From Malacca to the arctic: understanding the arctic strategy through the Malacca

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Statement of originality

This is to certify that the content of this thesis is my own work. This thesis has not been submitted for any other degree or purpose. I certify that the intellectual content of this thesis is the product of my own work, and that all assistance received in preparing this thesis and all sources have been acknowledged.

Abstract

China is a prisoner of its geography, where approximately 80 Per cent of its crude oil imports come through the Strait of Malacca, showing a fundamental strategic vulnerability and exposing its energy supply chain to potential disruption by rival powers, particularly the United States with its chain of alliances and India with its geographic presence in the Indian Ocean. Drawing on Mahanian's concept of sea power, this paper examines how China has pursued strategic diversification of maritime routes to mitigate its structural chokepoint dependency, with particular focus on the Arctic as an emerging supplementary corridor. The analysis evaluates two Principled mitigation strategies. First, the string of pearls - a network of dual-use infrastructure spread across South and Southeast Asia developed under the envelope of the Belt and Road Initiative seeking to establish a forward naval presence in the Indian Ocean; however, major parts of this initiative, such as CPEC and CMEC, are struggling from operational constraints due to armed conflicts or anti-Chinese sentiment. Second, the Arctic policy formalised in 2017 through Vision for Maritime Cooperation and the 2018 Arctic White Paper, positions the Northern Sea Route as a strategic alternative to Suez-dependent trade lanes, offering a potential 40 per cent reduction in shipping distance between East Asian and European ports. The paper finds that, though Sino-Russian cooperation has accelerated following Russia's post-2022 international isolation, the Northern Sea Route remains constrained by severe infrastructure deficits, seasonal navigability limitations, and the withdrawal of Chinese firms from sanctioned projects, revealing financial pragmatism over strategic commitment. Furthermore, a coordinated strategic push from the Western alliance system in the Arctic region has significantly slowed Chinese resource and infrastructure investments across the wider Arctic region. The paper concludes that the Chinese Arctic strategy is a long-term investment fuelled by commercial incentives compelling enough to overcome Nordic reluctance and to prioritise economic rationality over security concerns, though the ultimate viability is contingent on the Northern Sea Route's operational maturation and the sustainability of the Sino-Russian partnership amid escalating geopolitical polarisation.

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Introduction

Since 1993, China has become a major oil importer, and its unprecedented economic integration into the global economy has created some concerns regarding its energy security. It is estimated that around 80 per cent of total crude oil imports and two-thirds of total trade volume pass through a narrow strait called Malacca (Lanteigne, 2008, pp. 144-150). This logistical overdependence on a narrow chokepoint has been termed the "Malacca Dilemma. "This structural weakness is vulnerable to piracy and a naval blockade. In Mahanian terms, the control of the sea can be achieved through the control of the sea's narrows, and the Strait of Malacca is one such narrow that is vulnerable to American and Indian navies (Mahan, 1890). Beijing has recognized this vulnerability and so far it has perused a diversification strategy Under the Belt and Road Initiative. one of the most contested yet partially successful strategy is the String of pearls- a network of dual-use ports across South and Southeast Asia Aimed to establish Back door connectivity and form a chain of forward naval bases which are crucial to project power in Mahan's view (Marantidou,2014,p.3; Mahan,1890). However, the American maritime reach and growing presence of the Indian Navy in the Indian Ocean make these waters highly contested and necessitate a Chinese strategy to pursue a supplementary corridor. The Arctic—with its vast hydrocarbon reserves and the Northern Sea Route connecting Asia and Europe via Russian waters—offers precisely such an alternative, and its maritime paper of 2017 and its 2018 Arctic white paper integrate the strategic viability of the High North and positioning Arctic energy corridors as critical Infrastructure for China-Europe connectivity and energy security diversification. This paper examines how the operationality of the Northern Sea Route and comprehensive Russian partnership addresses the Malacca dilemma while simultaneously dealing with the substantial structural constraints that limit the immediate viability of China's Arctic Policy.

This analysis proceeds through six integrated sections, first section illuminates China's maritime vulnerabilities and geopolitical constraints, second evaluates the Beijing's mitigation strategy through String of Pearls, third evaluates the Polar silk Road vision, fourth evaluates the viability of Northern Sea route, Fifth discuss the reaction of Arctic states towards Chinese presence, then finally, conclusions synthesize findings regarding Arctic cooperation's capacity to address structural chokepoint vulnerabilities while acknowledging enduring constraints on transformation into a large-scale diversification mechanism.

Mahan and Malacca

The Malacca dilemma embodies the Mahanian paradox. The explosive industrial rise has solidified China in the global trade system. On the other hand, the energy that enabled China to become an

industrial leader has been flowing through narrow maritime chokepoints that are vulnerable to external control. This constraint was termed the Malacca dilemma; the strait is only 2.7 kilometres wide at its narrowest and carries almost 80 per cent of China's crude oil imports and over two-thirds of China's total trade volume (Lanteigne, 2008, pp. 144-150). In Mahanian terms, this overreliance is a structural weakness that could cripple the state economically, politically, and even socially. According to Mahan (1890), the command over the sea can be established through control of narrow chokepoints and in the case of China it’s not just the Malacca strait but also The strait of Hormuz which is equally vulnerable to external pressures, with nearly one-third of its imports passing through, making it another important strait with potential for disruption (Baabood, 2023).

If these narrows are disrupted, then the conversion of production into wealth—the very engine of China's global influence—would be disrupted (Mahan, 1890). China is anxious about this vulnerability because the USA has a global reach, an elaborate alliance system, and various naval bases in Japan, South Korea, Guam, the Philippines, and Australia, all structured to minimise and contain Chinese naval expansion. The U.S. is expected to have 11 active nuclear Aircraft carriers, 71 nuclear submarines, and 294 battle force ships by the end of 2030 (O'Rourke, 2025; Osborn, 2019; Nuclear Threat Initiative, 2024). Meanwhile, India, another competitor in the Indian Ocean, has border disputes with China. The Indian Navy has the islands of Andaman and Nicobar, which offer India a permanent, unsinkable base for naval assets, air power, and joint operations (Muraliprasath,2021). It is located directly at the mouth of the Malacca Strait, granting India severe leverage in a naval confrontation. Mahan extensively emphasised the necessity of controlling "vital centres through which commercial shipping must pass he identified the importance of distinct locations like straits and how controlling such narrows enables a navy to exercise command over sea lanes and global commerce (Mahan, 1890). In China's case, two naval powers have a significant presence near the chokepoints, and this presence itself is an alarming vulnerability that China is trying to mitigate through its maritime strategies, such as the String of Pearls.

String of pearls

The String of pearls is a Western term coined to describe China's maritime strategy, which involves developing dual-use ports across South and Southeast Asia (Marantidou, 2014, p. 3). These ports were termed pearls, and the chain of these ports, ranging from Gwadar (Pakistan), Hambantota (Sri Lanka), Kyaukpyu (Myanmar), Djibouti, and Chittagong (Bangladesh), which allows safeguarding China's Sea Lines of Communication (SLOCs), was termed the String (Marantidou, 2014, pp. 6-9). At its core, this strategy aims to diversify logistical routes through back channels like China–Pakistan Economic Corridor (CPEC) and the China–Myanmar Economic Corridor (CMEC) and aims to secure China's energy lifelines and commercial routes (Lintner, 2019, p. 17). CEPC connects Xinjiang with the Indian Ocean, bypassing the Strait of Hormuz. The logic is to establish a naval presence and connect Gwader to Xinjiang through a series of highways, railways, and pipelines, similar to CMEC, which is already

connected to China's Yunnan Province with Kyaukpyu Port in Myanmar, providing an outlet to the Bay of Bengal. Crucially, oil and gas pipelines under CMEC are already operational, but various other infrastructure projects are stalled due to internal conflicts and anti-Chinese sentiment (Aung, 2024), and the CEPC is plagued by political instability, insurgency in Baluchistan, and debt-related concerns in Pakistan (Mardell,2020). China's rapid naval modernisation represents a critical component of its maritime strategy. According to the Centre for Strategic and International Studies, “China now operates the world's largest navy with 234 warships compared to the U.S. Navy's 219” (Palmer et al., 2024). The U.S. Department of Defence projects this fleet will “expand dramatically to 395 ships by 2025 and 435 ships by 2030” (O'Rourke, 2025). China's third carrier, Fujian, is expected to enter service by late 2025 and has been a technological leap for China (ABC News, 2025). China's submarine force “comprises 60 vessels, with only 12 nuclear-powered submarines”. However, this force is “projected to grow substantially to 65 submarines by 2025 and 80 by 2035” (Nuclear Threat Initiative, 2024b). In comparison, India has also initiated its naval expansion and commissioned one new indigenous warship or submarine every 40 days on average (Modi, 2025). This accelerated pace is part of India's ambitious plan to expand its fleet to over 200 warships and submarines by 2035 (Pandit, 2025). This naval expansion indicates an ongoing struggle to establish command over the sea, and for China, the threat becomes severe as both Indian and the USA want to contain Chinese naval expansion.

Polar Silk Route

The Arctic presents a golden chance for China to capitalise on; the NSR is the only route which is not under the control of the West and presents a theoretically stable and secure route to Europe in comparison to the Suez Canal route, and the Arctic itself presents a source of a stable and secure energy provider. By developing the foundational capabilities in the Arctic region, such as Infrastructure and icebreakers, China can capitalise on the Arctic resources as its infrastructure capabilities mature. The 2009 U.S. Geological Survey revealed the presence of 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids, with 84 per cent of resources located offshore, presenting China with incentives to engage with the region (Bird et al., 2008). Russia owns 53% of the total Arctic territory, and the Arctic coastline presents China with a new maritime opportunity in the form of the Northern Sea Route (Arctic Institute, 2022).

Chinese Arctic ambitions were articulated through the 2017 Vision for Maritime Cooperation under the Belt and Road Initiative, and the 2018 China's Arctic Policy reflects a calculated strategic response to both resource vulnerabilities and geopolitical opportunities. The 2017 paper explicitly lays the foundation for the Chinese Arctic strategy. The paper identifies three critical "blue economic passages" essential to Chinese global connectivity: the China-Indian Ocean–Africa–Mediterranean route, the China–Oceania–South Pacific route, and, significantly, a passage to Europe via the Arctic Ocean (State Council of the People's Republic of China, 2017). The paper also attempts to justify its infrastructural

projects in the Russian Arctic and ports by linking the Northern Sea Route to the mutual economic progress of the region (State Council of the People's Republic of China, 2017). The paper stresses scientific research, resource exploration, and clean energy initiatives, establishing Beijing's narrative as a "responsible partner" in Arctic development (State Council of the People's Republic of China, 2017). The 2018 paper is an extension of this, but this paper was the first comprehensive public articulation of the Chinese Arctic engagement strategy. The document outlined various key objectives of China. Still, the most prominent one, which provides insight into China's Arctic strategy, is its objective to develop the Northern Sea Route and explore the possibility of resource extraction (State Council of the People's Republic of China, 2018).

Throughout the White Paper, China carefully balances rhetoric respecting the sovereignty of Arctic nations while simultaneously asserting the rights of non-Arctic states under UNCLOS and international law, including the rights to conduct scientific research, freedom of navigation, fishing, and resource exploration in international waters (State Council of the People's Republic of China, 2018). This dual messaging aligns with China's broader foreign policy principle of non-interference, though scepticism persists given China's assertive behaviour in other maritime domains, particularly the South China Sea. The document's language echoes the BRI principles of "respect, cooperation, win-win results, and sustainability" (State Council of the People's Republic of China, 2018).

Collectively, these documents suggest that the primary interest behind China's Arctic policy is the development of the Northern Sea Route and its connection to Europe, as well as the exploration of the Arctic's numerous untapped resources.

Northern Sea Route

The Northern Sea Route, under Russian law, is part of the Russian Exclusive Economic Zone, which stretches from the Novaya Zemlya archipelago to the Bering Strait, serving as the shortest maritime corridor between Western Eurasia and the Asia-Pacific (Ministry of Foreign Affairs of the Russian Federation, 2025). This route has sparked a strategic interest around the globe due to its potential 40% reduction in distance between East Asian and European ports compared to the Suez Canal route (Liu & Kronbak, 2010, p. 434).

Theoretical advantages

The NSR provides a significant edge over Canal. The Suez Canal. Theoretically, the NSR saves significant time when the three China–Europe corridors via the Suez Canal and the Northern Sea Route (NSR) are compared. For Tianjin–Rotterdam, the Suez routing is 11,500 nautical miles (nm) with an estimated duration of 29.9 days, whereas the NSR is 7,800 nm and 23.4 days (Humpert, 2013). For Shanghai–Rotterdam, Suez is 10,800 nm and 28.1 days, while the NSR is 7,600 nm and 22.9 days

(Humpert, 2013). For Shenzhen–Rotterdam, Suez is 10,100 nm and 26.3 days, compared with 8,500 nm and 25.2 days via the NSR. Across the three origins, the NSR consistently exhibits shorter route length and lower transit time relative to the Suez Canal (Humpert, 2013). This translates to significant savings on fuel, maintenance costs, transit time, and lower carbon emissions, making the overall logistical ecosystem more efficient. Based on these observations, many Chinese scholars conclude that the sooner the Infrastructure of NSR is developed, the sooner it will ensure the maritime and energy security of China (Pezard et al., 2022, pp. 7-13). This view is further demonstrated in the recent Russia-China signing off on the Northern Route shipping deal to slash global freight times (Aris,2025).

Table 1. Data from Humpert (2013)

Trade route	Suez	Day	NSR	Day
Tianjin-Rotterdam	11,500	29.9	7,800	23.4
Shanghai-Rotterdam	10,800	28.1	7,600	22.9
Shenzhen-Rotterdam	10,100	26.3	8,500	25.2

Operational Constraints

Humpert (2013) contends that the Northern Sea Route's (NSR) chief operational constraint is its uneven payoff across Chinese ports. Northern gateways—such as Shanghai—can capture the full distance savings of the route, while major southern hubs like Shenzhen benefit by only about 10–15%. A second constraint is speed: whereas the "Suez route allows modern containerships to sustain speeds of around 16 knots, Arctic conditions and ice-limited navigation often reduce averages to roughly 11 knots" (Humpert, 2013, pp. 11-12).

A recent voyage illustrates both the potential and the limits. In 2025, the Istanbul Bridge—an Ice Class 1 containership built in 2000 and among the largest to operate in the Arctic since 2024—sailed independently (without icebreaker escort) from Ningbo to the Port of Felixstowe (CHNL, 2025). "The transit lasted 20 days and 22.5 hours, covered 7,850 nautical miles, and averaged 15.62 knots" (CHNL, 2025). "Under favourable ice conditions, the NSR track would have been theoretically seven days faster and 2,706 nautical miles shorter than the Suez alternative" (CHNL, 2025).

Taken together, this suggests that navigability has improved since 2013 and highlights the route's future potential. At the same time, the distribution of benefits remains geographically skewed: As Ningbo is a northern port, this reinforces Humpert's analysis of enduring asymmetries in cost and benefit between northern and southern ports.

-Infrastructure, Environment, and Seasonality

The most constraining limitation of NSR is the lack of Infrastructure and Seasonality. The NSR traverses over 2,500 miles of sparsely populated Arctic coastline, with scant port facilities between Murmansk and the Bering Strait (Humpert,2011). This "infrastructural void" is a severe limitation: in case of emergencies, there are almost no options for technical support. Seasonality compounds these risks: typically, the NSR's navigation window lasts less than five months, heavily dependent on ice conditions, and is subject to year-to-year variation (Zhang et al., 2016).

Operational costs are higher due to ice-class vessel requirements, specialised crew, and maintenance burdens. Vessels used in Russian domestic shipping were generally built 30–45 years ago and have severely exceeded their expected service lives (Gunnarsson,2024, pp.105-106). These same vessels also have low to moderate ice classes. The advanced age of these rusting tankers, which transport heavy oil and oil products in Arctic coastal waters, increases the risk of accidents and oil spills (Gunnarsson, 2024, pp. 105-106). This further becomes an alarming issue when most cargo is petroleum-related, and in 2022, 46 ships out of 314 were built more than 30 years ago, raising concerns regarding spills and posing a threat to the fragile Arctic marine environment (Friskilä, 2023).

-Recent Infrastructure and Policy Initiatives

To address these challenges, both Russia and China have committed significant capital. Russia's NSR development plan (2025–2030) allocates “2 trillion Rubles (approximately 600 billion Rubles from the federal budget)” for icebreaker construction, port upgrades, and coastal facilities (Government of the Russian Federation, 2023). Chinese companies, such as NewNew Shipping, have also expanded Arctic Express container services, and joint Sino-Russian ventures are developing new classes of ice-capable vessels (Nilsen, 2025). Yet, despite these efforts, logistical and Infrastructure deficiencies persist.

Legally, the NSR's status remains contested. Russia asserts certain straits as internal waters (Liu & Solski, 2022, pp.858-859). Chinese strategic ambiguity preserves its freedom of navigation rights while it accepts the Russian management of the route. Both countries have formalised their cooperation through the 2024 Sino-Russian Arctic Waterway Subcommittee, through which both countries will work on joint shipping development, navigational safety, and polar shipbuilding to coordinate cargo planning and emergency response (Dieckmann, 2025).

Table 2. Data from (Balmasov, 2024)

Statistics	2023	2024
Total NSR Transit Cargo	2,1M	3,1M
Number of Transit Voyages	75	97
Russia–China Cargo Share	95%	95.20%
Crude Oil Shipments	1,5 m	1,89M
Oil & Gas Share	70.20%	61.10%

Cargo and Transit Trends: 2023 vs 2024

Transit activity along the Northern Sea Route (NSR) expanded significantly in 2024 despite enduring structural limitations. Total NSR transit cargo increased from 2.1 million tonnes in 2023 to 3.1 million tonnes in 2024—a rise of roughly 48% (Balmasov, 2024). The number of completed transit voyages jumped from 75 to 97, marking a record year for the route's commercial use (Balmasov, 2024). The overwhelming majority of this traffic continued to serve the Russia–China trade, with China's share moving from 95% in 2023 to 95.2% in 2024 (Balmasov, 2024).

A key driver of growth was the surge in crude oil shipments: volumes rose from 1.5 million tonnes in 2023 to 1.89 million tonnes in 2024, reflecting intensified Russian oil exports to China following the EU's 2022 embargo (Balmasov, 2024). However, while the absolute tonnage surged, the oil and gas share of total NSR transit cargo actually fell—from 70.2% in 2023 to 61.1% in 2024—indicating minor growth in other cargo categories, though the trade remains overwhelmingly energy-dominated (Balmasov, 2024).

Key Observations

- Despite rapid percentage growth, NSR transit cargo remains modest in a global perspective, especially when compared with China's annual maritime oil import of 11.1 million barrels per day in 2024 (Barron, 2025).

- Petroleum and liquefied gas continue to constitute the vast majority of NSR transit by volume, with dry bulk and container shipments still rare due to environmental and seasonal constraints, establishing NSR as an energy corridor.

"NSR transported transit cargo volume grew by about 45% in 2024, with energy cargo—particularly crude oil to China—accounting for the bulk of this increase" (Balmasov, 2024). The data reveal growing operational use and targeted investment, positioning the corridor as an energy route rather than an international trade route between Russia and China. However, the recent voyage from Ningbo to

Felixstowe has demonstrated China's vision to utilise the NSR as an international route (CHNL, 2025). This reveals that the Chinese strategy treats the Northern Sea Route as a strategic investment. In the short term, China is achieving no significance, but in the long term, it will enjoy the benefits of first-mover advantage.

Arctic Region

The Arctic Council comprises eight permanent member states whose territories and jurisdictions are intrinsically linked to the economic and logistical viability of the Northern Sea Route (NSR) for Chinese maritime trade and port connectivity. For China to establish a fully operational international Arctic shipping corridor and secure diversification of energy supplies and resource access, sustained diplomatic engagement with all Arctic Eight nations is essential. These collaborative frameworks encompass navigational agreements, search-and-rescue protocols, environmental standards, and infrastructure development partnerships that underpin safe and efficient transit through Arctic waters. However, since the onset of the Ukraine conflict in 2022, nearly all multilateral Arctic cooperation mechanisms have encountered significant stagnation. Russia's suspension from various forums, Western sanctions, and geopolitical polarisation have disrupted dialogue channels, delayed joint projects, and complicated China's efforts to pursue balanced diplomatic relations across the Arctic region, thereby introducing considerable uncertainty into the NSR's future trajectory as a reliable trade and energy corridor.

American perception

The American perception of Chinese Arctic activities has undergone substantial change. This is evident when we observe the American Chinese corporation in Alaska during a 2017 state visit by China, where Chinese corporations inked a commitment for a $43 billion development of Arctic LNG, but it never materialised (Reuters,2017). In fact, in 2019, the American perception shifted from corporation to securitisation, which is evident in the speech of then-Secretary of State Mike Pompeo, who explicitly rebuked the Chinese self-designated title of "near Arctic State" at the Arctic Council Ministerial meeting in Rovaniemi (Pompeo, 2019).

This sudden shift in behaviour from corporation to securitisation stems from the American perception of China's diplomatic push toward its self-designated title as a "near-Arctic state" and its introduction of the Arctic Silk Road initiative as an expansionist maritime strategy which extends beyond the Polar region and is a part of great power rivalry (Tripathi & Bindra, 2024, p. 3389). According to the 2023 report of the U.S. Department of Defence, Chinese Arctic activities are subtle but growing in nature, with their Infrastructure being dual-use and increasing over time. The most critical aspect is its growing relations with Russia, which is a relevant geopolitical competitor of the U.S. Under the Biden Administration, the American Arctic strategy emphasised strengthening the U.S. military presence and

capabilities in the region, with a focus on enhancing cooperation and diplomatic ties with Arctic states to counter Russia and China (U.S. Congress, 2023). This further demonstrates that American anxiety stems from Russian-Chinese cooperation and its military aspects, which is evident in the Joint Bomber Exercise conducted near Alaska on July 24th 2024 (Williams et al., 2024). The second-term Trump administration's Arctic strategy builds upon Biden's Arctic strategy, which emphasises the U.S. icebreaker fleet and strengthening joint defence efforts with NATO allies. The security-related focus remains on countering the growing collaboration between Russia and China (Konyshev & Sergunin, 2024, pp. 195–197).

Strategic Initiatives: Greenland and Canada

China's investment in Greenland and Canada was strategically aimed at ensuring the development of infrastructure and resource extraction. However, despite China's enthusiasm, its initiatives failed to materialise, highlighting the issue of profitability and government restrictions. In Greenland, Chinese ventures encountered systematic obstruction across multiple sectors. The state-owned China Communications Construction Company withdrew its 2019 airport infrastructure bid after Greenland selected Denmark for financing, signalling a preference for Western partners (Reuters, 2019). Mining efforts proved equally unsuccessful: General Nice Group lost its Isua iron mine license in 2021 due to inactivity, while the Kvanefjeld rare earth project—in which the Chinese company Leshan Shenghe holds a 12.5 per cent stake—became economically unviable after Greenland's 2021 uranium mining ban rendered the commingled rare earth-uranium deposit unworkable (Edstrøm et al., 2025, p. 18). The authorities banned all future oil and gas explorations and eliminated the offshore energy sector (Edstrøm et al., 2025, p. 18). Denmark blocked attempts to acquire the naval base Kangilinnguit on security grounds, but American pressure was also a factor (Pezard et al., 2022).

In Canada, the Chinese strategy was to divest in resources but faced persistent difficulties in the form of lack of profitability or direct government intervention which is further exemplified by the example of the Wolverine mine purchased by Jinduicheng Molybdenum Group for $113 million in 2008 (Oddleifson et al., 2021) and operated briefly from 2012–2015 before bankruptcy (Pilkington, 2024). In 2020, the Chinese state-owned Shandong Gold Mining attempted to acquire TMAC's Hope Bay Gold Mine, but the Canadian government blocked the acquisition under the Investment Canada Act following a 200-day national security review (Assaf et al, 2020; Oddleifson et al., 2021).

In 2022, the Canadian government explicitly designed a policy to restrict any foreign state-owned entities in critical minerals as posing "inherent economic risk," restricting approvals to exceptional circumstances (Government of Canada, 2022). This act directly targets Chinese investments. By 2025, the government will introduce strengthened Investment Canada Act amendments, which substantially increase regulatory barriers, with penalties rising to $25,000 per day and mandatory pre-closing filings

required for sensitive sectors (Parliament of Canada, 2024). This regulatory framework effectively constrains future Chinese Arctic resource investment, reflecting coordinated Western Arctic containment strategies.

Nordic Arctic Pushback

Unlike the USA, which maintains significant power rivalry with China, Nordic nations—Iceland, Finland, Norway, and Sweden—rely heavily on China for trade, creating a paradoxical relationship of economic necessity and security vulnerability.

"The Arctic is the last thing Xi Jinping thinks about when he wakes up in the morning."

These words of Professor Øystein Tunsjø suggest that Nordic states recognise the Arctic as merely a strategic interest for China (Keliher,2020). Still, their caution against China stems from their shared democratic and cultural identity. For Nordic states, the Arctic is their existential core, and they remain cautious of the great power rivalry between the USA and China, hence showing concerns regarding Chinese investments. Chinese scientific presence traces its origin in the 2000s; China's Polar Research Institute operates the Yellow River Station in Svalbard (established 2004) and maintains membership in EISCAT, the Arctic scientific radar association (Edstrøm et al., 2025,p.14). However, Nordic states have recognised China's growing scientific operations as dual-use operations and in 2014, Norway rejected a Chinese proposal to construct a radar antenna at the Svalbard EISCAT facility, citing diplomatic concerns regarding military applications (Edstrøm et al., 2025, pp. 14-15). Similarly, Finland showed restraint regarding the Scientific and Technological Corporation, specifically in relation to the Joint Research Centre for Arctic Space Observations and Data Sharing in Sodankylä and the Kemijärvi airport takeover by a Chinese enterprise; the reason was the dual-use nature of these projects (Puranen & Kopra, 2022,p.12). Sweden terminated China's access to satellite antennas at Esrange in 2020, despite operational arrangements dating back to 2011, citing concerns about potential military applications (Barrett & Ahlander,2020). Iceland was the first European country to have a free trade agreement with China, making China one of the most important trading partners for Iceland; however, even they showed caution regarding Chinese scientific endeavours. The China-Iceland Arctic Research Observatory (CIAO) was launched in 2012 and leased to China's Polar Research Institute for a 99-year term, but as of 2025, it is partially constructed, and the National Police Commissioner declared the facility possessed "dual-use purposes" and potential espionage functions (Edström et al., 2025, p. 15).

As of 2025, the Chinese financial investments remain minimal, with the primary exception involving Norway, where Chinese-controlled Bluestar acquired the industrial producer Elkem in 2011 for approximately $2 billion USD (Orkla, 2011). The Chinese state-owned COSL engaged in energy drilling and conducted its operations in the Arctic region of the Barents Sea, discovering 52 million

barrels of oil in 2024 (Staalesen, 2024). However, Chinese financial endeavours have faced numerous roadblocks, as evident in the case of Kirkenes port expansion, a strategic objective of China, which the government has systematically obstructed. On August 27, 2025, Norway's Foreign Ministry announced its Arctic policy, which explicitly designates China as a strategic competitor, and this legislation effectively foreclosed most Chinese port expansion initiatives (Norwegian Police Security Service, 2024; Government of Norway, 2025).

Chinese property tycoon Huang Nubo attempted to purchase approximately 300 km² (30,000 hectares or about 116 square miles) of land in northeast Iceland in 2011 for a proposed tourism and golf resort project, but the deal triggered significant security concerns and was rejected by Iceland's Interior Ministry in November 2011 (Valdimarsson, 2011). The same Chinese businessman, Huang Nubo, attempted to purchase land in northern Norway in 2014 after his Iceland deal failed (Boehler,2014). In May 2024, a 60 km² (23 square miles) tract of private land on Svalbard was put up for sale for approximately $324 million, triggering immediate security concerns about potential Chinese buyers (Guy,2024). Norwegian officials explicitly warned against Chinese acquisition, with authorities stating they would use legal powers to block any sale to Chinese entities due to strategic security concerns in the Arctic (Presse, 2024). Arctic infrastructure projects systematically excluded Chinese participation. The Lapland railway connecting Kirkenes to Rovaniemi has remained rejected since 2021 (Puranen & Kopra, 2022).

China, Russia and sanctions

Since the Russia-Ukraine war, bilateral trade between Russia and China increased by 29.3 per cent in 2022, reaching $190.8 billion, with China now firmly establishing itself as Russia's largest trading partner (Gordienko, 2024). The Russian exports to China surged 43.4 per cent to $114.2 billion, while Chinese imports to Russia grew 12.8 per cent to $76.1 billion (Gordienko, 2024). This demonstrates how China has been positioning itself as the economic lifeblood for Russia. This dramatic trade expansion reveals the asymmetric nature of the Russia-China corporation, where Russia is growing its dependence on China; hence, Russia's leverage has substantially diminished, while China's has substantially increased. China's Arctic investments in Russia demonstrate a distinctly profit-maximising strategy rather than one driven by complementary need or stable partnership. This orientation becomes evident through examination of strategic sectoral specialisation, wherein China pursues targeted investment and business activities designed to foster expertise, operational efficiency, and competitive advantage (Lai et al., 2014, p.77). The Yamal LNG, valued at $27 billion, demonstrate this, where the Chinese National Petroleum Company holds a 20% alongside the 9.9% stake of the Chinese Silk Road Fund and the project is further financed by Chinese institutions (Edstrøm et al., 2025). Similarly, the Arctic LNG 2 is 20% Chinese-owned, representing a consistent pattern of Chinese investments in

energy-related projects where the Chinese own a stake big enough to have a say but limited enough to keep the primary holder in charge.

In 2023, the U.S and Western countries reinforced significant sanctions against Russia, and projects like Arctic LNG 2 faced sanctions. In such scenarios, Chinese firms demonstrated behaviour which reveals a fundamental contradiction undermining claims of strategic partnership: financial risk preservation supersedes energy security commitments. When U.S. sanctions threatened Arctic LNG 2 in December 2023, China National Offshore Oil Corporation (CNOOC) and China National Petroleum Company (CNPC) immediately declared force majeure and suspended participation (Edstrøm et al., 2025). Similarly, in June 2024, Chinese engineering firm Wison New Energies completely withdrew from all Russian Arctic projects mid-implementation, abandoning Zhoushan facilities fabricating Arctic LNG 2 modules(Chow,2024). These actions directly contradict scholarly and policy narratives asserting that Arctic energy cooperation represents a coherent strategic partnership grounded in mutual commitment and shared objectives. Beyond energy extraction, China has invested in energy logistical infrastructure such as the 4,188-kilometre Eastern Siberia-Pacific Ocean pipeline and the 5,111-kilometre Power of Siberia pipeline, which delivers natural gas directly to China (Edstrøm et al., 2025). These initiatives increase China's security Index projection of 2025 from 0.4419 in 2020 to 0.5412 in 2025, while this demonstrates the potential of Arctic corporation to mitigate the Malacca dilemma, it also aligns with China's domestic green energy transition, as majority of Chinese investments in the Russian arctic are related to clean energy like LNG (Zhang et al., 2022,p.1).

Conclusion

China's Arctic engagement represents a strategic calculus shaped by acute maritime vulnerabilities and pragmatic geopolitical realities. The success of Chinese investments in the Russian Arctic stems from a confluence of factors such as the post-Ukraine isolation of Russia, which narrowed Russia's choices, and the overlapping strategic interests of China and Russia to rival the United States, acting as a bond in their partnership. However, this deepening Sino-Russian collaboration generates unintended consequences. Nordic states increasingly view China through a securitised lens. China's "pro-Russian neutrality" in Ukraine and growing Chinese presence in Russian military-related sectors have transformed perceptions from economic partner to potential security threat. Russia's transformation to a war economy presents additional strategic risks for China. As Moscow engages in wars, it will become unpredictable; its military industrial complex is already dependent on Chinese electronics, dual-use technologies, and critical components, creating asymmetric interdependence that extends beyond energy. While China gains significant leverage and discounted energy, it is also simultaneously becoming exposed to future conflicts, sanctions and more complicated relations with the West, especially European countries, which are an important market for China. Chinese strategy does recognise European markets as important, and that's why the Chinese Arctic strategy is betting on the

future potential of the Northern Sea Route. The strategic thinking of China is that if the NSR becomes viable, then the commercial incentives will be compelling enough to overcome Nordic reluctance and facilitate economic rationality over security concerns. This vision directly addresses China's Malacca Dilemma by creating diversified, resilient trade and energy infrastructure that extends beyond Western maritime dominance. However, the success remains contingent on the NSR's operational viability. The developing political scenarios of Russian aggression and the growing functionality of NATO to counter Russia will be the biggest challenge for China. China must therefore balance deepening Russian cooperation essential for NSR access against the perception costs that alienate other Arctic stakeholders, whose long-term engagement remains crucial for transforming Arctic aspirations into sustainable strategic realities.

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