

The Polar Silk Road

China's New Frontier of International Cooperation

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Abstract: The introduction of the “Polar Silk Road (PSR)” into the first comprehensive white paper on Arctic policy is a historic step for China's Arctic engagement. Over the past few years, China has achieved policy synergies and launched industrial, scientific and technological cooperation with Russia and Nordic countries. With enlarged interests and enhanced capabilities, China is becoming a preferred partner for Russia and Nordic countries in a number of infrastructure, energy and transportation projects within the Arctic region. The PSR framework to advance Arctic

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cooperation under the Belt and Road Initiative (BRI) presents both economic opportunities and social as well as environmental challenges for Chinese enterprises to balance the utilization and protection of the Arctic.

Keywords: Polar silk road (PSR); arctic governance; Belt and Road Initiative (BRI); Chinese overseas investment.

In January 2018, the Chinese government published its first ever comprehensive white paper on Arctic policy, outlining some key aspects of its Arctic agenda including the exploration and understanding of the Arctic, the region's environment and the impact of climate change, the use of Arctic resources, the region's governance and international cooperation, and the importance of maintaining peace and stability in the region. Notably, the white paper elaborates a vision of "Polar Silk Road (PSR)" against the background that China's Belt and Road Initiative (BRI) will bring opportunities to all parties concerned and facilitate connectivity and sustainable economic and social development of the Arctic.¹ The PSR, which refers to a wide range of international cooperation launched between China and Russia as well as Nordic countries, has since been thrust into the limelight of global media.²

The article explores China's existing and potential role in international cooperation along the PSR. It first elaborates on how the PSR evolved from a vague idea of the "Silk Road on Ice" into a key part of China's Arctic policy, and what cooperative achievements had been made between China and Arctic countries before the PSR was proposed. It then proceeds to examine China's economic partnership with Russia in the Arctic with a

¹State Council Information Office of the People's Republic of China, "China's Arctic Policy," January 26, 2018, http://english.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm.

²See, for example, Adam Minter, "Don't Fear China's Arctic Takeover," Bloomberg, January 30, 2018, <https://www.bloomberg.com/view/articles/2018-01-30/don-t-fear-china-s-arctic-takeover>; Philip Wen, "China Unveils Plan for 'Polar Silk Road' across the Arctic," The Independent, January 26, 2018, <https://www.independent.co.uk/news/world/asia/china-polar-silk-road-arctic-xi-jinping-shipping-global-warming-a8178891.html>; and Emily Feng *et al.*, "China Reveals Arctic Ambitions with Plan for 'Polar Silk Road,'" January 27, 2018, <https://www.ft.com/content/c7bd5258-0293-11e8-9650-9c0ad2d7c5b5>.

focus on the ongoing development of the Yamal LNG project and the rejuvenation of Russian seaports. In the third part, it considers China's economic opportunities in the Nordic Arctic, particularly those generated by the Arctic Corridor program proposed by Finland and Norway. It is concluded that Chinese companies will face many social and environmental challenges in Nordic countries and thus need to behave as responsible stakeholders with local communities, in order to achieve sustainable development in the Arctic.

The Polar Silk Road: From Idea to Reality

Originally introduced as the "Silk Road on Ice," the concept of the PSR was first proposed in 2011 by Mr. Sergey Shoygu, then Russian Minister of Emergency Management, at a themed conference called "The Arctic: Territory of Dialogue." However, this concept did not garner much attention at the time. For years, Russia has been seeking cooperation to tap into the great potential of energy reserves in the Arctic as well as the commercial value of the Northern Sea Route (NSR). As Russian President Vladimir Putin pointed out, "we see its [NSR's] future as an international transport artery capable of competing with traditional sea routes in cost of services, safety and quality."³ In order to facilitate its energy exports to major consumers in East Asia such as China, Japan and South Korea, Russia has been attempting to beef up infrastructure projects in the Arctic for land and sea transport, with the aim of connecting the Eurasian landmass in a more comprehensive manner.

Since May 2013 when China obtained the observer status in the Arctic Council, Chinese stakeholders have also been increasingly active in Arctic affairs. In summer 2013, *M/V Yong Sheng*, a commercial ship of the China Ocean Shipping (Group) Company (COSCO), undertook its first voyage from a Chinese port to Rotterdam via the NSR, following the maiden transit of *R/V Xuelong*, a Chinese icebreaker, from China to Iceland in 2012 through

³The official site of the Prime Minister of the Russian Federation, "Vladimir Putin's Speech at the Forum," presented at the second International Arctic Forum "The Arctic—Territory of Dialogue," Arkhangelsk, September 22, 2011, <http://archive.premier.gov.ru/eng/events/news/16536/print/>.

an Arctic sea route.⁴ Soon after Chinese President Xi Jinping mapped out the BRI during his state visits to Kazakhstan and Indonesia in late 2013, China began to enhance policy coordination with Russia in the Arctic under their comprehensive strategic partnership. From the Chinese perspective, cooperation with Arctic states in the five pillars of the BRI — namely, policy coordination, infrastructure connectivity, unimpeded trade, financial integration and closer people-to-people ties — can be strengthened based on the principles of extensive consultation, joint contribution and shared benefits.⁵

In May 2017, during a meeting with his Russian counterpart Mr. Sergei Lavrov, Chinese foreign minister Wang Yi openly endorsed Russia's proposal to jointly build a "Silk Road on Ice."⁶ A month later, a policy document was co-released by China's National Development and Reform Commission (NDRC) and State Oceanic Administration (SOA), to highlight the significance of constructing a blue economic passage in the Arctic that links China and Europe.⁷ In November 2017, Chinese President Xi and Russian Prime Minister Dmitry Medvedev agreed that China and Russia would jointly develop the PSR and enlarge the use of the NSR.

Thanks in part to its policy coordination with Russia, China released its Arctic policy in January 2018, which calls for stronger international

Russia and China
have many common
interests in
developing the Polar
Silk Road.

⁴Gudjonsson and Nielsson, "China Can Play Key Role in Arctic Shipping," *The Maritime Executive*, March 21, 2015, <https://www.maritime-executive.com/features/china-can-play-key-role-in-arctic>.

⁵State Council of the People's Republic of China, *Action Plan on the Belt and Road Initiative*, March 30, 2015, http://english.gov.cn/archive/publications/2015/03/30/content_281475080249035.htm.

⁶Ministry of Foreign Affairs of the People's Republic of China, "Wang Yi: Russia is an Important Strategic Partner of the Joint Construction of the 'Belt and Road,'" May 26, 2017, https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1466559.shtml.

⁷State Council of the People's Republic of China, "Vision for Maritime Cooperation under the Belt and Road Initiative," June 20, 2017, http://english.gov.cn/archive/publications/2017/06/20/content_281475691873460.htm.

cooperation in infrastructure building and operation of the Arctic sea routes by jointly building the PSR. Meanwhile, China attaches great importance to navigation security along the PSR; it has conducted a number of studies on the Arctic shipping routes and continually strengthened hydro-graphic surveys with the goal of improving the navigation security and logistical capacity in the Arctic region. Moreover, China abides by the Polar Code and supports the International Maritime Organization (IMO) in playing an active role to formulate navigational rules for Arctic shipping.

Highlighted in China's white paper on Arctic policy, the PSR is set to open up a blue economic passage linking China and Europe via the Arctic Ocean,⁸ enhance the digital connectivity and weave a global infrastructure network in the Arctic. Accordingly, China is deepening cooperation with other Arctic stakeholders on space and submarine technology, as well as cable projects based on successful practice in the field of digital technology.

In 2015, China and Russia decided to strengthen their partnership on satellite navigation, particularly between the GLONASS system and the Beidou system, through improving compatibility and inter-operability, enhancing system functions, building station network for applications, and exchanging data for monitoring and evaluation.⁹ At present, China's Ministry of Industry and Information Technology (MIIT) and China Telecom, one of the largest Chinese telecommunication operators, are collaborating with Finnish, Russian, Japanese and Norwegian partners in constructing a 10,500-kilometer fiber-optic maritime cable link across the Arctic Circle.¹⁰ In another recent example, leading Chinese companies

⁸State Council of the People's Republic of China, "3 Sea Routes Planned for Belt & Road Initiative," June 21, 2017, http://english.gov.cn/state_council/ministries/2017/06/21/content_281475692760102.htm.

⁹"Zhong-e zongli diershi dingqihuiwu lianhegongbao [Communique on the 20th Regular Meeting between Chinese Premier and Russian Prime Minister]," Xinhua, December 18, 2015, <http://www.xinhuanet.com/politics/2015-12/18/c.1117499329.htm>.

¹⁰"Beiji haidi guanglan dajian shuju 'sichouzhilu' [Under-sea Cable Paves Digital 'BRI' in the Arctic]," Xinhua Silk Road News, March 7, 2018, <http://silkroad.news.cn/2018/0207/83602.shtml>; and Elizabeth Buchanan, "Sea cables in a thawing Arctic," Lowy Institute, February 1, 2018, <https://www.lowyinstitute.org/the-interpretor/sea-cables-thawing-arctic>.

including Alibaba, JD Group, Huawei, SF Express, and China International E-Commerce Co. Ltd have launched discussions with their Estonian counterparts to explore the possibility of making Estonia a transit hub of Chinese commodities from e-platforms.¹¹ Working closely with Peking University, Tsinghua University and the Chinese Academy of Sciences (CAS), China's Haidian Science Park in Beijing signed a cooperation agreement in April 2018 with Tehnopol, the biggest science park in Estonia (and the Baltics as well), in order to advance bilateral cooperation in the high-tech field.¹²

The unique environment along the PSR has made it imperative to develop sustainable energy systems and explore new areas of cooperation such as eco-tourism and trade of low-emission food and aqua-cultural products. This is well reflected in China's white paper on its Arctic policy, in which China vows to strengthen clean energy cooperation and pursue low-carbon development, advocates eco-tourism in the Arctic, and encourages Chinese enterprises to make the best use of their advantages in the protection and rational use of Arctic resources.¹³

A success case in this regard is the cooperation between China and Iceland. As early as 2012, China signed framework agreements with Iceland to support greater cooperation on geothermal energy, along with marine and polar science.¹⁴ As of April 2018, Sino Petroleum Corp (Sinopec) and Iceland's Arctic Green Energy Corporation (AGEC) have developed geothermal projects in 40 Chinese cities.¹⁵ In 2013, China and Iceland engaged

¹¹The Baltic Course, "Ministry Keen to Boost Export of Chinese E-goods via Estonia," April 18, 2018, http://www.baltic-course.com/eng/good_for_business/?doc=139369.

¹²Tallinn.info, "Estonian, Chinese Tech Companies to Increase Cooperation," April 3, 2018, <https://www.gotallinn.info/news/1999453/estonian-chinese-tech-companies-to-increase-cooperation>.

¹³State Council Information Office of the People's Republic of China, "China's Arctic Policy."

¹⁴Chinese Embassy in Iceland, "Chinese Premier Wen Jiabao Pays Official Visit to Iceland," April 25, 2012, <http://is.china-embassy.org/eng/xwdt/t926273.htm>.

¹⁵Arctic Green Corporation, "Arctic Green Energy Completes USD 150 Million Equity and Debt Funding," April 26, 2018, <http://arcticgreencorp.com/arctic-green-energy-completes-usd-150-million-equity-and-debt-funding/>.

in a series of bilateral initiatives including a joint aurora observatory.¹⁶ In 2017, a special session on the BRI was set on the agenda of the Arctic Circle Assembly (ACA), which would again discuss PSR-related topics in 2018.¹⁷ During his visit to China in early September 2018, Mr. Gudlaugur Thor Thordarson, Iceland's Foreign Minister, and his Chinese counterpart concluded new bilateral agreements on geothermal cooperation. Both countries are also moving forward to explore deeper trade relations such as joint development of e-commerce and China's import of mutton and seafood from Iceland.¹⁸

China had worked closely with other Arctic stakeholders even before issuing its Arctic policy.

In an op-ed published by *China Daily*, Mr. Thordarson further underlined that his government follows the BRI carefully and with much interest, especially the PSR, which aims at opening up new shipping routes through the Arctic.¹⁹ Iceland has great potential for becoming a shipping hub in the Atlantic Arctic. With the launch of its first domestically built icebreaker, *R/V Xuelong II*,

China will be well equipped to be at the forefront of exploring the central Arctic shipping route.²⁰ Additionally, planned port projects in the

¹⁶Further information on CIAO is available at its official website. See <https://karholl.is/en/>.

¹⁷The Arctic Circle, "2017 Arctic Circle Assembly October 13–15," October 13, 2017, <http://www.arcticcircle.org/Media/arctic-circle-2017-assembly-program.pdf>; and The Arctic Circle, "Draft Program 2018 Arctic Circle Assembly October 19–21," September 6, 2018, <http://www.arcticcircle.org/Media/2018-arctic-circle-assembly-program.pdf>.

¹⁸Ministry of Foreign Affairs of the People's Republic of China, "Wang Yi Holds Talks with Minister for Foreign Affairs Gudlaugur Thór Thórdarson of Iceland," September 6, 2018, https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1593570.shtml.

¹⁹Gudlaugur Thor Thordarsson, "Iceland-China Relations will Continue to Strengthen," *China Daily*, September 6, 2018, <http://usa.chinadaily.com.cn/a/201809/06/WS5b90702ba31033b4f465477b.html>.

²⁰Wang Ying, "First Domestically Built Icebreaker Launched in Shanghai," *China Daily*, September 10, 2018, <http://www.chinadaily.com.cn/a/201809/10/WS5b9633a4a31033b4f46553ba.html>; and Li Weida, "Chinese Icebreaker Begins Polar Research Expedition," *GBTimes*, July 20, 2018, <https://gbtimes.com/chinese-icebreaker-begins-polar-research-expedition>.

Northeast of Iceland, both in Finnaðjörður and at Dysnes,²¹ have been attracting potential Chinese investors.²²

China's Economic Footprints in the Russian Arctic

The launch of the PSR as part of China's Arctic policy exhibits the country's willingness to join in infrastructure building in the Russian Arctic for the peaceful use of sea routes. Recent commitments of investment indicate that China would support Russia to better exploit the NSR and other parts of the sea routes in the Arctic based on the principles of sustainability and win-win results.

So far, Russia has echoed China's BRI enthusiastically; and the two countries have scaled up economic cooperation in the Arctic, including some of the world's largest liquefied natural gas (LNG) projects. As the most significant commercial project in the Arctic to date, Yamal LNG, also known as Arctic LNG-1, has been designed to meet China's growing energy demands through development of Russia's Arctic resources. Put into operation at the end of 2017, Yamal LNG is an integrated project encompassing production, liquefaction and shipping of natural gas. In particular, it comprises construction of an LNG plant with an expected annual output capacity of around 16.5 million tons by 2019.

The Yamal-Nenets Autonomous Region, the world's largest natural gas producing area, produces approximately 80 percent of Russia's natural gas and approximately 15 percent of the world's total.²³ Even under current sea conditions, Yamal is expected to double Russia's share in the global LNG

²¹Further information on Dysnes and Finnaðjörður port projects are available at their official websites. See <http://www.dysnes.is/> and <https://bremenports.de/finnafoerd/>.

²²James Kynge, "Chinese Purchases of Overseas Ports Top \$20bn in Past Year," *Financial Times*, July 15, 2018, <https://www.ft.com/content/e00fcfd4-6883-11e7-8526-7b38dcaef614>; and Haraldur Gudmundsson, "*Funduðu með kínverskum skiparisa um Finnaðjarðarverkefnið* [Meeting with a Chinese Shipping Giant about the Finnaðjörður project]," *Visir*, September 5, 2017, <http://www.visir.is/g/2017170909468>.

²³Novatek, "Novatek and the Silk Road Fund Conclude Framework Agreement on Acquisition of Stake in Yamal LNG," September 3, 2015, <http://www.novatek.ru/en/press/releases/index.php?id.4=984>.

market by the time it reaches full capacity in 2020.²⁴ Used as a resource base for Yamal, the South Tambey Field has proven gas reserves of 926 billion cubic meters, making it the largest Arctic source of LNG.²⁵ Currently, Yamal LNG constitutes 3.5 percent of global LNG production; extensive construction of transportation infrastructure is still ongoing in the scope of the Yamal LNG project, including the Sabetta Airport and a sea port initiated in 2013.

In November 2017, Novatek, one of the largest independent natural gas producers in Russia, signed a strategic cooperation agreement with the Chinese National Petroleum Company (CNPC), which owns 20 percent of Yamal LNG. The agreement confirms both parties' intention to cooperate in implementing the Arctic LNG-2 project, as well as collaborating in different segments of the LNG and natural gas markets, including LNG trading and gas infrastructure development. Novatek also signed an agreement with China Development Bank for cooperation as part of this project.

Meanwhile, France's Total oil corporation holds a 20 percent stake in the Yamal LNG project and would like to participate in the upcoming Arctic LNG-2 (as well as other possible international projects), which has a potential producing capacity of approximately 19.8 million tons per year. Reportedly, Arctic LNG-2 could unlock more than 7 billion barrels of oil equivalent of hydrocarbons' resources in the onshore Utrenneye gas and condensate field, partly utilizing the NSR to connect produced natural resources to the global supply chains of energy trading by 2023.²⁶ As mentioned above, by August 2018, Yamal LNG had already accounted for 3.5 percent of global LNG output, producing 11 million tons a year, with two expansion projects (by 5.5 million and 1 million tons per year, respectively) to be fully operational by 2020. Arctic LNG-2 envisages three

²⁴Oksana Kobzeva and Olesya Astakhova, "Russia to Boost Presence on Global LNG Market, Helped by Lower Costs," Reuters, June 3, 2018, <https://www.reuters.com/article/us-russia-lng/russia-to-boost-presence-on-global-lng-market-helped-by-lower-costs-idUSKC-N1IX4FI>.

²⁵Further information on Yamal LNG is available at its official website. See <http://yamallng.ru/en/>.

²⁶Total, "Russia: Total Expands Partnership with Novatek through Arctic LNG 2 Project," May 24, 2018, <https://www.total.com/en/media/news/press-releases/russia-total-expands-partnership-novatek-through-arctic-lng-2-project>.

phases of construction in 2022–23, 2024 and 2025, with a capacity of 6.6 million tons each. By then, the combined LNG production capacity of Yamal Arctic LNG-1 and LNG-2 will be as high as 37 million tons per year.

Chinese involvement in the Arctic LNG projects is vital to Russia, especially in light of the continuing western sanctions since the Ukraine crisis in 2014. At present, CNPC and China's Silk Road Fund (SRF) hold 20 percent and 9.9 percent ownership stake of the Yamal LNG project, respectively. In Spring 2016, the Russian LNG producer Novatek concluded an agreement with China Development Bank and the Export-Import Bank of China for US\$12 billion loans financing the Yamal LNG project.²⁷ Apart from cooperation with CNPC, Novatek also signed a Memorandum of Understanding (MoU) with China Development Bank to settle the financial arrangement for the Arctic LNG-2 project.²⁸

It is worth mentioning that the Yamal LNG project, which is planned to ship to basic markets of East Asia, can also be piped to Europe later. According to rough estimations, some 70 percent of the Yamal LNG will be transported eastwards and 30 percent will be westbound, which presents enormous opportunities for East Asian and European energy consumers to collaborate on developing infrastructure projects and the NSR.

As noted before, COSCO's *M/V Yong Sheng* accomplished its first transiting voyage through the NSR in 2013. Two years later, COSCO successfully completed the two-way transit shipping. By the end of 2017, COSCO had sent a total of 10 vessels on 14 trips through the NSR, smoothly carrying cargoes including building materials, components and equipment. These achievements demonstrate that regular shipping activities along the NSR carried by Chinese companies have begun to

China's involvement in the Yamal LNG project helps revive the Russian Arctic.

²⁷Reuters, "China Lenders Provide \$12 bln Loan for Russia's Yamal LNG Project-sources," April 29, 2016, <https://uk.reuters.com/article/russia-china-yamal/china-lenders-provide-12-bln-loan-for-russias-yamal-lng-project-sources-idUKL2N17V2MI>.

²⁸Novatek, "NOVATEK Signed MOU with China Development Bank," November 1, 2018, http://www.novatek.ru/en/investors/events/archive/index.php?id_4=1950&mode_4=all&from_4=01.01.2017&ato_4=31.12.2017&from_4=4.

take shape.²⁹ In October 2017, the oil and gas shipping unit of COSCO approved a plan to acquire 50 percent stake of the Mitsui OSK (MOL) subsidiary for building four new conventional LNG carriers booked to deliver cargoes from Yamal LNG, expanding the two firms' joint fleet to 17 with a total investment of \$877 million. COSCO and MOL jointly own 4 ships delivered between 2015–2016 for charter to ExxonMobil, 6 vessels due for delivery between 2016–2018 for charter to Sinopec, and 3 of the 15 icebreaking LNG carriers that load Yamal LNG cargoes at the Port of Sabetta in the Russian Arctic.³⁰ COSCO has planned 10 NSR voyages in 2018, including those of *M/V Tian En*, China's first cargo ship specially designed for sailing in polar waters.³¹ To date, COSCO has become one of the most prominent international shipping operators in the Arctic region and the first to include the NSR into its transportation network as a regular route.

Against this backdrop, rejuvenation of sea ports in the Russian Arctic has attracted growing investment and even broader economic involvement from China. So far, Chinese investors have shown much interest in coal terminals of the all-year ice-free port of Murmansk, which is regarded as a potential large-scale trans-shipment hub for the NSR.³² In September 2017, a number of Chinese companies expressed their desire to invest in a new project near Arkhangelsk, a historic Russian port city, including the development of the Belkomur railway and a deep-water port on the Northern Dvina River.

²⁹Zhang Yiqian, "Chinese Commercial Ships Explore Arctic Routes Amid 'Polar Silk Road' Ambitions," *Global Times*, February 8, 2018, <http://www.globaltimes.cn/content/1088825.shtml>.

³⁰MOL, "MOL and China COSCO Shipping Jointly Own 4 LNG Carriers for Russia Yamal LNG Project," November 2, 2017, <http://www.mol.co.jp/en/pr/2017/17075.html>.

³¹Reuters, "A Chinese Cargo Ship Specially Built for the Arctic has Embarked on its First Northern Sea Route Voyage," *Arctic Today*, August 10, 2018, <https://www.arctictoday.com/chinese-cargo-ship-specially-built-arctic-embarked-first-northern-sea-route-voyage/>.

³²Atle Staalesen, "Murmansk wants Arctic Container Port," *The Barents Observer*, February 01, 2016, <https://thebarentsobserver.com/en/industry/2016/02/murmansk-wants-arctic-container-port>; and Atle Staalesen, "Murmansk Counts on Chinese Investors," *The Barents Observer*, March 14, 2017, <https://thebarentsobserver.com/en/industry-and-energy/2017/03/murmansk-counts-chinese-investors>.

Up to now, the Export-Import Bank of China has committed to provide loans for the project in which COSCO and other Chinese companies including Chimbusco, Poly Group and the China Marine Fuel Service Corporation would also like to participate.³³ The new port, which is estimated to reach 30 million tons of cargo by 2030 and act as a central Arctic hub for Russian export and import with Europe, the Asia-Pacific and North America, will be built near the Mudyug Island where existing port facilities are in place for larger vessels.³⁴ In June 2018, potential PSR projects between Russian and Chinese partners became highly visible as the NSR was named as one of the priority areas for up to \$10 billion investment jointly committed by China Development Bank and Russia's Vnesheconombank (VEB) that would finance some 70 projects, particularly those in the Arctic.³⁵

China's Opportunities in the Nordic Arctic

As key stakeholders of Arctic governance, Nordic countries including Finland and Norway have also proposed the Arctic Corridor,³⁶ a transportation program that will connect the city of Rovaniemi in North Finland with the Norwegian port of Kirkenes, to further strengthen the international utilization of the NSR. The program includes the rebuilding of the Kirkenes deep-water port and the construction of a railway, a logistic hub in Rovaniemi and an air logistic Hub in Helsinki that is linked to the Baltic Tunnel. Once completed, ships can dock at Kirkenes, where cargoes are offloaded to

³³Atle Staalesen, "Chinese Company COSCO Confirms Interest in Trans-Arctic Shipping to Arkhangelsk," *The Barents Observer*, September 26, 2017, <https://thebarentsobserver.com/en/arctic/2017/09/chinese-company-cosco-confirms-interest-trans-arctic-shipping-arkhangelsk>.

³⁴Thomas Nilsen, "New Mega-port in Arkhangelsk with Chinese Investments," *The Barents Observer*, October 21, 2016, <https://thebarentsobserver.com/en/industry-and-energy/2016/10/new-mega-port-arkhangelsk-chinese-investments>.

³⁵Janne Suokas, "China Pledges \$10bn to Silk Road, Arctic Projects in Russia," *Gbtimes*, June 13, 2018, <https://gbtimes.com/china-pledges-10bn-to-silk-road-arctic-projects-in-russia>; and Atle Staalesen, "Chinese money for Northern Sea Route," *The Barents Observer*, June 12, 2018, <https://thebarentsobserver.com/en/arctic/2018/06/chinese-money-northern-sea-route>.

³⁶Further information on the Arctic Corridor is available at its official website. See <http://arcticcorridor.fi/>.

the railway and sent southward through rail connections in Helsinki, and then through the proposed Helsinki-Tallinn tunnel to central Europe.

To China, the Arctic Corridor presents an extraordinary opportunity for cooperation under the PSR framework. Most obviously, infrastructure building of the Arctic Corridor is highly relevant to the NSR, facilitating connectivity between East Asian and Arctic economies and helping integrate the Baltic region and central European market in a more comprehensive way. Since the Arctic Corridor is a huge ensemble of costly projects, Chinese investment would be very welcomed—some Chinese companies have received invitation to discuss the possibility of getting involved in these projects, and a brochure in Chinese has been prepared.³⁷

Historically, Norway has been one of China's most significant trading partners in Northern Europe. The Chinese and Norwegian governments are seeking to revive stalled free trade negotiations.³⁸ In particular, Norway's shipping groups are interested in engaging with their Chinese counterparts and look forward to greater involvement by Chinese shipping companies.³⁹ As the northernmost ice-free port located by the Barents Sea and the closest Western port to East Asia via the NSR, Kirkenes will play an indispensable role in future cooperation between China and Norway; ships can move cargoes from China as well as oil and gas from Arctic fields in Russia westward along the NSR to Kirkenes.

For years, Kirkenes has been a free trading, logistics and industrial port in use for supplies and services to the Russian Barents, Pechora and Kara seas, Yamal and other Northern Russian onshore and offshore sites.⁴⁰ It is an ultra-deep, large fjord port with dry and calm inland climate, which is accessible and operative for conventional, non ice-class vessels under all

³⁷Arctic Corridor, "Arctic Railway Rovaniemi-Kirkenes," <http://arcticcorridor.fi/wp-content/uploads/jkrautatiekiinascr02.pdf>.

³⁸Reuters, "China Says Free Trade Talks with Norway should be Accelerated," August 2, 2018, <https://www.reuters.com/article/asean-singapore-china-norway/china-says-free-trade-talks-with-norway-should-be-accelerated-idUSL4N1UT0O6>.

³⁹Liang Youchang and Zhang Shuhui, "Norway's Arctic Town Envisions Gateway on Polar Silk Road with Link to China," Xinhua, 10 March, 2018, http://www.xinhuanet.com/english/2018-03/10/c_137029993.htm.

⁴⁰For an introduction to the Kirkenes Industrial Logistics Area (KILA), see http://www.tschudiartctic.com/page/256/Kirkenes_Industrial_Logistics_Area_KILA.

weather conditions. In addition, Kirkenes has unlimited potential for expansion, with experienced shipping agents and ship repair services, where facilities for supply of power, fuel, water, as well as for the service of piloting, customs, health are efficiently presented.

On his visit to Shanghai in April 2018 on a delegation led by Norwegian Minister of Research and High Education, Mr. Rune Gjertin Rafaelsen, Mayor of Sør-Varanger municipality, Kirkenes, announced that Kirkenes was well prepared for the Arctic Corridor and the opening of the NSR.⁴¹ The Norwegian National Rail Administration, the National Coastal Administration and the National Road Administration have already made recommendations to the Ministry of Transport and Communication to extend support to the Arctic Corridor program, which would serve as an integral part of the flow of freight transport along the NSR. Such a vision has partially been realized. In September 2010, the bulk carrier *M/V Nordic Barents* became the first non-Russian flagged commercial vessel to successfully transit the NSR, sailing directly from Kirkenes through the NSR and the Bering Strait to Lianyungang of China with a cargo of iron ore.⁴²

In Finland, Rovaniemi as the Arctic capital shares a lot of interests with China in the fields of energy, mining, tourism, information and communication technology (ICT), and clean technology. A maritime cable project linking Europe and Asia via the NSR has been planned to pass through Rovaniemi.⁴³ An increasing number of travelers choose to visit the Finnish Lapland

China and Nordic countries are seeking closer cooperation to build the Arctic Corridor.

⁴¹ Atle Staalesen, "Barents Town Envisions Arctic Hub with Link to China," The Barents Observer, February 6, 2018, <https://thebarentsobserver.com/en/arctic/2018/02/barents-town-envisions-arctic-hub-link-china>; and Liang Youchang and Zhang Shuhui, "Norway's Arctic Town Envisions Gateway on Polar Silk Road with Link to China."

⁴² CHNL, "Fact Sheet—The Northern Sea Route," August 26, 2018, http://www.chnl.no/publish_files/NSR_FACTSHEET_UK.pdf.

⁴³ Aki Uljas's "Arctic Connect" presentation at the Arctic Economic Council 3rd Top of the World Arctic Broadband Summit, Sapporo, Japan, June 27–28, 2018, <https://arcticeconomiccouncil.com/wp-content/uploads/2018/07/Uljas.pdf>.

area in winter. As a result, Rovaniemi recorded the hottest winter tourism season in 2017, with a 15 to 20 percent increase in the number of visitors compared with that in 2016. The high demand for accommodation has also attracted new investments to facilitate the growth of the tourism industry.⁴⁴

In February 2018, the final report of the Helsinki-Tallinn Transport Link Feasibility Study was released, which gave technical details of the proposed €13–20 billion, 103km-long rail tunnel connecting Finland to Estonia under the Gulf of Finland, including two huge artificial islands and a tunnel 250 meters beneath the sea.⁴⁵ Once finished, it would be the world's longest undersea tunnel. The tunnel would run in parallel with the planned airport rail line providing connections to the rest of Finland, Sweden, and North Russia. On the Tallinn side, the link would connect directly to the airport, which is already connected to the rest of the rail network and Rail Baltica, the new pan-Baltic rail project expected to be launched in 2019. Since rail gauges differ between Finland and Estonia, the line will adhere to the European standard (1435 mm), making it accessible to Rail Baltica.⁴⁶

In the foreseeable future, Helsinki will become an air hub of the Arctic Corridor. Currently, Finnair has already served 7 airport destinations in Greater China with 38 weekly flights, topping all other European airlines.⁴⁷ It is noteworthy that passengers travelling on scheduled flights from Helsinki to China account for 5 percent of all international passengers, and China is projected to be the 8th most popular destination country for the Finnish. Meanwhile, air travel from China to Finland has grown

⁴⁴Thomas Nilsen, "Record-breaking Winter Season for Lapland Tourism," *The Barents Observer*, November 21, 2017, <https://thebarentsobserver.com/en/travel/2017/11/record-breaking-winter-season-lapland-tourism>.

⁴⁵European Union ERDF and Interreg Central Baltic, "Finest Link Helsinki-Tallinn Transport Link Feasibility Study—Final report," February 7, 2018, <http://www.finestlink.fi/wp-content/uploads/2018/02/FinEst-link-REPORT-FINAL-7.2.2018.pdf>.

⁴⁶Agnis Driksna, "Progress of Rail Baltica Design Activities in Latvia," 23 January 2018, http://www.railbaltica.org/wp-content/uploads/2018/01/EDZL_23.01.2018_Vilnius.pdf; and Rail Baltic, "Frequently Asked Questions," March 31, 2017, <http://railbaltic.info/en/faq>.

⁴⁷Hu Tao, "Finnair Flying High with China's Ongoing Growth, Development," *China Daily*, June 15, 2018, <http://www.chinadaily.com.cn/a/201806/15/WS5b23169da310010-f8f59d1c8.html>.

tremendously during the past decade. The number of Chinese on overnight stay in the country has grown from 98,100 in 2007 to 361,800 in 2017.⁴⁸ Between 2016 and 2017, the number of Chinese visitors increased by 63 percent; and Chinese tourists spent €335 million in Finland in 2017, a 49 percent increase from the level of 2016.⁴⁹ With the introduction of Alibaba's Alipay and Fliggy, *Visit Finland* has estimated that consumer spending by Chinese tourists in Finland, excluding flights and hotels, has more than doubled from around €600 per visitor to €1,300.⁵⁰

Social and Environmental Challenges for Chinese Enterprises

Although most of the infrastructure projects in the Arctic have yet to be built and no one can accurately predict the pace of sea ice melting and technological advancements, considerable progress in Arctic governance has been made over the past decade, while lasting momentum for Arctic partnerships has developed. In the coming years, many long held economic goals of Arctic countries are likely to be realized; and much closer links can be expected among China, Russia and Nordic countries, thanks to their policy coordination and concerted efforts. However, for Chinese enterprises, involvement in Arctic cooperation is a relatively new experience, which poses many social and environmental challenges alongside business opportunities.

The majority of Arctic countries along the PSR are developed economies, whose level of productivity and degree of affluence are much higher than China's. They also take the lead in technological innovation — in the 2017 global innovation index (GII), almost every Arctic

Chinese enterprises must undertake more social responsibility in building the polar silk road.

⁴⁸Ren Xiaojin, "Finland Records Surge in Chinese Tourists," *China Daily*, 10 September 2018, <http://africa.chinadaily.com.cn/a/201809/10/WS5b961519a31033b4f4655333.html>.

⁴⁹Visit Finland, "Spending by International Visitors Increased by 20% in 2017," March 16, 2018, <https://www.visitfinland.com/travel-trade/newsletter/spending-international-visitors-increased-20-2017/>.

⁵⁰Ren Xiaojin, "Helsinki to Make Travel Easier for Chinese tourists," *China Daily*, 11 September 2018, <http://www.chinadaily.com.cn/a/201809/11/WS5b9721eca31033b4f4655547.html>.

country except Russia ranked higher than China, although China overtook Iceland, Canada and Norway in 2018.⁵¹ In terms of business climate, most Arctic countries boast a sound market system, consummate industrial structure, sophisticated economic operation mechanisms and systematic market legal norms. Most importantly, these countries usually have high social and environmental standards. Therefore, they have high hopes for Chinese investment, while adopting rigid criteria for accepting the investment. Besides, in Arctic economies, goals of social development are more diversified and comprehensive, including social justice, ecological balance, economic development, inter-generational equity, enterprise ethics, and climate response, among others. In a similar vein, the decision-making process for social resource allocation is more complicated in Arctic countries. All these require Chinese enterprises to demonstrate more corporate social responsibility (CSR) when engaged in local business and projects.

In the meantime, climate change remains a big threat to the Arctic ecosystem, including the destruction of food chains of regional species. The exacerbation of climate change and its ensuing impact will bring about more stringent standards for economic activities in the Arctic, which will also increase the cost of Chinese investment. For Chinese enterprises, the exploration and exploitation of Arctic natural resources demands sufficient assessment of the environmental impact, ecological sensitivity and production safety of any investment. In the long run, it is necessary for Chinese enterprises to achieve a balance between the development of Arctic natural resources and the protection of the fragile environment, with better understanding on how human activities create barriers for the migration and reproduction of Arctic birds and animals, and how environmental pollution, such as oil spills, affects the fragile ecosystem.

The Chinese government has committed to regulate and supervise the activities of Chinese citizens, enterprises and other organizations in the Arctic, in accordance with the legal framework, to ensure that their activities comply with the international and national laws on environmental protection, resource conservation and sustainable development. Chinese

⁵¹In the global innovation index rankings, Arctic countries hold high positions with Sweden as the 3rd, the United States the 6th, Finland the 7th, Denmark the 8th, Canada the 18th, Norway the 19th, Iceland the 23rd, Russia the 47th, while China ranks 17th. See 2017/2018 rankings, <https://www.globalinnovationindex.org/analysis-indicator>.

enterprises must be fully aware that their partners along the PSR prioritize environment protection over economic gains in the Arctic. Thus, restrictions can be imposed by Arctic countries on Chinese economic activities; and Chinese enterprises operating along the PSR need to be equipped with more social and environmental awareness, and behave as responsible stakeholders in local communities, in order to achieve sustainable development in the Arctic.