RUSSIA IN THE ARCTIC: CHALLENGES AND PROSPECTS FOR TAPPING ENERGY RESOURCES

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INTRODUCTION

The growing demand for energy resources will have a potential impact on the availability of exhaustible resources in the future. This scarcity of resources is bound to impact the consumption and price of such resources. It is in this context that the Arctic region has become a contested zone between the major powers, especially for Russia. Global warming has made the ecology of this region fragile. Efforts have been made to explore the hydrocarbons which were once considered inaccessible. The accelerating pace of ice melting will make exploration in the Arctic profitable and viable. Oil and natural gas, however, do not comprise the only factor that concerns the Arctic. The region is also contested over sovereignty and legitimate rights. This paper would focus on certain key issues pertaining to the undiscovered natural resources, the presence of international powers, and how Russia can address its Arctic goals and challenges.

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GEO-POLITICS OF THE ARCTIC REGION

The Arctic Ecology

The Arctic region is fundamentally very different from other regions like the Middle East, Western Europe or Southeast Asia. It can be described as the region of peripheries.[1] The total area included within the boundaries is around 40 million sq km or 8 percent of the earth's total surface.[2] However, given the vast geographical area, the human population in the region is quite dense. The region is inhabited by nearly four million people. More than 40 different languages are spoken by the inhabitants, including the indigenous communities, representing the cultural and social diversity of the region.[3] Furthermore, the region comprises more or less remote portions of countries like Canada, Denmark, Finland, Norway, Sweden, Iceland, United States and the Russian Federation.

The prominence of the Arctic is associated with climate change. Environmentalists have often spoken about the effects of climate change due to global warming. Certainly, the Arctic is a grave reminder of the accelerating pace at which the planet is getting warmer. [4] However, the effects of climate change can be viewed as paradoxical. On the one hand, where global warming is dangerously affecting the Arctic environment, it has also resulted in unfreezing the natural resources that lie beneath the ice cover. The melting of the ice has opened the Northern Sea Passage which is seen as an essential route for maritime commerce, easy access for exploring the vast oil and gas reserves and exploiting the huge fish stock.[5] This provides countries with an opportunity to build infrastructure and explore the rich hydrocarbon deposits. But, at the same time, it also raises

1. Oran R. Young, "Governing the Arctic: From Cold War Theater to Mosaic of Cooperation", *Global Governance* (Lynne Rienner: Colorado, 2005), vol. 11, no.1, pp. 9-10.
2. Ibid.
3. Arthur Brekman, *Environmental Security in the Arctic Ocean: Promoting Cooperation and Preventing Conflict* (Routledge: United Kingdom, 2010).
4. Sarah Simpson, "The Arctic Thaw Could Make Global Warming Worse", *Scientific American*, May 17, 2009, see http://www.scientificamerican.com/article/the-peril-below-the-ice/, accessed on June 23, 2014.
5. Uttam Kumar Sinha, "The Arctic: An Antithesis", *Strategic Analysis* (Routledge: New Delhi, 2013), vol. 37, no. 1, p. 34.

questions regarding the territorial disputes and the politics and governance of the region.

Fig 1: The Countries Surrounding the Arctic Region

Source: "Permafrost in a Warming World", *Weather Underground*, see http://www.wunderground.com/resources/climate/melting_permafrost.asp, accessed on June 24, 2014.

Geo-political Relevance of the Arctic Region

As mentioned above, global warming has resulted in opening opportunities for the Arctic countries. The Arctic is important for many reasons, mainly its natural resources, the viability of new shipping routes, and for carrying out scientific and military research. Although there is no clear data on the

precise volume of resources that lie under the ice cover, estimates are that the Arctic could contain almost 30 percent of the world's undiscovered natural gas and 15 percent of its oil.[6] According to the 2008 US Geological Survey assessment, the total undiscovered conventional oil and gas resources of the Arctic are estimated to be approximately 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids.[7]

In addition, there is also the possibility of opening up of new sea routes for maritime commerce. The Northern Sea Route along the coast of Russia is considered a vital route which could be 40 percent faster than the traditional Suez Canal for ships to travel from the European countries to the Asian countries. Since the route falls under the Russian territory of the Arctic, it will be interesting to see what benefits Russia can derive out of it. The Northwest Passage between Greenland and Canada comprises a similar case. Although the passage has become a zone of contention between Canada and the United States (over the sovereignty issue), the passage holds the possibility of significantly speeding the cargo travelling between the Dutch shipping hubs of Rotterdam to the ports of California.[8]

As mentioned earlier, the Arctic is also considered a viable region for conducting scientific and military research. Scientific research is largely associated with understanding climate change and its impact on the Arctic environment. For this purpose, the International Study of Arctic Change (ISAC) was established in 2003 by the International Arctic Science Committee and the Arctic Ocean Sciences Board to keep a check on, and provide accessible scientific information for responding to, the rapid climate change.[9] The data can be used to address the problems of droughts,

6. Frédéric Beauregard-Tellier, "The Arctic: Hydrocarbon Resources", Parliament of Canada, October 24, 2008, see http://www.parl.gc.ca/content/LOP/researchpublications/prb0807-e.htm, accessed on June 5, 23, 2014.
7. Ronald R. Charpentier, T.R. Klett, and Emil D. Attanasi, "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle", U.S. Geological Survey, see http://www.anwr.org/images/pdf/USGS_Oil_gas_Arctic_2008_estimate.pdf, accessed on June 23, 2014.
8. Deb Riechmann, "So, How Important Is The Arctic?", *The Huffington Post*, January 1, 2014, see http://www.huffingtonpost.com/2014/01/01/how-important-is-the-arctic_n_4526951.html, accessed on June 23, 2014.
9. "International Study of Arctic Change", see http://www.arcticchange.org/about, accessed on June 23, 2014.

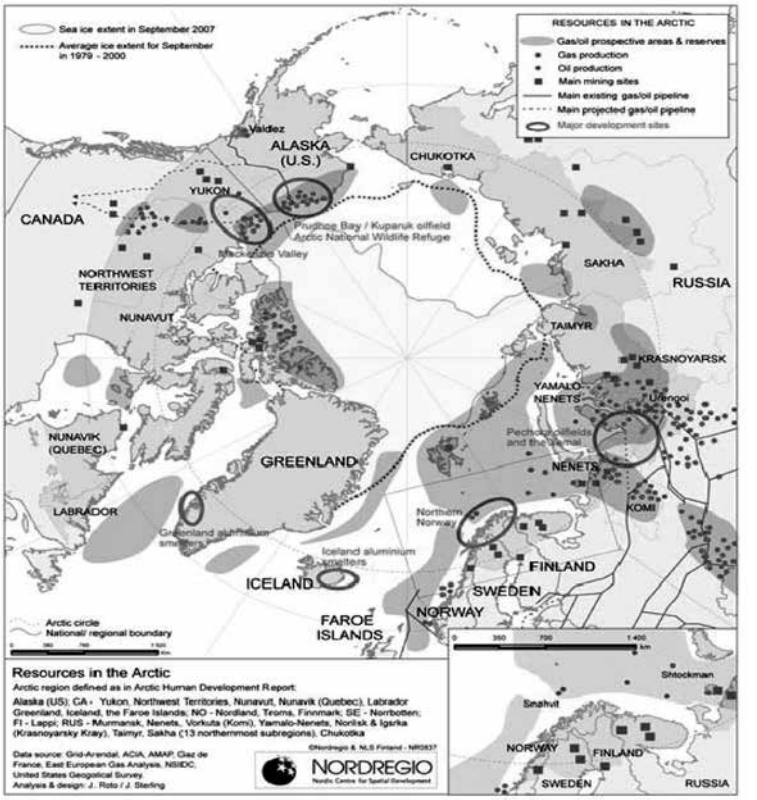
floods, winds and frosts in the areas which have similar climatic conditions. Furthermore, the information is also vital for understanding ocean currents and their impact on land climate and topography.[10]

In matters of defence research, there are a few examples that signify the importance of the Arctic. One example is that of the Defence Advanced Research Projects Agency's (DARPA's) Assured Arctic Awareness programme. The vastness and isolation of the region make it a suitable place for carrying out high-tech military equipment research. DARPA's Assured Arctic Awareness programme plans to develop sophisticated technologies to monitor the region, using the distributed advanced sensor system.[11] The advanced sensors would be able to catch even the slightest change on or below the ice surface. The technology would not only be cost efficient and time saving but would also limit the need for human presence to monitor the region. Once tested under the harsh climatic conditions of the Arctic region, it can also be used to enhance maritime security in an affordable and accountable manner.[12]

Another example is that of Canada which is experimenting on high level underwater sensors under the programme initiated by the Defence Research and Development, the research arm of the Department of National Defence.[13] The programme aims at developing newer technologies like sensors, cameras, and radars for surveillance purposes. In addition, the technology can also be used to monitor the movements of vessels and identify aircraft passing over the surveillance area. Once proved effective, the improved technology can be used for matters related to military and security purposes.

10. "Significance of Arctic Research Expedition", see http://www.china.org.cn/english/features/40961.htm, accessed on June 23, 2014.
11. "Assured Arctic Awareness (AAA)", DARPA, see http://www.darpa.mil/Our_Work/STO/Programs/Assured_Arctic_Awareness_(AAA).aspx, accessed on June 23, 2014.
12. Ibid.
13. "Military Tests Arctic Surveillance Technology" *CBC News*, May 2, 2012, see http://www.cbc.ca/news/canada/north/military-tests-arctic-surveillance-technology-1.1171382, accessed on June 23, 2014.

Fig 2: Regions with Possible Deposits of Energy Resources.



Source: Johanna Roto & José Sterling, "Resources in the Arctic", *Nordregio*, 2011, see http://www.nordregio.se/en/Maps--Graphs/05-Environment-and-energy/Resources-in-the-Arctic/, accessed on June 23, 2014.

Territorial Disputes and Governance of the Region

Countries for long have made territorial claims over the Arctic region which have been contested by other regional powers. Amongst all the Arctic powers, Russia is certainly one of the most important players, due to the massive territory and water that is shared. The Russian Arctic stretches more than 4,000 miles east to west, comprising the entire northern coast of Eurasia. Given the huge territory, Russia has ongoing territorial disputes with countries like Denmark and Norway. Russia also had a territorial dispute with the United States over the Bering Strait which was brought

to a resolution in 1990 under the USA/USSR Maritime Boundary Agreement.[14] Russia's overall involvement and interest in the Arctic would be dealt with in the latter half of the paper.

Denmark's involvement in the Arctic is through Greenland and its province, the Faroe Islands. The claim made by Denmark extends up to the North Pole via the potentially rich Lomonosov ridge.

Canada too asserts exclusive rights, authority and privileges to the land masses of the Arctic Archipelago.[15] Canada has a territorial dispute with Denmark over the Hans Island [which is situated in the centre of the Kennedy Channel of the Nares Strait, between Canada's Ellesmere Island and Greenland (a territory of Denmark)]—both Canada and Denmark claim the territory to be theirs.[16] Canada also has a disagreement with the United States over the demarcation and segmentation of the Beaufort Sea. In addition, Canada also lays claim over the Northwest Passage which has drawn strong reactions from the United States and Russia that claim the passage falls under international waters.

Norway's claim over the Arctic territory includes the Svalbard Archipelago, with a total area of 64,000 km^2. Norway has a territorial dispute with Russia over the demarcation of the Barents Sea and Svalbard Island. In 2010, the countries ended their 40-year-long dispute by agreeing on the new maritime boundary in the eastern Barents Sea. Under the agreement, the disputed area of around 175,000 sq km will be divided into approximately two equal sized parts.[17]

Denmark's involvement in the Arctic is through Greenland and its province, the Faroe Islands. The claim made by Denmark extends up to the North Pole via the potentially rich Lomonosov ridge. Russia argues that

14. Vlad M. Kaczynski, "US-Russian Bering Sea Marine Border Dispute: Conflict over Strategic Assets, Fisheries and Energy Resources", *Russian Analytical Digest*, 2007, see http://www.css.ethz.ch/publications/pdfs/RAD-20.pdf, accessed on June 30, 2014.
15. "The Arctic: Canada's Legal Claims", *Library of Parliament*, October 24, 2008, see http://www.parl.gc.ca/content/lop/researchpublications/prb0805-e.pdf, accessed on June 26, 2014.
16. Ibid.
17. "Russia and Norway Sign Maritime Border Agreement", *BBC*, September 15, 2010, see http://www.bbc.co.uk/news/business-11316430, accessed on June 28, 2014.

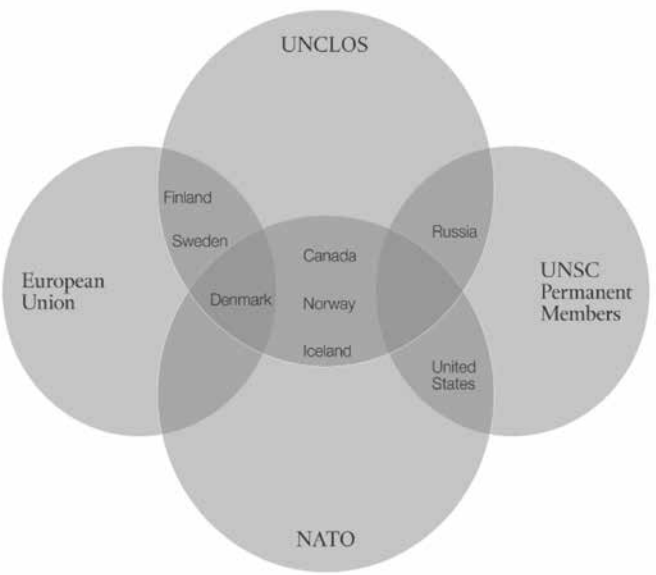
the ridge is geographically linked to the Siberian platform, while Denmark and Canada maintain that the ridge is an extension of the North American continental shelf.[18] Denmark has also carried out investigations to see if the ridge is geologically connected to Greenland. Another dispute is over the Hans Island with Canada. However, there have been plans to divide the island into two equal parts and end the political stalemate. The boundary drawn would run from north to south, connecting the existing maritime boundaries on either side of the island.[19] It will be interesting to see if the two sides agree on the settlement proposal, given the fact that the political complexities of agreeing are much more difficult than actually resolving the territorial dispute.

The United States' involvement in the Arctic is very interesting. It has not made any extended continental shelf claims and remains one of the most important industrialised countries that have not ratified the Law of the Sea (LOS) Convention. Without ratifying the treaty, the US not only loses its chance of claiming legitimacy over the extended continental shelf but also silences its voice over a number of key issues ranging from naval power, maritime commerce and international dispute resolution to maritime environmental protection and scientific research. It can also not be a member of the International Seabed Authority and, thus, cannot participate in the administration of the seabed mining panel. From the United States' perspective, it is imperative that the administration proceeds with ratifying the treaty, given the fact that the United States has potential claims to areas off the coast of Alaska, including the Beaufort Sea off the northern coast and the Chukchi Sea off the northwestern coast, as mentioned in the territorial dispute with Canada.

18. Adrian Humphreys, "New Proposal Would see Hans Island Split Equally Between Canada and Denmark", *National Post*, April 11, 2012, see http://news.nationalpost.com/2012/04/11/new-proposal-would-see-hans-island-split-equally-between-canada-and-denmark/, accessed on June 30, 2014.
19. Ibid.

International Governance

Fig 3



Given the territorial disputes between the countries, there was a need for a governing institution that can make settlements. The Arctic Council is the primary governing body designed to handle territorial disputes between the Arctic countries. The council came into existence through the Ottawa Declaration of 1996. It was formed as a high-level inter-governmental forum with the purpose of promoting cooperation, coordination and interaction among the Arctic states.[20]

The membership of the Arctic Council includes the eight Arctic countries that share territory in the region. Observer status is granted to non-Arctic countries which are approved by the council at the ministerial meetings that take place once in every two years. The countries which are awarded permanent observer status have no voting rights in matters related to Arctic governance. As of May 2013, there are 12 non-Arctic observer countries,

20. "Establishment of the Arctic Council", *Arctic Council*, April 27, 2011, see http://www.arctic-council.org/index.php/en/about-us/arctic-council/history, accessed on July 3, 2014.

which include India, China, France, Germany, Italy, Japan, South Korea, Netherlands, Poland, Singapore, Spain and the United Kingdom.[21]

The administration of the Arctic region is in accordance with the domestic laws and regulations of each Arctic state. The legal framework that governs activities in the Arctic is the 1982 UN Convention on the Law of the Sea to which most of the Arctic countries (except the United States) are entitled.[22] The United Nations Convention on the Law of the Sea (UNCLOS) has resolved a number of key territorial issues such as establishing freedom-of-navigation rights, setting territorial sea boundaries 12 miles offshore, setting Exclusive Economic Zones (EEZs) up to 200 miles offshore, establishing rules for extending continental shelf rights up to 350 miles offshore and creation of the International Seabed Authority.[23]

ROLE OF RUSSIA IN THE ARCTIC

> *The Arctic is an unalienable part of the Russian Federation that has been under our sovereignty for a few centuries, and it will be so for the time to come.*
>
> – Russian President
> Vladimir Putin.[24]

For Russia, the Arctic region is of great significance. It has more Arctic land, coastline and waters that any other country and, thus, is entitled to the benefits associated with the region due to climate change.[25] In December 2001, it became the first country among the Arctic powers to submit its extended continental shelf claim to the UN Commission on the Limits of the Continental Shelf. The document asserted claim over 1.2 million sq km of the Arctic Ocean,

21. "Observers", *Arctic Council*, April 27, 2011, see http://www.arctic-council.org/index.php/en/about-us/arctic-council/observers, accessed on July 5, 2014.
22. "The Emerging Arctic", Council on Foreign Relations, see http://www.cfr.org/arctic/emerging-arctic/p32620#!/, accessed on July 5, 2014.
23. Ibid.
24. "Putin Says Russia will Expand its Arctic Presence", *Business Standard*, October 3, 2013, see http://www.business-standard.com/article/pti-stories/putin-says-russia-will-expand-its-arctic-presence-113100301096_1.html, accessed on July 5, 2014.
25. Dylan Lee Lehrke, "The Cold Thaw", *IHS Jane's Defence Weekly* (UK: Warners Midlands Plc, 2014), vol. 51, no. 20, p. 27.

including the North Pole.[26] In 2007, Arctic researcher and Duma member Artur Chilingarov planted a flag in the High North region which created a political uproar among the Arctic powers. Russia's involvement in the region can be directly related to its long-term political, economic, and security goals, thereby ensuring its competitiveness in the international community.[27]

Economic Impact

Most of the energy giants in Russia are well aware that vast hydrocarbon deposits lie in the Barents and Kara Seas. As per current estimates based on geological surveys, the Arctic shelf north of Siberia contains almost 80 percent of Russia's unexplored hydrocarbon resources.[28] This, to a large extent, explains why Russia is so involved in the Arctic. It has been estimated that the Russian region is rich in resources like oil, natural gas, gold, diamonds, nickel, copper, platinum, iron and timber.[29] Although the region is home to less than 10 percent of the overall Russian population, it contributes approximately 20 percent to the Gross Domestic Product (GDP). Sixty percent of the raw materials exported comes from the high north region. Most resources located near the Russian coast are at a depth of under 500 m. As per the data published on Arctic reserves, some 200 potential natural gas fields have been discovered in the Barents, Pechora and Kara Seas.[30] Along with this, the Russian Arctic regions of the Kola Peninsula, Taimyr, Chukotka, Yakutia and Norilsk also have significant deposits of nickel (85 percent), copper (60 percent), tungsten (50 percent), rare earth elements (95 percent), tin (75 percent—known reserves in the Severo-Yanskoye field),

26. "Commission on the Limits of the Continental Shelf (CLCS), Outer Limits of the Continental Shelf Beyond 200 Nautical Miles from the Baselines: Submissions to the Commission: Submission by the Russian Federation", Oceans and Laws of the Sea, United Nations, June 30, 2009, see http://www.un.org/depts/los/clcs_new/submissions_files/submission_rus.htm, accessed on July 5, 2014.
27. Katarzyna Zysk, "Military Aspects of Russia's Arctic Policy: Hard Power and Natural Resources" in James Kraska, ed., *Arctic Security in an Age of Climate Change* (US: Cambridge University Press, 2011).
28. Timo Koivurova and Kamrul Hossain," Offshore Hydrocarbon: Current Policy Context in the Marine Arctic" *Arctic Transform*, 2008, see http://arctic-transform.org/download/OffHydBP.pdf, accessed on July 6, 2014.
29. Valery P. Pilyavsky," The Arctic: Russian Geopolitical and Economic Interests", F*riedrich Ebert Stiftung*, 2011, see http://library.fes.de/pdf-files/id/07925.pdf, accessed on July 6, 2014.
30. Ibid.

As for natural gas, there are more than 400 discovered onshore oil and gas fields in the Arctic Circle. More than two-thirds of these producing fields are located in the Russian Arctic region.

gold and silver (90 percent) and diamonds (99 percent—most of which are on the territory of Yakutia in the Arkhangelsk region and the Taimyr Autonomous Area).[31]

As for natural gas, there are more than 400 discovered onshore oil and gas fields in the Arctic Circle. More than two-thirds of these producing fields are located in the Russian Arctic region.[32] The estimated total oil production (including Sakhalin Island) could be about 55 billion barrels which would be about 16 percent of Russia's total oil reserves.[33] Even the Russian Natural Resources Ministry has stated that the parts of the Arctic Ocean which are claimed by Russia may hold more petroleum deposits, sufficient to surpass the potential oil reserves of Saudi Arabia.

Russia has already carried out various initiatives to extract oil from the Yamal Peninsula and the adjacent offshore areas. It also carried out its first offshore development project in 2013 in the Prirazlomnoye oil field south of Novaya Zemlya.[34] Russia's Gazprom Neft, the oil arm of gas producer giant Gazprom, shipped the first 70,000 tonnes of oil by tanker from the Prirazlomnoye platform, making it a successful venture.[35]

Russian interest in the Arctic is likely to increase in the coming years. This may be because the production in the traditional fields in Western Siberia has slowed down comparatively.[36] Another reason may be a more political and strategic one. For decades, Gazprom has controlled the gas coming out from the Central Asian countries, mainly Turkmenistan, Uzbekistan

31. Ibid.
32. "Oil & Gas", *The Arctic,* see http://arctic.ru/natural-resources/oil-and-gas, accessed on July 6, 2014.
33. Heli Simola, Laura Solanko and Vesa Korhonen, "Perspectives on Russia's Energy Sector" *Bank of Finland- Institute of Economies in Transition*, 2013, see http://www.suomenpankki.fi/pdf/172269.pdf, accessed on 6 July 2014.
34. Dmitry Gorenburg, "How to Understand Russia's Arctic Strategy", *The Washington Post*, see http://www.washingtonpost.com/blogs/monkey-cage/wp/2014/02/12/how-to-understand-russias-arctic-strategy/, accessed on July 6, 2014.
35. "Russia Ships First Oil from Disputed Offshore Arctic Platform", *Reuters*, April 18, 2014, see http://in.reuters.com/article/2014/04/18/russia-prirazlomnoye-oil-idINL6N0NA1C720140418, accessed on July 6, 2014.
36. Zysk, n. 27, p. 78.

and Kazakhstan. Gazprom purchased gas at heavily discounted rates and then resold the same gas to the European countries at a much higher price. However, in 2008, when the old contracts were about to end and the newer ones were to be established, the Central Asian gas procedures demanded an increase in the price that Gazprom should pay for new gas deals.[37] The global gas prices before the global economic meltdown of 2008 had been quite high. Since then, the market had seen a substantial drop in the demand for hydrocarbons. The price that Gazprom sells its gas for is less than what it was contractually obliged to pay to its Central Asian suppliers.[38]

Developing technology to carry out exploration in the Arctic required both time and resources and until that was done, the Arctic deposits would remain prohibitively expensive to explore. Now that exploring the Arctic has become a possibility, it would be interesting to see how Gazprom carries out its further operations.

There was a reason behind Gazprom taking such a decision. The purchases by Gazprom not only prevented a price war between the Russian and Central Asian suppliers to sell gas to the European countries, but also made sure that such competition did not suppress gas prices and profits, when Gazprom was already reeling from the serious effects of the financial crisis of 2008.[39] The other influential factor was the development of cheaper technologies for exploring and exploiting the untapped Arctic and East Siberian gas deposits. Developing technology to carry out exploration in the Arctic required both time and resources and until that was done, the Arctic deposits would remain prohibitively expensive to explore. Now that exploring the Arctic has become a possibility, it would be interesting to see how Gazprom carries out its further operations.[40]

37. Peter F. Johnston, "Arctic Energy Resources and Global Energy Security", *Journal of Military and Strategic Studies* (Canada: University of Calgary, 2010), vol. 12, no. 2, p. 5.
38. Ibid.
39. Danila Bochkarev, "European Gas Prices: Implications of Gazprom's Strategic Engagement With Central Asia", *Pipeline & Gas Journal,* (US: Oildom Publishing Company, 2009), vol. 236, no. 6, see http://pipelineandgasjournal.com/%E2%80%9Ceuropean%E2%80%9D-gas-prices-implications-gazprom%E2%80%99s-strategic-engagement-central-asia?page=show, accessed on July 7, 2014.
40. Ibid.

Navigational Routes

> *I want to stress the importance of the Northern Sea Route as an international transport artery that will rival traditional trade lanes.*
>
> – Vladimir Putin, President of Russia.[41]

Another important factor that drives Russia's interest in the Arctic region is the Northern Sea Route. The Northern Sea Route (a section of the Northeast Passage) that was created using ice breakers to reach ports from the Kara gate (the passage between the island of Novaya Zemlya and the mainland, which separates the seas north of Europe from those of Asia) eastward to the Bering Strait.[42] The route serves as an important transit point both from the point of view of the regional sea lines and as well as a trans-Arctic passage. Internally, the passage provides access to regional ports such as Novy port, Dikson, Dudinka, Igarka and Tiksi port. These ports have served as loading points for Siberian mineral and timber resources. During the summer, these ports are also used for coastal fishing and routine trade.[43]

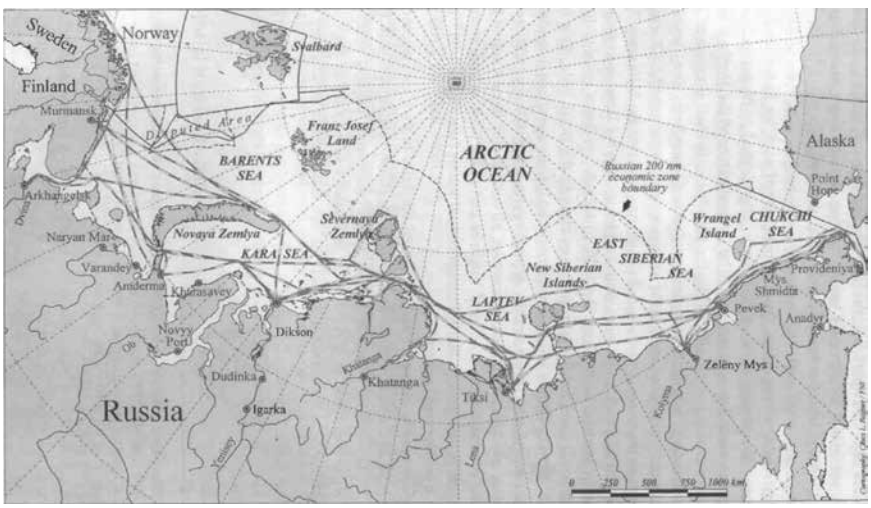
Apart from serving as a crucial point connecting the internal ports of Russia, the route also serves as an important trans-Arctic passage. Opinions have been raised for calling it an alternative route to the traditional lanes from the Baltic ports through the Suez Canal thereby connecting Europe and Asia in a much shorter time.[44] The journey from Yokohama to Rotterdam through the Northern Sea route can be reduced by about 4,000 miles. Even under terrible conditions, with possible slowdown in speeds, the ships can save a significant amount of fuel, by travelling through the shortened routes.[45] In addition, it also serves as an economical option by saving on cost on transit and service charges. Example: shipping from Murmansk to Vladivostok is twice as fast as that going by the Southern Seas. It saves a

41. EB Bryanski, "Russia's Putin says Arctic Trade Route to Rival Suez", *Reuters*, September 22, 2011, see http://www.reuters.com/article/2011/09/22/us-russia-arctic-idUSTRE78L5TC20110922, accessed on July 7, 2014.
42. Caitlyn L. Antrim, "The Russian Arctic in the Twenty-First Century", in Kraska, ed., n. 27
43. Ibid., pp. 113-114.
44. Ekaterina Piskunova, "Russia in the Arctic: What's Lurking behind the Flag?", *International Journal* (US: Sage, 2010), vol. 65, no. 4, p. 854.
45. Johnston, n. 37.

minimum of 10 days for cargo ships on the Hamburg-Yokohama line and up to 12 days on the Pechanga-Yokohama line.[46]

Russia's use of this passage has increased in the recent times. Soviet interest in the Arctic was at its peak during the 1980s, but after the breakdown of the Soviet Union, the transition from the Soviet Union to Russia resulted in neglect of the Northern Sea Route and the ports associated with it. Cargo business along the ports also saw a relative decline. In 2000, Putin brought back the attention that was deprived from the region. The Northern Sea Route featured as one of the key proponents in Russia's Arctic strategy. Certainly, the development of the ports around the passage shows the new vision of Russia's economic development strategy.[47] The passage was operationalised in 2009, when two German ships from the company Beluga Shipping GmbH travelled from Ulsan, South Korea, to Rotterdam, Netherlands.[48]

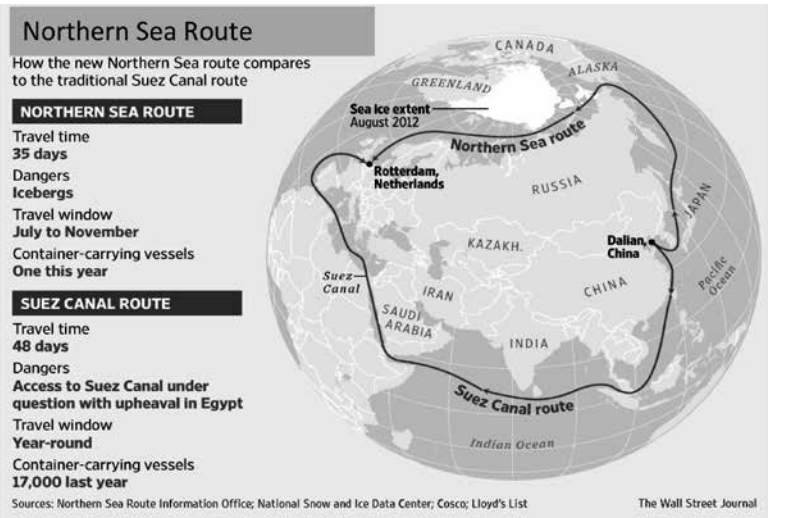
Fig 4: The Internal Waters of the Northern Sea Route



Source: Willy Østreng, "The Northeast Passage and Northern Sea Route", see http://www.arctis-search.com/The+Northeast+Passage+and+Northern+Sea+Route+2, accessed on July 7, 2014.

46. Ibid.
47. Bocharev, n. 39.
48. Matt Moore and Seth Borenstein, "Global Warming: 2 German Cargo Ships Pass Through 'Arctic Passage'", *The Huffington Post*, November 9, 2009, see http://www.huffingtonpost.com/2009/09/11/global-warming-2-german-c_n_283662.html, accessed on July 7, 2014.

Fig 5: Northern Sea Route



Source: John Stansfield, "Yong Sheng has Reached Rotterdam Sailing from Dalian Through the Northern Sea Route", *Vessel Finder*, September 11, 2013, see http://www.vesselfinder.com/news/1448-Yong-Sheng-has-reached-Rotterdam-sailing-from-Dalian-through-the-Northern-Sea-Route, accessed on July 7, 2014.

The Northern Sea Route will provide Russia with various benefits in terms of export, transit and domestic freight flows. Besides, Russia can conduct geological explorations of the seas, islands and archipelagos which have not been explored. Russia can also have a strategic edge over other countries as the passage would serve as the global transportation corridor. It will enable Russia to shape its position regarding freight turnover, the diversification of freight shipments from Europe to Asia, the Middle East and the Pacific.[49] In addition to that, Russia can also generate revenue from the nuclear icebreakers that escort the vessels through the passage.[50] Besides this, the passage will also play a crucial role in providing domestic supplies of commodities, food and raw materials, to the northern regions.

49. Kira Kalinina, "Russia Prioritizes Northern Sea Route as Fastest, Safest Way from Europe to Asia", *Voice of Russia*, see http://voiceofrussia.com/2014_03_01/Russia-prioritizes-Northern-Sea-Route-as-fastest-safest-way-from-Europe-to-Asia-7911/, accessed on July 7, 2014.
50. Andrew E. Kramer and Andrew C. Revkin, "Arctic Shortcut Beckons Shippers as Ice Thaws", *The New York Times*, September 10, 2009, see http://www.nytimes.com/2009/09/11/science/earth/11passage.html, accessed on July8, 2014.

Security

It would be inappropriate to say that the security aspect of the Arctic has warmed up only in the recent times. Even during the late 20th century, both the United States and the Soviet Union made extensive use of the Arctic region for their strategic military purposes. Both the North Atlantic Treaty Organisation (NATO) and the Soviet forces used the region for bases for their nuclear submarines and also for testing their intercontinental ballistic missiles. However, towards the end of the Cold War, from a strategic point of view, the Arctic region was given less priority. But the growing interest in the Arctic among countries has once again brought back attention to the region.

Ensuring security concerns in the Arctic has occupied a central position among Russia's strategic thinking community and defence policy makers. Russia maintains a strong military presence in the region with varied interests and activities. It is the only non-NATO country in the region with a vital interest in the region's wealth and resources. It also shares by far the longest coastline and constitutes the largest population. Most of the undiscovered natural wealth is supposedly in and around the Russian Arctic region. The opening of the Northern Sea Route and even the oil and gas pipelines in the northern and northwestern region of Russia along with the Baltic pipeline system and the Nord Stream gas pipeline add to the security build-up in the region. The national security strategy of the Russian Federation until 2020 describes the Arctic region as an area with the possibility of conflict (due to the varied interests of the different countries involved) and the possible use of military force to resolve crises in the region.[51]

Russia's ability to project power in the region has also increased. The increase in the defence budget since 2009 is a good example to understand Russia's assertive military dominance in the region. A large portion of the funds have been allocated to the navy which is currently constructing its Borei and Yasen class nuclear submarines. Russia has also trained several special forces units in Arctic warfare techniques. It has deployed a number of nuclear

51. Pauli Jarvenpaa and Tomas Ries, "The Rise of the Arctic on the Global Stage" in Kraska, ed., n. 27, pp. 136-139.

The Northern Fleet is based along the coastlines of the Barents and White Seas. The fleet is considered to be one of the strongest in the Russian Navy and was reinforced in the Arctic to cater to the need of additional military exercises.

missile carrying submarines, mostly the Delta–IV class, in the Arctic waters.[52] The Northern Fleet is based along the coastlines of the Barents and White Seas. The fleet is considered to be one of the strongest in the Russian Navy and was reinforced in the Arctic to cater to the need of additional military exercises. It has undertaken a series of patrol missions over the Arctic. The patrols are conducted through the Tupolev Tu-142 long range Anti-Submarine Warfare (ASW) and I1-38 medium range ASW aircraft, operating from air bases in the Murmansk and Vologda regions.[53]

Russia is also preparing two Arctic infantry brigades that will be equipped with all the special Polar standard personal equipment, clothing and vehicles to carry out full scale operations in the region. The military authorities are conducting tests to ensure the reliability and applicability of the equipment in the harsh weather conditions. An example of this is the upgradation of some Mil Mi-8 'Hip' transport helicopters with powerful engines, electric generators, ice protection systems and ski landing gear. In addition, Russia is also planning to construct a new air command centre, a replacement runway and a naval dock on Kotenly in the New Siberian Islands. It is also planning to reestablish 12 Cold War era air bases in the region.[54] All these actions, which are in line with the process of further strengthening the military infrastructure in the Arctic, have generated strong reactions from the other Arctic countries, mainly the US, which has deployed a number of nuclear power submarines in the Arctic waters. Both the US and Canada also maintain a strong air defence system with early warning and missile tracking radars that provide comprehensive

52. Rob Huebert, "Canada and the Newly Emerging International Arctic Security Regime", in Kraska ed., Ibid., p. 210.
53. Leheke, n. 25, p. 28.
54. Ibid.

surveillance and security of the region.[55]

Although Moscow's actions in the Arctic reflect an increasingly assertive foreign policy, the Russian actions as of now, have remained within the boundaries of international law. However, this does not rule out the possibility of confrontation between the regional powers in the near future.

CHALLENGES FOR RUSSIA IN THE ARCTIC

As much as there are opportunities for Russia in the Arctic, the cold desert also holds some challenges. The challenges are largely to do with the lack of sophisticated technology in oil drilling and gas exploration, environmental issues, dispute over the Northern Sea Route (with the US and EU claiming that the route passes through international straits), and the growing presence of foreign powers, especially China, which has the potential of changing the geo-strategic environment of the region.

The obvious challenge for any country to carry out exploration in the Arctic is the climate, which is very uncertain. The temperatures are extremely low, with extensive dark periods in winters. The presence of icebergs along with sea ice and the remote places of extraction make the region an extremely difficult place to work in.

The obvious challenge for any country to carry out exploration in the Arctic is the climate, which is very uncertain. The temperatures are extremely low, with extensive dark periods in winters. The presence of icebergs along with sea ice and the remote places of extraction make the region an extremely difficult place to work in. There is also the need for advanced technology to carry out drilling and exploration.[56]

55. James Jay Carafano., Ariel Cohen, Sally McNamara and Richard Weitz, "EUCOM Should Lead U.S. Combatant Commands in Defence of National Interests in the Arctic", *The Heritage Foundation*, March 28, 2011, see http://www.heritage.org/research/reports/2011/03/eucom-should-lead-us-combatant-commands-in-defense-of-national-interests-in-the-arctic, accessed on June 8, 2014.
56. "Climate Change in the Arctic Region: Between Opportunities and Challenges", *Climate Policy Watcher*, May 12, 2013, see http://www.climate-policy-watcher.org/?q=node/509, accessed on July 9, 2014.

Russia's exploration activities do face a lot of technological challenges. Right from the time of the Soviet Union, most of the oil and gas exploration has been on land. The energy acquired was transported through land-based pipelines to most of the Western European pipelines. The petroleum industry specialised in land-based extraction. Even the experience of the people, the infrastructure, machinery and science and technology have all been focussed towards land-based energy exploration. Adventuring in the north would mean working along the coasts or at sea. Although Russia has consolidated itself in the international community with its energy markets, it has only made decent economic progress and may have to struggle to invest huge funds in developing new and advanced technology.

Coping with these challenges would require foreign investment in terms of providing both technical advancements and monetary assistance.[57] Another important issue that can emerge could be of the organisational capacity and capital. Estimates have been made that by 2030, Russia's continental shelf would require massive infrastructure to explore as well as transport 110 million tonnes of oil and 160 billion cubic metres of gas annually. The volume of resources to be extracted, as per the estimate, would require construction of nearly 60 new oil rigs along with other technical infrastructural requirements. This could cost around some two trillion roubles.[58]

Another challenge is the distribution of licences to foreign companies. Rosneft and Gazprom, the two state owned companies, have the right to explore and develop oil and gas deposits on the Arctic continental shelf. Both companies, however, lack the capacity and technical capability to exploit the Arctic to its full limits. The Russian government understands the complexity involved and is now encouraging foreign investors and companies to enter into joint ventures with Rosneft or Gazprom. An example of that could be the agreement between Rosneft and ExxonMobil to set up a

57. Indra Øverland, "Russia's Arctic Energy Policy", *International Journal* (Canada: Sage, 2010), vol. 65, no. 4, pp. 870-872.
58. Ibid.

joint research centre and also share the necessary technology required. The companies are cooperating to explore and develop the three blocks of the Kara Sea and one block of the Black Sea.[59]

Predicting the trend of the international energy market can also be a challenge for Russia. Explorations in the Arctic are expensive and are largely affected by the market trend of the global energy demand. Recently, Gazprom, one of the biggest energy giants, called off its flagship project of developing the vast Shtokman gas field in Russia's Barents Sea. The decision was taken due to excessive cost, lack of technology and cataclysmic changes in the international gas market caused by the North American shale gas revolution, which made the exploration both expensive and unfeasible.[60]

There are also issues pertaining to the environment of the Arctic. Explorations in the Arctic can destabilise the Arctic ecosystem. Russia has often faced strong criticism from environmental groups and activists such as Greenpeace regarding the oil drilling projects and spillage in the Arctic. As per the Greenpeace report, nearly five million tonnes of crude oil is spilled in Russian oil fields every year. The report also claims that Russia burns around 40 billion cubic metres of gas annually.[61]

Oil spillage in the Arctic is dangerous because unlike in warm water, oil remains in the Arctic environment for a longer period of time. The evaporation rate is also much slower due to the extremely cold climate, which can seriously affect the habitat of the region, thereby endangering the ecosystem. Adding to that, the sub-zero temperatures, poor visibility and blackouts (most of the time), make it difficult to effectively implement or undertake clean-up activities.[62] Serious concerns have been raised against Russia's activities. Some maritime scientists have also drawn the conclusion that the rate at which the explorations are taking pace, especially in the

59. Simola, et. al., n. 33, p. 12.
60. Guy Chazan," Gazprom Freezes Arctic Gas Project", *Financial Times*, August 29, 2012, see http://www.ft.com/intl/cms/s/0/ab331568-f1d8-11e1-bba3-00144feabdc0.html#axzz36whEICOa, accessed on July 9, 2014.
61. "Russia Oil Disaster", *Green Peace International, see* http://www.greenpeace.org/international/en/campaigns/climate-change/arctic-impacts/The-dangers-of-Arctic-oil/Black-ice--Russian-oil-spill-disaster/, accessed on July 9, 2014.
62. "Oil Spills", *Oceans North*, see http://www.oceansnorth.org/oil-spills, accessed on July 10, 2014.

Russian Arctic, can result in devastating consequences for the pristine region.[63]

Even in terms of operationalising the Northern Sea Route, Russia faces tough challenges, which include developing infrastructure alongside the route, building and expanding ports facilities, building new ice breakers and improving the overall operational services. The ice-free port of Murmansk for long has been envisaged as an important economic component of the Russian maritime Arctic. There have been reports which suggest that the headquarters of the Northern Sea Route may be moved from Dikson to Murmansk. If that is the case, there is serious need for developing the Murmansk port. A more advanced marine infrastructure needs to be planned with advanced satellite systems, advanced research vessels, efficient navigational facilities and repair and maintenance centres. Plus, Russia would also need to build and improve the existing fleet of ice breakers. The Russian nuclear powered ice breaker fleet under the state owned Atomflot may signify the legacy of the Soviet Union but lacks the technology required to work in the extreme conditions of the region. The Russian Federation has undertaken several plans to modernise the fleet, build dual draft ships which can operate along the coastal waters of the Northern Sea Route and in the Siberian waters.[64]

The Arctic has not only opened opportunities for the littoral countries, but also lured other countries which now see it as a lucrative region for energy resources and profitable navigational routes. Among the players that eye the Arctic, China has been the more assertive one. Even though, China does not possess any territory in, or bordering, the Arctic region, it has shown considerable interest in it mainly because of the resources and the easy navigability from the new route.[65] The new shipping route would cut down the distance by almost 2,800 nautical miles from Rotterdam to

63. Fiona Harvey and Shaun Walker, "Arctic Oil Spill is Certain if Drilling Goes Ahead, says Top Scientist", *The Guardian*, November 19, 2013, see http://www.theguardian.com/world/2013/nov/19/arctic-oil-drilling-russia, accessed on July 10, 2014.
64. Lawson W. Brigham, "Russia Opens Its Maritime Arctic", US Naval Institute, see http://www.usni.org/magazines/proceedings/2011-05/russia-opens-its-maritime-arctic, accessed on July 10, 2014.
65. Johnston, n. 37, p. 19.

Shanghai with an initial cost savings of 30-40 percent or $60 to 120billion annually.[66]

China's keen interest also lies in the resources, including oil and natural gas, rich fishing waters, rare earth deposits and hydrocarbons. In order to promote its interest, China has undertaken various steps.[67] China has signed a number of bilateral agreements: examples of these could be the 2013 free trade agreement with Iceland or the improved diplomatic representation in the Nordic region. Although Iceland is not an aggressive country in the region, the agreement has helped China project its image in the Arctic. Similarly, China has also entered into several ventures with Greenland. China provides a lot of private investment in the mining industry in Greenland.[68] Quite recently, the China National Offshore Oil Corporation, signed a deal with Russia's second largest gas producer Novatek to build equipment for a liquefied natural gas project in Siberia. Besides this, the China National Petroleum Corporation (CNPC) has also sealed a deal to buy 3 million tonnes of LNG per year from the Yamal project.[69] In 2010, it leased a dock at North Korea's Rajin Port for 10 years,[70] and has invested more than $10 billion in building infrastructure, which many believe could serve as a potential hub for Arctic transport in the future.[71]

Besides China's economic interest in the Arctic, there are also environmental concerns which draw its attention in the region. China is worried about the changing weather patterns which can result in rising sea levels and food security problems. The security concerns have led

66. "Short and Sharp", *The Economist*, June 16, 2012, see http://www.economist.com/node/21556803, accessed on July 10, 2014.
67. Juha Käpylä and Harri Mikkola, "The Global Arctic: The Growing Arctic Interests of Russia, China, the United States and the European Union" Finnish Institute of International Affairs, November 8, 2013, see http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?id=172671, accessed on July 10, 2014.
68. Ibid.
69. "China, Russia Sign $1.6Bn Deal on Siberian LNG Project", *The Moscow Times*, *Reuters*, July 10, 2014, see http://www.themoscowtimes.com/business/article/china-russia-sign-16bln-deal-on-siberian-lng-project/503249.html, accessed on July 11, 2014.
70. Sunny Lee, "China's Acquisition of Sea of Japan Port Rattles its Neighbours", *The National*, March 14, 2010, see http://www.thenational.ae/news/world/asia-pacific/chinas-acquisition-of-sea-of-japan-port-rattles-its-neighbours, accessed on July 11, 2014.
71. Margaret Blunden, "Geopolitics and the Northern Sea Route", *International Affairs* (UK: Blackwell Publishing, 2012), vol. 88, no. 1, p. 127.

Russia has been keenly involved in the region due to the economic and strategic benefits that it wishes to derive. However, the uncertainty regarding the access to the undersea resources will continue to be a big concern for the Russian Arctic decision-making body.

China to invest in research programmes and promote international cooperation in scientific research on key environmental issues. China has also been involved in the governance of the Arctic region. In May 2013, it was awarded permanent observer status which portrays its idea of the Arctic not being limited to the littoral countries.[72]

FUTURE PROSPECTS FOR RUSSIA IN THE ARCTIC

There is no doubt that the Arctic is transforming into a region which has great geo-political and strategic significance. The economic prospects seen in terms of resources and maritime routes have not only offered opportunities to the Arctic countries but also lured other international players, which now consider the region as strategically important. Russia has been keenly involved in the region due to the economic and strategic benefits that it wishes to derive. However, the uncertainty regarding the access to the undersea resources will continue to be a big concern for the Russian Arctic decision-making body. The cost of developing the offshore oil and gas operations is also relatively high. If Russia does manage to build the required infrastructure, it will need to strengthen or even build a new pipeline network that could transport oil and gas from the offshore Yamal region to Europe either via the Baltic pipeline system or the Yamal-Europe pipeline. These developments would come with a big price tag and the need for advanced and sophisticated technology.

Even the cost factor for exploring and transporting oil and natural gas through the Northern Sea Route needs to be taken into consideration. Estimates have shown that exploration can only be profitable when the oil price remains over $100 to 120 per barrel. As for the navigability through the Northern Sea Route, it has been minimal at the present time. Even though

72. Kapyle and Mikkole, n. 67.

there has been reduction in the ice cover during the summer, the possibility of thick ice and extreme weather conditions remains during winter. Using ice breakers for navigating is one preferable option but even ice breakers slow down during navigation through multi-layered ice chunks. The route is also narrow which can increase the transit time and make the journey expensive. Russia needs to foresee all these challenges and formulate a strategy which calls for greater cooperation among the countries and major energy companies, and share the necessary technology required for making the Arctic a profitable venture.

Russia and China have good relations and they can carry that forward in the Arctic. Recent developments in terms of energy deals and agreements serve as examples of how the strategic partnership can go ahead.

As for the international factor (mainly China), the question is of how Russia perceives China's involvement in the region. Russia can either develop strategic ties with China, and counter-balance the NATO alliance or vice versa, counter-balance China's rise in the region. Russia's decision to align on either side would depend upon the strategic thinking of the administration. However, there are certain reasons which can make the Russia-China Arctic partnership a more feasible one. Russia and China have good relations and they can carry that forward in the Arctic. Recent developments in terms of energy deals and agreements serve as examples of how the strategic partnership can go ahead. Even economically, both countries can benefit by coming together. While on the one hand, the Northern Sea Route will shorten the distance for Chinese cargo to travel to Europe; on the other, it will also provide the Russian domestic ice breaker fleet with sufficient work, resulting in a source of income. Plus, the two countries can also come together on a joint venture for developing nuclear power ice breakers.

Coming to the question of unresolved territory disputes and claims turning into conflicts, the possibility of such an occurrence is relatively low. So far, the countries have abided by the UNCLOS and the regulations of the Arctic Council to resolve territorial disputes between them. A case in

point is the Norway-Russia peaceful border settlement, which shows that the countries have realised that they can benefit more by cooperation than by confrontation. Russia can also use the soft balancing strategy to form relations with strong Arctic players like Canada and Norway.

There have been a few examples which can justify such an approach. The Shtokman gas field, for instance: when Russia opened the platform for foreign partners, various American companies like Chevron, Conoco Phillips and as well as British Petroleum submitted their proposals. However, their proposals were declined without giving much of an explanation and instead the tender was given to Norway's StatOil with a 25 percent stake in exploring the gas field. This approach can be seen in two ways. Firstly, Russia wanted to protect itself from the American threat by keeping one of the most important energy fields under its control and, secondly, by awarding the deal to Norway, Russia not only got the much needed technology that it needed but also a valuable ally.

Even with Canada, Russia has not been vociferous in terms of opposing the former's claims over the Northwest Passage. Both countries are interested in avoiding the internalisation of the passage, as mainly suggested by the United States. It will be interesting to see if the incentive of supporting the Canadian claim over the passage would be enough to overcome the existing divergences and form a good strategic partnership.