



National
Maritime
Foundation

ARCTIC PERSPECTIVES

Edited by

**VIJAY SAKHUJA
GURPREET S KHURANA**

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Vijay Sakhuja
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Edited by Vijay Sakhuja and Gurpreet S Khurana

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Foreword

The Arctic region is subject to major effects of polar melting induced by global warming. These effects present both opportunities and challenges for the international community. The opportunities range from emerging possibilities to harness the immense natural living and non-living resource mineral wealth of the region to the opening of much shorter northern shipping routes. The challenges emerge from the geopolitical competition arising from conflicting maritime claims of the littorals, the possible militarization of the region, and the adverse impact of increased human activity on the fragile ecosystem and the indigenous communities of the Arctic.

India is closely following the developments in the Arctic region. Its interests in the region are scientific, environmental, commercial, as well as strategic. After the initial success of two research bases in Antarctica, 'Maitri' and 'Bharti', India extended its scientific endeavours to the Arctic. In 2007, it established its first research base named 'Himadri' at Ny-Ålesund, Svalbard, Norway. Given the growing importance of the Arctic for India, Arctic Perspectives is a novel initiative by the National Maritime Foundation (NMF) to generate awareness and initiate a debate among analysts in the field on the multi-faceted issues relating to the Arctic. In this context, the NMF, New Delhi, has decided to conduct its Annual Maritime Power Conference – 2015 on the theme 'Asia and the Arctic: Challenges and Opportunities'. It is hoped that this publication and the Conference will further the frontiers of knowledge in this important arena.

Date: 19 February 2015

Place: New Delhi

Admiral DK Joshi

PVSM, AVSM, YSM, NM, VSM (Retd.)
Chairman, National Maritime Foundation

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Geopolitics

Arctic Littorals Augment Military Capabilities

Priya Kumari

Recently, in early September 2014, Russia dispatched a naval contingent to reopen its two Arctic military bases on Wrangeli Island and Cape Schmidt. Last year, ten Russian ships sailed from Severomorsk to Kotelny Island with the aim of maintaining a naval presence to defend Russia's economic interests in the region. Earlier in 2007, Russia planted a flag on the North Pole seabed by using a miniature submarine. Also, in 2008, it adopted *The Foundation of the Russian Federation's State Policy in the Arctic Until 2020 and Beyond*. The policy outlines a plan for development of the Arctic forces under the Russian armed forces and other government agencies like the Russian Border Guard Services. Russia's increasing military presence in the Arctic may be intended to support its claim to the vast energy resources under the ice cap. These developments have sent discomfiting signals to other Arctic states. In this backdrop, a pertinent question emerges – will greater access to the Arctic due to global warming and melting of ice result in militarization of the polar region and even an arms race?

Arctic, also known as the land of extremes, is a vast ice-covered ocean and is surrounded by five littoral states, viz. Russia, Canada, Norway, Denmark, and the United States. These littoral states are revising their foreign and defence policies driven by contesting boundary claims, living and non-living resources, and control of the transit routes.

In the recently concluded Operation Nanook 14, held off the coast of Baffin Island between 20 and 29 August 2014, Stephen Harper, the Prime Minister of Canada stated that “an emboldened Russia is a threat

to its neighbours in the Arctic, and Canada must be ready to respond to any Russian incursions in the region.” Ottawa has also reasserted its Arctic claim through the *Northern Dimension of Canada’s Foreign Policy* (2000) and the *International Policy Statement-A Role of Pride and Influence in the World* (2005). Militarily, the *First Defence Strategy* (2008) and the *Northern Strategy* (2009) elucidates Canada’s plans for the Arctic. It regularly engages in naval exercises to increase its visibility in the region, and demonstrate its ability to respond to emergencies in the region. The salient exercises are: (a) Sovereignty Operations (Army), (b) Northern Patrols (flights of Aurora patrol aircraft), (c) Sovereignty Patrols, and (d) Enhanced Sovereignty Patrol.

The Arctic policy of Norway is guided by the 2007 Soria Moria Declaration, which aims to strengthen the Norwegian defence presence and exercise its sovereignty in the region. Established in 2009, Brigade Nord (Brigade North) is the largest active unit of the Norwegian Army that is stationed in the north of the country and northwards of the Arctic Circle. The Royal Norwegian Navy had replaced its five small frigates with five much larger and more capable *Fridtjof Nansen*-class frigates, which are able to operate in Arctic waters. Likewise, Norway’s six *Ula*-class submarines can operate in the icy waters.

Denmark’s defence policy for the period 2010-2014 underlines the changing geostrategic significance of the Arctic. In July 2009, the Danish Parliament approved a plan for an Arctic military command, and a task force was set up in 2014 as the melting ice cap opens the Danish Navy’s access to Greenland and the Faroe Islands.

After the end of the Cold War, the US emphasis on the Arctic had reduced. Nevertheless, the recent realization of the changing geopolitical and geostrategic landscape in the Arctic has made the US review its stance towards the region. The Obama administration released the *National Strategy for the Arctic Region* in May 2013, following which, on 30 January 2014, the White House released its implementation

plan for the Arctic National Strategy. These policies reaffirmed US policy towards integrated Arctic management.

It is evident from the above that the foreign and security policies of the Arctic states are under transformation. However, these may not lead to an arms race in the region for a number of reasons. The changing environmental, economic, and political conditions have made it essential for the states to adapt their policies towards the region. The cost of extracting resources from the Arctic Ocean far exceeds any single state budget and hence requires a collaborative multilateral approach for developing infrastructure, including deep-water ports, ice-breaking capabilities, aviation assets, and the maintenance of airstrips, road, and pipelines. It is for such a collaborative endeavour that in 1996, Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden, and the USA adopted the Ottawa Convention. It laid the foundation of an intergovernmental Arctic Council, which aims at promoting cooperation, coordination, and interaction among the Arctic States, including the involvement of the Arctic indigenous communities and other Arctic inhabitants on common Arctic issues.

To conclude, the changing geopolitical and geostrategic conditions in the Arctic have made the littoral states review their national policy towards the region. This review is likely to witness both cooperation and confrontation. However, a multilateral cooperation is in the interest of the Arctic, its development, and management.

24 September 2014

Indian President's Visit to Arctic Neighbourhood

Priya Kumari

President Pranab Mukherjee, concluded a six-day visit on 17 October 2014 to Norway and Finland. The visit is seen as significant on many counts, particularly due to India's emerging proactive approach on Arctic issues. While Norway and Finland are members of the Arctic Council, India was granted permanent observer status in the Council recently in May 2013, along with five other countries, i.e. – China, Italy, Japan, South Korea, and Singapore.

The Arctic Council, formed in 1996, is a major intergovernmental initiative and comprises eight states: Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States. As per the Ottawa Declaration that laid the foundation of the Council, observer status is open to non-Arctic states, intergovernmental and inter-parliamentary organizations, and global, regional, and non-governmental organizations. Officially, the motive behind India joining the Council is purely scientific unlike China, Japan, and South Korea, who have commercial interests. At a more practical level, India's emerging role in the Arctic is driven by its strategic imperatives. India is the fourth-largest energy consumer in the world and its entry into the Arctic Council is an opportunity to join hands with the Arctic littorals in exploring the hydrocarbon potential of the Arctic. According to the United States Geological Survey estimate, the Arctic contains 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion of barrels of natural gas, which is approximately 13 percent of the world's undiscovered oil resources and about 30 percent of its undiscovered natural gas resources.

India is also working to strengthen its bilateral relations with other Arctic Council members. The significance of the President's tour of Norway and Finland lies in the broader changes underway in the Arctic due to melting of the sea-ice, the opening of the Northern Sea Route (NSR) and competition for natural resources. In order to effectively deal with these changes, New Delhi has developed policies for the Arctic both at the bilateral and regional levels. In essence, the visit by the President underlines importance of India's bilateral approach to Arctic issues.

In Norway, the President addressed the Indian scientists stationed at India's Arctic research station, *Himadri*, which was set up in 2008 in Spitsbergen (Svalbard). Mr. Mukherjee is the first Indian head of the state ever to visit Norway and the visit will further strengthen the bonds of friendship and cooperation between two countries. During this visit, 13 agreements were signed including on education, defence, and earth sciences. Oslo had supported India's candidature in the Arctic Council as an observer. It favours the expansion of permanent and non-permanent seats in the United Nations Security Council (UNSC), and supports India's candidature for permanent membership. Economically, closer cooperation between India and Norway will be mutually beneficial. Norway is the world's third largest exporter of hydrocarbons in the world and has expertise in modern technologies in exploration and drilling. Closer cooperation with Norway will help India diversify its energy supplies and reduce dependence on any one region to meet the growing demand of its economy. Norway can also benefit from India's huge consumer market. Besides, Norway has an opportunity to invest US\$20 billion to US\$40 billion in India. Presently, a meagre US\$4 billion of the Norwegian Pension Fund, also known as 'Oil Fund' has been invested in India. There are also prospects for cooperation with Norway in shipbuilding and port-development. This will be useful for India, which has plans to build its first ice-breaker to conduct "scientific and business exploration" in the polar regions. Both sides have been closely cooperating in the field of science and technology.

After his successful visit to Norway, the President visited Finland on 14 October. This visit was the third by an Indian President, the first two being by President V.V. Giri and R. Venkataraman in 1971 and 1988 respectively. Finland is also India's long-standing partner with whom cooperation ranges from trade and environment to science and technology. Both countries have traditionally shared warm and friendly relations and like Norway, Finland also supported India's entry into the Arctic Council. The other forum where Finland has supported India's stand is the Nuclear Suppliers Group (NSG) and the UNSC. In 2011, India was Finland's third largest trading partner in Asia, after China and Japan. Currently, trade between the two countries is about US\$1.5 billion. Nearly 120 Finnish companies operate in India and another 100 trade with their Indian counterparts including in science and technology domain.

The presence of a large Indian Diaspora in Finland has brought the two communities close to each other. On 18 April 2013, Helsinki launched an 'India Action Plan' with the aim to diversify its relations with India. Through this Plan, Finland strives to expand cooperation in various sectors and encourage companies to avail the opportunities presented by India's growing economy. The Plan also aims to deepen cooperation in the field of science, technology, and innovation as well as in the domain of foreign and security policy.

In April 2015, Canada will host the 2015 Arctic Council Ministerial meeting. In this backdrop, the President's endeavour to seek bilateral convergences with Norway and Finland - as integral members of the Arctic Council - will help India further develop closer multilateral cooperation with the Arctic littorals, and could project the collective stakes of non-Arctic Asian countries in future Arctic meetings.

21 October 2014

South Korea's Proactive Approach to the Arctic

Akshita Mathur

The talks between South Korea and Norway recently held on 28 November 2014 in Oslo, addressed bilateral cooperation in the Arctic. The discussions explored the possibilities of a joint shipping sea route. This new sea route could shorten the distance between South Korea and Europe by up to 3,777 nautical miles as compared to the conventional 11,879 nautical mile journey across the Indian Ocean. The talk focused on ensuring safety of the ships (including cruise ships) through information exchange and through development of the shipping industry, as laid down in the Polar Code of the International Maritime Organization (IMO).

The South Korean Ministry had earlier launched a cooperative effort with Russia to develop a new shipping route through the polar region. The Ministry now aims to boost cooperation with Norway, which is in line with their Memorandum of Understanding (MOU) signed in 2012. This development is the latest in the series of cooperative efforts, which indicates South Korea's increasingly proactive approach to the emerging vistas in the Arctic.

Given its recent entry into the Arctic Council as a permanent observer, South Korea has achieved a lot in its quest for further engagement in the Arctic. Like Japan, South Korea's polar activities have hitherto focused on Antarctica since the late 1970s. South Korea's engagement in the Arctic began with a preliminary scientific study on the region between 1993 and 1995. In 2002, it became a full member of

International Arctic Scientific Community and opened its first research station in Svalbard, Norway. In 2009, it undertook its first Arctic expedition onboard the polar research vessel *Araon*. Following three years of research by *Araon*, in September 2012, the then President Lee Myung-Bak visited Greenland and Norway. Before the Arctic Council's decision to grant it observer status, the South Korean policy makers had already identified the Arctic as a priority area. Concurrently with South Korea's entry into the Arctic Council, its government adopted a comprehensive Arctic Policy, which outlines its vision for the Arctic and its intention to "become a nation that contributes to opening up a sustainable Arctic future." It contains three policy goals: to build an Arctic partnership that contributes to the international community; to strengthen scientific research that address the common issues of human security; and to create new Arctic opportunities that expand economic opportunities. South Korea is also committed to raising the welfare of the Arctic's indigenous people, while protecting their rights, traditional knowledge, and culture.

South Korea's Ministry of Foreign Affairs has lately emphasized sourcing energy resources from the Arctic. In October 2013, South Korea carried out its first commercial freight voyage using the Northern Sea Route (NSR). Its government envisions the possibility of combining these two interests in the Arctic: resource exploration (including oil, gas, coal, iron, etc.) and shipping these resources through the NSR.

South Korea is among the world's biggest importers of crude and liquefied natural gas (LNG). The supply lines for shipment of these energy sources are another strategic factor. Guaranteeing these shipping routes across the Arctic would mitigate many of its potential regional security risks. These new routes will optimize trade links in the northern hemisphere and create more demand for ships that are capable of traversing the region. The relations between the Nordic countries and South Korea in shipbuilding domain would spur the commercial

activity that shipbuilding industry needs. This will also enable them to establish a long-term presence in this market for specialized vessels. Increased traffic through the NSR is expected to give further impetus to the South Korean shipbuilding industry. Arctic navigation requires specialized vessels, such as the ice-breakers, container ships with icebreaking capability, ice-breaking tankers and LNG carriers, all of which sell at a high price. The orders for such ships have been steadily increasing. In sum, the shipbuilding industry is enjoying a prodigious boom since the opening of the NSR.

South Korea's objectives on the Arctic continue to be driven primarily by its economic outlook. One of the world's major export-led economies, South Korea relies heavily on its maritime routes. The threat of insecure shipping routes is enhanced by the prevailing instability in West Asia. The political upheaval in the region puts a question on the safety of the existing sea routes across the Red Sea and its choke points, which makes stable alternative routes across the Arctic attractive.

Given the belief that the Arctic needs to be protected before it is developed for economic gains, South Korea is committed to actively participate in collaborative scientific research that aims to protect the environment and support sustainable circumpolar communities. Considering this objective, South Korea intends to strengthen and expand international cooperation at three levels—through projects agreed to by the Arctic Council and joint research projects by Arctic Council working groups; through Arctic-related activities with international organizations such as the International Arctic Science Committee and the International Marine Organization; and via cooperation with many private sector entities towards monitoring climate change.

South Korea has evinced interest in co-operating with Arctic states in the development of Arctic sea routes by gaining navigation experience, conducting international joint research, and co-operating in the expansion of Arctic coastal ports. It has made significant strides

in entering the Arctic Ocean, but many challenges must be addressed before the Arctic can become the source of economic prosperity. Until then, the traditional sea routes will remain dominant. Thus, South Korea is likely to continue focusing on its current trade routes and energy security strategy. The South Korean government Arctic Development Plan and the future success of its Arctic endeavours will rely largely upon the execution of its Arctic Policy Plan and its cooperation with the other Arctic Council observer countries like India.

12 December 2014

China in the Arctic: Awaiting the ‘Rising Tide’?

Gurpreet S Khurana

“The Arctic belongs to all the people around the world as no nation has sovereignty over it.”

Rear Admiral Yin Zhuo (PLA Navy)

March 2010

While the legal validity of the Admiral’s statement may be a moot issue, it underscored China’s thoughts on the Arctic barely a few years ago. However, Beijing has been extremely cautious on such overt articulations indicating its Arctic ambitions. It has instead couched its stakes in terms of polar scientific research, besides Arctic environment monitoring and protection. Towards these stated aims, in 2012, China’s Ukraine-built icebreaker *Xue Long* undertook its first high-latitude voyage across the Arctic Ocean. Without such caution, it may not have been feasible for China to gain ‘permanent observer’ status in the Arctic Council in May 2013. In the coming years, as greater opportunities emerge, Beijing may conceivably become more assertive in satiating its interests in the Arctic, even to the extent of seeking a major role the management of the polar region, which it considers as ‘global commons’.

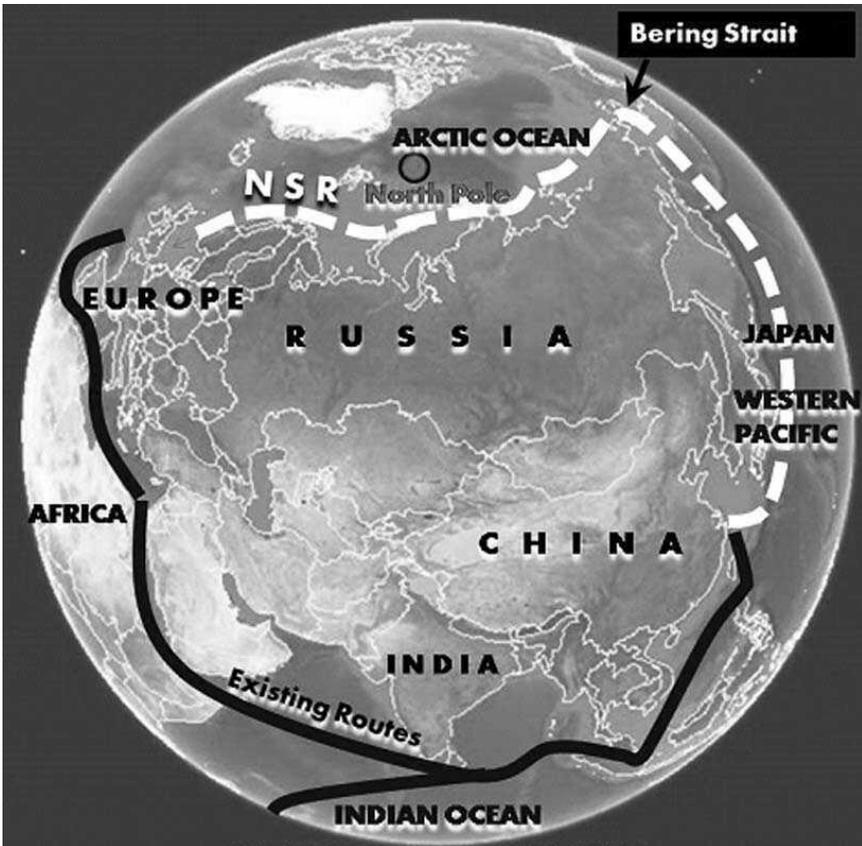
The climate-change induced trends in the Arctic are evolutionary and incremental, and thus, it may be early days yet for Beijing even to articulate an Arctic policy, much less to adopt a proactive policy stance. Nonetheless, the trends need to be noted. This essay aims to estimate the opportunities for China in the Arctic and the possible contours of its approach to the region.

Natural Resources

China's rapidly growing industrialized economy is likely to demand an increasing share of the world's natural resources, particularly hydrocarbons for energy generation. In 2008, the US Geological Survey assessed that the Arctic holds as much as 13 per cent of the world's undiscovered oil and 30 per cent of its undiscovered natural gas. The abundant resource reserves of the Arctic enhance China's policy-making options to diversify the sources away from the unstable areas of Asia, Africa, and Latin America. However, since the provisions of 1982 UN Convention on Laws of the Sea (UNCLOS) do not permit China to claim any sovereign rights in the Arctic, Beijing is likely to bid for joint ventures with the Arctic countries.

Sea Trade

Analysts predict that by 2030, the Arctic could be ice-free in summers. The jury is still out on the timeline for round-the-year ice-free navigation across the region, but trends indicate that this could eventually happen. At present, 40 per cent of China's trade moves westwards across the Indian Ocean. While piracy in the Indian Ocean waxes and wanes periodically, the insecurity for shipping and seafarers in the area is likely to prevail, if not aggravate further, consequent to the threats of 'maritime jihad' from the Al Qaeda and its affiliate, the Islamic State in Iraq and Syria (ISIS). This is likely to be a major source of anxiety for all maritime powers, including China. Some decades from now, a substantial amount of China's economic ventures may continue to involve the Indian Ocean and its littoral countries, including through its new concept of 'Maritime Silk Road' (MSR). However, a significant proportion of this trade – particularly with Russia, Northwestern Europe and North America – may use the Northern Sea Route (NSR). Its recently initiated collaboration with Arctic nations to build its own ice-breakers is a nascent indicator. Given China's penchant for innovative ideas, one may even conceive an Arctic version of China's MSR concept.



Map - China's Alternative Option: the North Sea Route (NSR)
 (Source: Author)

Symbolism

Beijing's interest in the Arctic is driven by symbolism to a large extent. At an emerging global power, and the only one that can challenge global preponderance of the United States, China seeks a role in any development that could shape the global order. It realizes that its status in the Arctic Council (permanent observer) is hardly substantive for decision-making on Arctic affairs, but it nonetheless symbolic. It may be noted that while the U.S. is a full member of the Council, its decision-making role is also limited since it is not a party to the 1982 UNCLOS.

Strategic Imperatives

At present, about 60 percent of China's seaborne oil imports transit through the embayed Indian Ocean, and the two sets of maritime chokepoints on its either end. This represents a major strategic adversity for China. In case Beijing opts to use military force to meet its 'core' territorial objectives in the western Pacific, the US and its allies and partners have several options to interdict China's strategic energy imports in the Indian Ocean. On the other hand, the Arctic North Sea Route (NSR) would be relatively secure, particularly in conjunction with China's oil source-diversification to the Arctic region (as noted earlier). The only insecure stretch would be the Bering Strait, where the US and Japan could interdict China's oil shipments (See map). However, it would be easier for the Chinese navy to provide protection to its strategic imports in this area rather than in the Indian Ocean. If the predicted circa 2030 timeline of Arctic becoming ice-free in summers is true, it is likely to be confirmed within the next decade. If so, would it encourage the Chinese to become more militarily assertive in the beginning of summer months?

It is pertinent to note that the climate-induced trends in the Arctic, besides taking shape in the longer-term timeframe, are also accompanied by many imponderables in terms of *inter alia* the pace of ice-melt, cost-effectiveness of Arctic resources, and the viability of the polar sea-route in terms of the risks involved. Hence, it is not easy at this stage to extrapolate precisely the opportunities afforded by the changing Arctic that China may be able to exploit. It is, nonetheless, certain that the Chinese would be looking out to all these developments with an eagle's eye. Would the Arctic Ocean assume precedence over the Indian Ocean as China's area of maritime interest? This question may not take too long to be answered.

23 December 2014

Arctic Council Leadership: 'Interesting Times' Ahead for the United States

Raghavendra Mishra

The United States is poised to assume chairmanship of the Arctic Council, an eight member high level intergovernmental group that takes policy decisions on 'comprehensive management' of Arctic Region. With the changeover scheduled in May 2015, the United States will assume the stewardship baton for a geographic continuum that is increasingly seen as a 'hotspot' in contemporary strategic narratives.

With a majority of predictions pointing to increasing ice-free conditions in the Arctic, newer cooperative as well as competitive discourses on issues of human and environmental security, ocean resource management (living and non-living), maritime regime building, and protocols for safe conduct of economic-commercial activities now complement some of the older arguments. Given the prevailing uncertainty in global strategic environment, the 'geopolitics' and 'security' of Arctic governance, particularly with 'sovereignty' connotations are also finding increasing mention.

The Arctic maritime economic discussions have largely focussed on the Northern Sea Route (NSR) where Russia enjoys a dominant position. However, the geographic location of the Alaska and the majority of Aleutian Island chain, which belong to the US, give it a strategic lever over the critical oceanic chokepoint of the Bering Straits, which connects the High Pacific to the Arctic. It is pertinent to mention that the purchase of Alaska from Russia in 1867 for US\$7.2

million (US\$120 million in 2014 terms) and ownership of Aleutian chain also provides the foundational logic for the US inclusion in the Arctic community.

As far as the Arctic policymaking is concerned, the Bureau of Oceans and International Environmental and Scientific Affairs, a part of the US State Department, is the nodal coordination agency. It would be obvious that US Arctic policymaking comes with 'foreign policy' and 'strategic' implications. The increasing importance attached to this region can be gauged by the fact that the US Arctic Policy was promulgated through a National Security Presidential Directive and Homeland Security Presidential Directive in January 2009 (NSPD 66/HSPD 25). The US Deputy Secretary of State, James B. Steinberg, in his September 2010 address had termed Arctic a unique 'strategic hot spot'. Taking cue from the increasing national attention, other organs of US administration have released their own strategies and roadmaps for the region such as the 'Arctic Vision and Strategy' by the National Oceanic & Atmospheric Administration (NOAA) in April 2010. Some of the leading think tanks like the Center for Strategic & International Studies (CSIS) have established dedicated projects dealing with Arctic issues.

The sustained focus on Arctic is also evident by the series of congressional hearings and reports by the Congressional Research Service (CRS) and, most importantly, by the promulgation of a dedicated strategy in May 2013. This strategy draws upon the 2010 US National Security Strategy (NSS) document and identifies three vital issues in relation to the Arctic: (a) advancing US security interests; (b) pursuing responsible Arctic Region stewardship; and (c) strengthening international cooperation. The imperatives of climate change especially those in the Arctic are also a subject of intense attention by the US Security apparatus and find mention in the 2010 and 2014 Quadrennial Defence Reviews (QDR). The Department of Defense (DoD) released its Arctic Strategy in November 2013

with the aim of “a secure and stable region where U.S. national interests are safeguarded, the U.S. homeland is protected, and nations work cooperatively to address challenges.” The US Navy (USN) has promulgated its Arctic Roadmap in October 2009 based on the tenets contained in *A Cooperative Strategy for 21st Century Seapower (CS 21)* of 2007 and aims at “strong cooperative partnerships that preserve a safe, stable and secure Arctic region.” The USN climate change roadmap of April 2010 specifically mentions Arctic as region of concerted attention. In May 2013, US Coast Guard (USCG) also articulated its strategic vision for Arctic operations that seeks to “ensure safe, secure, and environmentally responsible maritime activity in the Arctic.” While most of the policy and vision statements seek cooperative approaches, it would be simplistic to overlook the ‘hard component’ of US national security interests.

The Arctic leadership opportunity for the US comes with an interesting mix of opportunities and challenges. The Russian economy, under the sanctions regime due to the ongoing Ukraine crisis, seems to have faltered and the 60 percent fall in crude prices over the last six months, has made the situation even more complex for Moscow. These sanctions have also cut off financial and technology infusion for the Russian Arctic energy projects and the Western firms have pulled out of ongoing and future ventures. The Chinese economy is also reported to grow at a relatively slower rate in 2015, whereas the US is seeing industrial revitalization, sustained job creation and seems to be less affected by the oil shock, largely due to shale oil and gas. On the other hand, the Eurozone economic outlook remains bleak with uncertainties over some of its members like Greece remaining committed to restructuring programmes. While the US is better placed in a comparative sense due to the breather afforded by the 2013 Bipartisan Budget Agreement (BBA), the likely adverse effects of quantitative easing and sequestration concerns in a post-2016 scenario remain.

The Arctic is not without its share of maritime/territorial sovereignty disputes, the latest being the competing Russian and Danish claims over the North Pole. Canada and Norway have made claims for the same region based on the extended Continental Shelf provisions under the 1982 United Nations Convention of the Laws of the Sea (UNCLOS). This issue becomes important as four of the claimant states are not only Arctic Council members but also belong to the NATO community (Canada, Denmark, Iceland, and Norway). The recent decision to downsize or close down 12 overseas US military facilities in Europe, announced on 8 January 2015, has been criticised as a lack of American commitment to transatlantic security issues in the face of continuing Russian assertiveness and as a sign of excessive pre-occupation with its pivot or rebalancing strategy to the Asia-Pacific. The US is itself involved in two maritime disputes with Canada, its otherwise friendly northern neighbour. These are related to the maritime boundary delimitation in the Beaufort Sea and competing interpretations over the legal status of Northwest Passage which Canada claims as internal waters, whereas the US along with some other countries prefer to term it as an international strait. In this context, Washington DC would be hampered since it is yet to ratify the UNCLOS and its position as a 'neutral facilitator' is likely to remain debatable.

In sum, the two-year Arctic Council chairmanship by the US comes at a critical juncture of international politics where changing power dynamics, balancing transatlantic-transpacific relationships, energy, environmental and human security, resource management, and global geo-politics are likely to demand significant strategic capital. Most of the permanent observers Asian states on the Arctic Council seem to be interested in the scientific, technological and climatological considerations. However, the Arctic melt offers China, South Korea and Japan an alternate and shorter route to Europe. Though unstated, access to energy and other resources would also be of interest to the Arctic stakeholder community. Going by the current trends, while

the US seems to be relatively well placed as compared to 2010-12, the management of competing politico-diplomatic, economic, socio-cultural, legal and military security 'ends and means' is likely to be a complex task.

27 January 2015

The North Face of Chinese Foreign Policy

Rana Divyank Chaudhary

Perhaps, not many saw the year 2015 start off with China touching a high diplomatic note in the northern latitudes. Zhang Weidong, recently appointed as China's ambassador to Iceland, made a number of public appearances and held a series of meetings with high-level Icelandic officials and European diplomats. New developments in China's relations with Iceland and other Arctic states are pertinent in the context of Beijing's forays into the region through multilateral and bilateral channels to assert its stakes in the nascent economic and strategic prospects. Its parleys with Reykjavik have been widely reported and the Arctic minnow is expected to open a strategic gateway for the Asian giant into the most eagerly anticipated maritime geopolitical space in the coming years.

China's relations with the Arctic great powers, the United States and Russia, move about undertowed by the larger dynamics of great power politics and this reality remains the basic prism for predicting Beijing's foreign policy behaviour towards them. However, each of the Arctic's other littoral states have their own experiences of dealing with China, and these have not been uniform or typical since diplomatic relations with Beijing took their course. So, how has China worded its Arctic interests in terms of foreign policy towards states such as Iceland, Denmark, and so on? What is the broad measure of the littorals' responses to the effect that it influences the effectiveness and fate of Beijing's Arctic Policy? Is there an emergent pattern in these bilateral quotients and what to make of it? A brief inquiry into this area draws a picture of China's changing position on the Arctic.

Nearing the Arctic

Those who look at China's position in East Asia today and judge the tone of its foreign equations with fear and trembling, believe that Chinese geopolitics is likely to play out elsewhere in the future. Amid 'containment' claims and 'rebalancing' counter-claims in the Asia-Pacific, China now appears hungry not only for resources, but also for geopolitical calm and stability. The Arctic, with all its 'post-polar' promises and relative geopolitical isolation thus far, is the natural destination for China in a discourse wherein remaining contained in the badly contested Asian neighbourhood is not an option even as the emerging balance of power in the wider arena tilts away from Beijing.

China argues that it is a 'near-Arctic' state and has multiple stakes in the region's economy, resources, and trade routes in addition to the geo-climatic developments. Over the years, it has raised its investment into Arctic scientific research to a figure even higher than the United States, and has acquired technological assets to match up to the Arctic littorals' capabilities and geographic advantages. But, China's bid for permanent observer status in the Arctic Council was turned down twice before it finally succeeded in 2013. While this allows China to put forward its own perspective in the Arctic, Beijing is not entitled to a vote in the Council's deliberations. China's perspective is also carefully worded so as not to create stresses that would undermine its position in the outstanding maritime disputes at home in Asia. It has focused on its concerns about the permafrost, on climate change, ice cap meltdown, and rise in sea levels – soft issues which apparently make legitimate room for non-Arctic stakeholders.

China's strategy in the Arctic is predicated on its growing interests, developing capabilities, and expanding reach and presence in the region. A key part of this strategy will be to dampen the resistance China would encounter while attempting an entry into the negotiations which would decide and delimit the Arctic states' claims, stakes, and

rights. China must prepare for the risk of being blocked in a forum like the Arctic Council by virtue of its observer status and the lack of a vote, and can do so by pursuing a direct bilateral approach with its interlocutors in the higher latitudes.

'Ice-breaker' Diplomacy

China has stepped up its diplomatic overtures to states like Iceland, Sweden, Denmark, and Finland in recent years. In 2013, Iceland became the first European state to sign a free-trade agreement with China. Both states have a number of agreements on cooperation in Arctic research and energy-source exploration. Iceland has welcomed Chinese investments and asset purchases to move out of the European financial troubles into becoming China's trade entrepot. Similarly, China and Finland have increased their trade, cultural, and military exchanges. There are direct flights between Helsinki and Xi'an and the two states share twenty pairs of sister cities/provinces.

Sweden was among the first Arctic Council members to support China's bid for permanent observer status. It has also courted Chinese ventures into scientific, technological, and industrial sectors with approval. Denmark's endorsement of Chinese inroads into the Arctic are pegged on the sheer scale of Beijing's energy and resource needs and its capacity to tap and absorb Greenland's marketable potentials in the future. It is the only Nordic country that has entered into a comprehensive strategic partnership agreement with China.

China is cognisant of being in the unique position, whereby it enjoys both the geopolitical heft and economic grasp needed to engage the Arctic littorals on a whole range of strategic, economic, and environmental issues. Its counterparts have actively acknowledged this and taken their bilateral relations forward notwithstanding the strategic reservations against Chinese 'expansionism'. Although thorny issues have arisen over Norway's award of the Nobel Prize to Chinese dissident

Liu Xiaobo or Denmark hosting the Dalai Lama, these countries have signalled that particular convictions would not jeopardize the entire expanse of diplomatic potential, which is currently being materialized between China and this part of the world.

If one were to map the evolution of China's diplomatic relations with the Arctic littoral states, it would not be dissimilar from its approach towards countries in Africa or South America. While these regions carry bigger pictures of inter-linkages and bigger promises of attendant gains, they also throw up bigger 'red flags' of geopolitical competition, counter-balancing behaviour, and higher opportunity costs. With the growth in its diplomatic capacity and outreach activities, China seems to be making greater investments in bilateral relations, aiming to first mould a consensus among the states of a region before going for the bigger-picture gains. Its geographical distance from the Arctic and the articulated cooperative rationale lends to Beijing ample strategic space and geopolitical innocuousness from the intra-regional contentions. Therefore, as long as China's Arctic ambitions resonate with the littorals' own dependence on the global economy and Beijing's lion's share in it, this strategy is its best option.

3 February 2015

Russia in the Arctic

Nidhi Sinha

The 2013 *Foreign Policy Concept* of the Russian Federation, which gives an overall analysis of Russia's strategic thinking, has reiterated the importance of the Arctic in Russian national security policy. Russia's interests in the region find resonance in the larger geostrategic paradigm of the country. Russia primarily sees the Arctic through the prism of accelerating its economic growth, serving a strategic resource base for the future, and a probable maritime trade route.

The 'Basic Principles of the State Policy of the Russian Federation in the Arctic until 2020 and Beyond' adopted in 2013 has highlighted the national interest of the Russian Federation in the region. The important pointers, which fall within the gamut of Russia's interests in the region are the use of the Arctic zone as a strategic resource base for Russia, primarily the hydrocarbon resources; development of the Northern Sea Route (NSR), which could serve as a national unified transport communication in the Arctic region; and military security and defence of the Arctic zone.

The Russian Arctic shelf contains between 5 and 9 per cent of its liquid hydrocarbon resources and up to 12.5 per cent of its gas resources. Russia has been exploring its energy options in the Arctic, primarily through onshore projects like the South Tambey field in the Yamal Peninsula, and offshore projects in the Barents, Pechora and Kara Seas. However, the offshore projects like Shtokman gas field and Prirazlomnoye oil field have proved to be extremely challenging and have suffered inordinate delays.

Russia has been trying to develop infrastructure in the NSR to deliver natural resources to other countries. These include construction of Arctic seaports such as Sabetta, search and rescue centres (SAR), Ice-class vessels, and oil-spill response capabilities. NSR would be the shortest maritime route connecting the eastern and western parts of Russia; but international shipping through this route has been considerably low due to inadequate infrastructure. According to the NSR Information Office, in 2011, the total volume of transit cargo was 820,789 tonnes, increasing to 1,355,897 tonnes in 2013. Further expansion of international transit along the NSR requires high financial investments. As most of the cargo shipped via this route is hydrocarbons, the future viability of NSR would depend on the successful culmination of Arctic oil and gas projects.

However, Russia needs western technology and investment to develop these oil fields as it does not possess the necessary technology of its own. The Shtokman project, one of the world's largest natural gas fields in Russia's Barents Sea region is case in point. This project had been jointly owned by Gazprom which holds 51 per cent stake, France's Total holding 25 per cent, and Norway's Statoil with 24 per cent. But this US\$15 billion energy project in the Russian Arctic has sunk due to plunging oil prices, lack of commercial viability, fall in European demand, cheap US shale gas availability, and above all, western sanctions.

Russia has been vocal about its claims in the Arctic ridge. In 2001, it submitted a claim for the extension of its continental shelf to the UN Commission on the Limits of the Continental Shelf (CLCS). At the 33rd session of the UN Convention on the Law of the Sea, 1982 (UNCLOS) held in October--November 2013, Russia spoke of its right to part of the Sea of Okhotsk, a 52,000 sq.km area, which it claims to be the continuation of its continental shelf.

Russia had traditionally considered the Western countries as its major investment partners, providing technology and expertise as

well as serving as its primary energy markets. Following the recent developments in Crimea and Ukraine, Russia's actions were strongly condemned by the Arctic Council member states like US, Canada and Norway. Norway suspended joint military exercises with Russia, including the Northern Eagle military exercises in the Barents Sea. The economic sanctions imposed on Russia have stalled many joint energy projects in the Arctic, as well as the export of high-technology oil equipment to Russia meant for use in the Arctic. The deep sea and shale extraction projects have also been adversely affected.

Russia has been on the lookout for diversifying its sources of investment and alternative partnerships in the Arctic. Many scholars have pointed out China as a potential partner. Though there has been convergence of interests between the two, there are roadblocks. Russia being sceptical of the rise of China's economic prowess, has tried to prevent its entry into key sectors of its economy, including the energy sector, while opting for other Asian and European consumers. This was evident during the 2013 Asia Pacific Economic Cooperation (APEC) summit in Indonesia, where President Putin stated, "We are expanding the capacity of Trans-Siberian and Baikal-Amur railways, and increasing that of the Northern Sea Route. These measures will allow us to establish new, shorter and more profitable routes between Asia and Europe, and save billions of dollars delivering goods."

In April 2015, the US will take over chairmanship of the Arctic Council. One can anticipate major policy shifts in the functioning of the Council, which may impinge on Russia's interests and claims in the Arctic. The challenges for Russia may be the escalation of Russia-US maritime border tension. In 1990, the two sides agreed on a border treaty, but the Russian Duma did not ratify it as it was considered unfair. The treaty provisions led to Russia losing a significant amount of revenue from fisheries. The status of the NSR is also a sore point. The US has claimed the right of free navigation through this route. On

the other hand, Russia insists that the route transits through Russian territorial waters, and therefore, ships should seek permission and pay fees.

In recent times, Russian military presence in the Arctic is increasing. In April 2014, President Putin held a meeting of the Russian Security Council on the implementation of state policy in the Arctic. He lucidly stated how Russia was strengthening its military infrastructure in the region by restoring a number of airfields beyond the Arctic Circle and deploying naval forces in the area. He focused on strengthening the marine component of the border patrol groups of Russia's Federal Security Service. During the 'Vostok 2014' military exercise – the biggest since the fall of the USSR – Russian troops carried out combat missions in the Arctic, displaying Pantsir-S and Iskander-M weapon systems. These military manoeuvres may bring back the memories of the Cold War, when the Arctic was on the strategic radar of both NATO and the Warsaw Pact, and was considered to be the launch pad for nuclear strikes. Russia seeks to upgrade its forces in the Arctic, particularly the Northern Fleet's strategic ballistic-missile submarines. It also plans to develop advanced naval, aerial and missile capabilities to deter foreign threats. The other Arctic Council member countries also have strategic interests in this region. In 2007, a Russian Arctic expedition planted the Russian flag on North Pole, creating a furore in the West, prompting these states to increase air patrols, augment military infrastructure and enhance presence of ice-breaker fleets in the region.

With the fast deteriorating relations between Russia and the West, cooperation in the Arctic involving Russia seems a distant idea. However, one cannot refute that the development of Arctic would require cooperation between the countries rather than narrow contestation based on narrow national interests.

5 February 2015

Russia's Military Strategy in the Arctic

Omprakash Dahiya

On 28 January 2015, the Norwegian Air Force sighted six Russian aircraft, two each of Tu-95 strategic bombers, Il-78 tankers and MiG-31 fighter jets outside Norwegian airspace on a southbound route. Some media reports suggested that they may have been carrying nuclear payloads.

In November 2014, Russia announced that it was resuming regular patrols in international air space in the Pacific and the Arctic by nuclear-capable strategic bombers. Soon thereafter, in December 2014, Russia released its new military doctrine. The 2014 military doctrine is the fourth version; the earlier doctrines were released in 1993, 2000 and 2010. The doctrine states that “maintaining Russia’s national interests in the Arctic” is one of the main goals of its defence forces. The new doctrine notes militarisation plans for the Murmansk area, Franz Josef Land, Wrangel Island and Cape Schmidt.

The naval element of the Russian doctrine calls for increasing presence in the Arctic. Russia’s Northern Fleet based in the Arctic accounts for two-thirds of the total force level of the Russian Navy. There is also significant increase in the number of ground troops in the region. Over the next few years, two new Arctic Brigades will be permanently based in the Arctic, and the current regiment of Marines assigned to the Northern Fleet will increase by one-third.

Russia plans to build 13 airfields as well as 10 radar posts along the Northern Sea Route (NSR). Further, Soviet-era bases and airfields

will be refurbished, and radars will be installed at new military camps at Cape Schmidt and Wrangel Island to provide full coverage of the Arctic by end-2015.

Russia's plans to reopen bases and create an Arctic military command indicate that it seeks to establish itself as a dominant force in the region. Since Russia has significant territorial claims, it is natural for Russia to have a military presence in the region. The Russian Navy recently tested its new underwater ballistic missile *Bulava*, fired from the submarine *Alexander Nevsky* in the Barents Sea, north of Scandinavia.

In September 2014, Russia's Northern Fleet conducted a series of drills in the Arctic. Six Russian warships including two destroyers, landing ships *Georgiy Pobedonosets* and *Kondopoga*, and two support vessels sailed through the frigid waters of the Kara Sea. Two *Arktika*-class nuclear-powered ice-breakers Yamal and 50 Let Pobedy escorted them. The latter is the largest nuclear-powered icebreaker in the world.

Russian Arctic strategy aims to accelerate the construction of more ice-breakers for the region. There are plans to build at least three new ice-breakers at St. Petersburg's Baltiisky shipyard under 'Project 22220', and these would be the largest ice-breakers in the world. Russian planners are also anticipating rapid development of the NSR in the coming years, which they hope may compete with the Suez Canal route for commercial traffic. This would require major investments in icebreakers, new and expanded port facilities, places of refuge for ships and other services.

For now, the Arctic region is an area of low conflict, and it is in the interest of all Arctic littoral states to keep it that way. Although the security challenges currently existing in the Arctic are of non-military nature, there is still a requirement for military capability in the region that can support civilian authorities for search and rescue and natural disaster response. But, it is potentially counterproductive for Russia to

increase tension and hostility in the area. Russia's actions in Ukraine and its rapid buildup of military capabilities, it is likely to invite similar countermeasures from its potential adversaries, particularly the NATO countries.

In essence, Russia's Arctic strategy is following two divergent tracks. The first track seeks international cooperation to ensure the development of the region's resources; and second, to assert Russia's sovereignty claims over the largest portion of the Arctic. It is Russia's prerogative to deploy its military assets within its national territory in the Arctic. However, it will be prudent for Moscow to consider the concerns of its Arctic neighbours.

12 February 2015

Connectivity and Routes

Russia Commits to Build Northern Sea Route Infrastructure

Vijay Sakhuja

Earlier this month, Russia hosted the Fourth International Meeting of the Arctic Council at Naryan-Mar, a seaport in the Barents Sea, to discuss issues of infrastructure and safety of ships transiting through the Northern Sea Route (NSR). The meeting was attended by seven of the eight permanent members of the Arctic Council, the US being conspicuous by its absence. The meeting was also attended by the Observer states including China, India, Singapore and South Korea who joined the Council in May 2013.

There is good news from the northern latitudes and the economic potential of the Arctic is encouraging. In the coming years, the cargo volume through the NSR could increase by 10-15 per cent annually. By some estimates, it could even grow seven times in the next five years touching 8-10 million tons. Interestingly, similar statistics have been recorded for the past few years: from four vessels in 2010 to 40 in 2013 and the cargo volume has increased to nearly a million tons.

These statistics and predictions could take a tumble unless adequate infrastructure such as icebreakers, ice-class vessels, technical services, emergency response mechanisms and search and rescue capabilities are developed to ensure that the NSR is economically viable and safe for the commercial shipping. This was perhaps one of the many reasons why Russia organised the conference and shared with the members of the Arctic Council its commitment to develop the NSR and related infrastructure for the safe passage of ships from Russia's Far East to

Murmansk. The Russian Arctic Strategy, endorsed by President Putin in February 2013, envisages 'development of science and technology, creation of a modern information and telecommunications infrastructure, environmental security, international cooperation in the Arctic, provision of military security, and the protection of the state border'.

It is true that ice-breaker and ice-capable ships hold the key to any successful voyage through the NSR. Currently, Russia has the largest inventory of such vessels, which include six nuclear powered and a number of diesel-electric icebreakers. Some of these will be due for decommissioning in the next three to five years and would need to be replaced. Rosatomflot, the subsidiary company of Rosatom, the Russian agency responsible for the management of nuclear-powered vessels, has announced that three next-generation nuclear-powered Russian icebreakers 'Arctic', 'Siberia' and 'Ural' would enter service between 2017-2021. It is important to note that it can take four to five years to build a medium capacity nuclear propelled icebreaker, which can cost as much as US\$1 billion, and an ice-class vessel around US\$500 million.

During the Naryan-Mar meeting, Russia also announced plan to develop the Radio-Technical and Information (RTI) systems, which would collate from various sources a real time picture of incidents, accidents, emergency situations and also acts of terrorism targeting infrastructure sites. The system is designed to automatically share data with the response agencies.

As part of the international conference, Russia also conducted the Arctic-2014 oil spill response exercise which simulated an oil tanker on fire in the Pechora Sea, and tested the response of various agencies. A number of state and commercial entities such as Russian oil companies Gazprom and LUKOIL, and a variety of platforms (Antonov An-26 and Ilyushin Il-38 aircraft; Beriev Be-200 amphibious aircraft;

coast defense ship; Spasatel Karev rescue vessel; and Yuri Topchev icebreaker) belonging to various departments participated in the exercise. Significantly, these exercises were overseen by a number of international experts.

The US absence from the International Meeting of the Arctic Council merits attention. Although the Russians were quick to dismiss any apprehensions of lack of US interest in cooperating with Russia in the Arctic, Washington has announced a number of sanctions (post-Ukraine-Crimea crises), which restrict the export to Russia of high technology equipment related to extreme weather oil exploration. Apparently, Russia is 'almost 100 percent dependent on imported technology and equipment' and these are critical for energy exploration in the Arctic and could potentially disrupt ambitious projects which Russian companies have conceived.

The Asian observers would have benefitted immensely from this meeting given that it was a unique opportunity for them to socialize with the permanent members and the other Observers of the Arctic Council. It would have also given them few glimpses of the political, economic and strategic dynamics among the Arctic Council member states. These are significant issues for the Asian countries, who have enormous stakes in the changing Arctic. It will be useful to keep in mind that the Observers states are 'truly observers' and have no say in the proceedings of the Council. Finally, it will be important for the Asian countries to develop a common approach to the Arctic and a pan-Asia dialogue could help formalize a regional Arctic strategy.

11 August 2014

Assessing India's Need for a Polar Icebreaker

Priya Kumari

On 29 October 2014, the Indian Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, approved the acquisition of Polar Research Vessel (Icebreaker, Research cum Supply Vessel) by the Ministry of Earth Sciences within a period of 34 months. It will cost about Rs 1051.13 crore (US\$170 million). This decision will enhance India's bi-hemispheric approach to the polar regions, which are home to India's three research bases, two in Antarctica (*Maitri* and *Bharti*) and one in the Arctic (*Himadri*). It will also be useful for other tropical research initiatives, including in the Southern Ocean.

With this acquisition, India will enter the exclusive club of the states possessing ice-breakers. The table below shows the ice-breaker capacities of the Arctic Council member states. Russia tops the list with 37 ice-breakers, followed by Finland, Sweden, Canada and the USA.

Although the single icebreaker would amount to a nascent capacity, this is worthy to secure India's scientific, commercial and security interests. Scientifically, the polar ice holds many secrets of global and regional significance, including on the origin of life and the solar system. Research is necessary to unlock some of these secrets. India is one of the leading nations of the world engaged in the polar expedition. The Antarctica expedition began in 1981. The first research station, *Dakshin Gangotri*, was set up in 1984. In 1990, the station was buried in ice and had to be abandoned. Subsequently, two more permanent stations *Maitri* and *Bharti* were established in 1989 and 2012 respectively.

Countries	No. of Icebreakers	Under Construction	Planned
Canada	6	Nil	1
Denmark	4	Nil	Nil
Finland	7	Nil	Nil
Norway	1	Nil	1
Russian	37	4	8
Sweden	7	Nil	Nil
The United States	5	Nil	1
China	1	Nil	1
Japan	1	Nil	Nil
South Korea	1	Nil	Nil
India	Nil	Nil	1

Source: The US Coast Guard Office of Waterways and Ocean Policy (USCG-WWM)

In the Arctic, India began its scientific endeavours in 2007. After the initial success of the three projects, relating to atmospheric science, microbiology, and earth science and glaciology, India established a research base, *Himadri*, at Ny-Ålesund, Svalbard, Norway. Despite the growing importance of polar research for India these expeditions are carried out through chartered icebreaker vessels. Being cargo vessels, these ships help only in the transportation of personnel and goods back and forth the polar region, and are not optimized to serve as a research platform. India's decision to acquire a polar research vessel will help to fill the gap between the growing need to expand its scientific endeavours in the region, and the limited availability of such specialised vessels. It would also address their high chartering costs.

Commercially, the melting of Arctic ice has increased the region's accessibility in terms of its natural resources. The littorals are engaged in modernising and developing resources in the polar region. India can also contribute by engaging in joint-operations with these littorals. In this regard, it seeks to further strengthen its ties with Russia. During the former Prime Minister, Manmohan Singh's visit to Moscow in 2013,

India had evinced “interest in participating with Russian companies in exploring hydrocarbons in the Arctic region.” Furthermore, India is also planning to invest in the Canadian northern Alberta oil sands deposit, the third-largest proven crude oil reserve in the world, next to Saudi Arabia and Venezuela. However, such investments in one of the coldest regions on the planet pose significant challenges for personnel and equipment. The ice-breaker will play a vital role in the supply of cargo and equipment to the drilling sites, and protect the drill ships and oil platforms from the risk posed by ice caps. Hence, the icebreaker will also be useful to India’s commercial interests. Unlike other polar littorals, India has no territorial claims in the area. Nonetheless, its security interest in the region flows from its role as a responsible power in world politics concerned with the peace, sustainable development, scientific and other issues of political significance in the region. To effectively address its issues of concern, India needs to closely collaborate with polar littorals and ensure round the year access to various sites of the region. The decision to acquire an icebreaker is a stepping-stone in that direction. It will further enhance India’s international stature and accord it a greater say in shaping the future developments in the polar regions.

The acquisition of an icebreaker is an apt decision, but we need to further capitalize on this. As a single icebreaker cannot operate throughout the year due to its regular maintenance and technical support from shipyards and industrial facilities, regular provisioning, and periodic crew change outs. It cannot reasonably provide India around the year access to all polar regions and the Southern Ocean. Additionally, considering cost-effectiveness and economies in design and construction it is not profitable to have a single icebreaker at a time. Hence, it is in India’s interest to have if not multiple, at least two icebreakers in order to secure its scientific, commercial and security interest.

18 November 2014

Declining Traffic Through The Northern Sea Route: What Went Wrong?

Vijay Sakhujia

Shipping news from the Northern Sea Route (NSR) for 2014 is not very encouraging on two counts. First, after a positive trend in the number of ships sailing through the NSR (4 vessels in 2010; 34 vessels in 2011; 46 vessels in 2012; and 71 vessels in 2013), the transits have reduced in 2014. According to the Russian NSR Information Office, only 31 vessels transited between Zhelania and Dezhnev along the NSR.

Second, the volume of cargo transported through the NSR fell by nearly 77 per cent from 1,355,897 tons in 2013 to 274,000 tons in 2014. Earlier, cargo volumes through the NSR had shown signs of continuous increase from 0.800 million tons in 2011 to 1.30 million tons in 2012. This also put to rest the belief that the cargo volume through the NSR would increase nearly 10 times to 19 million tons by 2021 provided the Arctic sea ice continued to shrink at the same rate in the future allowing more ships to use the NSR.

The above statistics raise an important question: why, in 2014, there was a sudden reduction in number of ships sailing through the NSR and the related decline in volume of cargo. There are at least seven reasons; first is the high cost of production of oil in the Arctic. The global oil prices have been falling from peak US\$150 in 2008, US\$120 in 2012 and US\$100 in September 2014. It was hoped that the oil prices would stabilize at about US\$100 and would be profitable for oil production in the Arctic. However, the continued decline in oil prices, now at about US\$60 and the likelihood of plummeting further

to US\$40, has caused worries among the oil companies engaged in the Arctic. In that case, the Middle East oil would be more attractive than drilling in harsh and difficult Arctic oil fields.

Second, the shale gas boom had an impact on oil exploration in the Arctic. According to estimates, in 2014, the shale gas market was US\$41.4 billion and is expected to grow to US\$104 billion by 2020 making Arctic oil and gas less attractive.

Third, the low volume of cargo (iron ore and gas condensates) transported through the NSR is due to business problems. The Kovdor Mining Company, which transports bulk cargo from Murmansk, could not reach an agreement on shipping prices and carried 200,000 tons less than the earlier years. Similarly, Novatek stopped shipping out gas condensate from Vitino on the Kola Peninsula and moved its business elsewhere.

Fourth, the Ukraine crisis has affected Russia's Arctic energy sector. The economic and technological sanctions imposed by the US and the European Union on Russia have precluded financing of projects. For instance, Exxon Mobil had to stop cooperation with Russian energy companies such as Gazprom, Gazprom Neft, Lukoil, Surgutneftegas and Rosneft. Similarly, western shipping companies have shied away from doing business with Russian firms. In this context, Russia's state-owned United Shipbuilding Corporation is under sanctions and the managing director of Arctech, which builds icebreakers and other Arctic offshore vessels, has stated "It is true that the U.S. sanctions have influenced our banking relations". These had a negative impact on the Russian Arctic energy trade due to higher costs of production and transportation from existing facilities and new exploration ventures were put on hold.

Fifth, there are fears, though not corroborated, that Russia may react to these sanctions by not offering support and safety services, which are critical for vessels sailing through the NSR.

Sixth, the shipping companies are not yet convinced of the profits they would earn by transporting goods between Europe and Asia through the NSR as compared to the traditional route through the Indian Ocean. Further, the low fuel prices will be able to offset the longer distance. In addition, they note, the earlier voyages were only demonstrative in nature.

Seventh, Arctic resources such as oil & gas, metals and minerals are also available elsewhere in the world. Resource hungry nations like China and India have found new markets in Australia, Latin America and Africa and it is easy to transport at lower costs.

Although the 2014 NSR data is not encouraging and may not be attractive to businesses, it is fair to argue that the setbacks for NSR are temporary. Russia is turning to Asian countries such as China for finance and alternative technologies to keep up the production. It is keen to develop the Arctic energy sector as it constitutes nearly 10 to 15 per cent of its GDP and it has firm orders for gas from China totalling US\$400 billion under a 30-year China-Russia gas deal. If the western sanctions are lifted, the NSR would regain its attractiveness and western technology giants may still find Russian Arctic an attractive destination for long-term investment.

2 January 2015

Shipbuilding for the Arctic

S Navaneetha Krishnan and Antony Prince

The Arctic region has a huge potential in terms of unexploited natural wealth and resources, though it accounts for a small area on the earth's surface. Many countries, other than the eight countries which lay either completely or partially in the Arctic region, are interested in exploring the natural resources available in this region, and for various other economic, strategic and geopolitical reasons. In addition, moving cargo from the west to the east (and vice versa) in the northern hemisphere can be undertaken through the Arctic region at lower cost. For any nation to have control over the Arctic, it will have to establish its physical presence in this region. Such presence can be demonstrated by reaching this ice and water bound zone through ships. However, not all ships can sail in the polar region; this is primarily due to the adverse climatic condition and presence of solid ice on the sea surface. Much of this region is covered with ice throughout the year; and in some areas, the ice melts and refreezes and thus multiple layers of ice exist. Therefore, ships transiting this region will need to be specially designed and constructed, so that they can navigate by breaking the surface ice. This essay will focus on the challenges and solution in designing and building such ships.

First, the ships need to operate in waters/ ice below sub-zero temperatures. At such temperatures, the normal shipbuilding steel will have very less fracture toughness value, and there is a tendency for the steel to develop crack and fail by brittle fracture; similar to the crack failure in the Liberty-class ships during the cold winter nights, when

welded ships were first being introduced. The solution to this problem is usage of steel that has high value of impact energy (20 joules at minus 10 degrees centigrade). During the construction of the ship, care has to be taken that the toughness does not reduce while welding.

Second, the forward part of the ship's hull has to be carefully designed to ensure that it has the ability to pierce and break the ice during the forward motion. The ship generally breaks the ice by the power of its forward propulsion thrust. In certain case, where the ice is strong (multi-year ice layers are more than 50 mm thick), the ship's bow rides over the ice and breaks it due to the ships weight, since ice has less bending strength. This warrants the bow of the ship to be specially designed to have the strength to break the ice. Hydrodynamically, the ship's bow is characterized by less flare at the waterline with more sloping or rounded stem. In addition, the hydrodynamic design of the bow should be such that, after the ice is broken or crushed, it is able to push the ice floes away from the ship's side. The hull is designed in such a manner that the floes are mainly pushed below the ship. The forward part of the ship and the ship side at the waterline are build with strong material that are resistant to abrasion and corrosion. In certain cases, abrasion-resistant stainless steel is welded to this region of the ship. Therefore, ice strengthening of the ship's hull is an important aspect for the ships designed and built to operate in the Arctic.

Third, in order to propel the ship along with breaking the ice, the propulsion train of the ship has to be appropriately selected after considering the speed at which the ship has to move, and the thickness of the ice that is to be broken. A diesel-electric engine with fixed pitch propeller (FPP) is one of the choices. Most of the Russian ships operating in this region are nuclear ships, where the nuclear-electric power is used to electrically propel the ship. Electric propulsion motors are preferred because of its good low-speed torque characteristics. In certain cases, direct drive through diesel or gas turbine connected to the Controllable Pitch Propeller (CPP) through gearbox is used, to

take the benefit of less weight of the propulsion train. Ships requiring more manoeuvrability are fitted with Azimuth or podded propellers. Such ships can create a wider channel in the ice, for passage of other ships following these. The exposed part of the propulsion system, such as the shaft and the propeller need to be protected from the floating ice and therefore, the aft end of the ship has to be designed accordingly.

Fourth, these ships have to operate for long duration in a region which does not have adequate shore support for maintenance. Therefore, the reliability of all equipment and systems has to be very high. Rugged and dependable equipment / systems are essential in these ships. All the components in the equipment should function reliably at lower temperature; for example, rubber (used in equipment mounts) loses its softness and become brittle at low temperature. Similarly, the systems that use seawater for cooling should be able to take in seawater, as well as ensure that this water does not freeze inside the system pipes. Therefore, reliable equipment, systems and quality construction is very critical for ships operating in the Arctic region.

In order to ensure that ships operating in the Arctic region have all these requirements addressed in the design and construction, the International Association of Classification Societies (IACS) has released unified class requirement for ships operating in the polar region. There are seven Polar Classes (PC) based on the severity of the ice conditions in which, the ships (other than Ice-breakers) have to navigate. PC 1 is the most stringent, which caters for 'all polar waters' throughout the year and PC-7 is the least stringent one, where the ship has to operate during the summer and autumn in 'thin ice'. International Maritime Organisation (IMO) is planning to put into place Safety of Life at Sea (SOLAS) and Marine Pollution (MARPOL) aspects for the PC before the year 2017.

Construction of polar class vessels needs quality workmanship. Majority of these ships are constructed by the Arctic countries, such as

Russia, Canada, and the USA. South Korean and Japanese shipyards are also building these specialised polar class vessels, since they have the international repute of building quality ships. There is a future potential for building polar class vessels, due to the availability of natural resources in the Arctic region. Indian shipbuilding industry can also look at this potential market, but its industry needs to first earn international reputation of building quality ships with reliable equipment and timely delivery.

28 January 2015

Geoeconomics

Energy Resource Exploitation in the Arctic

Shashwat Tiwari

The Arctic Circle accounts for only about 6 per cent of the Earth's surface area, but it could account for as much as 20 per cent of the world's undiscovered and recoverable oil and natural gas resources. The hydrocarbon potential of the Arctic has been known for decades, but it is only in recent years that resource development and polar navigation in the region have become technically and economically feasible.

In 2008, the United States Geological Survey (USGS) released the first-ever wide-ranging assessment of the Arctic oil and gas resources, and noted the undiscovered and technically recoverable crude oil and natural gas reserves. The USGS assessment concluded that approximately 90 billion barrels of oil, 1,669 trillion cubic feet of gas, and 44 billion barrels of natural gas liquids (NGLs) are available in the Arctic. Of the total 412 billion barrels of oil equivalent (boe), approximately 84 per cent is expected to be discovered offshore, and about two-thirds (67 per cent) of the total was natural gas.

The recent oil discovery by Russia's top crude oil producer Rosneft and ExxonMobil of the USA, at their joint drilling site in the Arctic has brought this region into public eye. The *Universitetskaya-1* well in the Kara Sea has become emblematic of Russia's ambitions to develop its enormous Arctic oil venture in the face of western sanctions. The US\$700 million well has been one of the most closely watched projects in the oil industry, as geologists believe that the Arctic is the last great unexploited resource.

Challenges Facing the Arctic Drilling

The quest for Arctic oil and gas resources is both high-cost and high-risk. More specifically, the major challenges include:

- **Harsh climate:** The intense cold for much of the year, long periods of near-total darkness, the potential ice-pack damage to offshore facilities, the marshy tundra dictating seasonal activity in many areas and the limited biological activity all will take a huge toll on equipment and personnel.
- **Limited existing infrastructure:** New development will be very expensive and carry large environmental risks, and special equipment will be required (such as special tankers and ice-breakers), with long supply lines and with supply/logistical issues compounded by the harsh climate.
- **Gas-on-gas competition:** The booming global gas supply, both from conventional and unconventional sources, will challenge Arctic gas development, especially shale gas, but increasingly coal seam gas and liquefied natural gas as well.
- **Exceptionally long project lead times:** With the long drawn-out time lines, the risk of cost overruns increases dramatically. Drilling operations in the region are only possible for a short period due to extreme weather conditions and technical difficulties.
- **Spill containment/spill recovery:** Both from a planning and an equipment perspective, containment/recovery contingencies will be both different and more difficult due to both climatic and logistical considerations.
- **Overlapping/competing territorial claims:** There are substantial political and jurisdictional issues with the 1982 United Nations Convention on the Law of the Sea (UNCLOS), which set

seemingly conflicting rules for sovereignty claims, particularly for the Arctic seabed that may or may not be an extension of a continental shelf.

- Country-specific environmental laws/regulations: Country-specific action may restrain or constrain Arctic development and/or further complicate the territorial issues (e.g., the US ban on Arctic National Wildlife Refuge (ANWR) development, or the environmental challenges to Arctic drilling plans).
- Financial viability: According to Statoil's head of exploration, the cost of exploration wells alone in some areas of the Arctic could be as much as US\$500 million each—which is four to five times more than the cost of warm, deep water wells.
- Climate change: Any country / company involved in hydrocarbon development in the Arctic will have to ensure that damage to the environment is kept to a minimum.

Despite the aforementioned challenges, there is a huge potential as well as risks associated with operations in the Arctic and the industry must prove that the Arctic can be drilled and developed safely. These operations are clearly on the outer limits of both safety and commercial viability of the industry, and a spill or accident there would be catastrophic. The economics of Arctic development are also looking forward to even higher oil prices which may or may not happen in the near term. Two other factors will ultimately shape the quest to develop these resources: geopolitical and commercial.

Geopolitics will play a critical role, as countries with varying interests use control through the jurisdiction and regulation as opposed to diplomatic cooperation. In such a political environment, the massive long-term investments and commitments that will be required to develop these resources are unlikely to be forthcoming, or at least more limited.

On a more positive note, commercial collaboration and competition, primarily based on the technology and resources of the major energy players in the Arctic, along with the Russian energy giants Rosneft and Gazprom and possibly a few of the larger independents, will truly lead us to pioneer this frontier.

Further, the effects of ice-melt showcase the beginning of new politics in the Arctic region pivoting on resources and routes. The claimant states are beginning to take hardened positions due economic and strategic interests. Non-Arctic states too are devising proactive policies for the Arctic by establishing scientific research stations, resource assessment and exploitation studies, acquisition of ice capable ships, northern sea route transportation planning, and studies in Arctic politics, law and diplomacy.

India sees itself as an Arctic “stakeholder” since the Svalbard Treaty (1920), signed by Britain (India being a part of the British Empire at this time). It is a relative newcomer to the Arctic and India’s stake in the Arctic region has considerably diversified from purely scientific to resource security. The signing of a memorandum of understanding (MoU) between its public-sector enterprise ONGC Videsh Limited (OVL) and Russia’s Rosneft for “the companies’ cooperation in subsurface surveys, exploration and appraisal activities and hydrocarbons production in Russia’s offshore Arctic” highlight this transition. In addition to this, India’s involvement in energy exploration projects in the Sakhalin gas fields provides the necessary technical knowledge to further explore this region.

Though the Arctic is often held up as an example of international cooperation, with the Arctic countries mostly adhering to international treaties, interacting regularly at regional forums like the Arctic Council and resolving differences diplomatically, issues of competing economic and sovereignty claims come up from time to time, and this has the potential to escalate into a clash of interests. Given the challenges

associated with development of Arctic energy resources, the price of oil and gas will have to be at a level that will ensure a profit for the companies. While the region's energy resources are and will be important, they will only impact on the global energy market in the future.

11 December 2014

Sanctions and Oil Prices Stump Arctic Energy Development Plans

Vijay Sakhuja

The year 2014 was not particularly good for the development of energy resources in the Arctic for at least three reasons. First, after the Ukrainian crisis, the United States and the European Union (EU) announced sanctions against Russia prompting a number of global energy giants to terminate cooperation with Russian oil companies. The September 2014 EU statement reads ‘certain services necessary for deep water oil exploration and production, Arctic oil exploration or production and shale oil projects in Russia may no more be supplied, for instance drilling, well testing or logging services’.

Second, the near continuous fall in oil prices during 2014 took a heavy toll on deep-sea exploration projects in the Arctic making it unviable to produce cheap oil and gas. The oil is currently trading at around US\$50 as against over US\$100 per barrel last year while the cost of production of oil in the Arctic could be as high as US\$130 per barrel. Yevgeny Primakov, the former Prime Minister and Foreign Minister of Russia has questioned if it is ‘really worth boosting oil production on the shelf under conditions such as now’, and advised that Russia ‘take a pause in development of Arctic oil and gas fields.’

Third, there is growing pressure on oil companies about the environmental risks in exploiting energy resources in the Arctic region. According to scientists, if the ‘global temperature rise’ is to be kept under 2 degrees centigrade, oil exploration in the Arctic should slowdown. It is useful to recall that in September 2013 the Greenpeace

had protested against the operation of the oilrig Prirazlomnaya owned by Gazprom of Russia, to protect the marine life and environment in the polar region and 25 activists from the 'Save the Arctic' campaign arrested by Russia from its ship 'Arctic Sunrise'.

The above reasons, either individually or as a combination, have affected future energy projects in the Arctic region. In September, ExxonMobil, a US energy company, pulled out of the joint energy exploration project with its Russian collaborator Rosneft resulting in major setbacks for the Russian offshore energy sector. ExxonMobil had committed US\$3.2 billion for deep-sea oil and gas drilling and well testing including supplying high technology equipment for the projects. Earlier, it had undertaken extensive exploration activity in the Kara Sea at the University-1 well. However, ExxonMobil is hopeful of returning to the Arctic whenever political relations between Russia and the west improve and sanctions lifted. Likewise, Gazpromneft, a subsidiary of Gazprom and the fourth largest oil producer in Russia, was a victim of western sanctions.

In 2012, Statoil, the Norwegian state owned oil company, which has rich Arctic experience, made investments worth US\$34 and US\$40 billion with Rosneft, a Russian company, for exploration in the northern Barents Sea and Sea of Okhotsk. The western sanctions forced the company to withdraw from further operations with Rosneft. Likewise, the French energy giant Total cancelled joint projects with Lukoil (49 per cent of the venture) in the Bazhenov shale formation in Western Siberia. In fact the joint venture was cancelled before the project was started and according to the CEO of Total, "The Lukoil joint venture is definitely stopped...it hadn't started, so it doesn't have any impact [on Total]."

British Petroleum too pulled out of the Arctic projects due to oil price volatility and also from its joint venture (20 per cent shareholding) with Rosneft due to 'geopolitical risk caused by western sanctions'.

Besides, it announced major cuts in staff globally due to declining oil prices and the Gulf of Mexico spill forced it to sell assets worth US\$40 billion to pay for the Deepwater Horizon accident.

The decision by Chevron last month to stop drilling in Canadian Arctic is driven by 'economic uncertainty in the industry' due to falling oil prices. The company has licenses to explore in the Beaufort Sea including an outright control over EL-481 for which it paid CAD\$103.3 million for exploration rights over 508,000 acres and a 60 per cent stake in another project in partnership with Statoil ASA.

Last year, Shell announced its 2015 Arctic drilling plans in Chukchi Sea, but environmentalists believe that its 'ill-fated attempts at Arctic exploratory drilling in 2012, which included a series of accidents, would likely be the biggest deterrent to the launch of an Arctic drilling program in 2015'.

Against the above background of sanctions, Russia has invited China, India, and Vietnam to support its Arctic projects through funding, technology and joint development projects. Russian oil companies are also exploring energy projects elsewhere in the world.

The prolonged Ukraine crisis and the western sanctions against Russian finance and energy companies and against some individuals, would weigh heavily on the Russian economy. However, Moscow plans to pursue its Arctic oil plans by raising funds from domestic financial institutions and invest in technological developments to surmount the sanctions. While Russia is currently on a back foot, it may emerge as a winner in case oil prices return to over US\$100 per barrel and the west could end up feeling the pinch.

15 January 2015

Yamal: Centerpiece of Russia's Arctic Resource Development Strategy

Vijay Sakhuja

The Yamal region contains nearly 22 per cent of the global proven gas reserves and 70 per cent of all Russian crude reserves. Nearly 85 per cent of the natural gas production in Russia comes out from the Yamal-Nenets Autonomous District. The South Tambeiskoye field is estimated to contain proven reserves of 907 billion cubic meters of natural gas. Further, by 2020, investment potential of Yamal energy projects could be about 8 trillion rubles. Several major Russian companies are engaged in development of oil and gas fields in the Yamal area.

The Yamal peninsula juts into the Arctic Ocean and the Ob River estuary, which remains ice-bound for most of the year. Till very recently, the Yamal LNG project was a joint venture between Novatek (80 per cent) and the French Total (20 per cent) but the latter pulled out due to western sanctions against Russia following the Ukraine crisis. The Project infrastructure comprises of an LNG plant, gas and condensate processing facility, network of pipelines and storage tanks, Sabetta port, 6 icebreakers to ensure port access and a dedicated fleet of ships has been specially planned to transport the gas. The plant will have with an annual capacity to process 16.5 million tons of LNG and 1 million ton of gas condensate.

The construction of the Sabetta port began in 2012 and will be ready by 2016. It will be one of the largest ports in the Russian Arctic and involves an investment of 75 billion ruble and is being built under the Public Private Partnership (PPP) wherein the Russian government

has committed two-thirds and the balance is being raised through private investments. The port will have a 50 kilometers long channel, a six-kilometer long and 420 metres wide approach channel, a four-kilometer long berthing for ships. When completed, it will be able to handle 15 million tons of cargo in 2018, 30.7 million tonnes in 2020 and 50 million tons in 2030. One of the important features of the port is its effective ice-management system which will ensure year-round navigation and tankers will be able to load cargo at the terminal every 38 hours. The port development has been hit by sanctions and the developers have sought government's help for funds from the National Reserves Fund and approached Chinese banks that could provide up to US\$10 billion for the project.

The tanker fleet comprising of 'Arc7' ice-class vessels capable of transporting 170,000 cubic meters will support transportation from Yamal to markets in Asia, Europe and North America. The Korean shipbuilding giant Daewoo Shipbuilding & Marine Engineering Co. is building 16 ice-class tankers valued at US\$2.8 billion. These will be able to plough through ice thickness of 2.1 meters, operate in air temperature of minus 52 degrees centigrade and sail year round along the Northern Sea Routes and Arctic waters/seas without the assistance of an icebreaker. These ships also feature additional qualitative requirement for Arctic LNG tankers which allows these vessels can maintain cargo temperature of -163 degree centigrade in the tanks.

Simultaneously, Russia is building indigenous capacity for infrastructure development to support its Arctic energy strategy. In the Far East, the Zvezda yard is being rebuilt as a non-military yard. During the Cold War, the site was used for the construction and repair of nuclear submarines, which has now moved to Sevmash outside Arkhangelsk. It will have the capacity to construct LNG carriers, ice-protected ships, drilling rigs and production platforms. The facility will be ready by 2018 and it would cost the Russian government more than 100 billion rubles.

Russia has begun the year 2015 on an anxious note with western sanctions looming large on the Arctic energy projects and the profits of Gazprom, a major Russian energy giant engaged in the Arctic, plummeting by nearly 62 per cent. The Yamal project is on track clearly suggesting that the effects of the western sanctions have not deterred Russia to continue Arctic energy ambitions in the High North. Moscow is aggressively wooing Asian energy companies to invest in Yamal after western companies shut operations or chose to withdraw from the projects.

It is fair to argue that sanctions have taken toll on the Russian Arctic plans but in modern times, states have developed significant national resilience to thwart the impact of sanctions and respond in their own ways. Russia has invested in indigenous technology development and raised funds through local institutions to keep the Arctic energy projects alive. At another level, President Putin has reacted to the sanctions and decided to cut off 60 per cent supplies to Europe in the middle of winters causing immediate crisis in Bulgaria, Greece, Macedonia, Romania, Croatia and Turkey with more countries to follow.

Some western countries are exploring ways to skirt sanctions and resume business with Russia while others have decided not to impose fresh/additional sanctions. In essence, the Russian resilience to cope with political, fiscal and technological challenges is unquestionable and Moscow has taken upon itself to reengineer its Arctic resource development strategy.

2 February 2015

Miscellaneous

Greenpeace Activism in the Arctic: Solution or Threat?

Aditi Chatterjee

Greenpeace activists were aggrieved by the recently concluded climate talks held in Peru, as it merely made nations commit to a reduction in the rate of greenhouse gas emissions. The agreement, titled Lima Call for Climate Action, set the stage for a global climate talks to be held in Paris in December 2015. The meeting failed to address the grave issue of climate change and the urgency with which the world's governments must seriously reduce carbon dioxide emissions from burning fossil fuels. The Greenpeace activists were visibly disheartened as the severe threat that nations pose to the marine ecosystem of the Arctic through recent explorations were not a part of the Lima discussions.

In the above context, for years now, the Greenpeace activists have protested that nations are racing to secure their 'right' to drill for oil in the Arctic but they show little interest in enacting policies to reduce carbon dioxide emissions and to increase the use of renewable energy resources. As the appetite for burning fossil fuels increases, the world is rapidly nearing the 'point of no return' for preventing the climate chaos that will affect all. The Barents Sea, which has one of the richest and unique marine ecosystems in the world, has witnessed drilling of three exploratory wells by Statoil earlier this year and a fourth well is being drilled by Rosneft, a Russian oil company. The Norwegian Petroleum Directorate had also commissioned an oil exploration seismic survey of the northern Barents Sea in the summer of 2014. This seismic survey involved projection of acoustic energy (thousands of times louder

than a jet engine) into the water from a towed air gun, and seismic blasts were detected several hundred kilometres away from the ship. Greenpeace activists argue that these drillings threaten marine life and the ecosystem and can adversely affect through oil spills across the world which could cause severe long term environmental damage.

In the past, Greenpeace has encountered strong response from states after it attempted to stop offshore explorations. The Greenpeace demonstrations focused on the risk of irreparable disaster that an oil spill at a platform would cause to the environment. In September 2013, a Greenpeace ship *Arctic Sunrise* was taken into custody in Murmansk, Russia, and was detained for nearly ten months. The thirty activists protested oil drilling by Gazprom in the Pechora Sea, and they were charged with 'piracy' and 'hooliganism'. The Greenpeace activists are of the view that illegal boarding and arrest of the *Arctic Sunrise* and the following investigation into the protest was an attempt to intimidate and stifle debate about Arctic oil drilling.

The Apollo well, an oilrig, situated in the Hoop field of the Barents Sea is registered in the Marshall Islands and currently operated by the Transocean Spitsbergen mobile drilling rig and serves as the northernmost oil drilling operation there. In May 2014, Statoil, the license holder started drilling using the Transocean Spitsbergen, a semi-submersible drilling facility. Drilling at Apollo however, was postponed after a Greenpeace campaign against the project, highlighted the issue of environmental impact on the fragile ecosystem of Bear Island. In the case of Apollo, Greenpeace successfully drew attention to the risks for the Bear Island ecosystem by occupying the drilling site with the ship *Esperanza*. Greenpeace's complaint was based on the proximity of the site to Bear Island's rich bird colonies and wildlife. The Norwegian government ultimately rejected Greenpeace's appeal and granted drilling permit to Statoil though the rig failed to produce commercially viable amount of oil and gas.

Recent research findings by the Norwegian Polar Institute have concluded that the average extension of the polar ice edge over the last 30 years is located close to the drilling site, with serious risks for the stability and safety of the structure. With the dramatic effect of climate change, the Arctic ice is shrinking and industrial exploitation in the Arctic is bound to accelerate. The balance between saving nature and emerging human activity is extremely important for the Arctic, and its fragile ecosystems. The activism of the Greenpeace environmentalists could be a solution to the challenges posed by oil exploring nations, similar to that of the Sea Shepherd Conservation Society that is campaigning for protection of marine life at sea, in the Antarctica. Greenpeace in association with Sea Shepherds could promulgate various measures to preserve the relic populations of birds and animals which may be affected by human activities in the Arctic region.

Arctic exploration opens up great opportunities for companies, but at the same time, activity in this region is associated with great risk. Oil and gas companies would have to prove and guarantee the security and the development of the Arctic mineral resources. There is no doubt that hydrocarbon production is a business that requires enormous safety measures and accurate economic calculations, as emergencies from oil spills could be catastrophic.

It is time for both Greenpeace environmentalists on the one hand and big business companies on the other to emerge from their entrenched positions and discuss about practical and sustainable business processes in the Arctic. The need for a debate about how to preserve these delicate environmental concerns cannot be overstated.

30 December 2014

The Arctic Council and Indigenous Population

Priya Kumari

The mere mention of the Arctic makes people think of igloos, reindeer, polar bears and more recently, new shipping routes and exploitation of natural resources. However, less attention is paid to the people whose lives will be affected by the increasing human footprints. This paper focuses on the relationship between the indigenous peoples and the Arctic Council. Recently, a working group of the Arctic Council on Conservation of Arctic Flora and Fauna (CAFF) convened the Arctic Biodiversity Congress (ABC) in Norway from 2-4 December 2014. It was aimed at promoting the conservation and sustainable use of Arctic biodiversity through dialogue among all relevant stakeholders including indigenous peoples. The Congress also examined the outcome of the Arctic Biodiversity Assessment (ABA) report, a region-wide assessment of threats to Arctic biodiversity, and advised the CAFF on 'Action for Biodiversity: Implementing the Recommendations of the ABA 2013-2021', which will be presented to the Arctic Council Ministers in April 2015.

Since its inception, the Arctic Council has taken several initiatives to promote and protect the rights of indigenous peoples, who form an integral part of the Arctic ecosystem, genetic and cultural diversity. According to the Arctic Human Development Report (AHDR), out of the total population of 4 million people in the Arctic region, only ten percent are indigenous and reside in eight Arctic countries; Canada, United States, Russia, Finland, Sweden, Norway, Iceland and Denmark. The cultural, historical and economic background of

these groups varies from state to state. However, a common feature for most of the indigenous communities in the Arctic is that their habitat has undergone significant changes due to state policies, modern transport and the introduction of mixed economy. Further, despite a heterogeneous legal system among the Arctic states, there is a trend towards banking upon an integrated legal system to protect and promote the rights of indigenous peoples. The Arctic Council has created a special category of membership called the Permanent Participants for the Arctic indigenous communities. It has accorded permanent membership to six communities viz. Arctic Athabaskan Council, Aleut International Association, Gwich'in Council International, Inuit Circumpolar Council, Russian Association of Indigenous Peoples of the North (RAIPON) and the Saami Council. The involvement of these communities and other Arctic inhabitants is essential in any decision-making involving the sustainable development and environmental protection of the Arctic.

Each chairmanship of the Council have in their own ways augmented involvement of indigenous peoples. Canada that held twice the chairmanship of the Council, has played a vital role in the promotion and protection of the rights of indigenous populations both at the state and global level. At the state level, it is one of the first countries in modern times to extend constitutional protection to the indigenous peoples. The 1982 Constitution recognizes and reaffirms the aboriginal and treaty rights of the Indian, Inuit and Metis people of Canada. These provisions protect the aboriginal title arising from historic occupation, treaty rights and cultural activities. Canada also adopted the Northern Strategy in 2009, focused on its northern area, which is home to many indigenous peoples.

Canada's effort at the state level has given a strong foundation for advocating indigenous people's rights internationally. During its first chairmanship of the Arctic Council (1996-98), Canada played a vital role in consolidating the Council and ensuring the active involvement

of indigenous peoples. The Canadian Chairmanship Program 2013-2015, released by Ottawa after assuming its second chairmanship in 2013, puts 'Northerners first' and continues to maintain close and fruitful relations with northern indigenous peoples. The theme of Canada's chairmanship is also "development for the people of the North," with a focus on responsible Arctic resource development, safe Arctic shipping, and sustainable circumpolar communities. Also, Leona Aglukkaq, an Inuk from Nunavut, was appointed as Canada's Minister to the Arctic Council. Her appointment underlines the priority that the government places on the Arctic as well as its commitment to ensure that the region's future is in the hands of Northerners.

The Kiruna Declaration (2013) adopted by the Arctic Council recognizes "the rights of the indigenous peoples and interests of all Arctic inhabitants, and emphasized that a fundamental strength of the Council is the unique role played by Arctic indigenous peoples." It also acknowledges "the importance of indigenous peoples' traditional ways of life to their economic wellbeing, culture and health, and request Senior Arctic Officials recommend ways to increase awareness regionally and globally on traditional ways of life of the Arctic indigenous peoples and to present a report on this work at the next Ministerial meeting in 2015."

In tandem with the declaration, several subsequent meetings and Congress such as the ABC (2014) highlighted the need for active involvement of indigenous peoples in the management and sustainable use of protected areas. It also recognized the need to further integrate the value of traditional ecological knowledge with the assessment, planning and management of Arctic biodiversity. This includes involving Arctic peoples and their knowledge in the survey, monitoring and analysis of Arctic biodiversity. Despite positive steps, there are daunting challenges facing the Canadian government, especially with the recent release of the UN report of the

Special Rapporteur on the rights of indigenous peoples in May 2014. The report states that the well-being gap between indigenous and non-indigenous peoples in Canada has not narrowed over the last several years, treaty and aboriginal claims remain persistently unresolved, indigenous women and girls remain vulnerable to abuse, and overall there appears to be high levels of distrust among indigenous peoples towards government at both federal and provincial levels. Further, of the bottom 100 Canadian communities in the Community Well Being Index, 96 are Indians/First Nations, and only one First Nation community is in the top 100.

The US is taking over the Arctic Council chairmanship in 2015. Analysis of the US policy documents, outlining its Arctic strategy shows that there will be an overall, broad overlap and continuity between Canadian chair's priorities and American plans for the Arctic Council. The US has identified a number of issues on which it focuses - marine issues, social development, enhancing the participation and capacity of Permanent Participants, tracking and archiving projects, listening to Northern voices. However, the challenges facing the US can be even grave, as unlike Canada, it does not support the UN Declaration on the Rights of Indigenous Peoples.

22 January 2015

Sustainable Development of the Arctic: Is it Possible?

Kapil Narula

The Arctic is a unique region which plays a very important role in the earth's ecosystem. It regulates the earth's climate, influences the ocean currents, has rich biodiversity and is home to a substantial indigenous population. Therefore, sustainability should be a prerequisite condition for development in the Arctic.

'Sustainability' is the ability of a system to continue a desired behaviour indefinitely. An example of such a sustainable system is tropical rain forests in which the inherent processes continue in a cyclic manner to support life. On the other hand, 'development' is the process of growth. When these two words are conjoined it implies 'continuous growth'. Hence, the word 'sustainable development' is actually an oxymoron because any kind of growth cannot be indefinite.

While 'sustainable development' is rightly understood as a multi-dimensional concept, having economic, environmental and social dimensions, an extended definition includes inter and intra-generational equity as well as inter-species equity, as its fundamental principles. However, people often misunderstand it as simultaneous and continued growth in all three dimensions. This understanding is flawed as these dimensions have competing goals and therefore there has to be a trade off between these goals. As an example, any kind of economic growth has negative environmental externalities and there may be accompanying social impacts which may lead to collapse of societies. Therefore, sustainable development needs to be perceived in a way that explicitly conveys the core idea that the growth of the economy and the society is constrained by environmental limits.

If 'Sustainable Development' of the Arctic region is viewed from the above perspective, one is forced to define environmental limits prior to looking at economic opportunities in the region. Further, the impact of development in the region on culture, societies and the traditional way of living of the indigenous people should also be minimal. Hence it is important that any activities which are undertaken in the Arctic region should be carefully examined for the foreseeable impacts which they might have on the region as well as on the ecosystem of the earth.

Let us consider two major issues which are threatening the sustainability of the Arctic region: 'resources' and 'routes'. The scramble between Arctic nations to control both these and the intent of extra regional powers to share the trickledown benefits, have resulted in countries engaging in active geopolitics on the Arctic. While some countries like India are keenly interested in science in order to increase their understanding of climate change, other countries such as South Korea are looking at the economic benefits which they can reap as fallout of increased shipping in the region.

Let us talk about resources first. According to the U.S. Geological Survey, the region contains 30 percent of the world's undiscovered natural gas and 15 per cent of its oil. These valuable energy resources have been fossilised over millions of years. From the viewpoint of sustainability, the 'strong sustainability' condition defines that the 'economic capital' (produced capital such as infrastructure, knowledge etc.), and 'natural capital' (environmental assets such as fossil fuels, biodiversity and other ecosystem structures) are complimentary, but not interchangeable. This implies that natural capital needs to be preserved sufficiently, as it has to be passed to the next generation and cannot be replaced with economic capital. Hence, the amount of fossil fuels and minerals that can be extracted from the Arctic region should be limited to the regeneration rates of these resources. Obviously, this would mean that only miniscule amounts of resources can be extracted

and therefore the strong sustainability condition is difficult to meet, in the case of energy and mineral resources. An alternate interpretation for resources can be as follows: the non-renewable resources that are extracted should be replaced by an equivalent amount of substitutes for that resource. This interpretation can however serve as a prerequisite condition for resource extraction, if the Arctic has to be developed sustainably.

The strong sustainability condition is often diluted to a 'weak sustainability' condition which allows unconditional substitution between economic and natural capital. This implies that natural resources may be used as long as economic capital is increased. Proponents of this approach claim that the energy which is extracted now, can be used to increase economic capital, so that the total amount of capital for the next generation remains unchanged. However, most often this weak sustainability condition is also violated and the extracted resources are consumed by the existing generation without a thought for the future generations.

On the issue of new shipping routes, the strong sustainability condition in the Arctic region would be met as long as the rates of waste generation from shipping and related activities do not exceed the assimilative capacity of the Arctic eco-system. This condition therefore requires that while the shipping routes may be used, there should be stringent environmental regulations controlling the operation of shipping in the region. Notwithstanding the strict enforcement of rules, the environmental risks remains high due the uncertain nature of floating ice, harsh climatic condition, risk of human or technical failure and the fragile nature of the environment. An oil spill either from offshore drilling or from accidents at sea and marine pollution due to leaks and untreated waste disposal at sea are other challenges, which will have an impact on the marine environment in the region. However, as long as the environmental impact on the ecosystem is within the acceptable limits, shipping in the region could be classified

as sustainable. However, the question is “do we have enough know-how on the Arctic ecosystem to even attempt defining such limits?” Further, what is the guarantee that there would be no accidents such as those involving the drilling ships, the *Noble Discoverer* and the *Kulluk*, operated by Shell off the Alaskan coast in 2013 which led to suspension of further drilling in the region. The answers to these questions are not easy and hence prior to allowing navigation of ships through the ice floes infested waters, one must carefully examine the environmental risks which the region is exposed to, if unrestricted shipping is allowed.

It can, therefore, be concluded that there are many challenges to sustainable development of the Arctic region. However, such a possibility exists, provided stringent rules and regulations are followed for shipping and a limited amount of resource extraction is permitted in the region. How would this development unfold, is a question which none can predict, but one can only hope that the Arctic Council adopts some guidelines which imposes certain limits and restriction on shipping and resource exploration activities in the Arctic region.

10 February 2015

The Arctic: A Common Heritage of Mankind?

Brij Mohan Dimri

On 15 December 2014, the Kingdom of Denmark filed a claim to the Commission on the Limits of the Continental Shelf (CLCS) to redefine the boundaries of the continental shelf in the Arctic Ocean. The claim covers 895,541 sq km, which is about 20 times the size of Denmark. The basis of Denmark's claim is that the North Pole is situated on part of the continental shelf connected to Greenland. Denmark considers the Lomonosov Ridge to be an underwater extension of Greenland. However, Russia claims that it is the Siberian continental platform. With this move, Denmark has become the first country in the world to attempt to claim outright ownership of the North Pole. In 2015, Moscow is due to submit the claim to the CLCS, which would be Russia's earlier proposal, returned on 28 June 2002 for follow-on revisions. Denmark's position objectively mirrors Russia's claim.

Unlike Antarctica where the Southern Ocean surrounds the lands and ice sheets, the Arctic is an area around the North Pole, encompassing the land and sea area lying north of the Arctic Circle. The Arctic lands, belonging to the five countries viz. Russia, the United States, Canada, Norway and Denmark (via Greenland), almost encircle the Arctic Ocean. Also, unlike the Antarctic, sovereignty is a major issue in the Arctic, which has gained momentum with various studies claiming that 20-25 per cent of the world's undiscovered gas and oil reserves may be there. It is also believed to be rich in gold, silver, and diamond reserves.

Geopolitically, there are eight states with territory north of the Arctic Circle. Apart from the five coastal states facing the Arctic Ocean,

other Arctic States are Finland, Iceland, and Sweden. Since the region of the Arctic consists of mainly ice-covered ocean rather than land, no national sovereignty as such is exercisable. The rapid melting of the Arctic sea ice began drawing interest of both the Arctic and non-Arctic states in the region in terms of navigation and exploration of rich natural resources. When the Arctic began attracting attention as a region in need of an effective legal regime in terms of international governance and management, during both the 2008 Ilulissat Declaration and the 2010 Chelsea Ministerial Meeting, the five coastal states of the Arctic Ocean reaffirmed that no new international legal regime will be created to govern the Arctic Ocean. An additional pledge for “orderly settlement of any possible overlapping claims,” was made by acknowledging the sanctity of the United Nations Convention on the Law of the Sea (UNCLOS, 1982). The Treaty signed on 15 September 2010 between Norway and the Russian Federation concerning maritime delimitation and cooperation in the Barents Sea and the Arctic Ocean is a good example. While it may not be groundbreaking, it certainly signals the willingness of the Arctic states to work together in resolving their disputes.

From the navigational perspective, the melting of the ice has increased the prospects of navigable Northeast Passage (Northern Sea Route) and the Northwest Passage. Both these passages are constituted by waters that the Russian Federation and Canada claim as internal waters based on historic title. By doing so, both the states want to exclude the possibility that the waters forming these passages could be considered as territorial seas. Shortening of the passage has expanded opportunities for commercial shipping. In a modest estimate, the current 20 to 30 ice-free days in a year may go up to 120 by the end of this century, which represents a potentially major opportunity for the shipping industry allowing increased traffic. This has intensified the rivalry among Arctic states to have control over these Passages waters.

To tap the vast offshore hydrocarbons resources of the Arctic continental shelf, UNCLOS provides the legal basis. Under the

Convention, states can establish the outer limit of continental shelf beyond 200 nautical miles (up to 350 nm), based upon equitable geographical representation. This process of claiming the extended continental shelf has been resorted to by four Arctic coastal states, viz. Canada, Russia, Norway, and Denmark, who have ratified the Convention. The United States cannot take advantage of such rights until it ratifies the Convention.

Undoubtedly, the governing international legal system for the Arctic is UNCLOS. Under the Convention, the Arctic states have sovereign rights in their Exclusive Economic Zones (EEZ) and continental shelves (which extend beyond their territorial sea up to 200 nm). The sovereign rights exercisable by the coastal states in both the regimes are enumerated in Articles 56 and 77 respectively. Article 76 allows a coastal state to extend the limits of the continental shelf beyond 200 nm by submitting a claim to the CLCS. Extension is based on equitable geographical representation. In EEZs, all states enjoy high seas freedom enumerated in Article 87 subject to the coastal state's rights in EEZ (Article 58). The water column beyond 200 nm is designated as High Seas. Similarly, in the Continental Shelf (200nm) and extended Continental Shelf (extendable up to 350nm), the coastal state exercises such sovereign rights as provided in Article 77. The seabed beyond the extended continental shelf has been termed as "the Area". Under Article 136, the mineral resources beyond national jurisdiction (i.e. "the Area") are the "Common Heritage of Mankind (CHM)." These resources are managed by the International Seabed Authority (ISA). The ISA oversees the exploration and exploitation of the seabed minerals in accordance with Part XI (dealing with "the Area") of the Convention, its Annexes, and the 1994 Agreement of Implementation. Article 137(3) of the Convention provides that "no state or natural or judicial person shall claim, acquire or exercise rights with respect to the minerals recovered from the Area except in accordance with Part XI.

The acceptance of the Law of the Sea as the governing instrument for the Arctic implies that the extension of jurisdiction over the

continental shelf as well as over maritime passage and the resources of the national ocean space will lie with the littoral states. On the other hand, the rights of the non-Arctic States under the Convention remain unfettered. But, if the exaggerated extended continental shelf claims of all the Arctic states are allowed, a considerable portion of “the Area” will be appropriated by the coastal states. After apportioning the seabed areas as the continental shelf amongst the Arctic coastal states, the remaining “the Area” will have the status of CHM and governed by the Seabed Authority. Therefore, the need for striking a judicious balance.

Since all Arctic coastal states are making claims to extensive parts of the Arctic seabed, there is a lot of scientific and professional work that needs to be done. The exaggerated extended continental shelf claims of the Arctic coastal states will reduce “the Area” available to the world community as CHM. Considering the nature of the claims, the conflicts over the Arctic region are unlikely to be resolved in the near future. If these claims are not viewed favourably by the CLCS or disputed by other contesting coastal states, resolving them under the Convention would not be an easy proposition for want of an effective conflict resolution mechanism. Therefore, it remains to be seen how the CLCS views these claims.

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