
Arctic Shipping to the Republic of Korea

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1 Korea's recent Arctic related activities

01 Korea's recent Arctic related activities

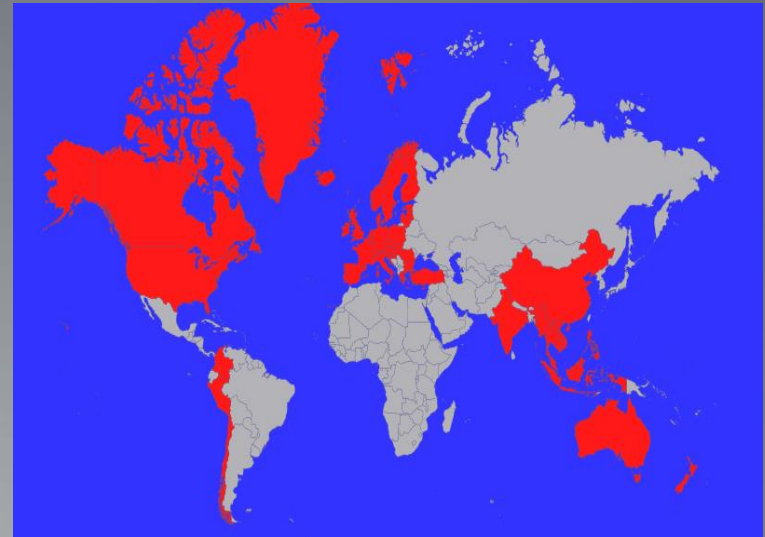
1. Korea's Perception changes on the Arctic

- In 2013
 - ✓ 'From a frozen sea to an important new shipping route'
 - ✓ 'The last reserve, providing a path to join in the Arctic development'
 - ✓ 'Amidst scrambling for Arctic resources and new shipping route, Korea obtains Observer status'
- In 2015
 - ✓ 'Domestically trained seafarer participates in NSR expedition'
 - ✓ 'Signals of Climate Change, and long-term measures for the Korean Peninsula needed'
 - ✓ 'Trust and capability, the way forward to becoming the best Arctic partner'

01 Korea's recent Arctic related activities

1. Korea's Relations with Arctic Council States

- S/T Agreements w/ 48 countries
 - ✓ 5 ASs (USA, RUS, SWE, DEN, FIN) and 11 OSs
- Shipping agreements w/ 23 countries
 - ✓ 4 ASs (USA, RUS, NOR, DEN) and 6 OSs (GER, UK, NET, SIN, CHN, IND)
- 15 FTAs w/ 54 countries cover 74% of global GDP, except RUS & JAP
 - ✓ 15% of total trade with 8 ASs, and 42% with 11 OSs



01 Korea's recent Arctic related activities

1. Korea, as an observer state in the Arctic Council

- developing Arctic Policy Master Plan (2013) and Action Plan (2015)
 - ✓ will develop annual action plan to evaluate and adjust direction of the Master Plan for the future cooperation with Arctic stakeholders
 - ✓ designated Ambassador for Arctic Affairs in the Ministry of Foreign Affairs
- operating KAEN (Korea Arctic Experts Network) since 2014 to participate in the AC subsidiary bodies and to build capacity
 - ✓ 44 experts from 17 orgs. such as national institutes and Universities
 - ✓ participated to 21 WGs and TFs since 2014
 - ✓ seasonal workshops to share the results of WGs and TFs
- seeking opportunities for direct cooperation with WGs
 - ✓ invited CAFF to talk about participating of Korean experts to AMBI
 - ✓ will publish core documents of WGs in Korean language
 - ✓ developed portal system introducing WGs activities to Korean public

01 Korea's recent Arctic related activities

- agreement between AIA and KMI to join project in PAME
 - ✓ 'Arctic Indigenous Marine Use Mapping' by developing 'Statement of Cooperation' in June 2015
- establishment of 'Korea Arctic Academy' hosted by KMI & UArctic
 - ✓ 11 students from 7 Arctic states and 19 Korean students from 12 Univ.
 - ✓ 6 indigenous students from Nunavut Arctic College, Univ. of Greenland, Univ. of Lapland, Univ. of Oulu, NEF Univ., Baikal State Univ.
 - ✓ 5 int'l lecturers from UArctic, UNBC, NOAA, USA and Finnish Embassy
 - ✓ 4 Korean lecturers from KMI, KOPRI, DSME and JN Univ.
 - ✓ 6 site visits including Maritime Museum, Maritime Univ., KR, KOPRI, DSME and BPA
- hosting the 1st International Seminar on Arctic Information and Knowledge (ISAIK) to exchange information with Arctic organizations
 - ✓ PAME, CAFF, AIA, Arctic Portal, Arctic Center, The Arctic Institute, AINA, Nordregio, KOPRI and KMI

01 Korea's recent Arctic related activities

- inviting Ambassadors of Arctic states in Korea to the icebreaker research vessel Araon and Korea Polar Research Institute
 - ✓ to celebrate 2nd anniversary of Observer status in the AC and to enhance cooperation with Arctic countries
- promoting Arctic research cooperation among in China, Japan and Korea to share experiences and develop joint researches by establishment of NPARC (North Pacific Arctic Research Community)
 - ✓ 18 universities and research institutes from CJK in 2015
- encouraging public awareness and providing exchange program
 - ✓ by jointly hosting Special Arctic Exhibition series with Arctic states on their Arctic Expedition, History, Cultures and Tradition
 - ✓ The 1st exhibition is scheduled in Nov. with Norway in Seoul and Busan

2 Korea's interest in Arctic shipping

1. Geographical, Environmental and Socio-Economic Connectivity

- Located in the region where impacts of the Arctic climate and environmental change could appear (AO, extreme weather, etc.)
- A potential sea route user of NSR/NWP (shipping share in trade volume: 99.7%)
- A trade-based economy (dependency rate on FT: 97%)
- Economic system highly dependent on energy and resource imports (oil/gas import: 96.5%)
- * import distance of resources; approx. Oil 11,500km, LNG 8,400km
- A leader in high-tech shipbuilding & offshore plant construction
- International responsibility as a global player

2. Shipping situation in Korea

- Vessels information
 - The number of Korean-Flag Registered Fleets is 9,360 (Cargo Ship: 793, Passenger Ship:224, Tanker:734, Tug boat: 1,290, Barge: 2,024, Others:4,295)
 - The number of Korean-Flag Ocean-going by Ownership type is 1,077(bulk ship type:304, General Cargo Ship:194, Full Container Ship: 160, Oil Products/Chemical:134 etc.
- Gross tonnage of Korea-flag Fleets is 13,585,000GT and Korea –Flag Ocean-going vessels is 4,012,000GT
- The number of person, who have Seamen's Certificates, is 90,342.

02

Korea's interest in Arctic Shipping

- Major ports in Korea



AT A GLANCE

- Capital: Seoul
- Location: longitude 127° 30", latitude 37° 00"
- Area: 100,032 km²
- Population: Approximately 48.54 million

Destination Distance&Time

Major Port		Fukuoka	Nagasaki	Okinawa	Hakodate (Sapporo)	Niigata	Beijing	Shanghai	Tianjin	Dalian	Tsingtao	Hong Kong	Taipei
Incheon	distance	445	-	-	-	-	424	531	-	309	387	-	837
	time	26	-	-	-	-	25	31	-	18	23	-	50
Busan	distance	107	150	-	-	-	677	478	671	-	496	1,170	716
	time	6	9	-	-	-	39	28	39	-	28	65	41
Donghae	distance	215	-	-	611	345	-	-	-	-	-	-	-
	time	12	-	-	36	20	-	-	-	-	-	-	-
Jeju	distance	222	215	530	-	-	-	267	-	-	-	-	611
	time	13	13	31	-	-	-	16	-	-	-	-	36

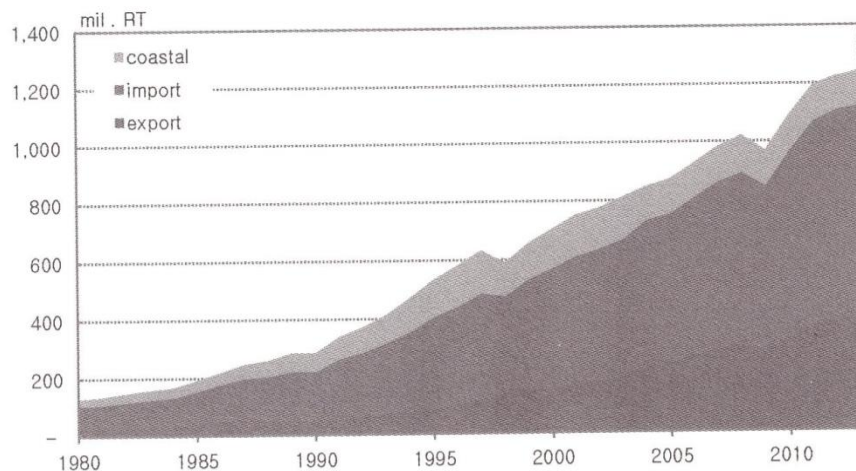
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Korea's interest in Arctic Shipping

3. Port Cargo volume in Korea

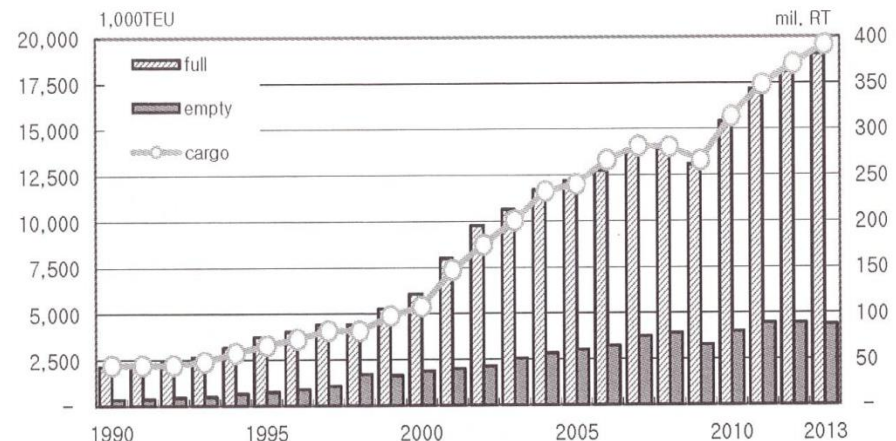
- General cargo volume in 2013 is 1,123 million ton
 - Import : 735 million ton
 - Export : 387 million ton
- Container cargo volume in 2013 is 23,470,000 TEU

Port Cargoes in Korea(1980~2013)



Source: Ministry of Ocean and Fisheries

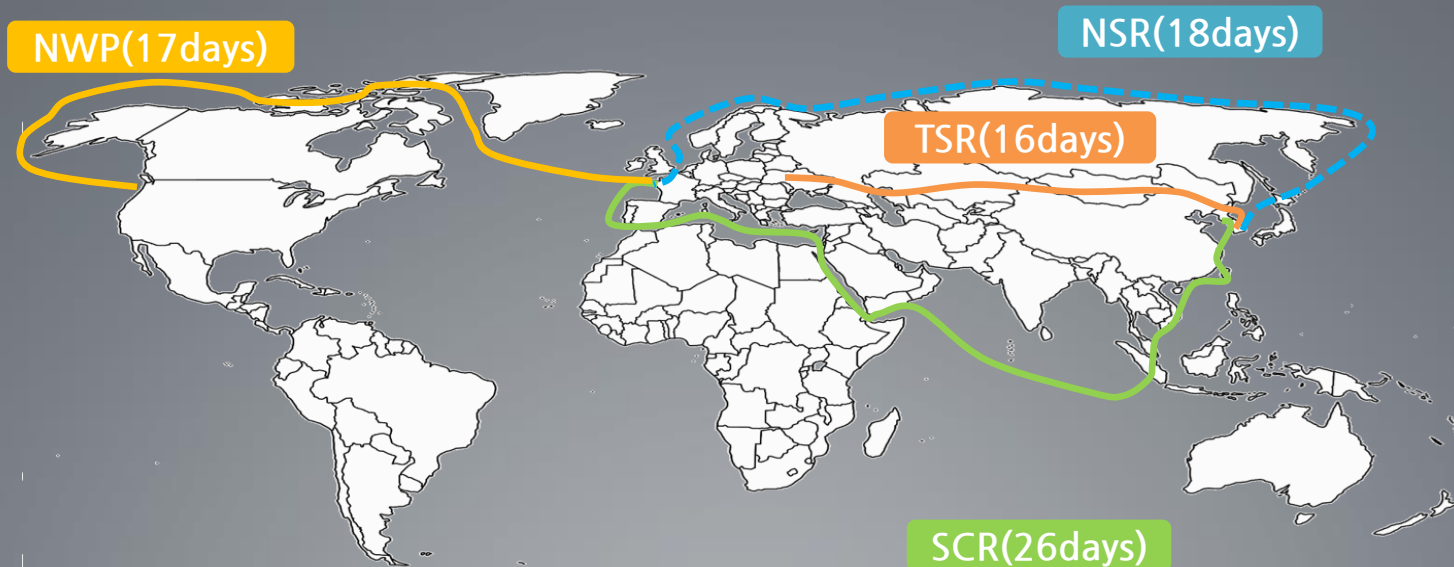
Development of Container Cargo Traffic



Source: Ministry of Ocean and Fisheries

4. Potential economic benefit from traffic via NSR

- The NSR is the shortest distance connecting Asia-Europe
- Shipping through Arctic Ocean via the NSR could save about 40% of the sailing distance from Asia to Europe compared to the traditional route via the Suez Canal
- Moreover, it could save transit time, fuel consumption and operating expenses of vessels



02

Korea's interest in Arctic Shipping

- List of NSR transits voyage using Korean port

Year	No.	Vessel's Name	Flag	Cargo	Port of Loading	Port of Destination
2011 (3)	1	Perseverance	Singapore	Naphtha	Yeosu, ROK	Le Havre, France
	2	Stena Poseidon	Finland	Gas condensate	Vitino, Russia	Incheon, ROK
	3	Mariann	Norway	Gas condensate	Vitino, Russia	Incheon, ROK
2012 (11)	1	Marile	Norway	Gas condensate	Murmansk	IncheonROK
	2~3	Marika	Norway	Jet Fuel	Yeosu, ROK	Porvoo, Finland
	4~5	Marinor	Norway	Gas condensate	Murmansk	Daesan, ROK
	6~7	Stena Poseidon	Finland	Gas condensate	Murmansk	Daesan, ROK
	8~9	Palva	Finland	Gas condensate	Murmansk	Daesan, ROK
	10	Ob River	Marshall Island	Ballast dspl.	Yeosu, ROK	Montoir, France
	11	Maribel	Norway	Gas condensate	Murmansk	Daesan, ROK
2013 (9)	1	Marinor	Norway	Gas condensate	Murmansk	Daesan, ROK
	2	Yong Sheng	Hong kong	general cargo	Rotterdam, Netherlands	Busan, ROK
	3~4	Vengery	Russia	reposition	Murmansk	Busan, ROK
	5	Propontis	Greece	gasoil	Ulsan, ROK	Skagen, Denmark
	6	Stena Polaris	Bermuda	naphtha	Ust-Luga	Yeosu, ROK
	7	Zaliv Amurskiy	Cyprus	gasoil	Onsan, ROK	Rotterdam, Netherlands
	8	Viktor Bakaev	Liberia	jet fuel	Yeosu, ROK	Rotterdam, Netherlands
	9	Zaliv Baikal	Liberia	naphtha	Ust-Luga	Yeosu, ROK

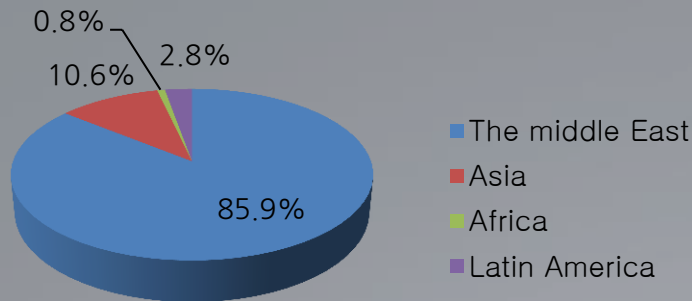
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Korea's interest in Arctic Shipping?

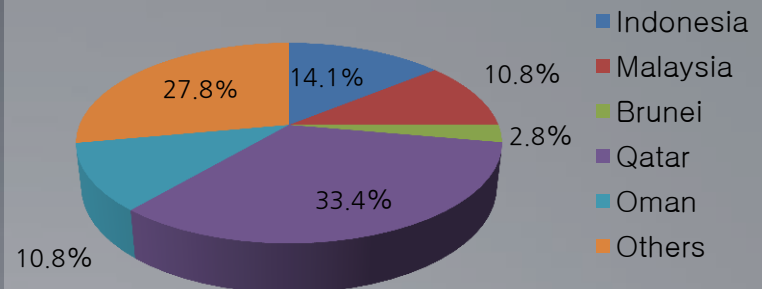
5. The growing importance of resources

- The dependence of Energy on Overseas(2013)

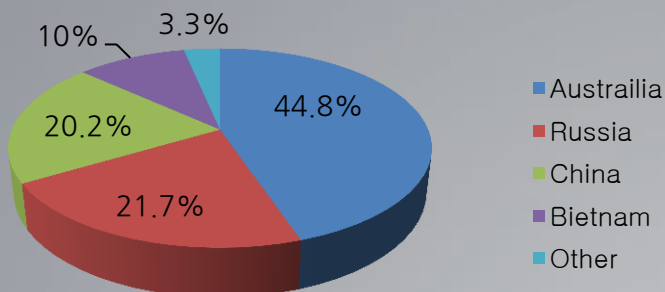
Oil import ratio



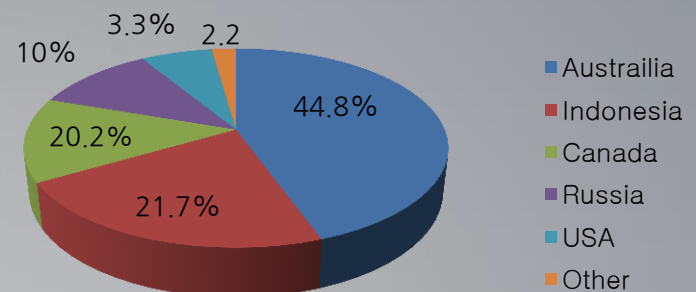
LNG import ratio



Hard Coal import ratio



Soft Coal import ratio



3 Korea's approach to the NSR

1. Korea's Arctic Policy Master Plan

- Korea established the first Arctic Policy Master in 2013
- The purpose of Arctic Policy Master plan is to contribution to the development of states and international society through cooperation with Arctic states and Arctic –related organizations
 - 1) Strengthening international cooperation with the Arctic region
 - 2) Strengthening scientific survey and research capacities
 - 3) Pursuing sustainable Arctic businesses
 - 4) Securing institutional foundation

2. Enhancement for the R&D for sustainable shipping

- Development of domestic institutional arrangement for the Polar Code for securing safety for Arctic navigation
 - ✓ Enact related domestic law by 2016
 - ✓ Revision of Guideline for ice covered area by KR
- R&D investment for the innovative technology in Arctic weather condition
 - ✓ Safe, environment friendly technology including shipping
- Investigating Arctic Navigation Support System to address ice related risk in the route
 - ✓ Charting and navigating information support system

3. Ice Navigation training for Koreans

- The Lloyd's Register Marine Approved Training Provider Scheme has awarded approval of the Korea Institute of Maritime and Fisheries Technology(KIMFT) training centre and ice Navigation training courses
- KIMFT provided following major services:
 - 1) Education and Training of job Knowledge for Arctic navigation
 - 2) Education of international laws regarding Arctic navigation
 - 3) Education and Training of ship control, navigation and operating communication equipment in Arctic

4. The cooperation in the development of Arctic ports

- Russia and Korea discussed cooperation in modernization and development of Russian Arctic ports in Korea-Russia economic Committee (2010)
- Korea is carrying forward a MOU with Russia for the cooperation in the development of Arctic ports



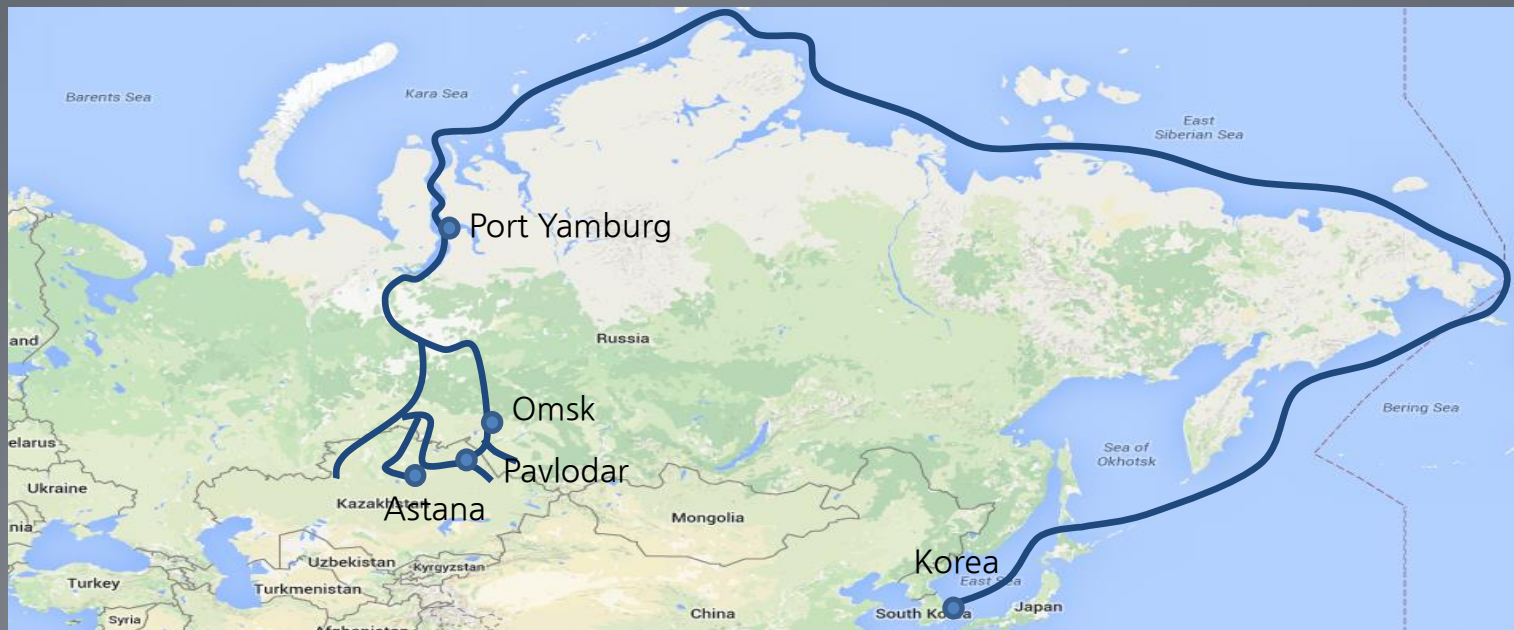
Source: www.mining.com



Source: s-material Handling co.,Ltd.

5. The diversification of business model with the NSR

- Korean government, port authority, related institutes have discussed the diversification of navigation route through NSR
- In this connection Korea Maritime Institute is working on the possibility of utilization of inland shipping which connects NSR



6. Operation in the NSR

- In 2013 Hyundai Glovis, for the first time as a domestic company
- They shipped 44,000 tons of Naphtha and was imported by the Yeochun NCC in a ship chartered by the Stena Marine
- It took 35 days from Ust-Luga to Gwangyang



03

Korea's approach to the NSR

- CJ Korea Express, commercial operation in NSR as a Korean flag carrier
- Shipping stevedoring facilities of 4,000mt for construction of offshore terminal, starting from Mussafah based in UAE to Yamal Peninsula
- 500 km passing through the NSR and 4 Korean navigation officers were certified under 'Ice Navigation training'



7. Shipbuilding

- DSME will build total of 15 ice-class Arc7 LNG carriers and the first vessel from batch is scheduled for delivery in 2016.



Source: Ministry of Oceans and fisheries



Source: Ministry of Oceans and fisheries

4 Comments

- Positions : Korea borders both the Pacific Ocean and the Eurasian continent, and is geographically located to affect and be effected by the Arctic. And Korea has
 - ✓ no geopolitical ambitions in the Arctic region
 - ✓ a democratic political and financial system connected to the global society
 - ✓ an economic system based on free market principles
 - ✓ advanced circumpolar science research facilities and experiences
 - ✓ accumulated knowledge in ship building and shipping business, communications, and construction technologies
 - ✓ demonstrated leadership as a Middle power
- Potential Value : The Korean government has displayed strong political willingness to foster cooperative ties with Arctic states with capacity as
 - ✓ a provider for state of the art safe technology the Arctic needs
 - ✓ a consumer for the Arctic resources and services the Arctic provides

Thank you

Note : The views expressed are the sole responsibility of the author and do not reflect the views of KMI or Korean government.