Korea’s Perspectives on the NSR Transport

Industry Seminar: NSR’s Maritime Transport Infrastructure

Oct 15

DNV GL

Oslo, Norway
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1. Sharp Decline of Intl Transit Transport on the NSR
2. Maritime Transport Infrastructure on the NSR
3. Korean Stakeholders’ Position on the NSR Transit
4. Controversial Issues
5. Concluding Remarks

1) Decrease in global oil price

2) US/EU sanctions against Russia
   - Russia’s banking, energy sector, engineering, etc.

3) No transit cargo from cargo-owner (2014-2015)
   - The move of Novatek operation to Ust-Luga terminal caused a complete halt of transportation of gas condensate to Asian markets via NSR

4) Revision of icebreaking tariff by FTS (Mar 2014)

5) No price difference between Asian & European markets
## US/EU sanctions against Russia (2014)

<table>
<thead>
<tr>
<th>Directive</th>
<th>Description</th>
<th>Examples</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>prohibits transacting in, providing financing for, or otherwise dealing in new debt of longer than 30 days maturity or new equity of persons listed on the SSI List under Directive 1</td>
<td>Bank of Moscow (US only) Gazprombank Russian Agricultural Bank Sberbank Vnesheconombank VTB Bank</td>
<td></td>
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<tr>
<td>2</td>
<td>prohibits transacting in, providing financing for, or otherwise dealing in new debt of longer than 90 days maturity of persons listed on the SSI List under Directive 2</td>
<td>Transneft Gazpromneft Novatek (US only)** Rosneft</td>
<td>Medium- and long-term US source financing prohibited, but Euro financing is available to Novatek EU modification: 30 day maturity</td>
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<tr>
<td>3</td>
<td>prohibits transacting in, providing financing for, or otherwise dealing in new debt of longer than 30 days maturity of persons listed on the SSI List under Directive 3</td>
<td>Rostec OPK Oboronprom (EU) United Aircraft Corporation (EU) Uralvagonzavod (EU)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>prohibits the provision, exportation, or reexportation, directly or indirectly, of goods, services (except for financial services), or technology in support of exploration or production for deepwater, Arctic offshore, or shale projects that have the potential to produce oil in Russia, or in maritime areas claimed by Russia and extending from its territory</td>
<td>Gazprom Gazpromneft Lukoil Rosneft Surgutneftegas</td>
<td>Export Administration Prohibition on commercial and dual-use controls: License is required to export or transfer …if (i) knows will be used in exploration for, or production of, oil or gas in Russian deepwater or Arctic offshore or shale formations, or (ii) unable to determine **drilling rigs, artic-capable marine equipment</td>
</tr>
</tbody>
</table>

**Includes 50% or more owned subsidiaries, i.e., Yamal LNG JV Source: Korean law firm, Korea Strategic Trade Institute, 2015**
NSR Comprehensive Development Project by Russian government (Jun 2015)

1) Russia’s Prime Minister Dmitry Medvedev approved a NSR Development Project (8 June 2015)
   “The estimated potential for the coming 15 years - the period of the plan’s implementation, is more than 80 million tons”.
   (Deputy Prime Minister Arkady Dvorkovich)

2) Russian government wants more cargo traffic on NSR

3) Lack of funding for improvement of transport infra to guarantee safe navigation on the NSR
The usage of NSR as an int’l transit transportation route between European and Asian markets: Two different viewpoints on the function of NSR?

1) Putin’s address
   ▪ Develop NSR as an international transit route!
     (Eastern Economic Forum, Vladivostok Sep.4, 2015)
   ▪ Modernization of NSR infrastructure: icebreaker, communication, navigation, etc. (Jun. 2014)

2) Strategic meeting by Ministry of Development of the Russian Far East
   (July 19, Moscow)
   ▪ Develop NSR as an int’l transit route for commercial shipping in the near future

3) However
   ▪ In reality, Russia tends to consider NSR as transportation route for Russian Arctic resource transportation.
   ▪ One of main goals of NSR development is to transport Russian Arctic resources into European/Asian markets
2. Maritime Transport Infrastructure on the NSR

1) Icebreaking capability
   ▪ 4 Atomic, Diesel, 3 next generation super icebreakers

2) Port & terminal

3) SAR (Search and Rescue)

4) Hydrographic service

5) Communication infrastructure (INMARSAT)

6) Necessity for integrated NSR management system?
**Icebreaking capability of Russian icebreakers can be enough for servicing NSR transit foreign vessels?**

Arctic project, being realized under participation of Rosatomflot (2015-40)

<table>
<thead>
<tr>
<th>Number</th>
<th>Project name &amp; port</th>
<th>Production/year</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yamal LNG / Sabetta</td>
<td>17.6 mil ton/ LNG</td>
<td>2018-2040</td>
</tr>
<tr>
<td>2</td>
<td>Novoportovskoe field(Gazpromneft) / Novy port</td>
<td>8.5 mil ton/ Crude oil?</td>
<td>2015-2030</td>
</tr>
<tr>
<td>3</td>
<td>Norilsk Nikel / Dudinka</td>
<td>1.3 mil ton/ Non-ferrous metals</td>
<td>Permanent</td>
</tr>
<tr>
<td>4</td>
<td>Paiyahskoe field (Independent oilgas company)</td>
<td>7.3mil ton/ crude oil</td>
<td>2018-2030</td>
</tr>
<tr>
<td>5</td>
<td>Work under licensed region of Rosneft</td>
<td>Works on exploitation of shelf</td>
<td>Till 2023</td>
</tr>
</tbody>
</table>

Source: Golovinski, Activity of Rosatomflot on the NSR, Sep 30, 2015, [www.proatom.ru](http://www.proatom.ru)
### Privatization of Russian Arctic ports: Any difficulties to port infra development on the NSR?

<table>
<thead>
<tr>
<th>Port name</th>
<th>Owner</th>
<th>Specification of cargo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dikson</td>
<td>Norilsk Nikel</td>
<td>Oil products, construction materials, non-ferrous metals</td>
</tr>
<tr>
<td>Dudinka</td>
<td>Norilsk Nikel</td>
<td>Non-ferrous metals, oil products, foodstuffs</td>
</tr>
<tr>
<td>Igarka</td>
<td>Igarka lesocombinat</td>
<td>Woods, oil products, foodstuffs, non-ferrous metals</td>
</tr>
<tr>
<td>Tiksi</td>
<td>Republic of Saha (Yakutia)</td>
<td>Woods, oil products, coal, foodstuffs,</td>
</tr>
<tr>
<td>Pevek</td>
<td>Privatized</td>
<td>Coal, oil products, foodstuffs, high-tech equipment</td>
</tr>
<tr>
<td>Anadir</td>
<td>Privatized</td>
<td>Non-ferrous metals, Coal, steel scrap, container cargo, oil products</td>
</tr>
<tr>
<td>Beringovskii</td>
<td>Privatized</td>
<td>Non-ferrous metals, container cargo, coal</td>
</tr>
</tbody>
</table>

Source: Briyzgalov, NSR: Present condition and development prospects, Mir, 1-3, 2011
Necessity of Establishment of Integrated NSR Management System

Source: www.morflot.ru
1) To organize interaction of federal, regional bodies of executive power, local self-government bodies, other state bodies and organizations when resolving social and economic tasks to develop the Russian Federation’s Arctic zone and ensure national security

2) Improvement of efficiency of NSR

3) Expansion of Resource base in the Russian Arctic region

4) Decision by State Commission on Arctic development is compulsory for all the federal & regional bodies (Source: www.tass.ru, Apr 13, 2015)
3. Korean stakeholder’s position on the NSR transit

- **Government’s Strong Support**
- **Logistics Co. & Carriers’ Viewpoint**
  (Shipper’s approval, Difficulty of securing cargo)
- **Shippers’ Viewpoint**
  (Reliability, Safety)
- **Shipbuilders’ Viewpoint**
  (Ice class shipbuilding)

**Limitation to Active Use of NSR**
Evaluation of Korea-related NSR transit (2011-13)

- Transit pattern during 2011-13
  - Import of Russian Arctic Resources (Mainly, Novatek: Ulsan, Yeosu, Daesan)
  - All voyages made by Scandinavian carriers

- Korean shipping companies have no ice class vessel

- Accumulation of Ice navigation experience by Korean shipping company thru pilot shipping on NSR
  - Hyundai Glovis 2013 (Stena Bulk), CJ Korea Express 2015 (Novy port),
    Unico logistics(Multimodal transportation: Planning)

- Mid-term prospect
  - Decision making regarding shipbuilding of Ice class vessel upon availability of securing long-term contract cargo

### Import of Russian gas condensate
- 2013: 182 thousand tons, 3 times
- 2012: 365 thousand tons, 7 times
- 2011: 119 thousand tons, 2 times

### Export of Korean jet oil to Europe
- 2013: 293 thousand tons, 3 times
- 2012: 198 thousand tons, 3 times
- 2011: 64 thousand tons, 1 time
Korean government’s plan (Ministry of Oceans and Fisheries, Korea)

1) Port incentive
   - 50% exemption of domestic port dues for the vessels via NSR (Jan, 2014)
   - Reviewing to provide volume incentive by Port Authority in accordance with the cargo volume

2) Crew training for Arctic shipping
   - Accumulation of Arctic shipping experience and development of crew training program, considering establishment of IMO Polar code

3) Establishment of secretariat for systematic Arctic research
   - Polar Institute (KOPRI)
1) KIMFT (Korea Institute of Maritime and Fisheries Technology)

2) Pre Preparation
   - MOU with Russia Makarov Maritime University
   - Collecting information on ice navigation training and navigation vessels in the polar regions

3) Training program for cultivating experts
   - Cultivating 4 experts
     - Makarov Maritime University Ice Navigation course completion
       - Ice Navigation Training Course for Seafarers (5 days)
       - Cold Climate Survival Course (1 day)
       - Training the Ice Navigation Simulator Instructor (5 days)
Crew Training certified by Lloyd’s Register

This is to certify that the training course:

**Ice Navigation Basic course**

Provided by

**Korea Institute of Maritime and Fisheries Technology**

Is a

**Lloyd’s Register Approved Training Course**

Date of approval: 11 December 2014
Date of expiry: 10 December 2019

subject to annual monitoring and maintenance of Approved Training Provider status

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This is to certify that the training course:

**Ice Navigation Advanced course**

Provided by

**Korea Institute of Maritime and Fisheries Technology**

Is a

**Lloyd’s Register Approved Training Course**

Date of approval: 11 December 2014
Date of expiry: 10 December 2019

subject to annual monitoring and maintenance of Approved Training Provider status
# Crew Training Results

<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
<th>Man</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td><strong>Basic Course</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 2014. 12. 08~10</td>
<td>7</td>
<td>STX, Hyundai</td>
</tr>
<tr>
<td></td>
<td>- 2015. 05. 27~29</td>
<td>5</td>
<td>Megaline</td>
</tr>
<tr>
<td></td>
<td>- 2015. 06. 17~19</td>
<td>5</td>
<td>CJ, SMLLeader, STX</td>
</tr>
<tr>
<td></td>
<td>- 2015. 06. 22~27</td>
<td>5</td>
<td>Megaline</td>
</tr>
<tr>
<td><strong>Advanced Course</strong></td>
<td>- 2014. 12. 11~16</td>
<td>6</td>
<td>STX, Hyundai etc</td>
</tr>
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</table>
The 3rd International Arctic Shipping Seminar Ulsan (Nov, 2014)
Int’l Arctic Shipping Seminar (Nov 26 2015, Ulsan, Korea)

1) The 4th Int’l Arctic Shipping Seminar
   - Date & Place: 2015.11.26(Thurs) Lotte Hotel, Ulsan
   - Host: Ministry of Oceans and Fisheries, Korea, Ulsan Port Authority, Ulsan Metropolitan City
   - Organizer: Institute of Arctic Logistics, Youngsan University

2) Program
   - 2015.11.25(Wed): Field Trip, NSR Specialist Meeting 2015.11.26
     - Visit Ports (Ulsan Port, Hyundai Heavy Industry), Hyundai Automobile
     - Invited Specialists (approx.15)
     - NSR Specialist Meeting (Lotte Hotel, Ulsan)
     - Domestic and Int’l NSR Specialists and MOFK (approx.30)
     - International Arctic Shipping Seminar(Lotte Hotel, Ulsan)
     - Domestic and Int’l NSR specialists, Shipping, Logistics and Port related industries (approx.200)
Ice class shipbuilding by Korean shipbuilders

1) Hyundai HI
   - Gazprom, ice class LNG-FSRU - Nov. 2017 delivery

2) Samsung HI
   - Norway Biken Shipping, 2 Aframax Tankers (1A)
   - Sovcomflot, 6 Arc 7 ice class shuttle tankers, delivery Apr 2017
   - Russian Oil to Europe

3) Hanjin HI
   - An Europe Ship owner, 7 ice class container ships (1,900 TEU)
   - Late 2016 delivery

4) DSMELNG Carriers, Sovcomflot 1, Teekay 6, MOL 3, Dynagas 5

5) Korea Shipbuilding
   - GB Jellicoe Tanker, 4 Aframax Tankers (1C),
   - 2017 1~3Q delivery
DSME, Arc7 LNG Carriers
# 1A Ship buildings in Korea till 2013

<table>
<thead>
<tr>
<th>Vessel Type</th>
<th>Daewoo</th>
<th>Hanjin H.I.</th>
<th>Hyundai H.I.</th>
<th>Hyundai Mipo</th>
<th>Hyundai Samho</th>
<th>Korea S.B.</th>
<th>Samsung H.I.</th>
<th>STX S.B.</th>
<th>Total</th>
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<tbody>
<tr>
<td>Anchor Handling Tug/Supply</td>
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<tr>
<td>Asphalt &amp; Bitumen Carrier</td>
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<td>Bulk Carrier</td>
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<tr>
<td>Chem Parcel Tanker</td>
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<tr>
<td>Chemical &amp; Oil Carrier</td>
<td>4</td>
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<td></td>
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<td>Drillship</td>
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<td>Ethylene/LPG</td>
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<td>Fully Cellular Container</td>
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<td></td>
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<td>General Cargo Liner</td>
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<td>LNG Carrier</td>
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<td>LPG Carrier</td>
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<tr>
<td>Open Hatch Carrier</td>
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<td>1</td>
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<tr>
<td>Pass./Car Ferry</td>
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<tr>
<td>Prod / Chem Carrier</td>
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<tr>
<td>Product Carrier</td>
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<tr>
<td>Shuttle Tanker</td>
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<tr>
<td>Tanker</td>
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<td>14</td>
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<td></td>
<td>13</td>
<td>11</td>
<td></td>
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<td>Total</td>
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<td>46</td>
<td>82</td>
<td>11</td>
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<td>20</td>
<td>44</td>
<td>226</td>
</tr>
</tbody>
</table>
Korea’s ice class shipbuilding by vessel type

Source: Figure adapted from ABS data
Korean stakeholder’s concern regarding NSR transport infra

1) Korean shipping companies
   ▪ Lack of information about NSR port infra,
   ▪ Difficulty of ice class vessel chartering & securing cargo, etc
   ▪ Lack of ice class vessel operation on the NSR high icebreaking tariff by FTS (3, 2014)

2) Korean shippers
   ▪ Safety of cargo transportation
   ▪ Risk management on the NSR
   ▪ On-time delivery (Ice condition, Icebreaking service)
CJ KOREX, Korea SPB No.2, Arctic loading tower for Bluewater

(Assembling, Sep 21, 2015)
Unico Logistics, Multimodal Transportation of Heavy Cargo (Plan)

Departure from Korea via Bering Sea (Planning)
- Vladivostok (T/S Customs) → Yamburg Port or Novy Port (T/S Operation to River Barge)
  → River Jetty → Trailer → Pavlodar
Case study: COSCO Yong Sheng 2015 voyage

- Dalian 7/6~9
- Jangjin 7/18~22
- Bering 7/31
- Varberg 8/17~19
- Hamburg 9/4
- Dalian 7/6~9
- Tianjin 10/3
- Busan 9/30 (Steel 570 tons)
- Antwerp 8/23~9/2
- Hamburg 9/4
- Bering 9/20
- Tianjin 10/3
- Busan 9/30 (Steel 570 tons)
- Jangjin 7/18~22
4. Controversial Issues Regarding NSR Transport

1) Russian government’s perspective on international transit between Europe and Asia on the NSR?
2) The causes of sharp decline in NSR transit records
3) Mid-term prospect regarding int’l transit on the NSR
4) Feasibility of container shipping on the NSR
   - Is it possible to transport container through NSR in the near future?
Arctic container line: its feasibility in the near future?

Plans to construct container ports on both ends of the NSR:
Private investment until 2018 to build a base for transport & distribution between the two ports

Connects Southeast Asia and West Coast of the North America with a base in Petropavlovski-Kamchatski hub

Source: Nikolai Pegin, Arctic Transport & logistics seminar, Moscow, Mar 12, 2015
5. Concluding Remarks

1) Better understanding of willingness of Russian government for the development of potential of NSR in the future
   - e.g. Export of Russian Arctic resource to Asian Pacific region will be increased in the near future

2) Joint efforts by all the stakeholders for invigorating int’l transit transportation on the NSR

3) Development of NSR’s maritime transport infrastructure for safe navigation

4) Feasibility of container shipping between Asia and Europe via NSR in the future
Thank you

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