Panel 1 “Arctic Sea-lane”

Moderator: Dr. Hiromitsu Kitagawa (OPTI-SPF)
Panelists: Mr. Leonid Mikheson, Chairman of Management Board – Director, Novatek
          Mr. Michael Borrell, Senior Vice President of Continental Europe and Central Asia, Total
          Dr. Hiroyuki Goda, Manager, Government and Industrial Affairs Group, Management Planning Headquarters, NYK
          Mr. Nobuo Kikuta, JGC Corporation, Sponsor, Yamal LNG Project
Marketable Oil/Gas Development Sites Shift: North American Shelves to Eurasian Ones
Glaobal Potential Arctic Energy Resources

(National Petroleum Management Association, 2014)
A potential LNG plant at Karan Nos would be linked to the South Tambey Gas Condensate Field via an offshore gas pipeline.
PROJECTS OF DEVELOPMENT OF OIL AND GAS AND DEVELOPMENT OF TRANSPORT INFRASTRUCTURE IN THE RUSSIAN ARCTIC

44 investment offshore and onshore projects with the maritime scheme of transportation located in 10 zones of economic activity
Weak Oil Price

Oil price (Arab light), USD/barrel

(Bloomberg, 2015)
Natural Gas Production and Prices (in 2015 $s)

A period of high prices from 2000 to 2008 incentivized the post-2008 shale revolution.

Sources: Energy Information Administration (1993-2012) & Point Logic (2013-2015), Bloomberg Professional (NG1 with generic rolls and CPI INDX)
Developing Northern Sea Route

Electric Charts and SAR Structure

NSR
Lines to Water Area, 2014

(Source: CNIIMF, 2014)
Sailing Distance:

Hamburg – Yokohama

Sailing Distances; from Hamburg to,
via Suez Canal or via NSR

Singapore
Bangkok
Manila
Hong Kong
Shanghai
Pusan
Yokohama

Hamburg – Yokohama
Kirkenes - Tomakomai

Sailing Distance from Kirkenes; via NSR, Suez Canal, Panama Canal, Cape

Tomakomai
Yokohama
Busan
Shanghai
Hong Kong
Singapore
Vladivostok
Vancouver

0 5000 10000 15000 20000
Nautical miles

Pusan; via the Tsugaru Strait
Number of Transited Vessels:
via Northern Sea Route  via Suez Canal

**Northern Sea Route**

- 2011: 41
- 2012: 46
- 2013: 71
- 2014: 55

Source: Northern Sea Route Information Office

**Suez Canal**

- 2011: 17,799
- 2012: 17,224
- 2013: 16,596
- 2014: 17,148

Source: Suez Canal Authority

Photo: Nordic Bulk Carriers
Freight Rate Fluctuation; 2011 – 2015

LNG Freight Rate

(Source: BIMCO, 2015)

(Source: Timera Energy, 2015)
Average Monthly Arctic Sea Ice Extent
September 1979 - 2015

Extent (million square kilometers)

Year


National Snow and Ice Data Center
Global Shipping Choke Points and Maximum Ship Size as of 2015

(Source: Carnel, Lloyd's Register and HKND Gr., 2015)
Figure 1.1. The OECD Industrial Production Index and indices for world GDP, merchandise trade and seaborne shipments (1975–2014) (base year 1990 = 100)

Active Faults around Japan

(As of 2013)

(Source: University of Tokyo, 2014)
Natural Gas End Use

(Source: EIA, 2015)
“A pessimist sees the difficulty in every opportunity. An optimist sees the opportunity in very difficulty.”

Winston Churchill

North Pole – 1: drifting ice station

1937, 89° 25’N

2,850km
234 days

1938, 70° 40’N

Ivan Papanin
Ernst Krenkel
Yevgeny Fyodorov
Petr Shishov

New Russian Nuclear Powered Multi-purpose Icebreaker (image)

(Source: ROSATOMFLOT, 2014)
Thank you for your kind cooperation

New Russian Marine Reactor, RITM-200 and Casing
Small, Light and High Efficiency

(ROSATOMFLOT, 2014)