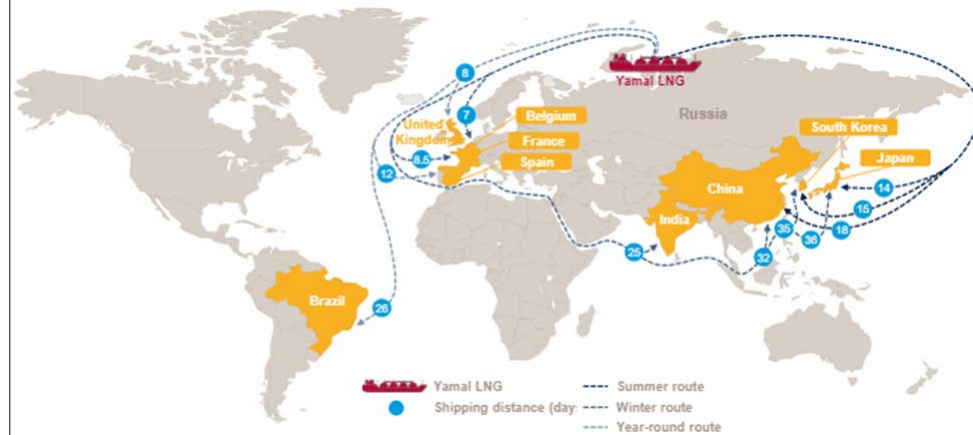


Arctic Ports and Infrastructure

Mark Rosen, CNA

Yamal



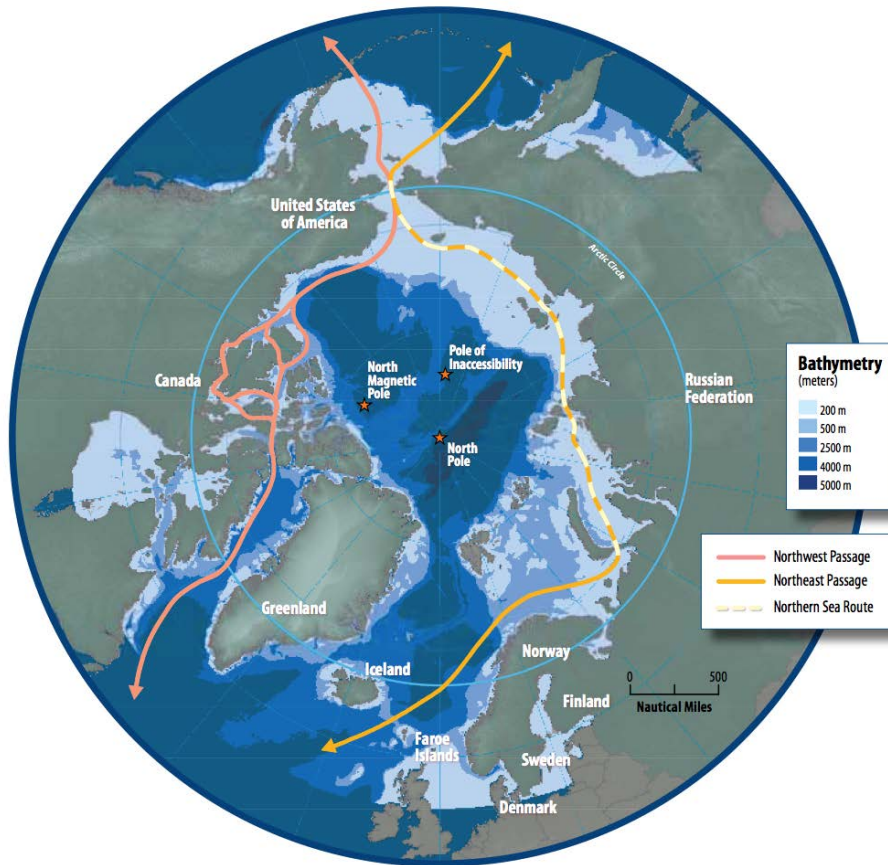
- The Yamal Megaproject is more than just a couple ice hardened tankers – it's a Deepwater port facility, LNG storage and feeder lines, permafrost resilient support buildings, and rail lines.
- Wells are on and off shore. LNG planned in Gulf of Ob. Owned by:
 - Gazprom (Pipeline, supply deal with CNPC)
 - Bashneft
 - Rosneft
 - Lukoil (Sinopec)

- Project Cost: \$27 bn
- Main export market: China
- Project Ownership:
 - Novatek (Russia): 50.1%
 - Total S.A. (France) – 20%
 - CNPC (China) – 20%
 - Silk Road Fund (China) – 9.9%
- Fleet of 15 LNG icebreaker/tanker vessels flagged in Cypres



Images. Above: Yamal LNG export destinations and transit time (U.S. Energy Information Administration). Right: Russian LNG Tanker Ports in Rudong LNG Terminal, China (Arctic Today).

The Northern Sea Route



- China is investing in infrastructure along the Northern Sea Route, as part of it's "Polar Silk Road" Initiative.
- In June, China and Russia agreed to a \$9.5 billion dollar credit agreement, which will fund select projects along the NSR
- Component of China's new Arctic Strategy, which includes "development of Arctic shipping routes, infrastructure and Construction, and marine research..."
- NWP - preliminary talks between China and Canada

China's Arctic Strategy – NSR, Yamal, Etc.

- China White Paper
- Strategic Intent – “Near Arctic State” “common heritage of mankind”
- Demand Signals for LNG and Oil and Rare Earth.
- China Interested in Controlling conduits of infrastructure
 - Data Silk Road
 - NW Passage ?
 - Equity Position in the NSR?
 - Past Overtures to make large Real Estate Purchases in Greenland including Thule
 - China uses its heavy research presence as a beachhead to mask larger presence
- Challenge for the US:
 - Ensure that NSR and NW Passage remain international sea routes. US should actively work with Russia (as recommended in Hoover study) to declare a routing measure and work with Canada.

What Does this Mean for the U.S.?

- US can decide whether it wants to play in the development of its resources BUT it cannot avoid:
 - Increased risk of an industrial accident;
 - Increased risk(s) associated with more vessels transiting through the Bering Strait;
 - Inadequate capacity to respond to any large scale incident; and most importantly
 - A legal environment in which other states are free to develop resources as they wish with few if any legal consequences.
- The USG needs to start making tangible investments in Arctic infrastructure and developing reciprocal Arctic development laws/policies which put the US on a level playing field.
 - The US cannot afford to economically retreat from the Arctic economic game and Alaska in particular
 - Public/Private Partnership funding should be fast tracked to enable Alaskan entrepreneurs to source their funding from US sources vs. from abroad.