

Project information

Keywords

shipping, northern sea route, drivers

Project title

Drivers for Arctic shipping: Transport alternatives, demand for minerals, and supply and demand of Russian icebreakers

Year

2014

Project leader

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Participants

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Flagship

Arctic Ocean

Funding Source

Fram Centre, Arctic Ocean Flagship

Summary of Results

As this is intended as a project for 2014 and 2015, so here we present both status for the work, and Results/findings.

Project status 31 January 2015:

This is a project that is planned to run for 2014-15.

It has the following WPs (part in 2014, in relation to original budget/application)

WP1 Mining and its transport alternatives(75% in 2014)

WP2 Mining demand and supply (100% in 2014)

WP3 O&G fields and transport (70% in 2014)

WP4 Icebreakers (75 % in 2014)

WP5 Synthesis/summing up (0% in 2014)

WP1 and WP4 have done considerable work, WP2 is finished, while WP3 is reviewing literature and documents to set up the overview of gas and oil fields and transport routes, and collecting data published on internet sites. Additional data from interviews is sought to fill in knowledge gaps. This is especially relevant when prices are fluctuating and the political situation creates uncertainties; there is a time lag between written sources and up-to-date interviews with experts.

WP1: A comprehensive mapping of all the Russian mining industry has been performed: Russian mineral and metal ore deposits and mines, railroads, Russian public development strategies (energy strategy, port strategy and railroad strategy), and strategies of the mining industry (major companies). A report is finished: Rautio and Bambulyak 2015.

WP2: Based on the mapping in WP1 it was identified which minerals and metals it was particularly important to gather world market, trade, export and transport data on. These were Bauxite, Coal, Copper and nickel, and Iron ore. Data sources have been i.a. Eurostat, Russian customs' statistics, UNCTAD. The data have been collected into a database that allows for easy compilation, presentation in tables, diagrams and maps, and analysis.

WP3: We are mapping extraction/production fields and reserves, as well as transport alternatives from different fields. We seek to get an overview of the amount transported by pipeline, rail and sea from northern Russia. We also try and deliberate potential changes in plans for extraction development and construction of transport alternatives, in light of the fluctuating oil- and gas prices, as well as the developing international situation generated from the tense Russian-Ukrainian relation.

WP4: Data collection has been performed at Arctic Shipping forum (Helsinki, April 2014) and in Russia in June 2014, and a paper is published (Moe 2014)

The project team had meeting in June, September and October to coordinate the work in this project, and also in relation to the Barents2020 project on Arctic shipping, with related content and FNI, Norut and Akvaplan as partners.

Normann participated in a seminar in april 2014 with the A-LEX project, and A-LEX also participated in our project meeting in September.

There has also been contact in June to coordinate with A-LEX research and activities, and a joint seminar/workshop was held in October with A-LEX, KGJebsen centre and our project.

Results/Findings:

There is no clear pattern in the use of the Northern Sea Route the last few years, not in terms of cargo nor destinations. The motivation for the international use of the NSR has been to test the route or utilise short-term opportunities in the market. There does not seem to be a clear strategic approach by shipowners or cargo-senders. Particularly for the short term potential for more transit sailings through the NSR and the NEP the scepticism (or realism) seem to be increasing.

Big infrastructure investment needs have been identified for the NSR, including for icebreakers, but the financing is uncertain. It seems probable that the icebreaker capacity in some years will be less than required for the Russian estimates of traffic growth. A possible shortage of icebreaker capacity is also very relevant for insurance for sailings on the NSR, as insurance companies are very concerned about this, and see available icebreaker assistance as paramount for safety and security.

The preliminary conclusions regarding the mineral industry increasing shipping of mineral products out through NSR are that there is in the near term a limited potential for this. Norilsk Nickel is the main user of NSR for transport of minerals, but is only sailing the Western part. There are at the moment no other ongoing or planned mineral activities along the NSR with potential for transport of large bulk volumes by sea. Norilsk Nickel could also be shifting substantial parts of its shipping from sea to rail if the Russian railroad strategy for 2030 is implemented, connecting Norilsk to the central railroad system. Iron ore concentrate represents the only mineral being shipped in transit between European Russia and Asia along the NSR today. There is a physical potential for increased mining near the NSR, but the main such mineral resource is coal, which will not be possible to extract economically – both with present prices, and in cost competition with coal mining in developed deposits in South Siberia and planned deposits much closer to the Asian markets, near existing transport (rail) infrastructure.

The volatility of world market prices for metals and minerals is another crucial factor to consider.

Regarding oil and gas and the potential for more Arctic shipping in the NSR, the LNG production at Yamal seems certain to produce traffic in the future, but it is unsure how much and how they will contribute to paying for icebreakers and other infrastructure. The current relatively low oil and gas prices have made the development of other petroleum projects in the Arctic less likely, but uncertainty is large, for instance, US oil interest has increased in the area the past few months. The current sanctions on Russia add uncertainty specifically about Russian developments, and also with respect to other nations seeking alternative sources for their energy supply.

See findings from Summary of Results and Conclusions.

Published Results/Planned Publications

Presentations fully or partially utilising results from this project:

- Berger, Stian 2014: Database related to Arctic shipping. Presentation at Seminar on Russia for Shipping projects. Tromsø, 21 October 2014.
- Mikkelsen, E and JA Røyset 2014: A new tool for actual Arctic shipping data. Presentation at Cooperation 66 Degrees North, Arctic maritime and security forum, 8-9 May 2014, Tromsø.
- Mikkelsen, E 2014: Arctic shipping projects. Presentation at Seminar on Russia for Shipping projects. Tromsø, 21 October 2014.
- Moe, Arild 2014: The Northern Sea Route; Smooth Sailing Ahead?, *Strategic Analysis*, 38(6), 837-55.
- Moe, Arild 2014: Utviklingen av den nordlige sjørute: Ambisjoner og komplikasjoner. Presentation at Seminar on Russia for Shipping projects. Tromsø, 21 October 2014.
- Normann AK and E Mikkelsen 2014: Impact of insurance on developing the Northern Sea Route. Presentation at Cooperation 66 Degrees North, Arctic maritime and security forum, 8-9 May 2014, Tromsø.
- Normann AK and E Mikkelsen 2014: Importance of insurance for developing the Northern Sea Route. Presentation at 10th Annual Arctic Shipping Forum, 8-10 April 2014, Helsinki.
- Rautio, Rune 2014: Kildetilgang ved kartlegging av russisk gruveindustri og strategier med potensial for utvikling av Den nordlige sjørute. Presentation at Seminar on Russia for Shipping projects. Tromsø, 21 October 2014.
- Rautio, Rune and Alexei Bambulyak 2015: Drivers for increased use of the Northern Sea Route - Russian mining industry status and prospects. Akvaplan Niva report 6545 / 6872.
- Moe, Arild: Arctic shipping – Market outlook and developments on the Northern Sea Route, Alfred Wegener Institut, Bremen, 28.10.2014
- Mikkelsen, Eirik 2015: Drivers for Arctic shipping. Presentation for EUs Joint Research Centre and the Norwegian Research Council. Tromsø, 22 January 2015.

Communicated Results

- Mikkelsen, E 2014: “Store mengder is skaper trøbbel i Nordøstpassasjen” (Large amounts of ice create trouble in the Northeast passage), *Aftenposten*, 24 August 2014.

Arild Moe: '[Nordleg sjørute ingen ny Suezkanal](#)' ('– The Northern Sea Route Is No New Suez Canal'), *BarentsWatch*, 16.12.2014. In Norwegian

Interdisciplinary Cooperation

The project has been performed by an interdisciplinary team, with researchers from political science, economics, economic geography, business, ICT/programming. This has been very valuable in the project, bringing together a total set of data from different sources and of different type, perspectives and theories that each individual researcher could not had alone, and which helps us understand the multitude of factors that affect future Arctic shipping.

Budget in accordance to results

The funding from the Fram centre has been essential to realize this project.

Could results from the project be subject for any commercial utilization

No

Conclusions

For the icebreakers:

In further assessments of the conditions for sailing on NSR it is important to look at not only the number of icebreakers but also on how they are managed. Coordination of nuclear and diesel-electric icebreakers is very poor today but could be improved and increase effectiveness.

The mappings of the mineral industry in the project have included the mining sector in all of Russia, not just in the Arctic region near the NSR, as this is necessary in order to understand also the alternatives the mining companies and the Russian Federation have to develop production in the Arctic. It seems likely that many of the deposits in the Arctic will not be competitive compared to deposits further south, especially if the transport costs are included. Strategic political concerns or coordinated infrastructure investments and industrial developments in private-public partnerships could change the equation, though. It is necessary to assess the overall Russian transport policies to be able to evaluate the potential for future destination traffic on the NSR, in particular the investments in railroad compared to sea transport.

It has so far not been possible to get reliable and updated data on export/shipments from regions or ports in Russia, although we have collected export data at the federal level. Further research should be done to get data on regional exports of relevant minerals, particularly from Russia's Arctic regions and ports, either by getting access to reliable Russian data on this (if it exists), or by estimating this by a combination of actual ship-traffic data (which is available by ship type from the Havbase-project which Fram has supported, but not by cargo), mining company data and monthly Russian export data (which we have in our database).