
Northeast Sea Passage as Complementary Arctic Transit Route to the Main Intercontinental Transport Corridors

Submitted 13/12/25, 1st revision 15/01/26, 2nd revision 20/02/26, accepted 28/03/26

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Abstract:

Purpose: The main aim of the research is to assess current importance of the Northeast Sea Passage for international shipping and trade, as well as indicate main barriers to its further development, hampering at the same time possibilities of transforming this Arctic sea route into logistically complementary passage to the major global land and sea corridors.

Methodology: To conduct this data-driven research, the following methods were applied: 1. critical literature analysis, 2 Data mining and analysis, 3. market analysis and 4. comparative analysis.

Findings: The research results indicate that the NEP has been used not only seasonally, but also primarily by coastal shipping. Its status as international sea route is rather potential, not real. There are many obstacles and barriers of various nature limiting the possibilities of its wider use. They mainly include: geopolitical, ecological, economic, operational, technical and logistics issues. Without the creation of an international broad cooperation platform interested in using it as transit sea route, capable of improving the quality standard of the global logistics space, it remains only a potential opportunity for global transport and trade.

Practical Implications: In the face of ongoing difficulties in using the Suez and Panama Canals, as was the case in 2023-2025, unblocking the northern ocean passage is becoming a major challenge of strategic importance for maintaining the dynamic development of global trade and transport and increasing the resilience of global supply chains.

Originality/Value: The study indicates the need to develop NEP as complementary transit route for shipping to not only the main world canals but also other open ocean and land transit routes recently intensively used or blocked. The global cost-benefit analysis of implementing such a project seems to indicate its rationality from an economic and logistical point of view. It provides an opportunity for creating an alternative to sometimes very risky traditional sea passages and founding at the same time coherent global logistics space.

Keywords: Northern Sea Route, Northeast Sea Passage, traffic intensity, management of transit passages, environmental and economic challenges

JEL classification: F55, F64, K33, L91.

Paper Type: Research article.

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1. Introduction

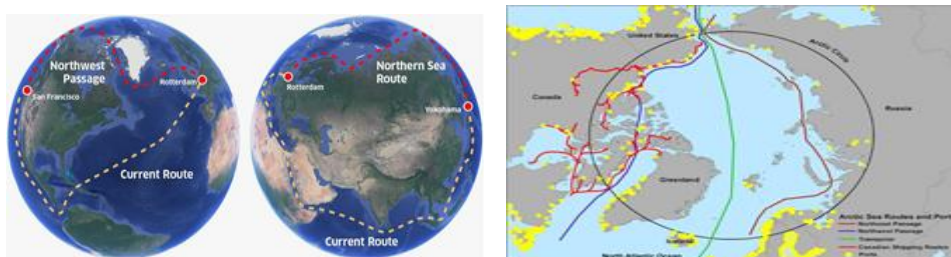
Global maritime transport, which already services over 81% of the world trade volume, i.e., 12.4 bn tons of cargo, while simultaneously accounting for 92% of total transport performance, operates on all oceans, seas, and waterways, accessible to seagoing vessels of various flags (UNCTAD, 2025).

However, the importance of individual navigable maritime transport routes on a global scale and the intensity of their use vary in time. They are usually subject to numerous changes over both medium and long periods, depending on the geopolitical stability in individual regions of the world, as well as climatic, oceanographic and, consequently, navigational conditions existing on the most frequently used international shipping routes.

It is precisely this type of geopolitical, climatic and weather disruptions that have occurred over the last two or three years. They have caused very severe restrictions on access to the Suez Canal (Houthi attacks on ships passing it) and Panama Canal (drought and extremely low water level), posing new, unpredictable long lasting, burdensome and complex challenges for shipping and global trade.

Climate change, clearly visible over the last 30 years, manifesting itself mainly in the form of so-called global warming and the consequent visible melting of glaciers in the southern and northern hemispheres, has for several years led some maritime countries and shipping operators seeking alternative, i.e., new and, above all, shorter transport routes to attempt to launch commercial-scale shipping through the so-called Northeast Passage (NEP) and the Northwest Passage (NWP). Both passages constitute the so-called Northern Sea Route (NSR) which runs through the Arctic regions, connecting the Pacific with the Atlantic Ocean.

Figure 1. The Northeast and Northwest Passages, along with an outline of the traditional sea routes currently used through the Suez Canal and the Panama Canal.



Source: Murphy (2021); Steven (2023); Gondek (2025); CHNL (2025a).

The NEP regarded as an integral part of the NSR is a shipping route connecting both oceans along the Arctic coast of Norway and Russia. In turn, the NWP is a series of

maritime routes that run through Canada's Arctic Archipelago and the coast of Alaska (Figure 1).

Another Arctic route includes the Transpolar Route which passes through the North Pole. Significant changes taking place in the Arctic area, both on land and especially on the marine areas in the recent decades, lead to gradually increasing interest in the possibilities of using Arctic areas for navigation purposes, including commercial navigation. Such interest has been fuelled by severe distractions and disruptions affected the vessels' passages, traditionally transiting via Panama and Suez Canals since 2023 what has encouraged trade and shipping sectors to search for new cargo transport routes in transcontinental relations, mainly the Far East-Europe relations (Grzybowski 2021; Larkin 2026).

2. Research Methodology and Literature Review

To meet the research goals and assess properly the current real importance of Northeast Passage for international shipping and trade, indicating at the same time the main barriers to its further development, hampering future prospects of transforming such natural sea route towards more frequently used passage, logistically complementar to the major global ocean canals, there were used a number of both quantitative and qualitative research methods and techniques.

As a part of the methodological triangulation formula, there were applied such methods and techniques as: critical literature analysis, factor analysis (FA) and mining of data obtained from many reports and studies issued by leading domestic and international organizations as well as institutes focusing on economic and environmental issues concerning Arctic area and NSRs. Furthermore, the market and comparative analysis (MA, CA) has been imposed.

Examining the current state and real prospects of the NEP's development as a key component of the NSR, it was necessary to use available and trustworthy sources and databases of existing Arctic portals as well as accessible reliable information, documents and expertises concerning this issues. In this respect, it was primarily used Shipping Portlet A which refers to the specialized information portal on the Arctic Portal, being a comprehensive online resource providing data, news, maps, and analysis on Arctic maritime transport, including new routes, infrastructure, environmental concerns, and legal issues.

There have been used also the rich resources of Aker Arctic, a private company specializing in development, design, engineering, consulting and testing services for ice-going vessels, icebreakers, offshore marine structures, marine transport solutions and ports.

The Rail Market.com was also an interesting source of information and data. It is a comprehensive digital and marketing platform providing real-time news, data, and

business intelligence for the European railway sector as well as other transport areas such as ocean and arctic shipping. In addition, there were used available resources of the Arctic and Antarctic Research Institute (AARI).

Scientific subdivisions of AARI are engaged in fundamental and applied research of the climate, the marine environment and the ice cover. The automated "Sever" ice-information system has been successfully used at AARI. The service is based on hydrometeorological information satellite monitoring and assists in conducting maritime operations in the Arctic safely and efficiently.

Another important source of information and data was Centre for High North Logistics (CHNL), a Norwegian-based organization focused on promoting sustainable, reliable, and innovative transportation, specifically regarding Arctic logistics and the Northern Sea Route. It is focused on research and facilitating logistics, shipping, and infrastructure development in the High North.

Malbitrans was another interesting source of information and data. MALBI-trans s.r.o. is an international transport and logistics company, specializing in freight forwarding between Europe, the CIS countries, Russia, and China. As a Czech-registered company with a focus on intermodal and railway transportation, particularly via the "Middle Corridor" (China–Kazakhstan–Caspian Sea–Azerbaijan–Georgia–Europe), heavily investing in optimizing supply chains, is very active in developing alternative routes, including the NEP.

When reviewing and analyzing the literature on the subject, there were taken into account always sources and information published on the Newsroom, Rosatomflot and Kommersand websites as well as the Polish national security news blog Bezpieczeństwo Krajowe (Rosatom, 2026, Arctic Portal, 2009).

A number of published sources and, above all, papers and scientific studies were also used to develop this complex and multifaceted issue. In this category, the publication issued by Elsevier on systematic literature review and policy implications of Arctic port infrastructure deserves a special attention (Rivas *et al*, 2022).

In turn, issues related to assessment of the economic viability of the NSR for container shipping amidst environmental and strategic policy shifts present in competent way up-to-date and comprehensive study published in *Polar Geography* in 2025 (Ge and Tan, 2025). Issues concerning the future of Arctic shipping and the assessment of the economic efficiency of transport in this polar region were presented in turn by H. Jóhannsson in *Arctic Portal* in 2024 (Jóhannsson, 2024).

The current role and strategic importance of the Northern Sea Route as an alternative to ocean routes and land connections between the Far East and Europe were highlighted and discussed in details in the article published by RailMarket News in

2024 (RAILMARKET, 2024). This type of interdisciplinary, cross-sectional publications contribute to a better understanding of the problems related to the use of Arctic passages in times of profound climatic, geopolitical and economic changes.

3. Transport and Logistics Potential of the NEP: An Analytical Approach

The Northeast Passage runs along the northern shores of Eurasia, including through the Barents Sea, the Kara Sea, the Vilkitsky Strait, the Laptev Sea, the East Siberian Sea, the De Long Strait, the Chukchi Sea, and the Bering Strait. Therefore, geographically NEP connects ports in Asia and the Far East with ports in Europe, i.e., the Atlantic.

Administratively, however, the NEP begins at the boundary between the Barents and Kara Seas (the Kara Strait) and ends in the Bering Strait (Cape Dezhnev). This means that the NEP itself does not include the Barents Sea, and it therefore does not reach the Atlantic. The total length of this waterway is 5,600 km (ALTAIR, 2025). As one of two other Arctic sea routes, is currently completely ice-free for only two months of the year. Some forecasts, however, suggest it could be fully navigable year-round as early as 2040 (Humpert, 2025; Steven, 2023).

As a result of the gradually lengthening navigation period, this Arctic route, will likely have been gradually gaining in popularity among shipping circles in the next decades. Although the Russian invasion of Ukraine in 2022 and the associated geopolitical tensions caused a decline in interest from European shipowners in this transport route in recent years, it may be changed under the pressure of other economic and geopolitical factors in the nearest future.

The entire route lies in Arctic waters and within Russia's exclusive economic zone (EEZ). NEP currently serves the Arctic ports and major rivers of Siberia by importing fuel, equipment, food and exporting timber and minerals. Currently, six major seaports are located on the NSR route in the Arctic Zone of the Russian Federation: Sabetta, Dikson, Dudinka, Khatanga, Tiksi, and Pevek ports.

In total, however, there are about 70 transshipment points and ports along the NEP, some of which are not directly on the coast but inland, e.g. Dudinka and Igarka (Rivas *et al.*, 2022; Rosatom 2026). The tests undertaken by European and Chinese shipowners so far have shown that, it is also possible to connect the NEP with the network of European ports, which potentially provide additional options for delivering goods e.g. from Far East countries to Europe and vice-versa. However, this does not mean that the transit time as a logistics factor will be always significantly shorter.

In terms of spatial distance (isodistant), the length of NEP in relation to alternative cargo transport routes from Yokohama to Hamburg is as follows: 1. Via the Northern Sea Route: 14.280 km, 2. Via the Suez Canal: 23.200 km; 3. through the

Cape of Good Hope: 29,400 km (Burdzik 2025). This potentially could reduce transport time and costs and, consequently, total logistics costs in the global supply chain, minimizing at the same time external costs in maritime transport due to lower CO₂ emissions. Moreover, using this route also potentially reduces the travel time of ships from Chinese ports to North America by up to 30% (RAILMARKET NEWS, 2024; Shtrek *et al.*, 2018).

However, at the same time, the climatic and atmospheric conditions that have a significant impact on the costs of sea transport, in the case of NEP are much less favorable, leveling out the effects resulting from the shorter distance. Sailing season lasts usually from July to October, i.e., only for 2-4 months of the year when the traffic is unhindered (Khon *et al.*, 2010; Gondek, 2024).

During the rest of the time each ship's voyage has to be accompanied by nuclear-powered icebreakers and is time and cost consuming. For this reason, this Arctic sea route is mainly used for cargo shipments between ports of the Russian Federation, i.e. coastal or destination shipping and not for transit voyages (ALTAIR, 2024).

Transit shipping utilises a certain route to transport cargo between non-Arctic ports. It is therefore shorter and saves time when compared to e.g. passing the Suez Canal or Panama Canal (A. Shtrek). Destination shipping, on the other hand, is cargo shipments of oil, liquefied natural gas (LNG), ore or coal from Arctic production sites to the market. It should be emphasized that the NEP following the Russian Arctic coast is the most known with high levels of destination shipments year-round, utilizing specially designed Arctic vessels and supporting icebreakers to safeguard transports (Idrissova *et al.*, 2021; Steven, 2024; Altair, 2024).

The undoubted advantage of this Arctic route is that it has the longest seasonal window for lower ice-class vessels. With Polar Code Category: 1. C vessels, the NEP can be used 2-3 months (August to October), 2. with Category B vessels, the NEP can be utilised 4-5 months (end of July to beginning of December) (Shipping Portlet 2025). However, this should be borne in mind that NEP transit shipping is sensitive to any form of disturbances, and with the current political situation, a sharp drop was seen in 2022 (CHNL 2025 b). A similar decline happened in 2014, when Russia changed the rules and regulations for the NSR transit (Steven, 2024).

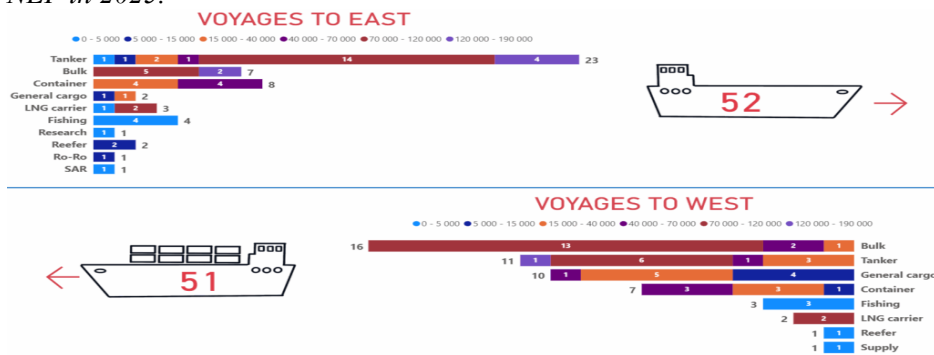
The analysis of the Arctic Council reports shows that between 2013 and 2019, cargo transport via the NEP increased by 25%, and the total distance covered by these vessels in 2019 was 9.5 M nm. In 2013 it was 6.51 M nm (Murphy, 2021). A breakthrough in this period, which was to herald a new era in the use of this route by container shipping, was the voyage of the Maersk's vessel *Venta* with a capacity of 3,600 TEU, which was the first to complete this route through the Arctic ice on the Vladivostok-St. Petersburg route in September 2018, without the support of icebreakers. However, the Danish shipowner Maersk Line treated this cruise only as a test and did not make further attempts to launch connections on this route.

In turn, in the period of 2020-2024, which was full of numerous turbulences (pandemic, war in Ukraine and its consequences for this region, other geopolitical upheaval as well as global economic disturbances, etc.), these previously observed trends in transport intensity and ongoing internationalization of this sea route has been radically slowed down.

Thus, in the period 2022-2024, only 97 vessels transited the NEP: in 2022 there were 39 journeys, in 2023 – 32, and in 2024 only 26, of which only 18 were international (11 westbound and 7 eastbound). In 2024, 1.89 M tons of crude oil and 877,000 tons of dry bulk cargo were transported in transit along this route (CHNL 2025 b). However, according to data from the ALTAIR Aviation Agency, a total of 37.9 million tons of cargo were transported along this route in 2024, which is over 1.6 million tons more than the previous record. In 2022-2023, total transport on this route averaged 34 M t (ALTAIR, 2025).

The 2025 navigation season on the NEP lasted roughly four and a half months (June 30 till November 17) and according to the CHNL, transit traffic on the Arctic corridor remained broadly robust, with a slight year-on-year increase in voyages and cargo tonnage (CHNL 2025 b). The NEP saw 103 transit voyages by 88 unique vessels in 2025, divided almost evenly between 52 eastbound and 51 westbound transits (see figure 2). Some ships completed two separate NSR passages during the season. Total transits are up slightly from 97 in 2024. Total cargo moving through the route reached an estimated 3.2 M tons (Rosatom 2025). Overall deadweight across all vessels recorded rose slightly to 6.23 M tons, up about 1 % from 2024.

Figure 2. Number of westbound and eastbound transit voyages by vessel type on the NEP in 2025.



Source: CHNL (2025); Humpert (2025); Rosatom Newsletter (2026).

According to Kommersant and the recorded results of the 2025 transit navigation season given by Rosatom, crude oil tanker shipments remain the dominant cargo on the NEP (Rosatom Newsletter 2026). Some voyages were directed to China, while

others involved crude oil deliveries with possible transshipment in eastern Russia. Based on the available data, the total volume of crude oil transported eastbound via the NEP declined from 1.91 MM tons in 2024 to 1.83 M tons in 2025. In the bulk carrier segment, there was observed cargo flows from Russia to China and an increased number of ballast voyages from China to Russia.

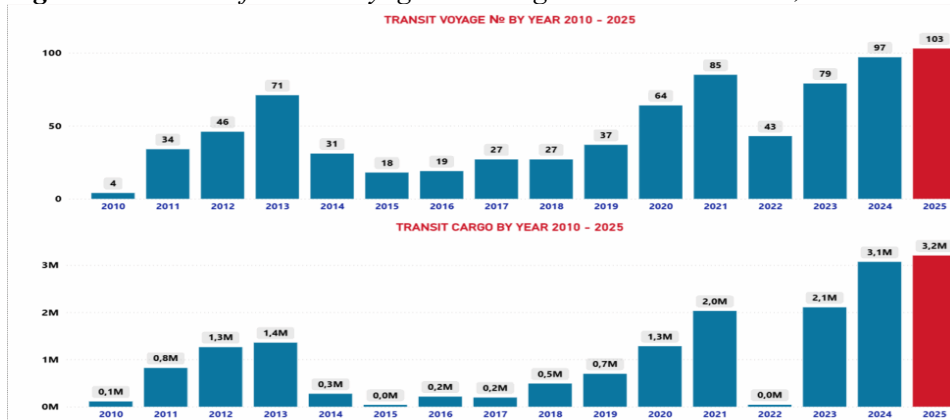
While container traffic showed an upward trend compared to 2024, with most voyages between Russian and Chinese ports, except for one shipment from China to the UK (ALTAIR 2025; Humpert 2025). These cargo flows exist year-round but typically follow traditional routes, with a portion switching to the NEP for few voyages in summer to save time. It should be stressed that presented data focuses exclusively on transit voyages, while the core cargo flow on the NSP remains the year-round export of raw materials from Arctic oil and gas projects (CHNL 2025; Shipping Portlet 2025, Steven 2024).

4. Research Results and Discussion

An analysis of transport operations conducted on the NEP, based on available data, shows that it is used seasonally for both transit and cabotage voyages. However, the number of vessels and transport volume, which are particularly important for assessing traffic intensity on this maritime route and need to be used to assess its development prospects, have fluctuated significantly over the last 15 years.

This issue is presented in a synthetic way in relation only to transit voyages which demonstrate the level of internationalization of this sea route (Figure 3). When analyzing the given figures, it is necessary to explain that official statistics on the number of voyages and cargo volumes are usually published by Rosatom after the shipping season ends (Stiven, 2024). Therefore, data for 2025 are only approximate and have been initially estimated.

Figure 3. Number of transit voyages and cargo volume on the NSR, 2010–2025.



Source: CHNL (2025); Humpert (2025); Rosatom Newsletter (2026).

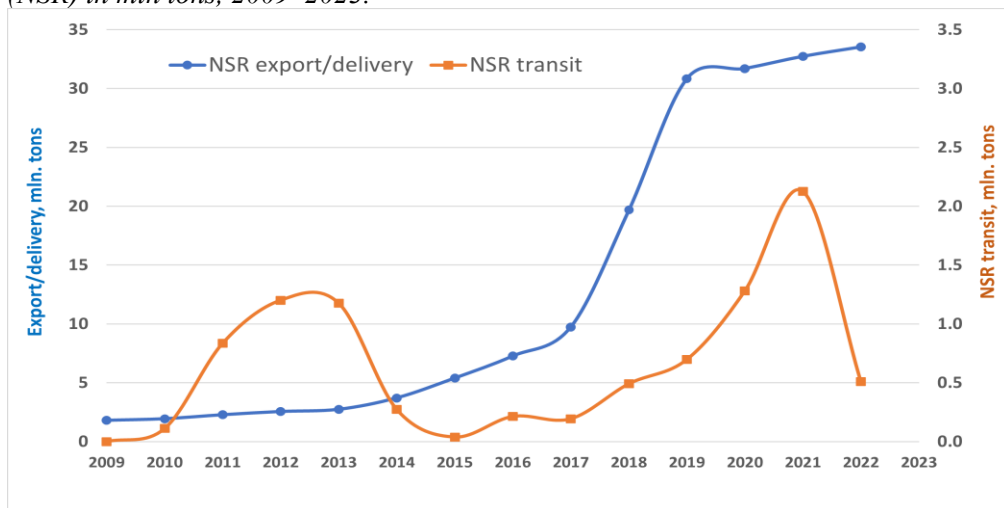
As can be seen from the data in table 3, both the number of transit voyages and the volume of transport in tonnes on the NSP were subject to significant fluctuations in the years 2010 - 2025, showing, however, a gradually increasing trend (Humpert, 2011; Gondek, 2024).

Therefore, the data indicate that the NSP in the transit transport segment is very susceptible to various types of disruptions that have occurred and already occur on this intercontinental sea passage. They were mainly caused by political, administrative and geopolitical reasons. Therefore, a sharp drop was seen not only in 2022 but also an almost similar decline happened in 2014, when Russia changed the rules and regulations for the NEP transit (Shtrek *at al.*, 2018).

On the other hand, destination shipping has been growing with a much greater dynamics since 2014 than transit transport, which was related to the growing importance of this Arctic sea route for the Russian Federation as a route of strategic importance for its economic interests (Figure 4).

Analyzing the transport carried out on the NEP over the last 20 years, both in the transit and cabotage segments, it can be concluded that this shipping route has in fact significant development potential. It is related, on the one hand, to the ongoing melting of ice and the facilitations it creates for navigation on this Arctic route, and on the other hand, to the scale of benefits it potentially creates as a shorter transport route in relations between the countries of the Far East and European ports.

Figure 4. Cargo volume transported in destination and transit shipping on NSP (NSR) in mln tons, 2009–2023.



Source: CHNL (2025a); (2025b); ALTAIR (2025); Humpert, (2025).

However, although glacier meltig is seen as the main driver for the reopening of the NEP for transit voyages, ice still covers the Arctic seas for most of the year

(November to July), making there year-round shipping without icebreakers currently impossible (Johannsson, 2024). Additionally, there are no guarantees on NEP when ice-free conditions start or end.

Moreover, throughout the summer drift ice originating further north is likely to be pushed into the shipping lanes by wind and ocean currents. Even during the summer months Arctic weather remains unstable (fog, poor visibility, violent winds, etc), enforcing not only reliance on icebreaker escorts, but also in such conditions strongly impact sailing being able to interrupt sometimes the pace of regular liner services, making them even impossible (CHNL, 2024). In fact it may drive additional transport costs not only for shipoperators but also for shippers and final consumers of goods passing this Arctic route.

Farther, it should be borne in mind that the lack of regular liner services or necessary schedule reliability along the NEP, regarded as intercontinental shipping corridor, represents a major obstacle to developing such an Arctic route. For the world's major container lines optimize their routes along a network of ports that offer developed communication lines into the hinterlands, e.g., river transport and railroads, to distribute goods to customers and consumers.

As the NEP between Murmansk and the Bering Strait passes along 2500 nmi of nearly uninhabited territory, no such infrastructure hubs are possible, strongly reducing the route's attractiveness for regular liner service shipping companies, operating on just-in-time cargo deliveries.

The ability to schedule journeys long-time in advance and to guarantee uninterrupted service are key factors for shipowners to hold or acquire a bigger market share. Therefore, scheduling uncertainty due to the Arctic environment and the lack of infrastructure in the hinterland, will prevent the route from becoming popular within container liner services (Humpert, 2025; Steven, 2024).

Moreover, the lack of infrastructure and suitable ports along the route renders ships unable to receive timely assistance in case of mechanical breakdowns or damage, and therefore, operating in such remote regions under harsh climatic conditions naturally translates into higher insurance premiums for cargo ship operators (ShippingWatch, 2025).

Whereas the medium shipping operators are very cautious and the likelihood they will wider use this Arctic route for commercial activity is far less than their bigger competitors. The cost, operational complications, and potential risk are simply too high, and the return and advantage are too small for them to become interested. The concerns of the stakeholders are a clear lack of infrastructure and information services, but more that the business case is not there, or at best, is unclear. As domestic shipping, fishing, and tourism is, however, expected to increase, there were strong concerns of limited search and rescue infrastructure and training.

For bulk dry and liquid carriers, in contrast, the route may increasingly represent an alternative to more traditional shipping routes. Bulk dry carriers follow less predictable schedules and their routes depend more on changing supply and demand of less time sensitive items. The NEP may also benefit from Russia's oil and natural gas developments in the Arctic which may be exported via the NEP (Gondek, 2024).

When analysing the development potential of this Arctic sea route and pointing out its current advantages and disadvantages for commercial maritime navigation, the first of these should be mentioned above all that the NEP represents a shortcut for the transfer of goods between Europe and Asia and thus by definition, somehow, offers significant cost savings for shipping companies.

Theoretically, distance savings along the NEP can be optimistically as high as 50% compared to the currently used shipping lanes via Suez or Panama Canals. Whereas a voyage from Japan to Europe takes roughly 29 days via the Cape of Good Hope and 22 days via the Suez Canal, it takes just 10 days via the Arctic Ocean (CHNL, 2025a). The actual sailing distance between Yokohama (Japan) to Rotterdam (Netherlands) is roughly 20,000 km passing through the Suez Canal, but less than 9,000 km via the NEP.

In view of the above, it can be said that the NEP has clear development prospects in the coming decades. However, due to high cargo and ship insurance as well as much higher operating costs (ice-class vessels, icebreaker assistance, higher crew costs, etc), the cost of delivery is currently about 30% higher than the cost of transport via the Suez Canal.

Nevertheless, given the current situation in the Red Sea, it may be an attractive business alternative for shippers and ship operators and such an option should not be overlooked or ignored. Such optimistic scenarios for the development of transport on the NEP route are increasingly presented in expert opinions and scientific studies, which indicate that there may be remarkable shifts in trade flows between Asia and Europe, diversion of trade within Europe, heavy shipping traffic in the Arctic and its substantial drop in Suez traffic (Larkin 2026; Ge and Tan, 2025).

However, projected shifts in trade also imply substantial pressure on an already threatened Arctic ecosystem, which raises a number of concerns among environmental groups, mainly in Scandinavian countries (ShippingWatch, 2025). Notwithstanding, the often expressed fears of environmentalists are not confirmed.

The study conducted by the Center for Marine Research showed that exceeding the maximum permissible concentrations in the atmospheric air, sea waters, and bottom sediments, which could indicate the impact of economic activities at this stage of development of the NEP was not recorded (Shipping Portlet, 2025; Humpert, 2025).

This gives a strong incentive to take action for its development in the nearest future. Such actions are undertaken primarily by China.

China National Petroleum Corporation (CNPC) signed an agreement with Sovcomflot (SCF), the largest operator of Arctic shuttle tankers and ice-class LNG carriers recently, to develop a long-term partnership in the field of seaborne energy solutions. The SCF fleet is currently serving the continually growing Chinese imports of hydrocarbons (Rosatomflot, 2025).

In Chinese shipping circles, NEP is called the “Arctic Golden Waterway” and a study conducted by the Shanghai Maritime University, estimates cost savings between \$60-120 billion per year if China makes extensive usage of Arctic shipping routes (Humpert 2011; Ge and Tan, 2025). In addition, China’s efforts to gain a foothold in Arctic shipping must be seen as an attempt to diversify the trade routes of its oil and natural gas supply and thus overcome its strategic weaknesses known as “Malacca syndrome.” Currently, 78 percent of China’s hydrocarbon imports pass through the narrow 1.5 nmi-wide channel at the Strait of Malacca (Ge and Tan 2025).

However, a strong incentive for the development of transport on this Arctic route comes primarily from the actions taken by Russia itself. Russia’s GDP is closely tied to its Arctic natural resource development which in turn depends on the ability to deliver these resources to the global markets, e.g., via pipelines or the NEP. Russia is seeking to tap Asian demand for oil and gas to help justify developing remote deposits in the Arctic and eastern Siberia.

Hence, Russia has a strong interest in developing the NEP into a commercially viable shipping route and ensuring access to one of the fastest growing consumer market for hydrocarbon resources, i.e. China and South-East Asia. Therefore, after the geopolitical tensions in this region subside and the economic sanctions imposed on Russia are eased, the economic factor may become one of the main stimulants of the development of transport in the NEP.

5. Conclusions

The disruptions of global supply chains that has been ongoing for last 6 years and the accompanying shocks in the commodities and transport markets caused by the growing wave of protectionism, as well as the serious geopolitical tensions that have generated severe distortions in the global logistics space, raise a number of questions regarding, among others, the future role of NEP as a complementary to the main sea and land routes which, as has been turned out, are very vulnerable to all these shocks.

In addition, the growing economic activity and interest of Russia and China in Arctic and NEP, as well as the gradually extending navigation season on this Arctic route,

raise vital for international trade and transport sector questions about the medium- and long-term prospects of shipping along the NEP. Generally the questions are: 1. whether do the NEP represents a commercially viable real alternative to traditional shipping routes and 2. what are the crucial variables in predicting the future of Arctic shipping on it ? Moreover, the open question is, whether the NEP would be compatible with already existed world trade patterns.

Author has tackled some of these questions only partially, indicating at the same time that this issue is very complex in its nature and needs to be a subject of coherent, coordinated on international level activities and decisions. All these questions are actually addressed to the international community and key international organizations.

At this level a compromise should be reached indicating who and to what extent will be responsible for organizing safe and prosperous utilization and paying for needed further developments of the NEP. Neither the shipping nor the insurance companies currently see a clear role here for them to play (Humpert, 2025). Moreover, the questions and concerns are more relevant now in 2026, given the more complex geopolitics and constraints in international collaboration in business, and policymaking (Larkin, 2026; Rosatomflot, 2026).

Practically, there is no other way than the one indicated above, that the development of the NEP needs to be an international undertaking and, therefore, business and shipping sectors committed in the Arctic exploration have to develop this sea route within a global context (Ge and Tan, 2025; Larkin, 2026).

Consequently, there is a clear and important need for ongoing internationally driven research and improved integrated observations, new information services, clear regulations, and infrastructure development in the Arctic region, not least related to search and rescue services (Johannsson, 2024; ShippingWatch, 2025).

In this context, the ongoing Russian Yamal LNG project may be regarded as a case study and an immediate test of the viability of the Northeast Sea Route and its potential role as the blue economic corridor. Any future activities will likely be driven by the largest international companies, supported by direct mandate of governmental bodies, cooperating closely with international economic organisations.

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