With climate change opening up new commercial shipping opportunities in the Arctic, ***Edward Murray*** *looks at the prospects for trade through the region and the underwriting difficulties it represents*

BREAKING THE ICE

Sitting on top of the world, the Arctic sea ice, which has for so long protected the underlying energy assets and restricted shipping routes, is giving way to global warming.

Without its rich reserves of hydrocarbons, commercial interest in the Arctic would be limited. However, the energy assets the territory contains are immense and a US geological survey in 2008 estimated there were more than 412 billion barrels of untapped oil and oil equivalent up for grabs.

Shipping lane

In conjunction with these rich pickings, climate change is affecting how far the Arctic sea ice recedes each summer, encouraging excitement around the possibility of a sustainable, commercial, trans-Arctic shipping lane.

The idea is not a new one – people have been investigating it for years. However, the practicalities of it have always been limited and only now, in light of changing temperatures, does it look like a viable and indeed reliable option for commercial shipping.

Essentially, the receding ice makes it possible for ships to sail between the Atlantic and Pacific Oceans by voyaging across the Arctic. There are two recognised routes: the Northern Sea Route (NSR) and the Northwest Passage. The Northwest Passage runs along the Canadian and Alaskan seaboard, while the NSR is along Russia's coastline from the Kara Gate to the Bering Strait.

For now, it is the NSR that is attracting most of the attention and which looks the most likely corridor to be reliably ice free for the longest period of time during the summer months. Indeed, during the summer of 2011 when the NSR was largely ice free, multi-year ice up to six metres thick was still to be found in the Northwest Passage.

However, despite the fact that the NSR cuts journey distances between northern Europe and north-east Asia by up to 40%, there are still significant obstacles to be overcome before it starts paying reliable dividends to ship owners.

Harsh conditions

The International Northern Sea Route Programme, a research project carried out between 1993 and 1999, undertook extensive research into the viability of the NSR. At the time it cited a number of challenges to be overcome before the NSR could become a feasible option for large numbers of ships.

It stated: "The most obvious obstacles to commercially viable shipping in the NSR are the harsh natural conditions, including ice most of the year. Even though modern technology can overcome such practical difficulties, the investments needed to build a fleet of adequate ice-classified cargo vessels are staggering. An equally big problem is for Russia to muster the political and economic strength needed to uphold a stable, well-functioning infrastructure along the NSR, the most crucial task being to maintain the capacity of the Russian ice-breaker fleet."

Similarly, the *Arctic Marine Shipping Assessment* 2009 report also highlighted barriers to successful commercial shipping in the Arctic: "For safe operations in the Arctic there is a need for the same suite of meteorological and oceanographic data, products and services as in other oceans, plus comprehensive information on sea ice and icebergs.

"Except in limited areas of the Arctic, there is a lack of emergency response capacity for saving lives and for pollution mitigation. There are serious limitations to radio and satellite communications and few systems to monitor and control the movement of ships in ice-covered waters.

"The current lack of marine infrastructure in all but a limited number of areas, coupled with the vastness and harshness of the environment, makes conduct of emergency response significantly more difficult in the Arctic."

Significant progress in many of these areas has been made and in October last year Russia announced that work would begin on building four new ice breakers, worth €1.8bn. There are also plans for another two to be commissioned.

In addition, the development of 10 new centres for search, rescue and communication along the NSR has also been announced.

Underwriting difficulties

Despite the improvements being made, there are clearly challenges for underwriters when it comes to pricing the marine insurance carried by ship owners for vessels operating in this area.

Mike Thompson is marine underwriter at Montpelier Syndicate 5151 and also chairman of the Navigating Limits sub-committee of the Lloyd's Market Association's Joint Hull Committee.

For ship owners looking to send their vessels across the Arctic, he says there is no set scale for the additional premiums required. He comments: "Standard cover is on a worldwide basis excluding certain areas including the Arctic and anything north of 70 degrees. The annual navigating premium is based on things like the record of the ship, its age and its condition and for each breach voyage into a restricted area, a percentage of that premium will be charged."

At the moment, Mr Thompson says there are a lot of enquiries into cover, although there is not any volume to speak of. Indeed, during the summer of 2010, there were only four transit voyages across the Arctic, moving 111,000 tonnes of cargo into the Asia-Pacific region.

As part of this, the Norwegian Tschudi Shipping Company, through its subsidiary Tschudi Arctic Transit and Nordic Bulk Carriers, carried 41,000 tonnes of iron ore concentrate on the *MV Nordic Barents*.

Discussing the voyage, chairman of the shipping company Felix. Tschudi, says: "It has been our ambition for years, so we are very happy to finally have the opportunity to do this voyage. The NSR can be of great importance for the companies in northern Scandinavia and on the Kola Peninsula which ship oil, gas, minerals and other raw materials to the increasingly important Asian markets."

Last year, trans-Arctic shipping traffic amounted to 34 vessels moving 820,000 tonnes, which represents a sizeable increase.

Logistical obstacles

Despite the growing appetite for use of the NSR, there are numerous logistical concerns to deal with as well as those created by harsh weather conditions, poor availability of accurate seabed mapping and underdeveloped infrastructure.

The NSR runs through Russian waters and compliance with its rules and regulations is required for ships wishing to secure permission to undertake this passage.

The Northern Sea Route Administration ↘

AN ILLUSTRATION OF TYPICAL METEOROLOGICAL CONDITIONS ALONG THE NSR:

Winter Season	Oct-May	Oct-June	Oct-May/June
Temp typical	-26°C	-30°C	-21°C
Temp extreme	-48°C	-50°C	-48°C
Ice thickness	1.8m-2.5m	1.6m-2.5m	1.2m-2.m
Fog	100 days	75 days	80 days

Summer Season	June-Sept	July-Sept	Mid June-Sept
Temp typical	7°C	8°C	15°C
Temp extreme	20°C	26°C	30°C

THE CII IS WORKING TOWARDS A BETTER UNDERSTANDING OF THE RISKS CREATED BY CLIMATE CHANGE

As part of its Chartered centenary celebrations, the CII is undertaking a series of research reports into future risks likely to shape the insurance sector. The latest of these looks at future risks related to climate change and energy security. Within the report, five world-leading experts, including the government's chief scientific adviser Professor Sir John Beddington, discuss the global implications of climate change and how we might avoid disastrous outcomes through effective mitigation and adaptation.
This research and previous Future Risk reports can be found at:
www.cii.co.uk/knowledge/policy-and-public-affairs/

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