

A large, white iceberg floats in the dark blue Arctic sea. The iceberg has a prominent natural archway in its center. Through this archway, a small, dark-colored ship with a yellow cabin is visible in the distance. The sky is a deep blue with scattered white clouds. A small bird is seen flying in the upper right corner of the frame. The water in the foreground is dark and reflects the sky and the iceberg.

How implementation of the Polar
Code and other relevant
instruments could contribute to the
green economy in the Arctic

Andrey Todorov, 2021

Increase in Arctic Shipping

Shipping in the Arctic has increased in recent years.



Source: PAME ARCTIC SHIPPING STATUS REPORT (ASSR) #1 March 31, 2020

Unique ships entering the Polar Code area 2013 and 2019.

International legal instruments relevant to Arctic shipping

1. The International Code for Ships Operating in Polar Waters (Polar Code)

PC, Main Environmental Rules

HOW THE **POLAR** CODE PROTECTS THE ENVIRONMENT

OIL



DISCHARGES
Discharge into the sea of oil or oily mixtures from any ship is prohibited



STRUCTURE
Double hull and double bottom required for all oil tankers, including those less than 5,000dwt (A/B ships constructed on or after 1 January 2017)



HEAVY FUEL OIL
Heavy fuel oil is banned in the Antarctic (under MARPOL). Ships are encouraged not to use or carry heavy fuel oil in the Arctic



LUBRICANTS
Consider using non-toxic biodegradable lubricants or water-based systems in lubricated components outside the underwater hull with direct seawater interfaces

INVASIVE SPECIES



INVASIVE AQUATIC SPECIES
Measures to be taken to minimize the risk of invasive aquatic species through ships' ballast water and biofouling

SEWAGE



DISCHARGES I
No discharge of sewage in polar waters allowed (except under specific circumstances)



TREATMENT PLANTS
Discharge is permitted if ship has an approved sewage treatment plant, and discharges treated sewage as far as practicable from the nearest land, any fast ice, ice shelf, or areas of specified ice concentration



DISCHARGES II

- Sewage not comminuted or disinfected can be discharged at a distance of more than 12nm from any ice shelf or fast ice
- Comminuted and disinfected sewage can be discharged more than 3nm from any ice shelf or fast ice

GARBAGE



PLASTICS
All disposal of plastics prohibited (under MARPOL)



FOOD WASTES I
Discharge of food wastes onto the ice is prohibited



FOOD WASTES II
Food wastes which have been comminuted or ground (no greater than 25mm) can be discharged only when ship is not less than 12nm from the nearest land, nearest ice shelf, or nearest fast ice



ANIMAL CARCASSES
Discharge of animal carcasses is prohibited



CARGO RESIDUES
Cargo residues, cleaning agents or additives in hold washing water may only be discharged if they are not harmful to the marine environment; both departure and destination ports are within Arctic waters; and there are no adequate reception facilities at those ports. The same requirements apply to Antarctic area under MARPOL

BACKGROUND INFO

- ❄️ THE INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS WILL ENTER INTO FORCE ON 1 JANUARY 2017
- ❄️ IT APPLIES TO SHIPS OPERATING IN ARCTIC AND ANTARCTIC WATERS; ADDITIONAL TO EXISTING MARPOL REQUIREMENTS
- ❄️ IT PROVIDES FOR SAFE SHIP OPERATION AND PROTECTS THE ENVIRONMENT BY ADDRESSING THE UNIQUE RISKS PRESENT IN POLAR WATERS BUT NOT COVERED BY OTHER INSTRUMENTS

DEFINITIONS



SHIP CATEGORIES
Three categories of ship designed to operate in polar waters in:

- A) at least medium first-year ice
- B) at least thin first-year ice
- C) open waters/ice conditions less severe than A and B



FAST ICE: Sea ice which forms and remains fast along the coast, where it is attached to the shore, to an ice wall, to an ice front, between shoals or grounded icebergs



ICE SHELF: A floating ice sheet of considerable thickness showing 2 to 50m or more above sea-level, attached to the coast

CHEMICALS



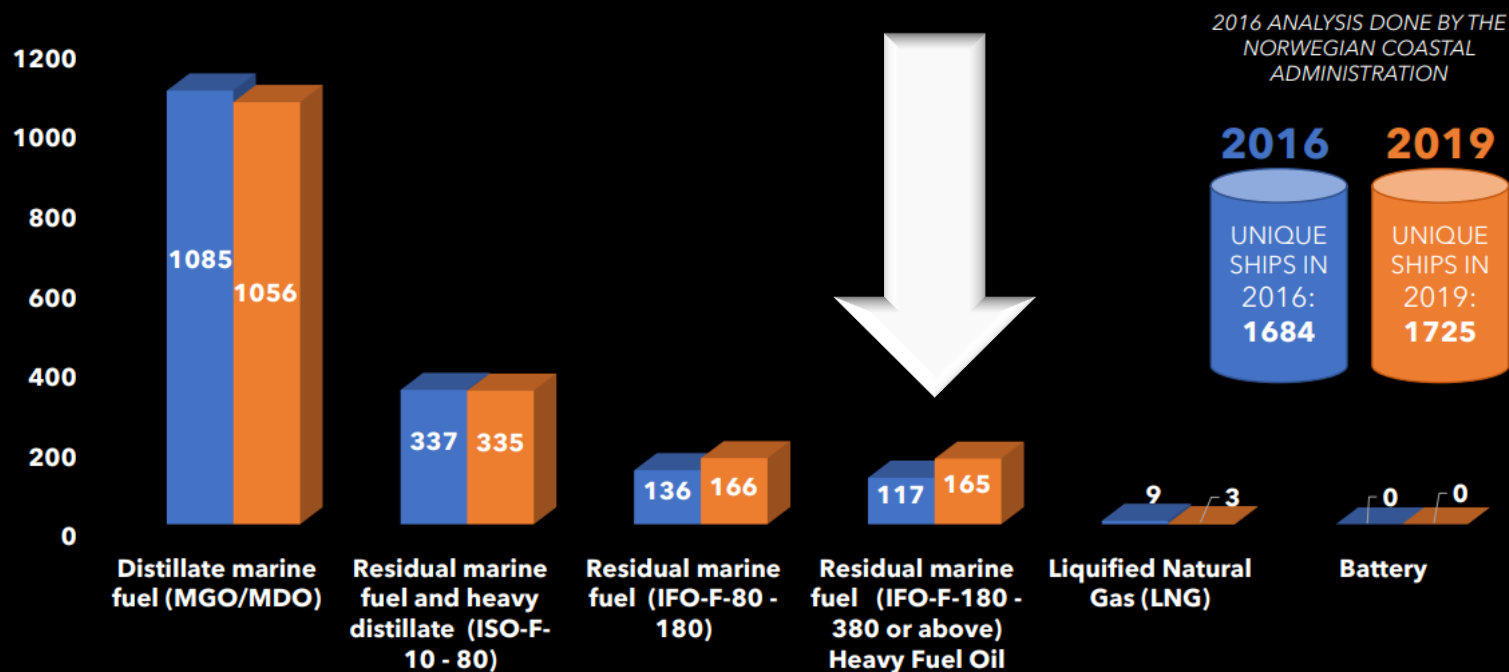
DISCHARGES
Discharge of noxious liquid substances (NLS) or mixtures containing NLS is prohibited in polar waters

International legal instruments relevant to Arctic shipping

1. The International Code for Ships Operating in Polar Waters (Polar Code)
2. As of 1 January 2020, the allowable amount of sulphur content in fuel was reduced to 0.5% m/m. (resolution MEPC.280(70))

Use of Heavy Fuel Oil (HFO) in the Arctic

THE NUMBER OF UNIQUE SHIPS IN 2019 AND 2016 ARE ALMOST IDENTICAL



Source: PAME Report "HEAVY FUEL OIL (HFO) USE BY SHIPS IN THE ARCTIC 2019", October 2020

International legal instruments relevant to Arctic shipping

1. The International Code for Ships Operating in Polar Waters (Polar Code)
2. As of 1 January 2020, the allowable amount of sulphur content in fuel was reduced to 0.5% m/m. (resolution MEPC.280(70))
3. Prohibition on the use and carriage for use as fuel of heavy fuel oil (HFO) by ships in Arctic waters on and after 1 July 2024. Ships which meet certain construction standards with regard to oil fuel tank protection (ships with oil fuel tanks located inside the double hull) would need to comply on and after 1 July 2029. Other exemptions. (MEPC 75, November 2020)

Use of HFO in the Arctic

Source: PAME Report “HEAVY FUEL OIL (HFO) USE BY SHIPS IN THE ARCTIC 2019”, October 2020

Density map of ships using HFO as fuel

Arctic Polar Code Area 2019



Residual marine fuel
(ISO-F-180 - 380 or
above) HFO

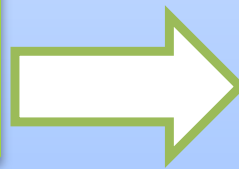


International legal instruments relevant to Arctic shipping

1. The International Code for Ships Operating in Polar Waters (Polar Code)
2. As of 1 January 2020, the allowable amount of sulphur content in fuel was reduced to 0.5% m/m. (resolution MEPC.280(70))
3. Prohibition on the use and carriage for use as fuel of heavy fuel oil (HFO) by ships in Arctic waters on and after 1 July 2024. Ships which meet certain construction standards with regard to oil fuel tank protection (ships with oil fuel tanks located inside the double hull) would need to comply on and after 1 July 2029. Other exemptions. (MEPC 75, November 2020)
4. IMO initial strategy on the reduction of greenhouse gas (GHG) emissions from ships. Goal: By 2050 to reduce CO₂ emissions by 50% relative to 2008

Implications for the Arctic economy

Stricter
requirements

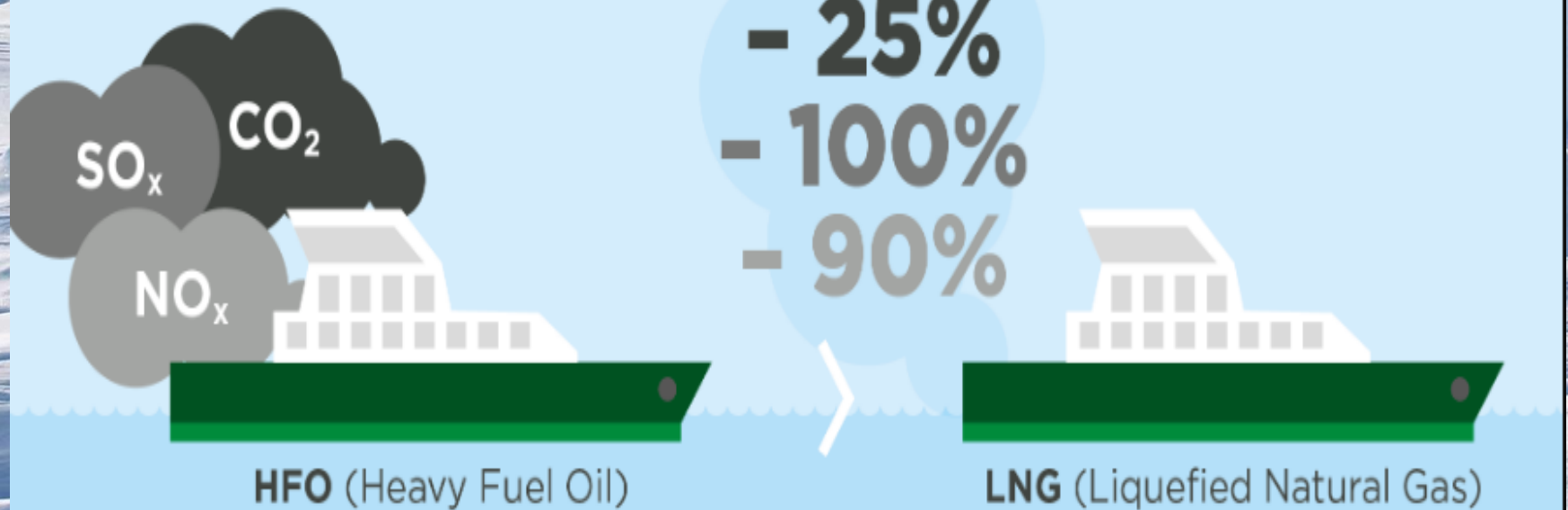


Shift to greener
vessels and fuels

Russia: Shift to LNG

Emission reductions when switching to LNG

Shipping

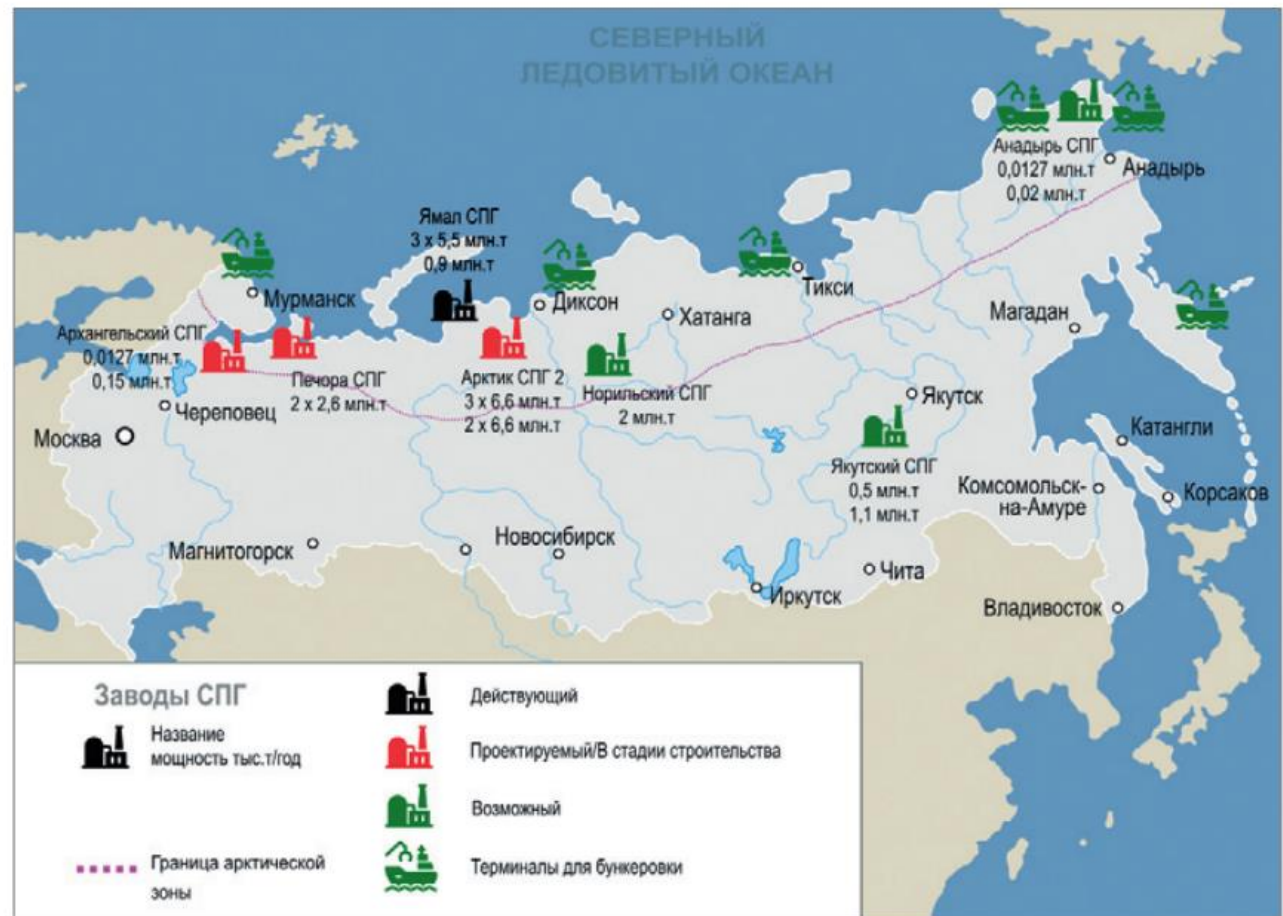


Russia: Shift to LNG

Рисунок 1.

Схема размещения СПГ заводов в Арктической зоне

LNG facilities in the Russian Arctic



Source: A. Klimentiev,
A. Knizhnikov, A.
Grigoriev, WWF, 2017

Источник информации: оценки авторов –
Аналитический обзор «Перспективы и возможности использования СПГ
для бункеровки в арктических регионах России»,
А.Ю. Климентьев, А.Ю. Книжников, А.Ю. Григорьев, WWF, 2017



Thank you for attention!