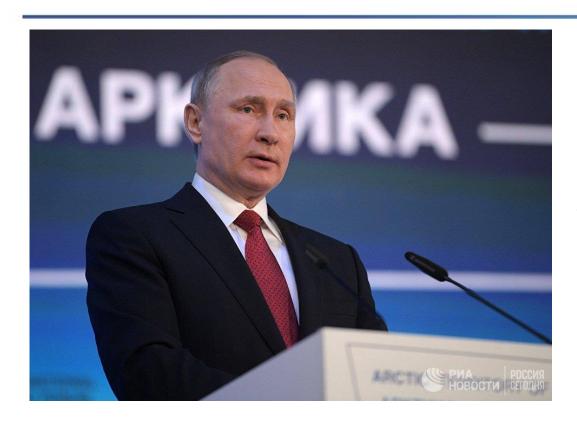


# **ROSATOM Functions as the Infrastructural Operator of the Northern Sea Route**



### **State Policy in the Sphere of Arctic Development**





We are facing ambitious tasks of the Arctic and the Northern Sea Route development. This does not mean mineral resources production and creation of such gas liquefaction enterprises only, it means further development of nuclear shipbuilding. Development of the icebreaking fleet and the Northern Sea Route will make it possible to perform shipments from the Yamal LNG to all parts of the globe and all year round".

President of the Russian Federation Vladimir
Putin
Sabetta, December 08, 2017

I already mentioned this but I would like to repeat – rephrasing the great Lomonosov who said that Russia will expand through Siberia. Now Russia should expand through the Arcrtic, since there we have our main supply of mineral resources.

President of the Russian Federation Vladimir Putin major press-conference December 14, 2017

# Presidential Decree On National Objectives and Strategic Tasks of Russian Federation's Development in the Period up to 2024 (extract)



- 15. Government of the Russian Federation to prepare in accordance with Strategy of spatial development of Russian Federation in collaboration with regional public authorities and by 01 October adopt a comprehensive plan of modernization and expansion of backbone infrastructure, which should ensure by 2024::
- a) Development of "West-East" and "North-South" transport corridors for cargo transportation, through, among others::

<...>

Development of Northern Sea Route and increase flow of goods through it to 80 million tons.



## The "Two Keys" Approach to Managing the Northern Sea Route according to the Federal Law #525 dd December 27, 2018





- Adopts the Rules of Navigation on the Northern Sea Route;
- Adopts the Plan of the Northern Sea Route Infrastructure Development.





- Regulation of navigation via the Northern Sea Route;
- International obligations of Russian Federation;
- Federal state supervision in the sphere of transport;
- State port control of vessels;
- Legislative regulation, control of navigation safety;
- Harbour masters management;
- List of port dues adoption.





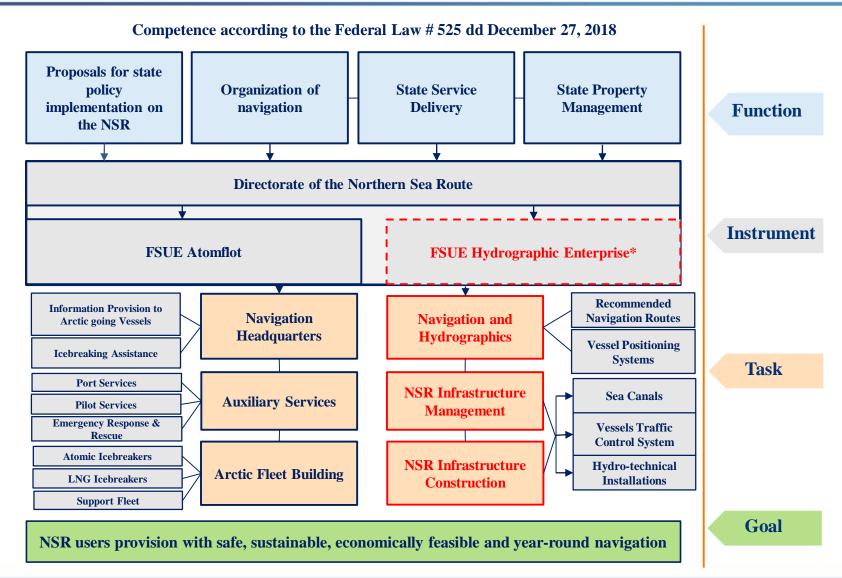
- Management of state Arctic icebreaking fleet;
- Proposals for state policy implementation on the NSR, building sea ports and objects of infrastructure;
- Management of state property;
- Organization of navigation;
- Provision of safety of navigation.

#### Ministry of Transport adopts after approval from Rosatom

- Mandatory regulations in the seaport;
- Rules of icebreaking assistance on the NSR, rules of ice piloting of vessels, etc.;
- List of port dues charged in each NSR seaport;
- Decision to establish a seaport on the NSR, etc.

## State Corporation ROSATOM is the Infrastructural Operator of the Northern Sea Route





## Required Icebreaking Capacity to Provide Year-Round Traffic of 80 mln. tons via the Northern Sea Route







**AIB 60 MW** 



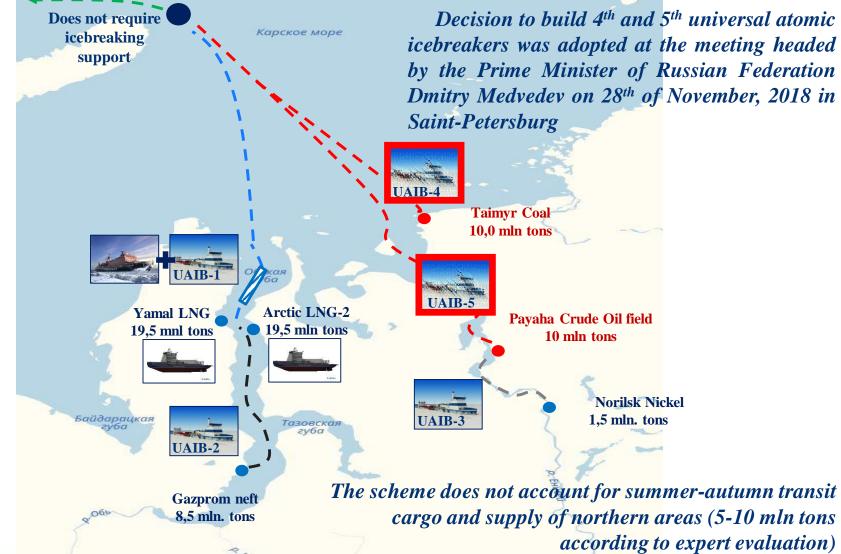
AIB 54 MW



IB LNG 40 MW

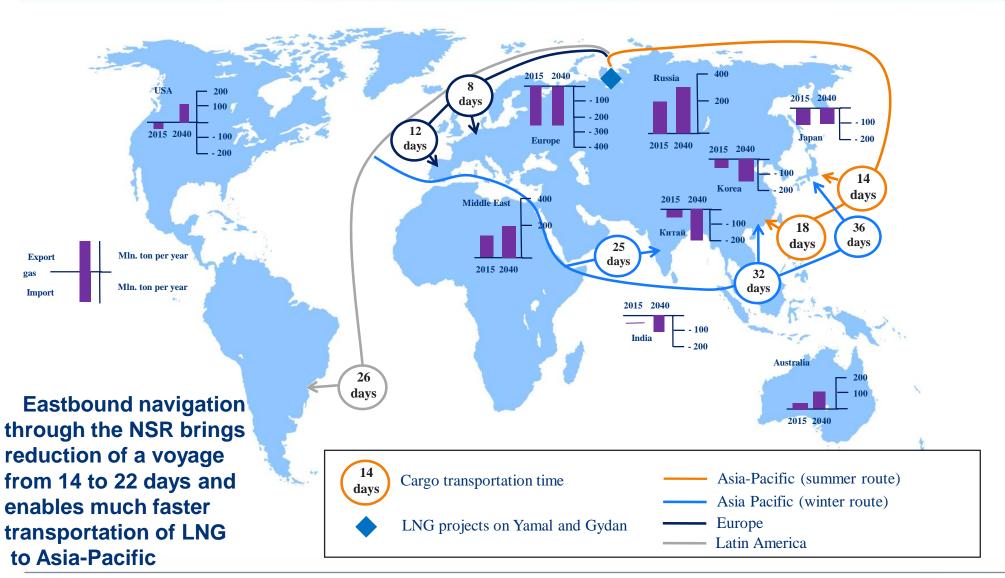


Sea Canal in Obskaya Bay to Sabetta Port



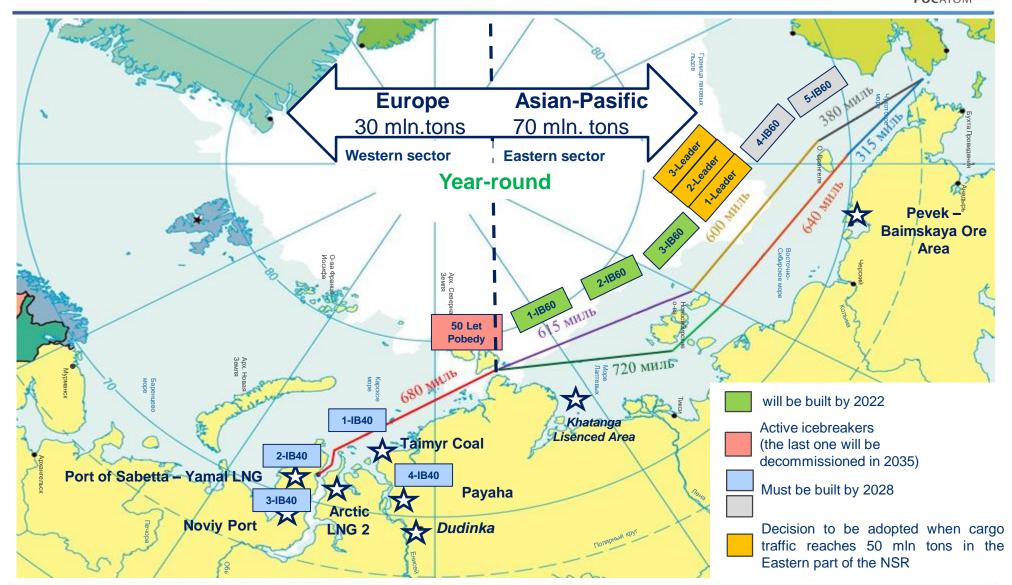
# Transportation of LNG from Obskaya Bay (Yamal Peninsula / Gydan Peninsula)





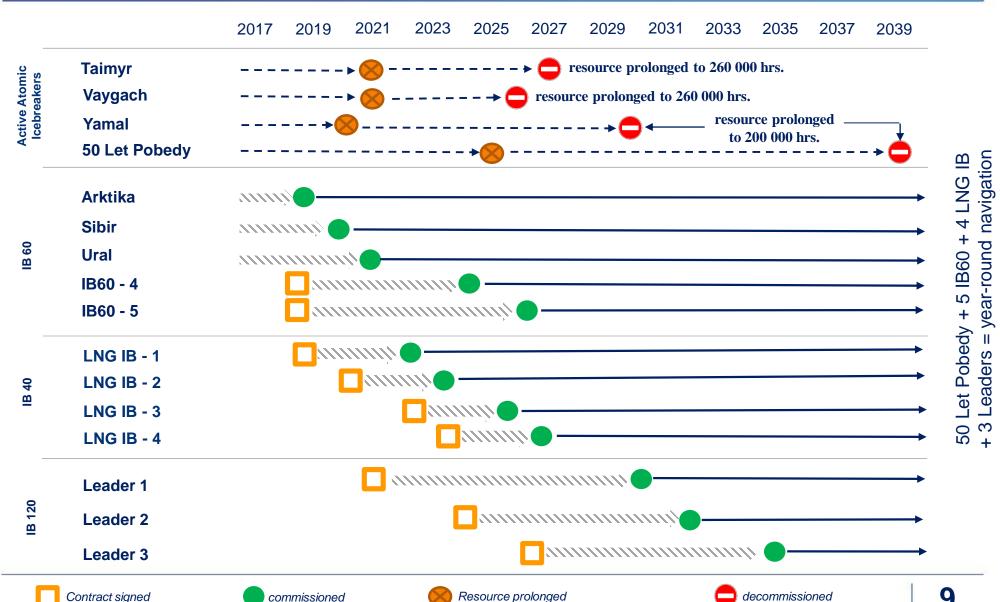
### **Arctic Fleet Positioning by 2035**





### Number of Icebreakers will be increased from 4 to 13 Vessels to Ensure Cargo **Volume Growth and Year-Round Navigation via the Northern Sea Route**





## New Generation Icebreakers is the Basis for Year-round **Navigation along the Northern Sea Route**





(IB60) with the propulsion power of 60 MW



Universal atomic icebreaker Project 22220 Atomic turbo-electric icebreaker Project 105010 (**IB Leader**) with the propulsion power of 120 MW



Line Icebreaker Aker ARC 123

#### 

-8,55 m. Water displacement -33540 tons.

MW.

#### **Icebreaking capability:**

The icebreaker navigates with even speed of 1,5-2 kn at full draught and power through flat solid ice with maximum thickness of 2.9 - 3.0 m.

#### KM © Icebreaker9 [2] AUT2-ICS EPP SDS<60 **HELIDECK-H Special purpose ship**

Length - 173,3 m, beam - 34 m, draught Length - 209,0 m, beam - 47,5 m, maximum maximum - 10,5 m, minimum operating draught draught - 13,0 m, water displacement - 70 674 tons

IB60 is equipped with dual-reactor nuclear power IB Leader is equipped with dual-reactor nuclear plant RITM-200 with the overall power of 175 power plant RITM-400 with the overall power of 315 MW.

#### **Icebreaking capability:**

The icebreaker navigates with even speed of 1,5-2 kn at full draught and power through flat solid ice with maximum thickness of 4,1 m.

Ice class: **Icebreaker8** (designed for RMRS)

Propulsion power: 40 MW

Length overall: 154,8 m (with towing notch –

160.0 m) Beam: 31,4 m

Draught max: 9.0 m

Main fuel type: Liquefied Natural Gas

**Icebreaking capability**: flat ice 2,85 m thick with constant speed 2 knots

## **International Transit Voyages via the Northern Sea Route in 2018**







## **International Transit Voyages via the Northern Sea Route in 2018**



Vessel	Ice Class	Gross-tonnage	Shipowner	Cargo
mv "Tian Hui"	Arc 4	26 787	COSCO	General cargo 29 938
mv "Tian You"	Arc 4	26 787	COSCO	General cargo 12 824
mv "Tian Jian"	Ice 1	26 770	COSCO	General cargo 29 772
mv "Tian You"	Arc 4	26 787	COSCO	General cargo 12 824
mv "Tian Jian"	Ice 1	26 770	COSCO	General cargo 29 772
mv "Tian En"	Arc 4	26 787	COSCO	Equipment 4 756
mv «Venta Maersk»	Arc 4	34 882	Maersk LTD	Frozen Fish 32 716
mv «Haaga»	Arc 4	19 955	ESL Shipping	Coal 16 049
Nordic Olympic	Arc 4	41 071	Nordic Bulk Carriers	Iron Ore 72 211
Nordic Oshima	Arc 4	41 071	Nordic Bulk Carriers	Iron Ore 72 288



Thank you for your attention!