



On the prospects for the development of oil and gas complex in the East of Russia in the context of energy cooperation with the countries of North-East and South-East Asia

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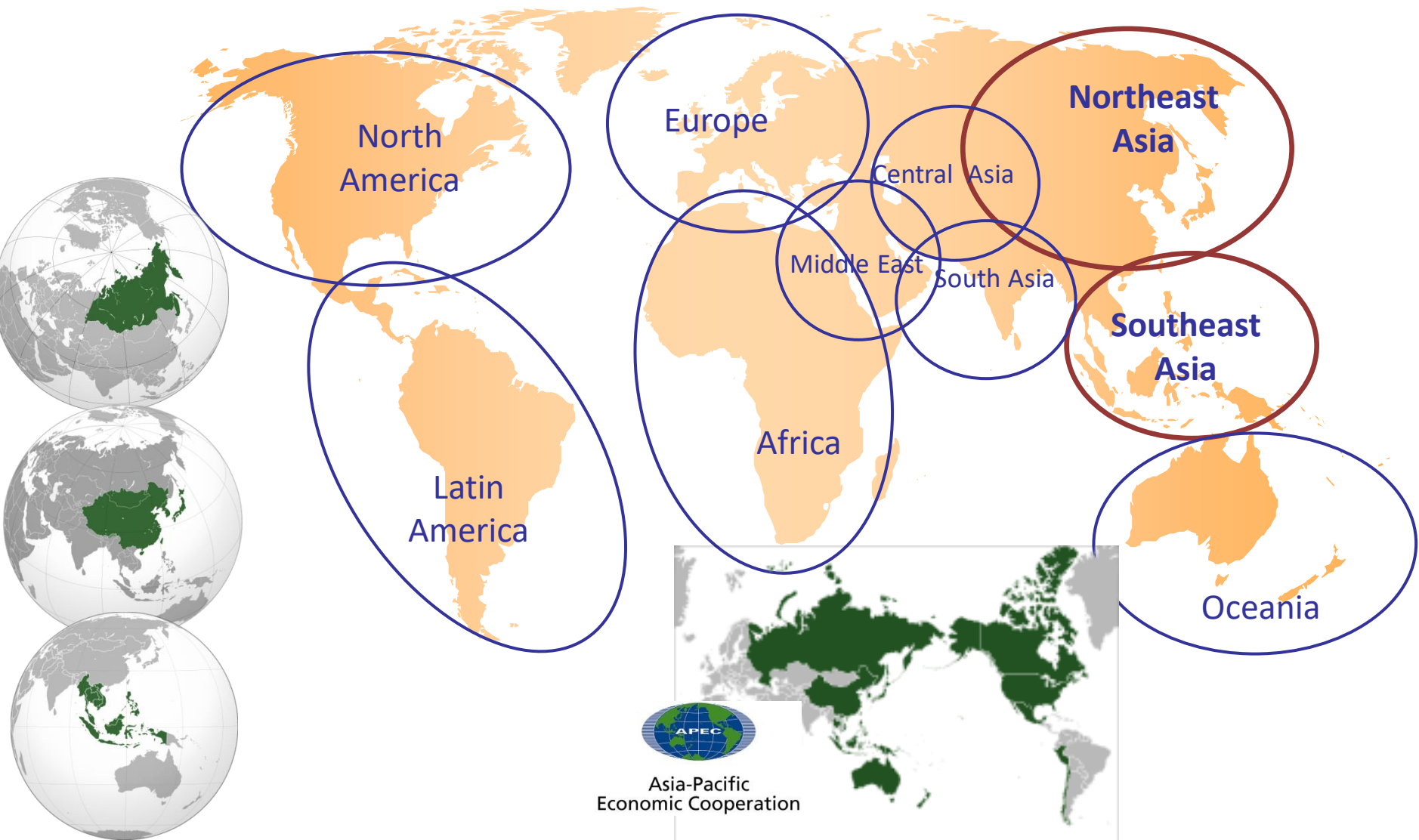
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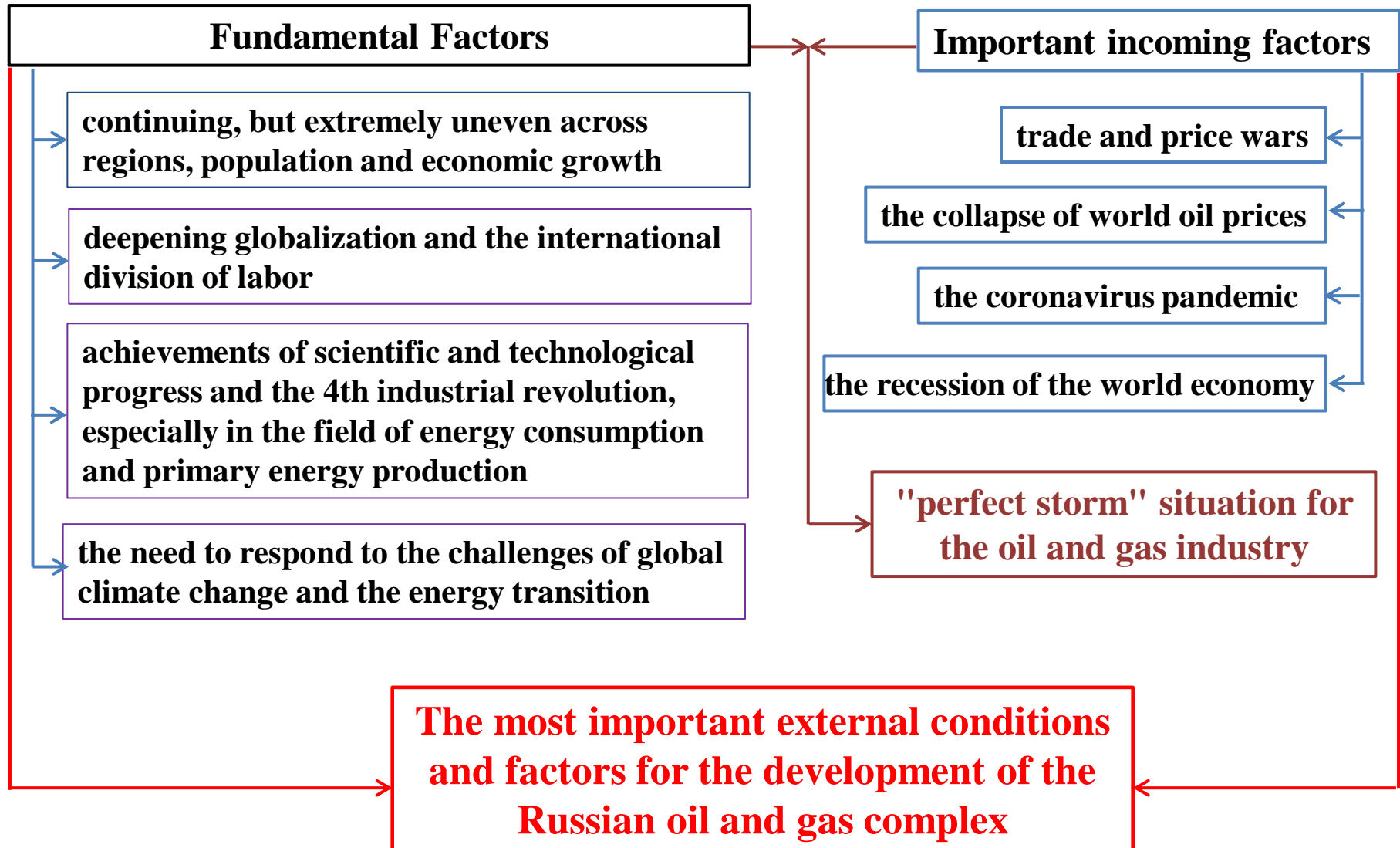


**Irkutsk, Russia,
September 8, 2020**

Northeast Asia and Southeast Asia on the world map



Fundamental Factors Determining Energy Cooperation of Northeast and Southeast Asian Countries in the Long Term



Basic factors determining the prospects for oil and gas development in the East of Russia

Growing demand for energy resources in Northeast and Southeast Asian Countries

The potential of the mineral resource base of the oil and gas industry in East Russia

The success of scientific and technological progress

The prospects for oil and gas development in the East of Russia



Prospects for the development of the Russian oil and gas industry in the Energy Strategy for the period up to 2035

Some INDICATORS implementation of the Energy Strategy of
the Russian Federation for the period up to 2035

| | 2024 | 2035 |
|---|---------------|----------------|
| Oil and gas condensate production, million tons | 555 - 560 | 490 - 555 |
| The ratio of oil and gas condensate production in Eastern Siberia, the Far East and the Arctic zone of the Russian Federation to the base level of production in these regions | 1,075 | 1,1 - 1,15 |
| Natural gas production, billion cubic meters | 795,1 - 820,6 | 859,7 - 1000,7 |
| LNG production, million tons | 46 - 65 | 80 - 140 |
| The ratio of gas production in Eastern Siberia and the Far East to the base level of production in these regions | 2,6 | 4,2 |
| Capacity of export gas pipelines, billion cubic meters | | |
| in Western direction | 325 | 325 |
| to the countries of the Asia-Pacific region | 38 | 80 |

On the prospects for the development of the Russian oil and gas industry beyond 2035

There are no official documents defining the directions, goals and objectives of the country's oil and gas complex development for the period up to 2050.

Two scenarios of prospective development are considered

The Scenario of the Current policies and conditions (Scenario CPC)

- the economic situation in Russia will not undergo significant changes;
- economic sanctions will continue;
- the high volatility of world oil prices will remain, with their average value in the range from \$45 to \$60 per barrel;
- in developed countries, the concept of energy transition will be actively implemented

The scenario of High resources / High capabilities (Scenario HR / HC)

- the development of the necessary transport infrastructure in the East of the country and in Russia as a whole will be ensured;
- there will be stably high world oil prices (at least \$ 80 / bbl);
- Western sanctions will be lifted from Russia, and the country will have free access to world financial resources, technologies and competencies;
- as a result of global warming, navigation along the Northern Sea Route will become year-round

BUT: the high uncertainty of the upcoming development makes the estimates at the level of 2040-2050 rather arbitrary

Strategic objectives for ensuring the development of the oil and gas industry in the period up to 2050

Strategic objectives ensure the development of the oil and gas industry in the period up to 2050 are:

- **structural transformation in terms of increasing the share of hydrocarbons extracted using secondary and tertiary techniques to increase recovery rates; increase in production of products with high degree of processing; changes in the investment structure towards increasing the share of expenditure on R&D and innovation;**
- **development of transport and industrial infrastructure in the Far East, Eastern Siberia and the Russian Arctic zone;**
- **minimizing the negative impact of hydrocarbon production, production, transportation and consumption on the environment, climate and human health.**

Reserves and resources of oil in the East of Russia

Распределение **запасов (1,6)** нефти категорий А+В+С₁+С₂ по основным субъектам и морям Российской Федерации, млрд. т

Distribution of **proved reserves (1.6)** of oil of categories А + В + С₁ + С₂ by main subjects and seas of the Russian Federation, billion tons

Распределение **прогнозных**

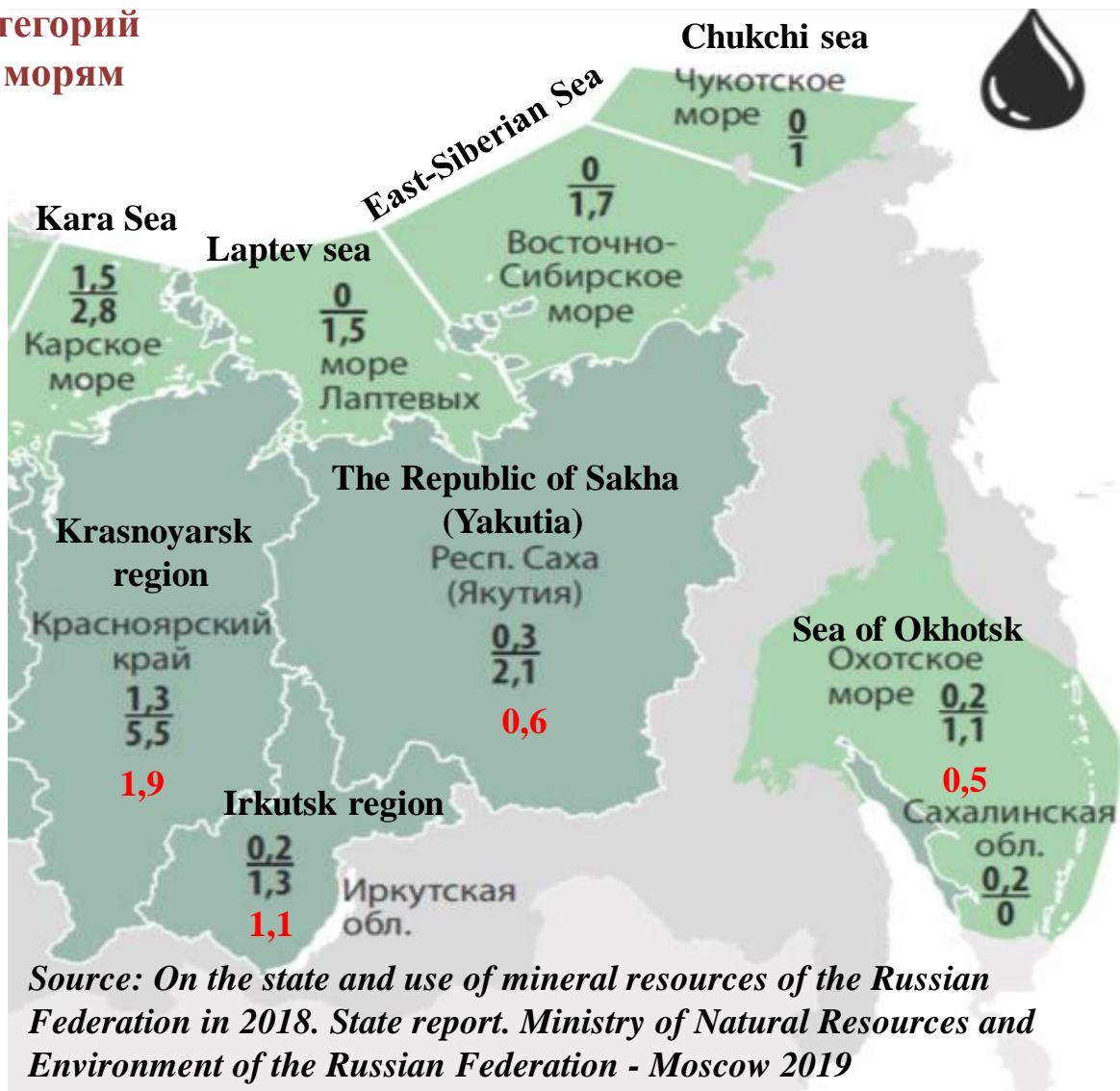
ресурсов нефти $\frac{0,6}{0,6}$ кат. D₀
кат. D₁+D₂

по основным субъектам и морям Российской Федерации, млрд. т

Distribution of **forecast**

oil resources $\frac{0,6}{0,6}$ кат. D₀
кат. D₁+D₂
on the main

subjects and seas of the Russian Federation, billion tons



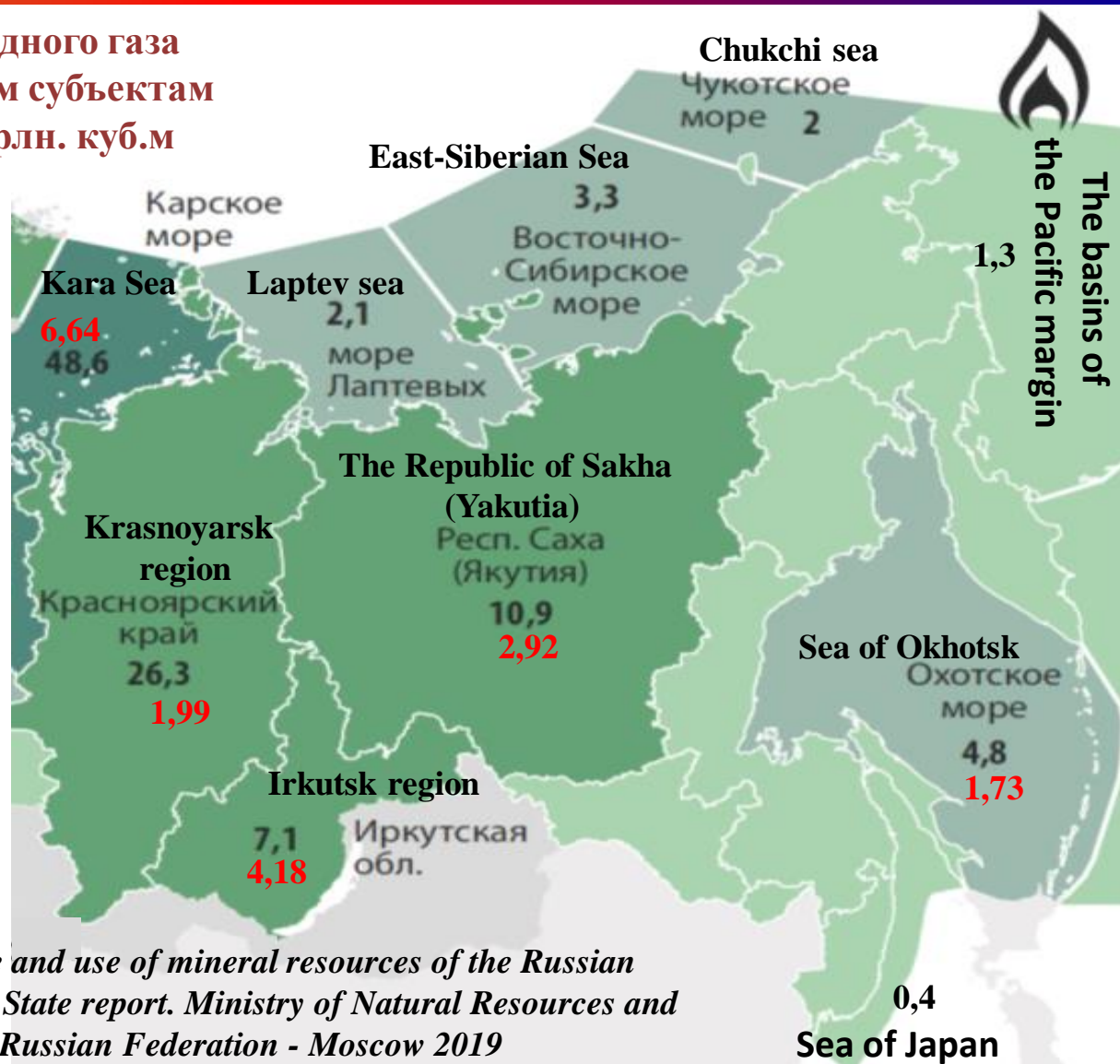
Reserves and resources of natural gas in the East of Russia

Распределение **запасов (1,6)** свободного газа категорий $A+B+C_1+C_2$ по основным субъектам и морям Российской Федерации, трлн. куб.м

Distribution of **proved reserves (1.6)** of free gas of categories $A + B + C_1 + C_2$ by main subjects and seas of the Russian Federation, tcm

Распределение **прогнозных ресурсов ($D_0+D_1+D_2$) (6,3)** свободного газа по основным субъектам и морям Российской Федерации, трлн. куб.м

The distribution of **forecast resources ($D_0+D_1+D_2$) (6,3)** free gas resources for the main subjects and seas of the Russian Federation, tcm



Source: On the state and use of mineral resources of the Russian Federation in 2018. State report. Ministry of Natural Resources and Environment of the Russian Federation - Moscow 2019

Key indicators of the development of the Russian oil industry

Key indicators of the development of the Russian oil industry, million tons*

| | History | | Forecast | | |
|-------------------------------------|--------------|--------------|----------------|----------------|----------------|
| | 2000 | 2019 | 2035 | 2040 | 2050 |
| Oil production | 323,5 | 561,2 | 490/555 | 450/570 | 380/590 |
| including-East of Russia | 3,9 | 76,3 | 98/110 | 105/120 | 75/120 |
| Oil refining | 173,8 | 289,8 | 240/295 | 250/270 | 240/250 |
| including-East of Russia | 19,0 | 22,4 | 45/50 | 50/65 | 65/70 |
| Oil export | 144,4 | 267,5 | 244/252 | 200/300 | 140/340 |
| incl. in the Asia-Pacific | | 91,3 | 109/120 | 100/165 | 70/170 |
| Export of petroleum products | 62,6 | 142,8 | 126/155 | 90/130 | 90/120 |
| incl. in the Asia-Pacific | 0,4 | 18,5 | 35/40 | 40/45 | 40/45 |

The forecast estimates are based on the following materials:

- 2020-2035 - according to the Energy Strategy of Russia for the period up to 2035
- 2040-2050-according to expert estimates: in the numerator, the Scenario CPC; in the denominator, the Scenario HR / HC
- 2020-2050, indicators for the East of Russia and exports to the Asia-Pacific region - according to expert estimates.

The resource availability of the Scenario HR / HC includes both the onshore hydrocarbon resources of Eastern Siberia and the Far East, and the northern territories of Western Siberia (the Yamal and Gydan Peninsulas), as well as the shelf of the adjacent waters of the Arctic Ocean.

Key indicators of the development of the Russian gas industry

Key indicators of the development of the Russian gas industry, billion cubic meters*

| | History | | Forecast | | |
|-------------------------------------|--------------|--------------|-----------------|-----------------|-----------------|
| | 2000 | 2019 | 2035 | 2040 | 2050 |
| Natural gas production | 583,9 | 737,0 | 860/1000 | 900/1040 | 950/1100 |
| including-East of Russia | 6,1 | 44,6 | 75/100 | 85/140 | 95/155 |
| LNG production, million tons | - | 29,0 | 80/140 | 85/150 | 100/170 |
| Export of pipeline gas | 193,9 | 227,9 | 255/301 | 300/360 | 355/390 |
| incl. in the Asia-Pacific | - | 0,2 | 80/91 | 110/130 | 130/160 |
| LNG export | - | 41,4 | 108/189 | 115/202 | 135/230 |

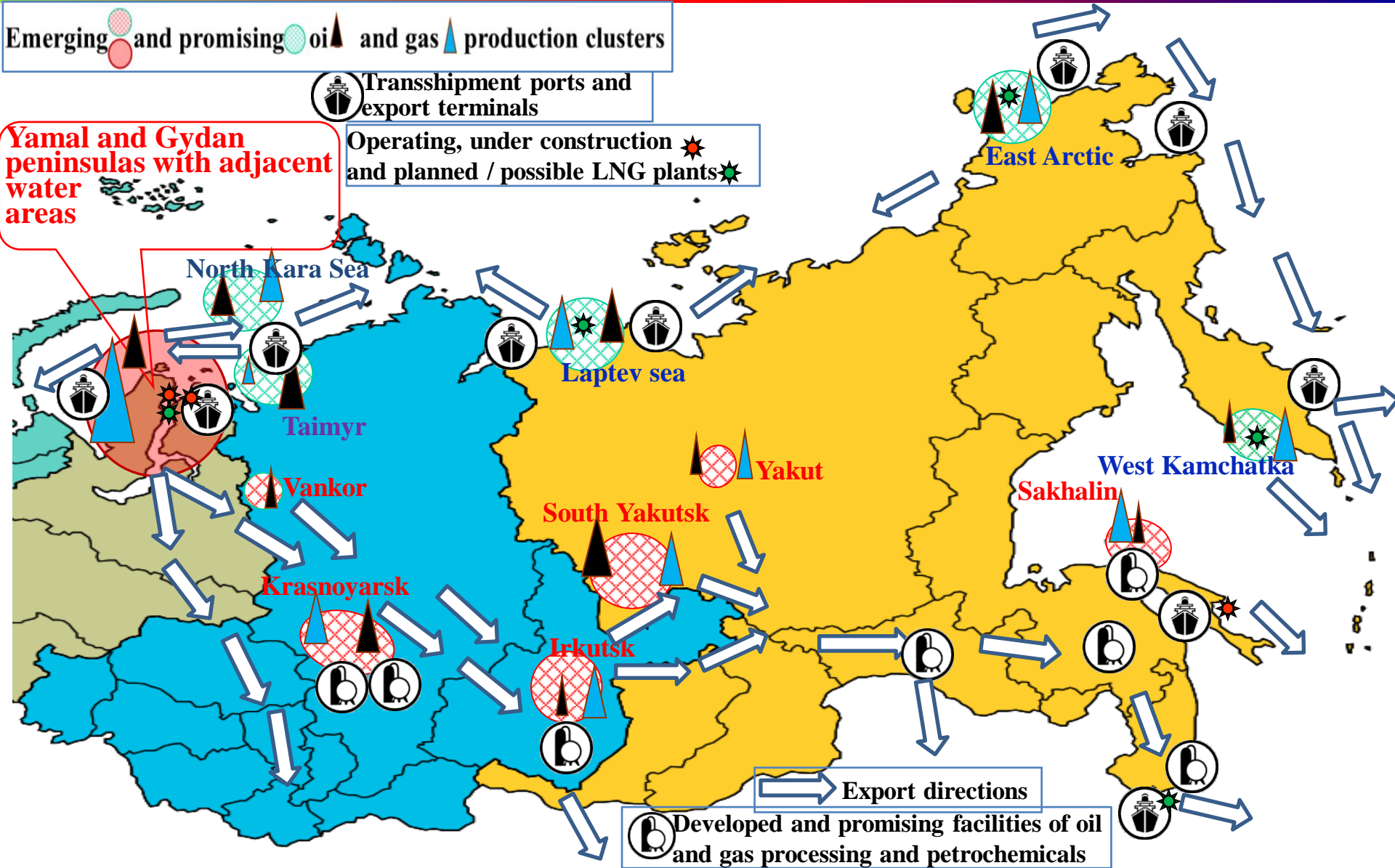
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2050:

what an economic map of Eastern Russia might look like



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Thank You for Attention!



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