




ИНСТИТУТ ВЭБ

DEVELOPMENT PERSPECTIVES OF THE OIL AND GAS COMPLEX

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Oil and gas complex facing new challenges

 **Sanctions and a «turn to the East». Decline or a slowed growth of the world hydrocarbon consumption?**

 **A new configuration of the global energy infrastructure**

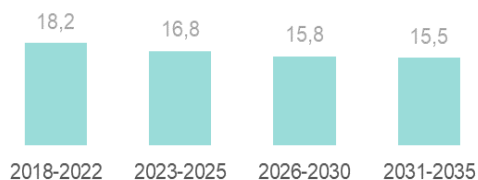
 **Technological sovereignty and import substitution potential realization**

 **The shift to the right of projects related to sustainable development (in accordance with the ESG principles) - the necessity to stimulate the implementation of energy and environmental efficiency and safety projects**

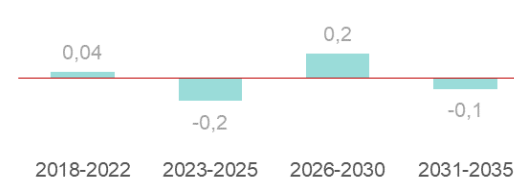
The role of the oil and gas complex in the economy

- The fuel and energy sector will continue to be the most important sector of Russian GDP, but its share will decrease in the long term perspective
- Increasing the contribution of the fuel and energy sector to the development of high-tech technologies
- Where is the "golden mean" of the conscious use of capital-intensive hydrocarbon resources and the development and redistribution of resources in favor of the knowledge economy?

Share in GDP, % on average for the period

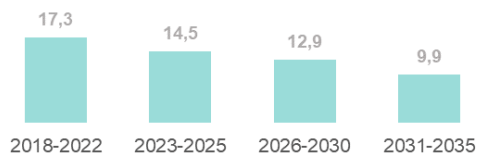


Contribution to GDP, p.p. average for the period

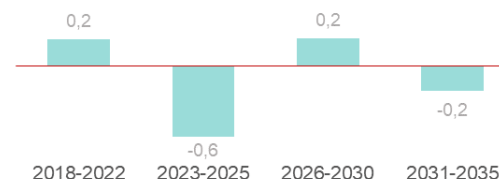


Oil and gas

Share in investments, % on average for the period

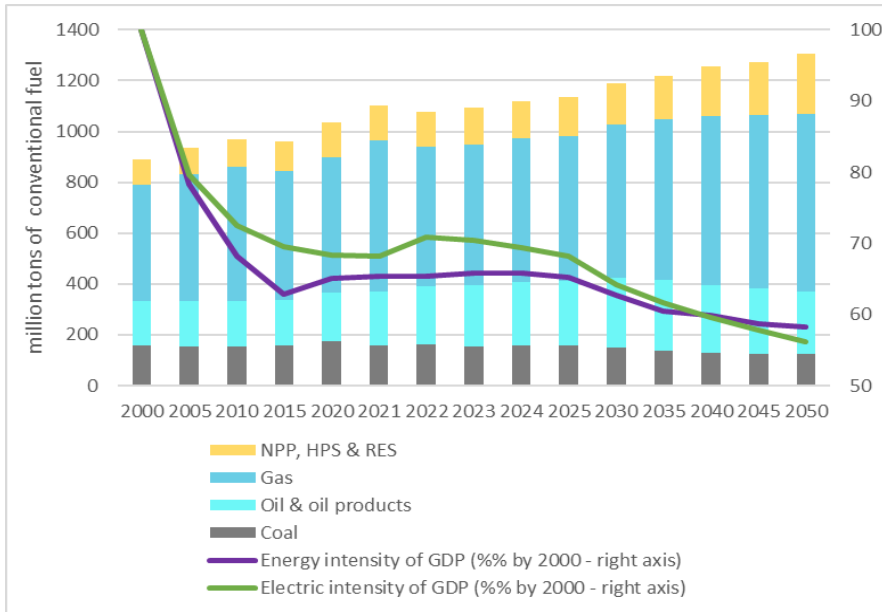


Contribution to investment, p.p. average for the period



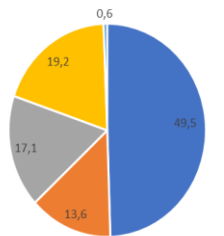
Growth potential of fuel and energy resources domestic consumption and GDP energy intensity reduction

Consumption of fuel and energy resources structure and energy intensity dynamics

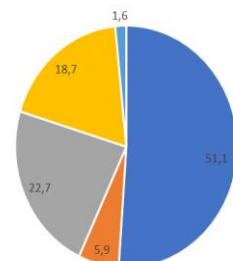


Power generation structure

2022 year



2035 year



- Domestic consumption of fuel and energy resources in the Russian economy will increase
- In the structure of fuel and energy consumption, natural gas will retain its dominant position, while its share will stabilize at the level of 52%
- The share of consumption of oil and oil products will increase by 1.3% compared to 2022, while the share of coal will decrease by 3.7%
- By 2035, the share of electricity generation from nuclear power plants, hydroelectric power plants and renewable energy sources in the total domestic consumption of primary fuel and energy resources will increase by 1.3% compared to 2022, and in the total electricity generation - by 6.7%
- In the medium term, the development of LNG and hydrogen production, railway electrification, the development of electric vehicles, as well as the expansion of the availability of renewable energy sources in remote and isolated areas will not reduce the energy and electricity intensity of GDP. However, in the long term, the use of new energy saving technologies will reduce the energy intensity of GDP by 7.4% compared to 2022, and electricity intensity by 13%, respectively

Development perspectives of the oil and gas complex



The need for oil and gas companies to quickly adapt to sanctions pressure on Russian energy exports, state support in organizing new supply chains in redirecting exports to friendly countries



Reducing the global consumption of hydrocarbons due to the reduction in the production of hydrocarbon-intensive industries, self-limitation of household consumption and the development of alternative sources of energy and fuels. At the same time, discounts to the price of Russian hydrocarbons can create favorable conditions for finding new sales markets.



In the face of rising supply from Asian refineries and declining demand, incl. due to the development of alternative fuels, the export potential of petroleum products is limited



Stimulating the development of projects on the technological sovereignty of LNG. Liberalization of LNG exports and prospects for our own Gas Hub. Stimulating the development of our own tanker fleet, including the icebreaker fleet

Товарные группы	Scenario	Production								Export							
		2021	2022	2023	2024	2025	2026	2030	2035	2021	2022	2023	2024	2025	2026	2030	2035
Oil, million tons	Basic	523	534	504	505	506	507	511	477	232	247	227	229	232	237	240	220
	Optimistic			504	514	518	528	556	510			227	239	246	259	281	237
Oil products, million tons	Basic	285	276	267	266	264	260	261	247	144	127	109	104	100	95	82	65
	Optimistic			267	265	262	259	265	263			113	106	102	99	89	75
Gas, billion cubic meters	Basic	763	672	638	664	689	702	767	840	204	131	97	103	115	119	128	172
	Optimistic			638	674	695	713	833	905			97	102	116	121	154	192
LNG, million tons	Basic									29	34	33	39	42	44	64	67
	Optimistic											33	39	42	44	74	90

Oil refining development perspectives



2021:

Share of oil products production by value added in GDP ~ 2.4%
The share of exports of petroleum products in total exports is 14.2%

Investments > 7 trillion rubles

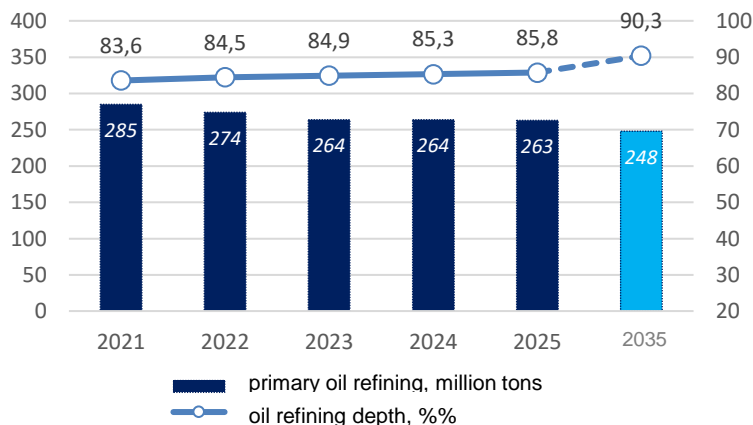
2022-2035

2035:

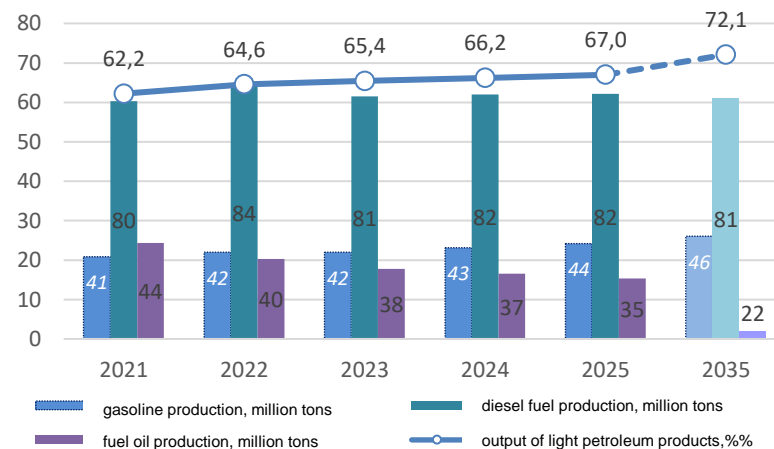
Share of oil products production by value added in GDP ~ 2%
The share of exports of petroleum products in total exports is 7%

Growth in **domestic demand for petroleum products** by 23% by 2035 compared to the level of 2022, with an increase in the depth of processing by 5.8%. Increase in the yield of light oil products by 7.5% by 2035

Oil refining forecast



Production of petroleum products

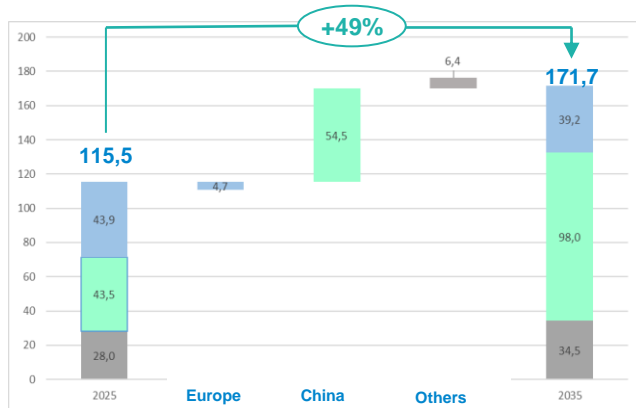


- **Development of technological sovereignty and import substitution in oil refining**
- Export potential is limited: reduction in global demand with an increase in supply + sanctions restrictions. The cessation of European supplies, as well as limited export opportunities to Asia and the Middle East, given their own processing capacities, will lead to a reduction in the volume of exports of petroleum products by 2035 by almost half compared to 2022
- **Focus on expanding the domestic market:** taking into account global trends in the development of alternative motor fuels, the potential for the development of petrochemistry

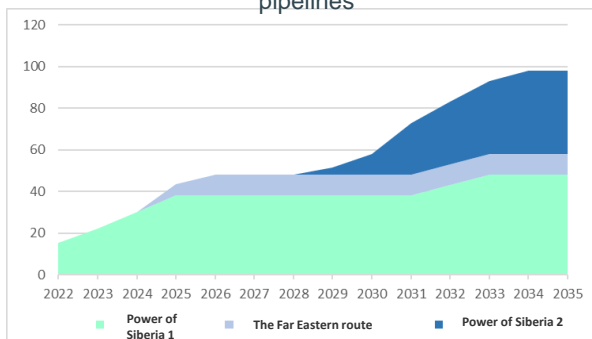


Gas export potential

Gas export, billion cubic meters m



Forecast of gas exports to China via pipelines



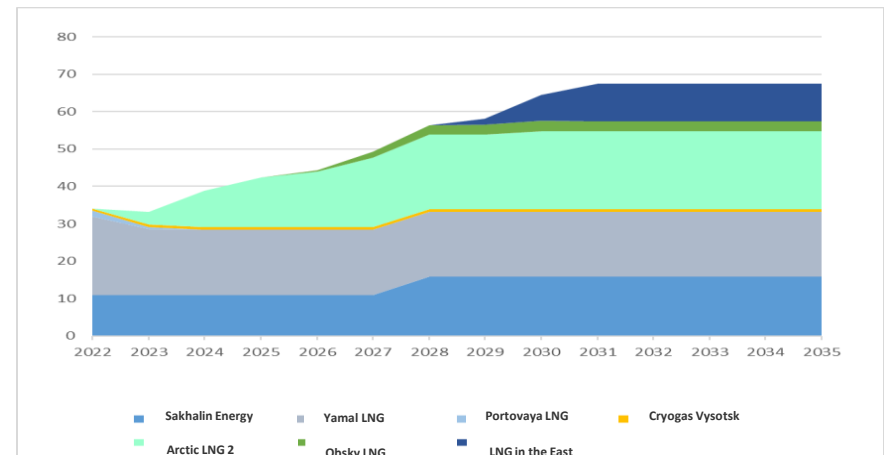
- In the medium term, Russian gas exports will decline

In the European direction only the Turkish market will remain promising

In the context of the development of the Chinese direction and the physical replacement of the decline in gas supplies to Europe the implementation of interconnectors of the UGSS, the Power of Siberia and Sakhalin-Khabarovsk-Vladivostok will be promising

- It will take about 10 years to restore the volume of exports of pipeline gas to the approximate volumes of 2021
- The LNG market will remain in short supply until 2027. It is necessary to intensify work on import substitution in the oil and gas engineering industry for LNG projects
- The provision of LNG projects with a sufficient number of gas carriers for the export of LNG is an important issue
- By 2035, it is advisable not only to completely reorient supplies from the European market, but also to create our own LNG distribution center

LNG projects



Widening gap between domestic and world energy prices

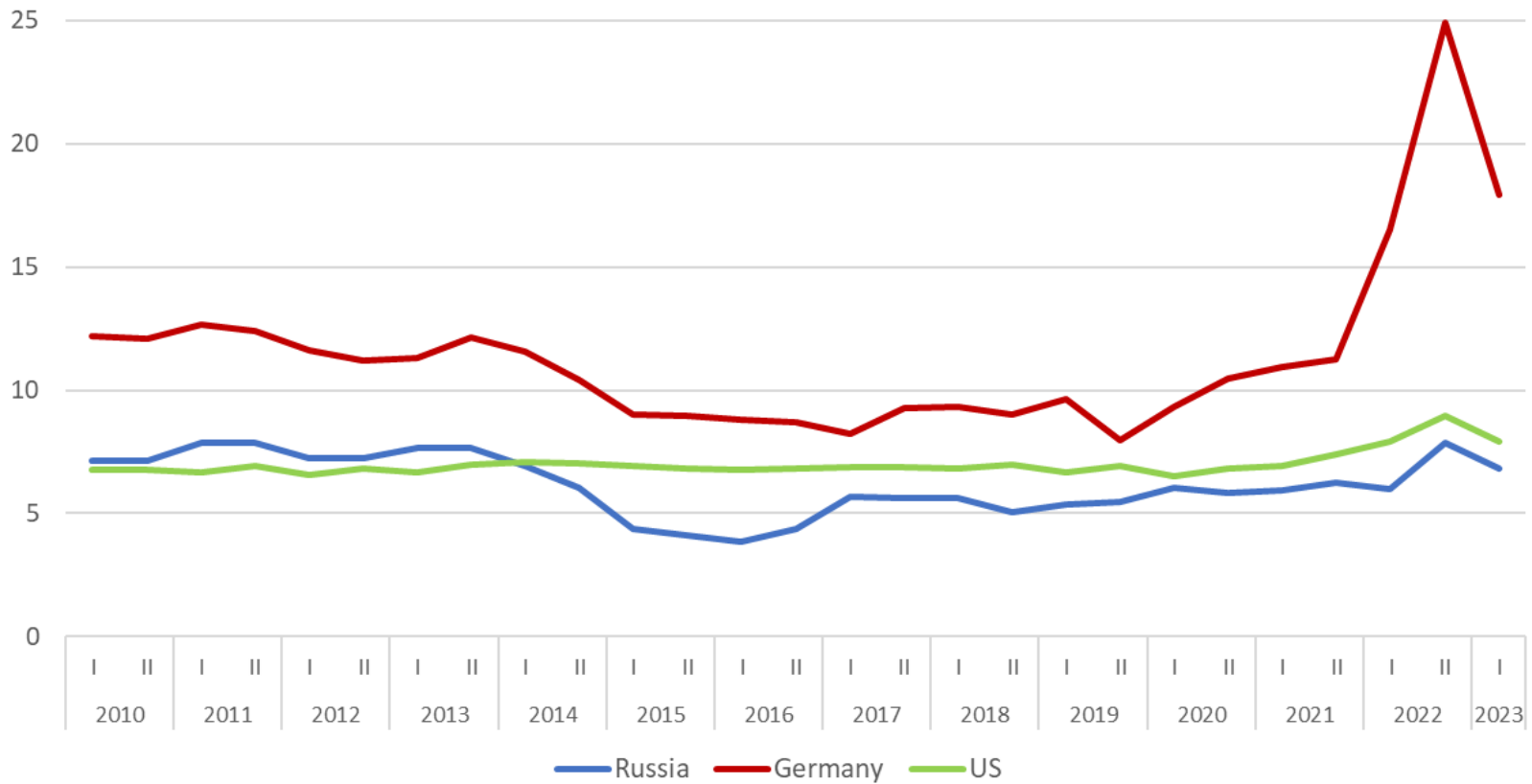
Electricity and Natural Gas prices in Russia, US and EU (Germany)

	2019		2020		2021		2022		2023	Price for households / Price for Industrial consumers	Price in different countries / Price in Russia
	I	II	I	II	I	II	I	II			
Electricity price (US cents/kWh)											1-st half of 2023 year
Industrial consumers											
Russia	5,4	5,5	6,0	5,8	5,9	6,3	6,0	7,8	6,8		
EU(27)	9,5	8,7	9,0	9,7	10,4	12,0	17,5	20,1	19,0		2,8
Germany	9,7	8,0	9,3	10,4	10,9	11,2	16,5	24,9	17,9		2,6
USA	6,7	6,9	6,5	6,8	6,9	7,4	7,9	9,0	7,9		1,2
Residential consumers											
Russia	4,2	4,3	4,1	3,8	3,7	4,0	4,0	5,3	4,6	0,7	
EU(27)	14,5	14,2	13,9	15,1	16,2	17,5	21,1	24,3	22,9	1,2	5,0
Germany	16,6	14,7	15,7	17,1	18,8	18,5	20,7	23,6	22,5	1,3	4,9
USA	13,0	13,0	13,1	13,3	13,4	14,0	14,5	15,7	14,5	1,8	3,2
Natural Gas price (USD/1000M³)											
Industrial consumers											
Russia	67	69	64	61	61	64	62	81	70		
EU(27)	339	313	288	296	303	447	679	802	738		10,5
Germany	331	296	284	304	303	364	512	555	557		7,9
USA	149	125	113	118	179	211	269	298	296		4,2
US Henry Hub	97	85	64	80	115	162	216	240	94		
Residential consumers											
Russia	57	59	54	52	52	55	52	68	59	0,8	
EU(27)	545	582	499	593	523	669	724	1046	787	1,1	13,4
Germany	563	505	508	587	553	581	646	791	702	1,3	12,0
USA	399	502	393	511	434	618	542	734	597	2,0	10,2

Increasing comparative imbalance between electricity and gas prices

Electricity

Wholesale price for Industrial consumers, US cents/kWh.



The need to form a new economic model for the fuel and energy complex: a decrease in natural and market rent, an increase in the imbalance between the price of energy for the population and business, the need to maintain an advantage in the price of energy

