Country Analysis Brief: Russia

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Overview

Table 1. Russia's energy overview, 2023

	Crude oil and other petroleum liquids	Natural gas	Coal	Nuclear	Hydro	Other renew-ables	Total
Primary energy consumption (quads)	7.5	17.2	5.1	2.3		0.7	32.7
Primary energy consumption (percentage)	23%	53%	16%	7%		2%	100%
Primary energy production (quads)	23.0	23.3	10.6	2.3		0.7	59.9
Primary energy production (percentage)	38%	39%	18%	4%		1%	100%
Electricity generation (TWh)	8.4	513.1	165.2	217.0	198.0	14.7	1,116.4
Electricity generation (percentage)	1%	46%	15%	19%	18%	1%	100%

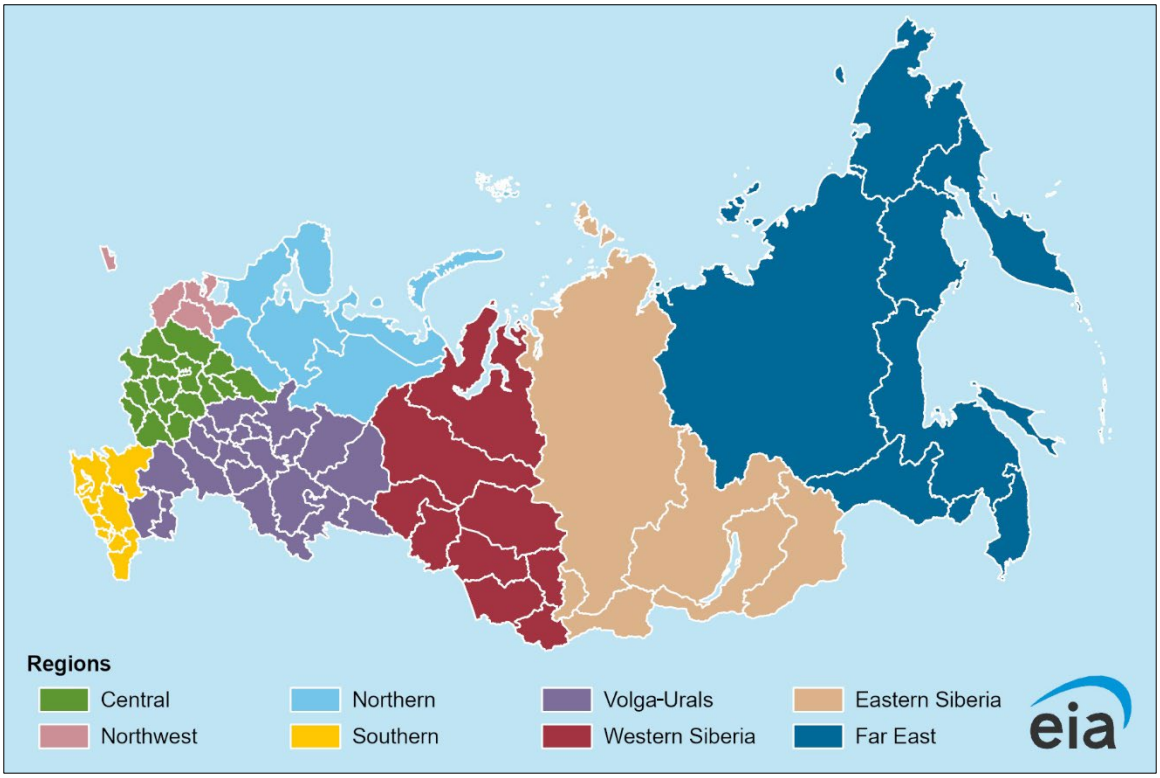
Data source: U.S. Energy Information Administration, International Energy Statistics database
Note: We aggregate hydroelectricity and renewables as *other renewables* for primary energy production and consumption. Electricity generation excludes generation from other gases. Quads=quadrillion British thermal units and TWh=terawatthours

- Russia was the world's second-highest producer of crude oil and condensate as well as dry natural gas and was the world's third top exporter for coal and natural gas in 2023.[1]
- Following Russia's full-scale invasion of Ukraine in 2022, a number of countries imposed sanctions on Russia, including targeted measures on Russia's energy sector.[2] In January 2025, the United States and United Kingdom imposed new measures supporting existing G7 price caps and export bans on oil and petroleum products from Russia.[3] The European Union (EU) adopted an 18th package of restrictions in July 2025 that lowered the existing price cap on Russia's oil exports and increased measures intended to limit the circumvention of capped oil prices by Russia's *shadow* or *gray* fleet (anonymously owned or insured vessels used to trade sanctioned oil and oil products) and related individuals and entities.[4]
- Ukraine-related sanctions expedited a shift in Russia's energy trade toward Asia, but Europe remained Russia's primary natural gas market as of 2024 because of established pipeline infrastructure from Russia, limited EU bans on Russia's liquefied natural gas (LNG), and increased consumption of natural gas by non-EU members.[5]

Figure 1. Map of Russia (as of July 2025)

Source: U.S. Central Intelligence Agency, The World Factbook–Russia

Figure 2. Map of regions in Russia (as of July 2025)



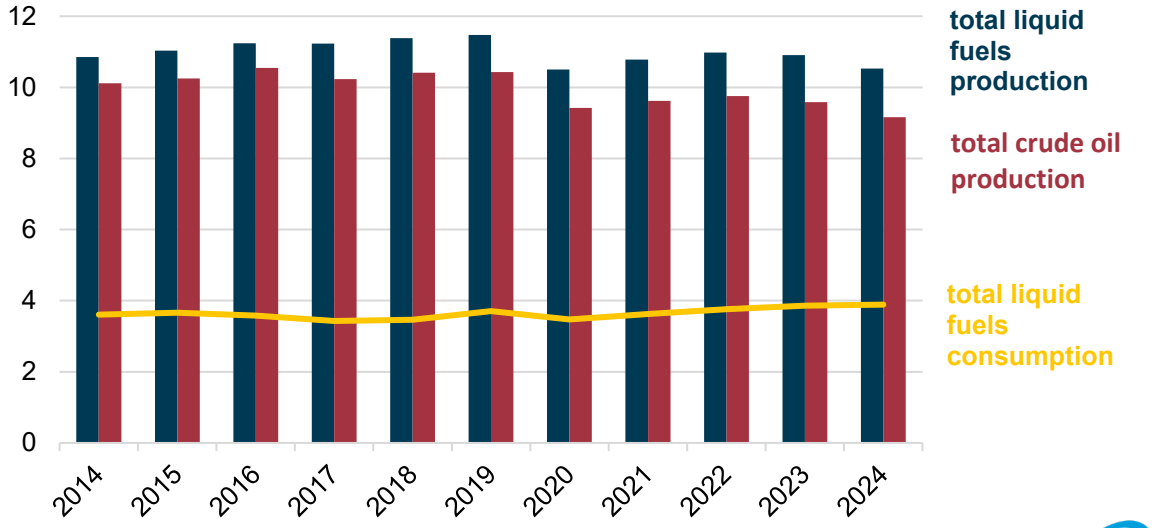
Source: Eurasian Research Institute

Petroleum and Other Liquids

- Russia's proved oil reserves were 58 billion barrels as of January 1, 2024, according to Rystad Energy.[6]
- Russia produced 9.2 million barrels per day (b/d) of crude oil in 2024, a decrease of 4% from 9.6 million b/d in 2023 (Figure 3).[7]
- Western Siberia is the main production region for crude oil and condensate in Russia, and upstream oil developments in Russia have primarily been onshore fields in northern areas of the region since the early 2000s.[8]
- Russia produces eight main grades of crude oil. Its major crude oil export is Urals, a medium-sour crude oil produced mainly in Western Siberia and Russia's Volga-Urals region (Table 2).[9] Historically, Urals was the main crude oil grade exported via pipelines from Baltic and Black Sea ports to Western markets, but Ukraine-related sanctions have shifted the trade and pricing of Urals eastward.[10]
- As an OPEC+ participant, Russia announced additional voluntary production cuts for the second quarter of 2024 to 8.978 million b/d.[11] Russia, along with other OPEC+ countries, extended these voluntary cuts through the first quarter of 2025, before beginning to unwind the cuts in April 2025.[12]
- Russia produced 10.5 million b/d in total liquid fuels in 2024, a decrease of 3% from 10.9 million b/d in 2023 (Figure 3).[13] Rosneft, Russia's largest oil producer and a major refiner, accounted for 31% of Russia's annual oil production in 2024 (Table 3).[14]
- Rosneft plans to commission the first stage of its Vostok Oil project in 2026, which the company expects to produce up to 2.0 million b/d by 2030.[15] The project, located in Western Siberia, includes 13 oil and natural gas fields, a 478-mile oil pipeline, and an Arctic oil terminal that will become Russia's largest oil terminal when it reaches full capacity (approximately 2.3 million b/d).[16]
- Transneft, Russia's state-owned pipeline company and the world's largest pipeline company, transports more than 80% of Russia's crude oil.[17]
- Russia's refineries processed 5.4 million b/d of oil in 2024. Between January 2024 and January 2025, average refinery runs in Russia remained relatively flat.[18] Refinery runs are down from almost 6 million b/d in January 2022, before Russia's full-scale invasion of Ukraine.[19]
- Beginning in January 2024, Russia experienced several refinery outages because of reported drone strikes, maintenance or technical issues, and possible impacts from Ukraine-related sanctions.[20] In January 2025, Ukrainian drone strikes reportedly hit a number of Russia's refineries, including major facilities such as Ryazan and Volgograd (Table 4), which temporarily halted production.[21] In late-March 2025, Russia and Ukraine agreed to a limited truce on energy infrastructure, although both sides claimed violations of the truce.[22]
- Russia consumed 3.9 million b/d of petroleum and other liquids in 2024, remaining flat in 2023 (Figure 3).[23]

Figure 3. Total annual petroleum and other liquids production and consumption in Russia, 2014–2024

million barrels per day



Data source: U.S. Energy Information Administration, *Short-Term Energy Outlook* Data Browser

Table 2. Major crude oil grades from Russia

	API gravity	Sulfur content	Regions
Urals	30 to 32	1.3% to 1.5%	Western Siberia and Volga Urals
ESPO	34 to 37	0.4% to 0.6%	Eastern Siberia
Sokol	35 to 37	0.2% to 0.3%	Far East
Varandey	25 to 37	0.2% to 0.5%	Northern
ARCO	23 to 24	2.2% to 2.4%	Northern
Siberian Light	34 to 36	0.2% to 0.6%	Western Siberia
Sakhalin	37 to 45	0.1% to 0.3%	Far East
Novy Port	30 to 35	0.1% to 0.3%	Western Siberia

Data source: McKinsey & Company, Independent Commodity Intelligence Services, Trading Economics, Hydrocarbons Technology, *Pipeline and Gas Journal*, Reuters, Nasdaq, NS Energy, and Mitsubishi Corporation

Table 3. Russia's crude oil and condensate production by company, 2024

Company	Total production thousand barrels per day	Percentage of total production
Rosneft	3,308	31%
Gazprom Neft	2,098	20%
Lukoil	1,567	15%
Surgutneftegas	1,136	11%
Tatneft	565	5%
Others	2,029	19%

Data source: Rystad Energy

Table 4. Major oil refineries in Russia, 2025

	Company	Region	Estimated capacity thousand barrels per day	Start of operations year
Omsk	Gazprom Neft	Western Siberia	440	1955
Kirishi	Surgutneftegaz	Northwest	400	1966
Ryazan	Rosneft	Central	340	1960
Nizhny Novgorod	Lukoil	Volga-Urals	340	1958
Yaroslavl	Gazprom Neft and Rosneft	Central	300–320	1961
Taneco	Tatneft	Volga-Urals	170–320	2011
Volgograd	Lukoil	Volga-Urals	290	1957
Perm	Lukoil	Volga-Urals	260	1958
Moscow	Gazprom Neft	Central	210–260	1938
Tuapse	Rosneft	Southern	180–240	1929–1933
Angarsk	Rosneft	Eastern Siberia	200	1954–1955
Neftekhim Salavat	Gazprom	Volga-Urals	200	1948
Komsomolsk	Rosneft	Far East	170–200	1942

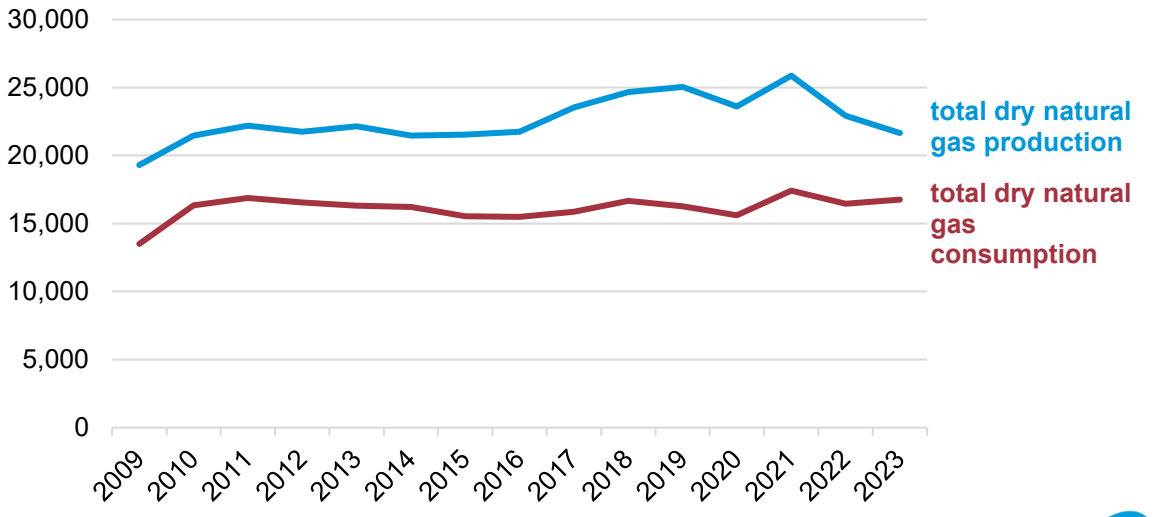
Data source: Reuters, Forbes, *The New York Times,* Gazprom, Tatneft, Lukoil, Bashneft, Rosneft, NS Energy, Offshore Technology, United24 Media, Realnoe Vremya, Hydrocarbon Processing, Promfinstroy, Processing Magazine, and U.S. Central Intelligence Agency, Freedom of Information Act Electronic Reading Room

Natural Gas

- Russia’s proved natural gas reserves were 1,654 trillion cubic feet (Tcf) in 2023 and 2024, according to OPEC’s *2025 Annual Statistical Bulletin*.[24]
- Russia’s dry natural gas production was 23.2 Tcf in 2024, a 7% increase from 21.7 Tcf in 2023, according to preliminary estimates.[25]
- Russia’s dry natural gas consumption increased 2% year over year in 2023 to 16.8 Tcf, from 16.5 Tcf in 2022 (Figure 4).[26]

- The Yamal-Nenets Autonomous Area, in Western Siberia, accounts for 90% of the country's natural gas production and 78% of its natural gas reserves. The region contains most of Russia's major natural gas-producing fields, all of which are onshore, conventional fields (Table 5). Russia's largest natural gas-producing fields, Bovanenkovo and Zapolyarnoye, each represent around 3% of the world's daily natural gas output.[27]
- Gazprom, Russia's largest and state-owned natural gas company, holds nearly 70% of the country's natural gas reserves.[28] The company reported a 17% increase in natural gas production between 2023 to 2024.[29]
- Gazprom's Amur natural gas processing plant is under construction in Russia's Far East. The plant's fourth train began operating in 2024. Upon completion, the plant will include six 247-Bcf trains, making it one of the largest natural gas processing plants in the world.[30]
- Lukoil has five major facilities in Russia to process associated natural gas. In 2022, Lukoil processed 123 Bcf of associated gas, of which 33% was processed at the company's Perm refinery, followed by 29% at Stavrolen, 27% at Lokosovksy, and the remainder at Volgograd and Usinsk.[31]
- Offshore natural gas development is a strategic priority for Russia, primarily in Arctic regions.[32] Gazprom has four major offshore development projects as of early 2025 (Table 6).[33]
- Russia flares the most natural gas of any country in the world. In 2023, Russia flared more than 1 Tcf of natural gas (19% of the world total), an increase of 11% from 901 billion cubic feet (Bcf) in 2022.[34]

Figure 4. Total annual dry natural gas production and consumption in Russia, 2009–2023
billion cubic feet



Data source: U.S. Energy Information Administration, International Energy Statistics database

Table 5. Russia's major producing natural gas fields, 2023

	Primary stakeholder	Region	Estimated production billion cubic feet per day	Production start year	Peak production year	Estimated reserves depletion percentage
Bovanenkovo	Gazprom	Western Siberia	10.8	2012	2021	25%
Zapolyarnoye	Gazprom	Western Siberia	9.8	2001	2013	55%
Yamburg	Gazprom	Western Siberia	7.0	1991	1992	83%
Urengoy	Gazprom	Western Siberia	4.1	1978	1992	92%
Yuzhno-Tambeiskoye	Novatek	Western Siberia	2.7	2017	2021	29%
Chayandinskoye	Gazprom	Far East	1.6–2.5	2019	2024	6%
Yuzhno-Russkoye	Gazprom	Western Siberia	2.1–2.4	2007–2009	2011	58%
Kovykta	Gazprom	Eastern Siberia	0.1–2.4	2022	2026	less than 1%
Pestsovoye	Gazprom	Western Siberia	2.0	2004	2006	69%
Yurkharovskoye	Novatek	Western Siberia	1.8	2003	2014	73%
Orenburg	Gazprom	Volga-Urals	1.1	1974	1985	84%
Medvezhye	Gazprom	Western Siberia	0.4	1972	1982	nearly 100%

Data source: Offshore Technology, Global Energy Monitor, and NS Energy

Table 6. Gazprom's major offshore natural gas field developments, 2025

	Location	Region	Estimated reserves in 2023 trillion cubic feet	Expected production start year
Shtokman	Barents Sea	Northern	139	2028–2029
Kharasaveyskoye	Kara Sea	Western Siberia	48	2025
Yuzhno-Kirinskoye	Sea of Ohkutsk	Far East	21	2027
Kamennomysskoye	Gulf of Ob	Western Siberia	15	2027

Data source: Offshore Technology, Global Energy Monitor, and *The Barents Observer*

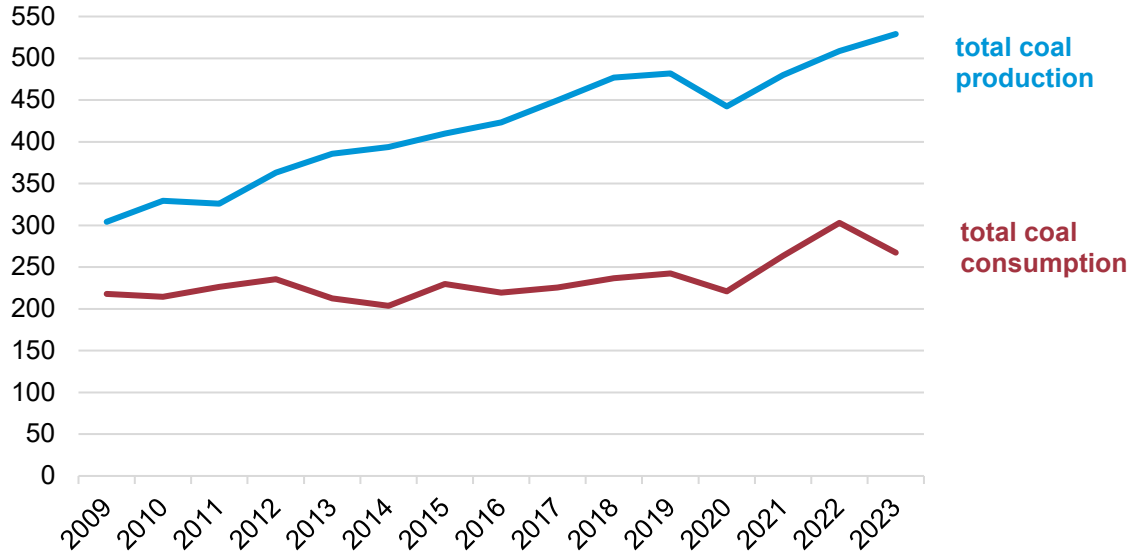
Coal

- Russia produced 529 million short tons of coal in 2023, a 4% increase from 509 million short tons in 2022 (Figure 5).[35]
- Russia was the world's fifth-largest coal producer in 2023 and held the second-largest coal reserves of any other country, estimated at 179 billion short tons.[36]
- Coal production in Russia is centered in the Kuznetsk Basin, or Kuzbass region, of Western Siberia, equidistant to Baltic Sea, Black Sea, and Pacific ports. The region accounts for more than half of coal production in Russia (Table 7).[37]
- Russia is the world's third-largest producer of metallurgical coal, after China and Australia. In 2023, Russia produced 116 million short tons of metallurgical coal, a 7% decrease from 125 million short

tons in 2022.[38] Western Siberia is one of seven global regions[39] that produce high-quality metallurgical coal.[40]

- Total coal consumption in Russia was 267 million short tons in 2023, a 12% decrease from 303 million short tons in 2022 (Figure 5). Metallurgical coal represented 29% of Russia's coal consumption in 2023 (or 77 million short tons), a decrease of 15% from 90 million short tons in 2022.[41]

Figure 5. Total annual coal production and consumption in Russia, 2009–2023
million short tons



Data source: U.S. Energy Information Administration, International Energy Statistics database

Table 7. Russia's coal mine production and reserves by region, 2024

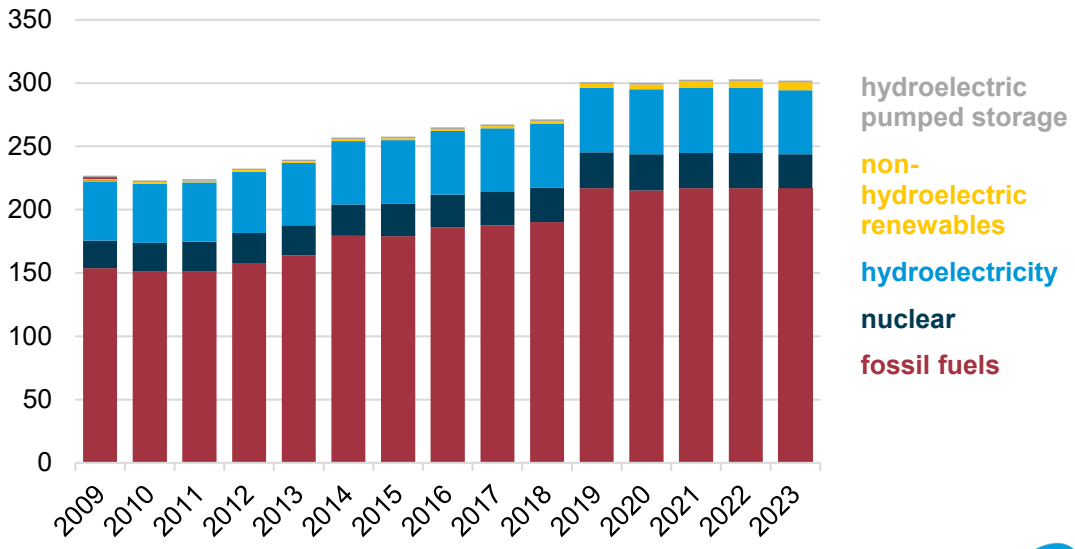
	Operating mines	Proposed new mines	Proposed expansions and extensions	Production percentage	Total reserves percentage
Western Siberia	96	7	9	54%	44%
Eastern Siberia	35	6	9	25%	34%
Far East	28	1	9	17%	21%
Northern	5	0	0	2%	<1%
Southern	4	3	0	1%	1%

Data source: Global Energy Monitor, Global Coal Mine Tracker
Note: *Total reserves* include proven and probable reserves for operating and proposed coal mines.

Electricity

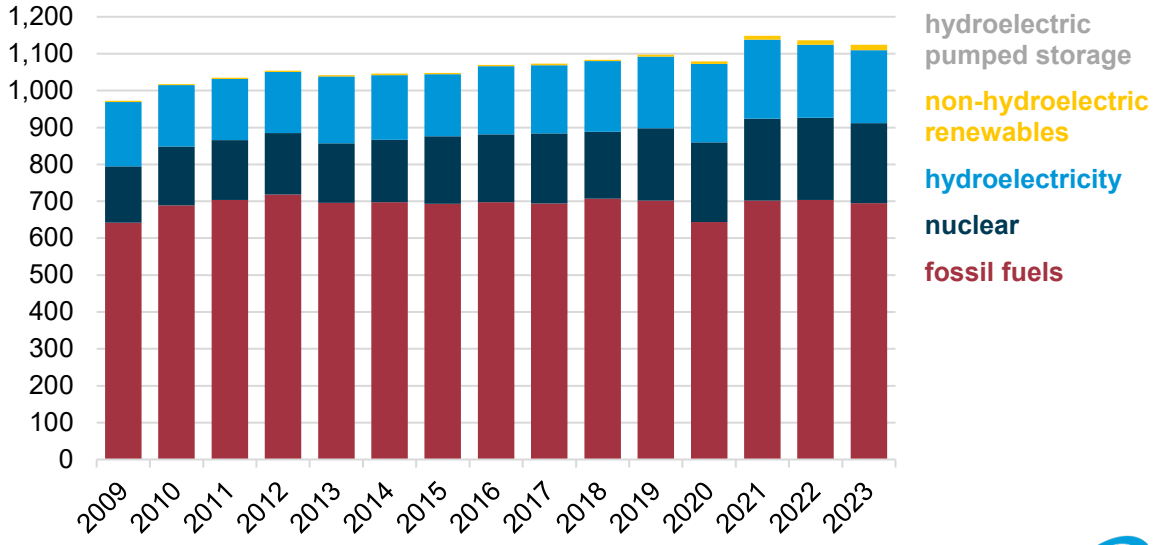
- Russia had 302 gigawatts (GW) of installed electricity generation capacity in 2023, only a slight decrease from 303 GW in 2022. The country's total generation capacity consists of installed capacity for electricity generation from fossil fuels (72%), nuclear power (19%), and renewables (9%) (Figure 6).[42]
- Russia generated 1,124 terawatthours (TWh) of electricity in 2023, a 1% decrease from 1,136 TWh in 2022 (Figure 7). Of this total, 46% of electricity was generated from natural gas, followed by 19% from nuclear, 18% from hydroelectric, 15% from coal, and 3% from oil and other sources. Electricity generated in Russia from natural gas totaled 513 TWh that same year, more than any country except the United States, which generated 1,806 TWh of electricity from natural gas in 2023.[43]
- Russia was the world's fourth-largest nuclear power generator in 2023 (271 TWh), after the United States (775 TWh), China (433 TWh), and France (321 TWh).[44] Rosatom, Russia's State Atomic Energy Corporation, is one of the world's largest nuclear power companies by capacity. It had seven nuclear power reactors under construction as of March 2025 (Table 8).[45]
- In September 2024, Russia's Unified Energy System published plans to increase the country's share of electricity generated from nuclear power to 23.5%. The plans included 34 new or proposed nuclear reactor projects with deployments scheduled from 2027 through 2042.[46]
- Russia generated the world's fifth-largest amount of electricity from hydropower in 2023, and hydroelectric power represented 17% of Russia's installed electricity generation capacity. RusHydro is the country's main hydroelectric power company and owns most of Russia's major domestic hydroelectric power plants (Table 9).[47] According to the Hydropower Congress of Russia, six new hydroelectric power plant projects are planned as of 2025, representing over 1,700 megawatts (MW) in planned additions to Russia's generation capacity (Table 10).[48]

Figure 6. Installed electricity generation capacity in Russia by fuel type, 2009–2023
gigawatts



Data source: U.S. Energy Information Administration, International Energy Statistics

Figure 7. Electricity generation in Russia by fuel type, 2009–2023
terawatthours



Data source: U.S. Energy Information Administration, International Energy Statistics database

Table 8. Nuclear power reactors under construction in Russia, 2025

Reactor name	Model	Reactor type	Net electric capacity megawatts	Construction start
Kursk 2-1	VVER V-510	PWR	1,200	April 2018
Kursk 2-2	VVER V-510	PWR	1,200	May 2019
Leningrad 2-3	VVER V-491	PWR	1,101	March 2024
Leningrad 2-4	VVER V-491	PWR	1,101	March 2025
Seversk BREST-OD-300	BREST-OD-300	FBR	300	June 2021
Cape Nagloynyn 1	RITM 200S	PWR	50	August 2022
Cape Nagloynyn 2	RITM 200S	PWR	50	August 2022

Data source: International Atomic Energy Agency, World Nuclear Association
Note: PWR=Pressurized Water Reactor, FBR=Fast Breeder Reactor

Table 9. Major operating hydroelectric power plants in Russia, 2024

	Company	Region	Nameplate capacity megawatts	Commissioned year
Sayano-Shushenskaya	RusHydro	Eastern Siberia	6,400	1978
Krasnoyarsk	EuroSibEnergo	Eastern Siberia	6,000	1967
Bratskaya	EuroSibEnergo	Eastern Siberia	4,500	1961
Ust Illminskaya	EuroSibEnergo	Eastern Siberia	3,840	1974
Boguchanskaya	RusHydro	Eastern Siberia	2,997	2012
Volzhskaya	RusHydro	Volga Urals	2,734	1958
Zhigulevskaya	RusHydro	Volga Urals	2,488	1956
Byreyskaya	RusHydro	Far East	2,010	2003
Saratovskaya	RusHydro	Volga Urals	1,427	1967
Cheboksarskaya	RusHydro	Volga Urals	1,370	1981
Zeyskaya	RusHydro	Far East	1,330	1975
Zagorskaya	RusHydro	Central	1,320	1987
Nizhnekamsk	Tatenergo	Volga-Urals	1,205	1979
Votkinskaya	RusHydro	Volga-Urals	1,020	1961
Chirkey	RusHydro	Southern	1,000	1974

Data source: World Resources Institute, Power Technology, and Global Energy Monitor

Table 10. Planned hydroelectric power plant projects in Russia, 2025

	Company	Region	Project type	Status	Additional capacity megawatts	Estimated completion year
Motyginskaya	EuroSibEnergo	Eastern Siberia	New construction	Announced	1,100	--
Nizhne-Zeyskaya	RusHydro	Far East	New construction	Announced	400	2030
Chirkey	RusHydro	Southern	Reconstruction	--	100	2027
Irkutsk	EuroSibEnergo	Eastern Siberia	Modernization	Preparing for construction	99	--
Nikhaloy	RusHydro	Southern	New construction	--	23	2027
Irganai	RusHydro	Southern	Reconstruction	--	0	--

Data source: Hydropower Congress of Russia and Global Energy Monitor
Note: --=not available

Energy Trade

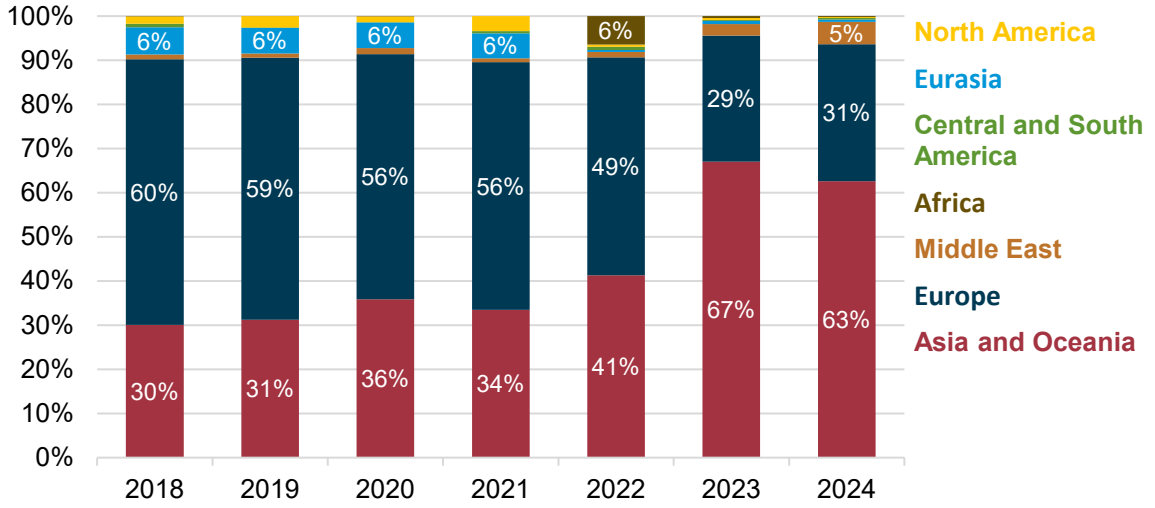
- Sanctions related to Russia's full-scale invasion of Ukraine in February 2022 expedited a shift in Russia's energy trade away from western markets and primarily toward Asia and Oceania. In 2021, prior to its invasion of Ukraine, Russia exported large amounts of coal (52% of total coal exports), crude oil (34%), natural gas (25%), and petroleum products (16%) to Asia and Oceania. In 2024,

countries in Asia and Oceania were the destination for 85% of Russia's coal exports, 63% of crude oil exports, 30% of natural gas exports, and 36% of petroleum product exports (Figures 8, 10, 12, and 17).[49]

Petroleum and Other Liquids

- Russia was the world's second-largest crude oil exporter in 2023, after Saudi Arabia, representing 11% (4.8 million b/d) of the world's total crude oil exports.[50]
- India surpassed China as Russia's largest crude oil importer between 2023 and 2024. India represented 34% of Russia's crude oil exports in 2024, up from 30% in 2023. China represented 26% of Russia's crude oil exports in 2024, down from 32% in 2023 (Figure 8).[51]
- Russia's Eastern Siberia-Pacific Ocean (ESPO) oil pipeline and Druzhba pipeline system are the country's primary routes to deliver crude oil to China and the EU (Figure 9 and Table 11).[52] The Skovorodino-Mohe branch of the ESPO pipeline connects to Chinese-owned pipelines (Russia-China 1 and 2) in China's northernmost county, and the main branch continues to Kozmino.[53] Transneft's Druzhba pipeline system is one of the world's longest completed pipeline networks and supplies Europe with crude oil from Western Siberia.[54]
- Russia was the world's fourth-largest petroleum product exporter in 2023, after the United States, India, and the United Arab Emirates (Figure 10). Russia represented 7% (1.9 million b/d) of the world's total petroleum product exports that same year.[55]
- Türkiye, Russia's largest petroleum product importer in 2024, received 17% of Russia's petroleum product exports, followed by China (11%) and Singapore, the United Arab Emirates, India, and Brazil (8% each).[56]
- Russia periodically banned gasoline exports starting in 2023 to ensure adequate supplies to its domestic market. In November 2024, Russia lifted a gasoline export ban for producers, but it remains in effect for brokers and resellers as of early 2025. From January 2023 through December 2024, Nigeria, the United Arab Emirates, Libya, and Brazil combined received 60% of seaborne gasoline exports from Russia (Figure 11).[57]

Figure 8. Crude oil exports from Russia by region, 2018–2024
percentage



Data source: Global Trade Tracker and Vortexa
Note: Individual percentages might not add to the total because of rounding. Figure excludes labels for percentages less than 5%.

Figure 9. Map of major pipelines and ports for Russia's crude oil, 2025

Source: Global Energy Monitor, Reuters, Bruegel, and the Centre for Research on Energy and Clean Air
Note: *Operable pipeline* may represent pipelines that are temporarily closed or partially active.

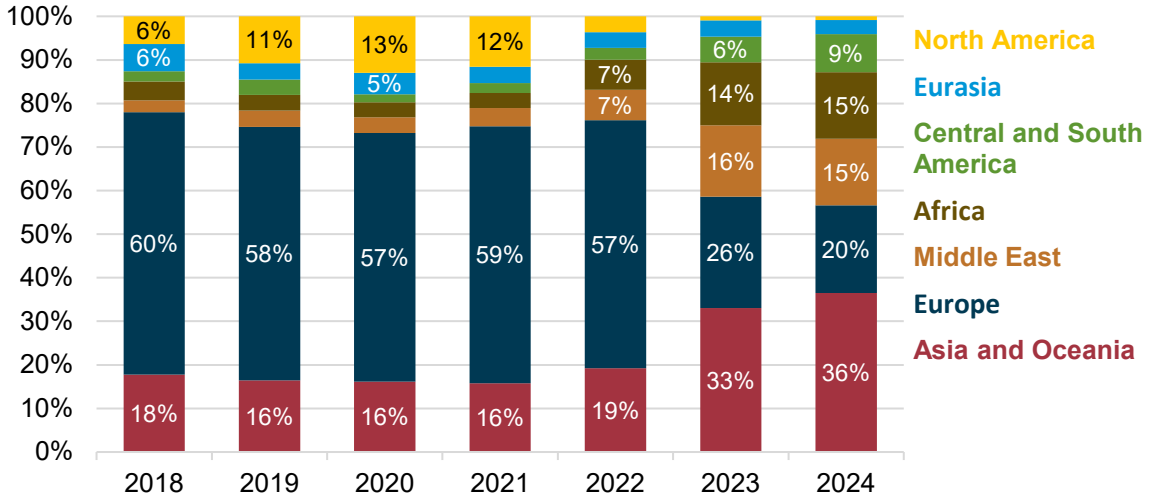
Table 11. Major pipelines for Russia's crude oil, 2025

	Capacity thousand barrels per day	Total length miles	Delivery path	Status	Stakeholders	Export destination region	Additional notes
Caspian Pipeline Consortium (CPC)	1,470–1,670	940	Tengiz Oil Field, Kazakhstan, (northeastern coast of the Caspian Sea) to Novorossiysk, Russia, (coast of the Black Sea)	Active	Transneft, Samruk-Kazyna, Chevron, and others	Eurasia	Crude oil originating from Russia accounts for around 10% of crude oil transported via the pipeline.
Eastern Siberia–Pacific Ocean 1 and 2 (ESPO 1 and ESPO 2)	600–1,610	2,990	Tayshet, Russia, (in Eastern Siberia) to Mohe County, China, and Kozmino, Russia, (on the Pacific Coast)	Active	Transneft	Asia	Includes Skovorodino-Mohe branch, connecting to Russia-China 1 and 2 in Mohe County, China
Druzhba	120–1,490	3,170	Central Russia to Central Europe via northern and southern branches that split in Belarus.	Partially active	Transneft and others	Europe	Throughput declined in 2022 because of Ukraine-related sanctions. The northern branch has only transported small volumes of crude oil from Kazakhstan since 2022.
Baltic Pipeline System 2 (BPS-2)	720	620	Bryansk Oblast, Russia, (bordering Belarus and Ukraine) to Ust-Luga (near St. Petersburg)	Active	Transneft	Europe	Connects to the Druzhba pipeline at Unecha Junction in Bryansk Oblast.
Baltic Pipeline System 1 (BPS-1)	120–560	830	Yaroslavl Oblast, Russia, (northwest of Moscow) to Primorsk (near St. Petersburg)	Active	Transneft	Europe	Primary pipelines within the system are Palkino-Primorsk, Yaroslavl-Kirishi, and Kirishi-Primorsk, with Palkino-Primorsk running parallel to the Yaroslavl-Kirishi and Kirishi-Primorsk segments.
Atasu-Alashankou (eastern segment of Kasakhstan-China pipeline)	400	600	Atasu, Kazakhstan, (Central Kazakshtan) to Alashankou, China, (near the border with Kazakhstan)	Active	Samruk-Kazyna (Kazakh state-owned company) and China National Petroleum Corporation	Asia	China receives an estimated 200,000 barrels per day of oil from Russia via the pipeline each year, connecting to Russian pipelines northward via the Omsk-Pavlodar-Skymkent system.
Russia-China 1	300	580	Mohe County, China, (near Russian border) to Daqing City, China	Active	China National Petroleum Corporation	Asia	Connects to ESPO-1 and ESPO-2, running parallel to Russia-China 2.
Russia-China 2	300	590	Mohe County, China, (near Russian border) to Daqing City, China	Active	China National Petroleum Corporation	Asia	Connects to ESPO-1 and ESPO-2, running parallel to Russia-China 1.

Data source: Reuters, Interfax, Centre for Research on Energy and Clean Air, Kazakhstan-China Pipeline LLC, Kursiv, Hillhouse Analytics, Global Energy Monitor, and Upstream

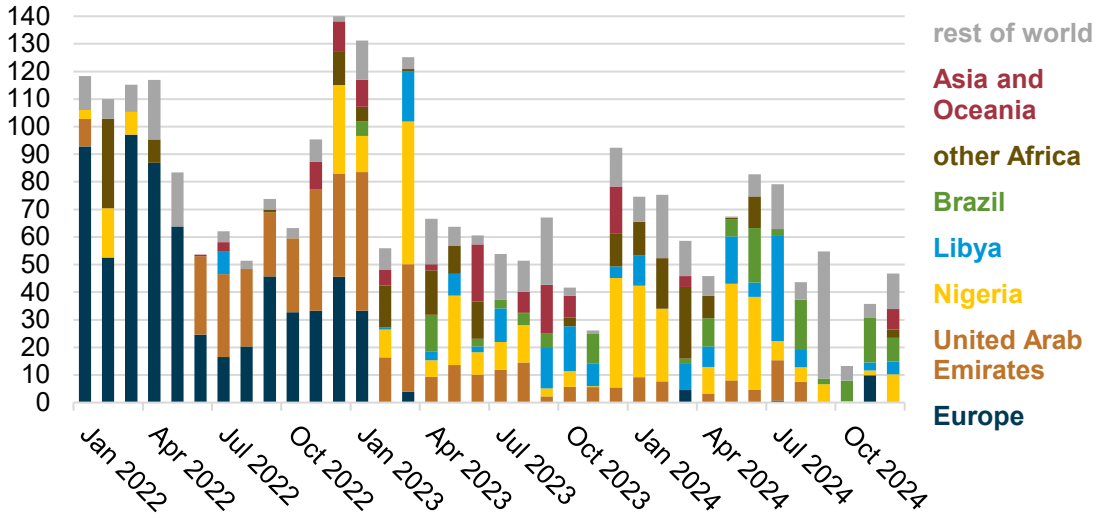
Note: Ranges in capacity represent the minimum and maximum values of the referenced pipeline branches and segments in each row. The length of the Baltic Pipeline System 1 (BPS-1) excludes the Palkino-Primorsk pipeline (440 miles). Capacity and length measurements are rounded to the nearest 10 value after metric conversions.

Figure 10. Petroleum product exports from Russia by region, 2018–2024
percentage



Data source: Global Trade Tracker and Vortexa
Note: Individual percentages might not add to the total because of rounding. Does not include labels for percentages less than 5%.

Figure 11. Seaborne gasoline shipments from Russia by region, 2022–2024
thousand barrels per day



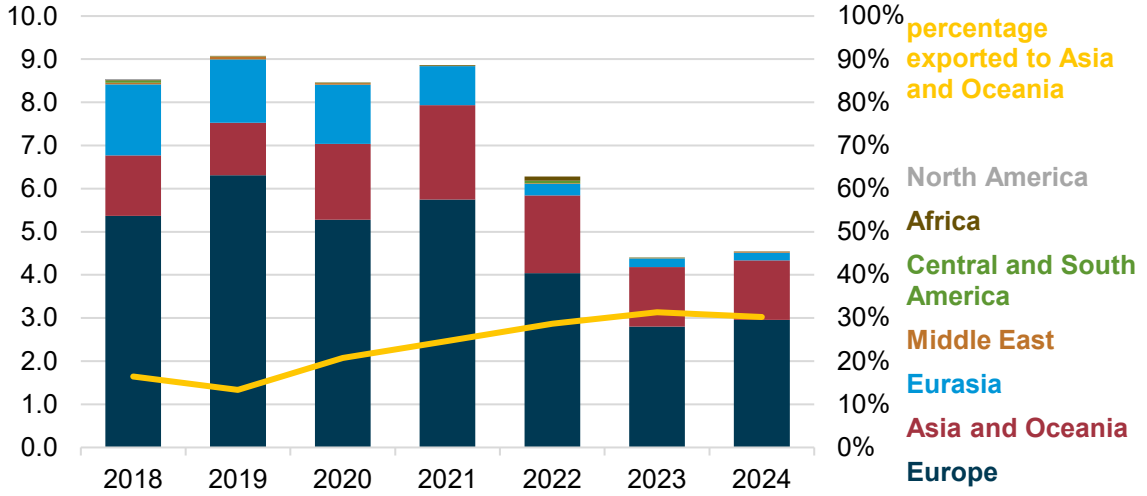
Data source: Vortexa
Note: Shipments with no recorded destination are included in *rest of world.*

Natural Gas

- Russia exported 4.4 Tcf of dry natural gas in 2023, down nearly 30% each year since 2021 (Figure 12).[58] Exports rose slightly to 4.5 Tcf in 2024. Russia's top importers of natural gas in 2024 were China (16%), France (11%), and Japan (10%).[59]

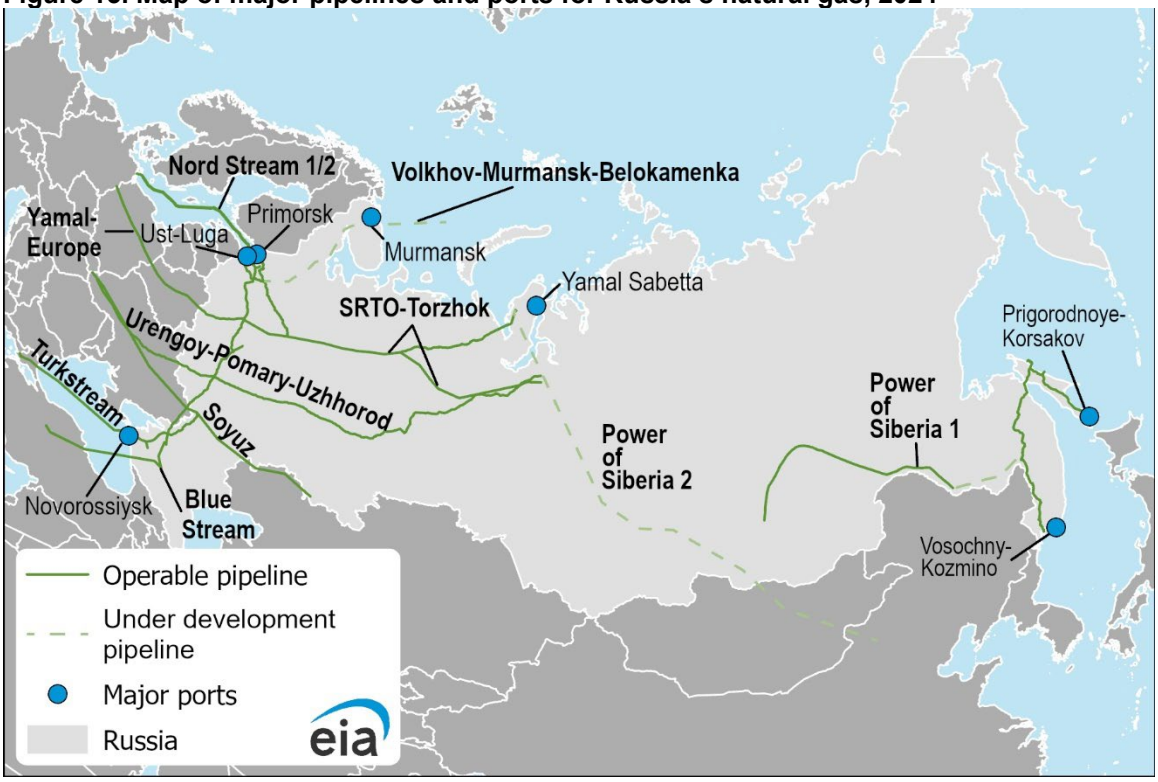
- Russia's pipeline infrastructure for natural gas is designed for delivery to Europe via four major routes—the Baltic Sea (Nord Stream 1 and 2), Belarus (Yamal-Europe), Ukraine (Urengoy-Pomary-Uzhhorod and Soyuz), and the Black Sea (Turkstream and Blue Stream) (Figure 13 and Table 12). The Nord Stream 1, Nord Stream 2, Soyuz, and Yamal-Europe pipelines stopped delivering Russia's natural gas in 2022, and transit agreements between Russia and Ukraine expired for the Urengoy-Pomary-Uzhorod pipeline in January 2025.[60]
- According to the Council of the European Union, 8% of the EU's piped natural gas imports in 2023 came from Russia, down from 40% in 2021.[61] Between December 2022 and December 2024, the EU received 40% of Russia's piped natural gas exports, followed by China (27%) and Türkiye (26%). The EU also received 49% of Russia's LNG exports, followed by China (22%) and Japan (18%).[62]
- Türkiye received 45% of its natural gas imports from Russia in 2023, primarily through Black Sea pipelines.[63] In December 2024, Türkiye surpassed the EU as Russia's largest source of revenue from piped natural gas.[64]
- Slovakia and Hungary were Russia's largest EU buyers of piped natural gas from December 2024 through February 2025.[65] In January 2025, Slovakia stopped receiving Russia's natural gas via the Urengoy-Pomary-Uzhorod pipeline (after transit agreements between Russia and Ukraine expired). As of February 2025, Slovakia received Russia's natural gas via Hungary, which connects to the Turkstream pipeline through the Balkans.[66]
- Russia's Power of Siberia 1 pipeline is the country's primary route to supply natural gas to China (Figure 14 and Table 12). A Chinese segment of the Power of Siberia 1 pipeline, completed in December 2024, allowed the pipeline to reach its designed capacity of 1,340 Bcf.[67]
- With the Power of Siberia 2 pipeline project, originally launched in 2019, Russia seeks to increase its natural gas export capacity to China, but China has shown little interest in the project. In addition, Mongolia—which the pipeline will pass through—excluded the Power of Siberia 2 pipeline from its national development plans in August 2024.[68]
- The Russian government seeks to increase capacity for LNG production during 2030 to 2035.[69] Four projects are either proposed or under construction but have been delayed because of Ukraine-related sanctions (Table 13).[70]
- Russia exported 1.6 Tcf of LNG in 2024, 4% more than in 2023 (1.5 Tcf), and Arctic ports accounted for 63% of the country's total LNG exports in 2024 (up from 61% in 2023) (Figure 14).[71]
- Novatek's Yamal LNG project accounted for almost all of Russia's Arctic LNG exports in 2024 (Table 13). That same year, Novatek's Arctic LNG 2 project, which is still under construction, shut down its first operating train and delayed the commissioning of a second train.[72]
- The Northern Sea Route provides Russia a shorter shipping route to Asian markets (Figure 15). In 2018, the Russian government announced a directive for Arctic shipping volumes to exceed 88 million short tons by 2024, but cargo volumes only reached 42 million short tons that year.[73]
- Arctic ports represented 7% of Russia's seaborne cargo movements of liquid fuels (including LNG) in 2024, up from 6% in 2022 and 2023 and 5% in 2021. In 2023 and 2024, Asia and Oceania received 39% of these Arctic shipments (up from 24% in 2022), over half of which were crude oil and condensate (Figure 16).[74]

Figure 12. Natural gas exports from Russia by region, 2018–2024
trillion cubic feet



Data source: U.S. Energy Information Administration, International Energy Statistics database; Global Trade Tracker; and Vortexa
Note: Reported exports for 2024 are preliminary estimates.

Figure 13. Map of major pipelines and ports for Russia's natural gas, 2024



Source: Global Energy Monitor, Reuters, and the Center on Global Energy Policy

Note: *Operable pipeline* may represent pipelines that are temporarily closed or partially active.

Table 12. Major pipelines for Russia's natural gas, 2024

	Capacity billion cubic feet	Length miles	Delivery path	Status	Primary stakeholder	Export destination region	Additional notes
Nord Stream 1	1,940	760	Vyborg, Russia, (near St. Petersburg) to Germany via Baltic Sea	Closed	Gazprom	Europe	Consists of two parallel 970-billion cubic feet (Bcf) pipelines
Nord Stream 2	1,940	760	Ust-Luga, Russia, (near St. Petersburg) to Germany via Baltic Sea	Closed	Gazprom	Europe	Consists of two parallel 970-Bcf pipelines
Power of Siberia 2	1,770	2,210	Northwest Siberia to China	Proposed	Gazprom	Asia	Planned/potential delivery of natural gas by 2030
Volkhov-Murmansk-Belokamenka	1,410	810	Volkhov, Russia, (near St. Petersburg) to Murmansk and Barents Sea	Proposed	Gazprom	Arctic	Potential construction scheduled for completion by 2027
Power of Siberia 1	1,340	1,860	Kovykta and Chayanda natural gas fields (in Eastern Siberia) to border with Northwest China	Active	Gazprom	Asia	Connection proposed to Sakhalin-Khabarovsk-Vladivostok natural gas pipeline on Russia's Pacific coast
Yamal-Europe and SRTO-Torzhok	740–1,170	2,400	Northwest Siberia to Germany via Belarus and Poland	Partially active	Gazprom	Europe	Flows from Russia halted through Poland in 2022
Turkstream	1,130	580	Anapa, Russia, (southern coast) to Northwest Türkiye via the Black Sea	Active	Gazprom	Europe	Consists of two parallel 570-Bcf pipelines
Urengoy-Pomary-Uzhhorod	990	2,770	Northwest Siberia to Uzhhorod, Ukraine	Partially active	Gazprom	Europe	Transit agreements between Russia Ukraine expired in January 2025.
Soyuz	880	1,710	Orenburg, Russia, (near the southern Ural Mountains) to Uzhhorod, Ukraine	Closed	Gazprom	Europe	Part of Brotherhood pipeline network transiting Ukraine to Slovakian border, Ukraine stopped accepting natural gas from the pipeline after Russia's invasion in 2022
Blue Stream	570	750	Stravropol Krai, Russia, (near the southern coast) to Ankara, Türkiye	Active	Gazprom	Europe	Onshore segment of pipeline in Türkiye owned and operated by Botas, Türkiye's state-owned pipeline company

Data source: Reuters, NS Energy, Global Energy Monitor, Neftegaz, Carnegie Endowment for International Peace, Lowy Institute, Financial Times, European Parliament, Offshore Technology, Nord Stream, *Pipeline & Gas Journal*, *The Barents Observer*, RBC Ukraine, and bne IntelliNews

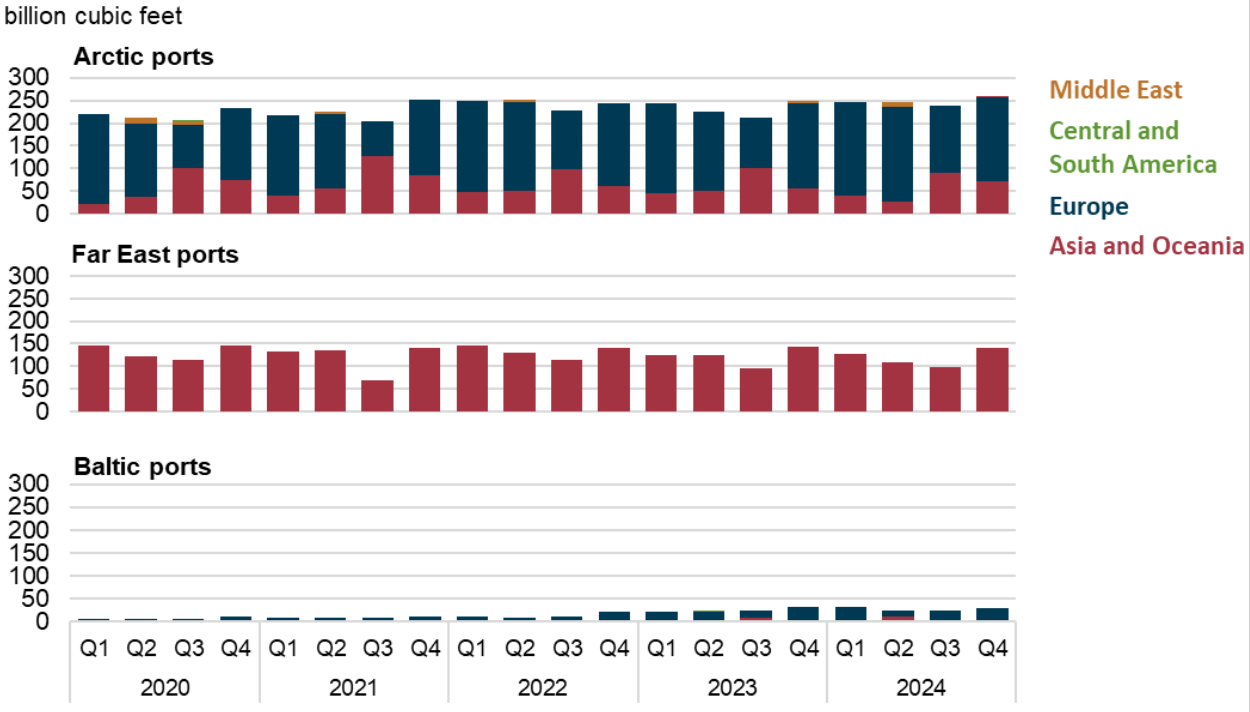
Note: Capacity and length measurements are rounded to the nearest 10 value after metric conversions. The length of the Power of Siberia 2 pipeline includes the Soyuz Vostok segment of the pipeline (598 miles).

Table 13. Russia's major LNG plants and projects, 2024

	Primary stakeholder	Region	Status	Estimated first year of production	Full nameplate capacity billion cubic feet	Exports billion cubic feet
Sakahalin-II	Gazprom	Far East	Operating	2009	461	473
Yamal LNG	Novatek	Western Siberia	Operating	2017	836	989
Cryogas-Vysotsk	Novatek	Northwest	Operating	2019	32	38
Portovaya LNG	Gazprom	Northwest	Operating	2022	72	70
Arctic LNG 2	Novatek	Western Siberia	Partially operable and under construction	2023	951	10
Ust-Luga	Gazprom	Northwest	Under construction	2028	937	N/A
Murmansk LNG	Novatek	Northern	Proposed	2030	980	N/A
Arctic LNG 1	Novatek	Western Siberia	Proposed	2030	951	N/A

Data source: Novatek, Mitsubishi Corporation, Reuters, Columbia University Center on Global Energy Policy, Global Energy Monitor, Offshore Technology, Interfax, World Oil, and Vortexa
Note: Sakahalin-II, Yamal LNG, and Cryogas-Vysotsk have been producing LNG above nameplate capacity since at least 2023. Capacity and export quantities represent volumes in terms of gaseous natural gas. Portovaya LNG includes exports from the Kaliningrad LNG terminal (FSRU Marshal Vasilevskiy). Proposed increases in capacity for operating LNG plants and projects are excluded. In 2024, Arctic LNG 2 consists of three total production trains. As of mid-2025, Trains 1 and 2 were both operable and had produced LNG, but volumes were well below nameplate capacity. It is unclear when or if Novatek will proceed with construction of Train 3. LNG=liquefied natural gas, FSRU=Floating Storage and Regasification Unit, and N/A=not applicable

Figure 14. Quarterly liquefied natural gas (LNG) exports from Russia by ports of origin and destination, 2020–2024

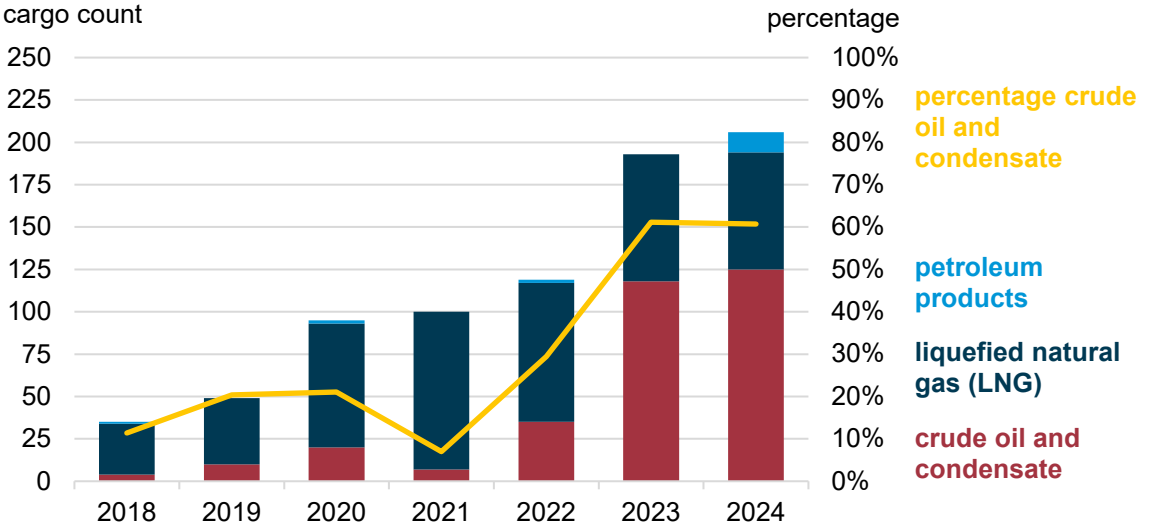


Data source: Vortexa

Figure 15. Map of Northern Sea Route (as of July 2025)

Source: *The Economist*

Figure 16. Seaborne cargo movements of liquid fuels and liquefied natural gas (LNG) from Russia's Arctic ports to Asia and Oceania, 2018–2024

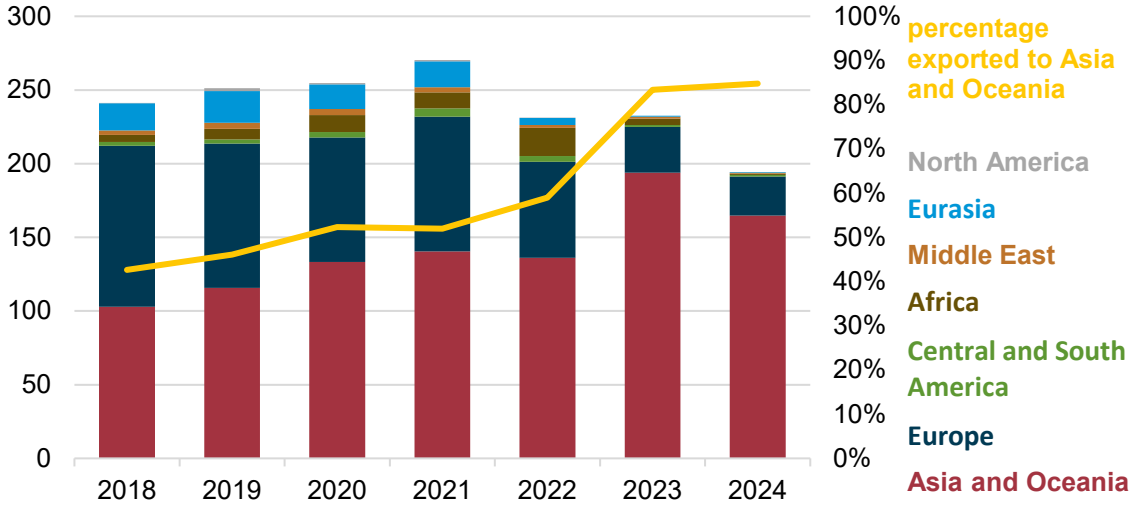


Data source: Vortexa

Coal

- Russia was the world's third-largest coal exporter in 2023, after Indonesia and Australia, representing 14% (233 million short tons) of the world's total coal exports (Figure 17). Metallurgical coal represented 17% (40 million short tons) of Russia's total coal exports in 2024, the country's highest share since 2002.[75]
- In 2024, China received 49% of Russia's coal exports, up from 47% in 2023 and 22% in 2022. Between 2023 and 2024, Russia was still China's second-largest coal supplier, after Indonesia, despite China's total coal imports from Russia decreasing 13% year over year.[76]
- Rail is Russia's primary mode of transportation to export coal.[77] Limited eastbound rail infrastructure from the Kuzbass region to the Pacific Ocean causes congestion and delays compared with more developed rail infrastructure for delivery to Europe.[78]
- In 2024, Russia's state-owned railway company, Russian Railways, reported that coal accounted for 28% of the company's cargo loads.[79]
- Russia's 531-kilometer Pacific Railway, privately owned by the Elga coal company, delivers coal from the Elginskoye coal field, in Russia's Far East (over 2.4 billion short tons in reserves), to the Port Elga coal terminal on the Sea of Okhotsk. Elga expects the project's annual transshipment capacity to exceed 33 million short tons by 2026 and 55 million short tons by 2027.[80] In comparison, Russia's other major Pacific coal ports, at Vostochny and Vanino, have a combined annual coal capacity of nearly 100 million short tons.[81]

Figure 17. Coal exports from Russia by region, 2018–2024
million short tons



Data source: U.S. Energy Information Administration, International Energy Statistics database and Global Trade Tracker
Note: Reported exports for 2024 are preliminary estimates.

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