Russia and Its Energy Achilles' Heel

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Abstract:

Russia is a country with abundant sources of energy. Its economy is heavily reliant on the oil and gas industry, which provides revenue for many non-energy sectors such as equipment manufacturing, field services, and transportation. In the past decade, Russia has made significant contributions to the economic development of its energy industry. In theory, the current version of Russia's "Energy Strategy Through 2035" is based on a comprehensive analysis of the current state of the energy sector in the country. In practice, however, these trends represent a shift from dependence to addiction. However, Russia's continued reliance on its oil and gas industry and disregard for the consequences of its actions will ultimately harm the country's economic development.

Key Words: Russian Energy Sector, Oil and Gas, Russian Economic Development

Introduction

In the 1960s and early 1970s, the USSR government began to treat the oil and gas industry with its newly discovered colossal natural resources as the most important sector of the national economy, capable of generating huge export revenues and creating a solid basis for domestic wellbeing. Other industries were not developed as intensely as this one. Gradually, energy exports created an interdependence with Western consumer nations with Soviet Russia as a major supplier. This interdependence remained a factor of political stability for several decades.

After the demise of the Soviet Union, the new Russian authorities further enhanced the dominant role of oil and gas in the economy to the detriment of other industries, and this strategy has made the country a parasite of natural resources rather than a trendsetter in advanced technologies that had to be imported in increasing quantities.

If Russia followed the course of economic integration alongside developed nations, this status would not have been a liability, but the new ruling group headed by President Putin decided otherwise. First, a series of reforms led to the deterioration of the investment climate, and then the government started weaponising energy interdependence with the West, disregarding the negative impact of this move on the energy sector and on the national economy. Instead of an asset, Russia's energy reserves became the weakest spot of the government. Their use as a geopolitical tool—in a situation where other industries had been all but disregarded—is leading to an economic and social catastrophe.

History Lessons

Energy traditionally plays a vital role in Russia, due to huge fuel demand necessitated by its harsh climate, long travel distances, and because energy resources—starting with wood, peat, coal, etc.—have been more than plentiful. In the 19th century, the Russian Empire expanded south of the Caucasus and gained access to rich petroleum reserves on the shores of the Caspian Sea where the first oil wells were drilled on the Absheron Peninsula (currently in Azerbaijan) in the 1840s. In 1859, the first oil refinery was built in Baku, and by the end of the century, oil extraction in that area totalled 9 million tonnes, which accounted for about half of global production.

After the establishment of Communist rule and civil war in Azerbaijan in 1920, production fell to 2.4 million tonnes, but before Hitler invaded the USSR in 1941 it equalled 23.6 million tonnes, 76 percent of the USSR's total. As the German army was advancing toward Caspian oil reserves in 1941-1942, the USSR intensified search for oil in Tatarstan, and in June 1948, a large Romashkinskoye oil field with initial recoverable reserves of three billion tonnes was discovered there. By 1956, oil production in Tatarstan exceeded that of Azerbaijan and in the 1960s this region was yielding one-third of all oil in the Soviet Union.

The first West Siberian oil was produced in September 1959 in the Khanty-Mansi Autonomous District in Tyumen. The Soviet government adopted the program of developing West Siberian oil reserves in April 1966. In 1970, the area produced over 30 million tonnes and in 1975, 140 million tonnes. Soon the USSR became the world's largest oil producer. In 1988, West Siberian oil output peaked at 415 million tonnes.

Before WW2, the USSR obtained natural gas mainly from oil projects. In 1939, the country produced a total of 2.3 billion cubic meters of gas, 90 percent of which was in Azerbaijan. In September 1941, a large Yelshanskoye gas field was discovered near Saratov on the Volga River. More discoveries followed there, and the Soviet Union's first gas trunkline between Buguruslan and Kuibyshev became operational in 1943. In 1946, gas from the Saratov Region reached Moscow. In West Siberia, natural gas production started in 1953, and the discovery of the unique Urengoy field, with initial reserves of 10.9 trillion cubic meters, in 1966 paved the way for new large-scale discoveries. In 1970, the USSR produced 198 billion cubic meters of gas.

The discovery of three world-class oil-and-gas-rich provinces—in the Caspian, Volga, and West Siberian regions—predetermined a rapid development of Russia's energy industry but caused an economic distortion toward a strategic emphasis on extraction and export of natural resources to the detriment of other sectors.

It dawned on the Soviet government in the 1960s that the country's tremendous oil and gas resources could not only cover domestic energy requirements but become both the main export staple and an instrument of international political influence, provided a delivery infrastructure was in place. The Druzhba pipeline system, spanning over 8,900 kilometres, was built in 1964–1974 to deliver about 70 million tonnes of oil annually from Almetyevsk and Samara on the Volga River to Soviet satellite countries: Poland, East Germany, Czechoslovakia, and Hungary.

Unlike oil, which could be exported by pipe, rail, or maritime vessels, delivery of natural gas at that time, when transportation of liquefied natural gas was not practiced, was fully dependent on pipelines. Thus, geographical factors dictated a focus on the western destination of gas exports as a pipeline to the east would be too lengthy to justify its construction, and there were no markets in either China or other Asia-Pacific nations. It was Europe that the Soviet government made its target for gas trade.

The history of Russia's gas export pipelines began in 1967 when the Brotherhood trunkline in Ukraine was extended beyond the USSR borders into Eastern Europe. First contracts were signed with Austria and Italy. Gas deliveries to West Germany started in 1973. Another line, the Union from Orenburg, was commissioned in 1980 to reach Czechoslovakia, Hungary, and Romania. In 1984, the Urengoy-Pomary-Uzhgorod pipeline was added to the export infrastructure.

West European governments welcomed the new energy supplier despite criticism from the United States and regardless of the Soviet Union's aggressive policies (the invasion of Czechoslovakia in 1968 and Afghanistan in 1979). In the 1970s, the 'gas-for-pipes' deal was signed with West Germany: the USSR obtained German-made large-diameter pipes for the construction of trunklines and paid for them with gas.

Energy sales to West European nations and purchases of food and other commodities for hard-currency revenues from those sales delayed the collapse of the Soviet economy and downfall of the Communist regime for at least a decade before the demise of the USSR in 1991. In all aspects, an interdependence was born. The USSR, which was eager to get access to Western commodities, cultivated economic ties with the West, and gas supply played an important role in this policy—and West European nations became gradually convinced that the Soviet Union would be a reliable and indispensable energy supplier regardless of political and ideological differences. They were betting on interdependence and believed it could not be broken by either party: the Soviets depended on the West as the buyer of gas and provider of vital imports as much as Europe depended on energy supply from the USSR.

In the post-Soviet era, the Russian government continued the predecessors' policy of expanding hydrocarbon exports. It did not see other ways of quickly healing the country's ailing economy and preventing social tensions. Under Vladimir Putin, Russia made quite a few attempts to eliminate transit countries from oil and gas export routes.

The Yamal-Europe gas pipeline with the annual capacity of 33 billion cubic meters was built in 1994–2006 to reach Germany via Belarus and Poland, and in 2003, the construction of the Blue Stream gas pipeline across the Black Sea to Turkey began. Currently, this line transports about 12 billion cubic meters a year. The Nord Stream pipeline to Germany with a nameplate capacity of 55 billion cubic meters a year was commissioned in 2012, and another Black Sea line, the TurkStream, became operational in 2020. As to the Nord Stream 2 pipeline in the Baltic Sea, it was built but remains defunct first because of international sanctions and second due its recent destruction. The work on the Power of Siberia gas pipeline to China is underway. It is expected to reach the planned annual capacity of 38 billion cubic meters in 2025.

The Backbone of the Soviet Economy

By the beginning of the 20th century, almost all the world's oil was produced in two countries: Russia (around Baku) and the United States (in Pennsylvania). In 1900, Russia provided 60 percent of export sales of kerosene, but the bulk of oil production targeted domestic consumers—mainly as fuel oil (*mazut*) for heating. The Russian Empire government banned crude oil exports, allowing only kerosene (46.4 percent of total exports of petroleum products in 1913), lubricants (25.3 percent), and *mazut* (6.8 percent) to be sold abroad. The excise tax on petroleum products, which was the largest levy on oil then, accounted for only 1.5 percent of budget revenues.

The Communist government in the 1920s regarded oil exports as a remedy for economic recovery after WWI and the Civil War as production of other exportable goods had shrunk. In 1932, exports of petroleum products fetched 18.7 percent of the country's export revenues. Foreign sales of crude oil in that period equalled just 9.4 percent of total petroleum exports and kept decreasing to almost zero by 1939. The growing domestic demand eroded oil export potential. While in 1932 Soviet Russia exported 28.6 percent of produced oil, in 1939 this share fell to 1.6 percent.

Immediately after WWII, the USSR exported no crude oil and small volumes of refined products until 1948. In the 1950s, however, the country started supporting its foreign satellites, often at the expense of national economic interests, and supply of oil at artificially low prices was one of the tools of this support. From 1955–1960, exports of Soviet oil (mainly crude) to 'socialist' countries tripled and to 'developing' nations, increased 2.6-fold. The prices for the Soviet Union's Eastern European allies did not compensate for production and transportation costs, and the recipients were able to sell petroleum products (made from Soviet crude on Soviet refining equipment) to the West at a significant premium.

Even after the 1973 oil crisis, which boosted the process worldwide, the Soviet Union continued this practice. Starting in 1975, the USSR fixed the price of oil it exported to Eastern Europe as an average global price for the previous five years, to protect the economy of the satellites from oil price volatility.

Figure 1. Share of fuel and electricity revenues in the USSR budget

	1940	1965	1970	1975	1980	1981
Budget, billion roubles	18	102	157	219	303	321
Energy revenues, billion roubles	0.03	1.27	1.80	7.55	23.28	28.67
Share in budget, %	0.18	1.24	1.15	3.45	7.69	8.94
	1985	**1986**	**1987**	**1988**	**1989**	**1990**
Budget, billion roubles	373	372	376	377	402	472
Energy revenues, billion roubles	38.29	32.30	31.69	28.26	27.43	24.61
Share in budget, %	10.28	8.69	8.42	7.50	6.82	5.22

Source: "People's Economy of the USSR" annual reports

In the meanwhile, the Soviet government was boosting investments in oil and gas, which it was willing to make the principal source of export revenues. Other sectors, such as civil machinery manufacturing, agriculture, consumer goods, were underfinanced. The 1970s may be regarded as the period when the country made its choice of critical dependence on oil and gas. The share of energy revenues in the Soviet budget soared from 1.24 percent in 1965 to 10.28 percent in 1985 (See *Figure 1*), although the percentage may be much higher as officially published statistical records were distorted for political reasons and cannot be trusted.

From Dependence to Addiction

Official records in the post-Soviet period show a somewhat fluctuating growth of the oil and gas share in Russia's federal budget revenues (See *Figure 2*), but the Russian Ministry of Finance includes only the mineral extraction tax, export duties, and windfall tax in the sum of such revenues, disregarding such levies as oil and gas producers' corporate income tax, dividends due to the state, personnel income tax, and other levies. Independent estimates may raise the share of oil and gas in the federal budget's revenues to over 60 percent.

Figure 2. Share of oil and gas revenues in Russia's federal budget

	2002	2003	2004	2005	2006	2007	2008
Budget revenues, trillion roubles	3.5	4.1	5.4	5.1	6.3	7.8	9.3
Oil and gas revenues, trillion roubles	0.7	0.9	1.0	2.2	2.9	2.9	4.4
Share in budget, %	20	22	19	43	47	37	47
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	
Budget revenues, trillion roubles	7.3	8.3	11.4	12.9	13.0	14.5	
Oil and gas revenues, trillion roubles	3.0	3.8	5.6	6.5	6.5	7.8	
Share in budget, %	41	46	50	50	50	51	
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	
Budget revenues, trillion roubles	13.7	13.5	15.1	19.5	20.2	20.6	
Oil and gas revenues, trillion roubles	5.9	4.8	6.0	9.0	7.9	5.2	
Share in budget, %	43	36	40	46	39	26	

Source: RF Ministry of Finance reports

In 2020, despite the impact of the coronavirus pandemic on the global economy and low energy prices, oil and gas exports fetched Russia $167.7 billion, 49.6 percent of the country's total export revenues. In 2019, the figures were higher ($265 billion and 62.1 percent).

The oil and gas industry remains a prominent source of revenues for many non-energy sectors of the Russian economy, such as equipment manufacturing, field services, construction, transportation, metals, pipes production, and so on. The industry's annual capital expenditures were estimated in 2019 to exceed 1.5 trillion roubles (about $23 billion), one-third of the overall capex in the Russian economy.

The 2001–2011 period witnessed a particularly quick growth of the oil and gas revenues' role in Russia. A 2002 reform of oil and gas taxation resulted in an increase of the state share in appropriation of these revenues.

The growing energy prices and a boost of export volumes brought new funds into the federal budget. An upsurge occurred in 2005 when the share of oil and gas revenues jumped from 19 percent in the previous year to 43 percent as the price of a barrel of Russia's Urals export blend grew from $34.40 to $50.80 and kept growing.

Encouraged by this bonanza of cash, the government launched a campaign to de-privatise commercial oil companies that had become private-owned in the 1990s. In 2003, after the infamous Yukos case, the assets of this commercially efficient company ended up in the hands of state controlled Rosneft. Later, in a series of a dozen takeovers, Rosneft established control over such private companies as TNK-BP, Bashneft, Udmurtneft, and others. In 2005, Gazprom took over Sibneft from private owners and renamed it Gazprom Neft.

The official so-called breakeven price of a barrel, an index the Russian Ministry of Finance uses to balance the income and expenditures in the federal budget, started to play a large role. The higher the index, the larger expenditure the government can plan. While in 2007 the breakeven price equalled $26.70, in 2008 it was as high as $57.90, and between 2009 and 2014 it exceeded $100. From 2001–2010, the growth of oil prices accounted for almost 50 percent of Russia's GDP growth. The GDP in that decade increased by 59.2 percent, according to the World Bank data.

In the early 2000s, the Russian government did not regard the growth of oil prices as a stable upward tendency. In 2004, a 'stabilization fund' was established to accumulate that portion of oil revenues which was sold higher than the breakeven price. In 2004, the breakeven price equalled $20 per barrel and in 2005, $27 per barrel. These surplus cash earnings were to help maintain the budgetary balance in the future if the oil price started to fall. This fund was split into two parts later but in 2018 became one, the National Wealth Fund which remains the government's large rain-day hoard but is occasionally used to help finance the government's selected projects. In July 2022 its size was officially recorded as 10,775 billion roubles ($185 billion).

The global economic crisis of 2008–2009 had a negative impact on Russia's stock market and financials but did not affect its oil and gas industry significantly. Oil production in 2008 edged down just 0.7 percent and in 2009 even went up 1.2 percent. Global oil prices started recovering quickly in 2010 and reached a pre-crisis level in 2011.

During the crisis, the Russian government evidently concluded that the focus on oil and gas as the basis of the national economy was the right

strategy, any crisis that may erode the size of budgetary revenues would be short-lived, and the general movement toward higher energy prices would guarantee success in a long-term perspective. In that period, an instrument for supporting the oil and gas industry in times of low prices was adopted, the devaluation of the national currency. The instrument was employed with success in 2009, 2014, and 2016. It enabled the industry to cut down the costs of production and transportation and boost the volume of exports, replenishing the state budget.

This approach, however, had its liabilities. Russia's manufacturing industries suffered from the rouble devaluation because they had to spend more in servicing their hard-currency credits they obtained to import equipment and technologies. As a result, they were decreasing investment in development, thus enhancing Russia's tilt toward an economy based on exploitation of natural resources.

Reserve funds that were accumulating surplus revenues of oil and gas exports became another anti-crisis tool for the Russian government. In 2005–2008, the funds received 7.7 trillion roubles, 33 percent of the country's total capex. This hoard could have been used to develop manufacturing industries, but the government preferred to tap it only for co-financing oil and gas projects, such as Yamal LNG when international sanctions obstructed borrowing from Western banks.

The discrimination of non-energy sectors of the national economy in favour of oil and gas created a vicious circle: high dependence on oil and gas production led to crises when energy prices were sagging; then the crises made the government to devalue the national currency; then the weak rouble depressed investments in manufacturing industries; and Russia's dependence on natural resource exploitation became more and more pronounced.

Beneficiaries at Home and Abroad

The list of priorities in the current version of Russia's "Energy Strategy Through 2035" opens with the following: "Guaranteed safeguarding of the country's energy security as a whole and on the level of the Russian Federation's divisions, particularly those on geostrategic territories." These territories are regions along the Arctic coast and the Far East, which the government regards as vital for national defence. These regions suffer more

than any other part of the country from depopulation and economic depression. The government expects the oil and gas companies to contribute to these regions' social and industrial development—not only by fuel supply but also by infrastructure projects such as export pipelines and Arctic maritime transportation. The LNG projects of Novatek and Rosneft's Vostok Oil project, for example, fit the description.

From a geopolitical angle, energy supply remains an instrument of the Russian government. Russian gas is sold at a discount to those former Soviet republics that follow—or pretend to follow—Moscow's political line (e.g., Belarus, Armenia, Kyrgyzstan) but such 'unruly' countries as Lithuania, Latvia, Estonia, Georgia, and Ukraine were often faced with gas bills with the prices on the EU level or above that level. In Europe, Russian gas contracts have also become politicised, as Gazprom's behaviour during the 2021 winter gas crisis in the EU and the disruptions of gas flows during Russia's war in Ukraine have demonstrated. Some EU member nations' critical dependence on Russian energy supply prevented the West from launching tough sanctions against the aggressor, such as a comprehensive oil and gas imports embargo.

In addition, oil and gas revenues help the government to buy the loyalty of Russia's political and financial elites. Apart from direct financing from the federal budget, these elites receive support through lucrative contracts awarded by Gazprom, Rosneft and other state companies—and can redirect such cash flows to bank accounts of corrupt government officials in foreign tax havens.

A Parasite on Natural Resources

Vladimir Putin's ideology in the energy sector was initially formed in 1991–1996 when he was responsible for foreign relations of the mayor's office in St. Petersburg. One of his tasks was to procure imported food and commodities for the population in exchange of energy and raw material exports. At that period, Russia could not offer competitive industrial products or advanced technologies but possessed immense natural resources for sale. It seemed to Putin and his subordinates in that period (Igor Sechin and Alexay Miller who later became the CEOs of Rosneft and Gazprom) that export of natural resources would guarantee quick and permanent profit for decades to come.

This ideology became a national strategy when Putin became president of Russia and gradually established control over first the gas industry and then, over most of the country's oil production, and initiated a tax reform to collect as much revenue from the resource rent as possible.

Putin's occasional declarations about the need to drop the oil addiction, develop advanced technologies, and create 25 million hi-tech jobs remained empty rhetoric. When his adventurous foreign policies provoked international sanctions, it became impossible for Russia to cooperate with the rest of the world in technological progress, leaving the nation with just one option: to continue exploiting natural resources. The notorious 'import replacement,' aka 'sovereign technologies,' has proven to be an inadequate means of maintaining a semblance of industrial development.

So far, there is no evidence of the Russian government's intention to take practical steps to abandon or, at least, decrease its dependence on oil and gas. The government appears to believe—and proves in in such strategic documents as the 2019 "Energy Security Doctrine"—that the developed nations' notion of determination to switch to greener energy and sustainable economy belongs to the category of 'risks,' 'threats,' and 'challenges' as far as Russia is concerned. According to Vladimir Litvinenko who heads the St. Petersburg Mining University and used to be the scientific coach for Putin's Ph.D. thesis, the West's decarbonisation strategy "was politically motivated by a desire to deprive Russia of markets and condemn it to poverty."

Prior to the Ukraine war and ensuing international sanctions Putin was convinced, and declared it in October 2019, that oil would "remain source number one in the global energy balance for the next 25 years even though its share would gradually decrease and the share of renewable energy, increase." The Russian government has not prepared a comprehensive plan for trimming down the country's dependence on oil and gas. Deputy Prime Minister Alexander Novak suggested an accelerated monetisation of Russian hydrocarbon resources before they lose their value, and Minister of Energy Nikolai Shulginov in January 2021 came up with a proposal to cut down state financial support of renewable energy projects by 30 percent, allegedly to keep electricity prices from growing.

A strategy that rejects the global trend toward decarbonisation and clean energy translated into the conservation of technological backwardness, and the sanctions against Russia as an aggressor make the situation even worse for this energy-rich country. Before the invasion of Ukraine, independent experts suggested, somewhat idealistically as later events demonstrated, that

the Russian economy might be saved through the radical improvement of the investment climate, which must become attractive for international investors with their technologies, know-how, and capital. The solution, they assumed, ought to include the following measures: decreasing political tensions in Russia's relations with the West; safeguarding ownership rights for business and technologies; de-monopolisation of economy, encouragement and support of small and mid-sized businesses; and tough anti-corruption measures and a restriction of interference in business by law-enforcement officials.

The Russian government acts in an exactly opposite manner, which does not leave chances for an economic revival—or even for maintaining the economy in the current shape.

Dire Consequences

Energy resources are Russia's most competitive trade commodities. In 2020, the coronavirus year, they brought 49.6 percent of total export value to the Russian budget. In 2021, their share increased to 54.3 percent as compared to 10.4 percent for metals, 7.7 percent for chemicals, 7.3 percent for food, 6.6 percent for machinery, and 3.5 percent for timber and pulp.

This distorted structure of exports makes the Russian economy extremely vulnerable to pressure from such factors as: a drop in oil prices; acceleration of the movement toward decarbonisation and green energy on Russia's traditional energy markets (e.g., the EU, China); political tensions and conflict causing sanctions and embargos against Russian energy exports; and the Russian government's decision to manipulate energy export flows as an instrument of achieving political gains.

The probability of replacing energy exports with other exportable commodities or services is very low given the long-lasting emphasis on oil and gas. Development of renewable and alternative sources of energy in Russia is in a nascent stage. Any significant decrease of energy exports is bound to have a dramatic economic and social effect on Russia, and a shortage of export revenues undermines Russia's potential to finance large infrastructure projects, maintain the national defence potential, and keep the living standards from declining.

The deterioration of the oil and gas industry will impede development of some key sectors of the national economy, such as equipment

manufacturing, field services, transportation, construction, metals, and so on. A shrinking access to hard-currency revenues would be translated in diminishing access to imported commodities, some of which are of critical importance for Russia. Russia has invested tremendous funds in upstream and infrastructure projects, which may become idle (and never reach reimbursement). Finally, the geopolitical role of Russia in the countries that receive its oil and gas will suffer.

So far, the attitude of the Russian government demonstrates that such consequences are disregarded, and the vitally important oil and gas industry is being sacrificed in favour of military encroachments in Europe.