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Finance (Basic)

Oil and Gas industry in Russia

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Contents

1. Introduction	3
2. Russia's oil and gas industry: short history review	4
3. Situation nowadays.....	6
3.1. Rising state role.....	6
3.2. Situation in oil and gas industry during financial crisis	9
4. Future plans about oil and gas industry.....	11
4.1. The Arctic prognosis.....	11
4.2. Production plans for future.....	12
4.2.1. Oil	12
4.2.2. Gas	13
5. Conclusion.....	15
6. Literature sources	16

1. Introduction

Russia is a major player in world energy markets. It has more proven natural gas reserves than any other country, is among the top ten in proven oil reserves, is the largest exporter of natural gas, the second largest oil exporter, and the third largest energy consumer. Energy exports have been a major driver of Russia's economic growth, as Russian oil production has risen strongly and world oil prices have been very high. This type of growth has made the Russian economy dependent on oil and natural gas exports and vulnerable to fluctuations in oil prices.

Furthermore, almost three fourths of Russian crude oil production is exported. The rest is refined in the country, with some refined products being exported. About two-thirds of Russia's (6.7 million bbl/d) crude oil exports in 2004 went to Belarus, Ukraine, Germany, Poland, and other destinations in Central and Eastern Europe. The remaining one-third of oil exports went to maritime ports and was sold in world markets. Recent high oil prices have enabled as much as 40% of Russia's oil exports to be shipped via more costly railroad and river barge routes. Most of Russia's exports of refined petroleum products to Europe are fuel oil and diesel fuel used for heating.

Talking about gas historically, most of Russia's natural gas exports went to Eastern Europe and to customers in countries that previously were part of the Soviet Union. But, in the mid-1980s, Russia began trying to diversify its export options. By now, Gazprom has shifted some of its exports to meet the rising demand of Turkey, Japan, and other Asian countries. If Gazprom is to attain its long-term goal of increasing its European sales, it will have to boost its production, as well as secure more reliable export routes to the region.

2. Russia's oil and gas industry: short history review

The decision to begin developing Russia's oil industry was taken in the 19th century when the first fields were discovered up in the Baku region, on the Apsheron Peninsula, and in the Caucasus. Next, oil was discovered in Krasnodar Krai, on the Cheleken Peninsula, in Timan-Pechora province, and on the island of Sakhalin. (The table below shows Oil production in the early years of development of Russia's oil industry.)

Oil production in the early years of development of Russia's oil industry	
Year	Oil production, millions of tonnes per annum
1880	0.4
1886	1.9
1890	3.9
1896	7.1
1900	10.9
1910	11.3

Following the Russian Civil War (1918-1920), Russia's oil economy was completely destroyed. In May 1920, the Soviet authorities nationalized the Apsheron oil fields. As of 1920 in Russia, and 1923 in the whole Soviet Union (USSR), the oil industry only existed in the form of a State monopoly. By 1945 over 150 oil and gas fields were discovered in the USSR. Just prior to and after the Great Patriotic War (1941-1945), fields were exploited in the Volga-Urals oil and gas-bearing oblast, while fields later appeared in West Turkmenistan, Kazakhstan, in Stavropol Krai, the Ukraine and Belarus.

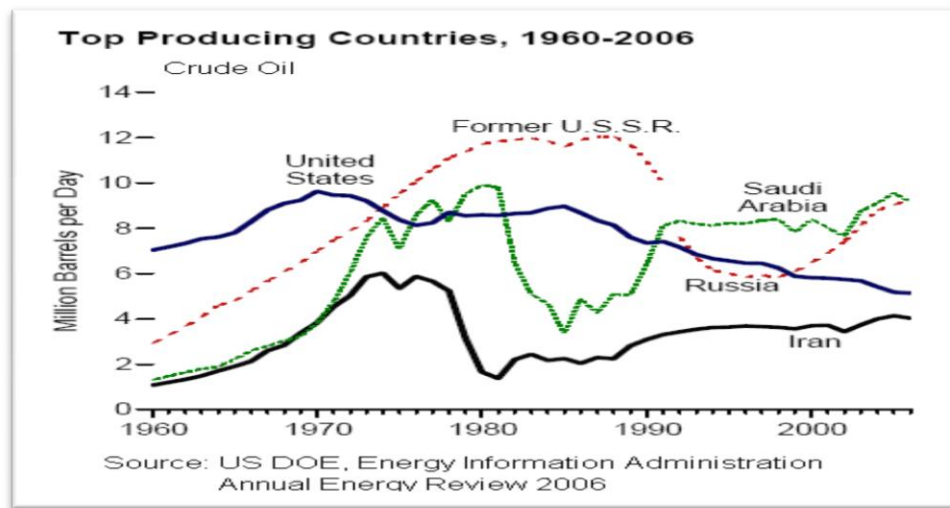
The Soviet Union's oil and gas industry only entered a phase of systematic development in the post-war years. In the 1950s and 60s, one of the world's largest oil and gas bearing reservoirs was explored in West Siberia, and significant oil fields were discovered there.

Intensive oil development and production began in the Tyumen district, key among the petroleum-extracting districts of West Siberia.

The probability of opening up new, large-scale oil and gas deposits on the continent had already diminished by the start of the 1970s. At this time, exploration work on the Russian shelf proceeded very slowly. During this period, Soviet scientists substantiated the future prospects and actuality of conducting geological survey work on the Continental shelves of seas within the Russian Federation with a view to discovering hydrocarbon deposits which could make up for losses in terms of mining deposits on land.

In order to create a stable energy base for the USSR, a resolution was passed on accelerating the development of offshore work on coastal sections of the Arctic waters. The shelves of the Arctic seas were seen as having a great potential, with estimated natural gas resources in the subsoil of the Barents, Pechora and Kara Seas alone of 70 trillion cubic metres.

To sum up historical review I can say that extraction of oil and gas was equal and stable from 1890 until the Russian Civil War when Russia's oil economy was completely destroyed. Afterward oil's industry existed in a form of a State monopoly. Post-war (decade after WW2) situation in gas and oil extraction started to be better and grew stable (look at "Top Producing Countries, 1960- 2006" chart). The key conditions were a foundation of new oil and gas areas, offshore development and intensive oil development. Just after USSR breakup Russia's oil and gas industry was stagnated. (The chart below shows what happened in oil industry after USSR collapsed.)

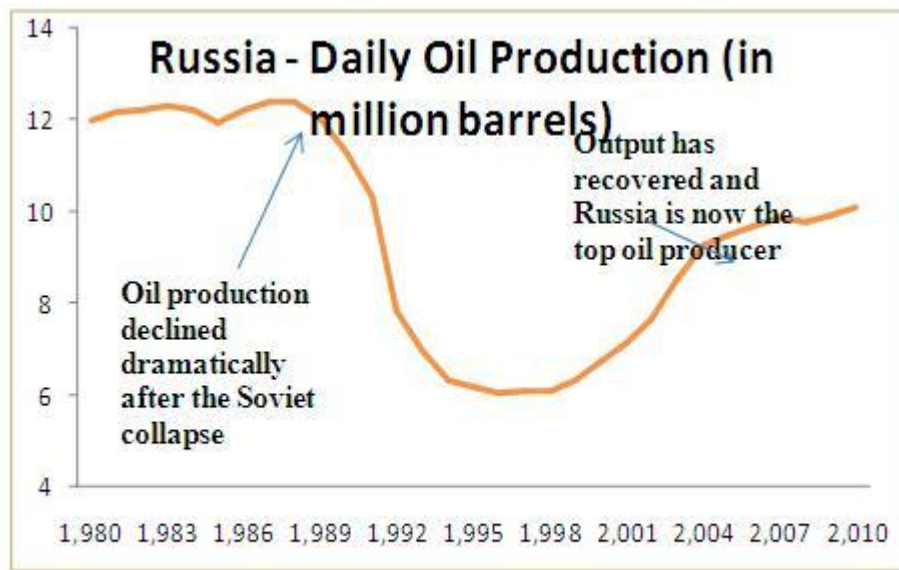


3. Situation nowadays

3.1. Rising state role

Russia's oil industry has been through three great evolutions since the collapse of communism.

First, after the fall of the Soviet Union that was Granger caused by an oil production decline that happened under a planned economic system. However, post-1996 oil production started to recover once again (the chart below represents the situation).



Source: U.S. Energy Information Administration

What happened after the fall of the Soviet Union was that markets and property rights changed. Before 1991 Russian oil production was owned, controlled, and priced by the Soviet government. But even after the USSR's demise, oil was controlled until about 1995 when government assets were finally sold and freer markets were established. So before 1995 there were neither markets nor well-defined property rights for Russian oil producers. This means that

given the inefficient system of the day, scarcity within that closed economic system caused the oil decline and Soviet collapse. Then after 1995, with the sale of Russian assets and the establishment of property rights, new investment and the application of Western technology into Russian oil production was finally possible. But former state-owned oil assets were parceled into vertically-integrated groups and sold off at bargain prices to investors or former managers, creating some of Russia's first "oligarchs".

The following decade saw a twofold process. First, partly under pressure from new president Vladimir Putin (he won the presidential election in 2000), private oil company owners brought in foreign technology that boosted production and profits. Putin sought to Russia's large share on the European energy market by building the submerged gas pipelines bypassing Ukraine and the New Europe (the countries which were often seen as non-reliable transit partners by Russia, especially following Russia-Ukraine gas disputes of the late 2000s). The pipeline projects backed by Putin include the Blue Stream from Russia to Turkey (built on the Black Sea bed), Nordic Stream from Russia to Germany (the longest sub-sea pipeline in the world, built through the Baltic Sea) and the planned South Stream from Russia to the Balkans and Italy (via the Black Sea). Russia also undermined the rival pipeline project Nabucco by buying the Turkmen gas and redirecting it into Russian pipelines.

On the other hand Russia diversified its export markets by building the Trans-Siberian oil pipeline to the markets of China, Japan and Korea, as well as the Sakhalin–Khabarovsk–Vladivostok gas pipeline in the Russian Far East. Russia has built LNG plant on Sakhalin and is building another one in Primorye, aiming to increase the overseas gas exports. Meanwhile, in the Gulf of Finland Russia has built a major Ust-Luga port connected to the Baltic Pipeline System-II, which allowed to export oil without transit through the ports of the Baltic states. The share of processed oil slowly grows with major oil refineries being built in Tatarstan and other regions of Russia. (The chart below shows how Russia strengthened its position as a key oil and gas supplier to much of Europe under Putin's tenure.)



Primary Russian Oil and Gas Pipelines to Europe

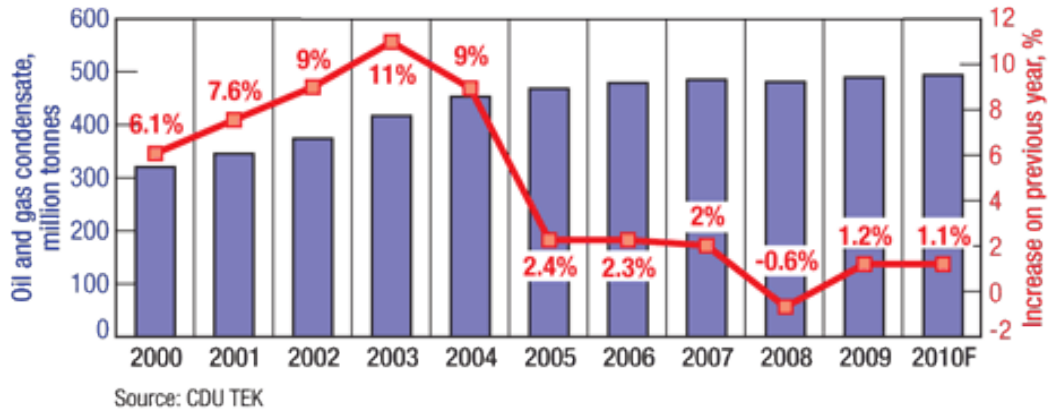
Then, mostly in Mr. Putin’s second term, state-controlled groups started taking back some of these revitalized assets. It’s the trend in the Russian oil industry is the recent and dramatic role that the government has assumed in the direct management of oil production. The first phase of this process began quietly in the early part of President Putin’s administration. This process became very visible after 2002, after the empowerment of the state oil company known as Rosneft. Using state power, Rosneft found its way into several strategic high profile projects. These included projects with major western Oil companies. Using Rosneft as a tool, Moscow has gained direct influence into the management of exploration and major new oil field developments. The use of substantial financial resources has greatly aided Moscow in achieving this goal. The second phase began in 2003 with the move against Yukos (former of Yukos is Mikhail Khodorkovsky). This action is more complex than its oil industry effects. With the government takeover of Yukos, the government effectively renationalized one of Russia’s

foremost oil assets privatized in the 1990s. Its management structure is now in very close contact with the Putin administration and its vision of the economy and the role of Russia's natural resources and private companies in it.

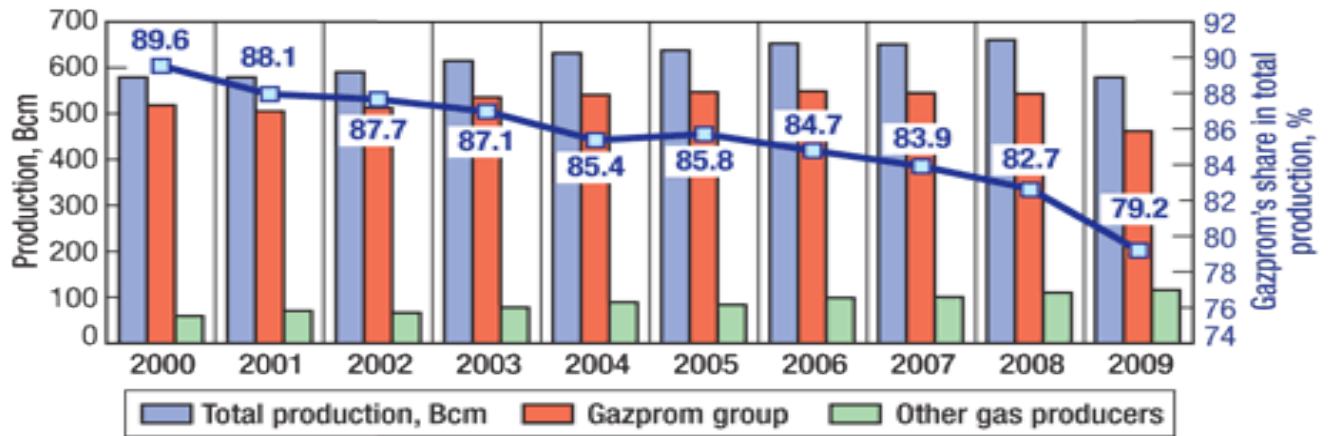
Another goal of the Russian government is to nationalize the gas industry. It's easy to see by the moves when Gazprom, the natural gas monopoly, bought Roman Abramovich's Sibneft. This was the way to provide Gazprom, already a powerful entity of state power, a larger role in the production of the nation's oil. Finally, a unified state oil and gas company will also move forward Moscow's external relationships with the world oil market and with leading foreign actors.

3.2. Situation in oil and gas industry during financial crisis

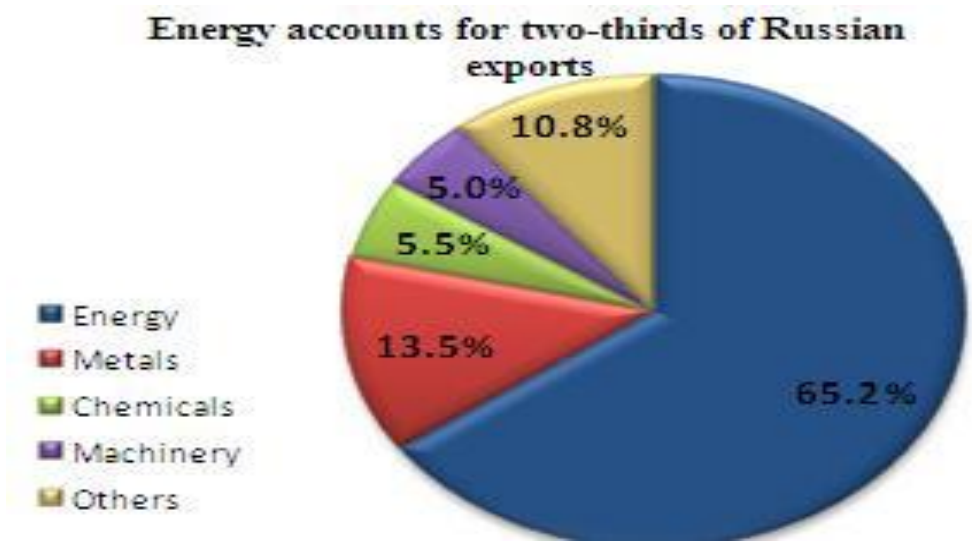
Russia was hit by a plunge in commodity prices and a reversal of capital flows, which led to a full-blown recession in mid-2008. Despite suffering a temporary setback in the aftermath of the global financial crisis, the strategic energy sector in Russia has bounced back as oil prices recovered from their abysmal lows. The decline in the production of oil, which began in May 2008, slowly started picking up in March 2009. Following the dismal run in oil prices, Russia took advantage of the OPEC production cuts and surpassed Saudi Arabia in oil production in September 2009, underlining the fact that Russia is still a force to reckon with in the global oil industry. Moreover, oil production in Russia touched 10.145 million barrels per day in 2010, the highest level since the collapse of the Soviet Union. The record oil output was made possible by the growth in the development of Greenfield deposits. Significantly, Russia, which is not a member of the oil cartel OPEC, was the only country to produce more than 10 million barrels of oil a day in 2010. (The charts below show the situation of oil production during financial crisis.)



The Russian gas industry suffered much more from the crisis than did the oil industry. However, here again, the global financial and economic crisis has had a mixed impact. The year 2009 witnessed a sharp decline of global industrial output, which affected global energy consumption and hence gas demand. Russian gas production declined by 14.4% from 2008 to 2009. In 2010, gas production has been recovering slightly; supported by increased industrial output inside Russia, as well as demand increase for Gazprom’s gas in The Russian gas sector is actually much more concentrated than the oil sector because of Gazprom’s monopoly on the gas transport system. By 2009, the company’s production accounted for 79.2% of total Russian gas output.(The chart below shows gas production decrease)



As well is very essential to stress one thing that Russia economy is depended on oil and gas industry. This is the main reason why prices fluctuations in gas and oil market give enormous positive or negative feedback. For instance, on average, a \$1 per barrel change in oil prices results in a \$1.4 billion change in Russian government revenues in the same direction. The chart below shows the share of energy in Russia industry. So that's why the falling of prices and output of gas and oil production made big losses in Russia's GDP. (The chart below shows Energy accounts for whole industry of Russia.)

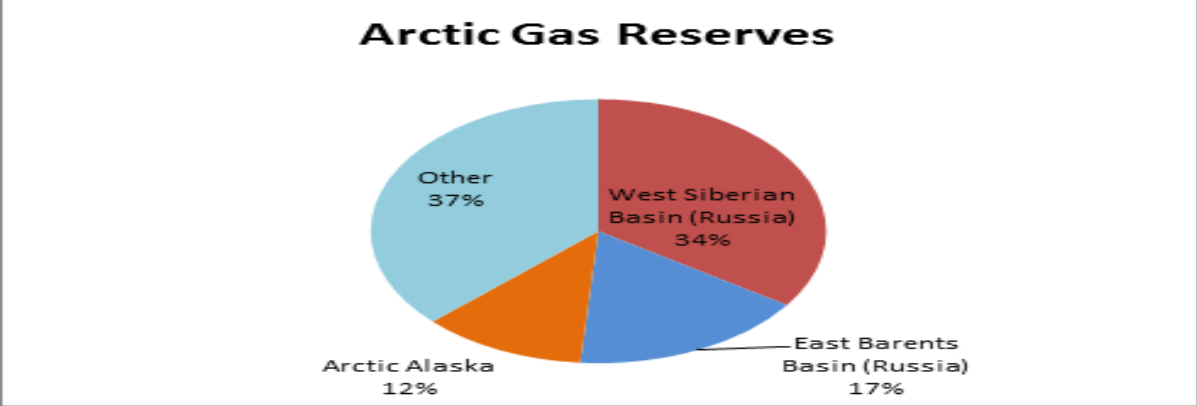


4. Future plans about oil and gas industry

4.1. The Arctic prognosis

Mostly of future plans about oil and gas production in Russia is closely related with the Arctic reserves because it's the main condition for stable economic growth in Russia. In previous part we saw how the Russia's economy is connected and depended on these energy recourses. According to Russia's media, the geologists returned with the "sensational news" that the

Lomonosov ridge was linked to Russian Federation territory, boosting Russia's claim over the oil-and-gas rich triangle. The territory contained 10bn tones of gas and oil deposits, the scientists said. According to the U.S. Geological Survey, the two largest Russian natural gas fields alone – the West Siberian Basin and the East Barents Basin – contain about 970 trillion cubic feet of natural gas, about 58% of the total gas believed to be in the Arctic. (The chart below shows Arctic gas reserves.)



So, in the early 2012 Russia plans to start the first commercial offshore oil drilling in the Arctic, on Prirazlomnaya platform in the Pechora Sea. The platform will be the first Arctic-class ice-resistant oil rig in the world.

4.2. Production plans for future

4.2.1. Oil

In November 2009, the new energy strategy of the Russian Federation until 2030 was adopted. The new document was made in accordance with “current trends and new systematic changes of energy development” (IES, 2010). This document shows that oil production in Russia will develop with positive trends. At the first stage (2013 – 2015) it is planned to produce 486 – 495 million tons of crude oil, at the second stage (2020 – 2022) – 505-525 million tons and at the third stage (till 2030) – 530 – 535 million tons. The increase of oil reserves shall be accordingly 1854, 5597 and 5122 million tons. Conditions to such substantial increase of oil production shall be the increase of geological works (deep drilling, geophysics) by 4 - 5 times.

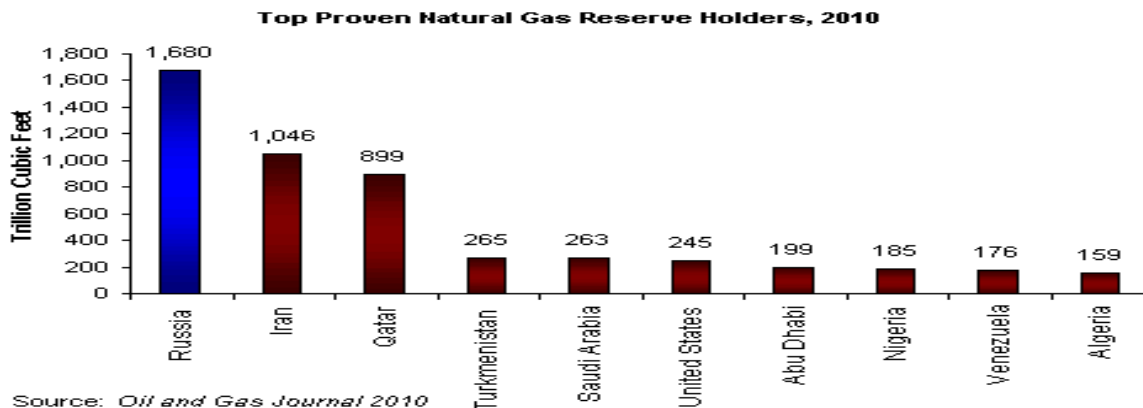
In order to achieve this figure it is necessary to implement new ways to search and explore new oil fields, improve current technology and technical base, etc. Such measures will require substantial state and private investments and improvement of the current legislation.

If Russia could successfully achieve the above mentioned goals the country will become of great strategic importance in enhancing the world’s energy security. The country still holds substantial oil reserves and with a well-considered approach to oil production, will keep playing a lead in the oil supplying role for decades.

4.2.2. Gas

According to the International Energy Agency in 2030, the consumption of natural gas will be 90% more than it is now, and gas will be the second most important energy recourse after coal. Thus, the portion of natural gas for the world’s energy structure will increase from 21% in 2005 to 25% in 2030 (IEA, 2011).

Russia holds the world’s largest natural gas reserves, with 1680 trillion cubic feet, and Russia’s reserves account for about a quarter of the world’s total proven reserves. (The chart below shows the World’s top proven natural gas holders.)



Russia is not only the holder of the biggest gas resources, it is also the biggest exporter in the world, contributing more than 40 % of the overall world’s gas export.

Russia owns two-thirds of the largest gas fields in the world. The majority of these reserves are located in Siberia, with the Yamburg, Urengoy, and Medvezhye fields alone

accounting for about 45 % of Russia's total reserves. More than half of all reserves are located in Siberia. Significant reserves are also located in northern Russia.

There are several factors why Russia is the largest oil exporter in the world. First, and the most important, is that the country holds the world's largest proven gas reserves, which is equal to almost one-quarter of global reserves. Second, Russia is the world's second gas producer, accounting for one-fifth of global production. Third, domestic demand still allows for gas exports, even Russia's home market consuming around 70 % of the national gas production. Fourth, Russia's wide pipeline network enables the re-export of imported gas from Central Asia.

Further, according to Energy Strategy of Russia for the period up to 2030 there are few crucial projects in gas industry to be completed till 2030. (The table below show crucial projects of Russia's gas industry until 2030.)

Crucial projects of Russia's gas industry until 2030.			
Project	Goals	Leading time	Investments, (Billion USD, (estimated)
Yamal exploration	Compensation of decreasing volumes at old fields	2015-2030	150 - 170
Shtokman	LNG supply to European and American markets	2017-2018 (1 stage)	2017-2018 (1 stage)
North Stream	Increase stable supply of gas to Europe	2011 (1 stage)	12-14 (1 stage: 5-7)
South Stream	Increase the stable supply of gas to Europe	2015-2020	2015-2020
Eastern gas program	Diversification of export, gasification of Siberia and Far East	2015-2030	80-90
Total 560			560 - 590

5. Conclusion

- The decision to begin developing Russia's oil industry was taken in the 19th century when the first fields were discovered;
- Oil and gas industry was completely destroyed during Civil War in 1918-1920;
- The Soviet Union's oil and gas industry only entered a phase of systematic development in the post-war years;
- Russia's oil industry has been through three great evolutions since the collapse of communism;
- Russia has the world's largest natural resources, and eighth largest oil reserves;
- Russia surpassed Saudi Arabia as the world's largest oil producer in September 2009 for the first time since the collapse of the Soviet Union;
- About 65% of Russia's exports are comprised of oil and natural gas;
- More than 70% of Russian crude oil production is exported and only the rest is available for local consumption;
- The oil & natural gas industry brings in 30% of the country's GDP and 60% of its export earnings;
- A majority of the blue chip companies in Russian stock exchanges are represented by the country's oil & natural gas sector;
- The industry is dominated by state-run firms.
- Russia's economy mainly depend on oil and gas industry

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