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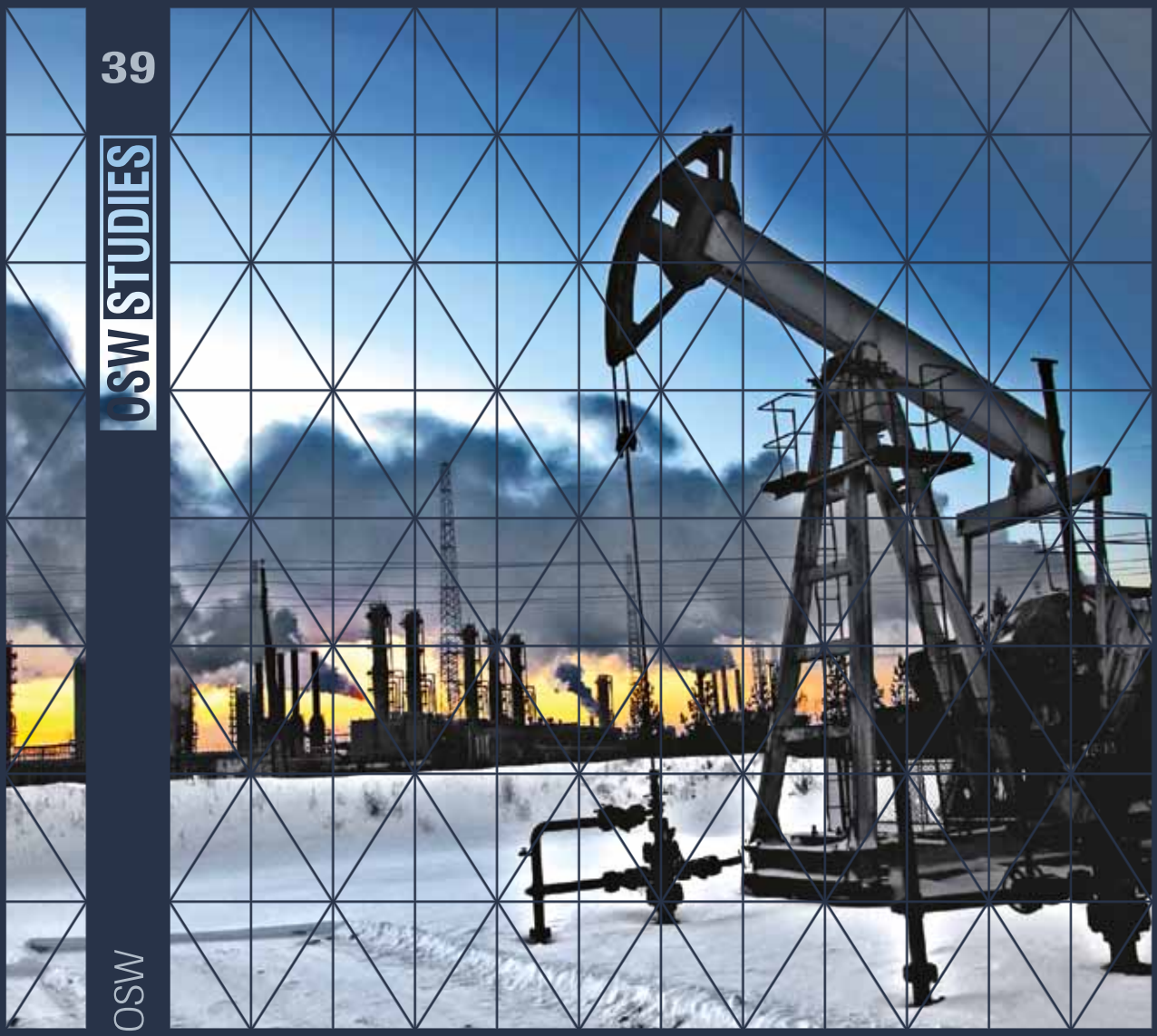

OSW

RUSSIA'S BEST ALLY

THE SITUATION OF THE RUSSIAN OIL SECTOR AND FORECASTS FOR ITS FUTURE

Wojciech Konończuk

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THESES

1. The oil sector is the most important branch of the Russian economy. It supplies the largest income to the state budget and is one of the main pillars on which Russia's international position is based. Revenues from oil are also one of the chief means allowing the ruling class to maintain political and social stability in the country. The rapid growth in oil prices over the past few years (with the exception of the crisis in 2009) has brought about a vast increase in budget revenues and this has led to a strengthening of the Russian economy's reliance on raw materials, to the government's failure to carry out economic reforms and also to a stronger assertiveness in Russian foreign policy. However, the increasing dependence of the Russian state budget on high oil prices is harmful, because a continuing reduction in prices could bring about an economic crisis, which would have far-reaching political consequences.

2. The Russian oil sector's greatest success in the past decade has been an increase in oil production by more than 50%. This was possible due to the rapid increase in oil prices and extensive production at the oil fields most easily accessed. An effect of this is that many of them have been overexploited. This in combination with insufficient investment in geological work and the exploration of new deposits will bring about a reduction in production in the future.

3. Many problems have accumulated in the Russian oil sector and are posing serious challenges. The most serious include excessive fiscal levies which deprive firms of the funds necessary for investment, the monopolisation of the sector, the government's discrimination in favour of state-controlled companies and significant restrictions imposed on foreign investors, who are treated mainly as technology suppliers. Without a liberalisation of the fiscal system, oil firms will not be able to generate capital for investment which is necessary for the exploration of new fields and the development of existing ones. The present problems are to a great extent a consequence of the government's failure to adopt a well-thought-out and consistent policy and its treatment of the oil industry as a temporary source of budget revenues, which is preventing the development of this sector.

4. The Russian refinery sector is technologically outdated and requires a very costly and time-consuming modernisation. Over the past few years, the Russian government has been conducting an effective policy aimed at boosting the volumes of oil processed in Russian refineries; however the quality of their output is still low. At the same time, the Russian government is encouraging oil companies to invest more actively in takeovers of refineries and fuel distribution networks abroad, especially in EU member states.

5. Oil production is likely to increase slightly in Russia within the next two-three years, and then it will start to fall below the level of 500 million tonnes. The degree of this fall will depend on the actions the government takes, including mainly the improvement of the fiscal environment and the investment climate. A change in the state fiscal policy will not stop the production decline but it may significantly slow it down. However, if the government takes overly cautious and inconsistent actions, it cannot be ruled out that the level of production may even fall below 400 million tonnes in the medium term.

6. The decline in Russian oil production will result in a reduction in its export levels, the volume of which will however depend on several factors, including the oil processing capacity of Russian refineries and domestic consumption. It cannot be ruled out that in connection with the increase of the customs duty rate on petroleum products in 2011, Russian oil exports will grow a little within the next three to four years above the present level of 244 million tonnes. However, in the longer term, it will be falling as oil production falls back.

7. Despite the export diversification policy adopted by Russia, Europe will remain the key outlet for Russian oil in the foreseeable future, although its share will drop from the present level of 80% to around 65% of total exports within the next ten years. It is likely that Russian oil supplies to Europe will decrease by approximately 15-20% within the next few years, which will not however be the consequence of a political decision but rather of decreased output at Western Siberian oil fields, which are the main raw material base for Russian exports.

INTRODUCTION

Oil is a strategic raw material for Russia and one of fundamental significance for the functioning of the state and its future. Taxes on oil production and exports are the most important source of state budget revenues which guarantee Russia maintains its political and economic stability. Russia is building its international position on the basis of its vast raw material and energy potential. One symbolic manifestation of this is the informal concept of Russia as an 'energy empire', which emerged several years ago. Oil corporations form a significant part of the Russian firms which are most active and recognisable on foreign markets.

Paraphrasing the famous statement made by Tsar Alexander III in the late 19th century, that the Russian Empire had only two allies: its army and its fleet, one Russian expert concluded a few years ago that the Russian Federation also had only two allies: oil and gas[1]. While a great number of various publications have been devoted to Russian gas and Gazprom, surprisingly little research has been done into the present condition and possible future developments of the Russian oil sector, despite the fact that oil has and will have a much greater impact than gas on the functioning and the future of Russia.

The main objective of this text is to describe the present situation of the Russian oil sector, its problems and the challenges it is posing, as well as the government's policy towards this key branch of the Russian economy. This will be an introduction to an attempt to answer to the questions about the possible future production and the export levels of Russian oil, which is and will remain one of the major issues in Russia, and about the great impact on this country's economy and politics. This topic is also important for EU member states, which are major importers of Russian oil.

This study has been divided into five parts. The first one presents the significance of the oil sector for the economy, political stability, and the international position of Russia. The second part shows the condition of the Russian oil deposits and provides a review and a brief characteristic of the present and possible future production centres. The third part describes the transport infrastructure and the refinery sector. The fourth part analyses problems existing in this sector in detail, including: the inefficient fiscal system, discrimination

[1] D. Trenin, Reading Russia Right, Carnegie Endowment for International Peace Policy Brief, October 2005, p. 6, http://carnegieendowment.org/files/pb42.trenin.FINAL.pdf

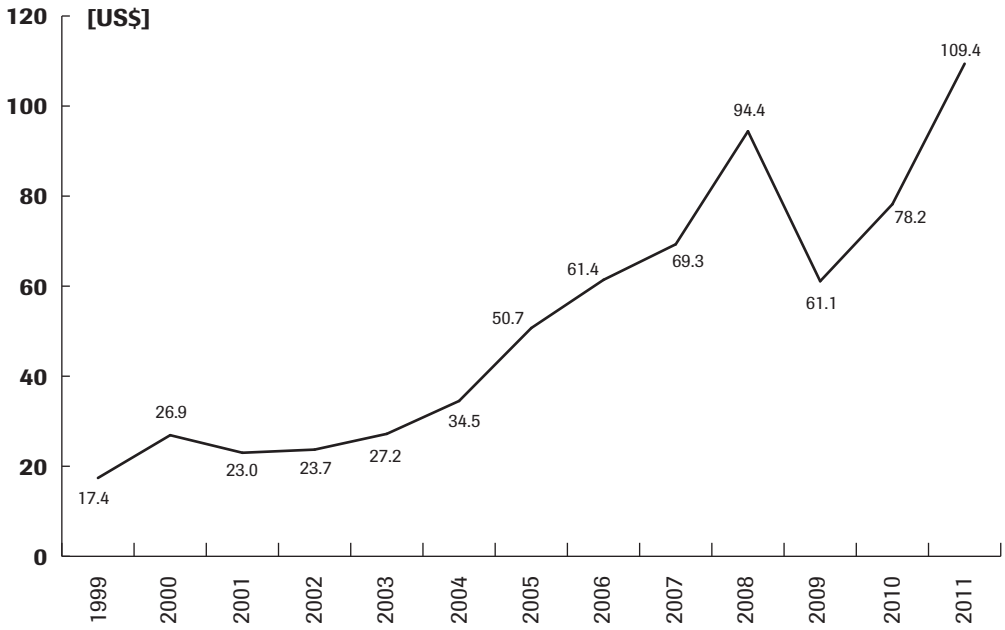
in favour of state-controlled firms, and insufficient investments. This is especially important because the future of the sector will depend on the way these problems are resolved. The pivotal fifth part is an attempt to address the question about possible oil production volumes in Russia until 2030 and future export levels, also broken down into the European and Asian directions.

I. CRUDE OIL – THE FOUNDATION OF RUSSIA

1. Oil as a source of income

The oil industry is the most important sector of the Russian economy and a source of the largest share of state budget revenues. In 2010, profits from exports of oil and petroleum products accounted for 44% of all budget incomes[2]. This is a consequence of the rapid growth of oil prices on global markets, which has been observed over the past few years. The average price per Urals barrel, the main oil brand exported by Russia[3], increased from US$11.8 in 1998 and US$23–27 in 2000–2003 to US$94.4 in 2008. This price fell in 2009 and 2010 to US$61.1 and US$78 respectively, to reach again a record-high level of US$109.4 in 2011 (see Chart 1).

Chart 1. Average annual Urals oil prices in 1999-2011



Data: EIA

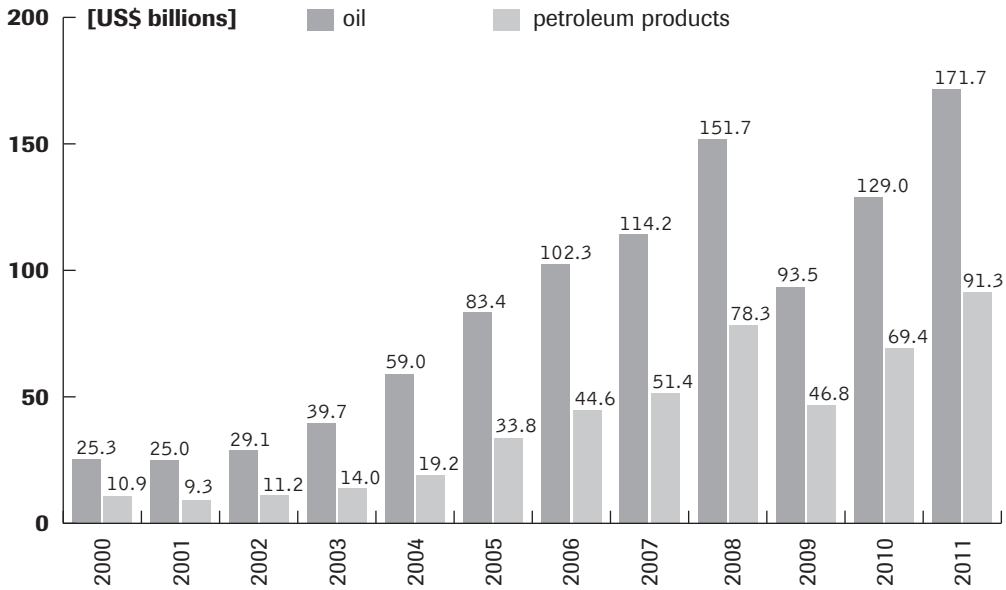
Growing oil prices brought about a vast influx of petrodollars to the Russian state budget, one consequence of which is its deepening dependence on

[2] In the opinion of Energy Minister Sergei Shmatko http://www.rusenergy.com/ru/articles/articles.php?id=49076

[3] Russia also exports other oil brands, such as Siberian Light (from the Khanty-Mansi Autonomous Okrug), ESPO (from Eastern Siberia) and Sokol and Vityaz (from Sakhalin).

revenues from oil and petroleum product exports. These revenues were at a level of US$35–40 billion annually in 2000–2002, and started increasing rapidly in the next years to reach a record-high level of US$230 billion in 2008 (see Chart 2). Although incomes from oil fell in the next two years as a result of lower oil prices, they reached an unprecedentedly high level in 2011 (US$263 billion). It is worth emphasising that income generated by oil sales is much more vital for the Russian budget than the tax revenues from the gas sector, which accounts for 6–7% of total revenues.

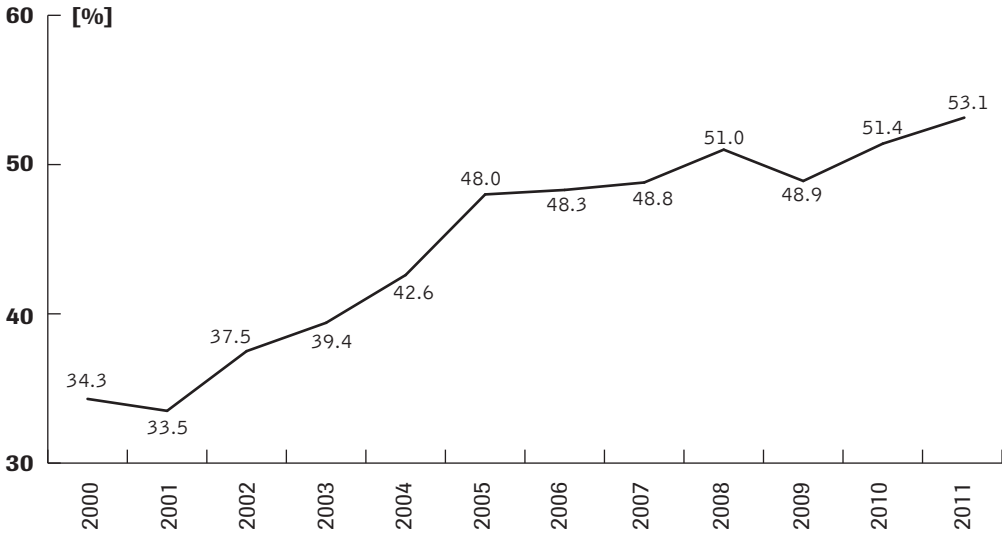
Chart 2. Revenues from exports of oil and petroleum products in 2000–2011



Data: Federal Customs Service of the Russian Federation

Since oil prices tripled over the past few years, the share of revenues from sales of oil and petroleum products in the total value of Russian exports also increased significantly. While in 2000–2003, this share ranged between 33.5% and 39.4%, for the last seven years it has been at a level of 48–53% (see Chart 3). Furthermore, Russia exports around 75% of the oil it produces (including 25% in a processed form as petroleum products), while only one third of Russian gas is exported.

Chart 3. The share of revenues from the export of oil and petroleum products in total Russian exports from 2000 to 2011



Data: Central Bank of the Russian Federation

2. The significance of oil for political and economic stability

Income generated by oil sales has been the basis for the stabilisation of the socio-economic situation in Russia since 2000. This in turn is one of the key factors which add legitimacy to the governments of the country and ensure a high level of public support for the political elite led by Vladimir Putin. The increasing oil prices enabled the Russian state to follow a path of relatively high economic growth in the past few years (5–7% annually), which made it possible to significantly increase social expenditure and thus 'extinguish' potential outbreaks of public unrest. According to the estimates of Russian economists, an increase in the oil price of 10% translates into 0.9% GDP growth at the most[4]. An increase (or decrease) in oil prices by US$2 per barrel automatically makes the state budget revenues go up (or down) by US$3 billion. Growing oil-generated income also made it possible for Moscow to repay its foreign debts ahead of schedule and annulled its need for international financial aid. Furthermore, part of the incomes from oil exports accumulated in the special Stabilisation Fund, which was created in 2004, enabled Russia to significantly alleviate

[4] 'Po nayezzhennoi koleye' *Neftegazovaya Vertikal*, no. 8, 2011, p. 20.

the consequences of the financial crisis in 2008–2009[5]. Russia's oil potential is having a positive effect on the other sectors of the Russian economy and is becoming its driving force. However, since the population of Russia is much bigger than those of such oil producer countries as Saudi Arabia, Kuwait, Qatar or Norway, the 'oil rent' is not able to ensure welfare to the Russian public as a whole[6]. This is also an effect of the fact that the oil industry employs only 3% of Russian workforce.

However, the growing oil-generated revenues are having a number of negative consequences for Russia. The influx of petrodollars makes the ruble stronger against other currencies, in effect of which the production of other sectors of the economy (not based on raw materials) is less competitive in foreign markets. The worst consequence of expensive oil, however, is the fact that the Russian government has given up taking real action for modernisation and economic reforms. As the incomes from oil sales flow in generously, the Kremlin does not have to introduce any structural changes. Vladimir Putin's discontinuation of reforms which had been launched during his first presidential tenure (2000–2004) coincided with the beginning of the increase in the price of oil.

It seems that at least part of the Russian political elite are aware of the negative impact expensive oil has on Russia. In his address to the Federal Assembly, President Dmitry Medvedev admitted in 2009: "So long as oil prices were growing many, almost all of us, to be honest, fell for the illusion that structural reforms could wait and that what was important now was to make maximum use of the high prices. The priority was on pushing ahead the old raw materials economy, while developing unique technology and innovative products was the subject of only random individual decisions"[7]. In 2010, the Russian president stated in turn that high oil prices were an impediment to the modernisation of the country: "140 dollars per barrel would be a catastrophe; it would destroy all our incentives for development"[8]. Despite all this, the government has not taken any real action to change the raw material-based model of the Russian

5 A. Dubas, J. Rogoża, I. Wiśniewska, 'Russia in crisis: year one' OSW Report, January 2010, http://www.osw.waw.pl/sites/default/files/Crisis_report_2010.pdf, p. 13.

6 Income from exports of Russian oil and petroleum products in 2011 reached approximately US$1,800 *per capita*.

7 Presidential Address to the Federal Assembly of the Russian Federation, 12 November 2009, http://eng.kremlin.ru/transcripts/297

8 Russia has no choice but to modernise its economy and social sphere, 28 May, 2010, http://eng.kremlin.ru/transcripts/285

economy, and the dependence of the Russian budget on oil prices is growing regularly stronger. While in 2000 the Russian budget ran no risk of a deficit with the oil price at US$25–30 per barrel, in 2008 this level rose to US$70, and the budget for 2011 envisaged the lack of a deficit if the oil price is not below US$105. Since the market situation for oil producers was good, Russia was able to balance its budget in 2011 (the budget surplus reached 0.8% of GDP).

The increasing dependence of the Russian budget on oil-generated incomes and its sensitivity to price changes has brought about a situation wherein maintaining the oil price at a high level has nearly become a *raison d'État* in Russia. This is so because the government's ability to fulfil its obligations to the increasingly developed social sector, and thus to maintaining social stability, depends on that. In connection with the parliamentary (December 2011) and presidential (March 2012) elections, social expenses have been increased further. As a consequence, the budget law for 2012 envisages a deficit of 1.5% of GDP on the assumption that the average oil price will be US$100[9]. Analysts estimate that public finances could be balanced only at a level of US$117 per barrel.

The heavy reliance of the Russian budget and economy on high oil prices is potentially posing a threat to Russia's financial stability. According to estimates by the Russian government's experts, a price fall to US$80 would lead to a reduction in economic growth of 2.5% of GDP and a significant decrease in investments[10]. Should the oil price fall to US$60, Russia's GDP would shrink by 1.4% and investments by 6.5%. In turn the Public Debt Management Policy to 2014 prepared by the Ministry of Finance speculates that should the oil price fall to US$60 per barrel, i.e. the level it was at in 2006–2007, the budget deficit will reach 5% of GDP, and if the price fell below US$50, the deficit could grow by as much as 20% of GDP[11]. In effect, a potential decrease in the oil price could lead to a serious economic crisis in Russia, which would certainly have an immense impact on Russian politics. Since the government is treating the oil sector as a cash cow, the fiscal levies are among the highest among oil producer countries. Despite appeals from oil corporations and warnings of the negative consequences of the defective tax system, which have been repeated for many years, Russian politicians are reluctant to consider proposals to cut taxes.

9 The budget law also estimates that the oil price will reach US$97 in 2013 and US$101 in 2014.

10 'Yest' li zhizn nizhe $100/barriel'? *Neftegazovaya Vertikal*, no. 22/2011.

11 Y. Kravchenko, M. Lutova, 'Pechal neftianika' *Vedomosti*, 11 August 2011.

3. Oil as foreign policy instrument

The country's energy potential has been used by the government to reinforce Russia's position on the international arena. Practical experiences over the past few years prove that growing budget revenues from oil exports have stimulated an increase in Russia's international ambitions and have made Russian foreign policy more assertive[12]. At the end of Vladimir Putin's first term in office as president (2000–2004), when oil prices started growing rapidly, the informal concept of Russia as an 'energy empire' was forged. It has not been formalised in any official document or speech by a representative of the Russian government. It should be seen as an attempt by experts to define Moscow's political actions aimed at helping it to build its international position on the basis of the country's unique oil and gas potential[13]. However, symptoms of thinking about Russian in terms of an 'energy empire' have appeared in some official Russian documents. The Energy Strategy to 2020, which was adopted in August 2003, includes a statement which admits the significance of the energy policy as a foreign policy tool: "Russia possesses great energy resources and a powerful fuel and energy complex, which is the basis of economic development and the instrument of leading internal and external policy. The role the country is playing on global energy markets to a great extent defines its geopolitical influence"[14]. In turn, President Vladimir Putin said at a session of the Security Council in 2005 that "Russia wants to be a global energy leader"[15]. This similar belief results from the fact that, apart from its energy sector, Russia has relatively low economic potential which may be used as a tool to strengthen its international status and economic presence abroad.

In effect, oil and gas are often used by Russia as a bargaining chip in relations with other countries, and Russian oil companies are the most important Russian foreign investors and often invest in sectors of strategic significance. Moscow supports their foreign expansions, seeing them – especially in CIS countries and the former Eastern Bloc – as one of its key foreign policy tools.

[12] Interestingly, the Russian-Georgian war broke out at the time when global oil prices had reached the highest levels in history. Oil cost US$147 per barrel in July 2008, three weeks before the start of the conflict.

[13] See, for example, F. Hill, Energy Empire: Oil, Gas and Russia's Revival, Foreign Policy Centre, September 2004, http://fpc.org.uk/fsblob/307.pdf

[14] Energeticheskaya strategiya Rossii na period do 2020 goda, p. 4. However, the new version of the Energy Strategy to 2030, which was adopted at the end of 2009, does not contain such a statement.

[15] http://archive.kremlin.ru/text/appears/2005/12/99294.shtml

Examples of how Russia uses oil issues to apply political pressure include: cutting oil supplies to the Ventspils terminal in 2001 after the Latvian government had refused to sell it to a Russian company; switching off the pipeline which supplied oil to Lithuania's Mazeikiai refinery in 2006 (under the pretext of its 'failure') after the decision had been announced that it would be sold to Poland's PKN Orlen instead of to a Russian corporation[16]; and the withholding of oil exports to Belarus in 2007 to force Minsk to accept new conditions of raw material imports. Furthermore, Russia often combines signing a contract for oil or gas supplies with certain concessions to a given Russian firm. For example, one of the conditions of the Russian-Chinese agreement on the construction of the oil pipeline running from Eastern Siberia to China was the granting of 49% of the shares in the Tianjin refinery under construction to Rosneft, owing to which this Russian firm entered the Chinese market for the first time.

The strategy for strengthening the international position of Russian oil corporations by restricting the access foreign companies have to the Russian energy sector has been evident since 2010. State-controlled firms are aiming at taking over shares in a given Western firm or in its production assets or at technology transfer in exchange for minority stakes in oil fields in Russia. This is especially clear in the case of the Arctic, the world's largest undeveloped region which potentially has vast deposits of oil and gas. Pursuant to Russian law, licences for field exploration in the Arctic can be obtained only by state-controlled firms (Rosneft, Gazprom Neft, Gazprom and Zarubezhneft), which may then offer minority stakes on certain conditions to a foreign company. The most vivid example of this new policy is the deal Rosneft and ExxonMobil struck in August 2011, in effect of which Rosneft has gained access to ExxonMobil's six production units, including in the USA and Canada, in exchange for 33% of the shares in three fields on the Kara Sea. In January 2011, Rosneft made an attempt to strike an even more beneficial deal with BP, which would offer the Russian company 5% of the shares in the British company in exchange for 10% of its own shares. However, this agreement was not implemented.

[16] Russia also cut supplies in 2000, when the Mazeikiai refinery was purchased by the US-based Williams, which in effect led to this firm being resold to Russia's Yukos.

II. RUSSIAN OIL DEPOSITS

1. Deposit levels

Russia has oil deposits which are among the largest in the world (7th place) and is the world's largest oil producer (12.9% share in global output in 2010)[17]. According to international estimates (for example, from the BP Statistical Review of World Energy and the EIA), confirmed Russian oil deposits are at a level of around 10 billion tonnes, which accounts for 5.6% of global deposits. Thus, with the present production level (511.3 million tonnes in 2011), they would be sufficient for twenty years. Russian data are much more optimistic. The Russian Energy Ministry estimates that the volume of the oil fields fit for production is at least 22 billion tonnes, which would allow it to maintain its present output level for approximately forty years. Furthermore, Russia estimates that its oil deposits on the continental shelf, mainly in the Arctic, could reach 16.5 billion tonnes and that it is very likely that new significant deposits will be found.

A characteristic feature of the Russian oil sector is that most of its oil originates from large fields, which currently account for approximately 60% of total output. However, the problem is that they have been depleted significantly, by 60%. Another feature of the Russian oil production sector is the 60% share of fields which are difficult to access in the total production level of the largest oil companies. Moreover, a vast majority of the fields were put into operation in Soviet times, while new, recently launched projects account for only slightly more than ten percent of annual output (see Chart 5). Additionally, most of them have been classified as small or medium due to their complex geological structure and require further expensive investment.

Russian oil deposits were regularly depleting between 1991 and 2004 as more oil was being produced than found in new fields. This was an effect of the overexploitation of the fields by some of the companies and a significant decrease in investment outlays on geological and exploration work. It is only since 2005 that the deposits in the newly found oil fields have been higher than the annual output in Russia. However, most of the new fields are classified as small, and their development is less cost-efficient than is the case with medium and large fields. Furthermore, the increase in the deposits also results from the fact that

[17] BP Statistical Review of World Energy 2010, London 2011. In 2010, Russia produced 37 million tonnes of oil more than Saudi Arabia. Also in 2011 Russia was the biggest world's oil of producer.

the previously discovered oil fields were classified in higher categories determining the likelihood of production. In aggregate, between 2000 and 2010, the surplus of newly discovered oil deposits above output at that time reached 89 million tonnes.

2. Key production centres

Russia has several oil production centres (called oil provinces), two of which are of key significance: Western Siberia and the Volga-Ural region; these account respectively for 63% and 22.1% of Russian oil production. The regions of lesser, if growing, significance are: Timan-Pechora (6.3%), which is located in the north of the European part of the country, the Far East (2.9%), Eastern Siberia with the northern part of Krasnoyarsk Krai (3.9%) and the Northern Caucasus (1.8%). The location of Russian oil provinces is shown on the map 1 (see page 19), while Table 1 presents the shares of each Russian region in oil production.

Table 1. The shares of Russian regions in oil production (2010)

Region	millions of tonnes	%
Western Siberia	318.3	63
Volga-Ural	111.5	22.1
Timan-Pechora	31.5	6.3
Eastern Siberia and northern Krasnoyarsk Krai	19.7	3.9
Far East	14.8	2.9
Northern Caucasus	9.3	1.8
TOTAL	505.1	100

Western Siberia, which encompasses the Khanty-Mansi Autonomous Okrug (82% of regional output), the Yamalo-Nenets Autonomous Okrug (12.5%) and the Tyumen, Tomsk and Novosibirsk Oblasts (5.5%), is Russia's most important oil region and one of the world's largest oil production centres. In 2010, the total output of the Western Siberian oil province reached 318.3 million tonnes. Oil from this region is characterised by its high quality owing to a low sulphur

content (Siberian Light brand), and the fields have a good geological structure. Despite continuous production since 1964, this region still has around half of Russia's oil deposits, including eight of the ten largest oil fields in Russia. Two of these, the Priobskoye field (it is owned by Rosneft and Gazprom Neft and produces 34 million tonnes of oil annually) and the Samotlor field (owned by TNK-BP, 25 million tonnes), are among the world's ten largest oil fields and in aggregate account for 15% of Russia's oil production. However, the most serious problem the Western Siberian oil province has is the high level of depletion of its fields, reaching approximately 50%, as a consequence of which their output is regularly falling (in the case of the Samotlor field by around 5% annually). The output is declining despite increasing investment activity. Most Russian experts believe that it is no longer possible to increase output in Western Siberia, and the most optimistic scenario is to maintain it at the present level[18].

Before large-scale oil production commenced in Western Siberia, the most important Soviet oil province was **Volga-Ural,** which encompasses Tatarstan, Bashkiria, Udmurtia, Perm Krai and the Samara and Orenburg Oblasts. Since the beginning of the operation of the fields in this province in the 1920s, over 6 billion tonnes of oil have been produced, including 111.5 million tonnes in 2010. Oil from this region is heavy and contains a high level of sulphur, and therefore is sold at lower prices than Brent and various other brands of Russian oil. The fields in this region have been depleted by 70%, and the output is regularly decreasing. Oil deposits in the Volga-Ural region still account for 16% of total Russian oil deposits. The largest field in the region and the one with the third largest production capacity in Russia (15 million tonnes annually) is the Romashkino field owned by Tatneft, which has however been depleted by 80%.

The third largest Russian oil province in terms of output is **Timan-Pechora,** which is located in the north of the European part of Russia and encompasses the Nenets Autonomous Okrug and the Komi Republic. A total of 31.5 million tonnes of oil was produced there in 2010, which accounted for 6.3% of total Russian oil production (58.5% was produced in the Komi Republic and 41.5% in the Nenets AO). Small scale oil production began in Timan-Pechora already as far back as the 1930s. It was only in the 1960s when large-scale production commenced in this region. At the same time, development of the fields in its northern part began and production was launched here in the 1990s. The estimated deposits of Timan-Pechora are 1.3 billion tonnes, which accounts for 6% of all

[18] See, for example: M. Turukalov, 'Zapadnaya Sibir: ot snizheniya dobychi do obvala' *Neftegazovaya Vertikal*, no. 6, 2009, p. 14.

Map 1. Key Russian oil production regions

oil deposits in Russia. The fields in this region are still at the initial stage of exploitation (10%). The output has been decreasing over the past two years, but it is expected to increase from 2015, when production starts in several larger fields (including the Trebsa and Titova fields). Most fields in this region are classified as small and medium, and 70% of them are difficult to access and capital-intensive. Oil from this region has a higher quality than the sulphated oil from Volga-Ural, and therefore is sold at higher prices. It (Arctic Light brand) is exported from the Varandey terminal by the Barents Sea. The level of geological and exploration work in Timan-Pechora is among the highest in all Russian oil provinces.

The oldest Russian oil region is the **Northern Caucasus.** The beginnings of oil production there date back to the late 19th century. However, the fields in this region, which are located in Chechnya, Krasnodar Krai and Stavropol Krai, are almost totally depleted and have a marginal share in total Russian oil production (annual output there is approximately 5 million tonnes).

3. Future oil regions

As production levels in the traditional oil fields are regularly falling, the development of new regions is a problem. Eastern Siberia with the northern part of Krasnoyarsk Krai and the Far East (and the Arctic shelf in the longer term) stand the greatest chance of becoming major production sources. Production has already started in some of these regions, although its level is still low. An increase in output is also expected on the Caspian and the Black Sea continental shelves, which will however have less impact on the Russian oil sector.

What these regions have in common is that they all have been explored geologically to only a small extent so far, which makes it difficult to assess the volume of the oil deposits there. Furthermore, investments in geological and exploration research are at low levels, the discovered fields are at the initial stage of development and most of them are classified as medium in terms of confirmed deposits. What makes Eastern Siberia, the Far East and the Arctic shelf different from the present chief production centres are the much harsher climate conditions; this significantly raises the costs of investment and requires the application of new, often still undeveloped technologies (as in the case of the Arctic shelf). Another crucial aspect regarding the new fields is the feasibility of production, while in 80% of them production is unprofitable, given the present fiscal situation.

As regards the future oil regions, the **Far East** was the first where oil production started. Currently, oil is produced only in the fields on the Sakhalin shelf, which were discovered in the 1980s and were gradually put into operation over the past ten years. The confirmed oil deposits of the Sakhalin-1, Sakhalin-2 and Sakhalin-3 projects are approximately 400 million tonnes. Forecasted deposits in this region are many times higher and are estimated to reach 1.5 billion tonnes. In 2010, the level of oil output in the Far East was 14.8 million tonnes, i.e. 2.9% of total Russian output. In addition to the deposits in Sakhalin, exploration work is taking place on the shelves of Kamchatka and Chukotka, which are seen as future oil regions.

Production also commenced in **Eastern Siberia** after the launch of the ESPO (Eastern Siberia-Pacific Ocean) oil pipeline in 2010. This region previously had no transport infrastructure whatsoever, which prevented the development of its oil fields. The Russian government is planning to make Eastern Siberia a key Russian oil production centre within the next twenty years. According to current estimates, Eastern Siberia has 1.15 billion tonnes of confirmed and 1.18 billion tonnes of probable oil deposits[19]. This oil is of much better quality and contains less sulphur than the oil from the Volga-Ural region and this will translate into high demand for this commodity on Asian markets. According to Russian geologists, new deposits are likely to be found in this region. The Siberian Branch of the Russian Academy of Sciences even estimates that exploitable oil reserves in Eastern Siberia and the Far East could reach a gigantic volume of between 15 and 22 billion tonnes, although this figure is often reduced to 8 billion tonnes[20]. The insignificant increase in the deposits in the past few years has not confirmed these highly optimistic forecasts as yet, which is also due to the insufficient intensity of geological and exploration research in the region.

The **northern part of Krasnoyarsk Krai** is often mentioned as Eastern Siberia although geographically it is part of Western Siberia. Oil production there started in 2009 and is currently in place only at the Vankor field, the largest oil field to have been developed in Russia from the very beginning after 1991. Vankor has 390 million tonnes of proven oil reserves and 105 million tonnes

[19] O. Prishchepa, Y. Podolsky, 'Mneniye VNIGRI: net po nefti i vozmozhno po gazu' *Neftegazovaya Vertikal*, no. 20, 2010, p. 28.

[20] N. Pusenkowa, 'Vostok yest vostok: novaya neftegazovaya provintsiya Rossii', Rabochiye materialy moskovskogo Centra Carnegie, no. 4, 2007, p. 14.

of likely reserves[21]. In 2010, the total output in Eastern Siberia and the northern part of Krasnoyarsk Krai reached 19.7 million tonnes, which accounted for 3.9% of Russian oil production in aggregate. The output will continue to grow rapidly in the immediate future, but its ultimate level is still disputable. Increasing production in this region has already partly compensated for the still relatively low decline in Western Siberian production.

Another future oil production region is the **Arctic shelf,** and primarily the Kara, the Barents and the Pechora Seas. However, given the extreme climate conditions, the technological needs and the enormous costs, production in this region is still seen as a distant future project. It is unlikely to be launched before 2030. Only three licences for production at the Kara Sea have been granted so far (to Rosneft). According to forecasts from the Russian Ministry for the Natural Environment, exploitable oil reserves on the Arctic shelf could reach 11.5 billion tonnes[22]. However, these estimates are not based on any geological survey since this region is still almost totally unexplored.

According to official Russian estimates, considerable oil deposits could also be found in the other parts of the Russian continental shelf. In addition to the shelf in the Far East already mentioned, the Russian parts of the **Caspian and Black Sea shelves** are promising regions. LUKoil embarked on oil exploration on the Caspian shelf in 1995 and has found several significant oil fields, with reserves of approximately 300 million tonnes. In 2010 production commenced in the Korchagin oil field near Astrakhan, the first one in this region of Russia[23]. The sea shelf in Dagestan also seems promising, but no geological work is being conducted there for the time being. Meanwhile, exploration work has been launched on the Black Sea shelf. The work is most advanced on two fields: the Tuapse Trough and the Shatsky Ridge (both are owned by Rosneft). Their estimated oil deposits are approximately 1.2 billion tonnes and approximately 860 million tonnes respectively[24]. Production in this region, despite favourable climate conditions, will be capital-intensive and will not start before 2025. Small amounts of oil (hundreds of thousands of tonnes annually) are also produced on the continental shelf in Kaliningrad Oblast.

[21] http://rosneft.ru/Upstream/ProductionAndDevelopment/eastern_siberia/vankorneft/

[22] http://www.ngv.ru/about/news/news9528.aspx

[23] http://lukoil.ru/materials/images/Oil_production/2011/Oil_production_FB_ru.pdf

[24] Y. Mazneva, V. Novyi, 'Morskoy rekord' *Vedomosti*, 18 June 2010.

4. The level of oil production

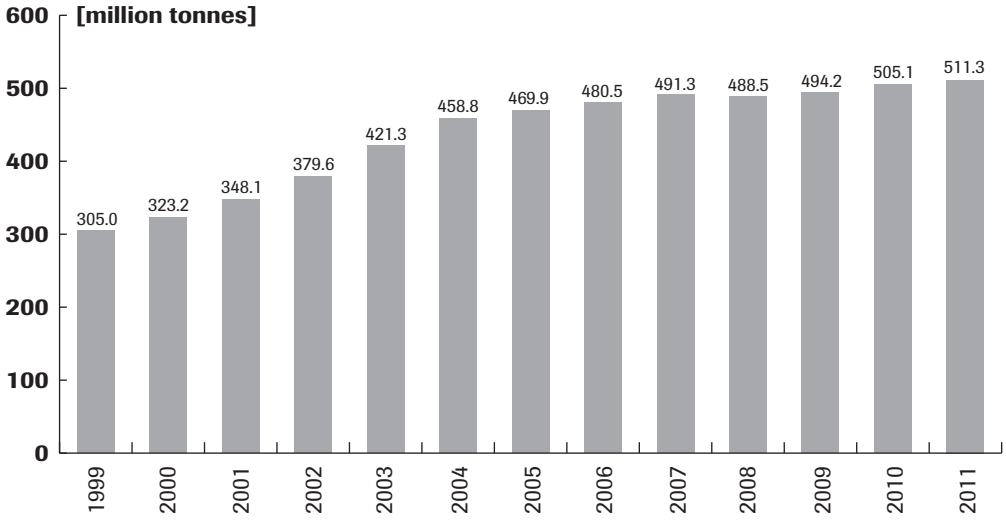
Oil production in Russia grew from 323 million tonnes in 2000 to 511.3 million tonnes in 2011 (see Chart 4). Against this, approx. 90% of oil (464 million tonnes) is produced by the nine largest corporations[25]. This increase of as much as 58% over this period is the Russian oil sector's greatest success and its impact on Russia's economy and politics cannot easily be overstated. The giant leap in production was to a great extent unexpected. The Ministry of Energy forecasted in 2000 that the output within the next few years would grow marginally at the best and at the same time did not rule out that it could fall significantly.

There are two major reasons which provide the explanation as to why the production level has risen so much in the Russian oil sector. Firstly, the private owners of the corporations adopted a policy of extensive production, almost overexploitation, and focused on the most easily accessible fields which had been developed already in Soviet times[26]. Their goal was to maximise profits by producing the largest amount of oil possible at the lowest possible cost, without considering the rationality or future consequences of such methods. In effect, many of the most cost-effective oil fields have been overexploited. State institutions, which were weak at that time, were unable to hold this back. Secondly, the increase in production was stimulated by the fact that oil prices grew several times within one decade, as has been mentioned above. All this led to a revival of the oil sector, which was in a deep crisis in the 1990s. The influx of capital and the resulting introduction of new technologies which enabled an intensification of production made it possible to resume production in fields which had been considered unprofitable.

[25] According to data for 2011: Rosneft (122 million tonnes), LUKoil (90.7 million), TNK-BP (86 million), Surgutneftegaz (60.7 million), Gazprom Neft (32 million), Tatneft (26 million), Slavneft (18 million), Bashneft (14 million) and Russneft (13 million). The remaining 10% of the oil was produced by Gazprom, international consortiums operating in the Sakhalin-1 and Sakhalin-2 fields, and small oil firms, including three major ones: Tomskneft, Salym Petroleum and Novatek.

[26] 'Neftedobycha: shatkoye blagopoluchiye' *Neftegazovaya Vertikal*, no. 5, 2010.

Chart 4. Oil production in Russia 1999–2011

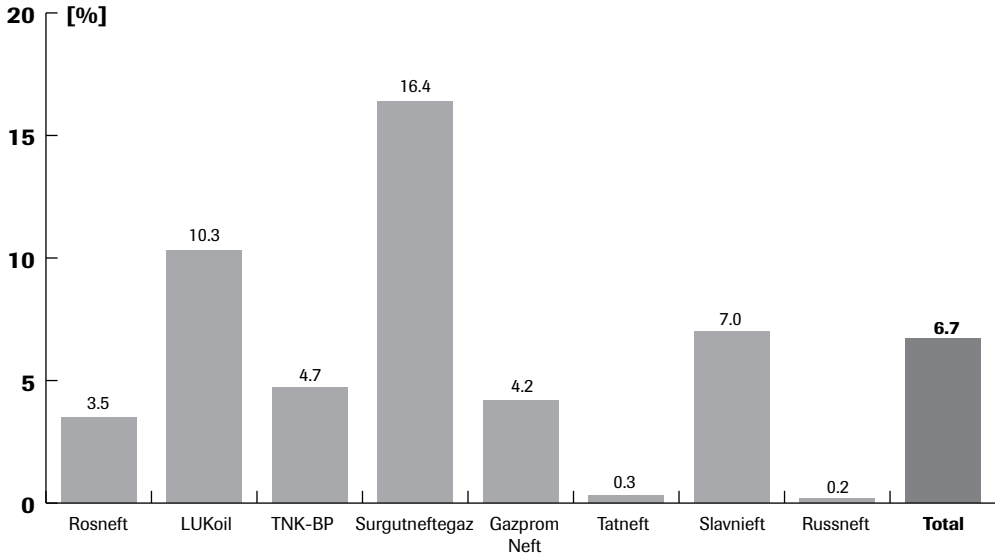


Data: Ministry of Energy of the Russian Federation

However, the production growth rate, which in 2000–2004 ranged between 6% and 11% annually, started slowing down to reach around 2% in the past few years. 2008 was an exception, because the production level went down a little. This means that the sources of the growth are running low, which is primarily a consequence of the regular decrease in the output of the old fields, which are of key significance for this sector. Nevertheless, over the past few years this decrease was compensated by growing production levels in new fields, especially in Eastern Siberia (the Vankor, Verkhnechonsk and Talakan fields) and in Sakhalin. In 2009, the output of the fields which had been put into operation within the five preceding years reached 31 million tonnes, which accounted for 6.7% of total oil production (see Chart 5).

The insufficient level of investment in geological and exploration work and the development of the fields which have already been discovered are to a great extent a consequence of excessive fiscal burdens imposed on oil companies and this is adversely affecting the condition of the Russian oil sector. The increasing monopolisation and restricted access for foreign investments are also having a detrimental effect on this sector. The most serious problems of the Russian oil sector are presented extensively in Chapter IV.

Chart 5. Share in percent of new fields in the total output of oil companies in 2009



Data: *Neftegazovaya Vertikal*, no. 4, 2010

5. The level of oil exports

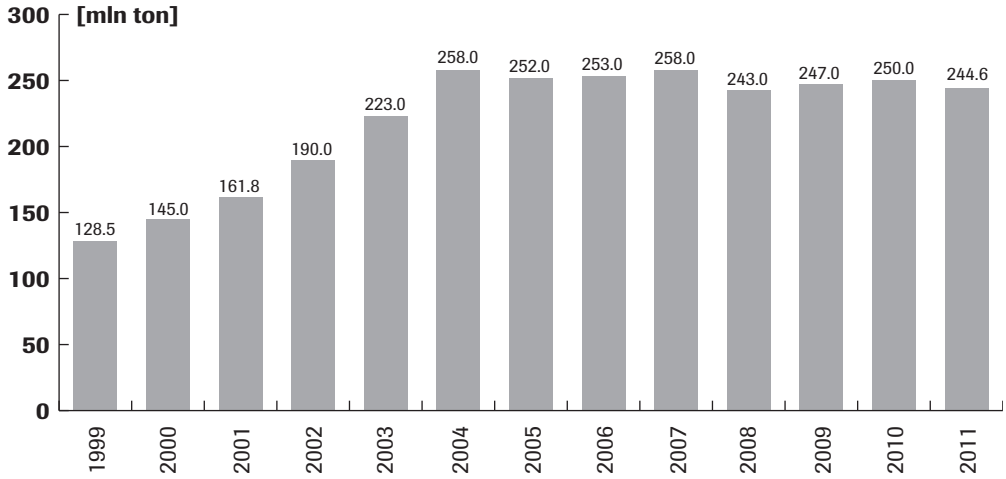
Russia is the world's second largest oil exporter after Saudi Arabia, with a share of 13.2% in 2010[27]. Oil exports are the main source of incme for Russian oil companies and the state budget alike. The export volume increased by approximately 75% over the past ten years, from 145 million tonnes in 2000 to 247 million tonnes in 2011 (see Chart 6). This was an effect of a significant output growth. Since 2004, export volume has been maintained at approximately 250 million tonnes annually. At the same time, exports of petroleum products have become significantly higher, as well; since 2004, their level has risen from 50 million tonnes to 132 million tonnes (for more information see Chapter III, section 3.2.).

Around 87% of Russian oil is exported by pipelines, which are controlled by Transneft, and 13% of the exports are transported by railway and river ships. According to data for 2009, the key outlets for Russian oil exports are EU member states and the Balkans, which buy 60% of exported Russian oil. CIS countries (mainly Belarus and Ukraine) have a share of 21%, Asia 12%, North and

[27] Saudi Arabia's share is 15.4%. Iran, with a share of 5.4%, is ranked third. Data from the EIA for 2010.

South Americas 6%, Africa 0.7% and Australia 0.3%[28]. The largest importers of Russian oil are: Germany (10% of total oil exports), Holland (7.5%), Poland (5.5%) and China (5%).

Chart 6. Russian oil exports from 1999 to 2011



Data: Federal Statistical Service of the Russian Federation

[28] Data from the EIA.

III. TRANSPORT INFRASTRUCTURE AND THE REFINERY SECTOR

1. Existing infrastructure

Russia has one of the world's largest oil pipeline networks, with a total length of 68,000 km, including 19,300 km of product oil pipelines. The exclusive owner of the oil pipelines is the state-controlled company Transneft, which also holds a monopoly on oil transport. This company manages access to pipelines and allocates quotas to oil companies for oil transport within Russia and for export. In aggregate, Transneft is in charge of the transport of 93% of Russian oil. The rest is transported mainly by the Russian Railways (RZhD) and private firms.

The key Russian oil pipeline mains (see Map 2) run from Western Siberia and the Urals to the central part of Russia, and from there to the Russian export terminals in Novorossiysk and Tuapse by the Black Sea (the Samara–Novorossiysk oil pipeline) and to Primorsk (the Baltic Pipeline System, BPS, oil pipeline). The new Eastern Siberia-Pacific Ocean (ESPO), the first section of which was put into operation in 2010, is gaining significance. Other important oil export centres are the oil terminals Varandey by the Barents Sea, which handles oil from Timan-Pechora, and De Kastri in Khabarovsk Krai, which transports part of the oil from Sakhalin. In aggregate, approximately 60% of Russian oil (around 150 million tonnes annually) is exported by sea.

The key export pipelines are: Druzhba, the northern branch of which supplies oil to Belarus, Poland and Germany, and the southern branch to Slovakia, the Czech Republic and Hungary (in total around 75 million tonnes annually), and the Skovorodino–Daqing oil pipeline (a branch of ESPO), which was put into operation in January 2011 and carries oil to China. This new oil export route has an annual capacity of 15 million tonnes, which can be expanded to 30 million tonnes. This is also the first energy infrastructure connection between Russia and China. The Samara–Odessa oil pipeline, which supplied oil to part of Ukrainian refineries, was also in use until 2009.

2. Infrastructure under construction

Over the past five years Russia has been intensively developing its new transport infrastructure, for both internal use and export. The largest projects as part of the development of the national networks are the pipelines:

Zapolyarnoye–Purpe and Purpe–Samotlor (approximately 910 km in length; capacity of 25 million tonnes by 2013 to increase to 50 million tonnes by 2016; the project is worth over US$5 billion), which will carry oil from the northern part of Krasnoyarsk Krai[29], and Tikhoretsk–Tuapse-2 (247 km long, 12 million tonnes of oil annually, cost of US$0.7 billion), which is aimed at increasing oil supplies to the Tuapse refinery. The Caspian Pipeline Consortium (CPC) oil pipeline also runs through the southern part of Russia. CPC is used for the transit of Kazakh oil, and its capacity will be expanded from 28 million tonnes to 67 million tonnes annually by 2015. Two key export oil pipelines under construction are ESPO and BPS-2 (Baltic Pipeline System-2).

The ESPO oil pipeline is among the most strategic and expensive projects being implemented currently in the Russian energy sector. Its purpose is to contribute to the emergence of a new oil production centre in Eastern Siberia and to connect the oil fields there with the Kozmino terminal by the Pacific Ocean. The new oil pipeline is also expected to help diversify Russian oil exports through entry to the Asian oil markets. The construction of ESPO commenced in 2006. The first part of the pipeline (Tayshet–Skovorodino), which is 2,700 km long and has a capacity of 30 million tonnes, was launched in January 2010. At present, oil is transported by railway from Skovorodino to the Kozmino terminal. In the second phase of the project (by 2013) the oil pipeline to Kozmino will be built (50 million tonnes, 1,763 km long) and the capacity of the first part will be expanded to 80 million tonnes. The total cost of ESPO construction will exceed US$30 billion[30].

The construction of the **BPS-2 oil pipeline,** which will connect Unecha (Bryansk oblast) and Ust-Luga by the Baltic Sea (998 km long), started in mid 2009. The new pipeline will be built in two stages. The first branch, which will have an annual capacity of 30 million tonnes of oil, will be put into operation in the first quarter of 2012. Then the pipeline's capacity will be expanded to 50 million tonnes by the end of 2013. The total cost of the project will reach US$5 billion[31].

[29] The Purpe–Samotlor oil pipeline was put into operation in October 2011.

[30] For more on ESPO see: W. Konończuk, 'Russia launches its oil pipeline to Asia' *EastWeek*, 6 January 2010, http://www.osw.waw.pl/sites/default/files/EastWeek_194.pdf; W. Konończuk, 'The East Siberia/Pacific Ocean (ESPO) pipeline: a strategic project – organisational failure?' *OSW Commentary*, no. 12, 2008, http://www.osw.waw.pl/en/publikacje/osw-commentary/2008-10-22/east-siberiapacific-ocean-espo-oil-pipeline-strategic-project-0

[31] For more on BPS-2 see: W. Konończuk, 'The construction of the BPS-2 oil pipeline starts' *EastWeek*, 17 June 2009, http://www.osw.waw.pl/en/publikacje/eastweek/2009-06-17/construction-bps-2-oil-pipeline-starts

Map 2. Key oil pipelines in Russia

The construction of the BPS-2 oil pipeline is not economically viable since the Russian oil pipeline infrastructure already has a larger export capacity than needed. Thus the aim of this project is not really to increase the volume of oil transported but rather to gain an oil export route alternative to the Druzhba oil pipeline and to minimise dependence on transit states. This will enable Russia to manoeuvre its transport routes to Europe and will provide it with a means to apply pressure on the transit states (Belarus, Ukraine and Poland) and oil recipients in Central Europe.

When the new oil pipelines, BPS-2 and ESPO, with a planned total annual capacity of 120 million tonnes, have been completed, Russia will be able to export approximately 45% more oil. The construction of both routes is at an advanced stage (one section of BPS-2 has already been put into operation), and the Russian government is clearly determined to carry through the construction. Money will also not be a problem, since Transneft has been given in 2009 a loan from China for the construction of ESPO (US$10 billion) and is receiving support from the state. Therefore, it may be expected that these two strategic oil pipelines will be completed as planned.

3. The refinery sector

Although Russia is a global leader in oil production, its refinery sector is technologically outdated and needs a very expensive modernisation. The annual processing capacity of Russian refineries is 279 million tonnes, which accounts for 6.2% of global refinery output, and ensures Russia third place after the USA and China[32]. However, Russian refineries are not running at full capacity: the volume of oil processed in 2011 reached 258 million tonnes, of which 132 million tonnes was exported.

28 refineries are operating at present in Russia. In aggregate, they generate 96% of the total oil refining output (the remaining part is generated by Gazprom's chemical plants and 'mini-refineries'). Most of these firms are owned by a few of Russia's largest oil corporations, which control 72% of total output[33]. All these refineries, with the exception of two, were built before the mid 1960s and, with a few exceptions, have not been modernised since. The systems installed in them have been worn down to a level of 80%, and the average level of

[32] BP Statistical Review..., *op. cit.*

[33] Including 50 million tonnes by Rosneft, 45 million by LUKoil, 22 million by TNK-BP, 22 million by Surgutneftegaz and 18 million by Gazprom Neft.

oil processing depth is as low as 71.2%, while a significant part of the refineries has a level of around only 60% (this level in the EU is around 90%)[34]. The Nelson Index reflects the degree of oil refining complexity and the possibility to manufacture highly-processed petroleum products and in the case of Russian refineries this is only 4.4. For comparison, this index reaches 7.4 in Western Europe, 9.5 in the Płock refinery owned by PKN Orlen, almost 10 in the Lotos refinery in Gdańsk, and 10.3 in the Mazeikiai refinery in Lithuania[35]. Due to technological backwardness, Russian refineries manufacture mainly low-processed products. Their production structure in 2011 was as follows: heavy fuel oil (mazut, 23.5%), diesel oil (31.7%), petrol (16.4%), aviation fuel (4.1%), other products (12.8%) and has remained basically unchanged since the 1990s.

3.1. The government's policy towards the sector

The Russian government's policy towards the oil sector over the past few years has been aimed at increasing the level of processing at Russian refineries and thus exporting more petroleum products at the expense of crude oil. Already in 1999, the government introduced a rule that access to Transneft's export system will be provided on condition that oil supply quotas to refineries have been met. In effect of this decision and also because of the rise in the prices of petroleum products in global markets, the level of usage of the capacity of Russian refineries has grown from 70% in 2000 to 90% at present (see Chart 7). The Energy Strategy to 2030 envisages a further increase in oil processing volumes to 249–260 million tonnes in 2022 and 275–311 million tonnes in 2030.

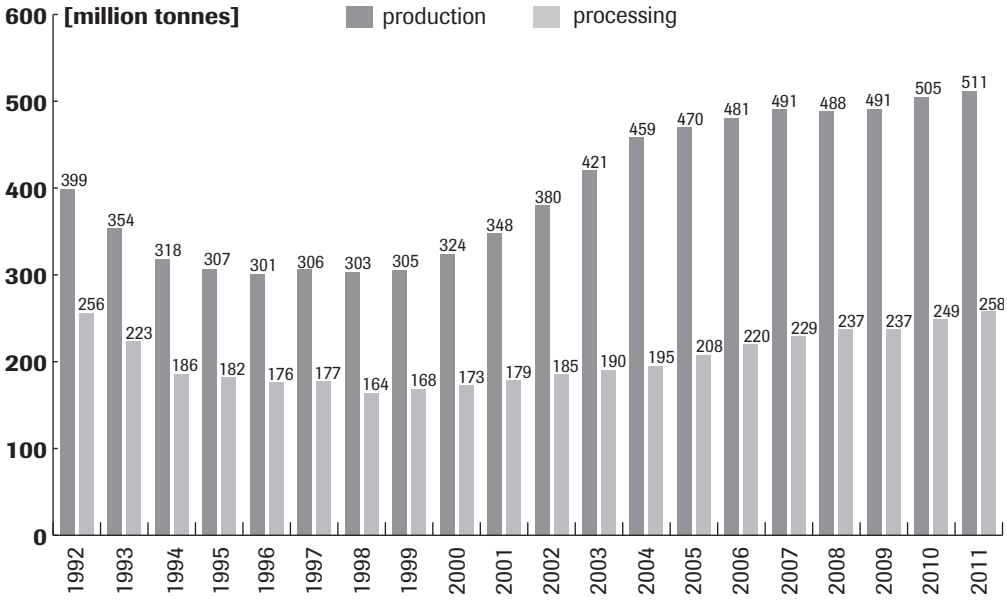
The government is also intending to force the refinery industry to embark on modernisation. In recent years, refinery owners have made relatively low investments primarily due to the lack of modernisation stimuli, including in the form of tax breaks. The policy recently adopted by the Kremlin is aimed at forcing refineries to make a technological leap by administrative means. One of these means is the ban on the production of fuels of Euro-2 class, which has been in force since 2011, of Euro-3 class since 2012 and of Euro-4 class to apply from 2015. The Strategy to 2030 envisages that oil processing depth will increase from 71.2% to 83% within the next ten years, and to 89–90% in 2030.

[34] A. Meshcherin, 'Khomut na sheyu' *Neftegazovaya Vertikal*, no. 7, 2010, p. 12.

[35] http://www.orlen.pl/PL/RelacjeInwestorskie/Documents/Company_overview_PL_March_2011.pdf

However, the technological modernisation of the refinery sector will be incredibly expensive. The Ministry of Energy estimates that the investments necessary for 2015 will cost US$20 billion[36], and the General Scheme of Development of the Oil Industry will require US$30 billion within the next ten years. This level seems unattainable and the oil sector, which will have to incur the high costs of investment in new oil fields in the immediate future, will probably be unable to earn such funds. In the opinion of Russian experts and oil companies, the reforms the government is trying to force through by administrative means are too ambitious, and thus unrealistic. It certainly appears that the reforms will be impossible to carry out within the deadlines which have been set. The petrol deficit which occurred in some parts of the country in spring 2011 – which was partly an effect of the ban on the sale of Euro-2 fuel – has proven that refineries are unable to meet the new requirements.

Chart 7. Dynamics of oil production and processing in Russia between 1992 and 2011



Data: Federal Statistical Service of the Russian Federation

[36] Interfax-ANI, 7-13 July 2011.

3.2. The export of petroleum products

Exports of petroleum products have significantly increased over the past few years (see Chart 8). They have been growing at a faster rate than crude oil exports and have increased by 109% since 2000. However, low-processed products which are used as semi-finished products to be processed further by foreign refineries are predominant in the foreign sales structure, which is a result of the technological backwardness of Russian refineries. It is especially worth noting that heavy fuel oil (mazut) has a 48% share in exports, while petrol has a share as low as 3.4% (diesel oil's share is 30.3%)[37].

Since the exported petroleum products are of low quality, their prices are low, too. Furthermore, until October 2001, the export duty rate on low-processed products was much lower than that on highly process products (respectively 46.7% and 67% of the value of the export duty on crude oil). A similar fiscal system prevented the modernisation of refineries, since it *de facto* favoured outdated production and made its exports more profitable. The return on sales of high-quality petrol was 10%, while that on heavy fuel oil, which needs a much shorter refining process, was 30%[38]. Meanwhile, according to estimates from the Ministry of Energy, if Russia had exported oil at the price of US$70 per barrel instead of petroleum products, the state budget would have gained US$13 billion more in annual revenues[39].

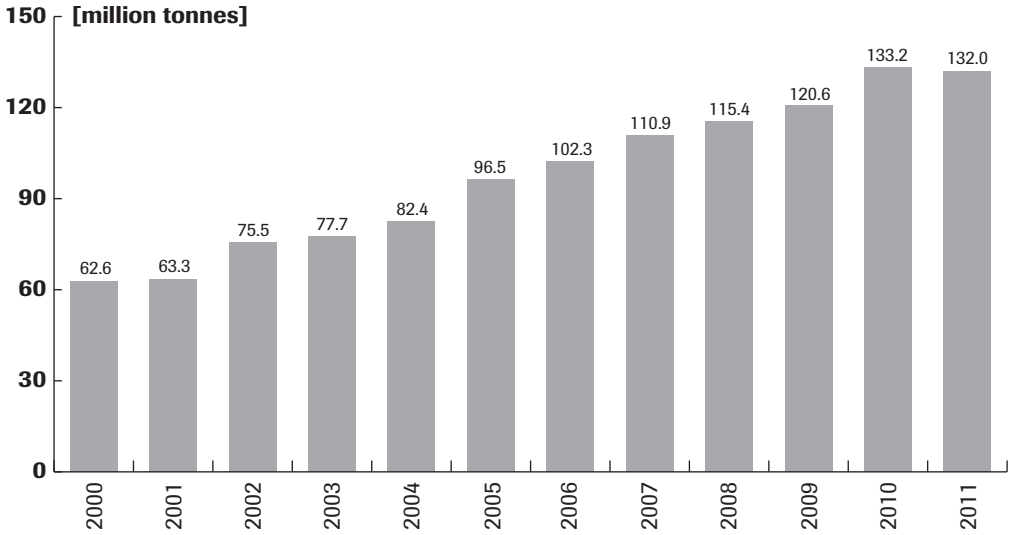
A unified export duty rate of 66% of the customs duty on oil was imposed on oil petroleum products in October 2011. In practice, this means a reduction of the customs duty on highly processed products and an increase on the low-processed ones. The government is hoping that the new duty rates will result in a reduction in the amounts of heavy fuel oil exported and an increase in the exports of highly processed products and at the same time will allow oil companies to earn approximately US$2.5 billion more annually and spend this income on the modernisation of refineries.

37 Data from the Federal Customs Service of the Russian Federation for 2010.

38 'Neftepererabotka: tak zhit nelzya' *Neftegazovaya Vertikal*, no. 5, 2010, p. 64.

39 'Mazutu dadut yeshcho dva goda' *Neft i Kapital*, no. 12, 2009.

Chart 8. Exports of petroleum products from Russia between 2000 and 2011



Data: Federal Statistical Service of the Russian Federation

The sale of low-processed (and thus cheap) products is not the only cause of the problem with the low profitability of exports of Russian petroleum products. Another reason is the economically irrational distribution of the refineries, which are located far from the main outlets in Russia and far from the export sea ports. As a consequence, transport costs increase their prices and negatively affect their competitiveness on international markets. All Russian refineries, with the exception of those in Kirishi (Leningrad oblast) and Tuapse by the Black Sea are located deep inside Russia[40]. Thus Russian refineries must transport their products great distances, which makes their price higher by US$ 20–30 per tonne in the case of refineries located in the European part of the country and by as much as US$80 in the case of Siberian refineries[41]. Furthermore, Russia is short of product oil pipelines – the cheapest means of transport – and manufacturers must transport their products by rail, which is much more expensive. Last but not least, the outdated systems used at the refineries result in high energy consumption in the refinery sector, which is two to three times higher than in the case of Western refineries[42].

[40] The reason for building them in such places during Soviet times was the need to secure the refineries in case of an armed conflict.

[41] N. Pusenkova, A. Bessonova, 'Blesk i nishcheta rossiyskoy pererabotki' Rabochiye materialy moskovskogo Centra Carnegie, no. 2, 2008, p. 13.

[42] V. Kapustin, 'Problemy razvitiya neftepererabotki v Rossii', 6 October 2006, http://www.oilcapital.ru/technologies/2006/10/061059_98699.shtml

The changes in the export duty rates mean that exports of Russian petroleum products may even go down (for more information on this, see Chapter V, section 2). This issue is especially serious if one considers the need to fill the oil pipelines which are now under construction (ESPO and BPS-2). This can also be concluded from certain statements by state officials; for example, Prime Minister Vladimir Putin said in December 2009, "One should build what brings profits. This may seem paradoxical, but from the economic point of view today it is more profitable to sell crude oil and not petroleum products"[43]. Many Russian experts agree with this stance and are presenting arguments for Russia not to increase the volume of oil processed in Russian refineries, since exports of crude oil are much more cost-efficient[44]. The Ministry of Energy also believes that annual refinery output at a level of 230–240 million tonnes is optimal although this is contrary to the guidelines of the Strategy to 2030, which envisages a regular increase in oil processing output in Russia[45]. It is worth emphasising that no new refinery is being built in Russia apart from the development of the refinery in Nizhnekamsk, which was completed in 2010, and the development of the Kirishi and Tuapse refineries currently in progress.

3.3. Expansion to foreign refinery markets

An analysis of the policy adopted by the Russian government towards the refinery industry leads to the conclusion that the goal of this policy is to make oil companies invest more actively in takeovers of refineries and fuel distribution networks outside Russia, especially in EU member states. The construction of new refineries in Russia would take a lot of time and expense, as would the modernisation of the existing ones to make exports of highly processed petroleum products possible. Given this situation, the best solution is to intensify foreign expansion – taking over refineries abroad and supplying Russian crude oil to them. This is vital for Russian firms because their produced oil versus processed oil ratio is several times lower than is the case with large Western companies, which usually process more oil than they produce themselves.

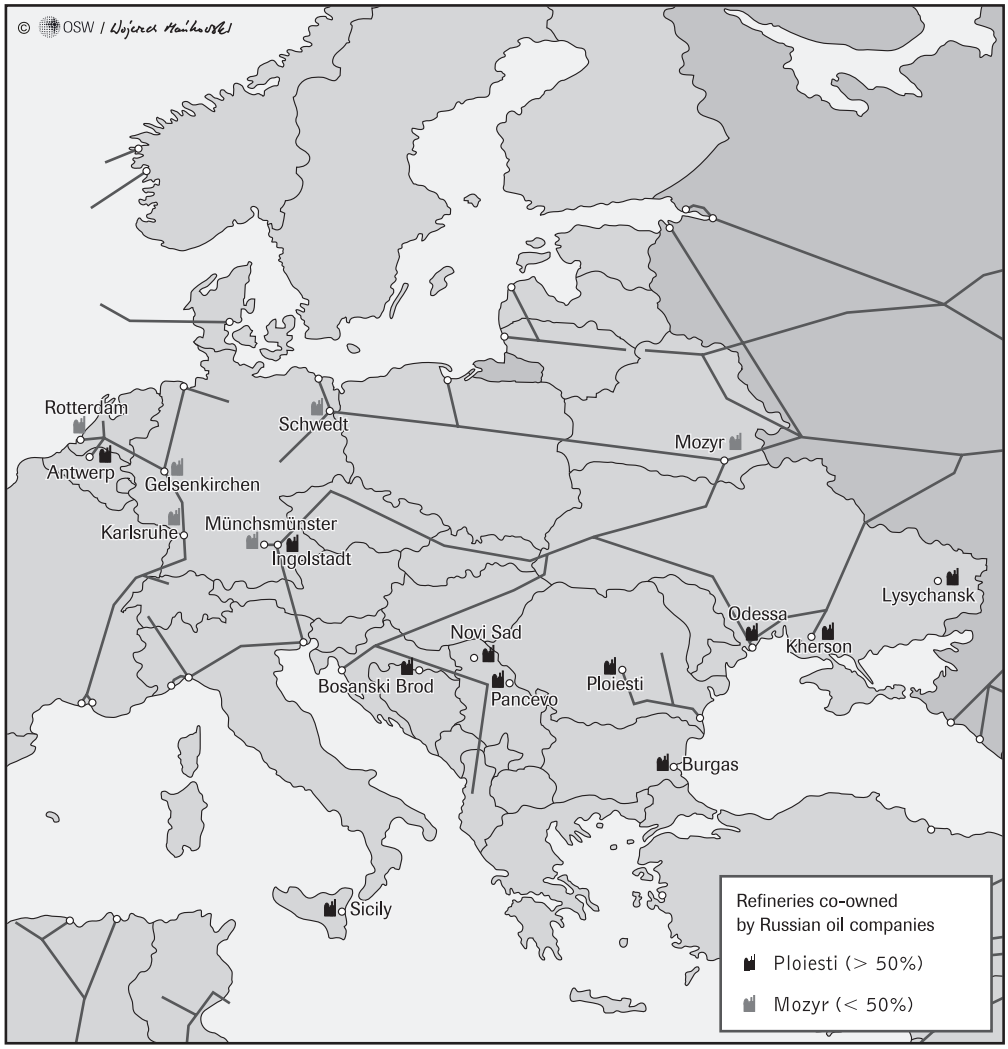
[43] http://premier.gov.ru/visits/ru/8759/events/8815/
In May 2008, Prime Minister Vladimir Putin said, however, that Russian manufacturers should "export not oil but highly processed petroleum products (...), which is more profitable and creates new jobs" http://government.ru/docs/1374/print/

[44] M. Sergeyev, 'Ekonomisty predlagayut likvidirovat v Rossii neftepererabotku' *Nezavisimaya Gazeta*, 30 March 2011.

[45] Interfax-ANI, 16-22 June 2011.

Their policy results from the fact that as a rule it is more profitable to sell petroleum products than crude oil.

Over the past few years, Russian firms have been actively increasing their presence on the refinery markets outside Russia. Currently, they own or co-own refineries in Ukraine (TNK-BP and LUKoil), Romania (LUKoil), Bulgaria (LUKoil), Serbia (Gazprom Neft), Bosnia and Herzegovina (Zarubezhneft), Italy (LUKoil), the Netherlands (LUKoil and Gunvor) and Germany (Rosneft), and share in refineries in Belarus (Slavneft) and up until May 2011 in Hungary (Surgutneftegaz). The area in which Russian companies are especially interested are those countries to which they may supply their crude oil at low expense, ideally using the Druzhba oil pipeline. These are the countries of Central Europe and Germany. It is a well-known fact that Gazprom Neft has been attempting to gain stakes in refineries in the Czech Republic (Česká rafinérská) and eastern Germany (Schwedt and Leuna), while TNK-BP was making efforts in 2011 to buy a 53% stake in Poland's Lotos. Although it is the Russian state which is acting as the initiator of the foreign expansion, the companies themselves are convinced that the expansion is a rational business strategy. Therefore, it may be expected that they will become more active in taking over refinery and downstream assets in the EU.



Map 3. Refineries owned or co-owned by Russian oil companies

IV. THE OIL SECTOR'S PROBLEMS

Despite the increase in oil production by almost 200 million tonnes in one decade, many problems have been accumulated in the Russian oil sector and are posing a serious challenge to its future, and may thus adversely affect the economic situation in Russia. However, the Russian government over the past few years has seen no need to change its approach to this most important branch of the Russian economy. One possible example of this is what Deputy Prime Minister Igor Sechin said in 2009, "there are no problems in the oil sector as a whole which would require any emergency action [from the government]"[46]. The Kremlin is unwilling to carry out reforms primarily due to the fear that budget revenues could be reduced since these are heavily dependent on oil-generated income.

The uncertainty the companies have about the government's policy is significantly impeding the development of the sector as a whole. This can be illustrated by a statement by Vladimir Bogdanov, the president of Surgutneftegas, a company which is believed to be top of the class, whose development results were the indicators illustrating the condition of the entire sector for the past few years. Bogdanov said that his company could increase its output from 59 million tonnes to 85 or even 100 million tonnes annually, but – given the situation, mainly fiscal, in which oil companies are forced to function now – this is economically unfeasible[47]. The key problems, which have been discussed in detail below, include: state ownership and political control of the sector, government discrimination in favour of state-owned companies, the inefficient fiscal system, one of the effects of which is an insufficient level of investment, and restricted access for foreign investors.

1. State control and political supervision

A vast part of the Russian oil sector was privatised in the mid 1990s, and almost all oil companies became controlled by Russian oligarch capital. Due to the weakness of state institutions and informal influence from Russian oligarchs, the government did not use the instruments it had to control the oil sector. However, fundamental changes took place at the end of the first term in office of Vladimir Putin as president, which was manifested by the 'Yukos affair', which was an attack on Russia's largest oil company inspired by the

[46] Quotation from: 'Strashilki ot Minenergo' *Razvedka & Dobycha*, no. 2, 2011, p. 11.

[47] 'Yest beguny na korotkiye distantsii, a my stayery' *Kommersant*, 29 April 2008.

government. Yukos was led to artificial bankruptcy, and its assets were taken over by Rosneft, the only state-owned oil company at that time[48]. An effect of the 'Yukos affair' was that the sector found itself under the direct supervision of the government elite. Furthermore, in 2005, Gazprom bought Sibneft, which was a private company (currently Gazprom Neft), as a consequence of which the share of state-controlled companies in total Russian oil production has grown from 24% in 2003 (i.e. the time before the 'Yukos affair') to 37% at present. However, if one takes into account the informal control which representatives of the government have in some private companies (Surgutneftegas, Slavneft, Bashneft and Russneft), this share will rise to almost 50%.

The state's control of a significant part of the Russian oil sector reflects its strategic significance and status of main contributor to the state budget. However, the government can successfully influence not only state-owned companies but also private ones, for example, by using threats to cancel the production licence, by imposing a high financial penalty for alleged ecological damage, etc. One important instrument of the government's influence is the company Transneft, which decides on access to the transport infrastructure, including export. Therefore, when private companies make key decisions, they must informally obtain consent from the government, especially if the ownership structure of a given entity is to be changed. This *de facto* means that the government has total control of the Russian oil sector.

Members of the ruling class, and above all Prime Minister Vladimir Putin, are playing a key role in determining the priorities for development of the oil sector. Deputy Prime Minister Igor Sechin is the government's person in charge of political supervision of the oil sector. He has been lobbying for its interests, especially of Rosneft, where he was chairman of the supervisory board until April 2011[49]. The Ministry of Energy, which acts mainly as the administrative supervisor and the performer of the Kremlin's orders, is playing a minor role. The Ministry of Finance in turn has a strong impact on the oil sector because it determines the fiscal system and is lobbying for high tax rates to be maintained.

[48] For more see: W. Konończuk, 'The "Yukos Affair", its Motives and Implications' OSW Studies, no. 25, August 2006, http://www.osw.waw.pl/en/publikacje/osw-studies/2006-08-15/yukos-affair-its-motives-and-implications

[49] Until mid 2011, senior state officials held key positions in the supervisory bodies of many state-owned companies. They had to resign after the ban on the simultaneous holding of positions in state institutions and companies, which was initiated by President Medvedev, was introduced. This, however, did not weaken their real, albeit now behind-thescenes, influence on the running of these firms.

Some individuals who do not hold any official posts but owing to their connections with the political elite, including Prime Minister Putin, may successfully influence state politics are also playing an essential role. Their actions are aimed at securing their private business interests in the sector and often contradict the interests of the state. The most influential individuals include: Gennady Timchenko, a co-owner of Gunvor, the largest exporter of Russian oil, holding a share of around 30%[50], and of the gas company Novatek; Arkady Rotenberg, the owner of the Novorossiysk port; and Ziyavudin Magomedov, the owner of Summa holding, which controls, among other entities, part of the oil terminal in Primorsk, the Stroynovatsiya firm, which is participating in the construction of the ESPO and BPS-2 oil pipelines, and the Souz Petrolium trader firm[51].

The government has total control of the oil sector because it is a sector of strategic significance and also because of the desire of part of the political elite to accumulate personal wealth[52]. The state-controlled companies and Transneft have especially many 'satellite' companies which are linked to politicians or members of their management. As a consequence, the priorities of the energy sector's development depend on the political and financial interests of part of the ruling class. As a result, some oil projects are being performed contrary to economic logic and are used as means to siphon off public funds. Embezzlement has occurred during the implementation of very expensive oil projects, including the construction of the ESPO and BPS-2 oil pipelines[53].

The combination of private and state interests and the influence from various decision-making centres on the formation of the oil policy (the prime minister, president, Deputy Prime Minister Igor Sechin, the Ministry of Energy, the Ministry of Finance, and Transneft), whose interests often collide, make Russia deprived of a consistent strategy regarding the key sector of its economy. The Energy Strategy to 2030, which was adopted only six years after the

[50] For more see: W. Konończuk, 'Making money on the crisis in Russia: the case of Gennady Timchenko' *OSW Commentary,* no. 31, 28 December 2009, http://www.osw.waw.pl/sites/default/files/Commentary_31.pdf

[51] Souz Petrolium, a company registered in Switzerland, is the main supplier of oil to PKN Orlen: it signed a three-year contract for the supply of 4.8 million tonnes of oil annually in November 2009, and in December 2011 it signed another three-year contract for annual supplies of 2.4 million tonnes of oil.

[52] P. Hanson, 'The Resistible Rise of State Control in the Russian Oil Industry' *Eurasian Geography and Economics,* no. 1, 2009, pp. 14–27.

[53] For more on this issue see the investigation by the famous Russian blogger, Alexey Navalny, 'Kak pilat v Transnefti' 16 November 2010, http://navalny.livejournal.com/526563.html8

endorsement of the Energy Strategy to 2020, is mainly a means of propaganda. It is aimed at demonstrating the country's energy potential. Some of its provisions included in the part concerning oil are contrary to the present policy. Many decisions are taken by the state administration under the influence of lobbying from certain institutions and firms and are not a consequence of well-though out, long-term activities.

2. The privileges of state-controlled companies

Since a significant part of the oil sector is state-controlled, the government is discriminating in favour of state-owned companies (Rosneft and Gazprom Neft) or those controlled by the ruling class (for example, Bashneft and Surgutneftegas). These firms may count on lobbying in their favour from the most senior state officials. Examples of special treatment of some entities include preferences given to them in setting the export schedule[54] and granting them the best production licences[55]. Although formally tenders are held, their results are often fixed so that one particular company wins. The most recent example of this was the granting of the licence at the end of 2010 to Bashneft for the development of the Trebsa and Titova field (Timan-Pechora), one of the largest the state still had at its disposal[56]. Another example of unequal treatment is the temporary lifting of the export duty on oil from Eastern Siberia, the main beneficiary of which is Rosneft.

One more example is the legal provision of 2008, which regulates that raw materials on the Russian continental shelf (with the exception of the Caspian Sea and the Sea of Azov) can be produced only by state-controlled firms[57]. This means that the competition has been restricted to four firms: Rosneft, Gazprom, Gazprom Neft and Zarubezhneft, the latter of which is a small company and does business primarily outside of Russia. Meanwhile, it is LUKoil, a private company, which has the largest experience with work on underwater fields. Similar legal restrictions cause significant delay in the utilisation of the natural wealth on the Russian continental shelf, since three companies are unable to cope with this task. According to the government's intention, this is to contribute to continuing growth of the share of state-controlled companies

54 The export schedule, i.e. the quantities of oil a given company may send in a defined direction and at a defined time, is determined by Transneft in consultation with the Ministry of Energy.

55 The Ministry of Natural Resources is in charge of granting production licences.

56 O. Gavshina, 'Sdielka iz proshlogo' *Vedomosti*, 3 December 2010.

57 D. Rebrov, 'Gazprom i Rosneft idut na dno' *Kommersant*, 17 April 2008.

in oil production and thus also in their significance. The other firms may take part in the production on the continental shelf only as subcontractors of the state-owned companies.

3. The inefficient tax system

3.1. Characteristics of the tax system

High tax rates are among the chief problems of the oil sector, which significantly inhibits its development and potentially poses serious consequences for its future. The primary goal of the Russian fiscal system regarding this branch of the economy is to gain the highest possible budget revenues. Nothing in the system performs the function aimed at stimulating its development. With the present tax rates, it is unprofitable to develop 90% of new fields and 30% of the old fields already in operation, which in aggregate accounts for half of all oil deposits in Russia[58].

The tax systems currently in force were created at the beginning of the first presidency of Vladimir Putin, when oil prices started growing rapidly. Two key taxes were then imposed on oil companies: the tax on the extraction of mineral resources (NDPI) and the export duty. While oil companies had been able to keep as much as 70% of their income, the two taxes imposed a much heavier fiscal burden on them (see Chart 9).

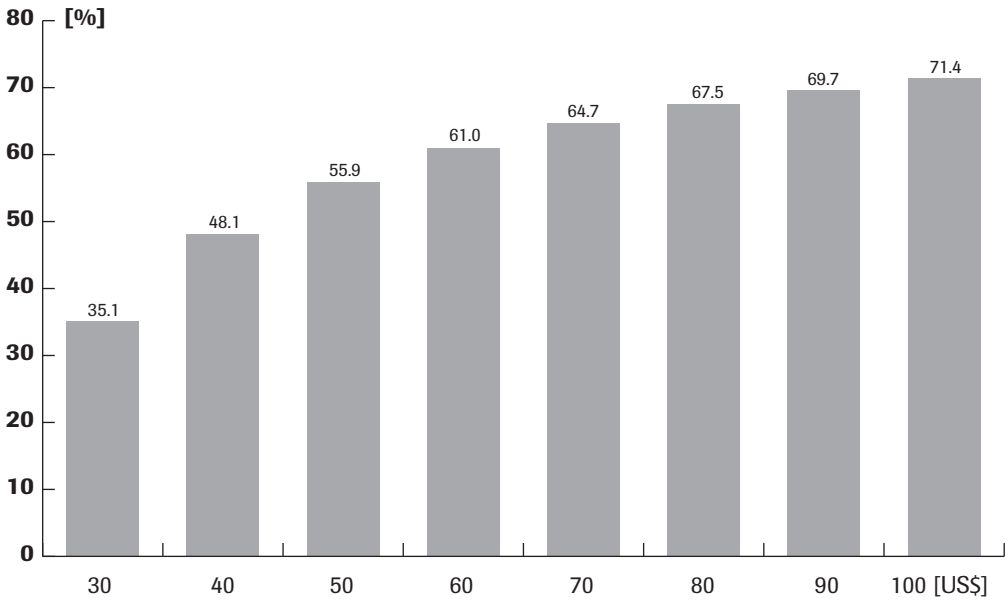
The rate of NDPI, which was introduced in 2002, depends on the current oil price and reaches approximately US$15 per barrel. Thus it is a simple mechanism which automatically siphons a significant part of the income of oil companies off to the state budget. The main criticism of NDPI concerns its flat rate, namely the fact that it is imposed at an equal amount on oil extracted from all fields, regardless of their geographical location, geological structure, degree of depletion and production costs. Thus this tax is encouraging production at the best and easiest to extract fields, and one of its consequences is the irrational overexploitation of some of the fields. In the opinion of *Neftegazovaya Vertikal*, one of the most important magazines dealing with oil and gas in Russia, NDPI stands for "primitivisation of the payment system (...) to improve the tax collection rate, with a damaging effect on the rationality of field production"[59].

[58] 'Zhertva dobychi' *RusEnergy*, 25 October 2010.

[59] 'Nalogooblozheniye: nozhnitsi Kudrina i pryaniki dla izbrannykh' *Neftegazovaya Vertikal*, no. 5, 2010, p. 17.

Another major fiscal levy is the export duty, the rate of which in the past two years ranged between 65% and 67% of the value of oil above US$25 per barrel. The duty rate changes every month and depends on the average oil price in the preceding month[60]. On 1 October 2011, the duty rate was reduced to 60%. As demonstrated in the chart below, the higher the oil price, the more intensive the growth of the fiscal levies imposed on Russian oil companies. At the price of US$30 per barrel, the share of NDPI and export duty is 35.1% of the oil price. When the price reaches US$50, the taxes grow to 55.9%, while at the price of US$100, the taxes reach 71.4%. This means that higher oil prices translate to higher incomes for oil producers to a very limited extent. For comparison, in Brazil, whose tax system is often presented as a model to be followed in the taxation of oil companies, the share of taxes in a barrel of oil worth US$100 is 41%[61].

Chart 9. Percentage share of the NDPI tax and export duty in the Urals oil price



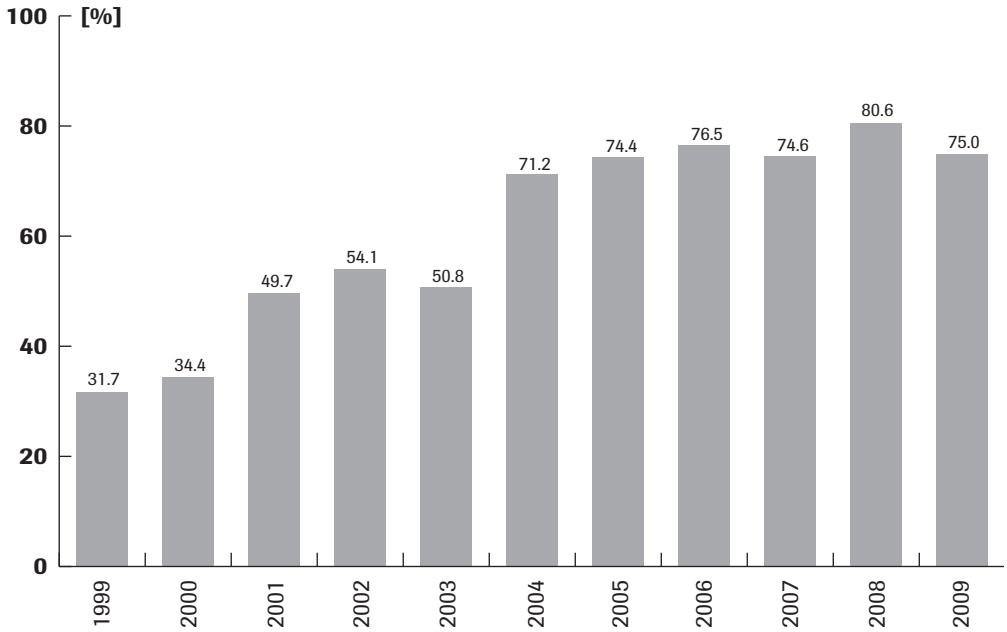
Data: *Neftegazovaya Vertikal*, no. 5, 2010

[60] Until 2010, export duty changed every two months, which in the case of rapid price growth offered oil companies additional profits and also high losses, when prices dropped rapidly. When the prices went down dramatically in the second half of 2008 some smaller firms even had to withhold production because the fiscal levies were higher than their incomes.

[61] O. Gavshina, Y. Mazneva, A. Trifonov, 'Reshitelnyi i shchedryi' *Vedomosti*, 31 August 2011.

NDPI and export duty are not the only fiscal levies imposed on the oil sector. Additionally, excise duty is imposed on petroleum products, and companies pay income tax, which has significantly increased since 2004 to reach a rate of 20% in the past few years. As a consequence, taxes currently take between 75% and 80% of the profits generated by oil companies (see Chart 10). The fiscal system leaves oil companies with income sufficient to continue production on the already used fields but too small for significant investments in new, usually capital-intensive upstream projects. Even the record-high oil prices have failed to provide a stimulus for oil companies to embark on the large-scale development of new fields or to invest in difficult-to-access oil fields. The main cause for this is the fact that the tax system performs only the fiscal function of supplying revenues to the state budget, which is increasingly dependent on the oil sector, and which at the same time fails to stimulate production and act as a mechanism for setting the trends of its development.

Chart 10. Taxes imposed on the profits oil companies between 1999 and 2009



Data: *Neftegazovaya Vertikal*, no. 5, 2010

Another kind of tax Russian companies must pay are the oil transport fees collected by Transneft. These are usually much higher than the actual oil transport costs, since this state-controlled company must compensate this way for the huge expenses it has incurred over the past few years in connection with the construction of new oil pipelines, including primarily ESPO, BPS-2 and

Purpe–Samotlor. This is then in fact another fiscal burden for the oil sector, which has an additional adverse impact on the conditions of its operation. Only in 2009–2011, Transneft's transport tariff increased by 71% and is one of the highest among oil producer countries[62]. In 2009, transport of one tonne of oil at a distance of 100 km cost US$0.95 in Russia, while it was US$0.44 in Canada and US$0.68 in the USA[63].

3.2. Attempts to improve the fiscal situation

In connection with increasing criticism of the fiscal system coming from oil companies and some experts, the government took action to liberalise it to some extent. This however did not take the form of a comprehensive reform, but was a rather fragmentary action in some areas. In 2007, the NDPI rate was slightly reduced for fields depleted to over 80%, and this tax was lifted completely in the case of the fields located in Yakutia, Irkutsk oblast and Krasnoyarsk Krai for 10 to 15 years or until 25 million tonnes of oil have been produced[64]. In 2009, NDPI was also temporarily lifted for fields on the Polar shelf (until 35 million tonnes have been extracted), on the shelves of the Caspian Sea and the Sea of Azov (up to 10 million tonnes, for no longer than seven years), in the Nenets Autonomous Okrug and in Yamal (15 million tonnes for seven years). However, this measure has improved the situation of the oil sector as a whole to a very limited extent since output levels in this region are still low, with the exception of the Vankor field[65].

The most important of the attempts to improve the financial conditions of the operation of oil companies was the lifting of the export duty on thirteen oil fields in Eastern Siberia in December 2009. In January 2010, this list was extended to twenty-two fields, although real production was in place in only four of these fields. However, the duty was imposed again in May 2011 due to a protest from the Ministry of Finance. The most recent moves made by the government to improve the fiscal environment were: the reduction of oil export

62 O. Gavshina, 'Privilegiya Transnefti' *Vedomosti*, 26 August 2011.

63 'Zhertva dobychi' *RusEnergy*, 25 October 2010.

64 A. Bessonova, 'Neftedobycha v Rossii' Rabochiye materialy moskovskogo Centra Carnegie, no. 1, 2009, pp. 15-18.

65 The aggregate output at the Vankor field exceeded 25 million tonnes in September 2011, so the regular NDPI rate has been imposed on this field since then.

duty from 65% to 60% from October 2011[66] and lifting NDPI in August 2011 for oil from the shelves of the Black Sea and the Sea of Okhotsk (until 20 million tonnes have been extracted), from the fields located in the Yamalo-Nenets Autonomous Okrug (up to 30 million tonnes) and those with deposits of less than 5 million tonnes[67].

Contrary to appearances, the Russian government has done little over the past four years, and the actions it has taken will not bring about a real improvement in the situation of the oil sector. The measures taken are fragmentary, fail to bring system changes and extend to fields which account for only a few percent of Russian oil output. In the case of old fields, where a vast share of Russian oil is produced, apart from the slight reduction in the export duty, no comprehensive action has been taken to improve the situation. Furthermore, a significant part of the solutions adopted brought benefits above all to the state-controlled companies, Rosneft and Gazprom Neft. Nevertheless, even Rosneft, with its great lobbying potential among the most senior state officials, has not been able to maintain the zero export duty rate on oil from Vankor. It also needs to be noted that the measures adopted concern primarily fields located in very unfavourable climate conditions and/or those which require expensive technological solutions. This, for example, concerns Gazprom Neft's fields in the Yamalo-Nenets AO. This company estimates that owing to the lifting of NDPI on these fields, it will gain approximately US$4.5 billion, which will significantly improve the return on investment, but at the same time assesses that the project will be possible to implement if the oil price is at least US$100 per barrel and that it needs a temporary reduction in export duty. Rosneft also predicts that its investments in the fields on the continental shelf will only be possible if export duty is temporarily lifted.

The solutions proposed by Russian companies and exporters indicate the need for a system-based reform of the entire sector instead of offering tax breaks to selected regions or upstream projects. They suggest among other solutions a gradual lifting of export duty on crude oil and at the same time the imposition of a higher NDPI on oil and excise duty on petroleum products, or – according to another version– the introduction of one tax whose rate would depend

[66] The complex formula of the export duty is the following: 65% of the difference between the current price per tonne of oil and US$182.5 (this figure changes) to the base price of US$29.2 per tonne of oil. The 65% rate has been replaced with 60% since October 2011.

[67] K. Melnikov, 'Neftianikam obnulili stavku' *Kommersant*, 22 July 2011.

on a company's income[68]. It has also been suggested that the rates of fiscal levies should depend on the distance which oil is transported.

It seems that the government is aware of the need to carry out a thorough fiscal reform in this strategic sector of the Russian economy. At the end of 2010, the Ministry of Energy suggested reducing export duty to 55% and, in the case of new fields, introducing one income tax at the rate of 27%. According to its calculations, revenues to the state budget would fall by US$2.5 billion in the first year of this system's operation but they would be 20% higher within the next ten years than the presently applicable system would ensure[69]. Similar conclusions can be found in the General Scheme of Development of the Oil Industry to 2020, which predicts that if no radical fiscal reform is carried through, oil production will start falling dramatically in Russia, and may even be 30% lower within a little more than a decade (this is discussed in more detail in Chapter V).

Even though the government has an objective picture of the situation in the sector, its response to the existing challenges is insufficient and fragmentary due to the fear of the consequences of falling budget revenues. High prices are used as another excuse for the Kremlin's passiveness. This, however, helps improve the investment potential of oil companies only to a limited extent. Furthermore, two groups are competing within the Russian ruling class. One of them, led by Deputy Prime Minister Igor Sechin, the guardian of the oil sector, is lobbying for the introduction of fiscal changes. Meanwhile, the other group, whose centre is in the Ministry of Finance, opposes this or claims that the actions which have been taken already are sufficient. The latter group, whose stance guarantees budget revenues being maintained at a high level, is supported by a majority of the Russian elite responsible for making the key decisions. This means that the chances for real change in the taxation of the oil sector are quite low in the immediate future.

3.3. The consequences of the lack of a fiscal reform

This, very circumspect, approach taken by the government proves that it fears that any thorough reform of the fiscal system pertaining the oil sector could lead to a significant reduction of budget revenues. While this scenario

[68] 'Zhertva dobychi' *RusEnergy*, 25 October 2010.

[69] D. Kazmin, A. Peretolchina, F. Sterkin, 'Syryevoye zaklatye' *Vedomosti*, 12 October 2011.

is in fact real in the short term, if no radical fiscal reform is carried through, oil production will fall, and all the negative consequences for the budget will take place anyway. Representatives of oil firms have been warning regularly that Russia has to choose between fiscal reform and durable output reduction[70]. Such opinions need to be seen not only as lobbying for a radical liberalisation of the tax system but also as a realistic warning that the fiscal levies currently in force are impeding the sector's development and are posing the risk of a serious crisis.

In addition to the real imminent risk of a significant reduction in oil output, the overly aggressive fiscal system also has at least two other major consequences. Firstly, it is affecting the increased activity in foreign upstream projects, which has been observed among Russian companies over the past two years. These entities, expecting more favourable conditions for investment, started investing in deposits in various places across the world. A good illustration of this is the example of TNK-BP. This company, which had not previously invested in upstream outside Russia, bought shares in oil projects in Venezuela and Vietnam from BP in October 2010, took over a 45% stake in a Brazilian field for US$1 billion in July 2011 and is intending to participate in a tender for extraction licences in Iraq. Other Russian companies active abroad include: LUKoil (producing or exploring oil in Iraq, Azerbaijan, Kazakhstan, Vietnam, Ghana, Egypt and Saudi Arabia), Gazprom Neft (Iraq and Iran), Rosneft (Algeria) and Tatneft (Libya and Syria). The scale and the acceleration of foreign expansion of Russian oil companies indicate that one of the key reasons for this is the unfavourable investment climate in Russia.

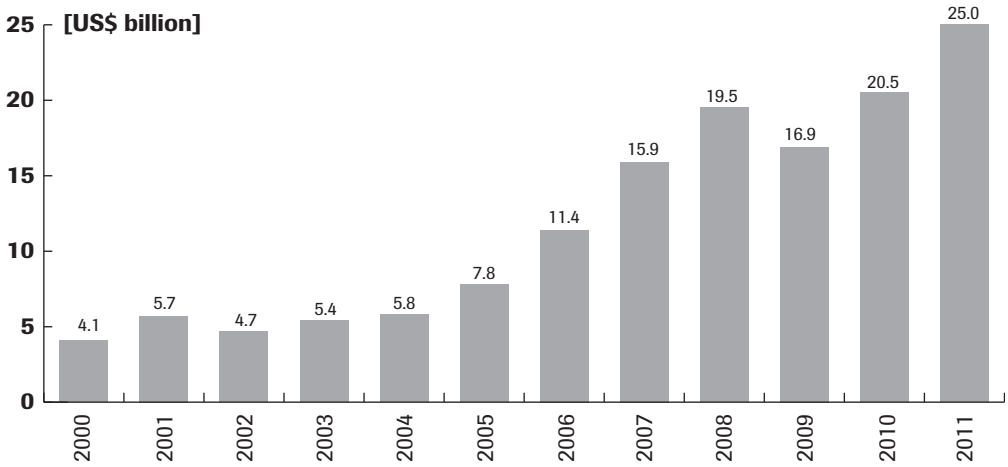
Secondly, the excessive fiscal burdens are adversely affecting the valuation of Russian companies, despite high oil prices. One example is Rosneft, whose stock-market value is five times lower than that of ExxonMobil, although Rosneft's oil deposits are a third larger than those of ExxonMobil. In addition to the insufficient share of petroleum products in the total sales of Russian companies, the other most important reason for this is the need to operate in an unfavourable fiscal environment. All Russian oil companies are affected by the problem of much lower capitalisation than their Western competitors with comparable output and reserves.

[70] See, for example, the statement by the deputy CEO of LUKoil, Leonid Fedun, Argus FSU Energy, 27 May 2011, p. 3.

4. Insufficient investments

As a consequence of the excessive fiscal burdens imposed on the oil sector, Russian companies allocate insufficient funds to investment, including on geological and exploration work and the development of already explored but still idle oil fields. The level of investment per barrel of extracted oil in Russia currently ranges between US$9 and US$10, and it was much lower recently, at US$5 to US$7[71]. Meanwhile, the average value of this indicator for large international oil firms ranges between US$15 and US$20[72]. It needs to be admitted that the investment outlays of Russian oil companies have been increasing over the past five years owing to the oil price growth but they are still far from sufficient. While the annual investment level in 2000–2004 was at US$4–5 billion, it started increasing rapidly in 2005 to reach US$11.4 billion in 2007 and US$25 billion in 2011 (see Chart 11). For comparison, the investment expenses of ExxonMobil, which produces less oil than Rosneft, in 2011 were US$ 32 billion, which was higher than the investment expenses of all Russian oil companies in aggregate[73].

Chart 11. The investment levels of oil companies in Russia between 2000 and 2011



Data: *Neftegazovaya Vertikal*, no. 5, 2010 and own calculations on the basis of data from companies for 2010–2011

The Energy Strategy to 2030 forecasts that the level of necessary investments in the sector should reach US$609–624 billion within the next twenty years, including US$491–501 billion on production and geological and exploration work

[71] 'Investitsii' *Neftegazovaya Vertikal*, no. 5, 2010, p. 91.

[72] 'Chistaya pribyl neftegazovykh kompaniy RF mozhet prevysit $100 mld', 30 May 2011, http://www.rosbalt.ru/business/2011/05/30/853490.html

[73] Y. Kravchenko, 'Bal Neftianikov' *Vedomosti*, 13.09.2012.

alone (see Table 2). This means that it is necessary to invest approximately US$24–25 billion annually; a level much higher than the present outlays. Furthermore, oil companies will also have to incur the costs of the modernisation of the refinery sector and oil pipeline construction (Transneft's network and the connections between their fields and Transneft's system), which, according to Strategy 2030, means additional costs of US$5.9–6.2 billion annually. Interestingly, a similar level of investment necessary to be made in the oil sector has been determined by the International Energy Agency (EA). According to its estimates, they should reach US$633 billion by 2035, of which US$44 billion would have to be allocated for the modernisation of the refinery sector[74]. Additionally, the Russian Ministry of National Resources estimates that the level of investment in the development of the Arctic shelf should reach approximately US$325 billion by 2040[75].

Table 2. Forecasted investment needs of the oil sector until 2030 (US$ billion)

Investment level	Stage I (to 2013-2015)	Stage II (to 2020-2022)	Stage III (to 2030)	Total
Production and geological and exploration work	110-111	109-112	272-278	491-501
Refinery sector	21-22	8-9	18-19	47-50
Transport	31-32	17-18	23-24	71-74
Total	**162-165**	**134-139**	**313-321**	**609-625**

Data: Energy Strategy to 2030

The investment structure of Russian oil companies in 2010 was as following: drilling in already active fields (40.2%), industrial construction (42%), equipment (13.3%), drilling for the exploration of new fields (3.6%) and other (0.9%)[76]. The low level of expenses on the exploration of new fields is noticeable and this has been regularly falling over the past few years. The existence

74 IEA World Energy Outlook 2010.

75 I. Kezik, 'Investitsii v defitsite' *Moskovskiye Novosti*, 5 October 2011.

76 A. Meshcherin, 'Fasadnoye blagopoluchiye: neft i gaz Rossii 2010' *Neftegazovaya Vertikal*, no. 4, 2011, p. 42.

of a crisis in this area is proven by the fact that while the level of drilling for the exploration of new fields in the early 1990s was approximately 7 million metres annually, it was reduced to 0.86 million metres in 2009[77]. Russian companies allocate approximately US$0.8 billion for new field exploration. Meanwhile, Russian experts estimate that the necessary level of annual investments in geological and exploration work should be at US$15–18 billion[78]. One of the reasons why the level of investment in this area is so low is because of legal regulations, which do not guarantee that a given firm will be given the right to develop the field it has discovered. The state's share in the expenses on geological and exploration work is also low: it was US$310 million in 2010 (an increase from US$100 million in 2005)[79]. For comparison, the public spending for this purpose in such countries as Canada, the USA or Brazil is at 5–8% of the total oil production value[80].

The key question is: 'Are Russian oil companies able to generate such vast funds by themselves?' This seems possible, but on two conditions: firstly, this needs the investment climate to be improved, which means above all that the government should reduce the fiscal burden and create a competitive environment, for example, by offering equal conditions for doing business to state-controlled and private oil companies instead of discriminating in favour of state-controlled companies; secondly, oil prices must remain high, since otherwise the development of many fields would be unprofitable. The government is still more inclined to put the blame for the insufficient level of investment on companies rather than to search for solutions, such as lowering taxes. One example of this was the statement made by Prime Minister Putin in July 2011, who criticised oil companies for insufficient investment and reproached them for having paid US$8 billion in dividends for 2010[81].

The overall net profit of the eight largest oil companies, which control 90% of total Russian output, reached US$48.9 billion in 2011 (see Table 3). This is quite a considerable sum. It is true that part of Russian firms allocate significant amounts of money on foreign investments, which must be happening at the expense of reducing their possibilities of investing in Russia. Furthermore, almost all large oil companies in Russia have loans to repay, the total value of

77 'Gosudarstvo ukhodit' *Nefteservis*, no. 1/2011.

78 'Resursnaya baza: slivki konchilis' *Neftegazovaya Vertikal,* no. 5, 2010, p. 44.

79 'Gosudarstvo ukhodit' *Nefteservis*, no. 1/2011.

80 'Resursnaya baza: slivki konchilis'..., *op. cit*., p. 42.

81 Data: The General Scheme of Development of the Oil Industry to 2020.

which at the beginning of 2012 exceeded US$44 billion (see Table 3), and must allocate part of their income on servicing current debt[82]. Regardless of all this, an improvement of the investment climate, and especially of the fiscal environment, would provide a strong stimulus for Russian oil companies to increase the level of their investments in the development of new fields and geological and exploration work.

Table 3. Net profit of oil companies in 2011 and their debts as of beginning of 2012 (US$ billions)

Oil company	Profit	Debt
Rosneft	12.4	15.8
LUKoil	10.3	6.3
TNK-BP	8.9	6.7
Surgutneftegas	8	0
Gazprom Neft	5.35	5.8
Tatneft	1.75	2.6
Bashneft	1.6	2.3
Russneft	0.67	5.06
TOTAL	**48.9**	**44.5**

Source: Own calculations based on data from companies

Investments could grow significantly in the Russian oil sector and its general situation would improve if foreign investors were given better access to the sector than has previously been the case.

5. Limited access for foreign investors

The Russian oil sector is to a great extent inaccessible to international corporations, which means that the necessary capital and competition are limited. The

[82] Own calculation, based on data from companies.

share of foreign investors is strictly restricted, which is an effect of a change in the previously quite liberal government policy that took place during the first term in office of Vladimir Putin as president, as a consequence of which the law has become less flexible. According to legal regulations, if a non-Russian entity wishes to acquire more than a 10% stake in a Russian firm in sectors defined as strategic – including the oil sector – consent from the governmental commission for foreign investment control is required[83]. There are also unofficial rules, not recorded in legislation, according to which political approval is required for each significant foreign investment, especially if the acquisition of a considerable part of shares in a Russian firm by foreign capital is envisaged. The nationalisation and the ruling class's control of the oil sector, which have been intensifying over the past few, years mean that in practice international entities may count only on minority stakes in Russian energy companies, and thus will not gain real influence on the way they are managed.

The shareholding structures of the largest Russian oil companies do not include any major foreign investors, with the exception of TNK-BP, 50% of whose shares are owned by BP. BP also owns 1.3% of Rosneft shares, which it bought during this firm's IPO at the London Stock Exchange in 2006.

Foreign investors also hold shares in a few small firms, which are often joint ventures with Russian companies. India's ONGC holds 100% of the shares in Imperial Energy, China's CNPC 49% in Vostok Energy (Rosneft holds the remaining 51%), PetroVietnam holds 49% of the shares in Rusvietpetro (Zarubezhneft holds the remaining 51%), and China's Sinopec holds 49% of the shares in Udmurtneft (Rosneft holds the remaining 51%). Foreign firms also participate in several upstream projects as minority partners for Russian firms, which is shown in Table 4.

[83] A legislative amendment is being prepared which will raise this threshold to 25%.

Table 4. The share of foreign firms in Russian oil projects

Oil field name	Shareholders	Reserves	Project stage
Sakhalin-1	ExxonMobil (30%), Sodeco (30%), ONGC (20%)	256 million tonnes	annual production of 9 million tonnes
Sakhalin-2	Shell (27.5%), Mitsui (12.5%), Mitsubishi (10%)	150 million tonnes	production of approximately 8 million tonnes
Sakhalin-3 (Veninsky block)	Rosneft (74.9%), Sinopec (25.1%)	169 million tonnes	preparations for production launch are being made
Kharyaga	Total (40%), StatoilHydro (40%), Zarubezhneft (10%)	97 million tonnes	production of approximately 1 million tonnes
SeverEnergia company has fields in the Yamalo--Nenets AO	Eni and Enel (49%), Gazprom Neft and Novatek (51%)	568 million tonnes	field development has not started yet

Thus, foreign companies, with the exception of BP's stake in TNK-BP, still hold an insignificant share in the Russian oil sector. However, since 2010, the Russian government has been making hints at its readiness for a broader opening up to foreign investment[84]. The most important manifestations of this were the aforementioned agreement between BP and Rosneft (unsuccessful) and between Rosneft and ExxonMobil concerning extraction from three blocks at the Kara Sea. In 2010, Rosneft also signed agreements with US companies ExxonMobil and Chevron, concerning common upstream projects on the Caspian shelf (the Tuapse Trough) and Black Sea shelf (the Shatsky Ridge) respectively[85].

[84] For more see: I. Wiśniewska, 'Controlled opening-up of Russia's energy sector to foreign investors' *EastWeek*, 9 March 2011. http://www.osw.waw.pl/en/publikacje/eastweek/2011-03-09/controlled-opening-russia-s-energy-sector-to-foreign-investors

[85] In June 2011, Chevron and Rosneft ended their co-operation on this project. The official reason for that were differences in the assessment of the potential deposits on the Shatsky Ridge.

These deals are signs of Russia's new approach to foreign investors. The Energy Strategy to 2030, which was adopted in 2009, already included a provision for attracting international investment. The attractiveness of Russian deposits to foreign entities, regardless of the existing political risk, makes them interested in participation in projects implemented in Russia. However, Moscow's new policy in this area can be characterised as an opening up which is controlled, restricted and subject to many conditions. It also is not an effect of an improvement in the investment climate or better co-operation conditions. Its main goal is an attempt to encourage selected large foreign firms to invest in risky, technically difficult and capital-intensive upstream projects, especially in those where Russian firms do not have the necessary technologies (this primarily concerns fields located on the continental shelf). Investors are thus being treated mainly as a source of know-how and capital. Moreover, such projects usually require lengthy and expensive preparations, Russian firms as a rule keep the control package, and the investor is deprived of real influence on the management of the project. Furthermore, foreign companies are often allowed to invest in Russia on the condition of a mutual exchange of shares or the sale of attractive international assets to a Russian firm.

It is still too early to sum up the results of the policy of a controlled opening up of the Russian oil sector to foreign investments. However, it may be expected that the Russian government will be more and more interested in increasing the level of foreign investments over the coming years, especially if oil production starts to drop. In many regions (the Arctic shelf, Eastern Siberia, and the Far East), Russian companies are unable to operate alone due to the technological complexity and large capital the fields require, and will need foreign partners. In the case of the Far East the decision on the choice of a given company will also be of high political significance (the choice between Chinese and Japanese firms). Engagement from foreign companies considerably more intensive than so far could accelerate many oil fields being put into operation and thus become a cure for the increasingly serious problems of the Russian oil sector. However, it is quite likely that foreign entities will expect that the protection of their investments be guaranteed and the unfavourable fiscal system changed[86].

[86] 'Nevostrebovannyie bogatstva' *RusEnergy*, 18 May 2011.

V. HOW MUCH OIL WILL RUSSIA PRODUCE AND EXPORT?

1. Oil production forecast by 2030

In 2011, oil production in Russia reached 511.3 million tonnes, the highest level since the collapse of the USSR[87]. Russia's major goal in oil policy is to maintain annual output within the next few years at around 500 million tonnes, which in the government's opinion is 'optimal'[88]. Despite the fact that proven Russian oil reserves are still vast, and that Russia probably has very large still undiscovered deposits, it will be difficult to attain this goal since this will require a change in the government's policy towards the oil sector.

Official forecasts concerning oil production levels which can be found in various Russian documents significantly differ from one another. The Energy Strategy to 2030, approved at the end of 2009, envisages that oil production will grow by approximately 5% within the next twenty years to reach an annual level of 505–525 million tonnes in 2020–2022 and 530–535 million tonnes in 2028–2030. In turn, the Geology Development Strategy to 2030 assumes that oil production will fall in 2015 to 490 million tonnes, and will then start growing a little to reach the level of 500 million tonnes in 2020 and 530 million tonnes in 2030 (see Table 5).

Table 5. Oil production forecasts by 2030 according to the Energy Strategy and the Geology Development Strategy (in million tonnes)

	2010 fact	2015	2020	2025	2030
Energy Strategy to 2030	505	515	527	533.5	534
Geology Development Strategy to 2030	505	490	500	-	530

Another forecast is provided in the General Scheme of Development of the Oil Industry to 2020, which was made public at the end of 2010 and endorsed in April 2011 by the Government Commission for the Fuel and Energy Complex.

[87] Annual oil production in the Russian SFSR in the late 1980s was 570 million tonnes.

[88] See, for example, the speech by Prime Minister Vladimir Putin, February 2011, http://premier.gov.ru/events/news/14105/

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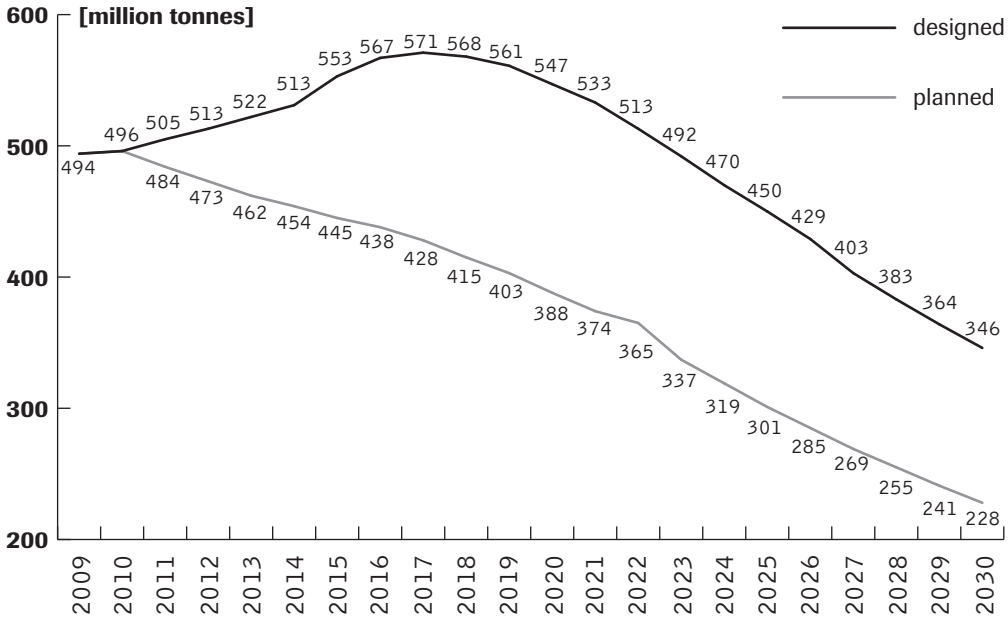
This document was ordered by the government and developed by the Ministry of Energy in co-operation with a number of Russian and foreign scientific and research centres. The general scheme presents two possible scenarios of oil production levels in Russia to 2030 (see Chart 12). According to the first scenario, defined as 'planned', if the present environment which oil companies operate is maintained, oil production will be falling within the next few years at a fast rate to reach 454 million tonnes in 2015, 403 million tonnes in 2020 and 228 million tonnes in 2030. This will mean a radical fall by 20% within the next ten years and by 55% in twenty years, with all its negative consequences for the Russian state.

According to the second scenario, which is defined as 'designed', if investments increase significantly and the government adopts a good policy, which will primarily cover a liberalisation of the fiscal system applicable in the oil sector, oil production will be growing within the next few years to reach a maximum level of 571 million tonnes in 2017. Thus, if the environment in which oil companies operate changes, this document includes more optimistic oil production forecasts than Strategy 2030.

Chart 12. Oil production forecasts in Russia by 2030 according to the General Scheme of Development of the Oil Industry



However, the General Scheme predicts that after 2017 production will rapidly fall to 547 million tonnes in 2020, 470 million tonnes in 2025 and 346 million tonnes in 2030. This means that the suggested tax breaks will be able to hold off the reduction in Russian oil output for a few years but not prevent it, and its level in twenty years could be 31.5% lower than now. Nevertheless, this document includes a reservation that the production level after 2020 "will depend on the geological work conducted, new fields discovered and the demand for oil".

Of all the documents prepared by Russian state institutions containing forecasts for the development of the situation in the Russian oil sector, the General Scheme of Development of the Oil Industry to 2020 provides the most realistic picture of its future–even if one assumes that the alarmist approach adopted in this survey is also aimed at lobbying among the decision-makers to change the fiscal system in a way that would be beneficial for the oil sector.

Most Russian experts are of the opinion that official forecasts, especially those provided in the Energy Strategy to 2030, are overly optimistic, and that production is bound to fall in a decade or so the only unknown is how much it will fall by. For many Russian experts, one of the most reliable forecasts was presented in 2010 in *Neftegazovaya Vertikal*, a magazine dedicated to the oil and gas industry[89]. Its authors predict that a production peak at 506.5 million tonnes will take place in Russia in 2015. After this date, production levels will fall regularly to reach 498.1 million tonnes in 2020, 478.1 million tonnes in 2025 and 443.1 million tonnes in 2030. These conclusions are in line with the predictions of many Russian experts, who believe that oil production levels will depend on the government's policy but generally expect them to fall. Similar forecasts have been made by the IEA. According to its estimates, oil production in Russia will remain at the present level until 2015, and will then start falling: 7% by 2020 and 3.5% by 2025, to remain thereafter at that level until 2030–2035[90]. Thus, according to the IEA, production will fall by approximately 50 million tonnes over fifteen years.

[89] Y. Podolsky, S. Kipelman, 'Nizhe optimizma, vyshe pessimizma' *Neftegazovaya Vertikal*, no. 6, 2010.

[90] IEA World Energy Outlook 2010, p. 128.

In the opinion of the author of this text, the most likely scenario for the Russian oil sector provides for a slight increase in oil production (by several million tonnes annually) in the next two to three years, and thereafter production will start to fall below the level of 500 million tonnes. The degree of this fall will depend on the measure taken by the government, above all an improvement of the investment climate and the fiscal environment. If the state oil policy changes, production may decrease by tens of millions of tonnes to 2030. However, if the actions taken by the government appear too circumspect, it cannot be ruled out that production could even fall below 400 million tonnes.

1.1. Eastern Siberia will not replace Western Siberia

The main reason for the expected production fall is the deteriorating condition of oil fields in Western Siberia, the key Russian oil production centre. Total output there fell by 5% in 2006–2010 and, according to most forecasts, will continue to fall in the future. The situation is especially bad in the oil fields in the Khanty-Mansi AO, where over 50% of total Russian oil production is taking place. Russian experts warn that the observed fall is independent of the increasing investment activity of oil firms, the significant intensification of drilling and the extensive use of technologies improving production efficiency[91]. At best, output in this region will be maintained at a slightly lower level than now. More likely, however, its level will start to rapidly fall[92]. Even Strategy 2030, with its optimistic forecasts, envisages that oil production in Western Siberia will be regularly and irreversibly falling, and the fall may even reach 10% within the next five years. The situation is expected to show even greater deterioration in the Volga-Ural region, Russia's second most important oil province, where – according to Strategy 2030 – output will be reduced 20% in ten years and by even more than 40% by 2030 in comparison to the level in 2008 (see Table 6). This is due to: the high degree of depletion of the old fields, extensive production since 1991, and the fact that production is unprofitable in some fields in the present fiscal environment.

[91] M. Turukalov, 'Zapadnaya Sibir: ot snizheniya dobychi do obvala' *Neftegazovaya Vertikal*, no. 6, 2009, p. 13.

[92] *Ibid*. p. 14.

Table 6. Oil production forecast in Russian regions according to the Energy Strategy to 2030 (million tonnes)

Region	2008 (fact)	2013-2015	2020-2022	2028-2030
Western Siberia	332.7	294-310	286-312	301-303
Volga-Ural	106.7	94-97	80-86	59-65
Timan-Pechora	29.1	32-35	35-36	42-43
Eastern Siberia	0.5	21-33	41-52	75-69
Far East	13.8	23-25	30-31	32-33
NorthernCaucasus	4.8	7-11	19-20	21-22
TOTAL	487.6	486-495	505-525	530-535

The increase in Russian oil production, which has been observed over the past few years, may have a reassuring effect on the government by creating the illusion that the situation in this sector is good. Meanwhile, this recent insignificant production growth was mainly an effect of several new fields being put into operation, including above of all: Vankor, the largest oil field to have been developed in Russia since 1991, which will reach its output peak in 2012–2013 (25 million tonnes annually); the Sakhalin fields, which were made ready for production owing to the technologies and capital of foreign companies; the Talakan and the Verkhnechonsk fields in Eastern Siberia; and the commencement of production on the Caspian Sea shelf. Neither the new fields which have been in operation for a short amount of timenor those where production is due to start soon, i.e. mainly the fields in Eastern Siberia and the Caspian Sea shelf, will be able to compensate for the output fall in the traditional oil provinces in the medium and longer term. All official Russian documents make the same conclusion that Western Siberia and Volga-Ural will remain the key regions for at least twenty years in terms of not only production volume but also the increase in reserves owing to newly found fields.

Another problem in the Russian oil sector is the fact that no new large fields are planned to be put into operation in the immediate future. Strategy 2030 envisages that the significance of oil production in Eastern Siberia and the northern

part of Krasnoyarsk Krai (Vankor) will grow. However, its forecasts, according to which the total share of these regions and the Far East in overall Russian oil production will reach 18–19% by 2030, are overly optimistic. One of the goals set by the Russian government is to fill the ESPO oil pipeline – which is presently under construction – whose annual capacity is to reach 80 million tonnes after 2015. It seems impossible that this goal will be attained within the next decade or so. Even Strategy 2030 predicts that oil output in this region in twenty years will reach 75 million tonnes as a maximum. However, many Russian experts believe that production forecasts for this region fail to correspond to data on available oil reserves. The fields already discovered and developed will be able to produce 50 million tonnes of oil annually at best, while reaching the level of 80 million tonnes as the government has assumed would require a doublingin the intensification of geological and exploration work[93]. It still needs to be admitted that some experts believe that oil output in Eastern Siberia will be growing rapidly. According to estimates by the Siberian Branch of the Russian Academy of Sciences, it will reach 76 million tonnes in 2020 and 87 million tonnes in 2030. In turn, the Oxford Institute for Energy Studies assesses that it will be at a level of approximately 80 million tonnes after 2020 to rise to almost 100 million tonnes a few years later[94]. Such forecasts are much more optimistic than those provided in Strategy 2030.

Eastern Siberia is a region where the level of geological exploration is still low. It also has to be borne in mind that the period between finding a field and reaching the planned output is 10 to 15 years[95]. Another problem is the fact that oil reserves within the reach of the ESPO oil pipeline, i.e. those which do not require building new, expensive oil pipelines to connect it to fields located within a greater distance, include 667 million tonnes as proven reserves and 857 million tonnes as probable reserves; this is too little to fill ESPO[96]. Furthermore, the new fields require much more complex technologies and are predominantly located in areas with no infrastructure whatsoever. All this makes their operation expensive. The estimated value of necessary investments is approximately US$160 billion by 2030 (jointly for Eastern Siberia and the Far East). Another problem

93 A. Korzhubayew, I. Filimonova, L. Eder, 'O realnykh perspektivakh kompleksnogo osvoyeniya resursov nefti i gaza vostoka Rossii' *Neftegazovaya Vertikal*, no. 20, 2010, p. 22.

94 J. Henderson, 'The strategic implications of Russia's Eastern oil resources' The Oxford Institute for Energy Studies, January 2011, p. 60.

95 S. Kipelman, Y. Podolsky, 'Nizhe optimizma...' *op. cit.;* 'ES'2030: ignoriruya realii *Neftegazovaya Vertikal*, no. 19, 2010, p.25.

96 O. Prishchepa, Y. Podolsky, 'Mneniye WNIGRI: net po nefti i vozmozhno po gazu' *Neftegazovaya Vertikal*, no. 20, 2010, p. 28.

with Eastern Siberian oil fields is that oil transport via the ESPO pipeline is expensive, since the real cost reaches US$130 per tonne. Since it is subsidised by Transneft (which at the same time sets excessively high tariffs for transport in the western direction), the present rate is US$61 per tonne. This is, however, affecting the financial condition of Russian oil companies[97].

The existing problems, the need to make large investments, the restricted access for foreign investors, and the long time the development of this new Russian oil province requires; all this indicate that oil production levels in Eastern Siberia are very likely to increase at a slower rate than envisaged by the government. However, production growth could be accelerated through the reduction of fiscal levies (mainly export duty) and by allowing foreign investors to become engaged. The decision made in September 2011 by the Japanese government to withdraw from the use of nuclear energy within ten years may lead to increasing demand for Russian oil and gas and make Japanese firms more willing to make investments in Eastern Siberia and the Far East.

1.2. A crisis or a change in government policy

As outlined in the previous chapters, a number of problems have accumulated in the Russian oil sector over the past few years. These problems have been additionally aggravated by the lack of a response from the Russian government. One of the key issues is the insufficient level of investment expenditure, including on geological and exploration work – which is fundamental for the future of this sector – and on the development of new fields. The oil sector will start to feel the consequences of its chronic underinvestment in the past few years. The goals of the Energy Strategy include an increase in oil reserves by 5.5 billion tonnes to 2020 and by 5.1 billion tonnes more to 2030, which would mean a 50% increase in proven oil reserves according to the Russian classification and a 100% increase according to the international classification. It will be impossible to reach a level like this without a huge increase in investments. Furthermore, the quality of existing oil reserves is deteriorating, and extracting them will be complicated due to the complexity of the geological structures in which they are located (difficult to extract oil makes up 60% of total reserves[98]), harsh climate conditions and the lack of a developed infrastructure and necessary technologies.

97 Interfax ANI, 23–30 December 2009.

98 S. Filatov, O. Belyakova, 'Osvoyeniye trudnoizvlekayemykh zapasov nefti: otsenka ekonomicheskoy effektivnosti' *Neftegazovaya Vertikal*, nos. 23-24, 2010.

Strategy 2030 and the IEA agree in their estimates that investments necessary in the Russian oil sector within the next twenty years should be at a level of US$30 billion annually. Therefore, since US$25 billion was invested in 2011, Russian oil companies need to generate an additional US$5 billion annually. Thorough fiscal reform would make it possible. The reduction of the export duty in 2011 and the lifting of NDPI for some future oil regions, although still insufficient to improve the situation, do, though, show that the government is aware of the imminent problem of a fall in production. However, the ruling class fear the consequences of a decrease in oil-generated budget revenues. Therefore their actions regarding this strategic branch of the economy are very cautious and lack a broader vision. A fiscal reform would in fact reduce tax revenues but, as the general scheme is convincing, this reduction would be 'minor' and after 2020 would be 'compensated many times' by higher incomes.

Fiscal system reform is not the only factor to decide on the level of future output. It is also necessary to end the existing informal division of oil companies into two categories. The first category includes state-owned companies and those linked to the government elite, which are favoured in receiving access to new fields and supported through the use of various administrative means. The second category includes private firms which may not count on any privileges and are reducing their investment plans and intensifying activity on international markets, due to the deterioration of the investment climate in Russia. Small firms belong to a separate category. If the conditions in which they are doing business improve, they could develop many oil fields which large corporations are not interested in and thus contribute to overall production growth.

Another issue which needs to be changed is the policy towards foreign investors. Although it seems that, with lighter fiscal burdens, Russian oil companies would be able to generate the funds needed for investments, they are still without the technologies necessary in the case of many promising deposits (the Arctic shelf and the Western Siberian unconventional oil fields). This means that, without engagement from large international firms, production in these fields – if not entirely impossible – would be postponed until a later time. A change in the government's policy towards investors has been observed since 2010. One example of this is the engagement of ExxonMobil on the Caspian Sea. However, production at this flagship project will not start until after 2030. It would be more beneficial for the future of the Russian oil sector if foreign, including Asian, investors were given access to oil reserves in Eastern Siberia and the continental shelf in the Far East.

Summing up, it needs to be emphasised once more that it will be the state policy that has the strongest impact on the future of the Russian oil sector. Unless the ruling class change their approach to this sector and stop treating it primarily as the key source of budget revenues, the crisis trend is bound to escalate. This will have grave consequences for the entire economy and the state which over the past few years has developed a heavy reliance on raw materials and a strong dependence on incomes from oil exports.

One more key factor, which will have a vast impact on the future of the Russian oil sector, needs to be mentioned. This factor is the oil price. The development of most new fields and part of the old ones will be unprofitable at a price lower than US$100 per barrel. A price fall continuing for a long time would spell catastrophe for the Russian state budget and the condition of oil companies. This would very likely mean the government would withdraw from the liberalisation of the fiscal policy, with all the negative consequences this would bring Russia and its oil sector.

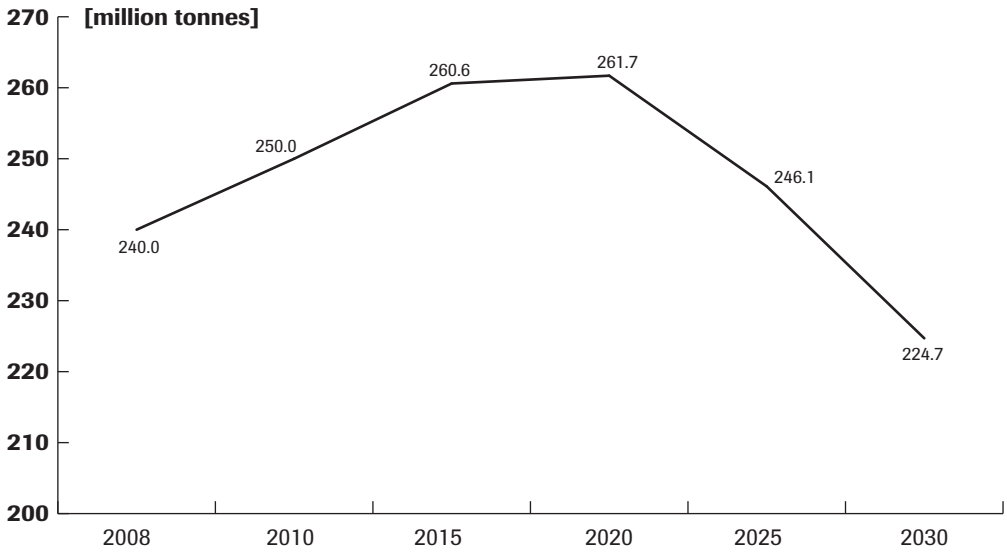
2. Future oil export levels

Over the past few years, Russian oil exports have been at a level of around 250 million tonnes annually. According to the Energy Strategy to 2030, oil export levels will be 243–244 million tonnes in 2013–2015, 240–252 million tonnes in 2022 and 222–248 million tonnes in 2030. The most likely export levels, according to the strategy, are presented in the table below. This means that the government expects oil exports to fall in 2030 by approximately 35 million tonnes in comparison to their present volume, this in the face of the forecasted output growth. This is due to an assumed increase in oil processing levels at Russian refineries, which is to grow from 247 million tonnes in 2010 to 232–239 million tonnes in 2013–2015, 249–260 million tonnes in 2020–2022 and 275–311 million tonnes in 2030. Consumption of petroleum products is also expected to increase slightly in Russia to 125 million tonnes annually by approximately 10% according to Strategy 2030 and by 7% according to the IEA until 2030[99]. The IEA estimates that Russia will overtake the United States and will become the global leader in terms of energy consumption *per capita*[100].

[99] *IEA World Energy Outlook 2010*, p. 107.

[100] By 2035, energy consumption per capita in Russia will reach 6.4 tonnes of oil equivalent. *Ibid*. p. 89.

Chart 13. Forecast for Russian oil exports according to the Strategy to 2030



The decline in Russian oil production predicted by the author of this text will inevitably entail a reduction in exports. The degree of this reduction will however depend on several factors, including mainly domestic demand and oil processing volumes at Russian refineries. Although Strategy 2030 envisages a significant increase in the capacity of Russian refineries, the changes in the rates of export duty on crude oil and petroleum products introduced in October 2011 may lead to a decrease in oil processing levels at Russian refineries and thus an increase in crude oil exports. Its estimated volume, according to the Russian Ministry of Energy, is 20–25 million tonnes annually[101]. However, it is unclear whether this level will be sustained over the next few years, especially given the fact that the government has declared its desire to modernise Russian refineries and in the longer terms wishes to increase exports of petroleum products at the expense of crude oil, which should have a positive effect on the capitalisation of oil companies and on maintaining jobs in this sector.

It can, therefore, be assumed that Russian oil exports within the next three to four years could rise slightly above the present level of 250 million tonnes, and will then gradually decrease as production declines. This prediction will be accurate provided that domestic consumption grows at a slow rate in the immediate future, and the state and oil companies make

[101] Y. Mazneva, 'Eksportnyi proval' *Vedomosti*, 5 September 2011.

efforts to keep oil processing output at Russian refineries at the present level or 10% lower. This means that the decrease in oil production will have the greatest impact precisely on export volume and is likely to cause a reduction in it of at least 10% and probably even more.

3. Export directions: how much to Europe and how much to Asia?

The Russian government has been declaring for years its desire to diversify oil exports. For decades, European countries have been the traditional major and almost exclusive recipients of Russian oil. This is linked to the geographical location of Russian deposits (the Urals, the Volga region and Western Siberia). Exports from these locations to Europe are the most rational economically. As a consequence of this, transport infrastructure in the western direction has been developed, starting already in Soviet times. Only small quantities of Russian oil have been sold to the American or Asian markets. In the case of the Sakhalin oil fields, the Asian markets and possibly the west coast of the USA are the natural destinations for exports. Since the late 1990s, small quantities of Russian oil have also been transported to China, initially by railway, and since January 2011 by the new oil pipeline, Skovorodino–Daqing, a branch of ESPO, with an annual capacity of 15 million tonnes.

Over the past few years, Russia has been making clear efforts to reduce its dependence on the European direction – which currently has an 80% share in total exports – by increasing its sales to Asian countries. Strategy 2030 assumes that the share of Asian markets in total oil export levels will double in twenty years from 12% at present to 22–25%[102]. The increase in exports to Asian countries is a direct consequence of embarking on the development of oil fields in Eastern Siberia, and their future volume will depend directly on the oil output in this region. The ESPO oil pipeline under construction, the first infrastructural project in Russia which is not directed towards the European market, is to contribute to the creation of a new oil province. While sale of oil from the Sakhalin or Eastern Siberian fields to customers in Asia is understandable for geographical reasons, the decision to transport oil via ESPO from the Vankor field in the northern part of Krasnoyarsk Krai, which will be the most important raw material base for this pipeline for many years, is politically motivated. Considering the distance, it would be cheaper and more rational in economic terms to send this oil in the European direction.

[102] It is worth noting here that the Energy Strategy to 2020 even set a totally unrealistic goal of increasing Asia's share in Russian oil exports from 3% at that time to 30% in 2020.

As the production in the oil fields of Eastern Siberia, northern Krasnoyarsk Krai and Sakhalin increases as forecasted, the share of Asian countries in total export levels will grow. At the same time, due to the expected reduction in oil output in Western Siberia and the Volga-Ural region, exports in the European direction will inevitably fall. **If one assumes that in 2020 the likely output will reach approximately 50 million tonnes in Eastern Siberian fields and around 20–25 million tonnes in Sakhalin, this will mean an increase in Asia's share in total exports by approximately 28–30% (assuming that their level will be similar to the present one of around 250 million tonnes annually)[103]. This share may even exceed a third of Russian exports if the total export level at that time is lower than now.**

Over the past few years, Russian government representatives have on many occasions threatened that Russia may "direct its oil pipelines to Asia" and reduce supplies to European markets[104]. However, it would be impossible to fulfil such declarations. **Europe will still be the most important outlet for Russian oil in the future, although its share will fall to around two thirds of total exports.** It is also likely that less Russian oil than now will be sent in the European direction in a few years. This however will not be a consequence of political decisions but of the natural processes of production decline in the oil fields which have been the raw material base for Russian exports over the past few decades. Despite the expected reduction of exports to European countries, Russia is developing its transport infrastructure in the western direction, one proof of which is the BPS-2 oil pipeline currently under construction. Thus, by opening a new export oil pipeline to Asia and expanding its export capacity in the European direction, Russia is creating greater opportunities for its oil policy.

WOJCIECH KONOŃCZUK

[103] Oil from this region of Russia can however also be transported to the west coast of the USA.

[104] See, for example, the article by the Russian Minister of Energy in the *Financial Times*, 19 October 2007.

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