

Astrov, Vasily

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The Russian Oil and Gas Sector: Facing the New Challenges

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Vasily Astrov

**The Russian Oil
and Gas Sector:
Facing the New
Challenges**

Vasily Astrov is wiiw research economist.
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Vasily Astrov

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Abstract

Russian oil and gas are playing a vital role in the world markets, but they also represent an important and (still) the most successful part of the national economy. However, whether the oil and gas sector will become an engine for the country's development in the medium and long run depends to a large extent on the performance of the sector itself, and particularly on whether it will be able to overcome the looming supply bottlenecks. Part of the problem is to be solved via the large-scale energy-saving measures envisaged by the federal 'Energy Strategy' and implying, among other things, a tariff reform aimed at bringing domestic prices for natural gas and electricity closer to the world level. In addition, the country's gas industry is to be reorganized on a competitive basis, with only transportation and distribution remaining in state hands. In the oil sector, transportation constraints are becoming much of a concern, as they may hamper the country's ambitious projects of simultaneous penetration into several important energy markets, such as those of the United States and East Asia. As of now, there are reasons to believe that Russia will continue its strategy of free-riding on OPEC supply cuts in the years to come, not least because of the recent warming of the Russian-American relations. Another issue is whether the oil sector will be able cope with production bottlenecks, as the bulk of currently operating deposits are largely exhausted and the most promising oilfields are situated in remote areas of Northern Russia, East Siberia and the Far East. Finally, a lot will depend on whether Russian exporters will be able to export more refined oil products and less crude oil.

Keywords: energy, industry studies: primary products, country study

JEL classification: Q4, L7, O5

The Russian Oil and Gas Sector: Facing the New Challenges

Introduction

According to various estimates, Russia accommodates 30 to 45% of the world natural gas and 5 to 10% of the world oil reserves. It is also the world's largest producer and exporter of natural gas, the second largest – along with Saudi Arabia – producer of oil (after the United States), and the second largest oil exporter (after Saudi Arabia). Thus, Russia is a key player in the world market for fuels. In addition, the oil and gas sector currently plays an extraordinary role in the country's economy. Since 1999, the high world prices for oil and gas, along with the rouble devaluation, have been the engine of economic growth in Russia. Investment of the 'windfall' profits by the Russian oil companies has generated, via a spike in consumption and investment, a multiplier effect and thus had a beneficial impact on the economy as a whole. In the presence of high world oil prices, this situation continued into 2001 and 2002, although economic growth has slowed down somewhat due to the stronger rouble and a number of serious structural deficiencies, such as the weak banking system.

These developments have received controversial assessment both domestically and abroad. While the success of the energy sector has somewhat helped to raise living standards, ensured a strong current account balance and stable tax revenues of the federal government, and eased the foreign debt repayment, it also enhanced still further the reliance of the Russian economy on exports of raw materials, bringing its economic structure closer to those of such countries as Nigeria and Venezuela.

Whether the oil and gas sector will continue to play its stimulating role in the Russian economy will depend on a number of factors. These include, on the one hand, the prospects of the sector itself, given both demand and supply considerations, and, on the other hand, the ability of the economy to make the most of the revenues generated in the sector in terms of restructuring its less productive (and less competitive), but potentially more sophisticated and more value-adding industries. In the present paper we focus primarily on the first group of factors dealing with the sector itself. After a brief sketch of the sector's performance in the past few years, we highlight some of the major shocks which it is likely to face in the years to come. Some of the shocks are expected to come from the government and include, most notably, the recently adopted 'Energy Strategy for the Period till 2020' and the related planned re-shaping of the gas industry. The remaining shocks are largely related to external developments and to the extent to which the Russian oil and gas sector will be able to respond to the outside challenges. Of crucial importance in this respect is the future of the relations between Russia and OPEC, and Russian energy co-operation with some of the main world energy consumers, including the EU, the

United States, and Eastern Asia. Obviously, the prospects of such co-operation will depend to a great extent on political developments, which have undergone a fundamental transformation following the events of 11 September 2001. Also, political factors cannot but affect the developments in the Caspian basin – the region where Russia has historically had a special interest and where its influence may grow still further.¹

The fuels sector and the dynamics of transition

The importance of the fuels sector in the Soviet, and later Russian, economy has had a controversial impact on the process of transition. On the one hand, at the beginning of transition it was assumed that the production of oil and gas would be conducive to reforms (as opposed to, e.g., the output of military-industrial plants); it was expected that the 'natural rent' associated with the extraction and sales of natural resources would alleviate the adverse social consequences of economic restructuring. In fact there are good reasons to believe that it is largely due to the Russian energy complex that the deterioration in living standards over the years of reforms, though pronounced, proved not as disastrous as in many other post-Soviet states. Ukraine, which enjoyed similar starting conditions and similar living standards as Russia at the start of reforms, but which lacked its own extensive energy base, appears a particularly appropriate reference for the last statement.

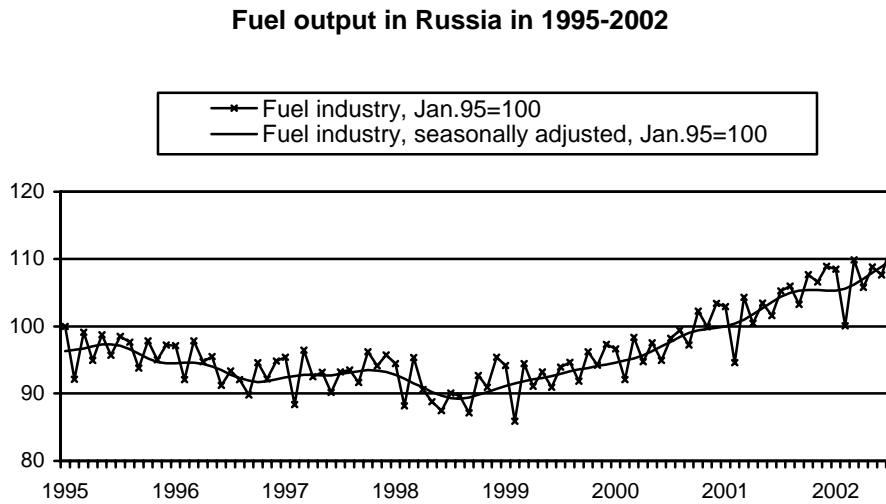
On the other hand, although the powerful oil and gas business elite has indeed favoured price and foreign trade liberalization, the peculiarities of the Russian privatization campaign in the course of the 1990s led to a situation when the 'natural rent' generated in the sector was effectively appropriated by a very narrow circle. The formation of financial-industrial groups (FIGs) such as *Interros*, *Alfa-Group*, or *Yukos-Menatep* in the mid-1990s was confined in the first line to the fuels, metals and banking activities. Although such FIGs were imminent to an environment lacking capital markets (they could easily move capital around inside themselves) and with poor contract enforcement, they led to an excessive concentration of ownership and wealth, thus undermining popular support for further reforms. Rising social inequality was accompanied by rising regional inequality, driven by the geographical concentration of deposits.² Even more importantly, the oil-generated 'Dutch disease' – which was pronounced in the years preceding the 1998 crash – supplemented the fiscal mismanagement and further reduced the competitiveness of Russian manufacturing. The result of this 'crowding-out' was increasing discrepancy

¹ In the present report, we disregard the coal sector. Similarly to many other countries, the Russian coal industry has been undergoing, since the mid-1990s, a rather successful process of restructuring, facilitated by a USD 800 million loan from the World Bank and entailing the closure of unprofitable mines, the radical modernization of commercially viable mines, and the reorganization of the state-owned coal monopolist *Rosugol*.

² The bulk of all Russian oil and gas is being produced in West Siberia. For a picture of regional inequalities see, e.g., V. Astrov (2000), 'Regional disparities in the Russian Federation', *The Vienna Institute Monthly Report*, no. 7-8, wiiw, pp. 20-28.

between the 'core' (consisting of oil, gas, metals, electricity and railways) and the rest of the economy, leading to a shift in the composition of industrial output. Official data suggest that the share of fuels in total industry (in prices of 1999) rose from 14.0% in 1992 to 18.1% in 1998, reflecting especially the growing importance of the production and refining of oil – and that notwithstanding the substantial decline in the oil industry itself.³

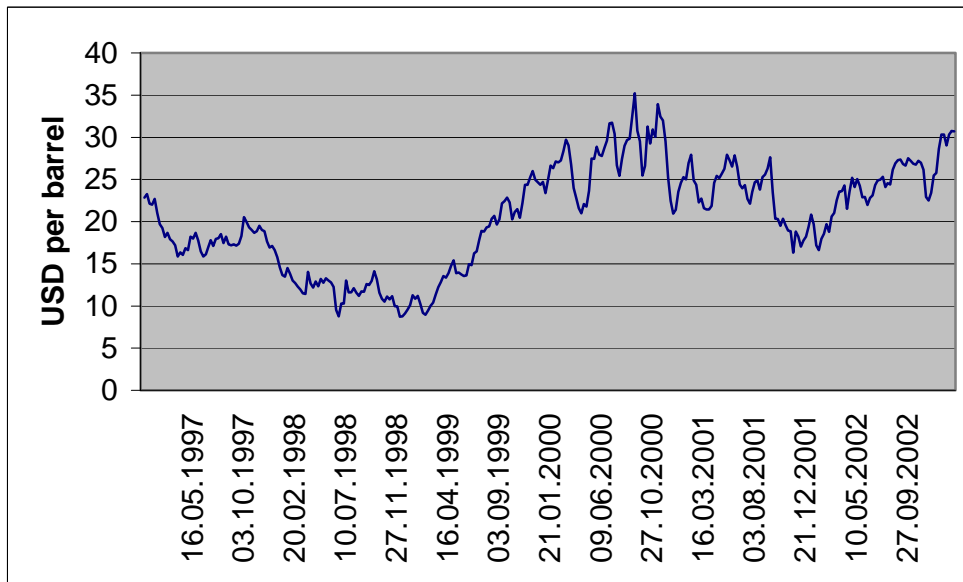
Figure 1



Source: Goskomstat.

Figure 2

Crude oil price in 1997-2002 (spot price of Urals blend in Mediterranean ports, f.o.b.)



Source: Energy Information Administration.

³ Even in 2001, oil production in Russia still amounted to only 78%, and oil refining to 66% of the 1990 level.

However, since 1999, aided by the weak rouble and the rise in world oil prices, the fuels sector has been the motor of Russian economic recovery (see Figures 1 and 2 and Table A/1).⁴ After falling from its peak of 11.4 million barrels per day (bpd) in the Soviet Union in 1988 to just above 6 million bpd in 1995-1999, oil production in Russia (including condensate) jumped to 6.4 million bpd in 2000, 6.9 million bpd in 2001 and 7.6 million bpd in 2002 and is expected to reach 7.8 million bpd in 2003 (according to official projections, which are believed to be overly cautious⁵). Although on an annual basis Russia is still the third largest oil producer in the world (behind the United States and Saudi Arabia), in individual months of 2002 (February and August) it overtook Saudi Arabia – the otherwise second biggest oil producer.

With modest domestic consumption, Russia exports roughly half of produced oil in the form of crude (3.8 million bpd in 2002), mostly to non-CIS countries, whereas combined exports of crude and oil products represent around two-thirds of the country's production. In the next three years, the country is reportedly planning to raise its crude exports to 4.3 mn bpd; upstream operations (oil extraction) have received an investment of around USD 5 billion annually in the last few years. However, exports of crude are increasingly constrained by transport bottlenecks (for more on that see below), making Russian companies rely more and more on exports of oil products in the future. Unlike crude oil, oil products can be economically shipped to ports by rail, making their transport less of a problem. Besides, pumping crude to refineries is currently three times cheaper than to the border, and the typically low profitability of refining can be checked by the use of 'transfer pricing' inside the VICs (vertically-integrated companies), whereby the prices of crude supplied to refineries can be kept sufficiently low. Also, there is hardly lack of spare capacity to refine, with the level of utilization of the 42 Russian oil refineries standing at just 70%.⁶ Some companies have already announced their plans to gradually shift their focus towards exports of oil products. Thus, *Lukoil* has announced that by 2010, oil products will comprise half of its energy exports. However, at present the problem with Russian exports of oil products is its generally low quality. Russia still lags behind in producing low-sulphur motor fuels, which will be compulsory in the European Union by 2005, and still exports a lot of fuel oil (oil product with relatively low value-added), the demand for which is declining. For Russian oil companies to remain competitive in the European market, they will need to upgrade their quality and to raise the share of light oil products before the 2005 deadline. This will require substantial investment. For the year 2002 alone, investment into these downstream

⁴ The main Russian export blend *Urals* usually sells at a USD 1.5 - 4 per barrel discount with respect to *Brent*, reflecting its lower quality. Although some Russian companies such as *Sibneft* produce high-quality oil, this advantage is reportedly being lost when it is mixed in pipelines with lower-quality oil, such as that produced by *Bashneft* and *Tatneft*.

⁵ Official projections are far below the individual targets of major oil producers, some of which – such as *Sibneft* and *Yukos* – plan to raise their output by close to 20% in 2003.

⁶ *Gazeta.ru*, 2 September 2002.

activities is believed to have totalled some USD 2 billion, or 10 times more than it used to be in the late 1990s.

Despite the favourable market situation, the recent performance of the Russian gas sector has been by far less impressive. Over the recent years, production volumes were generally declining, although they recovered somewhat in 2002 – see Table A/1. This relatively poor performance is to a large extent the consequence of the massive under-investment in the gas industry for several years in a row (more on that in the next section), but also reflects the higher initial base. The decline of gas production in Russia over the years of reforms was much smaller than that of oil: in 2001 gas production stood at 89% of the 1990 level (as compared to 78% for oil). Still, with 594 billion cubic meters (cm) in 2002, Russia is the world's largest producer of gas and its largest exporter as well, with roughly one third of production going into exports (net exports of 171 bn cm in 2001, mostly to the non-CIS countries). According to official projections, gas production in Russia might total 604 bn cm in 2003 and over 700 bn cm by 2010.

Without much exaggeration one can say that the fuels sector constitutes nowadays the 'healthy core' of the Russian economy, accounting for over a half of its exports, although in terms of economic structure the share of *exports* of fuels above 10% of GDP puts Russia in line with such countries as Gabon, Venezuela and Nigeria. Also, the dramatic rise in profitability and the improved financial situation of major Russian oil companies brought about a number of positive consequences. The capitalization of these companies went up and so did investment, including the possibility of asset diversification, often via the purchase of foreign energy producers and retailers. Thus, in November 2000 *Lukoil* bought from *Getty Petroleum* a network of 1260 gas stations in the North-West of the United States. Also, it said it wants to buy refineries in Poland and Greece to add to its two foreign plants in Bulgaria and Romania. The company was also planning to acquire the Gdansk refinery in Poland, but the deal has recently been stalled. In turn, *Yukos* has acquired a pipeline network in Slovakia and more recently a control stake in Lithuanian *Mazeikiu Nafta*, including a refinery and an oil terminal in Butinge.

Part of the successful performance of the Russian oil sector is often attributed to its ownership structure, which is dominated by nine, mostly private, vertically-integrated companies (see Table A/2 in the Appendix).⁷ Among them, by now only *Rosneft* is still majority-owned by the federal government, after a 75% stake in *Slavneft* was sold in December 2002 to a consortium of *TNK* and *Sibneft* in a highly controversial privatization deal. However, the federal government owns the oil pipeline monopoly *Transneft* and the

⁷ Table A/2 presents the data on ten, rather than nine, vertically-integrated companies, because it features *Sidanko* as an independent oil producer. However, in 2000 over 80% of *Sidanko* was acquired by *TNK*, after years of mismanagement under Vladimir Potanin. In turn, in February 2003 *TNK* announced the creation of a 50-50 joint venture with *British Petroleum* (see *Financial Times*, 12 February 2003).

oil products pipeline monopoly *Transnefteprodukt*, which enables it to exercise considerable control over the sector. Export duties, higher pipeline and railway tariffs, and quantitative limitations on exports of oil and oil products – all these measures allow the government to separate the domestic market from the world market and keep the domestic price of crude at a fraction of the world level – down to USD 5 per barrel.⁸ (The price Russia charges the CIS countries for its oil is below the world level as well.)

The federal budget has especially benefited from export duties on crude oil and oil products, which were introduced in response to the favourable market situation and adjusted periodically, following the world market prices. Also, projections of the world oil price explicitly underly the yearly budgets (USD 23 per barrel in 2002 and USD 21.5 per barrel in 2003). Nevertheless, the super-profits generated by Russian oil companies seem to have triggered further envy of the authorities: in July 2002, the working group led by the deputy head of the presidential administration, Dmitry Kozak, proposed amendments to the law on subsoil resources, effectively implying their nationalization. According to Kozak's proposals, which were later withdrawn, the present licences of oil firms were to be recalled and replaced by concessions, such as those practised in many OPEC countries. Had Kozak's proposals been endorsed, oil companies operating under concessionary agreements would have been entitled for compensation of just their costs plus a 'normal' profit, with all remaining revenue belonging to the government.⁹ The proposals were not inconsistent with earlier suggestions by V. Putin to tax away most of the 'natural rent' of oil producers, using the revenues to finance manufacturing, and high-tech industries in particular. Also, the move could be meant to replenish the budget and/or make up for the alleged injustices of cheap asset sales within the framework of the controversial 'loans-for-shares' scheme in the mid-1990s.

The federal 'Energy Strategy' and the planned re-shaping of the gas industry

Russia consumes some 7% of the world's energy – far more than its economic weight in the world might suggest, even taking into account the probably large shadow economy. While Russian per capita GDP, converted at purchasing power parity, is about one-fifth of the US level, its per capita energy consumption is half that level. Hence, the energy intensity of the Russian economy exceeds that of the USA by around 2.5 times, and in comparison to the less energy-intensive OECD countries this ratio is even higher, reaching 3.5 against the EU countries and as much as 6 against Japan. Already high in the Soviet Union due to the cheap energy, the energy intensity in Russia reportedly increased by another 19% between 1990 and 1996, after which it stabilized on this high level.

⁸ Also, oil and natural gas are the few Russian export commodities subject to value-added and excise taxes according to the land of origin principle.

⁹ *Moscow Times*, 12 August 2002, 'Would a windfall tax do justice?'.

The excessive energy consumption in Russia is one of the issues addressed in the 'Energy Strategy of the Russian Federation for the Period till 2020'¹⁰, adopted by the government in November 2000 and aiming to provide sufficient energy resources to underpin the projected economic growth in the range of 5% to 6% p.a. over this period. Importantly, the emphasis of the strategy is put not on expanding the production of fuels (which is meant to meet export needs in the first place), but rather on the reduction of energy intensity. The latter is to be achieved through large-scale restructuring and energy saving measures, the cost of which may total USD 40-70 billion. Although the programme envisages no substantial increase in energy production, even maintaining current production volumes may require additional investment of some USD 480-600 billion, as currently operating oil and gas deposits are largely depleted and will have to be replaced by the new deposits located in remote and badly connected areas, such as Timano-Pechora, Arctic shelves, Eastern Siberia and the Far East. Thus, total investment needs within the framework of the programme may reach USD 700 billion over 20 years. The government reckons that even under a favourable growth scenario, Russia will have to invest annually up to 6% of its GDP into the energy sector and related projects.

The centrepiece of the Energy Strategy is stimulation of energy-saving behaviour of consumers via a gradual rise in domestic tariffs for gas and electricity. The two latter sectors are closely linked together, since natural gas in Russia is used primarily for electricity generation – unlike in most big OECD countries where it is the sector of households which is the main gas consumer. Also, the Strategy envisages making natural gas relatively more expensive to induce its substitution by other fuels, particularly coal. The expected outcome should be the stabilization of the share of natural gas as a fuel for electricity generation and its subsequent decline from 2005 onwards. In particular, the share of gas in electricity generation is expected to drop from currently 53%¹¹ to 48-49% in 2010 and 42-43% in 2020. Instead, more gas will be needed in household utilities, as a raw material for the chemical industry, and as a fuel for motor vehicles.

Overall, the strategy stipulated that by 2005, domestic gas prices in Russia were to be raised 3.5 times in real terms against their 2000 level (when the strategy was drafted) and thus approach the world level. Currently, they stand at a mere USD 20 per th cm, against the world level exceeding USD 100 per th cm. In the course of 2002, gas tariffs have already been raised twice: by 20% in March and 15% in July, while the draft budget for 2003 envisages another 20% increase. Taken together, these measures represent roughly half of the planned 3.5 times increase by 2005. With the rising tariffs of 'natural monopolies' increasingly fuelling inflation, there are also concerns over their adverse impact on economic growth in the country. For instance, according to recent calculations of the

¹⁰ MinTopEnergо on-line.

¹¹ At present, oil and coal account for 19% and 16% of electricity generation in Russia, respectively.

Federal Energy Commission, such tariff hikes accounted for 13-14% of total inflation in 2000, 20-25% in 2001, and will probably account for 27% of overall inflation in 2002.¹²

In addition to this price instrument, the Strategy also envisages imposing penalties on those who fail to take adequate energy-saving measures, although the details of this remain to be specified. Also, the government plans to promote and support energy-saving businesses.

The tariff reform is planned to be implemented parallel to the restructuring of the state-controlled gas monopolist *Gazprom*, thereby ensuring a more efficient management of the industry and simultaneously providing gas producers with sufficient resources to make up for the serious under-investment of the last years.

At present, *Gazprom* is the biggest company in Russia and the biggest gas-producing company in the world. It accounts for 90% of Russian gas production and 5% of Russian GDP, employs over 300 thousand people, and provides 25% of the federal budget revenues. It also operates a pipeline network of 150 th km – the longest in the world. *Gazprom* is a joint-stock company, with the largest stake (38%) belonging to the federal government. Throughout the 1990s, corporate governance at *Gazprom* under its long-standing CEO Rem Vyakhirev was repeatedly criticized for intransparency and the lack of efficiency, and restructuring of the company used to be one of the major conditionalities attached to IMF credits. Overall, under the years of Victor Chernomyrdin as Russian prime-minister in 1993-1998 (who previously had been a *Gazprom* executive himself), the relationship between the government and *Gazprom* was quite intricate. The company typically had enormous tax arrears to the federal budget, but they were largely due to the low gas tariffs prescribed by the government, as well as the policy of tolerating non-payments for gas supplies. In fact, the highly subsidized domestic gas prices were a major tool of social policy of the government. The outcome of these policies was massive under-investment in gas exploration, production and transportation capacity, which was not least responsible for the recent decline in production (see Table A/1 in the Appendix), in spite of the favourable demand situation.

However, following the resignation of president Yeltsin on the eve of 2000, the position of the old management under Rem Vyakhirev became increasingly shaky. It was accused by minority shareholders of asset-stripping and extending credit guarantees to formally unrelated companies, most notably to the rival company *Itera*, which dominated Russian gas exports to the CIS countries. It appeared that *Gazprom* might have had a special interest in a private company taking over the 'problematic' CIS market and free of pressure from the Russian authorities to tolerate customers' non-payments. Another beneficiary of

¹² www.oilandgasinternational.com.

the controversial 'asset transfers' was said to be *Stroitransgas* – a pipeline-constructing company allegedly owned by close relatives of Rem Vyakhirev and Viktor Chernomyrdin. The audit of *Gazprom* carried out by PricewaterhouseCoopers in summer 2001 indeed confirmed numerous cases of asset transfers. Although the auditor said no sufficient information was available to judge whether *Gazprom* executives personally benefited from those transactions, the *Gazprom* CEO Rem Vyakhirev had to give way to Putin's ally Alexei Miller – a move which was seen by most experts as a sign of the finally coming (and long overdue) restructuring of the Russian gas industry.

The first plans of *Gazprom* restructuring were presented to the government as early as December 2000. Since then, reform efforts in this area have been postponed several times, with high-ranking government officials sending conflicting signals regarding both the time schedule and the details of reform. Also, the priority of the new *Gazprom* management under Alexei Miller proved gaining back the assets 'lost' under Vyakhirev, rather than the company's restructuring, episodically leading to rumours of Miller's possible resignation. However, a new impetus to reforms has been given by Russia's recent aspiration to join the WTO, which would require cutting the gas subsidies and bringing domestic prices in line with the world level. Also, the European Union is complaining that artificially cheap natural gas and energy in Russia are tantamount to dumping. In response to the demands of the WTO and the EU, the Russian leadership has repeatedly justified the low domestic gas price, calling it a 'natural advantage' of Russia, although it remains unclear how the 'natural advantage' can be reconciled with the enormous subsidies paid to the sector. At the same time there are signs that the Russian government itself is increasingly aware of the need to reform the industry. In his public speeches targeted at a domestic audience, Putin has recently accused *Gazprom*, along with other Russian 'natural monopolies', of being inefficient and demanded that it cut its costs first to be eligible for further subsidies. Nevertheless, while the Russian government seems to be unwilling to subsidize the inefficient gas production it cannot simply withdraw the subsidies either, as this would result in too much of a burden on the consumers, who would have to cover the inflated gas production costs from their pockets.

Against the background of all these considerations, a reform of the gas industry aimed at raising its efficiency seems finally coming. According to the draft concept, after the reforms in the sector have been completed, the structure of the Russian gas industry will be similar to the structure of its oil industry. In addition, similar reforms are already being launched in the electricity sector, to be followed by the railways. The restructuring concept envisages a three-stage programme aimed at creating a competitive environment in the gas industry, although the time schedule for the individual stages is still to be set.¹³

¹³ RFE/RL, 29 July 2002, and *gazeta.ru*.

The first stage envisages the formation of a two-tier structure, consisting of a state-regulated gas transport and distribution segment, and of an unregulated gas production segment, with both segments simultaneously present in the market. Gas production is to be organized on a competitive basis, with the formation of eight independent gas producers on the basis of the currently operating eight production units of *Gazprom*. In addition, independent gas producers (oil companies) will be granted access to the gas pipelines, giving them a chance to compete with the gas-producing *Gazprom* successors. (Russian oil companies currently produce 60 bn cm of associated gas per year – some 10% of total gas production – but, lacking access to pipelines, are reportedly left with no choice but to flare it.) In turn, the state-controlled segment will include gas transport and distribution, both activities considered as being a 'natural monopoly' and hence requiring state regulation. The segment will include the Joint Gas Transport Company (GTK), the System Operator of the natural gas market, a Natural Gas Exchange, and numerous gas distribution organizations (GRO). The GTK will be a 100% daughter company of *Gazprom* inheriting all its gas transport facilities, including gas pipelines, compressor stations, and underground storage facilities. The System Operator of the natural gas market – also a 100% daughter company – will be created on the basis of *Gazprom's* central production-dispatching directorate. Contracts on the Natural Gas Exchange will be made based on market prices. At the first stage, the government suggests that 10 bn cm of natural gas should be sold on the exchange, with subsequent gradual increases of this volume to 5% of the overall *Gazprom* production.

At the second stage, wholesale natural gas prices are to be liberalized further, and free contract prices are to be introduced for all consumers, with the exceptions of the general public and budget-funded organizations.

Finally, the third stage will end all regulation, except for transport, and give independent producers access to foreign markets. This implies that the direct natural gas price regulation for all categories of consumers will be abolished and replaced by target subsidies paid to the population.

The draft restructuring concept envisages that each investor gets a proportional piece in each of the newly created companies, while in the next step, the government will offer private investors to swap their stakes in gas transport and distribution assets for shares in the newly created gas-producing companies. In this way the government will gradually gain full control over the 'natural monopoly' segment of the sector. It is likely that the bulk of the gas-producing assets will be acquired by the Russian oil majors, which are in search of opportunities to invest their windfall profits. Thus, *Yukos* has already announced its plans to become a major player in the Russian gas market and has bought a stake in *Arktikgaz* earlier this year. *TNK* has recently bought a stake in *Rusia-Petroleum* operating the Kovyktinskoe gas deposit in East Siberia, with *Surgutneftegaz* figuring as another very

probable candidate to acquire one of the gas-producing units of *Gazprom*. Also, part of the interest of the oil companies in gas production may be due to their own needs in gas, e.g. to generate electricity for the oil business. The restructuring will likely result in a rising share of foreign ownership in the Russian gas industry. At present, the law forbids foreigners to hold more than 20% of *Gazprom*, and formally their share in the company is even lower.¹⁴ Also, under current regulations foreigners are only eligible for American Depositary Receipts (ADRs), which are traded at a premium to the rouble-denominated *Gazprom* shares circulating within Russia. Future developments in this area will obviously depend on the new legislation, the details of which are not clear-cut at the moment.

Main directions of regional co-operation in energy issues

Russia and OPEC

One of the factors behind the recently impressive performance of the Russian oil sector has been Russia's non-cooperative strategy with respect to the Organization of Petroleum-Exporting Countries (OPEC), an eleven-members oil cartel accounting for nearly 40% of world oil production.¹⁵ Meanwhile, Russian oil production – currently over 7 mn bpd – seems by far not negligible against the background of the 24.5 mn bpd quota currently set by the ten members of OPEC, with the eleventh member – Iraq – accounting for another nearly 2 mn bpd. Among OPEC members, only Saudi Arabia beats Russia in terms of oil production and exports (although Russian oil output had exceeded that of Saudi Arabia in individual months of the year 2002).

Russia is not an OPEC member and holds there a status of observer, occasionally giving in to OPEC pressure to cut oil exports to stabilize the global prices. In 1998 the Russian government vowed to co-operate with OPEC and indeed, since then, it has undertaken three cuts in oil 'shipments': by 100 th bpd in the third quarter of 1998, by 100 th bpd in the second quarter of 1999, and by 150 th bpd in the first quarter of 2002, in response to the falling oil price in the aftermath of the terrorist attacks of 11 September 2001.¹⁶ However, in the third quarter of 2002 the cuts were reversed, provoking sharp criticism from OPEC, which has kept its quota unchanged not only into the third but also into the fourth quarter of the year¹⁷. In spite of the mentioned cuts Russia has been generally reluctant to co-operate

¹⁴ However, due to the use of various 'grey schemes', the real share of *Gazprom* belonging to foreigners is estimated being well above the official limit.

¹⁵ OPEC-10 includes Saudi Arabia, Kuwait, Qatar, United Arab Emirates, Iran, Libya, Algeria, Nigeria, Venezuela, and Indonesia. The oil production and exports of the 11th formal OPEC member – Iraq – are currently constrained by the UN-imposed 'oil-for-food' programme.

¹⁶ At the same time, the government encouraged more fuel oil exports by abolishing export quotas in January and reducing export tariffs in February.

¹⁷ OPEC has finally decided to raise its quota by 1.3 mn bpd in January and by another 1.5 mn bpd in February 2003. The moves followed the rising world oil price on account of uncertainty related to the war with Iraq and the strike in Venezuela.

with OPEC in the last few years. While the oil cartel cut its supplies by 2.5 mn bpd in the course of 2001 and by another 1.5 mn bpd in the first quarter of 2002 in view of the worldwide economic slowdown, Russia took advantage of the high oil prices (see Figure 2) to expand its export volumes by nearly 500 th bpd per year. The oil price corridor targeted by OPEC, generally with success (USD 22-28 per barrel), has been comfortable for Russia whose own preferred price corridor (USD 20-25 per barrel) is not very different.¹⁸

It seems that as long as Russia is able to free-ride on the OPEC cuts, it will constantly prefer to do so, although its rising market share gradually puts the feasibility of this strategy into question. On the other hand, the policy of restricting oil supply might be more difficult to implement in Russia: unlike in OPEC countries, the Russian oil industry is predominantly privately-owned, which makes it more difficult for the government to co-ordinate its efforts with those of the OPEC governments. Besides, Russia is now essentially facing a trade-off between energy co-operation with the United States (more on that see below) and collaborating with OPEC. In this situation, both economic and political considerations suggest that Russia will in all probability choose the American option. The economic reason is straightforward: being an OPEC member, Russia will have to stick to its quota. Under these conditions the currently widely discussed growth of oil exports to the US will only be possible at the expense of exports to Europe – a very unlikely scenario. Taking into consideration that Russia is also planning to sell more oil to China, the country will hardly be willing to commit itself to a restrictive quota regime. Political considerations make co-operation between Russia and OPEC even less likely, given the importance of good relations with the United States for a wide variety of reasons (including possible foreign investment inflows and American help in accession to the WTO) and against the background of its own anti-Chechen campaign, which is now perceived as part of the global 'war against terror', and that not only in Russia.

Russia and the EU

The European Union consumes 16% of the world energy, being the world's second largest consumer (after the United States). The EU is also a large net energy importer: domestic production covers just over a half of its natural gas and less than one third of its oil needs. Russia is an important source of energy for the EU, accounting for 16% of oil and 25% of natural gas imports of the latter. The importance of the EU for Russia as an export destination is even more pronounced, as it buys 87% of Russian oil and 65% of its natural gas. Europe already was an important buyer of oil and gas from the USSR, but its importance has risen even more during the years of transformation, with the growing impoverishment of neighbouring CIS states resulting in a rapid contraction of their effective

¹⁸ It is often argued that a higher price will make it difficult for oil to compete with other sources of energy, whereas a lower price will hamper the technological development of the branch.

demand for Russian fuels. Within the EU, the biggest buyers of Russian fuels are Germany, France and Italy.

The 'energy bridge' between Russia and the EU was further re-inforced by the summit in October 2000, where Russia pledged to expand its oil and natural gas supply to the EU in return for EU help to develop new deposits and pipeline infrastructure.

In terms of oil, Russia plans to raise its exports to Europe to over 5 mn bpd in the future. The latter requires new transport routes since the bulk of existing export pipelines and sea terminals are now operating at close to full capacity. As before, the bulk of all exported oil is pumped through the long-standing *Druzhba* pipeline, which has a throughput capacity of 1.2 mn bpd and runs from central Russia westwards, intertwining into two major branches: northern (across Belarus and Poland to Germany) and southern (across Belarus and Ukraine to Slovakia, where it is connected to major European pipelines). The transport problem may be somewhat alleviated by linking *Druzhba* with the *Adria* pipeline system, giving access to the Adriatic deep water port in Omisalj (Croatia), which is capable of handling up to 100 th bpd of oil. The construction works on this USD 20 million project, which involved among other things reversing the direction of oil flows in *Adria*¹⁹, were recently completed. Besides, the capacity of the route is planned to be upgraded to as much as 300 th bpd by the end of 2003.

Another big share of Russian exported crude is being transported by tankers from the oil terminals on the Black and the Baltic sea coasts. However, the collapse of the Soviet Union left Russia with a limited oil terminal capacity of its own. On the Black Sea, the major oil exporting ports are Novorossiysk (some 800-900 th bpd) and Tuapse (around 100 th bpd), with another important one – Odessa (over 200 th bpd) – being now on Ukrainian territory.²⁰ Most importantly, the prospects of growing oil exports to Europe via the Black Sea are constrained by environmental concerns in the Turkish straits Bosphorus and the Dardanelles, which already operate on the verge of their physical capacity and where shipwrecks and oil spills have become common in recent times.

Against this background the Baltic direction of oil exports looks more promising, particularly with the recent launch of the *Baltic Pipeline System*. The USD 460 million system has an initial capacity of 240 th bpd and includes a newly built oil terminal in Primorsk on the Gulf of Finland, close to the Finnish border. It was put onstream in December 2001 and is

¹⁹ Previously, oil was flowing *from* Omisalj to the refineries in Hungary.

²⁰ Also, an important oil pipeline linking Central Russia and the terminal in Novorossiysk used to cross the eastern part of Ukraine, prompting *Transneft* to construct a 259 km long pipeline stretch circumventing Ukraine and allegedly allowing to save transit fees. The stretch *Sukhodolnaya-Rodionovskaya* was completed in September 2001 and has a throughput capacity of 520 th bpd.

pumping oil from the Timano-Pechora basin²¹ (in the Northeast of European Russia), Western Siberia and Kazakhstan. The second stage of the system, due to become operational in 2003, envisages upgrading its capacity to 360 th bpd, with estimated costs of some USD 230 million. By 2005 the terminal in Primorsk will be attached to an oil products pipeline with a planned capacity of 10 million tonnes per year. In the course of the next ten years the capacity of the terminal is planned to be raised to as much as 800 th bpd, requiring an investment of USD 4 billion. In addition, two more oil terminals on the Russian Baltic sea coast – in Ust'-Luga and Bukhta Batareynaya – have been under construction since 1997. The possibility of shipping oil from own terminals will substantially reduce Russia's dependence on transit via Estonia, Latvia and Lithuania.²²

The Russian-European 'energy bridge' also envisages a long-term increase in gas deliveries. *Gazprom* has committed itself to expanding its presence in European market and signed several long-term contracts, although it has reportedly already experienced problems in fulfilling its obligations and had to buy 10 bn cm of natural gas from Turkmenistan in 2002.²³

The supply of 30 bn cm per year of Russian gas to Europe (notably Germany, but also Finland, Sweden, and the UK) will be possible via the *North European Gas Pipeline* stretching on the seabed of the Baltic Sea. An agreement on this USD 3 billion project was signed in April 2001 by *Gazprom* of Russia, *Ruhrgas* and *Wintershall* of Germany, and *Fortum* of Finland, whereas the construction itself is to take place between 2005 and 2007. Besides, the capacity of the *Yamal-West* pipeline (one of the major natural gas pipelines – along with *Bratstvo*, *Progress*, *Soyuz*, and *Northern Lights* – running from Russia across Belarus to Europe) is to be upgraded from currently 28 bn cm per year to 65 bn cm by 2010. Also, in June 2001 a major agreement was concluded between Russia and Ukraine on the transit of Russian gas via Ukrainian territory for the period of 15 years. The agreement is important since 90% of all natural gas exported to Europe runs via Ukraine, which receives for that in-kind payment in the form of natural gas. Prior to 2001, Russia repeatedly accused Ukraine of illegal siphoning off natural gas out of the Russian export pipelines, and an option of constructing a new gas pipeline circumventing Ukraine was under serious consideration. However, these plans were dropped after an agreement on

²¹ The 'Federal Programme of Exploitation of Oil and Gas Resources of the Timano-Pechora basin' envisages production of up to 800 th bpd of oil by 2010 – see Table A/4 in the Appendix. The basin is one of the largest in Russia, accommodating 172 deposits with estimated oil reserves of 9.6 billion barrels. The oil and natural gas resources of the basin are to be developed jointly by *Lukoil* and *ConocoPhillips*, which plan to invest there USD 20 billion in the coming decade. Also, *Lukoil* has already completed a 50 th bpd oil terminal on the Pechora sea, and has also heavily invested in creating an Arctic tanker fleet.

²² The recent decision by Transneft to re-direct the flow of oil from the Latvian terminal in Ventspils to the newly built Russian terminal in Primorsk has provoked a sharp reaction of Latvia, for whom the transit of Russian oil via its territory accounted in 2002 for 7% of its GDP (see *Die Presse*, 12 February 2003).

²³ Energy Information Administration.

the restructuring of Ukraine's USD 1.4 billion debt for gas deliveries over 12 years had been reached in October 2001.

There are, however, a few problems related to the planned expansion of Russian presence in the European natural gas market. First, it is not quite clear what will happen to the long-term European contracts already signed by *Gazprom* in the case of its large-scale restructuring, which implies a formation of several independent companies in the gas-producing segment of the sector. Besides, the prospects of co-operation may be hampered by the 'natural gas directive' adopted by the EU in May 1998 and aimed at creating competition among the external suppliers of natural gas to the EU by 2005. The *Gazprom* management has reportedly complained that the latter proved to be an obstacle for signing further long-term contracts as well as for borrowing, since short-term contracts are a poor collateral for bank credits.

Another area of co-operation between Russia and the EU in the energy sector is the joint development of the vast hydrocarbon resources of the Barents Sea shelf, which, according to some estimates, might represent as much as a quarter of global reserves. In the East Barents Sea province a production-sharing agreement (PSA) on the exploitation of the Prirazlomnoe oil field, which might contain over 500 million barrels of extractable oil, was signed between *Gazprom* and *Wintershall* (Germany) in June 2000.²⁴ Another promising field in the Barents Sea – Shtokmanovskoe – is to be operated by the *Gazprom* subsidiary *Rosshelf* and is also eligible for a PSA.

Russia and the United States

The United States is the biggest oil consumer in the world, with 19.7 mn bpd of oil consumption in 2001, about half of which is being imported. Nevertheless, until recently trade in fuels between Russia and the United States has been minimal – because of the geographical distance separating the two countries, and not least politically motivated in the aftermath of the cold war. Up to now American oil imports have been dominated by Saudi Arabia, Venezuela, Norway and Kuwait, with Russia not even ranking among the top ten suppliers. Also, prior to the summer of 2002, when selling oil to the US Russia used exclusively swap operations, e.g. via a chain of other countries acting as intermediators.

However, the situation changed radically following the events of 11 September 2001, with the United States seeking to diversify its oil supplies away from the unstable Persian Gulf region and Russia interested in finding new markets for its rapidly expanding oil output. At the World Economic Forum in New York in February 2002, Russian prime-minister Mikhail

²⁴ Similar agreements were signed earlier with *Statoil* and *Norsk Hydro* of Norway on the joint development of natural gas deposits in the northern Pechora region (Varandei-more) and on the shelf of Pechora sea.

Kasyanov announced that his country would be prepared to become an important oil supplier to the United States. In May 2002, during a Moscow summit, Vladimir Putin and George Bush signed an agreement on an 'energy partnership', envisaging an expansion of American oil imports from Russia. In July 2002 *Yukos* undertook the first direct shipment of oil from Novorossiysk to the US Gulf coast on an experimental basis (2 million barrels sold to *ExxonMobil*), raising concerns that the deal can hardly be profitable. However, six such shipments were made in the course of 2002, and *Yukos* has reportedly named them profitable, announcing its plans to ship to the United States some 35 million tonnes of crude in 2003.

The prospects for the 'energy partnership' were further elaborated during the US-Russian commercial summit in Houston in early October 2002, which has resulted in a number of deals. In particular, the US-based *Export-Import Bank* signed a memorandum of understanding to extend a USD 100 million credit to each of the three Russian oil majors *Lukoil*, *Yukos*, and *Sibneft* to purchase US oil drilling equipment and services. The US-based *Marathon Oil* and *Rosneft* have agreed to set up a venture *Urals North American Marketing (UNAM)*, which will transport and market Urals crude in North America starting from the third quarter of 2003 and will reportedly rely on the existing transport and marketing infrastructure. Another US company, *Moncrief Oil*, has resumed stalled negotiations with *Gazprom* for developing a natural gas field containing 425 bn cm of reserves. Also, during the summit Russian energy minister Igor Yusufov announced that Russia may build its own oil reserve in the next two to three years, aimed at creating flexibility in meeting the demand of oil importing countries.

Overall, Russia claims that within five years it would be possible for the country to supply the US with 1 mn bpd of crude annually, thus covering some 10% of US oil imports. However, that is conditional on substantial investments into oil production and especially transport. The volume of such investment has been put by Igor Yusufov at USD 1 billion annually for the next few years and USD 50 billion in the period till 2010.²⁵ In particular, trans-Atlantic oil shipments require big tankers the use of which is constrained by the bottlenecks of the Turkish and Danish straits and the shallow Black and Baltic seaports of Russia itself. The problem has prompted the idea of constructing by 2005 a new oil terminal in Murmansk on the Russian Arctic coast nearby the Norwegian border, supplemented by a pipeline stretching from Western Siberia²⁶. Although the project idea has been supported by *Lukoil*, *Yukos*, *Sibneft*, *TNK* and (more recently) *Surgutneftegaz*, the government has reiterated it considers unacceptable the creation of private pipelines in

²⁵ RFE/RL, 4 October 2002.

²⁶ As of now, two possible routes for this 1.6-2.4 mn bpd pipeline from Western Siberia to Murmansk are under consideration: the 3600 km long and USD 4.5 billion expensive 'southern route' (via the promising Timano-Pechora oil basin in the north of European Russia) versus the 2500 km long and USD 3.4 billion expensive 'northern route' (via the White Sea).

Russia. However, a compromise deal seems not unlikely, whereby the five above-mentioned oil companies could enjoy preferential treatment – both in terms of quotas and tariffs – in return for their investment in this formally state-owned pipeline. The estimates of the costs involved have varied greatly, ranging from USD 1.5 to 2.6 billion, and the need for American financial participation has been emphasized. Also, rising oil exports to the US may be facilitated by the possibility of shipments from the Croatian deepwater port Omisalj (discussed in the previous section). In addition, shipments of Russian oil to the US West coast may be made possible by construction of an oil terminal in Nakhodka on the Russian Pacific coast (for more on that see next section).

Apart from the above-mentioned capacity constraints, there is a number of other limitations to the possibility of Russia 'crowding out' Saudi Arabia and other OPEC countries from the American oil market. First of all, in the short run the bulk of US refineries are technically not prepared to handle light sour Russian crude, as they are mostly adjusted to the blends from Venezuela and Mexico.²⁷ More importantly, oil in Russia is more expensive to produce than in the Persian Gulf countries and will likely become even more so in the future, since the most promising fields are geographically remote and technologically more challenging. Therefore, while oil shipments to the USA might be marginally profitable now, at a time of high world oil prices, they will likely become loss-making in the case of a price slump. Finally, in the long run oil supplies from the countries of OPEC will be crucial, since the latter accommodates about 80% of global proven oil reserves.

Russia and East Asia

Along with Europe and (possibly) the United States, the East Asian markets and the rapidly growing Chinese economy in particular are increasingly seen as another important destination for exports of Russian fuels. However, recent months have witnessed a substantial controversy inside Russia over the subject, with the two companies *Transneft* and *Yukos* having diverging visions of what is perceived to be a long-term strategy of expanding Russia's presence in the Asian energy markets.

The state-owned pipeline monopoly *Transneft* is advocating the construction of an *Angarsk-Nakhodka* oil pipeline, stretching over 3885 km and linking Eastern Siberia with the Russian Pacific coast. The idea of the project has been recently supported by Russian president Putin and the Japanese prime-minister Koidzumi, who signed an agreement on co-operation in the project implementation. The pipeline is projected to have a capacity of 0.9 mn bpd and will probably require an investment of USD 5-6 billion. Also, the project envisages an oil-loading berth at Perevoznaya Buhta, with deep-water capacity for tankers to load up to 300 th tonnes of oil. The advantage of the project is that an oil terminal in

²⁷ *Wall Street Journal*, 3 October 2002.

Nakhodka will allow shipments not only to China and other East Asian countries, but also e.g. to the western coast of the United States, thus ensuring a solid degree of flexibility. However, the project has been criticized by *Yukos*, which claims that it will lack enough oil to become profitable.

In turn, *Yukos* has put forward the idea of a 1700 km long *Angarsk-Daqing* pipeline directly to China, with an estimated USD 1.7 billion to be incurred by the Russian and USD 450 million by the Chinese side. At present, *Yukos* is supplying China with a mere 27 th bpd of crude via rail, but it has recently agreed on deliveries of 360 th bpd by 2005 and 540 th bpd by 2010. Initially, oil will be pumped from the developed fields in West Siberia, but will be gradually replaced by production from deposits in East Siberia, including the Kuyumbinskiy and Tersko-Kamovskiy blocks in Evenkiya, with total estimated reserves of over 2 billion barrels. The major difficulties in developing the fields are related to the remoteness of the region, and huge investment will be needed to build even a basic infrastructure. Overall, the *Yukos* project is cheaper than that of *Transneft* and is expected to pay off sooner, but it is also riskier as the success and failure of the project will largely depend on the political developments in China and the future of Russian-Chinese relations. In addition, there is a debate between the Russian and the Chinese side over the precise route of the pipeline, with Russia insisting that the pipeline cross the territory of Mongolia, and China opposing the Russian proposal for 'security reasons'.

The prospects of exporting oil to the US from the terminal in Nakhodka have also given rise to speculations that the project might compete with the export route via Murmansk (see previous section), although such speculations were dismissed by both *Transneft* and *Yukos* officials.

A natural gas pipeline to China is about to be constructed as well, with the joint participation of *Gazprom* and *Ruhrgas* of Germany and estimated costs of USD 6 billion. The project will reportedly draw on the reserves of the vast Kovyktinskoe field in Eastern Siberia, which is estimated to be the biggest in Russia.

The Sakhalin projects off the Russian Pacific coast, which operate under PSA conditions, are also targeting East Asian markets, including Japan, Taiwan and South Korea. The Sakhalin oil fields now under development hold an estimated 3.3 billion barrels of oil. Although PSA agreements for the two major Sakhalin projects (referred to as Sakhalin-1 and Sakhalin-2) were signed back in 1996, the projects reportedly face a number of both technological and legal impediments. The harsh climatic conditions and the offshore nature of deposits make oil and gas extraction here an expensive and technologically challenging undertaking. Exports by sea are complicated by the fact that surrounding waters are covered with ice at least several months a year. In addition, with the markedly improved economic situation in Russia and with the increased availability of domestic investment

resources, the Russian government seems to be less interested now in the further promotion of PSAs, leaving a heap of unresolved legal problems including those related to taxation. Also, the projects are controversial from the environmental point of view, as offshore drilling is said to jeopardize the population of grey whales – one of only two such populations left in the world.

The Sakhalin-2 project²⁸, led by *Royal Dutch/Shell*, is now more advanced and sells 90 th bpd of crude to South Korea, China and Alaska. The project envisages pumping oil and gas through the 480 miles long pipelines to the ice-free port Prigorodnoe, where they are to be loaded on tankers heading for Japan, South Korea and Taiwan. Also, a gas liquefying plant is to be built to make it transportable by tankers, although the consortium has so far been unable to find buyers for its liquefied gas. In turn, the Sakhalin-1 project²⁹, led by *ExxonMobil*, has experienced a number of delays and is not expected to export until 2005. The project has estimated reserves of 2.5 billion barrels of oil and 420 billion cubic meters of gas, and plans to export oil via a 150 m long pipeline to the Russian mainland port De Kastri. According to other reports, the project envisages a construction of a 120 miles pipeline from the deposits of Odoptu, Chayvo and Arkutun-Dagi to Sapporo on the Japanese island of Hokkaido.

In total, foreign companies are expected to invest about USD 13 billion³⁰ over the next four years to build pipelines, storage plants, roads and airports in this remote and backward Russian region.

Several further projects to be implemented under PSA conditions have been discussed for a number of years³¹, including Sakhalin-3 (Krinskiy blocks), Sakhalin-4 (Aylash and Veninsky blocks), and Sakhalin-5. The Russian side in these projects would be represented by *Rosneft* and its subsidiary *Sakhalinmorneftegaz*, whereas foreign partners might include *ExxonMobil*, *Texaco* and *British Petroleum*. *TNK* has also recently shown interest in the Sakhalin hydrocarbon deposits.

²⁸ The shareholders are *Royal Dutch/Shell* (62.5%), *Mitsui* (25%), and *Mitsubishi* (12.5%).

²⁹ The shareholders are *ExxonMobil* (30%), *Sodeco* (30%), *Indian National Oil Company* (20%), and *Rosneft* with its subsidiary *Sakhalinmorneftegaz* (together 20%).

³⁰ *New York Times*, 6 August 2002.

³¹ Altogether, there are 28 foreign oil projects on hold in Russia, seeking PSAs and waiting for legislation. Although the law on PSAs, aimed at protecting investors against possible future changes in domestic legislation, was adopted back in December 1995, so far only three PSA projects – Sakhalin-1, Sakhalin-2, and Kharyaginskoe – have been actually signed into law. Total output of PSAs is still modest, amounting to 44 th bpd of oil in 2001. Apart from bureaucracy, a big obstacle to foreign investment under PSAs is the controversial 'local contents requirement' adopted in 1999 and stipulating among other things that 70% of equipment used in a PSA project must originate in Russia.

Russia and the Caspian basin

In addition to the above strategic directions of its fuels exports, Russia is trying to establish itself as a key player in transporting oil from the Caspian Sea basin, reserves of which may total 70 billion barrels of oil. Arranging the flows of oil and gas to run through its territory would certainly bring the country both economic and political benefits.

An important landmark in this respect has been the successful launch of the *Caspian Pipeline Consortium (CPC)* pipeline in October 2001. This 1580 km long, 560-th-bpd capacity pipeline pumps oil from the huge Kazakhstani onshore Tengiz oil field (with estimated reserves of 6-9 billion barrels) to the Russian Black Sea port of Novorossiysk. The project is owned by an independent consortium³² and is not connected to the *Transneft* pipeline network. By 2015, the capacity of *CPC* is projected to be upgraded to 1.34 mn bpd.

CPC is not the only example of transit of Kazakhstani oil via the Russian territory. In June 2002, Russia and Kazakhstan signed agreements that ensure a Russian near-monopoly on the transit of oil from Kazakhstan for the years to come.³³ One agreement envisages a 15 year long transit of 300 th bpd of Kazakhstani crude via the *Atyrau-Samara* pipeline, to be pumped further to the *Druzhba* pipeline and the *Baltic Pipeline System*. Another 50 th bpd will be shipped by tankers to Russia's Caspian coast and from there via the *Baku-Novorossiysk* pipeline to the Black Sea. Russia also transports some Azerbaidzhani and Turkmen oil via its *Baku-Novorossiysk* pipeline, albeit in smaller quantities. Although the pipeline capacity is 140 th bpd, it is now loaded with no more than 40 th bpd, partly because Azerbaidzhan has cheaper export routes³⁴ and partly because of the instability in Chechnya, whose territory the pipeline crosses. Although a 300-th-bpd bypass pipeline circumventing Chechnya was built in 2000, this stretch may be vulnerable to terrorist attacks as well.

Overall, the development of the oil and gas reserves of the region is hampered by the unresolved legal status of the Caspian Sea. Formally, the latter is still regulated by the

³² Half of CPC equity is held by the governments of Russia (24%), Kazakhstan (19%) and Oman (7%), with the rest owned by a range of mostly private companies, including *Chevron*, *Mobil*, *Oryx*, *Lukarco*, *Rosneft-Shell*, *Agip*, *BG Overseas Holdings*, and *Kazakhstan Pipeline Ventures*.

³³ *Wall Street Journal*, 2 August 2002.

³⁴ Azerbaidzhan pumps the bulk of its oil via the *Baku-Supsa* pipeline (via Georgia) and will rely in the future on the *Baku-Tbilisi-Ceyhan* pipeline, the construction of which, after many years of uncertainty and delays, has finally started on 18 September 2002. The *Baku-Supsa* pipeline reportedly offers better transit fees (some USD 2 per barrel) than *Baku-Novorossiysk* (USD 3 per barrel), and though oil transit via *Baku-Tbilisi-Ceyhan* is expected to be more expensive (USD 4 per barrel), there are powerful political arguments in its favour.

Soviet-Iran agreements of 1921 and 1940.³⁵ The only regulation which at least to some extent determines the territorial rights of the littoral states nowadays is the instruction of the Soviet oil ministry allocating the 'zones of responsibility' of the Caspian seabed to the republican ministries of geology. It is this instruction that was underlying the *de facto* exploration of the Caspian seabed by the littoral states after the breakup of the Soviet Union.³⁶

The numerous attempts to find a legal solution to the status of the Caspian after the USSR collapse invariably failed due to the inability of the littoral states to reach a compromise. Since 1998 Russia has been advocating collective ownership of the Caspian waters and surface and division of its seabed according to a 'modified' median line, the 'modifications' being based on actual explorations made by the littoral states in the past. Meanwhile, the Russian position has been supported by Kazakhstan and Azerbaidzhan. The 'median line' principle, if applied, would relate the size of the national sector to the shoreline length and thus entitle Kazakhstan to 29%, Azerbaidzhan to 21%, Russia to 19%, Turkmenistan to 17%, and Iran to 14% of the seabed. In turn, Iran insists on either the joint ownership of *all* Caspian resources or their division into five equal parts. Turkmenistan has its own plan, envisaging 15 miles wide national zones and 30 miles wide economic zones, with the rest being open to all littoral countries. A summit of the 'Caspian five' held in Ashgabat in April 2002 once more failed to resolve territorial disputes.

Given the failure of finding a legal solution involving all Caspian states, Russia has recently pushed for bilateral agreements instead. An agreement with Kazakhstan was signed in May 2002, followed by a similar agreement with Azerbaidzhan in September. Therefore, the Russian part of the Caspian seabed has finally received legislative backing. Although the majority of Caspian riches is believed to be located outside the Russian sector, its oil reserves may still amount to some 1.7 billion barrels. To explore the North Caspian hydrocarbon deposits, a *Caspian Oil Company* (COC) was established by *Lukoil*, *Yukos*, and *Gazprom* in 2000. Also, *Lukoil* has been granted the right to explore the Yalamo-Samurskiy and Central oil fields. Besides, the three big fields in the Northern Caspian – Khvalynskoe, Tsentral'noe and Kyrmanqazy – are to be developed jointly by Russia and Kazakhstan.

³⁵ According to these treaties, Iran and the Soviet Union had equal rights to use the Caspian Sea for fishery and navigation purposes.

³⁶ M. Rubchenko, 'More razdorov', *Ekspert*, no. 30, 2001.

Conclusions

The Russian energy sector is playing a vital role in the world markets for oil and natural gas, and is also of crucial importance for the country's economic development. However, whether it will become an engine for the country's economic development in the medium and long run depends not only on the chances of creating a conducive investment environment – that would permit to channel the revenues from the extraction of mineral resources (representing largely the 'natural rent') into productive investment in the more sophisticated, and more advanced, economic sectors. Given the Russian circumstances, that will also be conditional on the performance of the energy sector itself, which is currently facing several important challenges.

The biggest challenge is facing the gas industry: it is to be reorganized in the next few years on a competitive basis, with only the transport and distribution of natural gas remaining in state hands. Most importantly, the question is whether the new (private) owners of the gas-producing assets will be able to attract investment into the maintenance of current deposits and the transport infrastructure to 'fix the holes' stemming from the years of poor management in *Gazprom*. The success and failure of the latter will be closely linked with the ability of the government to effectively implement a tariff reform, aimed at bringing domestic gas prices closer to the world level.

In the oil sector, an important issue is how long Russia will be able to free-ride on the OPEC supply cuts, increasing its share in the world oil market at the expense of other producers. As of now, there are reasons to believe that Russia will be reluctant to co-operate with OPEC in the years to come, not least because of the recent warming of the Russian-American relations. Another issue is whether the Russian oil sector, similar to the gas industry, will manage to overcome the supply bottlenecks and indeed carry out its ambitious projects of simultaneous penetration into several important energy markets, such as those of the United States and East Asia. In this context, the supply bottlenecks may affect both extraction (as the bulk of currently operating deposits are largely exhausted and the most promising oilfields are situated in remote areas) and transport, particularly that by sea. Finally, a lot will depend on whether Russian exporters will be able to export more refined oil products and less crude oil.

The way in which the Russian fuels sector will be able to respond to these challenges will be of crucial importance not only for the sector itself, but for the Russian economy as a whole.

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This report has drawn on a wide variety of sources, including in particular *Asia Times*, *Ekspert*, *Financial Times*, *gazeta.ru*, *Gazprom online*, *Izvestia*, *Kommersant Den'gi*, *Kommersant Vlast'*, *Lukoil online*, *MinTopEnergo online*, *Moscow Times*, *New York Times*, *OECD*, *oilandgasinternational.com*, *opec.ru*, *Reuters*, *RFE/RL Newslines*, *Rossiya Neft': federal'nyi spravochnik*, *Sibneft online*, *Transneft online*, *US Energy Information Administration*, *Voprosy Ekonomiki*, and *Wall Street Journal*.

APPENDIX

Table A/1

**Production and exports of crude oil, oil products, and natural gas
in 1994-2002**

	1994	1995	1996	1997	1998	1999	2000	2001	2002 prel.	2003 proj.
Production										
Crude oil, including condensate, million tonnes	318	307	301	306	303	305	323	348	379	390
Crude oil	310	298	293	297	294	295	313	337	.	.
Condensate	7.7	8.3	8.3	8.8	9.2	10.0	10.4	11.1	.	.
Primary oil products, million tonnes	186	182	176	177	164	169	174	178	185	190
Car petrol	26.8	28.1	26.8	27.2	25.9	26.2	27.2	27.5	.	.
Diesel fuel	46.7	47.3	46.7	47.2	45.1	46.8	49.1	50.2	.	.
Furnace mazut	66.0	61.4	60.0	57.4	52.8	50.2	49.2	50.2	.	.
Natural gas, including associated gas, billion cubic meters	607	595	601	571	591	592	584	581	594	604
Natural gas	581	570	575	544	564	564	555	551	.	.
Associated gas	26	25	26	27	27	28	29	30	.	.
Exports										
Crude oil, including condensate, million tonnes	128,0	122,0	121,0	127,2	137,2	134,6	144,5	162,1	190,1	.
to CIS	33,0	26,0	21,0	17,5	19,3	18,8	17,0	23,6	35,4	.
outside CIS	95,0	96,0	100,0	109,7	117,9	115,8	127,5	138,5	154,7	.
Oil products, million tonnes	46.4	46.5	56.6	60.6	54	56.9	61.5	70.8	.	.
to CIS	8.3	3.0	1.6	1.5	2.7	3.0	3.5	2.5	.	.
outside CIS	38.1	43.5	55.0	59.1	51.3	53.9	58.0	68.3	.	.
Natural gas, billion cubic meters	184,0	193,0	198,0	201,3	203,3	205,4	193,9	180,8	.	.
to CIS	75,0	70,0	70,0	80,4	78,3	74,3	60,1	48,9	.	.
outside CIS	109,0	123,0	128,0	120,9	125,0	131,1	133,8	131,9	.	.

Source: Goskomstat, own calculations.

Table A/2

**Production, exports and refining of oil by major vertically-integrated companies
in 1996-2002**

	1996	1997	1998	1999	2000	2001	2002
Production of crude oil, million tonnes							prel.
Lukoil	50.9	53.4	53.7	53.4	69.1	73.0	78.2 ¹⁾
Yukos	35.3	35.6	34.1	34.2	49.5	58.1	72.8
Surgutneftegaz	33.3	33.9	35.2	37.6	40.6	44.0	49.2
TNK (Tyumen Oil Company)	21.5	21.0	19.7	20.1	28.6	40.6	38.0
Sibneft	18.7	18.2	17.3	16.3	17.2	20.6	26.3
Tatneft	23.7	23.2	24.4	24.4	24.3	24.6	24.2
Slavneft	12.9	12.3	11.8	11.9	12.3	13.5	16.2
Rosneft	13.0	13.4	12.6	12.6	13.5	14.9	16.0
Sidanko	20.8	20.3	19.9	19.6	13.0	.	16.0
Bashneft	16.3	15.4	12.9	12.3	11.9	.	.
Exports of crude oil to non-CIS, million tonnes							
Yukos	7.6	9.1	12.2	15.1	21.9	27.4	.
Lukoil	10.5	13.9	18.8	16.1	20.8	22.7	.
TNK (Tyumen Oil Company)	4.7	3.4	7.0	8.3	11.7	16.3	.
Surgutneftegaz	7.6	11.7	9.6	12.3	13.7	16.2	.
Tatneft	9.0	7.7	8.8	.	11.1	11.0	.
Sibneft	.	.	5.8	5.0	5.6	7.3	.
Rosneft	5.1	6.4	6.9	5.0	6.3	6.5	.
Slavneft	2.5	2.9	4.5	3.9	4.2	5.4	.
Bashneft	2.6	3.4	3.8	3.9	3.8	.	.
Sidanko	4.6	5.2	6.2	4.8	3.0	.	.
Refining of crude oil, million tonnes							
Lukoil	19.3	18.9	16.6	19.4	22.1	32.6	.
Yukos	18.0	21.9	20.1	25.5	26.7	29.0	.
Bashneft	22.0	18.4	17.5	16.5	19.7	20.3	.
Surgutneftegaz	15.3	14.8	15.9	17.2	16.0	15.9	.
TNK (Tyumen Oil Company)	4.1	4.5	8.1	11.1	11.6	15.9	.
Sibneft	15.6	16.1	13.1	12.5	12.6	13.4	.
Slavneft	6.7	7.2	7.7	9.8	10.8	11.6	.
Rosneft	4.8	4.6	3.7	6.5	7.2	7.8	.
Sidanko	17.5	15.6	12.1	13.6	6.3	.	.

Note: 1) Including output of affiliated companies.

Source: Various sources including statistics provided by respective companies, own calculations.

Table A/3

Crude oil production and refining, and natural gas production in 2000, by region

	Oil production, million tonnes	Oil refining, million tonnes	Natural gas production, billion cubic meters
North West Federal District	13.3	19.6	4.0
Leningrad region	.	16.0	.
Republic of Komi	10.2	.	4.0
Nenets autonomous area	2.3	.	.
Central Federal District	.	31.8	.
City of Moscow	.	9.3	.
Ryasan region	.	11.6	.
Yaroslavl region	.	10.9	.
Privolzhsky Federal District	75.0	71.1	28.6
Republic of Tatarstan	27.2	.	.
Samara region	8.1	16.7	.
Nizhny Novgorod region	.	3.7	.
Republic of Bashkortostan	11.7	26.6	.
Udmurt Republic	7.7	.	.
Orenburg region	9.1	.	25.9
Perm region	9.4	11.1	.
North Caucasus Federal District	10.6	15.5	14.4
Republic of Ingushetia	0.2	.	.
Chechen Republic	0.0	.	.
Volgograd region	3.6	8.5	.
Astrakhan region	.	.	9.8
Ural Federal District	213.0	3.8	530.0
Tyumen region	213.0	.	530.0
incl. Khanty-Mansi autonomous area	181.0	3.5	20.1
incl. Yamalo-Nenets autonomous area	31.9	.	510.0
Siberian Federal District	7.0	25.7	3.0
Omsk region	.	12.6	.
Tomsk region	6.9	.	2.6
Irkutsk region	.	7.7	.
Far East Federal District	3.8	6.3	3.5
Republic of Sakha (Yakutia)	.	.	1.6
Khabarovsk territory	.	6.2	.
Sakhalin region	3.4	.	1.9

Source: Goskomstat.

Table A/4

Official projections of oil and gas production in selected regions of Russia in 2010

Region	Oil production	Gas production
West Siberia (Khanty-Mansi and Yamalo-Nenets autonomous areas)	4.4 mn bpd	520 bn cm per year
North of European Russia (Nenets autonomus area plus Arctic off-shore production)	0.8 mn bpd	70 bn cm per year
Sakhalin (off-shore production)	0.4 mn bpd	30 bn cm per year

Source: MinTopEnergO.

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