Russian energy sector – prospects and implications for European energy supply

17 October 2006

Russia is a globally important oil and gas producer. Russian energy is especially important to the import-dependent EU countries. Recently, Russia has expressed its interest in expanding its export markets outside Europe and has raised gas prices for several European countries. Not surprisingly, energy ranks high in both Russia's economic and foreign policy. EU dependency on Russia appears to be growing due to rising energy imports, and energy is likely to occupy a central role in the EU-Russia dialogue in the foreseeable future.

Russia is a globally important oil and gas producer

As a non-member of OPEC, Russia has increased its oil production significantly in recent years. During 1998–2005, Russia's oil output growth accounted for almost 40% of the increase in world oil supplies. After Saudi Arabia, Russia is the second largest oil producer in the world. In 2005, Russia accounted for 12.1% and Saudi Arabia for 13.5% of total world oil production. Russia's known reserves, however, are much smaller than Saudi Arabia's and its oil industry is still in many respects underdeveloped. Russia's known oil reserves account for only 6% of the world's known reserves, while Saudi Arabia's account for 22% (Table 1).

After the collapse of the USSR, oil production in the former Soviet states declined significantly throughout the early 1990s. Following the 1998 financial crisis, Russian oil production started to climb again. In fact, production has increased by over 50% since 1999. Since the end of 2004, however, production growth has slowed down. In 2005, Russia's oil production was 9.6 million barrels per day (bpd), which was still less than during the peak years of the Soviet era, and it grew by less than 3% year-on-year.

Russian oil exports are now at a much higher level than during Soviet times. As domestic demand decreased sharply throughout the 1990s, Russia has managed to increase its crude oil exports much faster than its production. In 1999–2004, exports grew on average by two-digit numbers annually, but, as with

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Table 1.

The 10 countries with the largest oil reserves in the world, end of 2005

Largest oil reserve	*Reserves (billion barrels)*	*Share of reserves, %*	*Production 2005 (million bpd)*	*R/P (years)*
Saudi Arabia	*264.2*	*22.0*	*11.0*	*65.6*
Iran	*137.5*	*11.5*	*4.0*	*93.0*
Iraq	*115.0*	*9.6*	*1.8*	*>100*
Kuwait	*101.5*	*8.5*	*2.6*	*>100*
United Arab Emirates	*97.8*	*8.1*	*2.6*	*97.4*
Venezuela	*79.7*	*6.6*	*3.0*	*72.6*
Russian Federation	***74.4***	***6.2***	***9.6***	***21.4***
Kazakhstan	*39.6*	*3.3*	*1.4*	*79.6*
Libya	*39.1*	*3.3*	*1.7*	*63*
Nigeria	*35.9*	*3.0*	*2.6*	*38.1*

Source: British Petroleum (2006).

production, a change occurred at the end of 2004. In 2005, export volume actually fell to 5.1 million bpd, a 2% decrease year-on-year.

Russia also produces oil products, although there is little refining capacity in the country. Refining declined sharply after the fall of the Soviet Union and then started to develop slowly after 1998. The quality of processing is also low. While Russia accounted for 12% of world oil output in 2005, its share of refining capacity was only 6%. Most of its refined products are consumed domestically, only a third being exported.

Russia's domestic consumption of oil has fallen from the Soviet period. It is now approximately 60% of what it was as recently as 1992, due to the general output decline in the 1990s and the restructuring of infrastructure inherited from the Soviet Union. The share of oil in energy production has decreased. Currently, domestic consumption is increasing slowly, at an annual rate of 1–2%.

Russia holds the largest natural gas reserves in the world

In 2005, Russia held more than a quarter of the world's total reserves of natural gas (Table 2). In contrast to oil, Russian gas reserves are expected to last a long time (see R/P ratio in Table 1 and Table 2), some 80 years at current production levels, despite the fact the vast majority of gas is extracted from three giant Siberian fields (Medvezhye, Urengoy and Yamburg), at least two of which have already passed peak production. In terms of production, Russia accounted for 22% of the world total in 2005.

Russia is also the world's largest consumer and exporter of natural gas. Approximately two thirds of gas produced is consumed in the domestic market, at regulated prices far lower than those at which gas is sold abroad. Residential and industrial sectors demand an almost equal share of the gas used in Russia, with transport as the third major consumer. Gas is also the most important fuel in electricity production in Russia. In the future, natural gas is expected to become ever more significant domestically, as the share of gas in Russian total primary energy supply is forecast to rise from 52% in 2000 to 56% in 2030 (IEA 2004).

Table 2.

The 10 countries with largest natural gas reserves in the world, end of 2005

Largest gas reserve	*Reserves (trillion m^3)*	*Share of reserves, %*	*Production (billion m^3)*	*R/P (years)*
Russian Federation	***47.8***	***26.6***	***598.0***	***80***
Iran	*26.7*	*14.9*	*87.0*	*>100*
Saudi Arabia	*6.9*	*3.8*	*69.5*	*99.3*
United Arab Emirates	*6.0*	*3.4*	*46.6*	*>100*
USA	*5.5*	*3.0*	*525.7*	*10.4*
Nigeria	*5.2*	*2.9*	*21.8*	*>100*
Algeria	*4.6*	*2.5*	*87.8*	*52.2*
Venezuela	*4.3*	*2.4*	*28.9*	*>100*
Iraq	*3.2*	*1.8*	*–*	*>100*
Kazakhstan	*3.0*	*1.7*	*23.5*	*>100*

Source: British Petroleum (2006).

In the Soviet past, Russian gas exports mostly went to Eastern Europe. Today, the focus has shifted to the EU countries and Turkey, which bought 80% and 12%, respectively, of Russian exports outside the CIS in 2005. The remainder went to non-EU European countries. World energy consumption is forecast to lean more to natural gas in the future. As Russia realises some or all of its current export infrastructure development plans (see Box), exports may become less concentrated on the European continent. In the near future, however, EU countries will most likely continue to be the main importers of Russian gas.

Oil and gas in the Russian economy

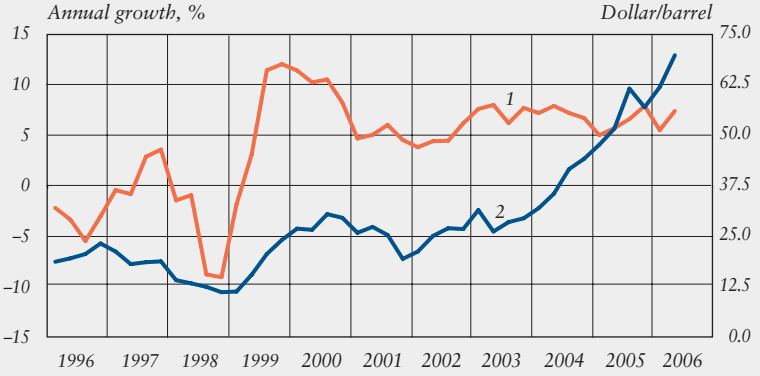
The oil and gas industry is of crucial importance to the Russian economy. The increase in world oil prices since 1999 has accelerated Russia's GDP growth during the present decade. According to an estimate made at the Bank of Finland, a 10% permanent increase in international oil prices is associated with a 2.2% increase in the level of Russian GDP (Rautava 2004). The world market price for oil has risen over six fold from 1999 to mid-2006 (Chart 1).

According to the Russian government, the energy sector actually accounted for about 30% of Russian GDP in 2005. Oil and gas exports accounted for 56% of Russia's total export income in 2005 and grew by almost 50% year-on-year. The employment effect is, however, much smaller. According to Rosstat, in 2005 only 1.6% of the employed worked in the mineral extraction sector, mostly in hydrocarbons.

As oil prices have continued to grow rapidly, export revenues have also grown rapidly since 1999. In the

Chart 1.

Russian GDP growth and international oil prices 1996–2006



1. Russian GDP growth, % (left-hand scale)
2. Oil price (Brent), dollar/barrel (right-hand scale)

Sources: Rosstat and Bloomberg.

first nine months of 2006 oil export revenues increased by nearly a third from a year earlier and accounted for 46% alone of the total value of exports. At the same time, gas export revenues have also significantly increased due to export price hikes. They grew by over 40% compared to the corresponding period in 2005. The growing export incomes are fuelling the economy with liquidity and keeping the current account in surplus (Chart 2). In the first half of 2006, the current account showed a surplus of USD 57 billion, or 13% of GDP, making it among the largest surpluses in the world. Russia is thus a major financer of global deficits.

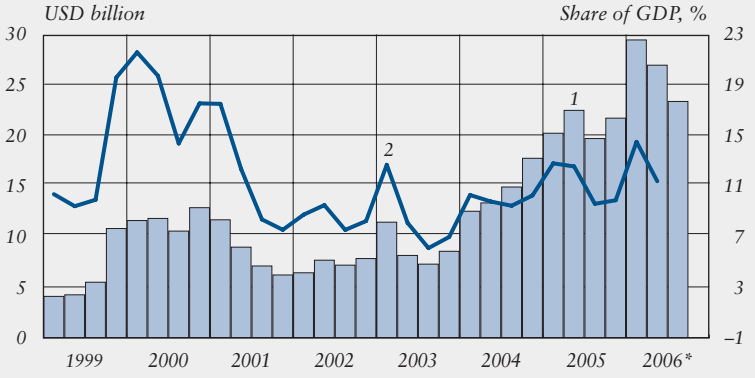
The sizeable export revenues have boosted Russia's foreign exchange reserves, which stood at USD 261 billion at the end of September 2006. Moreover, about half the federal budget revenues are currently from oil and gas. In order to neutralise liquidity flows, Since the beginning of 2004, Russia has been accumulating a Stabilisation Fund by high taxation of the oil sector. At present, the effective marginal tax rate on crude oil exports is approximately 90%.[1] The Stabilisation Fund has grown rapidly and at the beginning of October stood at USD 71 billion. It currently equals approximately the Russian federation's total external debt (Chart 3).

Although Russia has sterilized excess liquidity by different means, inflation remains high. Annual

[1] The Russian oil sector is taxed heavily through different schemes. On top of general taxes (eg VAT, profit tax and social tax) there are four sector-specific taxes for oil. Firstly, there is the mineral resource extractions tax, which taxes oil extraction. Secondly, there is the crude oil export duty, which is progressive with respect to Urals oil prices. Thirdly, there are export duties on petroleum products, which are adjusted every third month. Finally, there are excise duties charged on gasoline, heating oil and motor oil. A large proportion of oil sector-specific tax revenues are deposited in the Stabilisation Fund.

Chart 2.

Russian current account surplus 1999–2006



1. Value, USD billion (left-hand scale)
2. Share of GDP (right-hand scale)
* Third quarter 2006: preliminary estimate
Sources: Rosstat, CBR and MinFin.

inflation in 2005 was 10.9%; in September 2006 it had come down to 9.5%, partly due to the small appreciation in the nominal exchange rate. Rising prices for housing, petrol and certain foodstuffs also added to inflation last year. The rouble's real effective exchange rate in January–September gained 8.1% year-on-year and is forecast to appreciate further.

Limits of Russian oil production and exports

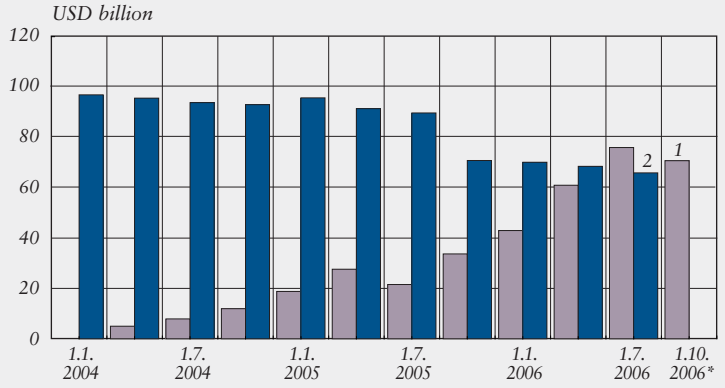
Russia's oil production is likely to stay at its current high level in the near future, but there is a great deal of scepticism over whether Russia can continue as such a large oil producer in the long term. In the first place, although Russia is the second largest producer of oil at the moment, it is only seventh in terms of known reserves (see Table 1). In terms of its reserve-production ratio, Russia scores much lower than the other major producers. At the current rate, Russia would empty its known reserves in 22 years. However, most experts believe that Russia's actual oil reserves are much larger, as the geological research available was conducted mainly during the Soviet era.

The majority of known oil reserves are located in the Ural Federal District, where they are easy to access. Undiscovered oil reserves are expected to be concentrated more in the Siberian and Far Eastern Federal Districts, where the oil is also deeper in the ground. As oil wells in the Ural Federal District are drying up, oil companies are forced to look for new wells in more remote locations, but so far they have not been keen on investing in exploitation to any considerable extent.

Secondly, investments in oil production have declined in the last few years. Most private producers have focused solely on exploiting

Chart 3.

Stabilisation Fund and federal government external debt



1. Stabilisation Fund
2. Federal government external debt
**Russia reduced its Paris Club Soviet era debt by USD 23 billion from the stabilisation fund in August.*
Sources: CBR and MinFin.

The government does not trust the ability of the private sector to manage the oil companies in the national interest.

current fields. Much of the drilling is still based on Soviet-era technology, which can be up to 30 years old, and needs to be replaced in order to increase productivity. According to the International Energy Agency, Russia urgently needs to modernise its oil production capacity: the Agency estimates that the oil sector needs roughly USD 14 billion annually to keep up with the modest growth projected in the country's energy strategy. Many specialists have also warned that Russia is at risk of a production crisis in the future due to the dearth of investment in geological research.

Thirdly, recently increased state involvement in the energy sector casts doubts on the investment climate and market rules in the sector. The government has increased the tax burden on natural resources (especially oil) while the price of oil has been high. Tighter and more progressive tax schemes for the export of both crude oil and oil products entered into force in 2004 and are being revised in autumn 2006, which is likely to strengthen state control of natural resources and increase tax revenues even further. However, the introduction of tighter taxation seems also to have reduced oil companies' interest in investing and especially in striving for increased exports, despite the current high world market price for oil.

The increased state involvement can also be seen as the government's response to some of the threats to oil production. It seems that the government does not trust the private sector's ability to run the sector in the public interest, ie to increase long-term investment, boost export growth, and provide abundant tax revenue.

The question remains as to whether increased state involvement is good for the oil sector. It could increase investment in exploration and development, which private companies have so far largely neglected. The involvement has also increased tax revenues. However, it can also have many negative consequences. The tax claims against Yukos were selective and are widely regarded as politically motivated, although other oil companies (eg TNK-BP and Sibneft) also received smaller charges for tax arrears. Many observers have noted how selective law enforcement in Russia can be and how it increases uncertainty for all business in Russia.

Finally, the question of foreign involvement in Russian oil business needs to be highlighted. Increased state involvement in the sector has included protectionist characteristics. Natural resources are seen as a Russian national treasure, or strategic sectors, and the government has become less amenable to foreign companies exploiting them. However, the government is also fully aware of the fact that only a few Russian companies have enough capital, and

the required technology, for the investment needed to develop the oil sector. Therefore some albeit limited foreign involvement seems to be accepted.

Official statistics and estimates show that the growth in oil production is slowing down. However, the assumed decrease in growth in the longer term varies widely. The Russian energy strategy approved by the government envisages moderate growth up to 2020, while one of the most pessimistic views was expressed by the energy consultancy agency Wood Mackenzie (Chart 4). It expects Russian oil production to actually decline after 2010, based on its pessimistic prognosis for investment in production facilities and new exploration.

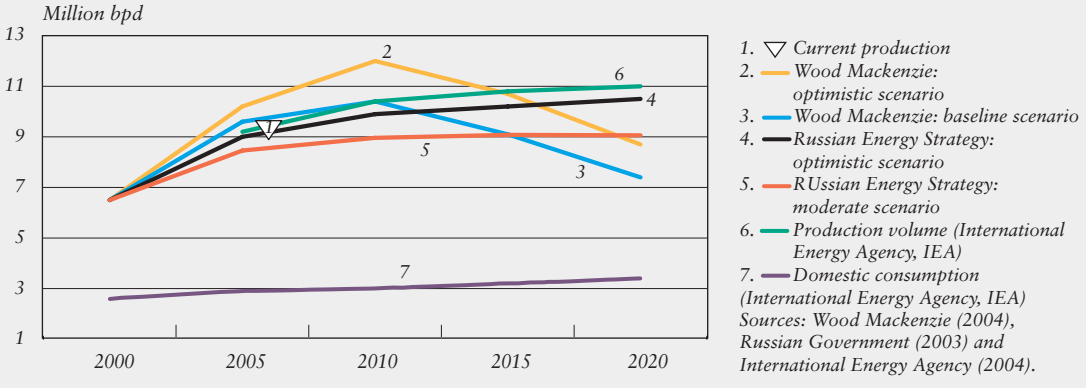
While production is still forecast to increase, domestic demand is estimated as increasing more slowly. According to the government's energy strategy up to the year 2020, Russia aims to fulfil its primary energy demand mainly through coal and gas, keeping the share of oil stable.[2] Russian domestic demand for oil is calculated at 3.0 million bpd for 2010, 3.4 million bpd for 2020 and 4.0 million bpd for 2030. The annual increase in demand for oil is thus 1.6% in 2002–2030, with the main increase in consumption coming from the transport sector. This demand, though rising, is still low compared to demand in the Soviet era.

In its economic projections up to the year 2015, made in late 2005, the Russian Ministry of Economy forecasts both oil and gas exports as growing by less than 10% over the next 9 years. The reasons for this low

[2] In the short run, the government plans to meet primary energy demand largely though nuclear power, but the projected increase for 2000–2030 is very small compared to gas and coal.

Chart 4.

Long-term oil production scenarios



1. *Current production*
2. *Wood Mackenzie: optimistic scenario*
3. *Wood Mackenzie: baseline scenario*
4. *Russian Energy Strategy: optimistic scenario*
5. *RUssian Energy Strategy: moderate scenario*
6. *Production volume (International Energy Agency, IEA)*
7. *Domestic consumption (International Energy Agency, IEA)*

Sources: Wood Mackenzie (2004), Russian Government (2003) and International Energy Agency (2004).

rate of growth include, firstly, slow production growth. Secondly, domestic demand is on the rise, albeit slowly. Thirdly, there will be less crude oil to export as more oil and gas are gradually be refined domestically (Chart 5).

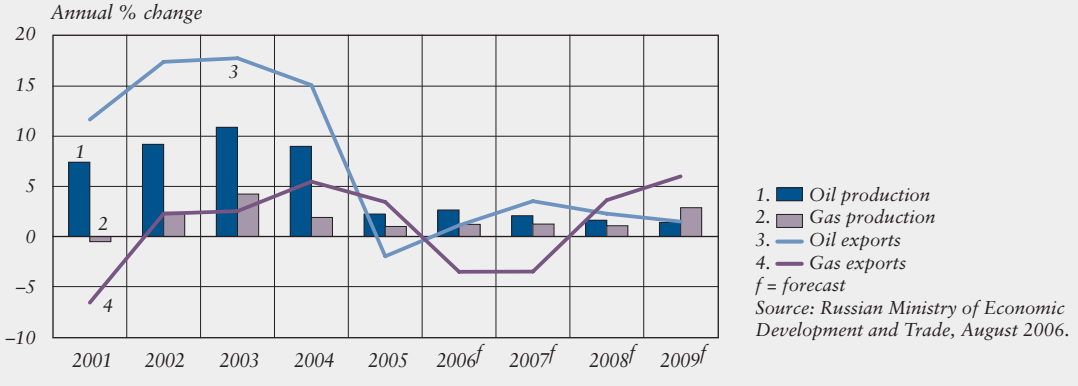
Today, Europe is Russia's largest oil export market, and Russian oil accounts for roughly a third of the European Union's oil imports. Russia has clearly stated that it wants to diversify its oil trade by increasing its exports to other areas. This aim is revealed in plans to construct new pipelines to the Pacific Ocean and to Murmansk. According to the Ministry of Industry and Energy, Russia aims to export roughly a third of its oil outside Europe in the future. In 2004, the share was only about 7%. This aim, and the fact that Russia's export growth is declining, suggests that Russia's oil reserves will not be as significant a source for Europe's increased energy needs as in recent years.

The lack of export capacity, especially in state pipeline-monopoly Transneft's network, has boosted train and river exports in the last few years. In 2004, pipelines accounted for 60% of crude oil exports, while 33% was exported by rail. The pipeline network has expanded little since the collapse of the USSR, and most of the work has been aimed at reducing bottlenecks. Table 3 shows the expansion plans for the Transneft network presented at the end of 2004 by the Ministry of Industry and Energy.

To increase capacity and get around the bottlenecks in the Bosphorus straights and the Friendship pipeline through Ukraine to Europe, the government has planned some alternative export routes. The first new oil terminal was built at Primorsk on the Gulf of

Chart 5.

Russian oil and gas production and export volumes 2001–2009



Finland. The adjacent Baltic Pipeline System is already running at full capacity. The Primorsk terminal is currently the largest oil exporting harbour for Russian oil.

The Russian government has also pushed ahead with its plan to extend the present pipeline grid eastwards. At the end of 2004, it announced its decision to construct an oil pipeline stretching over 4,100 kilometres from Taishet in eastern Siberia to Nakhodka on the Sea of Japan. The planned capacity of this pipeline is about 1.6 million bpd, which corresponds to nearly a third of Russia's current crude oil exports. The government is also considering building an offshoot from the Taishet-Nakhodka pipeline to China. A pipeline from western Siberia to the Kola peninsula (Murmansk) has also been discussed. This project would significantly reduce the cost of transport from Russian oil fields to the American market. It is, however, unclear whether this pipeline is still included in present plans.

Potential gas production and export growth

According to the national energy strategy, natural gas production is expected to increase from 598 billion cubic metres (bcm) in 2005 to 730 bcm under the optimistic, and 680 bcm under the pessimistic, scenario by 2020. Even in the optimistic case, the annual average growth rate of Russian natural gas production from 2002 until 2020 would be only 1.4%.

The monopoly position of Gazprom is one reason for the pessimistic near-term growth projections. Critics have long called for restructuring of this company giant, currently one of the 10 biggest in the world judged by market

Table 3.

Planned capacity of Transneft export pipeline grid, 2003–2020, volumes in millions of bpd

Transneft export pipelines	*2003*	*2005*	*2010*	*2015*	*2020*
Primorsk terminal (BPS)	*0.6*	*1.2*	*1.2*	*1.2*	*1.2*
Baltic and Polish terminals	*0.1*	*0.3*	*0.3*	*0.3*	*0.3*
Ukraine-Europe (Friendship)	*1.3*	*1.3*	*1.3*	*1.3*	*1.3*
Black Sea grid	*1.3*	*1.3*	*1.3*	*1.3*	*1.3*
Caspian Sea grid	*0.4*	*0.6*	*1.3*	*1.3*	*1.3*
Taishet to Nahodka			*0.6*	*1.0*	*1.6*
Western Siberia to Murmansk				*1.0*	*1.6*
Total	***3.7***	***4.7***	***6.1***	***7.5***	***8.7***

Source: Ministry of Industry and Energy.

The present infrastructure will probably be unable to cope with a major increase in gas exports.

capitalisation, but any serious effort by the Russian government to actually take up this task is yet to be seen. Furthermore, due to subsidised gas and electricity prices at home, Gazprom faces inadequate cash flow for any large infrastructure improvements. Thus, a serious lack of restructuring and investment plagues efforts to increase gas exports to any considerable extent.

Although arguments here also vary, the current infrastructure probably cannot handle any sizeable increases in export volumes of gas either. Any new infrastructure will take years and resources to build, although there are a number of plans in existence (see Box for a list of projects). To this we should also add the cost of ships suitable for LNG transportation, plus the costs for the purchasers of building the re-gasification facilities at the receiving end.

Furthermore, the new planned export capacity would have to be filled with gas not shown in the official production growth estimates. The new export pipeline plans listed in Box together indicate the need for up to 135–155 bcm of additional gas annually. There are also uncertainties even in those projects that have already proceeded the farthest. For instance, the North European Gas Pipeline between Russia and Germany would pass through the economic area of Finland and Sweden, implying that an environmental impact evaluation has to be conducted and approved before anything can be built. Sweden, in particular, has expressed its intention to scrutinize the proposal closely.

According to the US Energy Information Agency, all major consumers (including the EU, the US, India and China) expect to increase their consumption and import of gas in the next two decades. World consumption of natural gas is expected to increase by nearly 70% from 2002 to 2025. At the same time, total former Soviet Union demand and production are both forecast to grow slightly over 2% annually. Globally, Qatar, Algeria, Iran and Russia are expected to provide most additional gas. Qatar alone should account for almost one quarter of the increase in the inter-regional gas trade between 2004 and 2030, Russia for less than 10% (IEA 2006).

Implications for energy supply in Europe

High oil price and supply uncertainties have led to many countries trying to diversify their energy sources and in the long term decrease their demand for oil. Though the recent oil price peak is also being driven by supply uncertainties, the price is basically being driven by the rapid growth in consumption of both emerging markets like India and China and traditional markets. World supply of crude oil grew by only 1% in 2005. In fact, the fastest growth

Box.

Planned oil pipes

1. **Baltic pipe, 2nd phase (Energy strategy 28 August 2003)**
   - 1st and 2nd phase together 62 million t/ year
   - ready in 2006
2. **West Siberia – Kola peninsula (Energy strategy 28 August 2003)**
   - to the US market
   - 2,800–4,000 km
   - 120 million t/year (80 million t/year by 2020)
3. **East Siberia – Pacific Ocean ESPO**
   - to Japanese and Far East markets
   - 4,200 km
   - 50 million t/year
   - ready by 2010
4. **East Siberia – Daqing (China)**
   - 2,100 km
   - 30 million t/year
   - ready by 2010
5. **Combining Druzhba and Adria pipelines**
   - adds export capacity to the Mediterranean by 15 million t/year

Planned gas pipes

6. **Russia – Turkey 'Blue Stream'**
   - Gazprom, ENI
   - 1,200 km
   - is ready
   - capacity by 2010 from the current 4.5 to 16 bn m3/year
7. **North-European Gas Pipeline NGP**
   - Gazprom, BASF, E.ON; contract 8 September 2005
   - 1,200 km
   - 27.5 bn m^3/year
   - ready by 2010
8. **NGP 2nd phase**
   - 27.5 bn m^3/year
   - ready by 2013
9. **West Siberia – China (RBK 3 August 2006)**
   - Gazprom, CNPC; contract 21 March 2006
   - 3,000 km
   - 30–40 bn m^3/year
   - ready by 2011
10. **East Siberia – China (Jamestown 31 March 06)**
    - Gazprom, CNPC; contract 21 March 2006
    - 30–40 bn m^3/year
    - ready by 2011
11. **Russia – Serbia (Turkish Daily News 29 July 2006)**
    - Gazprom, Srbijagas
    - 400 km
    - 20 bn m^3/year

At present, 38% of energy consumption in the EU is based on oil, and this figure is expected to remain more or less unchanged between now and 2025.

was in the former Soviet states, and especially Russia. Despite the significant recent slowdown in production growth, Russia still has a role to play in increasing the world supply of oil.

According to the US Energy Information Agency, the world consumption of oil is expected to increase by 34% from 2004 to 2025 (EIA 2006). The situation is different in Europe. Currently, 38% of EU energy consumption is based on oil, and in 2025 the forecasts assume the share will remain largely the same. Oil consumption in the 25 EU countries (EU25) is estimated by the Commission as growing only by 3% in the whole period 2005–2025 (EUCOM 2005).

Norway, the second largest oil provider to the EU25 after Russia, faces declining production levels. Norwegian oil production has decreased an average 3% annually in 2002–2005. Libya and Saudi Arabia (3rd and 4th largest providers of oil for the EU25), have increased their production by 4.7% and 4.6% annually in the same period. As North Sea oil production has reached its peak, EU oil imports will grow faster than consumption in the future. It is hard to say what will happen to Russia's share of EU imports, but it will probably not change much. But Russia is clearly not an inexhaustible source of oil.

Western Europe's reliance on imported gas is projected as growing from a third of total gas consumption to 50% by 2025. EU25 gas consumption is projected to grow by 39% in the period 2005–2025 (EUCOM 2005).

In western Europe, plans to rely on producers whose gas would need to be imported in liquefied form are constrained by the necessary infrastructure investments in LNG terminals and special ships, and also burdened by security and environmental risks. In addition to the EU, countries such as the United States, China, India and Japan will also be competing for the same supplies. Some growing gas producers pose major political risks compared with Russia.

Many infrastructure projects have been suggested. On one hand, there is a perceived need to reduce dependency on Russia in energy transports from Central Asia. On the other hand, Russia wants to decrease its dependency on transit countries. At the same time Gazprom, while keen to maintain its monopoly transit position in Russia, has a commercially natural but in many eyes politically problematic goal of extending downstream, both to control pipelines and, increasingly, to enter retail markets. If at all, the liberalisation of entry to Russian pipelines and Gazprom's entry downstream can be achieved as parts of the same solution.

There is no world market price for gas, which is not a fungible commodity. Russia has through

Gazprom maintained price discrimination, based both on purchasers' wealth and, at least previously, on political considerations. Generally, new EU member states have paid less than the old ones. This seems to be changing, which has consequences both for cost levels and for the perceived need to diversify supplies.

Investment needed in the entire energy sector

Though often lumped together, the oil and gas sectors differ a great deal. The oil sector is larger and more export-oriented. It brought in 46% of all export revenue in the first half of 2006, while the gas sector brought in 14%. On the other hand, Russia's oil reserves are smaller relative to production than its gas reserves, which are the largest in the world. Well managed, the gas sector's significance in the economy will increase.

Despite recent developments, the oil sector remains to a large extent privately owned, while the gas sector is nearly fully state owned. After a steep decline in the 1990s, oil sector volumes grew rapidly until 2004, while the gas sector, which never experienced a similar collapse, has grown only modestly. The oil sector, producing a fungible commodity, is of global importance, while the gas sector is of importance for regions close to Russia. The emergence of LNG will change this only slowly.

Russia's energy is and will remain important for the European Union. For both oil and gas, Russia is the largest provider to the EU25, which has benefited from the increases in Russian oil and gas exports during the last decade. For oil, if the need is perceived, diversifying supplies is in practice easier and cheaper than for gas, due to the different infrastructure requirements.

Well managed, the gas sector's importance in the Russian economy will increase.

The Russian side of the equation also holds potential problems. Crude output is expected to grow modestly at best, while – barring very major improvements in domestic energy efficiency – domestic consumption will increase. It is not self-evident that Russia will increase its export volumes of crude oil, at least significantly. The sector badly needs investment. For close on the last twenty years, the Russian oil industry has generally focused on production – rather than development and exploration – due to the unstable investment climate, political instability and high taxation of oil. This lack of upstream investment has had a negative effect on the medium and long-term development of the oil sector. There are doubts about the sustainability of even current Russian oil production, as reflected in the reserve to output ratios mentioned above. There are also immediate-term problems with developing the pipeline network. Oil companies have often complained that the existing pipeline monopoly places heavy constraints on their export potential.

The doubts are somewhat similar for the gas sector. The sector

Gazprom will continue to put pressure on international prices.

is dominated by a state monopoly, Gazprom, whose track record and prospects have been much debated. According to one view, Gazprom prevents market reforms in the sector and uses its monopoly position ruthlessly, for either economic or political goals. Another view sees Gazprom as having improved its corporate management and argues that it is not at all evident how the potential liberalisation of the sector might proceed. It is also politically difficult to raise domestic gas prices, where most gas is sold. Even for its own corporate interest, Gazprom will therefore continue to put pressure on international prices. The gas sector too, is suffering from a serious lack of investment. And even if production were to increase, transit will continue to raise a variety of problems. Though Russia's aim to diversify its export markets – and to move downstream – is economically justified, it poses a number of problems, not least for the largely gas-based energy strategy in terms of which EU countries have generally been thinking.

There is no doubt that EU-Russia energy relations will remain on the agenda. One forthcoming decision is over the degree to which gas should be treated as a commodity among others, best left for market operators to handle, or if it would be wiser to increase the political character of energy markets further and aim at a situation where the EU would be a single operator, negotiating directly on prices, volumes and investment. Where might the required competencies lie? How realistic would it be, given the differences in endowments, inherited infrastructures and well-established policy goals, to aim at a common energy policy that would reach beyond some regulatory and infrastructural harmonisation?

Russia has benefited greatly from recent energy prices, both economically and politically. The world has also benefited from recent growth in Russia's hydrocarbon production, especially oil. Overall, Russia has managed its newly-emerging wealth well so far. Both Russian manufacturing and service production are now growing faster than energy extraction. Hydrocarbon production is expected to continue to grow modestly at most. This tends to depress aggregate growth, while perhaps putting it on a more robust foundation in the long run.

Keywords: energy, oil, natural gas, Russia, EU

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