Russia's Energy Sector in the Wake of the Financial Crisis

Economic policy failings and the falling price of oil on world markets were among the main factors that led to Russia's financial crisis in August 1988 and to the drastic devaluation of the rouble. At first sight, the Russian energy sector appears to have escaped the negative repercussions of the crisis, as the devaluation of the rouble reduced the costs – expressed in US-dollars – of the export-oriented energy companies. Closer analysis reveals, however, that additional burdens have been imposed on the energy sector in the wake of the crisis. Energy companies have been obliged to pay special charges and duties as a way of financing cash-strapped government budgets. At the same time, the problem of the failure by consumers to pay their energy bills has worsened. The energy sector has been forced to carry the can for economic policy failings, such as the inadequate liberalisation of energy prices and the lack of progress made in deregulation. These problems are exacerbated by the decision-making log-jam between government and parliament, and the inappropriate economic-policy parameters, which serve, not least, to hamper foreign investment. This is the environment in which the energy companies are seeking to hold their own. Those companies that began to consolidate their production and organisational structures before the financial crisis, and have drawn up a long-term development strategy – examples include Gazprom, Lukoil and Surgutneftegaz – are at an advantage in this situation. While in the course of this adjustment process it may be necessary even for these companies to cut output, the majority of companies face a continuation of the sharp decline in output, job losses and in some case even liquidation.

Export activity has not been affected by domestic instability. In 1998 export volumes remained at the previous year's level. As in earlier years, exports to CIS countries, which are in arrears with their payments to Russia, were cut back, while those to non-CIS countries were expanded. However, any further increase in exports to western Europe will be limited, given the fact that transport capacities are almost fully utilised in the short run and prices remain low. Even so, in the longer run Russia will probably be able to maintain its present position on west European markets; currently the EU purchases 13% of its petroleum imports and 35% of its natural gas imports from Russia.

Economic importance and position of the energy sector

Macroeconomic importance

The importance of the energy sector for the Russian economy as a whole has increased during the 1990s. Whereas GDP fell by almost one third, and industrial output by more than one-third, between 1992 and 1998, the loss of output in the energy sector over the same period – one-quarter – was significantly less serious. Consequently, the energy sector has increased its contribution to industrial output from rather more than one-fifth in 1992 to over 30% in 1998.

The energy sector has traditionally played an important role in foreign trade, in the past around 40% of export earnings were derived from sales of energy. Following the rise in prices during the mid-1990s, export receipts from petroleum and natural gas, alone, rose to around 44% of the total in 1996 and 1997 (around US-$ 38 billion). Following the fall in prices in 1998 – the price of Russian crude oil on the spot market fell from an average of US-$ 19.1/barrel (1997) to US-$ 12.76/barrel – export earnings declined by more than one-third to around US-$ 28 billion (cf. table 1), as it proved impossible fully to offset the drop in prices by expanding the volume of exports. This trend continued during the first two months of 1999; in the spring signs of a price recovery were observed at times.

The customs duties, taxes and other charges paid by the energy firms make a substantial contribution to government revenues. According to oil industry figures, the sector contributed a rising proportion (1994: 6%, 1998: 20%) to the revenue of the consolidated budget. However, these figures include the proceeds from the sale of state shares in energy companies, which have risen in recent years. In order to reduce the extent of tax arrears in the oil industry and to induce the oil companies to pay their taxes on time, since the summer of 1998 the export volume of oil companies owing tax dues has been cut to a corresponding extent. However, taxes and contributions are of declining importance for public finances, whereas the relative weight of customs duties (export tax) is rising. In 1998, for instance, total customs duties paid amounted to only around 5% of federal revenues; however, following the introduction of variable export duties for exports of energy products at the start of 1999,[1] the figure rose to around one-third in the first quarter of 1999 (according to provisional data). Overall, the state of public finances is heavily dependent on the

[1] The customs duty was set at 2.5 euro/tonne of crude oil at a world market price of between US-$ 9.8 and 12.3 per barrel, and 3 euro/tonne at a price above US-$ 12.3/barrel. Because the price fell below US-$ 9.8/barrel, imposition of the duty was suspended in March 1999.

Table 1

Export Earnings from Petroleum and Natural Gas

US-$ billions

Region	1994	1995	1996	1997	1998*
			Crude oil		
CIS countries	1.9	1.9	1.9	1.8	0.7
Other countries	9.6	10.4	14.1	13.0	9.6
Total	11.5	12.3	16.0	14.8	10.3
			Petroleum products		
CIS countries	0.7	0.5	0.4	0.4	0.6
Other countries	3.4	4.4	7.1	6.7	3.6
Total	4.1	4.9	7.5	7.1	4.2
			Total petroleum		
CIS countries	2.6	2.4	2.3	2.2	1.3
Other countries	13.0	14.8	21.2	19.7	13.2
Total	15.6	17.2	23.5	21.9	14.5
			Natural gas		
CIS countries	3.8	3.6	5.0	5.7	.
Other countries	7.9	9.8	10.8	10.7	.
Total	11.7	13.4	15.8	16.4	13.3
			Petroleum and natural gas		
CIS countries	6.4	6.0	7.3	7.9	.
Other countries	20.9	24.6	32.0	30.4	.
Total	27.3	30.6	39.3	38.3	27.8

* Provisional.

Sources: Goskomstat, Russian Economic Trends, various editions.

situation on the energy markets, both at home and abroad.

Production, consumption, exports

In the course of transition, primary energy consumption has contracted less severely than total economic output; thus Russia's energy intensity, already high by international standards, has increased further. In the short to medium term, domestic demand for energy will not rise to any significant extent, not least in view of the unfavourable growth prospects for the Russian economy. Even if the economy were to pick up, the associated modernisation would mean that primary energy consumption would not initially rise.

Natural gas is now the most important source of energy, accounting for over 50% of primary energy consumption (cf. table 2). Total primary energy output reached its highest level in the Russian Republic in 1988; 569 million t of petroleum and 590 billion m^3 of natural gas (cf. table 3). Since then primary energy output has fallen continuously, at least until 1998, when slight growth was recorded. In that year coal output continued to fall, whereas the output of electricity from hydroelectric and nuclear power stations, and the output of petroleum products stagnated at the previous year's level. The production of natural gas rose strongly, reattaining the level recorded at the end of the 1980s. Investment in the energy sector continues to decline. In the electricity industry investment fell by around 8% in 1998; in the coal-mining, natural gas and petroleum industry as a whole by as much as 16%. Hence there are no grounds for expecting a rapid modernisation of the outdated capital stock, nor a marked increase in production capacity.

In volume terms, exports reattained the level recorded in the early 1990s as early as 1997. There was no significant further rise in the export volume in 1998, however (cf. table 4). Exports of coal and electricity are relatively insignificant. Petroleum and natural gas remain the most important export goods. Here, the regional distribution of the volume of exports continues to follow the pattern observed since the start of transition: exports to the other successor states to the Soviet Union, which as a group are substantially in arrears with their payments to Russia, are declining, whereas supplies to wealthier non-CIS countries are expanding. In the short run, however, a significant further expansion of oil exports to third countries at the expense of supplies to CIS countries is probably only possible within strict limits, given transport capacity constraints.

The Russian government has committed itself vis-à-vis the OPEC to reduce its export volume from April 1999 by 10 000 barrels per day. Following the policy of expanding output, Russia is now relying on rising prices on international markets. This does not imply a reorientation of energy policy, however. Rather, the prime aim is to consolidate government budgets. In addition to the variable export duty, the government is considering, in the light of higher export prices, raising transport charges by means of an additional levy of US-$ 1.4 per tonne. Officially, this fee is supposed to contribute to financing a new pipeline to north-western Europe. Over the longer term, exports of gas, in particular, are to be increased.

Foreign direct investment

Foreign investment could provide an impulse for an expansion of energy output. Russia has been hesitant to open up the energy sector – which is seen as being of strategic importance – to foreigners. Indeed, as a strategic sector it was initially excluded entirely from privatisation, and the pipeline network was supposed to remain entirely in public ownership. The subsequent decision to sell shares in the energy companies after all was geared primarily to obtaining revenue for government budgets. In some areas the participation of foreign-

Table 2
Primary Energy Consumption by Energy Source

Year	Lignite mill. t	Coal mill. t	Crude oil mill. t	Natural gas bill. m^3	Hydro-electricity bill. KWh	Nuclear power bill. KWh	Total Exa-Joule
1988	152.0	285.2	273.6	437.2	157.0	126.1	38.7
1989	141.5	278.5	276.7	443.7	154.3	128.1	38.7
1990	137.3	264.7	258.7	508.7	161.4	118.3	39.9
1991	130.5	238.7	274.6	539.2	164.2	120.0	40.9
1992	124.5	228.4	233.8	468.4	162.0	119.5	36.4
1993	116.0	207.5	204.5	458.0	175.0	119.1	34.4
1994	105.2	178.6	152.2	432.9	172.4	98.0	30.3
1995	101.0	151.9	147.6	412.8	171.4	99.5	28.7
1996	98.5	152.9	127.0	412.5	176.8	108.8	28.0
1997	94.0	143.4	127.4	379.1	178.1	106.3	26.5
1998*	87.0	134.0	121.0	400.0	179.0	101.0	26.0

* Provisional.
Sources: Goskomstat.

Table 3
Primary Energy Production by Energy Source

Year	Lignite mill. t	Coal mill. t	Crude oil mill. t	Natural gas bill. m^3	Hydro-electricity bill. KWh	Nuclear power bill. KWh	Total Exa-Joule
1988	152.0	273.5	568.8	589.8	160.9	126.1	56.1
1989	141.5	268.3	552.2	615.8	159.7	128.1	56.0
1990	137.3	257.4	516.2	640.5	166.8	118.3	55.1
1991	130.5	222.9	461.1	643.0	168.5	120.0	52.0
1992	124.5	212.5	396.4	640.4	172.0	119.5	49.0
1993	116.0	189.0	354.4	618.3	175.0	119.1	45.8
1994	105.2	165.7	317.8	607.3	176.9	98.0	43.0
1995	101.0	161.0	307.0	595.0	176.4	99.5	42.0
1996	98.5	156.5	301.0	601.0	173.0	108.8	41.9
1997	94.0	150.0	305.8	570.0	175.0	106.3	40.8
1998*	87.0	143.0	303.0	591.0	176.0	101.0	41.0

* Provisional.
Sources: Goskomstat.

ers remains subject to restrictions. In the natural gas industry, for example, there is a ceiling on foreign shareholdings equal to 25% minus one share of share capital.[2] Overall, foreign investment in the energy sector was of only minor importance in 1998, at US-$ 2 billion or 17% of total foreign investment; not even one-fifth consisted of direct investment.

After considerable delays, in February 1999 the duma accepted a list of mining and drilling areas available for joint working that supplements the legal provisions on the Production-Sharing Agreement (PSA). On this basis a third agreement was signed with a French and a Norwegian oil company, alongside the two existing agreements (Sachalin I and Sachalin II), both of which are still in the implementation phase. However, this does not mean that, for the foreseeable future, foreign investors intend to step up their commitments to the Russian oil industry. Evidently, foreign companies are mainly interested in securing drilling rights and establishing a presence on the Russian market. In view of the still unstable environment and the loss of confidence associated with the financial crisis, there are no grounds for expecting a major influx of foreign investors in the short to medium run.

[2] Foreigners now hold one-third of the shares in the electricity concern EES, despite the fact that in 1998 the duma had adopted a resolution limiting shareholdings to 25% and proposing that corresponding measures be introduced.

Adjustment processes at the micro level

The emergence of a dual structure

The devaluation and the financial crisis have also had a substantial impact at the micro level. For those companies that had taken on debt denominated in foreign currency, the financial situation has deteriorated further. Given that the prices of the various energy products are set administratively, rising costs could not be passed on to the consumer to the full extent. Since 1998 the process of differentiation within the Russian energy sector has accelerated markedly. Two main trends can be observed:

– A (small) group consists of those companies that have largely consolidated their organisational structures and, under the pressure of the financial crisis, have intensified their efforts towards internationalisation and diversification. Examples include Gazprom, the integrated oil companies Lukoil and Surgutneftegaz, and, in the electricity sector, RAO EES Rossii, Mosenergo and Irkutskenergo. Characteristic of these companies, with the exception of those in the electricity sector, is a favourable ratio of export earnings to debt denominated in foreign currency. Their international credit-rating has suffered no lasting damage from the financial crisis, and is far higher than that of the Russian Federation. The

Table 4
Russian Petroleum and Natural Gas Exports

Region	1990	1991	1992	1993	1994	1995	1996	1997	1998*
					Crude oil (mill. t)				
CIS countries	.	104.0	72.8	42.9	32.8	26.1	20.6	17.1	19.2
Other countries	.	56.5	66.2	79.9	95.4	96.2	105.0	110.0	117.9
Total	235.0	161.0	139.0	122.8	128.2	122.3	125.6	127.1	137.1
					Petroleum products (mill. t)				
CIS countries	30.0	23.0	17.5	10.0	8.2	3.5	2.0	2.2	2.6
Other countries	24.0	27.0	25.3	35.1	39.1	44.0	55.0	58.4	51.2
Total	54.0	50.0	42.8	45.1	47.3	47.5	57.0	60.6	53.8
					Total petroleum (mill. t)				
CIS countries	.	127.0	90.3	52.9	41.0	29.6	22.6	19.3	21.8
Other countries	.	83.5	91.5	115.0	134.5	140.2	160.0	168.4	169.1
Total	289.0	211.0	181.8	167.9	175.5	169.8	182.6	187.7	190.9
					Natural gas (bill. m^3)				
CIS countries	140.0	164.0	101.0	75.0	75.0	70.0	68.5	80.0	75.6
Other countries	109.0	83.0	88.0	96.0	110.0	122.0	128.0	120.0	125.0
Total	249.0	247.0	189.0	171.0	185.0	192.0	197.0	200.0	201.0

* Provisional.
Sources: Goskomstat.

ownership structures of the companies are relatively stable, whereby in some cases the state still holds a substantial share of equity.

– The second group of companies, which is far larger in terms of absolute numbers, consists of those firms in which the financial crisis wiped out the progress made until then in attaining economic stability, and which now face enormous structural adjustments. This group is largely composed of firms belonging to financial-industrial groups – but also of those in which the state is the majority shareholder – and which have not been subjected to fundamental reforms in recent years. Examples include the oil companies Jukos and Eastern Oil, Sibneft, Sianco, the state-owned companies Rosneft, Slavneft and Onaco, and also Sibur (gas industry) and most of the regional electricity generation and distribution companies (energos).

In the *petroleum sector*, economic considerations and the maintenance of long-term development prospects are increasingly gaining the upper hand over quantitative parameters as decision-making criteria for firms in the first group. Oil is no longer being pumped out at any price. Unprofitable drillings are being abandoned. Against the background of a further decline in drilling activity, in 1998 the ratio between investigative and production drillings, an important indicator of long-term trends, improved (i.e. the ratio increased). Capacities in higher value-added areas, up to and including the sale of petroleum products, are being developed. As the example of Lukoil shows, Russian firms are increasingly acquiring shares in foreign companies, with the aim of diversifying their portfolios of resources and refinery capacities.

The enterprises owned by financial-industrial groups, on the other hand, have to face up to hasty portfolio adjustments. The state-owned companies lack a clear overall concept and a longer-term strategy set by the ministries. For instance it is unclear whether privatisation in the oil sector will continue or whether the three to four oil companies in which the state still holds the majority of shares will be brought together under the roof of an integrated state holding company.

In the *gas sector* Gazprom is the dominant company, accounting for over 90% of output. The plan, announced years ago, to deconcentrate the vertical structure of Gazprom, splitting it up into independent production entities and a transport company has not been implemented, nor has horizontal restructuring taken place. Foreign shareholding in Gazprom has remained limited, i.e. less than that permitted by law. For the first time, however, a substantial package of shares was recently sold in the form of a 4% stakeholding acquired by the German company Ruhrgas AG.

Additional strategic partnerships with Shell, ENI and BASF/Wintershall are currently being extended. Gazprom has also pushed ahead with its acquisition policy in Europe, purchasing shares in the Interconnector between Great Britain and Continental Europe, for example.

In the *electricity industry* the RAO EES holding company, which is majority state-owned, has a monopoly of the transmission network, owns most of the energos (regional electricity companies) and the largest conventional power stations, and at the same time also functions as a wholesaler. There are only a small number of independent generating and supply companies, including a few of the energos (among others the Irkutsenergo) and the state-owned Rosenergoatom, which runs all the country's nuclear power stations. In a number of regions, especially in western Siberia, attempts are being made to overcome dependence on this holding company and to decentralise the various functions performed by RAO EES.

Financial indicators

The financial indicators of the energy companies do not accurately reflect real trends. Even so, in a number of cases integration into the international financial markets has made evaluation more transparent. The APS Oil and Gas Index, which in March 1998 had been around 350, fell to a low of 60 in October; it began to recover in the spring of this year. Even so, the energy index has performed better than the general Russian share index (e.g. RTS).[3]

Some Russian companies have placed American Depositary Receipts (ADR) on foreign markets. Their prices have recovered, following the collapse in August 1998, to a greater extent than Russian share prices. In international comparative terms, Russian energy concerns are very small. Even taking the maximum values recorded last year as a basis for calculation, the market capitalisation of all Russian integrated oil and gas companies amounted to just US-$ 50 billion. This is equivalent to the capitalisation of a single medium-sized western energy concern.

The discrepancy between the actual financial data and those that might be expected according to western evaluation criteria can be explained by, amongst others, the following factors, although their relative importance is unclear:

- lack of market transparency,
  uncertainty regarding the actual position of the firm,
- uncertainty on the economically viable reserves,[4] and
- a general deduction ("transition deduction") from the share prices, irrespective of the situation in a given sector, reflecting the general uncertainty surrounding economic and political trends (e.g. nationalisation, arbitrary tax policies).

Energy exports to western Europe

In some areas the Russian energy sector plays an important role in supplying Germany and western Europe with energy. In 1998 Russian exports of crude oil and petroleum products represented almost 13% of European union imports of such goods; in the case of natural gas the figure was as high as 35% (cf. table 5). Russian exports accounted for around 26% of German imports of crude oil, 8% of petroleum products and 44% of natural gas. Only in the case of gas can one speak of a substantial import dependence on Russia.

Crude oil and petroleum products

Of total petroleum exports in 1998, around two-thirds consisted of crude oil and one-third of refined petroleum products (diesel, petrol etc.). The devaluation of the rouble has improved the cost position of Russian exports: expressed in US-dollars their costs of production have probably fallen by around US-$ 2 per barrel. Given the slight rise in export prices it must be assumed that at least a proportion of the exports makes sense even against market economic criteria.

A roughly equal proportion of Russian crude oil reaches Europe by pipeline and by rail/ship (cf. figure 1). Contradictory reports exist on transport capacities and the level of capacity utilisation, and in particular on the question whether the main export pipeline is already working close to capacity. The capacities are estimated at 60 million t p.a., with which Hungary (10 million t), Poland (15 million t), the Slovak and Czech Republics (7 million t each) and Germany (20 million t) could be supplied). Among the seaports used, export activity is currently concentrated on the port of Novorossijsk (30 million t), although technical constraints and susceptibility to bad weather mean that it is not always available. Oil is also transshipped via the ports of Vent-

[3] The strongest recovery in share prices – an indication of the relative strength of these companies – was recorded by Surgut and Lukoil. At the start of May 1999 their share prices were at 100% and 62% respectively of their previous year's high.

[4] The 'reserves' reported by Russian companies are larger than those that would emerge from an analysis of the reserves based on western standards.

Table 5
Petroleum and Natural Gas Imports to the EU

	1993	1994	1995	1996	1997	1998
Crude oil (mill. t)	534.7	538.5	526.0	548.0	559.4	582.2
of which: from former Soviet Union						
in mill. t	63.2	71.2	62.7	72.6	75.1	74.0
in %	11.8	13.2	11.9	13.2	13.4	12.7
Petroleum products (mill. t)	187.4	181.6	183.3	188.6	188.1	189.1
of which: from former Soviet Union						
in mill. t	17.8	15.4	17.8	23.9	24.4	24.0
in %	9.5	8.5	9.7	12.7	13.0	12.7
Total petroleum (mill. t)	722.1	720.1	709.3	736.6	747.5	771.2
of which: from former Soviet Union						
in mill. t	81.0	86.6	80.5	96.4	99.5	98.0
in %	11.2	12.0	11.3	13.1	13.3	12.7
Natural gas (bill. m^3)	163.4	170.5	187.1	201.9	206.1	208.2
of which: from former Soviet Union						
in mill. t	33.0	71.2	77.9	75.9	73.7	72.3
in %	20.2	41.8	41.6	37.6	35.8	34.7

Sources: International Energy Agency.

spils (Latvia, 15 million t), Odessa (Ukraine, 10 million t) and Tuapse (5 million t).

In view of the uncertainty surrounding Russian oil export trends and the constraints on financing, the current plans to expand transport capacity must be seen as pie in the sky.[5] On the other hand it would be possible to increase the through-put of the Druschba Pipeline and the export ports with relatively little investment.

The government and the oil industry have announced their intention to increase light-oil products as a share of both refinery output and exports. As far as exports are concerned, Russia is already Europe's largest exporter, alongside the Netherlands (60 million t p.a.), selling between 50 and 60 million t of oil products, with only around 65% of total capacity (268 million t) being utilised. Even so, considerable sums are to be invested in the refineries producing oil products for export.[6] If Russia manages successfully to consolidate its petrochemical industry, it could compete with central and east European countries.

Gas

Russian gas exports to the European Union are split roughly evenly between Germany (35.9 billion m^3 in 1998) and the other EU countries as a group. This makes Russia an important supplier of natural gas for Europe, alongside the North Sea, the Netherlands and North Africa. The devaluation of the rouble reduced the cost of exporting Russian gas by US-$ 10 to 15 per 1 000 m^3. Russian gas exports come almost exclusively from RAO Gazprom.

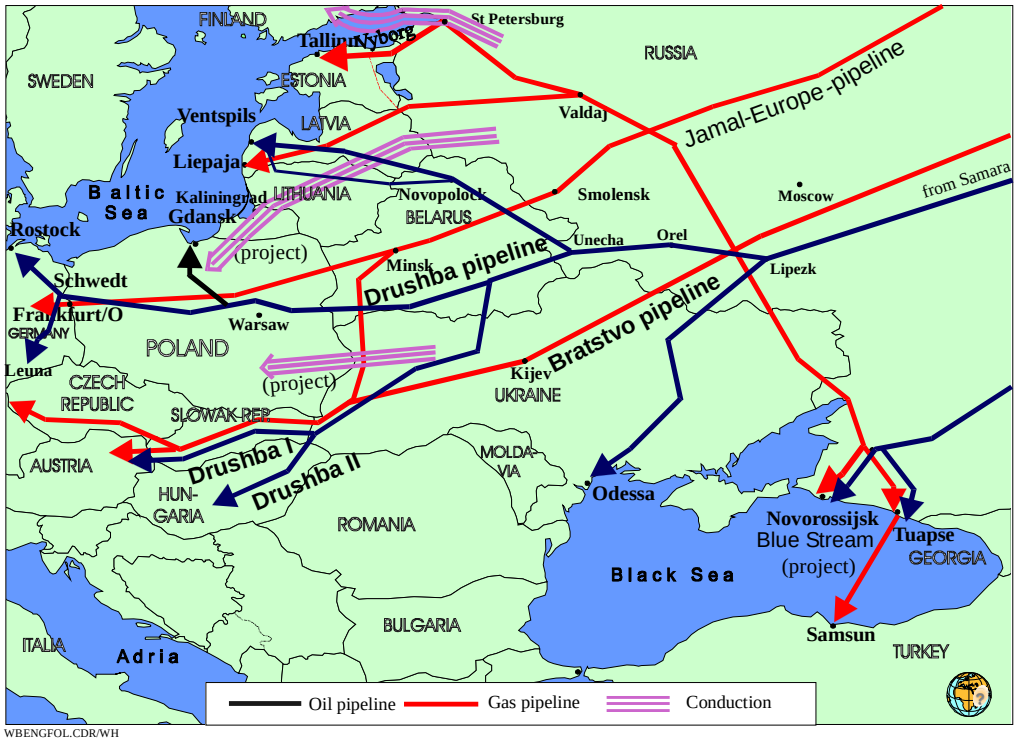
Similarly with the situation with crude oil, question-marks must be placed against export trends in the longer run. This is linked, first, to the high transport and transit costs on export routes that are up to 5 000 km long. Second, a trend towards falling gas prices is expected in Europe following the liberalisation of gas markets. Third, there are signs that production costs are set to rise, as the gas reserves become more difficult to tap and maintenance investment is neglected. Fourthly, and finally, it is uncertain whether the gas reserves on

[5] This is particularly true of the programme developed jointly by the Russian Fuel and Energy Ministry and the oil transport company Transneft, which envisages billions of dollars worth of investment. This programme includes the Baltic pipeline system for the export of oil from the (as yet largely untapped) Timan-Pechora Basin and the export pipeline from Angarsk to China.

[6] For instance, Surgut is currently modernising the Kirischi Refinery near St. Petersburg (capacity: 17 million t) and is developing the Batereinaja export terminal. Slavneft plans new crackers for the Jaroslav-Medelejev and Novo-Jaroslav refineries and is modernising its refinery in Mozyr (20 million t), which is closest to the European market.

Figure 1

Export Routes for Russian Energy



which Russia is building its export strategy (Yamal Peninsula, Timan-Pechora, Stockman, Astrachan) are economically viable.

The Russian government and Gazprom are planning two large-scale projects in order to safeguard the future of gas exports: the opening up of the Yamal Peninsula and the construction of an infrastructure link as far as Germany, and the link between Russia and Turkey through the Black Sea (Blue Stream Project). Although both projects have been under discussion for almost a decade, no breakthrough has yet been achieved regarding financing and realisation. Progress is being made with smaller-scale projects, however, such as the expansion of the overland capacities around the Black Sea or the link between Belarus and Poland.

Electricity

Russia's electricity industry, too, is making efforts to expand its export capacities and to open up new markets. Electricity exports, which in the early 1990s were more than 40 TWh per annum, had more than halved by 1998; most exports are now destined for CIS countries. The devaluation of the rouble has opened up a substantial price advantage for the cheapest suppliers – the nuclear power stations: costs have fallen from around 2 US cents/kWh to just over 1 US cent/kWh (compared with around 2.5 US cents in the Slovakian nuclear power station Mochovce).

Two factors are still serving to hamper any further expansion of Russian electricity exports:

– Institutionally, the monopoly on distribution held by the integrated RAO EES concern prevents other producers from entering the network. This is an obstacle to the development of the cheapest suppliers, in particular Rosatomenergo and the hydroelectric power stations (e.g. Irkutskenergo and Krasenergo). In October 1998 an agreement was signed for the first time between RAO EES and Rosatomenergo, permitting direct sales. West European and especially German energy supply companies have expressed an interest in purchasing Russian electricity.
– In technical terms the only physical link currently available consists of a direct-current power line between Russia and Finland in Vyborg (600 MW). However, two projects are already at an advanced

stage that are competing to link up Russia to the European CENTREL-UCPTE network, enabling a direct exchange of electricity. The first is the completion of the so-called 'Baltic Ring', i.e. the connection Russia-Lithuania-Kaliningrad-Poland, the second a bridge between the Ukraine and the CENTREL network in Poland or Hungary. During the first stage around 5 TWh p.a. could be transmitted though such a power line.

Alongside the potentially explosive political implications, the volume of Russian electricity exports will also depend ultimately on their competitiveness in the longer run. The low level of electricity prices currently prevailing in the EU following deregulation, the high transport costs and the potential export capacities in central Europe are all factors constraining Russian exports.

Outlook

Following an extended period in which Russia has failed rigorously to restructure and deregulate its energy sector, most of its energy companies find themselves with their backs to the wall. The aim of Russian energy policy must be to abandon the strategy of imposing excessive burdens on this sector, for instance by removing the sector-specific taxes and duties. Steps should also be taken to ensure that the policies towards investors remain more predictable and that competition is stimulated. It is only then that firms will be given both the incentive to develop, and the opportunity of developing, the long-term corporate strategies that are appropriate to the market conditions actually prevailing.

The electricity industry, and even more so coal-mining, both of which have so far been influenced only marginally by external markets, face a long and difficult adjustment process. In the case of gas, Russia has both huge reserves and a stable, although monopolistic industrial structure. In the oil industry, which is also heavily export-oriented, on the other hand, adjustment processes at the micro level can be expected to progress relatively quickly, given the market situation (saturated western markets and stagnant domestic demand) and the unfavourable resource situation. Overall, it is clear that it is primarily the external market that serves as a catalyst for the adjustment processes undertaken by Russian energy firms.

Russian energy exports appear to be stabilising, although at a lower level than initially expected. With the exception of the projects in the gas and electricity industries mentioned above, substantial investment in an expansion of export capacities is unlikely. This reflects, not least, the fact that the situation in Russia remains subject to substantial risk for foreign direct investors, so that large-scale foreign investment is not to be expected.

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