



Russia: Bank Assistance for the Energy Sector

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Acronyms and Abbreviations

CAE	Country Assistance Evaluation
CIDA	Canadian International Development Agency
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia Region
FCPF	Federal Centre for Project Finance
GDP	Gross Domestic Product
IBRD	International Bank for Reconstruction and Development
IMF	International Monetary Fund
OED	Operations Evaluation Department
PSA	Production Sharing Agreements
RF	Russian Federation
SAL	Structural Adjustment Loan
USAID	United States Agency for International Development
USSR	Union Soviet Socialist Republics

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Preface

This report is one of the background papers prepared by outside experts as an input to the Russia Country Assistance Evaluation (CAE Task Manager, Gianni Zanini) by the Operations Evaluation Department (OED) of the World Bank. Findings are based on a review of project appraisal and completion reports, sector reports, research papers in the academic literature, and a number of other documents produced by the Borrower and the Bank. The Russian co-author joined in selected meetings of the OED mission to Russia in February 2001 and also interviewed current and retired government officials, Russian experts, and Bank staff in the field office. An earlier preliminary version was discussed at a small workshop in Moscow in February 2001, with the participation of central government officials, academics, members of policy research institutes, and representatives of implementation units of Bank-supported projects. Their valuable assistance and feedback is gratefully acknowledged.

The authors (Mr. Yuri Bobylev, a Leading Researcher at the Institute for the Economy in Transition, Moscow, Russia, and Mr. Jacek Cukrowski, a Senior Economist at the Center for Social and Economic Research, Warsaw, Poland) are grateful for the comments received on previous drafts by OED peer reviewers (Messrs. Jorge Garcia-Garcia and Fernando Manibog) and ECA staff (Messrs. Peter Thompson, Gary Stuggins, Bjor Hamso, and William R. Porter), and Mr. Russell Cheetham (former ECA director of the department including Russia), which have been taken into account in the July 2001 version. However, the views expressed in this paper remain entirely those of the authors. They do not necessarily represent the views of the World Bank.

An earlier draft dated July 9, 2001 was sent to the Russian Government for review. Comments were received from Mr. U. Gorlin, a consultant engaged by the Federal Centre for Project Finance (FCPF) on behalf of the Government, and have been taken into account in this paper.

Executive Summary

Sector Overview

1. *Output and consumption.* In the first part of the 1990s, output of the Russian energy sector had been continuously declining. In comparison with 1990, the total primary energy supply in 1997 had decreased by about 27 percent, and total consumption by 45 percent.
2. *Prices.* Prices of oil, refinery products, and coal have been liberalized. Gas and electricity prices are still controlled and do not reflect production and transportation costs. Energy prices charged to certain classes of consumers in Russia, especially industrial users, are disproportionately high in comparison to the cost of energy production, reflecting cross-subsidies. Non-payment of energy bills is a common practice.
3. *Taxes and subsidies.* The energy sector is considered to be the main source of budget revenues. On the other hand, the general level of subsidies, especially for natural gas and electricity, remains significant. Moreover, the structure of energy prices is characterized by large cross-subsidies for electricity, gas, heat and coal to private householders at the expense of commercial energy users.
4. *Regulation.* The reorganization and partial privatization of the energy sector to date has left monopolies in gas and electricity sub-sectors unreformed.
5. *Investment.* The distortions caused by (a) current pricing policies, (b) non-payment of energy bills, and (c) the high levels, frequent changes, and multiplicity of taxes prevent most energy enterprises from making significant investment. Moreover, the tax regime and the legal framework applicable to foreign investment strongly discourage needed investment in the sector. Major impediments to investment include among other the lack of a comprehensive legal and regulatory framework, uncertainty in property rights and rights to mineral resources, an uncertain tax system, export controls, and pricing policies.
6. *Energy and the Environment.* The industrial and energy sectors are the major sources of pollution, but there is little money for the range of measures required to support monitoring, enforcement of regulations, equipment upgrading, and installation of pollution control facilities.

The Bank's Objectives and Actions

7. *Objectives.* The long-run objectives for the Bank's assistance strategy in Russia at the first stage of the transformation were to support the development of a market-oriented economy based on private sector initiatives; encourage the redirection of public

sector involvement in the economy toward the establishment of open and competitive markets and the provision of the physical, social, legal, and institutional infrastructure not normally provided through the private sector; and establish the Bank's long-term relationship with Russia.

8. In the middle of the 1990s, the Bank's country assistance strategy was modified to include the priority objective of moderating the impact of transition on socially vulnerable groups by supporting the development of a viable social safety net, and by maintaining social services and infrastructure, while improving the efficiency of public expenditures and promoting more flexible labor markets.

9. *Actions.* Bank involvement in the energy sector at the early stage was focused on assistance in establishing a suitable policy for future development by: (a) providing policy advice on pricing, taxation, petroleum legislation, and institutional reform; and (b) financing projects that would not otherwise attract foreign investment or where Bank participation could assist in mobilizing substantial additional resources.

10. In the oil sub-sector, the Bank's priorities included well workovers, new field development, transfer of technology, and pipeline rehabilitation. Moreover, the Bank's actions aimed to establish an environment conducive to private investment in oil production through a legal and regulatory framework, to reform oil taxation (to increase revenues, eliminate distortions, and strengthen incentives for investment), and to strengthen the regulatory framework for oil transportation (to achieve transparency and efficiency in pricing and access rights). In the policy context, the Bank focused mainly on pricing and taxation (tax reform based on a simplified profit-based tax system), export quotas, access rights and regulation of oil pipelines, and stimulation of foreign investment through the development of the legal basis for production sharing agreements.

11. Bank operations in the gas sub-sector aimed to promote greater efficiency in natural gas distribution and use through pricing and regulatory reforms, as well as rehabilitation of local gas distribution systems to improve safety and reliability. Specific objectives included such issues as pricing and tax policy, legislation, de-monopolization, correct setting of investment priorities, development of a legal framework for PSAs, reduction in accounts receivable, an increased level of exploration, and growth in exports.

12. In the coal sub-sector, lending in the 1990s focused on the elimination of high-cost producers, meeting expected demand at lower costs, and establishing a sound social safety net as a part of the restructuring program. Specific objectives included elimination of high loss-making mines without prospects, reduction/elimination of production subsidies (improved mechanism of providing subsidies including better targeting and delivery of coal subsidies), establishment of a more efficient and sustainable industry, privatization, promotion of competition, realisation of pilot projects for local development and providing assistance in resolving employment issues in the mining communities, completion of the transfer of social resources to local governments and ensuring sufficient funding, mitigation of the adverse environmental impact of mine

closing, development of social partnership relations, and private sector participation in power generation and distribution.

13. The Bank's operations in the electricity sub-sector focused on the concepts of corporatization and commercialization of power entities, as well as on pricing and improved financial management. Specific objectives included such issues as tariff levels and structure (tariff adjustments to cover full economic costs and elimination of cross-subsidization between users), cash collection, reduction in accounts receivable, privatization (increased private sector participation in power generation and distribution), competition, and pricing and institutional reforms.

14. The Bank's objectives in district heating included elimination of subsidies and cross-subsidization between users, rationalization, and rehabilitation of the existing stock of infrastructure.

Outcomes and Results of the Bank's Assistance

15. The results of the Bank's operations in different sub-sectors have been mixed. In the coal sub-sector, the Bank's projects have been effective in assisting the government to improve the management system, the social safety net, the level and composition of subsidies, and sector governance. They have been rather effective in encouraging the government to privatize viable portions of the industry and in pursuing the mine closure program. In the oil sub-sector, the Bank's projects have been rather effective in reversing the trend of declining production, in price adjustment, in the stimulation of oil exports to non-CIS countries, and in preventing oil-related environmental disasters. On the other hand, the Bank's efforts have been less successful in policy reforms and structural changes, such as pipeline regulation, development of PSA legislation, or international trading procedures. Most notably, in the gas and electricity sub-sectors, the Bank's projects did not achieve their most important objectives, including de-monopolization, privatization, and legal and structural changes. In *district heating* (and infrastructure), the projects have been effective in the preservation and regeneration of infrastructure capacity, but much less successful in structural changes and developing a new legal environment.

16. It is evident that investment loans did not address structural issues; results are localized and do not address systemic problems, such as change of legislation and the legal environment. Thus, the impact of the Bank's projects on institutional development has been rather limited—critical issues, such as reduction in non-payments and increases in cash collections, increases in tariffs towards full cost recovery, reduction in cross-subsidies between categories of customers, and energy efficiency are still listed in the government's plan for the next 10 years. Legal and structural changes resulting from the projects have been minor.

The Bank's Performance

17. The Bank's systemic objectives were correct and clear. However, their achievement without the full support of Russian policy makers and government commitment made them not very realistic—e.g., de-monopolization in the *gas* and *electricity* sub-sectors. It has to be recognized that, without Government support (and the support of the main players, such as Gazprom or UES), nothing could be done in this sector. Moreover, the Bank's lending in the energy sector was not sufficiently conditioned on progress in sectoral policy reforms; conditionality triggers were often hardly quantified. Furthermore, in comparison to rehabilitation or preservation issues, it seems clear that the Bank's activities did not pay enough attention to addressing major structural problems, such as development of the legal base, cash collection, corruption, the lack of fiscal and financial discipline, etc. These problems are still open.

Recommendations for Future Bank Assistance

18. To achieve most of the Bank's long-term objectives in the energy sector, Russian Government commitment to and ownership of reform is critical for success. The lack of consensus-building around the Bank's projects makes reforms very difficult to implement. Moreover, long-term involvement of the Bank in sectoral transformation is preferable; expectations for rapid results, especially in systemic transformation, are not realistic. The Bank's analytical and advisory assistance in the energy sector should be continued. Furthermore, multiple disbursements for loans in sector-specific projects seem to be more effective, since that approach allows the Bank to be engaged in the sector longer and has resulted in better compliance. Compared to structural adjustment loans, sector-specific adjustment loans are more focused and they are easier to manage and implement, since results are more measurable.

19. Funds should be disbursed based on achievements—real results. In particular, loans need to be disbursed in association with significant structural changes, and loan conditions should be based on changes in legislation.

20. Finally, the Bank's lending must be more carefully targeted. Lending must focus on projects that seek to achieve the Bank's fundamental, systemic objectives, such as legal and structural reforms, rather than on narrowly defined projects—e.g., the reconstruction of particular plants or small changes in the existing business environment. Narrowly focused projects with short-run effects, such as those for rehabilitation, restructuring and capacity extension, should be financed only after structural reforms are implemented.

1. Energy Sector Performance and Challenges

A. Introduction

1.1 The energy sector is a fundamental part of the Russian economy. It is a source of about 45 percent of total export earnings and a significant part of state budget revenues. In the year 2000, the contribution of the energy sector to the total profit of all industry amounted to 48 percent. Currently, the Russian Federation (RF) is one of the most important producers and exporters of primary energy resources in the world. It holds second place (after the USA) in total energy supply, producing more than 10 percent of world primary energy, and it is the largest world producer of natural gas, with 23.7 percent of total world production in 1999. In oil production, RF ranks third in the world, with 8.8 percent of total world production in 1999. It also holds second place, after Saudi Arabia, in energy and oil export, and first place in the export of natural gas.¹

1.2 Notwithstanding all the above, there is still enormous potential for energy sector development in Russia. RF has huge and economically attractive oil and gas reserves. Its proved reserves of oil amount to 6.7 billion tons (48.6 billion barrels), or 5 percent of total world reserves. Reserves of natural gas (the largest in the world) are estimated at about 48.1 trillion cubic meters, or 33 percent of total world reserves. Russian reserves of coal are estimated at 16 percent of total world reserves, representing second place after the USA.

1.3 In the former USSR, the development of the Russian economy was heavily supported by the energy sector. At that time, energy supply was oriented mainly toward development of heavy industry and the defense sector. Rapid growth of oil and gas production, accompanied by extensive exports, financed the development of the military-industrial complex and inefficient branches of the Russian economy. The transition to a market economy, followed by a significant fall in GDP, resulted in a serious reduction in energy demand and declines in investment in the energy sector and in its total output.

1.4 Output. In the 1990s, production of energy resources fell considerably (see Annex II). Aggregate production of primary energy resources decreased from 1,862 million tons (mln.t) of coal equivalent in 1990 to 1,359 mln.t of coal equivalent in 1997, i.e., by more than 27 percent; the largest reduction occurred in 1991-1994.

- Oil production fell from its peak of 570 million tons in 1987 by more than 47 percent. Similarly, in 1991-1998, coal output declined by about 41 percent. Russian gas production decreased as well, but not to such a great degree. Due to relatively large

¹ In 1999, Russian exports amounted to 9.4 percent of total world exports of oil, and 34.8 percent of natural gas.

demand from the energy sector and a significant export increase, gas production decreased by only 8.1 percent in 1992-1998.

- As the result, the share of natural gas in total primary energy production increased from 39.7 percent in 1990 to 49.2 percent in 1999. In the same period, the share of oil decreased from 39.6 percent to 31.4 percent, and coal fell from 14.5 percent to 12.2 percent.

1.5 Prices. The energy sector was not included in the general price liberalization of 1992; however, prices of crude oil and refinery products have been decontrolled in several steps. Prices for gas and electricity are still controlled, and do not reflect production and transportation costs.

1.6 Energy prices charged to certain classes of consumers in Russia, especially industrial users, are disproportionately high in comparison to the cost of energy production. For example, electricity prices charged to industrial customers in Russia are comparable to many OECD countries (see Annex III), while Russian input unit costs for energy production—such as labor, natural resources and capital—are substantially lower.

1.7 Non-payments. Non-payment of energy bills is a common practice (see Annex IV).² Energy-intensive plants (e.g., steel and cement) are avoiding shutdowns by paying for only a fraction of their energy bills, their largest cost component. Because these companies are often the major employers in a town, municipal and regional officials go to great lengths to keep them operating. Regional governments channel implicit federal energy subsidies to these companies by letting arrears to federal suppliers (mainly to Gazprom and UES^{3 4}) accumulate at the local gas and electricity distribution companies. However, some progress in cash collection has been recently achieved (see 4.8).

1.8 Taxes and subsidies. Traditionally, the energy sector is considered to be the main source of budget revenues. In 1994, energy-specific revenues collected amounted to over 30 percent of total budget revenues.⁵ On the other hand, the general level of economic subsidies, especially for natural gas⁶ and electricity,⁷ remains significant (see Annexes IV and V).

² This problem is unique to the Former Soviet Union. It is virtually absent in the transition countries of Central Europe and has been largely solved in the Baltic countries.

³ Unified Electrical Power Systems of Russia.

⁴ See Annex IV.

⁵ However, the net contribution of the energy sector to total budget revenues (after deduction of the subsidies to the coal sector) is estimated at about 25 percent.

⁶ On average, the domestic price of natural gas amounted to about 50 percent of the world price, households were charged about 9 percent of the world price, and industrial consumers paid about 64 percent of the world price (1997 data).

⁷ In 1997, the subsidy in the electricity sector amounted about 42 percent of the average price.

1.9 Energy pricing for electricity, gas, heat and coal is characterized by large cross-subsidies for private householders⁸ at the expense of commercial energy use.^{9 10} Russian households should be charged prices that at least cover costs, because as prices are raised, they would be educated in energy efficiency.¹¹ Moreover, regional governments channel implicit federal subsidies to large, unproductive companies in the form of lower energy payments, which allegedly are intended to prevent companies from shutting down and laying off employees. These subsidies put potentially productive companies at a cost disadvantage, blocking investments and growth on their part.

1.10 Competition. The reorganization and partial privatization of the energy sector to date has left many monopolies unreformed, including privatized ones. (Gazprom is now the largest monopoly in the world). This situation provides ample opportunity for competition to be hampered.

1.11 Energy efficiency. The poor efficiency of energy use reduces economic productivity, and contributes to decapitalization, environmental pollution, and consumption of energy resources that could otherwise be exported. The potential for energy conservation in Russia is estimated at 40-45 percent of the current level of consumption.¹²

1.12 Energy production inefficiencies are mainly due to the historical evolution of companies, and include such factors as excessive staffing, extended social programs, non-competitive supply of inputs, and sub-optimal technological solutions. However, a significant part of remaining inefficiencies have developed as a result of the continuing use of obsolete and under-maintained equipment, weak management, and poor or fragmented corporate governance.

1.13 Investment. Most energy enterprises have been prevented from making significant investments because of economic distortions caused by current pricing policies, non-payment of energy bills, and the high levels, frequent changes and multiplicity of taxes. These distortions have been magnified by the Russian financial crisis and the instability of the ruble.

⁸ Russian households spend less than 1 percent of the family budget on energy (the share for Western households is between 5 and 6 percent).

⁹ In the experience of most OECD countries, cost-based energy prices for households are higher than those for industry, since relatively small amounts of energy must be distributed over a wide-ranging network in order to provide service to households.

¹⁰ Since households use only a small fraction of total energy (see Annex VI), then, even if only some industrial users pay for its energy consumption, the household sector is heavily subsidized by industry

¹¹ The FCPF notes that "In the short run, it is wrong to state the necessity of raising household tariffs to the level that would cover the costs before resolving a whole range of serious socio-economic problems (ensuring a significant increase in wages, pensions, social benefits; development of relevant pricing mechanisms; achievement of more transparency of the sector enterprises' operations so as to evaluate their actual costs, etc.)."

¹² Estimated by the Institute of Energy Research of the Russian Academy of Sciences.

1.14 There is a strong risk that the current level of investment in the energy infrastructure is insufficient for it to meet the increased needs of the economy as it revives. Investors forego investment opportunities in upgrading existing assets¹³ and developing new ones.¹⁴ Moreover, the tax regime and the legal framework applicable to foreign investment strongly discourage needed investment in the sector. Major impediments to investment include the lack of a comprehensive legal and regulatory framework, uncertainty in property rights and rights to mineral resources, an uncertain tax system, export controls, and pricing policies. National R&D priorities in the energy sector (as in other sectors) are no longer backed by adequate or significant funds. There is no interest within the user community (public, private and foreign) to support an energy R&D complex. On the other hand, it appears that a number of unproductive laboratories continue to exist in order to provide social safety nets for researchers and support staff.

1.15 Energy and the environment. The industry and energy sectors are the major sources of pollution in the Russian Federation. According to official data enterprises in the energy sector are responsible for approximately 48 percent of harmful atmospheric emissions, 36 percent of waste water, and over 30 percent of solid wastes in Russia. In the Russian Federation, environmental problems are widely denounced, but are also largely ignored. There is little money for the range of measures required to support monitoring, enforcement of regulations, equipment upgrading, and the installation of pollution control facilities.

1.16 Challenges. There is substantial scope for efficiency gains in natural monopoly services (power, natural gas, oil transportation, and railway). These can have potentially large, economy-wide spillover effects that will be important for medium-term growth. Reforms need to concentrate in the following areas:

- Pricing should better reflect cost and demand conditions;
- Arrears should be reduced and payments discipline strengthened,
- Arms-length regulatory oversight should be built up, and
- Sub-sectors should be restructured to make their operations more transparent and open to competitive forces.

B. Oil Sector

1.17 The oil industry provides a considerable share of state budget revenues and convertible currency earnings. The share of oil is about 31 percent in total primary energy production, and about 50 percent in primary energy export. It is estimated that the oil

¹³ It is estimated that, in the energy sector, almost three-quarters of the old assets are still economically viable and could achieve up to 65 percent of US productivity with limited upgrade investments combined with modern forms of organization.

¹⁴ Substantial investments in developing new productive assets (such as the economically attractive, proven oil reserves of Western Siberia) are not observed.

sector is responsible for about 18-24 percent of the total revenues of the state budget, and 20-25 percent of total earnings from export.

1.18 Production. Oil production fell from a peak of 570 million tons in 1987 to 301 million tons in 1996, i.e., to about 52.9 percent of the maximum production level.¹⁵ Growth in oil output in 1997 was interrupted in 1998 by the fall in world oil prices and the financial crisis in Russia. Starting in 1999, oil extraction has increased each year. In the year 2000, oil production increased by 6 percent and reached the level of 323 million tons.

1.19 The precipitous output decline has less to do with deficiencies in the oil reserve base and technology than with a series of underlying political, economic and organizational problems related to the ongoing economic transformation. In particular, unpredictable economic policies impede investments into development of new oil fields.

1.20 Oil companies are reluctant to commit to large, long-term investment without stable and workable laws and tax policies, and export restrictions.¹⁶ For example, the law on production sharing agreements is far from being operational, and policy makers deliberately limit oil exports to secure a supply of cheap oil for “strategic” customers such as the agriculture and defense sectors.

1.21 A sharp decline in demand has led to a reduction in production capacity, a considerable increase in the number of idle oil wells, and a significant reduction of investment.

- The number of wells drilled fell from 121,000 in 1990 to 98,000 in 1998,
- The share of idle wells increased from about 13 percent to about 27 percent in the same period, and
- The number of new wells put into operation each year decreased from 12,000 in 1990 to about 2,200 in 1999, i.e., by more than 80 percent (see Annex II).

1.22 Low investment and obsolete technical equipment prevailing in Russian oil industry made the situation even worse. For many years, increases in oil production were based on the combination of extensive extraction methods and old drilling technology. As a result, the technical characteristics of the equipment used fell considerably below international standards. It is estimated that, at the beginning of the 1990s, only 14 percent of the equipment used in the Russian oil industry corresponded to world standards. Moreover, modern technologies aimed at increasing oil recovery also were not implemented.

1.23 Russia’s refineries also are not very sophisticated. In the first half of the 1990s, petroleum products were largely obtained by using straight-run distillation processes, the method with the simplest technology and the lowest cost. There was little use of cracking

¹⁵ From 1991 to 1994, each year’s production decreased by about 10-14 percent.

¹⁶ Transport limitations and some state restrictions on export of oil products.

or other secondary processes. As the result, the output mix of Russian refineries was dominated by heavy petroleum products, particularly heating fuel. The quality of refinery products was substantially below the world level. On the whole, Russia's refining capacity required radical modernization.

1.24 The Nelson complexity index, which reflects the technical level of oil refining and the share of secondary processes, was calculated at 3.8 for Russia. In comparison, the Nelson index is 9.5 for the USA, 7.1 for Canada, and 6.5 for European countries and Japan.¹⁷

1.25 Industry structure. In the Soviet period, oil production in Russia was centrally planned and based on state property. State agencies controlled the whole technology chain, i.e., extraction, refining, transportation and sales. This structure of the industry remained unchanged until the beginning of the 1990s. In 1991 the first Russian vertically integrated company—State Company “LUKOIL”—was established.¹⁸ At the same time, the first joint venture companies were created (currently there are over 40 joint venture companies in the oil sector).

1.26 However, despite a significant growth in the number and output¹⁹ of joint ventures, the attitude of foreign partners to large, long-term investment projects has remained rather reserved. In general, foreign investors considered joint ventures in the oil sector as a springboard for a possible further expansion of their activity in Russia. By the end of the 1990s, a new oil industry structure had been created, based on 13 vertically integrated companies (only two are state-owned)²⁰, which produce 86.6 percent of total crude oil output and 87.7 percent of total refining output. There are also 113 small companies, whose share in oil production amounts to 10.2 percent of the total volume (including 6.9 percent of the oil extracted by the joint ventures).²¹ “Gazprom,” which fully dominates the gas sector, produces the remaining 3.2 percent of crude oil.

1.27 Transportation. The oil pipeline systems currently are entirely state-owned and function as common carriers, serving all the various companies. They are administered by two companies: Transneft (crude oil pipelines) and Transneftprodukt (oil products). Although there may be some privatization of these entities in the future, the State is to retain controlling stakes. Rail still accounts for the bulk of refined products shipments from refineries (primary distribution), while the share shipped by pipelines is low and declining.

¹⁷ Johnston, D. The complexity index indicates refinery capability and value. *Oil & Gas Journal*, Mar. 18, 1996, p. 74-80.

¹⁸ Creation of other vertically integrated companies and further development of Russia's oil industry was supported by Presidential Decree #1403, issued at the end of 1992.

¹⁹ In 1992, joint venture companies produced about 4.5 million tons, and 21 million tons in 1999.

²⁰ They extract about 8 percent of total oil and produce 9.6 percent of refining industry output.

²¹ It has to be stressed that independent oil companies found themselves in much worse conditions than vertically integrated ones. Currently no new independent enterprises are being established.

1.28 Prices. Domestic oil prices remained under state regulation until the beginning of 1995. Their growth was limited by either a direct setting of a maximum price level (in the first stages of reform), or by setting a maximum profit rate. As a result, domestic oil prices remained considerably below the world price level in dollar terms (see Annex III). By the end of 1994, the domestic oil price reached only 27 percent of the world oil price. Only in 1995, after oil price liberalization and cessation of quotas and licensing procedures on oil exports, did domestic oil prices begin to increase rapidly. In 1996-1997, domestic oil prices stabilized at the level of US\$63-64 per tonne (approximately 60 percent of the world price). Domestic prices for gasoline reached almost 75 percent of the world level. However, in 1998, as a result of the devaluation of the ruble, domestic oil prices in dollar terms fell sharply to US\$15.5-16 per tonne. In 1999-2000, there was a gradual recovery of domestic oil prices in dollar terms, but they still reached only 33 percent of the world level. Therefore, prices for crude oil, although liberalized, still do not follow world prices. The low level of domestic prices to some extent is a direct consequence of limited export (due to underdeveloped oil transport capacities) and extensive supply to the domestic market.

1.29 Exports. Aggregate net exports of crude oil and oil products decreased from 246.3 million tons in 1990 to 184.5 million tons in 1999 (i.e., by 25.1 percent). At the same time, as a result of a sharp fall in domestic oil consumption, from 269.9 million tons in 1990 to 120.5 million tons in 1999, the share of exports increased from 47.7 percent to 60.5 percent of total oil production (see Annex II).²² Because of a sharp reduction in the demand for oil in the countries of Eastern Europe and the CIS, oil exports were focused on the Western European market. However, transport capacity constraints hampered output growth, export, and the development of the oil industry as a whole. In 1994, export quotas were cancelled, and the rule of equal access to oil pipelines was introduced. In 1995-1996, export duties on oil and oil products were abolished. In 1999, however, export duties were restored, and indirect limits on exports (through setting volumes to be supplied to the domestic market) were introduced. Therefore, since export is much more attractive than domestic trade (domestic prices are lower than prices in the world market) it is still restricted by the federal government.

1.30 Legislation. A major institutional reform was the passage of the Subsoil Law (in 1992), which established a general legal framework for the oil sector under the emerging market environment. At the end of 1995, the Federal Law “On Production Sharing Agreements,” which created the legal basis for production sharing agreements (PSAs), was passed.²³ However, other Federal Laws related to PSAs were modified only in 1999, and the development of PSA legislation in Russia is still not complete. The lack of appropriate PSA legislation has been one of the main factors restraining production growth and foreign direct investment in the oil sector. In fact, in the 1990s, only three PSAs were enforced

²² We have to note that export volumes in absolute terms have fallen.

²³ Such agreements provide investors with a stable legislative and fiscal regime during the whole life of an investment project. In the unstable fiscal and investment legislation in Russia, PSAs were considered a main mechanism for attracting large direct foreign investments in the oil production sector.

(Sakhalin-1, Sakhalin-2, and Khariaginskoye).²⁴ All of them were signed before the law on PSAs was passed.

1.31 Taxation. The Russian oil taxation system has several major defects: it depends excessively on revenue-based, rather than profit-based, taxes; it is subject to frequent changes; and it includes too many different kinds of taxes.²⁵ During most of the 1990s, the average tax burden calculated as a percentage of gross revenue exceeded 50 percent. However, in 1999-2000, as the result of the devaluation of the ruble and world price increases, the average tax burden decreased significantly.

1.32 Critical issues and challenges. Despite some recent improvements in the legislation underpinning production sharing agreements, the tax regime and the legal framework applicable to investment must be developed because they still strongly discourage needed investment in the sector.

C. Gas Sector

1.33 Production and distribution. Russian gas production fell from its peak of 643.4 billion cubic meters (Bcm) in 1991 to 571.1 Bcm in 1997. The main reason for the decline has been insufficient domestic and foreign demand²⁶ for already existing production capacity. Over 80 percent of current production comes from three “unique”²⁷ fields: Urengoy, Yamburg and Orenburg.

1.34 The gas industry is dominated by Gazprom (a privatized company, but 38 percent-owned by the State)²⁸, which produces 94 percent of the country’s gas. Its turnover amounted to US\$17.5 billion in 1998 and US\$12.4 billion in 1999. Gazprom owns all of its high pressure transmission lines (140,000 km) and associated infrastructure. Gas distribution is carried out by a large number of regional, territorial and municipal gas companies (the vast majority of which have been privatized); however, large industrial customers may be supplied directly by Gazprom.

1.35 Gazprom’s expected contribution to the state budget is enormous; in 1997, about 25 percent of all budget revenues should have come from Gazprom.^{29 30}

²⁴ The contribution of these companies to total oil production is rather minor.

²⁵ The average number of taxes and payments collected from oil enterprises by federal and local budgets is about 30, although certain regions impose even more than this.

²⁶ More precisely, payment problems in the domestic market and CIS countries.

²⁷ The term “unique” corresponds to a super-giant category (more than 1000 Bcm of reserves).

²⁸ According to 1998 data.

²⁹ *World Energy Outlook 1999 Insights*. International Energy Agency, 1999.

³⁰ At the same time, Gazprom is the biggest debtor of the budget.

1.36 Exports. Russia is the largest exporter of natural gas in the world. Currently, its gas exports amount to 33-35 percent of total yearly production. At the beginning of the 1990s, more than half of total exports were delivered to the “near abroad,” former Soviet republics. However, serious problems with non-payments in CIS countries significantly limited Russian gas export to these markets. Therefore, the majority of gas exports (about 64 percent in 1999) are now delivered to Europe (West and East). It seems certain that Russian gas exports to Europe will expand significantly over the next decade and beyond. The clearest expression of Russian intentions is the building of the new gas pipeline ‘Yamal’ to Europe and the recently negotiated gas export deal with the European Union.

1.37 Prices and non-payments. As in the case of oil, natural gas prices for final consumers in Russia are much lower than prices charged by Gazprom in Europe. Inside Russia, prices depend on the type of consumer: prices paid by industrial companies and power plants are much higher than prices paid by households. In 1992–1997, gas pricing was almost exclusively an internal procedure of Gazprom; however, since 1997, gas prices have been set by a government agency, the Federal Energy Commission.³¹

1.38 Non-payment is a highly charged issue in the Russian gas industry. Gazprom estimates suggest that only 15 percent of domestic companies pay in cash and on time. Debts of foreign companies (especially in Ukraine, Belarus, and Moldova) to Gazprom are also large. In July 1999, the total debt of the Ukrainian government and Ukrainian companies to Gazprom amounted to US\$1.8 billion (see Annex IV for details of non-payments to Gazprom).

1.39 Regulation. Specific gas regulation mostly concerns the role of the Federal Energy Commission in setting wholesale and retail prices for residential and industrial customers. Starting in 1997, some “regulation for competition” was put in place—the President canceled Gazprom’s monopoly for the development of new fields and guaranteed independent companies access to at least 15 percent of Gazprom’s gas pipelines. However the real effects of these steps are very limited.

1.40 Critical issues and challenges. The fact that the gas sector is dominated by a large national monopoly impedes the emergence of competition where this would otherwise be possible. This sector is also the major source for continuing de facto subsidization of other sectors of the economy through non-payments; thus, it impedes efforts to instill payments discipline in the economy. In view of the linkages between payments discipline, enterprise restructuring, and growth, the constraints in this sector represent very serious impediments to sustainable growth and poverty reduction. Further, there is a huge potential for gas savings in Russia (up to 25 percent of current internal demand) by such measures as elimination of waste and improvement in efficiency, and much of this could be accomplished using currently available technologies.

³¹ The Federal Energy Commission—the regulatory body in the energy sector—was established as one of the SAL conditions.

D. Coal Sector

1.41 Production and workforce. Coal production in Russia has been declining since 1988. From 1990 to 1998, Russian coal production declined by about 41 percent³² due to a severe reduction in domestic demand (export volume is non-significant), the closing of non-profitable mines, and lack of investment.³³ At the end of the 1990s, coal industry output increased (see Annex II).

1.42 At the beginning of 1995, the Russian coal industry was comprised mainly of 199 active underground mines³⁴ and 65 active surface mines affiliated with the state-owned coal monopoly RosUgol.³⁵ Total Coal industry workforce amounted to 819,078 in 1994 compared to 914,331 in 1992.³⁶

1.43 Prices. In principle, coal prices have been freed and allowed to rise to market-clearing levels. However, the coal market is still substantially distorted by the regulated low price of gas for domestic use, which is directly or indirectly controlled at levels below full costs. This has the effect of keeping coal prices from rising to cover full costs, which would lead to a loss of markets to artificially cheaper natural gas.

1.44 Subsidies. After the price liberalization of the early 1990s, the coal industry became dependent on explicit subsidies from the federal budget. By the beginning of 1993, the share of subsidies in the total financial resources of the industry exceeded 70 percent. Total subsidies to the coal sector constituted more than 1 percent of GDP and about 5 percent of the total expenditures of the state budget. More than 80 percent of the subsidies went to support loss-making coal mines. About 17 percent were allocated to the social infrastructure of coal mining cities and villages.

1.45 As a result of the first stage of reforms, the volume of subsidies was reduced from 1.04 percent of GDP in 1993 to 0.45 percent of GDP in 1995. The share of federal funding in the overall financial resources of the industry decreased from 77 percent in 1993 to 31 percent in 1995, and coal mining activity was terminated at 37 high loss-making mines without prospects.

³² In terms of total coal production (see Table II. 4 of Annex II). In terms of million tons of coal equivalent (see Table II. 1 of Annex II) this figure was 43 percent.

³³ Currently, Russia is the sixth-largest world producer of coal.

³⁴ In subsequent years, many loss-making mines have been closed.

³⁵ RosUgol combined the function of managing the packages of state-owned shares of many coal companies and allocating government budgetary funds for coal sector support with commercial activity.

³⁶ The Ukrainian coal industry (244 mines which produced 76 million tons in 1994) employed 925,000 people, while the US coal industry (2,354 mines which produced 937.4 million tons in 1994) employed 97,500 people.

The number of employees in coal production (i.e, coal production workforce) fell from 626,000 in 1993 down to about 526,000 in 1995. About 73 percent of social assets of the coal mining enterprises were transferred to local authorities.

1.46 In 1996, direct subsidies to the coal industry amounted to about US\$2 billion, and they have been significantly reduced since then. By 1998, subsidies had declined to about 0.2 percent of GDP, about 13 percent of the total turnover of the coal industry, and did not exceed US\$500 million.³⁷

1.47 Investments. Russian mines are being depleted and would need to be replaced. Much of the technology currently in use is not up to world standards. Mine accidents in Russia continue to occur at rates much higher than elsewhere in the world. However, no significant investments are currently being made in the Russian coal industry.

1.48 Restructuring. Restructuring of the coal industry has been based on the following key points: closure of all non-profitable coal mines, privatization of profitable ones, and cancellation of all subsidies. Significant resources have been devoted to the reconstruction of the potentially profitable entities in the coal industry and for financial help to unemployed miners.

1.49 Based on Presidential Decree #1702 (issued in 1992) coal mines were reorganized into joint stock companies (with the state as the main shareholder), and the State Company “RosUgol” was established. This decree aimed at a transfer of social expenditures from the accounts of the coal mining enterprises to local governments. At the same time, subsidies decreased and loss-making mines started to be closed down. Restructuring of the industry has been supported by several international organizations, in particular, the World Bank, the Export-Import Bank of Japan, and the Japan Bank of International Cooperation.³⁸

1.50 Critical issues and challenges. There is a need for further restructuring and downsizing in order to improve profitability and efficiency in remaining coal production enterprises, while ensuring that the social impact on households and communities affected by mine closures is adequately addressed.

E. Electricity Sector

1.51 Production, capacity and structure. As in other sectors, in the 1990s, electricity supply in Russia significantly declined; in 1997, electricity supply was 23 percent lower than in 1990. The Russian power system includes some 600 thermal generating stations (approximately 69 percent of total capacity installed), over 100 hydroelectric facilities (22 percent) and 9 nuclear power plants (10 percent). Total installed capacity is 205 GW (213

³⁷ *International Coal Report*, No. 466, January 25, 1999.

³⁸ In the *Second Coal Sector Restructuring Loan*, the Japan Bank for International Cooperation provided US\$800 million of co-financing.

GW in 1999), although only around 188 GW are considered available. In 1998, 45 percent of electricity production used natural gas as input, 17 percent—coal, 13 percent—nuclear fuel, 19 percent—hydro resources and 6 percent—other.

1.52 Export of electricity is not significant—in 1994 only about 2 percent of total production. The main actors in the Russian electricity sector are UES (54 percent State-owned) and over seventy Regional Distribution Companies (*energos*). The nuclear power operator (Rosenergoatom) has exclusive responsibility for the nuclear element of the electricity system.

1.53 Transmission. The current Russian high-voltage transmission network includes 146,700 km of high voltage lines above 110kV. While the network is overbuilt, generating capacity in Russia is subject to major operating constraints.

1.54 Tariffs. Similar to prices in other sub-sectors, domestic electricity prices remain below the level of world prices. In 1997, subsidies to electricity amounted to around 42 percent of the average price. The total amount of implicit subsidies for electricity generation plants is estimated at about 2 percent of GDP (2.6 percent of GDP in 1994 and 1.6 percent in 1997—see Annex IV for details). Electricity prices for households were about two-thirds of the price paid by industrial customers. As in other sub-sectors, there is a serious problem of cash collection.³⁹

1.55 Retail electricity tariffs are regulated by Regional Energy Commissions, which are controlled by regional administrations. In principle, the Regional Energy Commissions are supposed to follow the direction of the Federal Energy Commission; however, in practice, the interests of the Federal and regional commissions are often not consistent.

1.56 Restructuring. There are two key factors for restructuring the electricity industry: (1) a clear tariff regulation mechanism permitting an adequate return on capital, and (2) aggregation of distribution and generation assets to form a relatively small number of enlarged companies. At present, the main questions relate to the second point. In particular, the government has not decided (as of November 2000) whether the regional distribution companies will be merged or left as they are.

1.57 On December 15, 2000, the government announced the key principles of the government program for power sector reform, which include: liberalization of the wholesale electricity market, termination of tariff cross-subsidization, and the creation of 10–15 large companies and 30 smaller regional energos based on co-generation plants. The Government clearly anticipates substantial increases in electricity prices; it has approved an energy sector overview calling for electricity prices to rise 2.7 times over the next three years. However, the program does not specify how tariff setting will be regulated.

³⁹ See Annex IV for details.

1.58 Critical issues and challenges. The electricity sector (just as the gas sector) is dominated by a large national monopoly impeding the emergence of competition. Similarly, this sector also is a major source for continuing subsidization of other sectors of the economy through non-payments and an impediment to efforts to instill payments discipline in the economy. Further, there is an enormous potential for electricity savings in Russia. Some demand reductions can be expected to occur naturally in the near term as the economy restructures and prices come to reflect the cost of production. Additional opportunities for improving the efficiency of electricity consumption include establishing and enforcing equipment standards, funding development of energy-efficient technology and investments in energy-efficient equipment in manufacturing facilities.

F. District Heating

1.59 Heat production. Most urban areas in Russia are served by a district heating network (81 percent of heat production is supplied to urban areas). About 55 percent of heat supplied by district heating systems is consumed by industry.

1.60 A major advantage of district heating is that it easily accommodates the use of low grade sources of energy, such as waste heat from power plants or industrial facilities, bio-fuels such as wood and straw, or brown coal and coal. However, as currently operated, Russian district heating systems rely heavily on high-grade fuels such as gas and oil, which are then converted largely in heat-only boilers instead of in more efficient heat and power plants. The most common fuels in the production of heat are natural gas (about 47 percent of total heat production) and coal (38 percent).

1.61 Heat transmission and distribution. Heat produced in power stations is delivered through a network of transmission and distribution pipes; nationwide, there are an estimated 260,000 km of pipes. The local energy companies (energos) deliver heat to large industrial customers and to municipally run district heating networks. The heat medium is primarily hot water, although some industries are supplied with steam (approximately 11 percent of the total network). The pipes are poorly insulated, and the loss of heat in transmission and distribution pipes is estimated at 17 percent.

1.62 Tariffs and subsidies. Tariffs charged by the energos for industries and municipalities are based on heat production and transmission costs. Very little is charged for depreciation of existing assets. While rates charged to industrial customers are higher than those charged to municipalities, overall rates are below the appropriate levels needed to finance system rehabilitation and replacement.

1.63 The municipally owned distribution systems further subsidize their sales to households and public and commercial customers by charging less than the amount needed to pay the energos and cover their own fuel costs. Heat subsidies are accommodated within

municipal budgets, some of which are in turn subsidized by the Federal Ministry of Finance.

1.64 Critical issues and challenges. Heat consumption is largely un-metered, uncontrolled and under-priced. The non-payment situation compounds these problems. Furthermore, system inflexibility, combined with a lack of financial resources for system upgrading, results in an unsustainable continuation of inefficient practices.

2. Evolution of the Bank's Sector Assistance Strategy

2.1 Given Russia's vast natural resources and the potential contribution that these resources can make to achieving sustainable growth and poverty reduction, the Bank emphasized policy reform in energy and natural resource pricing, including the imposition of hard budget constraints and the regulation of natural resource monopolies.

2.2 The long-run priority objectives for the Bank's assistance strategy in Russia at the first stage of the transformation can be summarized as (a) to support the development of a market-oriented economy based on private sector initiatives; (b) to encourage the redirection of public sector involvement in the economy toward the establishment of open and competitive markets and the provision of physical, social, legal, and institutional infrastructure elements not normally provided through the private sector; and (c) to establish a long-term relationship between the Bank and Russia.

2.3 In the mid-1990s, the Bank's country assistance strategy was modified to include the priority objective of moderating the impact of the transition on socially vulnerable groups by supporting the development of a viable social safety net and maintaining social services and infrastructure, while improving the efficiency of public expenditures and promoting more flexible labor markets.

2.4 Short-run priorities included actions to prevent further collapse of the infrastructure base, to expand the legal and institutional framework for private sector activities, and to reform policies that create opportunities for corruption. After the Russian financial crisis, the short-term operating strategy prevailed.

2.5 The instruments in the first phase of the transformation included mainly rehabilitation loans. A shift in program focus and instrument mix began in 1996, and was crystallized in the Bank's strategy in subsequent years to support a comprehensive, accelerated program of structural reform (*SAL I* and *II*).

2.6 The Bank's involvement in the energy sector at the early stage was to assist in (a) establishing suitable policies for future development by providing highly focused policy advice on pricing, taxation, petroleum legislation, and institutional reform; and (b)

financing high priority projects that would not otherwise attract foreign investment, or where the Bank's participation could assist in mobilizing substantial additional resources.

2.7 While the Bank has actively supported key macroeconomic reforms, the sustainability of the stabilization process depends on key sectoral reforms, especially in the energy sector. In this context, the energy sector has been important for the stabilization program by generating additional tax revenues, reducing subsidies, and attracting foreign investment, as well as by achieving a relatively quick supply response through carefully chosen investments.

2.8 As macroeconomic conditions stabilized and the policy framework became better established, the Bank's assistance shifted towards investments where there was a clear justification for public sector involvement. In particular, bank operations in the energy sector ranged from specific investment projects (oil, natural gas and electricity) to sectoral adjustment loans and hybrid investment operations (coal).

2.9 The other targets included:

- Reform of monopolies, including restructuring to separate naturally monopolistic and potentially competitive activities,
- Improved network access for independent gas and oil producers,
- De-monopolization of electricity generation,
- A significant reduction in the list of customers whose energy supply may not be cut off,
- Reduction in non-payments and increase in cash collections,
- Tariff increases toward full cost recovery and reductions in cross-subsidies between categories of customers,
- Encouragement of efficiency,
- Improved taxation of the fuel and energy sector,
- Rationalization of the tariff structure,
- Development of PSA legislation, and
- A transition to a sustainable, privately-owned industry.

2.10 The operating objectives and broad strategy of the Bank have not changed appreciably since the beginning of the 1990s. However, the program focus and the mix of instruments have changed significantly.

2.11 During the early years in the energy sector, the lending program emphasized rehabilitation and institutional development. Because of the volatile economic, political and administrative environment of the early-to-mid-1990s, policy reform was pursued largely through analytical work and dialogue. Quick disbursing operations—apart from *Rehabilitation I and II*—were not features of the Bank's program until 1996.

2.12 Oil. In the oil sub-sector, the Bank's investment priorities included well workovers, new field development, transfer of technology, pipelines, and refinery rehabilitation.

Moreover, the Bank's actions aimed: (a) to establish an environment conducive to private investment in oil production through the legal and regulatory framework; (b) to reform oil taxation in order to increase revenues, eliminate distortions, and strengthen incentives for investment; and (c) to strengthen the regulatory framework for oil transportation in order to achieve transparency and efficiency in pricing and access rights.

2.13 In the policy context, the Bank focused mainly on pricing, tax reform based on a simplified profit-based system, export quotas, access rights and regulation of oil pipelines, and stimulation of foreign investment through the development of the legal basis for production sharing agreements (*Rehabilitation Loan, Second Rehabilitation Loan, Oil Rehab. I, Oil Rehab. II*).

2.14 Gas. Bank operations in the gas sub-sector aimed at promotion of greater efficiency in natural gas distribution and use through pricing and regulatory reforms, as well as at rehabilitation of local gas distribution systems to improve safety and reliability. Specific objectives included such issues as pricing and tax policy, legislation, correct setting of investment priorities, reduction in accounts receivable, level of exploration, exports, and development of the legal framework for PSAs (*Gas Dist. Rehab. and Energy Efficiency Loan*).

2.15 Coal. In the coal sub-sector, lending in the 1990s focused on the elimination of high-cost producers, meeting expected demand at lower costs, and establishing a sound social safety net as a part of the restructuring program. Specific objectives included: elimination of high loss-making mines without prospects, reduction/elimination of production subsidies (improved targeting and delivery of coal subsidies), establishment of more efficient and sustainable industry, privatization/furthering competition, realisation of pilot projects for local development and providing assistance in resolving employment issues in the mining communities, completion of the transfer of social resources to local governments and ensuring sufficient funding, mitigation of the adverse environmental impact of mine closing, development of social partnership relations, private sector participation in power generation and distribution, and a social safety net for the most vulnerable adversely affected by reforms (*Coal SECAL I and II, Coal Sector Restructuring Implementation*).

2.16 Electricity. The Bank's operations in the electricity sub-sector focused (in order to promote greater efficiency and private investment) on the concepts of corporatization and commercialization of power entities, as well on pricing and improved financial management. Specific objectives included such issues as tariff level and structure (tariffs adjustment to cover full economic costs and elimination of cross-subsidization between users), cash collection (reduction in accounts receivable), privatization (increased private-sector participation in power generation and distribution), competition, and pricing and

institutional reforms (*Gas Dist. Rehab. and Energy Efficiency, Electricity Sector Reform Support*).

2.17 District heating. Specific Bank objectives in these sectors included elimination of subsidies and cross-subsidization between users; rationalization and rehabilitation of the existing infrastructure; commercialization and/or privatization of operations on a sound technical, regulatory, and economic basis; institutional development; and tariff adjustments to cover full economic costs.⁴⁰

2.18 Overall lending volume. Lending volume to the Russian energy sector in 1993–2000 totaled US\$2,849 million (US\$840 million in 1997, the peak lending year in energy).⁴¹ In 1993–1995, the Bank’s assistance in the energy sector focused mainly on oil-related projects⁴² (US\$1,209 million out of US\$1,279 million of loans provided in this period). In contrast, in 1996–2000, the Bank’s lending to the energy sector focused on coal-related projects⁴³ (US\$1,525 million out of US\$1,565 million of loans provided in this period). The breakdown of the Bank’s assistance by year is presented in Annex VII, with lending volumes in “four distinct periods” of World Bank-Russia relations: 1990–1991: 0; 1992–1995: US\$1,279 million; 1996–1997: US\$1,365 million; 1998–2000: US\$200 million.

2.19 To summarize, the Bank’s objectives and targets seem to be reasonable, particularly taking into consideration the situation in the sub-sectors at the beginning of the 1990s. However, the lack of commitment of Russian political forces—both the Government and the Duma—to the reforms, especially structural and systemic changes, made them not very realistic.⁴⁴ Finally, in Russia, ten years is too short a period in which to achieve substantial change.

3. Bank Products and Services Assessment

A. The Bank’s Economic and Sector Work

3.1 The Bank’s assistance in the Russian energy sector in the 1990s was supported by a number of studies and sectoral analyses. The most important ones are discussed below.

⁴⁰ See *Municipal Heating Project* (FY2001).

⁴¹ Year of the project’s approval.

⁴² *The First and the Second Oil Rehabilitation Loans, Emergency Oil Spill Recovery and Mitigation Project.*

⁴³ *Coal SECAL I, Coal Sector Restructuring Implementation, Coal SECAL II, and Coal and Forestry Sector Guarantee Facility.*

⁴⁴ The view of FCPF is that: “unrealistic objectives cannot be reasonable.” Our point is that objectives were reasonable in the situation at the beginning of the 1990s but the lack of commitment of Russian political forces made them not realistic.

3.2 *A Study of the Soviet Economy (Chapter V.6: Energy)*.⁴⁵ *A Study of the Soviet Economy*, published in 1991, was one of the first extended analyses of the situation in the Soviet Union in the new economic environment. The chapter devoted to the energy sector presented an overview of all sub-sectors with the emphasis on economic issues (pricing, trade, export, efficiency, etc.) and recommendations for the sector. The study provided the Bank and other international organizations with the fundamental knowledge of the sector, and specified basic areas for the reforms.

3.3 The situation in the sector was characterized correctly, and the need for drastic reforms was justified. Recommendations included, but were not limited to:

- Initial price increases and price liberalization,
- Decentralization of the energy complex,
- Promotion of competition,
- Free access to transport facilities,
- Free trade,
- Development of new export channels,
- New investments,
- Introduction of more efficient technologies (including refineries),
- Improvement of gas pipeline maintenance,
- Attraction of foreign investment (joint ventures and long-term investments),
- Leasing arrangements and new legislation for international investment,
- Reform of the energy distribution system,
- Increase in storage capacity,
- Environmental regulations and safety issues (in the nuclear generating sector, especially),
- Introduction of business management methods, and
- The need for foreign assistance in reform of the sector.

3.4 *Russian Economic Reform: Crossing the Threshold of Structural Change*. A significant part of this World Bank study, published in 1992, was devoted to the energy sector. The authors emphasized links between reforms in the energy sector, macroeconomic stabilization, and the restructuring of enterprises. All recommendations presented in this study reflected the real situation in Russian energy sector and indicated clear directions for reforms. The main recommendations presented in this work can be summarized as follows:

- Adjustment of energy resource prices to the world level in two years, and price liberalization in potentially competitive markets for energy resources;
- Development of the tax system in oil industry, with the average tax burden lowered and taxes based on profits, rather than revenues;

⁴⁵ *A Study of the Soviet Economy (1991)*, Vol.3, IMF, IBRD, OECD, EBRD, Paris, pp. 181–232.

- Development of the legal framework for the oil industry;
- Development of a new management structure for the energy sector, based on market principles;
- Development and implementation of a privatization program in the oil and gas industry;
- Legislative changes to support foreign direct investment, especially in the oil industry; and
- Liberalization of foreign trade.

3.5 *Measures to Revitalize the Russian Oil Sector: Tax and Related Reforms.* This study, published in 1998, focused mainly on reform of the tax system in the oil sector, proposing introduction of the “control oil price” for tax purposes and development of a profit-based tax system. The authors discussed several other important areas for oil sector reforms, including: (a) change in the investment climate, i.e., the legal and tax environment; (b) development of technical capabilities for oil export; (c) internal and world oil price adjustment; and (d) free access to pipelines.

3.6 In 1993-1994, the World Bank initiated wide-ranging studies of the coal industry, focusing on its current status and approaches for development. The results of these studies were published at the end of 1994 in the work *Restructuring the Coal Industry: Putting People First.* According to the Bank’s estimates, coal mining in Russia would decrease considerably, but Russia would remain one of the largest coal producers in the world.

3.7 The basic problems of the coal sector, emphasized in these studies, include insufficient regulation and transparency, and misuse of funds. Moreover, it was revealed that RosUgol dominated the management of state subsidies, and that it was uninterested in the decentralization of the industry and in creation of a competitive market in the coal sector.

3.8 In addition, the Bank’s studies focused on social problems in the coal industry. The principal recommendation in this area included the creation of a social safety net and support for re-employment of displaced workers, which could guarantee restructuring with minimum negative social consequences. Based on the results of the Bank’s analyses, reforms for the coal sector were developed and formulated in the governmental document “Basic directions of the restructuring of coal industry in Russia.”⁴⁶

3.9 We can conclude that the Bank’s studies of the energy sector in Russia in the 1990s were done professionally, and that recommended actions were based on both worldwide experience and a deep analysis of the situation in Russia.

⁴⁶ The view of FCPF is that: “The Bank’s study was the paper after the thorough discussion of which MinEconomy and RosUgol, taking into account the Bank’s proposals, developed the “Basic directions of the restructuring of the coal industry in Russia.”

B. The Bank's Loans

3.10 Oil. Two important projects were implemented in the Russian oil sector: *Oil Rehabilitation I* (US\$610 million) and *Oil Rehabilitation II* (US\$500 million). The main targets of these projects can be specified as follows:

- Slowing the rate of decline in oil production and export, and increasing production capacity;
- Strengthening the managerial, technical, and financial capabilities of the chosen oil companies, and introducing international standards into Russian oil fields;
- Attracting additional financial resources, including foreign investments, into the oil sector through mutual financing and demonstration of project output; and
- Support for the legislative, tax, price, and institutional reforms needed for large-scale investments in the sector.

3.11 In general, the Bank's objectives corresponded to the targets declared at that time by the Russian Government, which referred both to production issues and to the development of market-oriented reforms. At the beginning of the 1990s, an increase in oil production was a central political issue. In particular, "The concept for Russia's energy policy in the new economic conditions," approved by the Government of the Russian Federation in 1992, set crude oil extraction as an economic priority.

3.12 From the point of view of the maximum short-run output effects, investment in oil-sector rehabilitation was, undoubtedly, reasonable.

- However, the drop in Russian oil output was caused not so much by production problems, as by a decline in domestic consumption and in exports to the countries of the former Soviet Union and Eastern Europe.
- Meanwhile, the Bank's projects were oriented mainly on rehabilitation of production capacity. This could be the reason why funds allocated to those projects were not fully used—only 68-69 percent of the total funds were used.

3.13 There were other alternatives for Bank assistance in the oil sector, such as development of the oil pipeline network to facilitate crude oil exports to Western Europe,⁴⁷ and modernization of obsolete refining technology.⁴⁸ Both of these areas had been identified by the Russian Government:

⁴⁷ The Bank financed a feasibility study of the Baltic line, but, due to the critical conceptual differences between the Russian Government and the Bank, the transportation projects were not financed.

⁴⁸ Other organizations (such as the EBRD) were involved in the refining sector.

- The Governmental Commission’s “Russia’s energy strategy” (1994) stressed that fuel exports could not be increased because the export capacity of oil pipelines and terminals had been reached. The need to increase export capacity was emphasized—in particular, construction of both a new port for transshipment of crude oil on the Bay of Finland and a pipeline leading to it.
- An increase in refining efficiency was emphasized as a key goal in the Russian Government’s 1992 “Concept for Russia’s energy policy in the new economic conditions,” and again in “Russia’s energy strategy” (1994) and in Presidential Decree #472 (1995), “Principal aspects of the energy policy of the Russian Federation for the period 2010.”

3.14 Despite the need to increase transportation capacities for oil export and modernization of refining capacities, neither of these areas has been supported by the Bank’s programs. It seems that allocation of funds to one (or both) of these areas, rather than to increasing output **in the short term**, would be much more efficient.

3.15 Development of transport capacity (pipelines and terminals) would allow Russia to increase oil exports. The overall output of the Russian oil industry and investment in the oil sector—financed partially by additional earnings in foreign currency—would increase as well, due to external demand. The potential for additional exports would also attract foreign direct investment and, to some extent, accelerate the process of internal and world oil price adjustments.⁴⁹

⁴⁹ Bank staff disputed this criticism, noting that the Bank did, in fact, put considerable emphasis on the value of export capacity. The Russian Oil Transport and Export Study was a major piece of ESW and this was followed by lending for a feasibility study for the Baltic Pipeline System (BPS). Although the Bank did not lend for an export project, Transneft itself had the capacity to raise the funding for this project (albeit in a fashion that the Bank does not approve of), and, in fact, BPS Phase 1 is moving ahead. Furthermore, a series of measures, such as the use of flow improvers and the increase in storage capacity at Novorossiysk, have been implemented to increase export capacity, which has increased over the last few years. Moreover, the Bank noted that additional export capacity will provide benefits only in the near to medium term. Given the decline in production that uses the Transneft system, export capacity will move into surplus in the not too distant future. The Bank would, therefore, certainly have reservations about financing a project such as BPS at this time. While access to export capacity has been a contentious point for investors (both domestic and foreign), the majority of potential foreign investors has responded by focusing on development prospects that will not be dependent on the Transneft system, such as Sakhalin and Priraslomnoye. For these investors, the PSA problem has been a much greater concern. Finally, ECA staff noted that the decision to focus on the two Rehabilitation oil loans needs to be evaluated within the context of what was practical and what pressures existed to proceed with a lending program to Russia at the time when the decision was made.

We have to emphasise, however, that, in the argumentation line above, a number of factors have not been taken into account. (1) The analytical and feasibility studies mentioned above, however, were done in the second half of the 1990s, while the basic decisions concerning assistance to the oil sector were all made before June 1994. (2) It is true that existing export capacity increased and the development of BPS has been started. Moreover, both were done without external borrowing. However, all of this should not be considered as an argument against external financing of such projects, because external borrowing could have accelerated the process of developing existing and new export capacity. (In this context, we have to mention that the increase in Russian oil output in 1999-2000 also was achieved using mainly internal financial resources). (3) The Bank assumes that, due to a decrease in oil output, export capacity will again be in excess; consequently,

3.16 Emergency oil spill recovery and mitigation. The Bank's Komi Emergency Oil Spill Recovery and Mitigation Project (US\$99 million) prevented a major environmental disaster in the Pechora basin, which would have resulted from the failure of an oil pipeline. Bank support was reasonable, and the project is considered one of the most successful examples of the Bank's assistance in the energy sector.

3.17 Bank assistance in the coal sector. Three important projects were implemented in the Russian coal industry: *Coal Sector Adjustment Loan I* (US\$500 million), *Coal Sector Adjustment Loan II* (US\$800 million) and *Coal Sector Restructuring Implementation Loan* (US\$25 million). The main targets of these projects included: (a) creation of competitive coal companies, which could guarantee self-financing in the long run; (b) a guarantee of social protection for the industry's workers and dismissed personnel; (c) a gradual reduction of government support for the branch's enterprises; (d) social, economic and ecological rehabilitation; and (e) a guarantee of social stability in the coal mining regions.

3.18 The targets of the Bank's projects reflected real needs of coal sector restructuring and coincided with the basic concepts of the coal sector reform specified by the Government in "Basic directions of the restructuring of coal industry in Russia."

3.19 Reforms of natural monopolies (SAL I, II, and III). Reform of natural monopolies was one of the most important issues in the Bank's assistance to the energy sector as a whole. A reform of natural monopolies was mentioned initially in the *Rehabilitation Loan II*, which envisaged the introduction of non-discriminatory access to oil pipelines. However, the Bank's objectives concerning the reform of natural monopolies were formulated mostly in the set of conditions to structural adjustment loans.

3.20 Particularly in *SAL I* and *SAL II*, the following basic objectives were specified: (a) pricing should better reflect costs and demand, (b) non-payments should be curtailed and payments discipline should be strengthened, (c) an effective regulatory system should be set up, and (d) sectors should be restructured in such a way that their performance is transparent and open for competition.

3.21 Later on, in the set of conditions to *SAL III*, the objectives of the natural monopoly reforms were reformulated. In particular, they focused on: (a) strengthening of payments

the Bank should not finance development of such projects as BPS. First, in the 1990s, limited export capacity significantly restricted Russian oil production. Second, Russian oil output is continuously increasing, and existing resources allow further increases in oil production (in particular, due to the increase in oil output from the northern part of European Russia and from Western Siberia). Taking this into account, the development of export capacity is still a current issue. (4) It is true that many foreign investors focus on oil production projects not related to the Transneft system, but this supports the argument that (a) transport-related issues restrict the development of the sector, and (b) the Bank should provide financial support to the transport system. (5) It could be that the development of oil export capacity in the first part of the 1990s was difficult due to some important reasons, but, in the Bank documents from 1992-1994, no such reasons are mentioned or discussed.

discipline; (b) improvement of conditions for private investment; (c) reduction and possible liquidation of barriers to competition, i.e., protection from monopolistic abuse; (d) guarantee of better reflection of costs and demand in pricing; and (e) strengthening of effective regulation in cases when competition does not secure observance of public interests.

3.22 All of the objectives listed above reflected real needs for the structural reform of natural monopolies. A similar set of objectives were announced by the Government in “Basic directions of the social and economic policy of the Government of the Russian Federation in the long run,” approved in July 2000.

4. Development Effectiveness (Outcomes and Impact)

4.1 The results of the Bank’s operations in different sub-sectors of the energy sector have been mixed.⁵⁰

4.2 Good results have been achieved in the coal sub-sector, supported by *Coal SECAL I, II* and the *Coal Sector Restructuring Implementation Loan*.⁵¹ As a result of these projects, state subsidies to the coal industry declined from more than 1.0 percent to 0.1 percent of GDP between 1993 and 2000. During the same period,

- The share of subsidies that went to support restructuring of the industry, as opposed to meeting the production costs of loss-making mines, increased from a negligible amount to more than 60 percent;
- Direct subsidies to coal production declined from 70 percent of sales value in 1993 to 13 percent in 1998;
- The old coal monopoly (RosUgol) was dismantled and replaced by a separation of policy, safety, environmental, subsidy management, and production responsibilities;
- Privatization of the sector was initiated, with the share of private companies in total production rising from some 5 percent in 1993 to 22 percent in 1998 and 42 percent in 2000;
- Productivity in the sector, following the period of decline, increased by 74 percent between 1994 and 2000;
- Systems were developed for channeling subsidies directly to beneficiaries in order to mitigate the social impact of mine closures and sector restructuring.

⁵⁰ The view of FCPF is that “taking into account the need to pay off the loans and all the complex links, consequences, etc., the question about the successfulness of the projects still remains unanswered, even granted the positive results in the coal sub-sector.”

⁵¹ We agree with FCPF that there were also some imperfections in the implementation of the coal projects, e.g., that “the initially established SECAL closing date was extended for more than 2 years,” and that “a number of significant parts of restructuring program outlined in the SECAL I documentation were not achieved.” Nevertheless, the overall achievements of coal projects we consider as satisfactory.

4.3 Without the assistance of the Bank, a consistent restructuring of the Russian coal industry would have been impossible. In particular, the Bank's projects had a fundamental impact on the creation of the competitive environment in the coal industry. It is expected that, in 2001-2002, the process of closing loss-making mines will be finished, and, starting in the year 2003, state subsidies to the coal industry will be fully stopped.⁵²

4.4 Some progress has been achieved in the oil sector. Basic targets of the *First* and the *Second Oil Rehabilitation* projects were achieved. The *Komi Emergency Oil Spill Recovery and Mitigation Project* prevented a major environmental disaster in the Pechora river basin. Some progress was observed in other areas, including privatization of state properties, price liberalization (domestic oil prices increased to 60 percent of the world level), cancellation of administrative restrictions (export quotas), and development of new legislation (in particular, related to oil pipelines and PSAs).

4.5 However, the oil market is still heavily regulated and the situation is not transparent. Prices set by vertically integrated companies are frequently lower than market prices. The program failed in developing a tax system⁵³ and liberalizing foreign trade; oil exports are harmed by existing implicit restrictions. The flow of foreign direct investment is rather negligible. Further development of the regulatory framework for oil pipelines and the law on PSAs are still needed (additional normative acts have to be approved).⁵⁴

4.6 Therefore, while the Bank's projects had a definitely positive impact on the sector, the real effects of the Bank assistance were rather minor. Basic objectives either were not achieved at all, or were achieved only partially. Consequently, the Bank's overall activities in the oil sector can be evaluated as not fully successful.

4.7 In gas, the Bank made several attempts to restructure the sector, including demonopolization, pricing issues, subsidies, separation of gas transmission activities from upstream gas production, etc. All of these efforts failed, primarily because both the Government and Gazprom were unwilling to move forward on such program.⁵⁵

⁵² We fully agree with FCPF statement that it was possible due to "the government commitment based on its political will."

⁵³ We have to mention that there were some changes in the oil sector toward profit-based taxation. In particular, in 2001, some taxes on turnover were cancelled, or tax rates were decreased significantly. Moreover, as the result of the ruble devaluation, excise taxes on oil in dollar terms sharply decreased, and export taxes on oil were connected with world prices.

⁵⁴ The ECA staff believes that the PSA amendments passed in late 1998 owed much to the dialogue between the Bank and the Government linked to SAL III. In fact, the restructured SAL III in 1999 focused only on the regulations (normative acts) and the only remaining legislative issues related to the PSA chapter in the Tax Code. However, to date, neither the corresponding chapter in the Tax Code nor related normative acts have been approved.

⁵⁵ Bank staff claim that "there is little we can do with \$100,000 budgets against companies with tens of billions of dollars in revenue." Of course, this is true, but the Bank should not provide funds if it is clear that it is not able to achieve the objectives.

4.8 Finally, regarding the effects of the Bank's structural adjustment loans (SALs) on the energy sector, several tasks indicated by the Bank (especially in *SAL III*) have been included in the Government program "Basic directions of social and economic policy of the Government of the Russian Federation in the long run," approved in 2000. Moreover, as a result of SAL I and II, new principles have been introduced for infrastructure monopolies (electricity, natural gas, and railways) to implement cost-based pricing and to reduce cross-subsidization. However, de-monopolization did not take place in any of these sub-sectors. Some progress has been recently achieved in cash collection, the problem emphasized in all structural adjustment loans. In particular, according to the State Statistical Committee of Russia (Goskomstat), UES cash collection rates went from roughly 20-25 percent in 1999 to about 75 percent by the end of 2000; in the same time period, Gazprom cash collection rates reached a level of about 70 percent.

4.9 It is increasingly evident that the rehabilitation and investment loans did not address structural issues—results are localized and do not address systemic problems, such as changes in the legal environment. Thus, the impact of the Bank's projects on institutional development has been rather limited. Critical issues, such as reductions in non-payments and increases in cash collections, increase in tariffs toward full cost recovery, reduction in cross-subsidies between categories of customers, energy efficiency, and so on are still listed in the government's plan for the next 10 years.⁵⁶ Legal and structural changes resulting from the projects have been minor.⁵⁷

5. Attribution of Bank Program Results

5.1 The early performance of the Russia portfolio was among the poorest in the Bank, with only 31 percent of the portfolio rated as fully satisfactory in 1996. Performance improved dramatically with a regime of intensive, objective-oriented supervision to a rating of 74 percent satisfactory in mid-1998. With the onset of the 1998 financial crisis, performance deteriorated sharply to only 33 percent satisfactory in 1999. However, by the end of 2000, results had improved and about 73 percent of projects in the Russia portfolio were rated satisfactory.

5.2 There is a common view that the main obstacles to attaining project and program objectives in Russia include: (a) difficult conditions in Russia, including the lack of a domestic political consensus behind reform, changing government officials, and widespread corruption; (b) limitations in the design and implementation of programs; and (c) an overly diversified portfolio of Bank projects and policy targets.

⁵⁶ Although the main objectives were not achieved, the direction of the Government's and RAO UES' thinking on the reforms has evolved significantly and in the right direction due to Bank activities.

⁵⁷ According to Bank staff, in several cases, the Bank's assistance had unintended positive effects and was instrumental in preventing a reversal of policy or in correcting mismanagement or preventing approval of bad legislation (e.g., in the power and gas sub-sectors).

5.3 External factors. It must be noted that progress in the Bank's project execution has been frequently halted by political events and disturbances in the country, such as civil unrest in Moscow in early October 1993, government changes leading to delays in reaching agreement, the financial crisis in 1998, the presidential election in 2000, and the conflict in Chechnya.

5.4 Aid partners. In energy, as in other sectors, many external players have been involved in supporting market reforms—e.g., in *coal*, the Bank cooperated with the Japan Export-Import Bank; in *electricity*, with USAID, CIDA and EBRD; in *oil*, with EBRD, the Dutch Government, and the Producer Association.

5.5 At times, conflicting policy agendas that drove the particular projects made partnering difficult, risky, and expensive. Nevertheless, there are some notable examples of partnership successes, e.g., cooperation with the Japan Export-Import Bank in the *coal* sub-sector. The experience accumulated suggests that a fruitful partnership can best be developed through a greater exchange of information on a limited number of topics that several donors view as critical in order to find synergies among the assistance available from different partners.

5.6 Russia's performance. First of all, in the process of transition to a market economy, Russian policy makers still lack confidence that the market will adequately provide what is needed for all regions, especially energy resources in the remote regions. Moreover, there is a common view that pursuit of personal financial gains within the government and government-related agencies or companies is pervasive in Russia. As in many other developing countries, the combination of arcane laws and government control mechanisms provides the means and incentives for corrupt practices. In Russia, virtually every business is in violation of some laws (primarily tax laws) and, hence, is the potential target of public or private shakedowns, primarily at the local level. Thus, in many cases, corruption, together with social concerns, is the main reason for problems in implementing reforms at the local level.⁵⁸ In addition to the corruption issue, there is the problem of lack of private investment support. If the reform program is to be successful, the Russian Federation must improve the private investment climate in order to stop the outflow of Russian private capital and stimulate foreign investors to commit to Russia.

5.7 The Bank's performance. Given the fact that Russia was a new borrower and, therefore, unfamiliar with Bank operational procedures and project implementation, the Bank moved too quickly and too widely in the development of investment lending during the early years of engagement.

⁵⁸ The corruption problem has been addressed in the Bank's projects—e.g., reforms to eliminate or minimize government policies that create opportunities for corruption were listed as one of the objectives of *Coal SECAL II* and *SAL III*).

5.8 The Bank's systemic objectives were correct and clear. However, their achievement without the full support of Russian policy makers or government commitment made them not very realistic—e.g., de-monopolization in the *gas* and *electricity* sub-sectors. Without the support of the Government and the main players such as Gazprom and UES, nothing could be done in the energy sector.

5.9 The Bank's lending in the energy sector was not made sufficiently conditional on progress in sectoral policy reforms, and any conditionality triggers were often hardly quantified. Further, the Bank did not adequately address major structural problems, such as development of the legal base, cash collection, corruption, the lack of fiscal and financial discipline, etc. These problems are still open. Finally, although it was evident that it would be hard to achieve all the objectives, clear prioritization among goals (for the sector and for each sub-sector) did not appear in the Bank's documents.

6. Recommendations for Future Bank Assistance

A. Lessons from the Bank's Experience

6.1 There are a number of lessons that can be learned from the Bank's experience in Russia in the past. The most important messages are the following:

- Implementation capacity, especially fiscal management, is still weak and must be improved;
- Results are localized and do not address systemic problems;
- Supervision of projects is resource-intensive and costly;
- Adjustment loans must be disbursed when conditions for significant structural reforms are met—the latter should be defined not as interim steps, but as outcomes, e.g., legislation enacted by, rather than simply submitted to, the Duma;
- Multiple smaller disbursements of loans seem to be effective, since splitting the loan enables the Bank to be engaged in the sector longer and results in better compliance (e.g., *Coal SECAL I and II*, and *Coal Sector Restructuring Implementation Loan*);
- Cooperation with other donors may increase the effects of the Bank's assistance to the sector. In the *Second Coal Sector Restructuring Loan*, the Japan Bank for International Cooperation provided US\$800 million of co-financing, effectively doubling the World Bank loan. In the *First Oil Rehabilitation Project*, the Bank's funding amounted to US\$610 million and

the rest (US\$316 million) was provided by other participants: EBRD, the Dutch Government, and the Producer Association.⁵⁹

6.2 Finally, money itself often is not the only, or the most important, factor in assessing the transition process.⁶⁰ The crucial issues are the policy dialogue and the commitment of policy makers to the reforms.⁶¹

B. Recommendations for Assistance

6.3 How should the Bank's work in the sector continue?

- To achieve most of the Bank's long-term objectives in the energy sector, Russian Government commitment to and ownership of reform is needed. The best example is the success in the coal sector reform. On the other hand, the lack of Government commitment to the reform in oil and gas⁶² is the main reason for the failure of the Bank's programs in those sectors.
- Sector-specific adjustment loans are more focused than structural adjustment loans and are easier to manage and implement because results are more measurable.
- Long-term involvement of the Bank in the sectoral transformation is preferable; expectations for rapid results in systemic transformation are not realistic.
- The Bank's analytical and advisory assistance in the sector should be continued.

⁵⁹ As mentioned by FCPF "also USAID and the Government of Japan provided in the initial phase of coal sub-sector reforms in the form of grants of US\$500,000 and US\$1 million, respectively."

⁶⁰ On the other hand, we cannot forget that financial support was an important incentive to move along reforms in the coal sector.

⁶¹ The view of the FCPF is "that the main conclusion that should be drawn in respect of the ten-year Bank-Russia co-operation is that its major positive aspects are neither connected with the financial support provided by the Bank (which amount being negligible in terms of Russia's economy) nor contained in specific projects, irrespective of the fact that some of them (especially those in coal) considerably impacted the sectors in which they were implemented. In [our] view, the principal benefits Russia has gained from its co-operation with the Bank are as follows: the positive experience accumulated, the introduction of advanced social, economic and management technologies, some elements of western mentality acquired by Russian government officials and a large number of experts during their joint work with the Bank; the progress in legal and institutional reforms that would not have been achieved without the Bank's assistance in the period under review; the creation of barriers to making decisions that would have a negative social effect if adopted by pushing through the Duma by lobbyists."

⁶² This is mainly because there exists a large group of powerful people for whom the existing situation is extremely beneficial.

- Multiple disbursements for loans seem to be more effective, since it allows the Bank to be engaged in the sector longer and has resulted in better compliance.
- Funds should be disbursed based on real results—significant structural changes and changes in legislation.
- Finally, the Bank’s lending needs to be more selective. Projects must focus on overall objectives, such as legal and structural reforms. More narrowly focused micro-level projects should be financed only after structural reforms are implemented.⁶³

6.4 The Bank’s assistance should focus mainly on financing systemic reforms and pilot projects (to test and present implementation procedures and to show the effects of the reforms). The important issue is to center not on short-run-effect rehabilitation and restructuring projects in energy, but to support institutional and systemic transformation, i.e., restructuring the energy sector in order to reduce the direct role of the state, induce competition and make business procedures transparent.

6.5 In *electricity*, institutional reform that stimulates de-monopolization and eliminates political control over the process of adjusting tariffs (cross-subsidization) should be a fundamental criterion for Bank support. The special area of concern in this sub-sector should be the safety of Russian nuclear plants.⁶⁴

6.6 Further Bank support in the *coal* sub-sector should be premised on real implementation of irreversible structural change, especially by encouraging new private sector operations and maintaining pressure on improving efficiency. To support the final stage of restructuring of the industry, the question of granting the third IBRD coal loan should be considered.

6.7 In the *gas* sector, the Bank’s assistance should focus on systemic changes, such as de-monopolization, access to pipelines (pipeline legislation, in particular), elimination of cross-subsidization, cash collection, export limitations, etc.

6.8 In the *oil* sector, emphasis should be put on pipeline regulation (access to pipelines and tariff policy) and the development of PSA legislation.

⁶³ Bank officials have recognized that the purpose of investment lending in the first period of the Bank’s presence in Russia was to build a platform for dialogue, rather than to achieve the Bank’s overall objectives. In the future, there will be no reasons to continue this kind of lending.

⁶⁴ Until now the policy of the Bank was not to be engaged in nuclear issues.

6.9 In the whole sector, there is a need for the Bank's assistance in the development of a market environment, support for market competition, and de-monopolization. Reform of natural monopolies is a special problem which requires the assistance of the Bank. In particular, the following issues should be reflected in future Bank's projects: further price liberalization, cancellation of cross-subsidization, and equal access to pipelines, energy transmission networks and railways. Moreover, the Bank's assistance should focus on conceptual issues, such as the development of the basic concepts for state policy in the whole energy sector.

6.10 The problem of widespread corruption should be addressed in the objectives of the Bank projects. A potentially effective way to reduce corruption in Russia would be to remove the numerous means by which the federal and local governments can interfere with markets to extract an economic rent. This would entail lower and simpler taxes, streamlined red tape, reduced scope for government procurements, and privatization of remaining government assets. The implementation of projects should take into account how these economic reforms would help to reduce the scope for corrupt practices.

6.11 In all sub-sectors, the Bank's analytical and advisory assistance focusing on and supporting the reform process should be continued.

6.12 Finally, in all sub-sectors, the supervision of environmental compliance agreements should be made a central issue in the Bank's ongoing dialogue with the national and local governments.

ANNEX I

ENERGY SECTOR ASSISTANCE STRATEGY MATRIX

Strategic Objectives	Strategic Actions	Bank Assistance	Progress Indicators	Evaluation of Bank Assistance
FY 1990-91: Learning about the sector and the Soviet economy as a whole; establishing a field presence and a work program.	FY 1990-91: Extensive democratization.	FY 1990-91: Joint Study with IMF, OECD, and EBRD on the Soviet economy.	FY 1990-91: Output decline in all sub-sectors.	Positive, but preliminary, with limited real effects.
FY 1992-95: Initially, support Government of RF's program (January 1992) of price and trade liberalization, macroeconomic stabilization, and privatization. Subsequently, push ahead with those structural reforms which were feasible in the presence of only limited macroeconomic stabilization.	FY 1992-95: Rehabilitation of operating oil fields and infrastructure, extensive price and trade liberalization; de-monopolization, and restructuring of oil and gas sector.	FY 1992-95: Oil Rehabilitation I (\$610m) 1993; Oil Rehabilitation II (\$500m) 1994; Emergency Oil Spill Recovery and Mitigation (\$99m) 1995; Gas distribution Rehabilitation and Energy Efficiency (\$70m) 1995.	FY 1992-95: Oil production decline stopped; oil prices moved from 10 percent of world levels to about 50 percent; export volumes to non-CIS countries increased significantly.	Lending focused mainly on rehabilitation, and had a positive effect on output, export, and oil prices, but did not contribute much to systemic reforms.
FY 1996-98: Take advantage of "window of opportunity" to push through macroeconomic stabilization and structural reform.	FY 1996-98: Reform of monopolies, aiming to separate natural monopolies; reduction of subsidies and non-payments; improvement of taxation and tariff structure; establishment of more efficient and sustainable industry; privatization, furthering competition; Rehabilitation of infrastructure.	FY 1996-98: Coal Sector Adjustment I (\$500m) 1996; Coal Sector Restructuring Implementation (\$25m) 1996; Electricity Sector Reform Support (\$40m) 1997; Coal Sector Adjustment II (\$800m) 1997.	FY 1996-98: Decline of subsidies from 1.0 percent in 1993 to 0.2 percent of GDP in 1998; coal monopoly RosUgol was dismantled; privatization was initiated (total production of privatized companies rose from 5 percent in 1993 to 22 percent in 1998); productivity of the sector increased by 35 percent between 1994 and 1998; about 50 percent of unprofitable mines were closed.	Excessive lending. Bank's assistance was successful in the coal sector, but the effects in other sectors were limited. Except in coal, Bank's projects did not result in significant structural changes.
FY 1999-2000: Support Government of RF's 10-year economic and social development plan.	FY 1999-2000: Continuation of structural and institutional reforms.	FY 1999-2000: Final stage of Oil Rehabilitation II and Coal SECAL II; Coal and Forestry Sector Guarantee Facility (\$200m) 2000	FY 1999-2000: Output growth in all sub-sectors (see table II.1 in Annex II); further reduction of coal subsidies; total coal production in privatized mines amounted to 42 percent of the total output; increase in cash collections in the gas and electricity sub-sectors (to about 70-75 percent); shift towards profit-based taxation in the oil sub-sector.	Further positive results in the coal sub-sector. Some positive shifts in other sub-sectors.

Production, consumption, and export of energy resources

**Table. II.1. Production of primary energy resources in Russia in the period 1990–1999
(in million tons of coal equivalent)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total production, including:	1862	1758	1656	1539	1438	1402	1396	1359	1367	1388
Crude, including gas condensate	738	661	571	506	454	439	431	437	434	436
Natural gas	739	742	740	713	698	685	694	659	682	683
Coal	270	241	230	209	186	181	171	164	154	170
Peat, oil-shales, firewood	20,3	20,3	17,2	15,5	11,0	10,8	8,9	7,4	6,4	6,9
Electricity produced by hydro-, atomic, and geothermal power stations	94,7	93,7	97,8	95,5	89,0	86,2	91,1	91,6	90,6	92,1

Source: National Statistical Committee of Russia (Goskomstat)

Table II.2. Production, consumption, and export of energy resources (1990-1999)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Crude oil, mln. t										
Production	516.2	462.3	399.3	353.9	317.8	306.8	301.3	305.6	303.4	305.0
Exports, total	220.3	173.9	137.7	122.6	129.8	122.3	126.0	126.9	137.1	134.5
Non-CIS exports	99.7	56.5	66.2	79.9	91.7	96.2	105.4	109.8	117.9	115.7
CIS exports	120.6	117.4	71.5	42.7	38.1	26.1	20.6	17.1	19.2	18.8
Net exports	201.5	155.8	127.0	112.2	121.6	113.8	117.2	118.7	128.6	128.5
Domestic consumption	269.9	266.2	231.4	196.5	151.4	150.4	131.3	132.2	125.1	120.5
Net export (% of production)	39.0	33.7	31.8	31.7	38.3	37.1	38.9	38.8	42.4	42.1
Oil products, mln.t										
Exports, total	50.6	46.1	43.0	47.4	47.3	47.0	57.0	60.6	53.8	56.9
Non-CIS exports	35.0	27.0	25.3	35.3	39.1	43.5	55.0	58.4	51.2	53.9
CIS exports	15.6	19.1	17.7	12.1	8.2	3.5	2.0	2.2	2.6	3.0
Net exports	44.8	40.3	40.9	45.2	44.8	42.6	52.8	54.7	49.7	56.0
Crude and oil products, mln. t										
Net crude and oil products exports	246.3	196.1	167.9	157.4	166.4	156.4	170.0	173.4	178.3	184.5
Net crude and oil products exports (% of oil production)	47.7	42.4	42.0	44.5	52.4	51.0	56.4	56.7	58.8	60.5
Natural gas, bln.c.m.										
Production	640.6	643.4	641.0	618.4	607.2	595.4	601.1	571.1	591.0	590.7
Export, total	249.2	246.8	194.4	174.4	184.3	192.2	198.5	200.9	200.6	205.4
Non-CIS exports	96.0	91.0	87.9	95.9	109.3	121.9	128.0	120.9	125.0	131.1
CIS exports	153.2	155.8	106.5	78.5	75.0	70.3	70.5	80.0	75.6	74.3
Net export	179.2	177.8	187.4	168.4	180.3	188.3	193.9	196.4	197.6	201.3
Domestic consumption	461.4	465.6	453.6	450.0	426.9	407.1	407.2	374.7	393.4	389.4
Net export (% of gas production)	28.0	27.6	29.2	27.2	29.7	31.6	32.3	34.4	33.4	34.1
Coal production, mln.t	395	353	337	306	272	263	257	245	232	250
Electricity production, bln. KWh	1082,2	1068,2	1008,5	956,6	875,9	860,0	847,2	834,1	827,2	845,0

Note: Data on geographical exports for 1990–1991 reflect exports to countries outside the FSU and to former Soviet republics.

Source: National Statistical Committee of Russia (Goskomstat), International Energy Agency of the OECD, Ministry of Fuel and Energy of Russia, State Customs Committee of the RF, authors calculations.

ANNEX II

Table II.3. Development of the oil industry, 1990–1999: Basic indicators

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Oil production, including gas condensate, mln. t	516,2	462,3	399,3	353,9	317,8	306,8	301,3	305,6	303,4	305,0
Primary refining, mln. t	297,8	286,3	256,0	223,0	187,0	183,0	176,2	178,0	164,0	169,0
Production of gasoline, mln. t	40,9	38,8	35,1	30,0	26,8	28,2	26,6	27,2	25,9	26,5
Production of diesel fuel, mln. t	76,2	72,2	65,0	55,1	46,7	47,4	46,8	47,7	45,2	46,8
Production of fuel oil, mln. t	100,2	97,1	88,0	78,3	69,5	65,1	63,9	62,5	55,3	52,2
Total number of oil wells for end of period, thousand	138,7	144,9	147,0	145,8	141,9	142,7	139,2	138,8	133,0	134,9
Number of production oil wells for the end of period, thousand	121,1	121,5	115,1	113,2	103,3	104,0	102,6	102,1	98,0	101,9
Number of idle oil wells for the end of period, thousand	17,6	23,4	31,9	32,6	38,6	38,7	36,6	36,7	35,0	32,9
Share of idle oil wells, %	12,7	16,1	21,7	22,4	27,2	27,1	26,3	26,5	26,3	24,4
Production and exploration drilling for oil, total, mln. m	37,9	32,4	24,6	20,5	12,7	11,6	8,3	8,8	6,3	6,5
Production drilling for oil, mln. m	32,7	28,7	21,2	18,7	11,4	10,2	6,9	7,4	5,0	5,3
Exploration drilling for oil, mln. m	5,2	3,7	3,4	1,8	1,3	1,4	1,4	1,4	1,3	1,2
Putting in operation of new oil wells, thousand	12,0	10,3	8,0	7,6	5,4	4,6	3,4	3,0	2,4	2,2

Source: National Statistical Committee of Russia (Goskomstat)

Table II.4. Development of the coal industry, 1990–1999: Basic indicators

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Coal production, total, mln. t, including:	395	353	337	306	272	263	257	245	232	250
Sub-surface mining	176	140	146	132	117	111	101	93	82	89
Open-pit mining	219	213	191	174	155	152	156	152	150	161
Share of open-pit mining in total production volume, %	56	60	57	57	57	58	61	62	64	65
Share of coal production with mechanized equipment in total production, %	83	83	84	84	86	88	89	91	93	93

Source: National Statistical Committee of Russia (Goskomstat).

Prices

**Table III. 1. Domestic oil, oil products, and natural gas prices (dollar per tonne)*
(end-of-year average wholesale prices of enterprises)**

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Crude oil	15.2	25.1	28.2	60.8	63,9	63,1	16,4	37,0	54,9
Gasoline	44.1	81.1	71.3	162.9	164,0	169,6	63,4	171,9	199,3
Diesel fuel	38.6	73.9	62.0	137.3	153,8	170,0	52,9	125,0	185,0
Fuel oil	20.0	24.7	30.7	62.5	71,2	73,8	22,0	46,1	79,7
Gas, dollar per th. ?ub. m.	0.5	1.4	1.9	3.8	6,9	6,6	2,1	2,2	3,1

* Calculated using the domestic official US dollar-to-ruble exchange rate.

Source: Authors calculations based on data from National Statistical Committee of Russia (Goskomstat).

**Table III.2. Relationship between internal and world prices for oil and oil products
(end of year)***

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Oil										
World price, US\$/t	113.1	114.4	85.5	106.3	118.0	158.5	104.4	60.1	168.4	166.6
Internal price, US\$/t	0.44	15.2	25.1	28.2	60.8	63.9	63.1	16.4	37.0	54.9
Internal price as a % of the world price	0.4	13.3	29.4	26.5	51.5	40.3	60.4	27.3	22.0	33.0
Gasoline										
World price, US\$/t	245.6	240.5	186.3	214.9	221.9	270.8	228.6	157.8	281.5	332.3
Internal price, US\$/t	1.25	44.1	81.1	71.3	162.9	164.0	169.6	63.4	171.9	199.3
Internal price as a % of the world price	0.5	18.3	43.5	33.2	73.4	60.6	74.2	40.2	61.1	60.0
Diesel fuel										
World price, US\$/t	181.7	176.5	146.6	159.8	180.5	222.5	172.3	111.5	220.9	293.9
Internal price, US\$/t	0.89	38.6	73.9	62.0	137.3	153.8	170.0	52.9	125.0	185.0
Internal price as a % of the world price	0.5	21.9	50.4	38.8	76.1	69.1	98.7	47.4	56.6	62.9
Fuel oil (mazut)										
World price, US\$/t	75.1	75.4	65.6	90.2	107.4	121.7	94.2	61.4	116.4	152.9
Internal price, US\$/t	0.49	20.0	24.7	30.7	62.5	71.2	73.8	22.0	46.1	79.7
Internal price as a % of the world price	0.7	26.5	37.7	34.0	58.2	58.5	78.3	35.8	39.6	52.1

* Oil world price = price of US import; world price for oil products = wholesale prices of US refineries; internal prices = wholesale prices of Russian refineries.

Source: National Statistical Committee of Russia (Goskomstat), U.S. Department of Energy/Energy Information Administration, authors calculations.

Non-payments

I. Natural gas: GAZPROM

Table IV.1. Gazprom Sales and Cash Collection Ratio (example: 1997)

Market	Deliveries (billion cm)	Price (\$/1000 cm)	Sales (\$ million)	Cash receipts (\$ million)	Cash rec./Sales Percent
Europe	121	88.5	10,707	10,707	100
CIS	64	76.8	4,937	2,855	58
Domestic	301	47.0	11,536	1,730	15
Total	486		27,180	15,292	56

Source: B. Pinto, V. Drebensov and A. Morozov. *Give Growth and Macroeconomic Stability in Russia a Chance: Harden Budgets by Eliminating Non-Payments*. The Economics of Transition, forthcoming.

Table IV.2. Domestic Implicit Subsidy Provided by Gazprom

	Via arrears (\$ billion)	Via barter (\$ billion)	Total as percent of GDP
1993	1.4	1.4	1.4
1994	1.6	1.7	1.3
1995	3.4	3.7	1.8
1996	3.6	3.7	1.8
1997	3.3	3.5	1.6
Total	12.7	13.5	

Source: B. Pinto, V. Drebensov and A. Morozov. *Give Growth and Macroeconomic Stability in Russia a Chance: Harden Budgets by Eliminating Non-payments*. The Economics of Transition, forthcoming

II. Power Utilities: UES**Table IV.3. Breakdown of Power Utilities Sales by Means of Payment
(Including intra-industry transactions)**

	1996	1997
Sales	100	100
Cash & liquid equivalent	20	20
Bank bills	11	6
Offsets and barter	49	62
Unpaid arrears	20	12

Source: B. Pinto, V. Drebensov and A. Morozov. *Give Growth and Macroeconomic Stability in Russia a Chance: Harden Budgets by Eliminating Non-payments*. The Economics of Transition, forthcoming

Table IV.4. Domestic implicit subsidy by the electricity generation sector

	Via arrears (\$ billion)	Via barter (\$ billion)	Total as percent of GDP
1993	3.0	2.0	2.5
1994	3.9	2.8	2.6
1995	3.7	4.8	2.2
1996	3.5	5.9	2.4
1997	0.5	6.7	1.6
Total	14.6	22.2	

Source: B. Pinto, V. Drebensov and A. Morozov. *Give Growth and Macroeconomic Stability in Russia a Chance: Harden Budgets by Eliminating Non-payments*. The Economics of Transition, forthcoming

Subsidies in the Russian Energy Sector, 1997

	Subsidy level (as percent of unit price)	Potential savings of primary energy from the cancellation of subsidy (in percent)	Efficiency losses (million rubles)	Budget expenditures (million rubles)
Fuel	9.3	2.4	40.4	3340.0
Oil	1.5	0.7	1.3	283.6
Electricity	42.0	24.3	8689.4	62847.0
Gas	46.1	36.6	30674.1	121908.7
Coal	0.0	0.0	0.0	0.0
Total	32.5	25.7	39405.2	188383.2

Source: International Energy Agency

Energy consumption in Russia in 1990, and 1995-1999

	Total	Industry	Construction	Agriculture	Transport	Other*	Losses in networks
1990	1073,8	625,9	18,8	96,4	103,8	144,7	84,2
1995	840,4	440,2	12,4	88,6	65,2	150,5	83,5
1996	827,7	424,9	11,2	85,9	64,9	156,3	84,5
1997	814,4	421,4	10,3	78,1	63,5	156,7	84,4
1998	809,1	412,0	9,1	75,0	60,0	159,8	93,2
1999	832,1	430,3	9,0	72,0	60,6	164,0	96,2

* It is estimated that about 75-80 percent of "Other" is "household energy consumption."

Source: National Statistical Committee of Russia (Goskomstat)

Bank/GEF commitments

Table VII.1. Bank/GEF commitments* in the energy sector

Year Approved	IBRD Loan	Amount (US\$ mill.)
1993	Oil Rehabilitation I	610.00
1994	Oil Rehabilitation II	500.00
1995	Emergency Oil Spill Recovery and Mitigation	99.00
1995	Gas Dist. Rehab. and Energy Efficiency	70.00
1996	Coal Sector Restructuring Implementation	500.00
1996	Coal Sector Restructuring Implementation	25.00
1997	Electricity Sector Reform Support	40.00
1997	Coal Sector Adjustment II	800.00
2000	Coal and Forestry Sector Guarantee Facility	200.00
Total	9 Loans/Guarantees *	2,849.00

* The figures in this table are based on the original loan amounts.

Source: The World Bank

Table VII.2. Bank's Assistance to the Energy Sector (Bar Graph Representation)

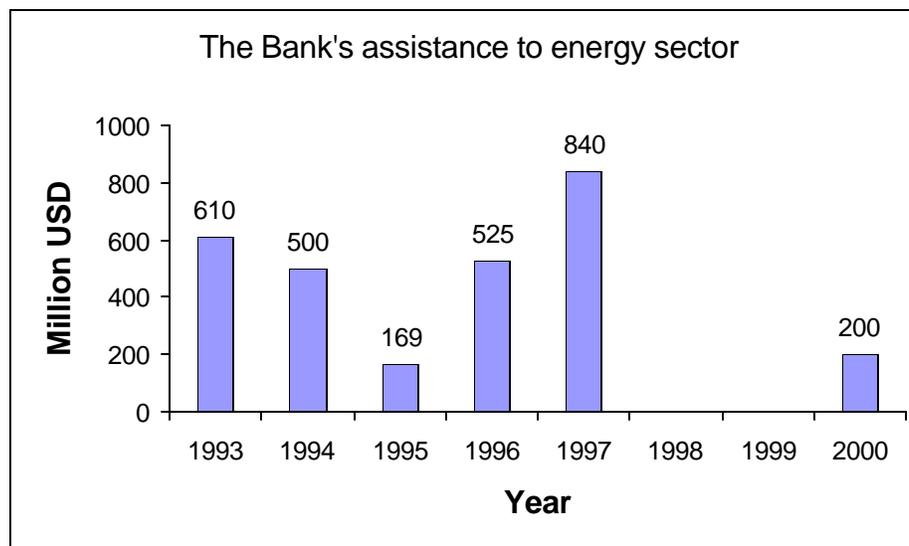


Table VII.3. Allocation of funds in the Bank's projects in the energy sector

Project	Amount approved mln. dollars	Dates of implementation	Funds allocated (until September 2000?.), mln. dollars
Oil rehabilitation I	610,0	15 November 1993– 31 December 1998	414,0
Oil rehabilitation II	500,0	25 May 1995– 21 June 2000	346,5
Emergency oil spill recovery and mitigation	99,0	29 June 1995– 30 September 2001	82,6
Coal sector adjustment loan	500,0	2 July 1996– 31 December 1997	500,0
Second coal sector adjustment loan	800,0	19 December 1997– 31 March 2001	650,0
Coal sector restructuring implementation assistance	25,0	25 July 1996– 31 December 2001	13,7
Energy efficiency	70,0	26 December 1996– 30 June 2001	15,2
Electricity sector reform support	40,0	12 August 1998– 31 December 2001	--

Source: The World Bank

Comments from Mr. U. Gorlin, a consultant engaged by Federal Centre for Project Finance (FCPF), and the Author's response

This Expert Opinion is a review of the report "Evaluating Bank Assistance to the Russian Federation for the Energy Sector in the 1990s" written by Yuri Bobylev and Jacek Cukrowski (hereinafter referred to as the "Report").

In analysing the Report and assessing its quality, the author of this Expert Opinion adhered to the view that the Report should comply generally with the requirements of the following OED principal documents determining approaches to evaluating Bank performance in the borrowing countries, particularly in Russia:

- *Approach Paper*⁶⁵
- *Suggested Evaluation Format For Sectoral Assistance Strategy Reviews (SASRs)*
- *OED Methodology Syndicate - Evaluation Criteria Review*⁶⁶.

Findings of this Expert Opinion are based on interviews with specialists from the MinEconomy of Russia, MinEnergy, RAO UES, ReformUgol, and a number of the research institutions which were/are involved in Bank-supported projects in the Russian Federation and Their valuable assistance and feedback is gratefully acknowledged.

The author is especially grateful to Prof. V. Livshitz for the detailed discussions of Bank performance in Russia's energy sector and suggested approaches to assessing Bank-funded projects. However, the views expressed in this paper remain entirely those of the author.

The Report under review is the documented result of the large-scope study conducted by the authors (hereinafter referred as the "Consultant"), to analyse Bank assistance in reforming and developing Russia's energy sector in the 1990s. The executive summary of the Expert Opinion on this report includes the following major conclusions:

The strong points of the Report are primarily as follows:

- The Consultant has collected and systemized to a certain extent the large volume of material specific to the projects implemented in the energy sector of Russia under World Bank funding.
- All figures related to Russia's energy sector and the country's economy as a whole generally cannot be argued.

⁶⁵ Draft revised December 28, 2000.

⁶⁶ Final draft, June 30, 2000.

- The Recommendations of the Report correctly adhere to the policy of sector market-oriented reforms, emphasis on stronger competition where applicable, introduction of the practice of making relevant decisions and setting tariffs by independent regulators, more transparency in decision-making, a focuses on social aspects in enterprise restructuring, etc.
- The Report has rather a clear structure and includes full coverage of Russia's energy sub-sectors supported by the Bank.
- Given the difficult conditions and the mixed results of Russia-Bank co-operation, the Report stresses the need for further joint efforts.

All this, with the rare exceptions given below, is a clear advantage. However, the Report contains the following serious weaknesses that, in my view, should be eliminated or at least mitigated in its revised version:

1. The data presented in the Report can be hardly qualified as systematic. Essentially, what we see are separate fragments of the sector-related material united in the individual sections in chronological order, with no account of sector and off-sector synergetic effects. Typically, the paper is lacking in final assessments.
2. It is not clear what evaluation methodology is applied in the Report. It seems that the author, for no visible reason, has put aside not only calculation of internationally accepted project efficiency ratios, but also the use of streamlined approaches, e.g. those described in the OED methodology, and has reduced his evaluation to non-systemized word rates.
3. Because there is no assessment of whether the benefits are worth the costs for the country as a whole and all stakeholders, the Report does not give a clear answer to the major question for the Borrower: What has Russia gained from its co-operation with the Bank? The answer must be reasonably clear both in respect of all projects taken together and for each specific operation. This clearness can be arrived at only through presenting quantitatively measured key indicators, primarily those related to integral evaluations of the projects implemented under World Bank financing.

As regards the coal projects [which the Report rates as satisfactory], it is not possible to draw a conclusion on their successfulness (efficiency) based only on the fact that the majority of their objectives were achieved. A well-founded assessment of the projects requires conducting a systems analysis that would relate project results to costs for the nation, budgets of all levels, coal mining enterprises, regions, etc. Unfortunately, all this is outside the focus of the Report.

Summing up the above, it should be said that the material presented in the Report should be looked at as a review of the Bank's activity, accompanied in a number of cases by the Consultant's judgments concerning the results attained, rather than a study of the efficiency of that activity.

Other specific comments included:

- The report should include a supplement with the information that would characterize performance of the energy sector in aggregate and that of selected companies (up to 2000 or first quarters of 2001).

- The structure of the Report virtually completely conforms with SASR requirements, but in several cases the contents are presented in too compressed form, and do not always contain a full discussion of the issues that should be addressed in accordance with SASR guidelines.
- The report should include assessment of the usefulness of each specific project for all project stakeholders: civil society, budget, private sector companies, the staff of participating organisations, etc.
- The report should include evaluation of Oil Rehabilitation II and provide separated evaluation of Coal SECAL I, II and Coal Sector Restructuring Implementation Assistance
- The Report does not give a clear answer to the major question for the Borrower: What has Russia gained from its co-operation with the World Bank?

Authors' Response:

The Authors of the present Energy Sector Report thank Mr. Gorlin – the author of the Expert Opinion, for his extensive analysis of the report's shortcomings and valuable comments that allowed us to improve the quality of the Report. We have a feeling, however, that some of the criticism is due to a misunderstanding about the basic design and objectives of such a Sector Report, and the differences between it and the much more thorough and systematic Project Audit Reports that OED produces when it reviews and evaluates the success of completed Bank lending operations. We therefore offer the following additional explanations.

1. The Authors are in full agreement with the Expert Opinion's concerning the limitations of the Report. Similarly to Sector Review developed in parallel by Richard Berney,⁶⁷ it is not an all inclusive, exhaustive study of the subject and it was never intended to provide an Audit of each of the Bank's activities in each sector, which would be necessary for a detailed evaluation of the efficiency and efficacy of these activities. Such an undertaking would have required several times the resources that OED had available to devote to the Energy Sectors Review. Rather, this Report was designed as a meta-evaluation (on the higher level of detalization), which would take advantage of all previous evaluative work. As with all meta-evaluations, this Sector Review takes advantage of, and builds on, all of the Bank's existing self-evaluative work. Evaluation of completed projects was done based on officially available documents. However, we find no cause to apologize for the fact that some of the conclusions reached in this Report are based on judgment calls. The objectives against which the results are judged are clearly defined, and the rational for how and why the judgments were reached are laid out in full. Readers can draw their own conclusions about whether the judgments reached are appropriate. On the other hand, due to strong limitations concernin g the length of the Report (less than 20 pages), authors had to focus on the summary of the most important findings and judgments for each subsector.⁶⁸

⁶⁷ Since in most cases the Expert Opinion presented the same kind of criticism in respect to both of the reports, the response of all the authors is in several points identical.

⁶⁸ According to the concept of this report and the limitations on the length each of the bank projects in the sector was not considered separately, e.g., some conceptually similar projects (Coal SECAL I and II) and Coal Sector Restructuring Implementation Assistance (supporting project) were analyzed together, similarly Oil Rehabilitation II: technical assistance to MinEnergy (10 million out of US\$610 million of the total) was not discussed in the report separately.

2. The Report (see Annexes) presents extensive information about the key indicators of the sector development in the nineties (although OED's Country Assistance Assessment process is not intended as a full review of all aspects of an economy). Since the report was developed in the first quarter of 2001, the development of key performance indicators is limited to the year 1999.⁶⁹ In many cases (when it was available), more recent data were presented. We agree that updating, presentation of data for 2000 would be useful, however, it would not change any conclusion of the report.
3. The full OED Audit methodology pertains to the evaluation of projects for which the initial investments are completed and sufficient time has elapsed to make possible the identification of early impacts. It is not possible to use the same methodology and rating process for ongoing projects. For those projects not yet closed, it was possible to provide tentative judgments only on the question of (i) whether the stated objectives of the projects were appropriate for the conditions in Russia at the time the projects were prepared (efficiency); (ii) and whether the projects appeared to be meeting their stated objectives (efficacy); and (iii) whether the benefits appeared likely to be sustainable. Because these judgment calls were based on limited and incomplete data, we felt that the use of the more scientific derived project suggested by the reviewer would be inappropriate, since they would not give the appearance of greater accuracy than the data could justify.
4. We believe that quantitative benefit-cost analysis can not be used to resolve the question of whether the Bank's support for the Energy Sector had, on the whole, a positive or negative impact. Its usefulness is limited to the evaluation of investments that have clearly defined, measurable inputs and outputs. In the case of energy sector where the set of stakeholders is very broad (budget, private, sector, civil society, labour force, etc.) such an approach would be very difficult (a more in-depth analysis of who gained and who lost, including governments at each level, coal mining enterprises, regions, etc., would only be useful if one could make a judgment about the importance-or value-of benefits to each of these affected groups), and it was out of the scope of the present analysis.
5. Finally, we are surprised at the criticism that the report does not give a clear answer to the question of what Russia has gained from its cooperation with the World Bank in the energy sector. In the oil sector Russia gained increased output, but it did not gain the full benefits that would have come with establishing a legal framework that could have encouraged foreign investment. In the coal sector Russia gained support for establishing a restructured, much more efficient, privately owned, competitive industry, with a maximum attention to social aspects of closing mines. In the power sector Russia gained technical advice on establishing a rational framework for restructuring the industry, which now appears to be in the process of implementing. In the gas sector Russia was uninterested in Bank support and advice.

⁶⁹ FCPF comments were presented to the authors of this Report in the second half of March 2002.