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**EVALUATION OF  
GASENERGO  
FOR INVESTMENT**

**VOLUME A  
GASENERGO**

**Prepared by:**

**Gasenergo  
A Russian Company for Development and Implementation  
of Private Power Projects**

**and**

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**Prepared for:**

**The Private Sector Energy Development Program and  
The Russian Electric Sector Privatization and Restructuring Working Group  
of the U.S. Agency for International Development**

**In Coordination with  
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**October 1994**

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## IMPORTANT NOTICE

This evaluation dated September 1994 is being submitted to potential investors in Gasenergo (Company) and its Shakhtinskaya Power Project (Project) to provide an introduction to the Company and the Project. It is not by itself intended to provide the basis for an investment or credit decision. Of necessity, certain information is incomplete, or incapable at this stage of verification, and many of the contractual relationships referred to in the evaluation are in the process of negotiation and accordingly not concluded. Nonetheless, certain assumptions have been made in this evaluation, which are based on the sponsor's expectations as regards the terms of such contracts once concluded. It does not constitute a recommendation by K&M that the recipient should participate in the Project in any manner, nor is K&M advising recipients as to the suitability or merits of any transaction or investment. Recipients must in due course make their own independent evaluation of the Project based upon such further investigations as are necessary or desirable to determine their interest in participation. It is stressed that the illustration of results and cash flow projections should on no account be taken as forecasts and must be read in conjunction with the assumptions and notes set out thereto.

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## **Executive Summary**

This document is a memorandum of information developed by K&M Engineering and Consulting Corporation, operating under the auspices of the United States Agency for International Development (USAID), in conjunction with representatives of Gasenergo, to introduce the objectives, activities, and capabilities of Gasenergo to third parties who may be interested in forming partnerships with the company or investing in its current projects. The information compiled in this volume can be used as a decision-making tool for potential investors in pursuing discussions with Gasenergo for equity participation either in the company itself or in any of its future projects. Technical and economic evaluations of two of Gasenergo's power projects under development, the Shakhtinskaya project and the Kamenskaya project, are presented in separate documents.

Gasenergo is one of the first private power developers in Russia and the Commonwealth of Independent States (CIS), and to our knowledge the most advanced from the point of view of actual projects under development. Its first project, the 70 MW Shakhtinskaya cogeneration power project, is 90% complete in terms of required investment and can be commissioned within 9-12 months from the point of obtaining an additional \$4 Million. The company has also completed the design work for a second, similar project, the Kamenskaya project, and is well positioned to pursue the development of a number of additional small projects.

Gasenergo's strategy to private power development in Russia is based on the premise of pursuing a modular approach to implementing small and rapid-turnaround projects. The company utilizes efficient Russian-made gas turbine/cogeneration technologies to repower aging power plants, and has been chartered by a variety of regional utilities to design and implement a significant number of projects. Gasenergo's strategic region of focus is in the northern Caucasus of Russia, an area characterized by severe energy deficits and aging plant equipment. The company is not limited to this region, though, and is actively working with other regional utilities as well.

One of Gasenergo's greatest advantages as a private power developer in the North Caucasus region has been its ability to obtain sponsorship by the key institutions in the energy sector operating in that region. Several North Caucasus regional utilities have participated as founding members and financial sponsors in Gasenergo's corporate structure and are active equity participants in the company's current repowering projects. Gasenergo also maintains equity and strategic relationships with a number of power equipment manufacturers and regional fuel suppliers. In addition, Gasenergo has demonstrated its ability to obtain sponsorship from RAO EES Rossii, the large national transmission utility, which is one of the major financiers of the Shakhtinskaya power project.

Gasenergo's technical design capability rests in its affiliated firm Energoperspectiva, which is the largest shareholder of Gasenergo. Energoperspectiva is a power plant design and engineering organization with over 150 highly qualified technical experts. This firm has pioneered the design of Gasenergo's modular cogeneration units.

The chapters in this document analyze the key issues that are important to potential investors interested in developing a strategic and equity partnership with Gasenergo. The report contains an overview of Gasenergo's sponsors and objectives, its current and planned activities, and its financial structure. Gasenergo has expressed its willingness to incorporate a foreign investor as a minor shareholder in the corporate structure as a sign of sponsorship and participation in the company's private project development efforts. It will be a matter of negotiation between Gasenergo's investors and the foreign participant to determine the size and corresponding value of shares of this investment.

## **1.0 Introduction**

In the relatively short period of two years, Russia has made significant progress in transitioning to a free market economy and towards the decentralization of economic decision-making. Although it may take some time before conditions stabilize, the prospects for deriving benefits from this economic reorganization appear to be very bright.

At the outset of these changes in 1991, Gasenergo, a privately held joint-stock company, was formed to develop relatively smaller electricity and heat products producing power stations and to sell the products to local utilities. The company's ownership is outlined in Table 3-1. The owners of the company possess in-depth experience in the development, design, construction, and operation of power stations in Russia. Furthermore, through their associations and experience in the Russian electricity sector, they are well positioned to market projects and have maintained a flexible and innovative attitude towards project development.

Gasenergo's goals in project development are:

- To control financial (i.e. 51%) interest in some projects.
- To have smaller financial participation, but retain the key management role in other projects.
- To provide complete project service from the development to the commissioning of the project.
- To secure financial structuring of the projects with Russian and foreign investors, securing loans and credits from Russian and foreign lending institutions depending upon needs of the project.
- To utilize commercial structuring in the formulation of power and heat products purchase documents.
- To keep abreast of legal reforms and new regulations affecting businesses.
- To research market potential and favorable conditions for privatized projects.

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This evaluation document is produced to provide an understanding of Gasenergo's activities, future project opportunities, and potential profitability to interested Russian and foreign investors and financial institutions. Gasenergo will consider inclusion of new investors in the company or in a specific project in which Gasenergo is involved as an investor and/or as a manager of the project. Any additional information required by the prospective investor may be obtained with a specific request to: Gasenergo Co., Ltd.,

Mr. Evgeny G. Sinikov, General Director, Energetik, Pyatigorsk 357561, Russia; Telephone No.: (87900) 98999 or 79353, Fax No.: (87900) 79397.

This evaluation document outlines Gasenergo's activities to date. Project specific information is produced separately for each project. More detailed project information may be obtained from the sources indicated in each volume.

Acceptance of any investment in Gasenergo is subject to approval by the Board of Directors of the Company, whereas any investment in a specific project is subject to the approval of the partners involved in that project.

Gasenergo is seeking investors, specifically investing in foreign currency, who are willing to seek real benefits on a long-term basis and with a preference for investors who can make positive contributions, over and above financial investment, to the nature of the business of the company. Gasenergo is also interested in seeking loans from foreign lenders for specific projects.

In this document, Gasenergo provides pertinent information to the best of its knowledge at the present time. Potential investors are encouraged to verify this information and verify independently any other information related to their investment.

Gasenergo, and its consultant Energoinvest, acknowledge, with gratitude, the financial support of the United States Agency for International Development (USAID) and the assistance of K&M Engineering and Consulting Corporation of Washington, D.C. in preparing this document.

## 2.0 Overview of Electricity Supply and Demand in Russia

### 2.1 Introduction

The Russian electric utility sector has undergone tremendous reform and restructuring since the end of 1991. A number of state-owned joint-stock companies were formed to commercialize the sector and decentralize operations and decision-making. As part of this process, RAO EES Rossii was formed, and was given ownership and control of all high-voltage transmission lines, all thermal generating plants larger than 1,000 MW, and all hydro-electric plants larger than 300 MW. In addition, 72 regional utilities were formed to own and operate regional transmission and distribution grids, as well as smaller generating and district heating facilities. All nuclear plants were transferred to the Ministry of Atomic Energy (MinAtom). All of the above-mentioned organizations form part of the Integrated Power System (IPS), a vast and unified nationwide system managed by RAO EES Rossii.

Definitive information on the supply and demand forecast of electrical power in Russia is difficult to catalog with precision. As outlined previously, the generating assets, including the responsibility for constructing new projects in the electric power sector within Russia, are divided between RAO EES Rossii and the AO-Energos (regional utilities). The following information has been gathered and analyzed from several sources and adapted to meet the needs of this study.

### 2.2 Installed Capacity and Demand

As of April 1994, the total installed generation capacity in Russia was estimated to be 213,400 MW. Table 2-1 provides a breakdown, by types, of the generating facilities in service. Of the thermal capacity (70% of the total), approximately 60% is based on the use of gas, 13% on mazout (heavy oil) and 27% is based on the use of coal and other solid fuels. It is important to note that a substantial number of plants produce both electricity and heat for district heating and for industrial uses. This generation of electricity and steam accounts for a greater part of the total capacity of all thermal power plants, approximately 130,000 MW of total installed capacity.

Table 2-2 provides historical information for total electricity consumption, peak demand, and the installed capacity for the past five years. The amount of electricity consumption during 1990, occurring in the same geographical territory as the current system, is detailed by region in Table 2-3. The slight inconsistency in information between Tables 2-2 and 2-3 demonstrates the difficulty in reconciling specific data for geographic regions between the Soviet era and the present.

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Table 2-2 provides the installed, available, and peak demand in MW for the past five years. However, keeping in mind that the system spans over eleven time zones, the peaks in demand are not uniform for the various time zones. The data on total electricity

consumption during the past five years is fairly reliable and clearly demonstrates the downturn in the economy. The available capacity is difficult to estimate for the entire Russian system because of various outages that occur within regions, both planned and unplanned. Thus, in considering new capacity, such information is best studied in a regional context or by the system coverage of a specific AO-Energo or regional utility.

Table 2-4 provides the load forecast for the Russian system as a whole. Due to major changes in redefining the system and due to the transformations taking place in the economic sector, a sufficient trend has not yet been established to provide a confidence factor for these forecast scenarios. Various studies have been made by several organizations, including RAO, in an attempt to more accurately predict future electric power usage. However, since these studies largely depend on concurrent economic forecasts that are in turn based on large assumptions under high, moderate, and low growth scenarios, it is extremely difficult to develop any forecast with reasonable confidence. RAO's load forecast, as provided in Table 2-4, is based upon a medium downturn and followed by an upward trend beginning in 1998. The Russian Government expects the recovery period to begin by 1996.

The retirement of older generating units and nuclear units is an important factor affecting the supply of electricity in Russia. An estimated 38,000 MW of generating capacity will be over 35 years old by the year 2000. However, RAO has no definitive plans for such retirements until financing for the new projects and/or a much lower demand forecast can be verified. Furthermore, by year 2005, approximately 82,300 MW of generation facilities will be over 35 years old. Figure 2-1 provides a forecast of generating capacity retirements at various plants of the Russian Federation.

Table 2-5 provides information on new generating capacity presently planned. The overall planned addition in generation capacity is 81,500 MW with about 62,000 MW in thermal plants and 8,800 MW in hydro plants (by the year 2005). The priority of new power plants of RAO listed in detail by regions and specific names of the plants in Table 2-6 will largely offset the retirement of old units even if the forecast of demand does not increase as predicted in Table 2-4.

In summary, while the overall supply situation is, at first glance, currently adequate in light of the expected lower demand for the next two to three years, this is not necessarily indicative of the need for expanded generation resources in Russia. Chapter 4 demonstrates that the system-wide supply situation is not a completely valid criteria by which to judge the necessity of new regional generating capacity. Indeed, the overall situation could take a turn for the worse if demand is higher than predicted (or there is an earlier upturn in the economy) or if older plants begin to develop greater operational problems.

TABLE 2-1

**TYPES OF GENERATING FACILITIES  
IN THE RUSSIAN ELECTRIC SYSTEM**

Type of Generating Facility	Capacity (MW)	Percentage of Total Capacity
Thermal Power Plants (Electricity and Heat Products)	130,050	61%
Hydro Power Stations	43,160	20%
Nuclear Power Stations	21,240	10%
Other (using various fuels)	18,950	9%
<b>Total</b>	<b>213,400</b>	<b>100%</b>

Source: RAO EES Rossii

TABLE 2-2

**DEMAND AND SUPPLY DURING THE PAST FIVE YEARS**

YEAR	Installed Capacity of Power Plants Including Plants of Other Ministries and Departments (1000s MW)	Available Capacity (Excluding the Far East) (1000s MW)	Peak Load of RAO EES Rossii (Excluding the Far East) (1000s MW)	Power Production by Power Plants of Russia (Including Plants of RAO EES & Other Ministries and Departments) (Billion KWh)
1989	211.1	171.2	159.5	1076.6
1990	213.3	174.8	153.4	1082.2
1991	213.0	174.5	148.1	1068.2
1992	212.0	172.1	145.0	1008.5
1993	213.4	174.8	138.8	956.6

Source: RAO EES Rossii

TABLE 2-3

**OVERVIEW OF ELECTRICITY DEMAND  
AND SUPPLY DURING 1990**

Regions	Installed Capacity (Ministry of Fuel and Energy & Ministry of Atomic Energy)  (1000s MW)	Available Capacity  (1000s MW)	Peak Load  (1000s MW)	Reserve Margin	Energy Production (Ministry of Fuel and Energy & Ministry of Atomic Energy)  (Billion KWh)
North-West	14.5	13.2	11.8	11%	77.0
Center	55.3	52.5	47.1	10%	306.1
Northern Caucasus	10.6	10.1	10.4	0	58.1
Middle Volga	22.9	20.3	17.9	12%	114.7
The Urals	40.9	40.6	38.8	4%	260.4
Siberia	44.3	38.1	30.9	19%	198.4
Far East	11.2	10.1	7.9	20%	44.6

Source: RAO EES Rossi

TABLE 2-4

LOAD FORECAST OF THE RUSSIAN ELECTRIC SYSTEM  
1994-2005

Year	Generation (KWh x 10 <sup>9</sup> )	Consumption (KWh x 10 <sup>9</sup> )
1994	894	860
1995	866	830
1996	890	860
1997	920	900
1998	965	940
1999	995	980
2000	1035	1020
2001	1060	1045
2002	1085	1070
2003	1110	1095
2004	1140	1120
2005	1170	1150

Source: RAO EES Rossii

TABLE 2-5

PLANNED NEW GENERATION (MW)  
1994-2005

Years	Nuclear Plants	Thermal Plants	Hydro Plants	Total
1994	--	2,900	600	3,500
1995-2000	3,000	31,800	3,200	38,000
2001-2005	7,700	27,300	5,000	40,000

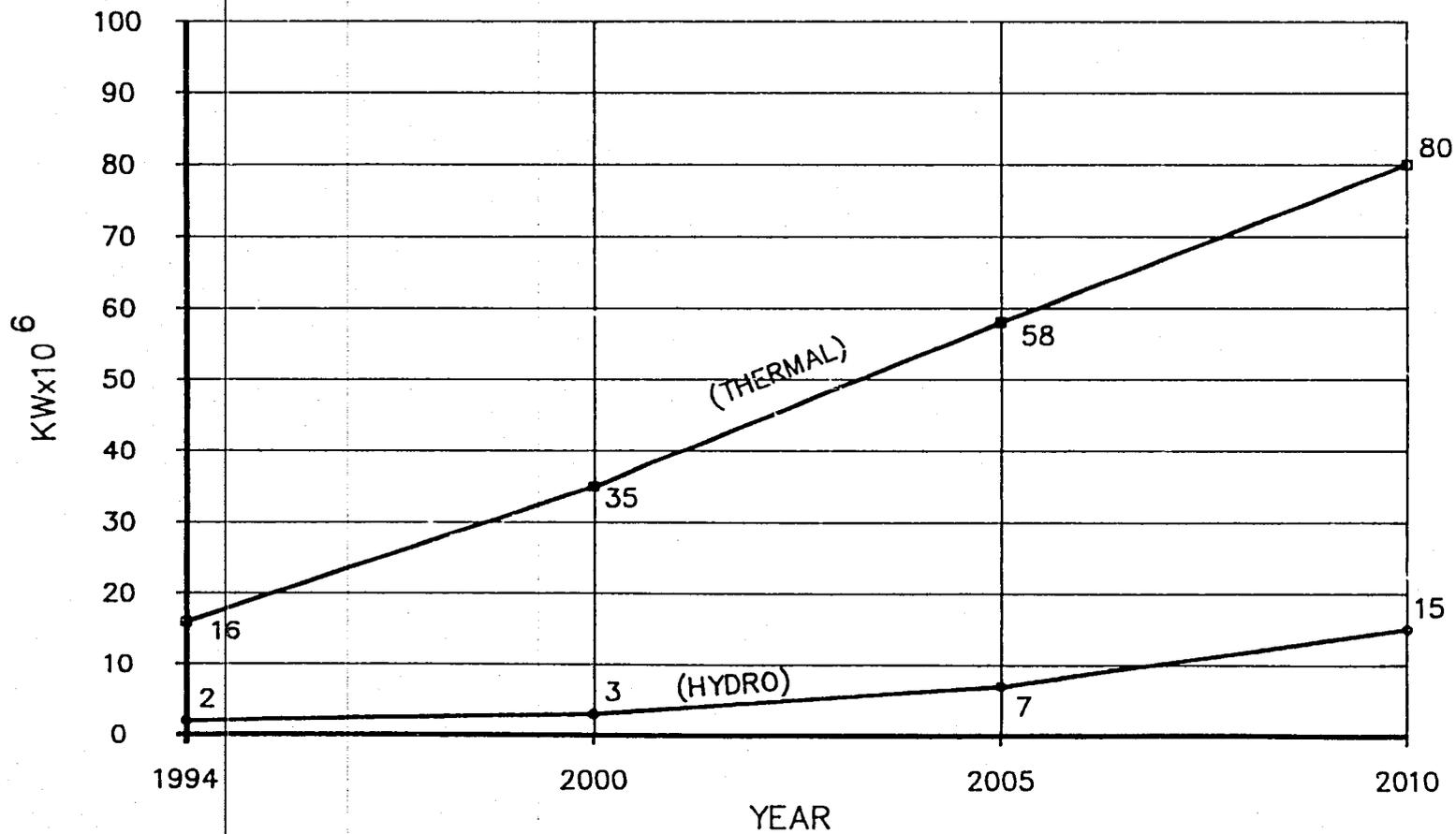
Source: RAO EES Rossii

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REGION	PLANT NAME	CAPACITY No. of Units x MW (TOT)	AO-ENERGO	COMMISSIONED BY 1/1/94 MW	COMMISSIONED 1994-2000 MW	PLANNED CONSTRUCTION COMPLETION YEAR
Center	Zagorskaya pumped storage plant	6 x 200 (1200)	Mosenergo	800	400	1998
North-West	Pechorskaya GRES	8 x 215 (1290)	Komienergo	1075	215	1998
	Belopozhskaya	(130)	Karelienergo	—	130	1998
	Pskovskaya GRES	3 x 210 (630)	Pskovenergo	210	420	1997
	North-West Thermal Power Plant	4 x 450 (1800)	Lenenergo	—	900	2008
North Caucasus	Krasnodarskaya GRES	3 x 450 (1350)	Kubanenergo	—	900	2001
	Irganayskaya hydro plant	4 x 200 (800)	Dagenergo	—	240	2008
Middle Volga	—	—	—	—	—	—
Urals	Surgutskaya GRES-2	8 x 800 (6400)	Tyumenenergo	4800	800	2003
	Urangoiskaya GRES	4 x 225 (900)	Tyumenenergo	—	225	2008
	Nizhnevartovskaya GRES	3 x 800 (2400)	Tyumenenergo	—	2400	1998
	Permskaya GRES	6 x 800 (4800)	Parmenergo	2400	—	2005
	Sverdlovskaya GRES	2 X 500 + 1 X 12	Sverdlovennergo	—	12	2005
Siberia	Gusinozerskaya GRES	8 x 215 (1720)	Buryatenergo	1290	215	2001
	Berezovskaya GRES-1	4 x 800 (3200)	Sibirenergo	1600	800	2004
	Karamorskaya GRES	6 x 215 (1290)	Chitsenergo	—	645	2008
	Boguchanskaya hydro plant	9 x 333 (2997)	Krasnoyarskenergo	—	307	2002
	Kursiskaya hydro plant	5 x 120 (600)	Krasnoyarskenergo	480	120	1994
Far East	Kolymurskaya hydro plant	5 x 180 (900)	Magadanenergo	720	180	1994
	Burayskaya Hydro Plant	(2320)	Amurennergo	—	384	2010
	Ust-Srednekanskaya	4 x 137.5 (550)	Magadanenergo	—	150	2003
<b>TOTAL</b>	—	<b>36,289</b>	—	<b>12,575</b>	<b>9,423</b>	—

GRES: Thermal Power Plant  
Source: RAO EES Rossii

# GENERATING CAPACITY RETIREMENT FORECAST



Source RAO EES Rossi

FIGURE 2-1

### **3.0 Organization and Expertise of Gasenergo**

#### **3.1 Introduction**

Gasenergo is an independently owned joint stock company established in 1991 by a group of companies representing all aspects of the energy industry in Russia. The original investors in Gasenergo (see Table 3-1) possess extensive experience in all areas associated with the electric utility sector including utilities, gas suppliers, gas turbine producers and producers of related equipment, as well as utility management, research, design, engineering and construction organizations.

#### **3.2 Ownership and Participation**

Gasenergo was founded by a group of leading organizations in the power sector to act as a catalyst in the development and implementation of privatized power projects. Since the initiation of the company the equity shares of the corporate investors have been gradually privatized and transferred to key managers of those organizations. At present more than 75% of the stockholders are private persons. The remaining stock is held by legal entities representing more than thirty enterprises associated with the Russian energy industry, and are expected to be transferred to private persons within those companies in the near future. The largest single block of shares, however, remains within the ownership of managers from Energoperspectiva Co., the primary sponsor of Gasenergo. This block of shares constitutes 20% of the total shares of the company.

#### **3.3 Corporate Structure and Organization**

The Company is managed by a seven member Board of Directors. Together these board members bring to Gasenergo many years of experience in the utility industry of Russia. They are also actively involved in other enterprises within the energy sector, bringing additional expertise to the company.

Gennady Yanin is Chairman of the Board of Gasenergo and Yevgeny Sitnikov is General Manager. Messieurs Sitnikov and Yanin are also directors of the Ushenergo (Southern) Territorial Energy Department of RAO EES Rossii. Other board members include Fyodor Kushnaryov, Yevgeny Zheltikov, Victor Klyonov, and Valentin Kovalevsky who are also directors of Rostovenergo, Stavropolenergo, Energoperspectiva, and Energetic Stock Company respectively. Board member Boris Fuki is Chief Engineer of the Caucasustransgas State Enterprise.

There are three regional offices directing local operations for Gasenergo, one in Moscow and one each in the towns of Shakhti and Kamensk, the sites of the company's current projects. Victor Klyonov is in charge of Gasenergo's office in Moscow. His background includes years of experience as a lead engineer, and he is also a director of Energoperspectiva. Valery Shapovalov heads Gasenergo's agency in the town of Shakhti.

He is also director of the Shkhtinskaya Cogeneration Plant and has many years of experience working in boiler/turbine plants. Gasenergo's office in Kamensk is directed by Vladimir Gerasimov. In addition, Mr. Gerasimov acts as director of the Kamenskaya Cogeneration Plant and has worked for many years in cogeneration plants.

#### 3.4 Strategic Alliances

One of the key factors in Gasenergo's demonstrated success in obtaining sponsorship from leading Russian institutions is its established network of equity and strategic alliances. These include the company's current shareholders (Table 3-1) as well as other strategic partners, such as RAO EES Rossii. This network spans almost all functions of a project's development and implementation stages and has been utilized in the preparation of the Shkhtinskaya project.

TABLE 3-1

## STOCKHOLDERS OF GASENERGO

Energoperspektiva Co. Ltd., Moscow	Research, Engineering, Design, Power Production
Orgenergogas Co. Ltd., Pyatigorsk	Management
Rostovenergo Stock Company, Rostov	Power Utility
Stavropolenergo Stock Company, Stavropol	Power Utility
Grozenergo Stock Company, Grozny	Power Utility
Association of South Russia Power Engineers, Pyatigorsk	
United Dispatcher Body of the North Caucasus, Pyatigorsk	
Caucasustransgas State Enterprise, Stavropol	Natural Gas Supply
Rostovteploelectroproject Institute, Rostov	Power Plant Design
Energetik Stock Company, Solnechnodolsk, Stavropolsky Cray	Plant Construction
All-Russian Teplotechnicheskiy Institute, Moscow	Research
ORGRES Enterprise, Moscow	Setting Plants Into Operation
Ushenergonadzor Russian Enterprise, Pyatigorsk	Control of Power Consumption
Machine Construction Plant Stock Company, Podolsk	Heat Equipment Production
Zarya Production Association, Nikolayev	Gas Turbine Production
Mashproject Research and Production Association, Nikolayev	Gas Turbine Design
Turbomotors Plant Production Association, Yekaterinberg	Gas Turbine Production
Privod Joint Stock Company, Lyisva	Electrical Generator Production
Mosgasprovodstroy Trust, Moscow	Gas Pipe Line Construction
Lenneftstroy Trust, Saint Petersburg	Oil Plant Construction
Avtonit Stock Company, Saint Petersburg	Plant Automation System Production
Tehpribor Plant (Sphere Enterprise), Saint Petersburg	Automation Production
Kazanskiy Compressor Plant, Kazan	Gas Compressor Production
Electroschit Plant, Moscow	Electrical Equipment Production
Mostransgas State Enterprise	Gas Transportation
Nevmashstroy Stock Company, Saint Petersburg	Air Intake Equipment Production

#### 4.0 Power Plant Technology

The availability of natural gas in many regions of Russia permits the selection of highly efficient combustion turbines for the production of electricity and thermal generation. Combustion turbines used for cogeneration are the most efficient technology available in the industry for electricity and thermal production. The high efficiency, reasonable installation cost and reduced construction schedule, in comparison with other available technologies, makes the use of combustion turbines on combined cycle or cogeneration cycle the best option. An additional advantage is that combustion turbines are capable of operating with oil if there is a disruption in the supply of natural gas.

A cogeneration plant for heat and steam production consists of two major pieces of equipment, the combustion turbine and a heat recovery steam generator (HRSG) producing steam for thermal output. This thermal output (i.e., steam) may also be utilized to drive a steam turbine producing additional electrical generation. In addition to electricity generation by the steam turbine generator, extraction steam from the steam turbine may also be utilized for thermal usage. The advantage of installing a steam cycle with the conventional gas turbine is that by recapturing the heat generated during the combustion process additional power can be produced without expending additional fuel and thus the plant efficiency for a combined cycle or cogeneration power plant is much higher compared with a simple cycle power plant using only a gas turbine generator.

The reliability of the combustion turbines manufactured by Zarya Production Association has been proven in many different applications. During the period 1977 to 1988 Zarya manufactured 547 marine turbines of various types. In addition, numerous combustion turbines, utilizing natural gas or oil as fuel, have been installed on gas compressor stations and stationary and mobile power plants. The total operating time of fifty-six (56) 10 MW combustion turbines installed at different locations without replacement of any major components is 45,000 hours. The Zarya combustion turbines have proven their efficiency and reliability under different operating conditions.

Table 4-1 shows a list of some of the Zarya Production Association 16.19 MW combustion turbines in operation.

TABLE 4-1

**OPERATING GAS TURBINE UNITS MANUFACTURED BY  
ZARYA PRODUCTION ASSOCIATION - NIKOLAYEV, UKRAINE**

Power Plants with Nikolayev 16.19 MW Gas Turbine Units

Barged Power Plants "Severnoye Siyaniye" (SS)

Plant, Region	Number of Units	Year of Commissioning
SS-1, Zeleny Mys, Yakutiya	2	1970
SS-2, Pechora, Republic of Komi	2	1971
SS-3, Sangar, Yakutiya	2	1974
SS-4, Shmidta, Chukhotka	2	1978
SS-5, Nadym, Tyumen Region	2	1980
SS-6, Nadym, Tyumen Region	2	1986

Mobile Power Plants

(excluding 11 rail way power plants temporarily stopped)

Plant, Region	Number of Units	Year of Commissioning
Labytnangi, Tyumen Region	4	1978
Tommot, Yakutiya	4	1977
Severobaykalsk, Buryatiya	2	1978
Tenkely, Yakutiya	1	1979
Tonnely, Buryatiya	2	1979
Lensk, Yakutiya	2	1980
Lazo, Yakutiya	4	1985
Deputatsky, Yakutiya	6	1986
Yushnaya, Kazakhstan	6	1987
Tengiz, Kazakhstan	12	1990

Stationary Power Plants

Plant, Region	Number of Units	Year of Commissioning
Kuluarskaya, Yakutiya	6	1976
Myskaya, Sovetskaya Gavan	7	1976
Nebid-Dagskaya, Turkmehiya	4	1980
Urengoyskaya, Tyumen Region	6	1982
Neftyaniye Kamny, Azerbyjan	4	1986
Beloyarskaya, Tyumen Region	6	1986
Mirninskaya, Yakutiya	10	1986
Yamburgskaya, Tyumen Region	6	1982

*All above power plants deliver electric power (and heat) to mines, oil and gas processing works, industrial and chemical enterprises, settlements and cities. Operate as autonomous ones as well as in conjunction with the power utilities.*

## 5.0 Current Projects and Goals

### 5.1 Introduction

Gasenergo demonstrated a sizable income in 1993. This section provides an overview of the company's existing income generating projects, other projects under development, and plans for future activities. The purpose of this chapter is to assess the sustainability and diversity of Gasenergo's sources of income, and the expected profitability of the company's future projects, including those currently under development.

### 5.2 Current Projects

In 1993, all of Gasenergo's revenues were generated from the proceeds of engineering and design services provided to a limited number of regional utilities. Market research has convinced the company to focus its efforts primarily in the Northern Caucasus region, which is currently experiencing significant energy shortages. The company has specialized in the design and development of small (17 MW) modular cogeneration units, termed M1 modules. These units are relatively more efficient than many of the existing generation plants, and can be procured and commissioned in a short period of time. They are particularly attractive to utilities that are experiencing shortfalls in both power and heat generation capacity.

In the Northern Caucasus, Gasenergo enjoys close relationships with several of the regional utilities, including Rostovenergo and Kubanenergo. In the Rostov Region, the company has, to date, performed engineering and design work on the repowering of the Shakhtinskaya power plant, which is close to completion. Gasenergo will be the majority shareholder. The preliminary design work to repower the Kamenskaya power plant of Rostovenergo has also been accomplished, and the company will own a minority share upon completion.

Gasenergo's clientele also includes utilities outside of the Russian Caucasus, such as Pirmenergo in the Urals. The company, through its affiliation with Energoperspectiva, is under contract with Pirmenergo to perform design and engineering work related to the installation of M1 modules.

In addition, Gasenergo expects a significant stream of income from the Shakhtinskaya project, which is currently under development by the company, and is expected to be commissioned in the second half of 1995. Construction of this project is over 50% complete, while 90% of the financing has already been arranged and made available. As mentioned above, Gasenergo will be the majority shareholder.

### 5.3 Future Projects

Gasenergo plans to continue both project development and engineering and design work in the near future. In conjunction with Rostovenergo, the company has identified a large number of projects in the utility's territory for which it will provide assistance, design, and engineering assistance. In some cases, the company will take the lead in project development, investment attraction, and structuring.

Gasenergo maintains close ties with several other utilities in the region and elsewhere in Russia, and is planning to exploit small scale repowering opportunities jointly with them. Overall, 11 projects representing 43 M1 units (with a total of 3,040 MW) have already been identified for joint development, including eight repowerings of cogeneration plants and three electricity producing plants. A list of planned projects is provided in Tables 5-1, 5-2, and 5-3.

Gasenergo has estimated its future stream of revenues based on expected profits from the Shakhtinskaya, Kamenskaya, Rostovskaya, Permskaya, Kizelovskaya, and Kolievskaya power projects. In billion ruble terms as of April 1994, these projects are expected to generate a cumulative income of 3.3 in 1995, 5.6 in 1996, 14.6 in 1997, 12.8 in 1998, 13.3 in 1999, and 13.3 in the year 2000.

### 5.4 Comments

Gasenergo has identified and focused on a market niche that seems to be quite real and attractive for a company its size. In the near term, Gasenergo's M1 units can serve a unique role in providing much needed heat and power at higher efficiencies than existing plants and earlier than most planned projects which would require much longer development and construction lead times.

Gasenergo's primary strength is its stronghold in the Northern Caucasus, a region with a higher energy deficit than all the other regions in Russia. The company's modular approach to addressing this region's needs in an efficient and timely manner promises to be the key to the successful positioning of Gasenergo not only for aggressive growth in the Caucasus but for expansion into other regions in the future.

**TABLE 5-1  
REPOWERING POWER PLANTS**

**THE GASENERGO PROGRAM  
OF REPOWERING POWER AND HEAT PLANTS IN 1994-1998  
USING GAS TURBINE TECHNOLOGIES**

Title or Site of Plant Subject to Repowering	Capacity MW / Gcal/h	Power Module Number x Type	Capacity Additions, MW/Gcal/h				
			1994	1995	1996	1997	1998
Shakhtinskaya Cogeneration Plant	60 130 50 100	4xM1  2xM1-1		60 130			50 100
Kamenskaya Cogeneration Plant	70 150 100 140	4xM1  4xM1-1		70 150	100 140		
Rostovskaya Cogeneration Plant-2	270 420	12xM1-1			90 140	90 140	90 140
Rostovskaya Cogeneration Plant-1	50 70	2xM1-1			50 70		
Volgodonskaya Cogeneration Plant:	70 140	4xM1			70 140		
Armavirskaya Cogeneration Plant	50 80	3xM1			30 50	20 30	
Astrakhanskaya Power Plant	100 140	4xM1-1				100 140	
Cogeneration Plants by Kaliningrad-energo	140 280	6xM1-1			70 140	70 140	
Power Plants by Permyenergo	350 700	15xM1-1				70 140	280 560
Other Power Plants	280 560	12xM1-1					280 560
<b>TOTAL</b>	<b>1590 2910</b>	<b>15xM1 57xM1-1</b>		<b>130 280</b>	<b>410 680</b>	<b>350 590</b>	<b>700 1360</b>

**TABLE 5-2  
REPOWERING HEAT PLANTS**

Site of the Plant Subject to Repowering	Capacity MW / Gcal/h	Power Module Number x Type	Capacity Additions, MW/Gcal/h				
			1994	1995	1996	1997	1998
Rostov	70 100 50 70	4xM1  2xM1-1		70 100	50 70		
Cherkessk	70 100	4xM1			70 100		
Krasnodar	200 280	8xM1-1			50 70	100 140	50 70
Taganrog	100 140	4xM1-1				50 70	50 70
Novorossiysk	70 100	4xM1				70 100	
Nalchick	70 100	4xM1					70 100
Stavropol	60 100	3xM1-1			60 100		
Astrakhany	100 200	4xM1-1				100 200	
<b>TOTAL</b>	790 1190	16xM1 21xM1-1		70 100	230 340	320 510	170 240

**TABLE 5-3  
GAS TURBINE POWER PLANTS ON LOCAL NATURAL GAS FIELDS**

Site of the Plant Subject to Repowering	Capacity MW / Gcal/h	Power Module Number x Type	Capacity Additions, MW/Gcal/h				
			1994	1995	1996	1997	1998
Rostov Region	240	8xM1 4xM1-1		70	70	100	
Krasnodar Region	270	4xM1 8xM1-1			70	100	100
Stavropol Region	150	6xM1-1				50	100
<b>TOTAL</b>	<b>660</b>	<b>12xM1 18xM1-1</b>		<b>70</b>	<b>140</b>	<b>250</b>	<b>200</b>
<b>TOTAL OF TABLES 5.1 - 5.3</b>	<b>3040 4100</b>	<b>43xM1 96xM1-1</b>		<b>270 380</b>	<b>780 1020</b>	<b>920 1100</b>	<b>1070 1600</b>

## **6.0 Authorized Capital and Need of Additional Capital**

Gasenergy has demonstrated its ability to grow as a viable company through its engineering and consulting activities and project development efforts. Its total current assets grew from 849 million roubles in January 1993 to over 10,658 million roubles by December 1993. While it is difficult to determine the real value of this increase due to hyperinflation and the rapid devaluation of the rouble in this period, the increase is nonetheless significant and demonstrates a source of revenue for the company.

Table 6-1 presents the balance sheet of Gasenergo. This balance sheet has not been independently audited. The value of the assets shown is based on 1993 roubles and has not been revalued in current terms. Thus, the authorized capital in 1994 terms is significantly understated as shown in this statement.

<b>BALANCE SHEET OF "GASENERGO"</b>		<b>TABLE 6-1</b>	
<b>for 1993 year</b>			
	<b>Code</b>	<b>On 01.01.93</b>	<b>On 31.12.93</b>
<b>ASSETS</b>		<b>min. rub</b>	<b>min. rub</b>
<b>I. FIXED ASSETS AND OTHER OFF-CURRENT ASSETS</b>			
Intangibles:			
initial cost	010	6.300	8.300
accumulated depreciation	011		
residual cost	012	6.300	8.300
Main Fixed assets:			
initial cost	020		22.158
accumulated depreciation	021		06.43
residual cost	022		21.515
Equipment to be installed	030	120.136	1347.780
Uncompleted constructions	040	169.154	3266.677
Long-term committed finances	050	0.500	2.500
Shareholders' contributions	060		4.155
Others	070		
<b>TOTAL</b>	<b>080</b>	<b>296.090</b>	<b>4670.927</b>
<b>II. CURRENT ASSETS (INVENTORIES)</b>			
Production inventories	100		9.453
Low-value assets:			
initial cost	120	0.004	0.916
accumulated depreciation	121	0.002	0.458
residual cost	122	0.002	0.458
Uncompleted buildings	130		
Prepayments and deferred charges	140		
Production to be realized	150		
Products:			
sale price	160		
trade increase	161		
consumer price	162		
Charge for residual products	170		
Value-added tax	175		
Others	176		
<b>TOTAL</b>	<b>180</b>	<b>0.002</b>	<b>9.911</b>
<b>III. CURRENT ASSETS (CASH, PAYMENTS, OTHERS)</b>			
Accounts receivable:			
for production and services	200		78.880
for bills receivable	210		
from subsidiaries	220	10.000	0.939
from budget	230		
from staff by other operations	240		7.000
from value-added tax			
from other debtors	250		
Advances to suppliers and contractors	260	529.963	3918.821
Short-term financing	270		765.900
Cash:			
petty cash fund	280		0.066
settlement account	290	13.439	460.880
foreign currency account	300		
other cash	310		745.409
Other current assets	320		
<b>TOTAL</b>	<b>330</b>	<b>553.402</b>	<b>5977.895</b>
Losses:			
in past years	340		
in year of account	350		
<b>TOTAL ASSETS</b>	<b>360</b>	<b>849.494</b>	<b>10658.733</b>

<b>BALANCE SHEET OF "GASENERGO"</b>		<b>TABLE 6-1</b>	
<b>for 1993 year</b>			
<b>LIABILITIES AND STOCKHOLDER'S EQUITY</b>	<b>Code</b>	<b>On 01.01.93</b>	<b>On 31.12.93</b>
		<i>min. rbl</i>	<i>min. rbl</i>
<b>I. STOCKHOLDERS' EQUITY</b>			
Capital stock (authorized capital)	400	19.300	35.300
Reserve fund	410		5.295
Special funds	420		11.150
Purposeful financing	430	0.754	7630.284
Rent obligations	440		
Settlements with shareholders	450	6.030	
Retained profit of past years	460	0.171	0.072
Profit:			
in a year of account	470		240.770
used	471		95.766
retained in year of account	472		145.004
<b>TOTAL</b>	<b>480</b>	<b>26.255</b>	<b>7827.105</b>
<b>II. LONG-TERM LIABILITIES</b>			
Bank long-term credits	500	300.000	1900.000
Other long-term loans	510	520.000	820.000
<b>TOTAL</b>	<b>520</b>	<b>820.000</b>	<b>2720.000</b>
<b>III. CURRENT (SHORT-TERM) LIABILITIES</b>			
Bank short-term credits	600		
Bank credits for employees	610		
Other short-term loans	620		3.500
Payments:			
for products and services	630		2.011
by bills	640		
for wages	650	0.215	1.642
for social insurance and security	660	.0143	1.921
for property and private insurance	670		
with subsidiaries	680		
for the off-budget purposes	690		
for the budget	700	0.031	90.500
to other creditors	710	2.850	12.054
Advances from customers and suppliers	720		
Earnings of future periods	730		
Reserves for future expenses and earnings	740		
Reserves for bad debts	750		
Others short-term passives	760		
<b>TOTAL</b>	<b>770</b>	<b>3.239</b>	<b>111.628</b>
<b>TOTAL LIABILITIES AND STOCKHOLDER'S EQUITY</b>	<b>780</b>	<b>849.494</b>	<b>10658.733</b>

<b>Income Statement of "Gasenergo"</b>		<b>TABLE 6-1</b>	
<b>for 1993 year</b>			
<b>I. Financial Results</b>			
<b>Characteristics</b>	<b>Code</b>	<b>Profit</b>	<b>Losses (Expenses)</b>
Net Sales	010	0	
Value-added tax	015		0
Excises	020		0
Operating Costs	040		0
Profit from main products sales	050		
Profit from other sales	060	0	
Income and expenses from off-sale operations, including securities and shares in other joint ventures	070	251.582	10.812
	071	250.595	0
<b>Total profit and losses</b>	<b>080</b>	<b>251.582</b>	<b>10.812</b>
Total gross profit or losses	090	240.77	0
Total excess of staff wages	100	0	0
<b>II. Profit Use</b>			
<b>Characteristics</b>	<b>Code</b>	<b>On 31.12.93</b>	
Budget payments, including	200	88.389	
profit tax		76.856	
wages excess tax		11.533	
Reserve fund	210	5.295	
Deductions for			
accumulation funds	220	0	
consumption funds	230	0	
charity	250	0.300	
others	260	1.782	
<b>III. Payments to the budget</b>			
<b>Characteristics</b>	<b>Code</b>	<b>By Calculation</b>	<b>Actual Input</b>
Property tax	300		
Profit tax	310		
Environment pollution tax	340		
Land tax	350		
Value-added tax	355		
Excises	356		
Export tax	360		
Import tax	365		
Income tax	380		
Other taxes	386		
Economical sanctions	390		
<b>IV. Expenses for calculating profit tax</b>			
<b>Characteristics</b>	<b>Code</b>	<b>Actual</b>	
For operating and nonoperating activity	500		
For environmental activity	520		
For public health services, public education, culture & others	530		
For charity, environmental and health improvement funds and others	540		

## 7.0 Investment Risks and Mitigation

### 7.1 Introduction

This chapter examines, in general terms, the types of risk exposure that Gasenergo's projects, and particularly the Shakhtinskaya Project, face given the existing approach to project structuring. The purpose of this analysis is not only to assess the nature of these projects from a risk perspective but also to identify potential opportunities for improvement and further risk mitigation. The primary focus of this analysis is from the point of view of a significant foreign investment in a Gasenergo project, while most of the findings apply also to all shareholders in the project.

Based on our experience, many Russian private power developers, while cognizant of the potential impact of risks on the profitability of projects, have not developed methodologies to mitigate risks and allocate them among diverse parties. This mitigation is a common practice for international private power developers and a critical step in the structuring of private power projects in countries such as Russia. At the same time, Gasenergo has shown tremendous interest and eagerness in applying risk analysis and mitigation to their projects, and to a large extent has agreed to modify the structure of the Shakhtinskaya and future projects on the basis of our recommendations. K&M's recommendations for risk mitigation for improvements in structuring Gasenergo's projects is summarized in Table 7-1.

### 7.2 Political Risks

Political risks are perhaps the most difficult to analyze, predict and mitigate in an environment such as Russia. These risks range from general difficulties in enforcing contracts with entities and the adverse effect of continuously evolving taxation legislation, to the more unlikely events of changes in ownership laws or the outbreak of armed conflict. From the foreign investor's point of view, these risks clearly need to be identified and mitigated prior to the negotiation of any investment transaction.

A most common risk, stated in very general terms, is the potential for difficulties in enforcing agreements in case of a breach of contract or a dispute between the project and Russian private or government counterparts. While this issue may also be classified as a commercial risk, in this case the uncertainty arises primarily from the political issue relating to the effectiveness of Russia's judicial and arbitration process. Arbitration codes certainly exist in Russia, but there has been little practical experience with arbitration court procedures, third party arbitration, and implementation under the country's current situation. While Gasenergo may rely on arbitration procedures offered by law to enforce agreements, it may be possible to structure project contracts in such a manner as to enable more efficient resolution of conflicts. Arbitration procedures may be explicitly identified in contracts, and additional mechanisms such as performance bonds and escrow accounts may also be used to allow for more rapid compensation for

damages. Gasenergo has expressed its readiness to review existing agreements and incorporate such mechanisms upon agreement with its counterparts.

A more common issue, both for Russia and to the most stable of economies, is the uncertainty arising from the possibility of changes in the country's tax laws. Russia's taxation system has evolved very rapidly into a complex and sometimes burdening set of duties that promise further changes in the near future. Under the existing project structure of Shakhtinskaya, for example, there are no safeguards against future changes in the taxation structure. However, it is possible in certain cases to transfer the risk of the adverse impact of tax changes to the purchasing utility if the utility is a government entity, in essence receiving a guarantee from the government against such unpredictable changes. For the Shakhtinskaya project, though, this option is not likely to be incorporated into Gasenergo's power purchase agreement with the purchasing utility. In this case, the project company as well as its individual investors will need to accept this uncertainty.

Other political risks, ranging from restrictions on currency convertibility and asset ownership to political force majeure issues such as war can be most effectively addressed through the type of insurance offered by the Overseas Private Investment Corporation (OPIC) and MIGA of the World Bank Group. Russia's Gosincor State Investment Corporation and its off-shore insurance program for political risk may also be utilized. Gasenergo, however, has little role in such issues which will primarily need to be addressed by the group of foreign investors themselves.

### 7.3 Commercial Risks

The greatest opportunity for improving Shakhtinskaya's and Gasenergo's risk profile is in the area of commercial risk mitigation. In general, most commercial risks identified here can be mitigated either by allocating uncertainties among organizations or through insurance. In those instances where either suppliers or the purchaser have been unwilling to assume additional risks or provide guarantees, Gasenergo is currently in the process of exploring opportunities for insurance. It has to date identified and held preliminary discussions with the insurance company of Energogarant, which specializes in providing energy-sector insurance.

Gasenergo is also pursuing discussions with Rostovenergo, the purchasing utility, to revise certain agreements in order to mitigate two key risks for the project. The first risk is that of non-payment by the utility, a real and critical issue not only affecting the Russian electric sector but the economy as a whole. With this regard, Gasenergo's aim is to incorporate additional procedures within its agreements with the utility to ensure a more efficient process in resolving disputes and ensuring payments. Gasenergo has also had preliminary discussions with Rostovenergo regarding the availability of fuel supply and the possibility of the utility procuring and supplying fuel for Shakhtinskaya. This would mitigate the risk of fuel shortages and unavailability, and potentially the adverse

impact of changes in gas prices on the profitability of the project.

#### 7.4 Financial Risks

Financial risks are defined as those commercial uncertainties that are beyond the influence of organizations that are party to the project. These generally include the impact of unpredictable changes in macro-economic factors such as inflation, interest rates, currency exchange, and general market conditions on the profitability of the project. Financial risks are generally assumed by the project consortium, although in some cases it may be possible to allocate these risks to a third party such as the purchasing utility.

In the case of Gasenergo, and the Shakhtinskaya project specifically, the only allocation of financial risks beyond the project that may be possible at this point is with the shifting of the responsibility for fuel procurement and payment from the project to Rostovenergo. Currency exchange risks, as with other financial risks, will need to be hedged by potential investors themselves.

#### 7.5 Technological Risks

Technological risks are a key consideration for Gasenergo, and specifically for the Shakhtinskaya project. Here, much of the equipment has already been procured and was delivered to the job site in 1992. The gas turbine, a critical component, was procured from a manufacturer in Ukraine and the one-year repair and replacement warranty has already expired. Furthermore, such contractual terms as liquidated damages for equipment non-performance were not incorporated into the original agreement.

A clear opportunity to mitigate equipment non-performance risk for Shakhtinskaya is to purchase an extension of the original warranty from the turbine manufacturer to guarantee equipment repairs and replacement in case of failure or non-attainability of performance standards. Gasenergo is currently pursuing this option with Zarya, the equipment manufacturer in Ukraine.

#### 7.6 Force Majeure Risk

The unlikely event of damages and losses resulting from a non-political force majeure event such as an earthquake is generally a risk that can be covered through insurance. While Gasenergo had not addressed this issue at the time of K&M's evaluation of the Shakhtinskaya project, it is currently conducting discussions with Energogarant, the Russian insurance company, to obtain insurance against this type of force majeure event.

#### 7.7 Conclusions

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The current approach of Gasenergo in structuring the Shakhtinskaya project exposes the

project to significant and unnecessary risks. To a large extent, however, these risks can be effectively mitigated through the introduction of modifications in the project's current structure and agreements. If adopted, K&M's recommendations in mitigating commercial, financial and technological risks would reduce the project's risks to an acceptable level from the point of view of a foreign investor. It is the responsibility of the foreign investor, however, to seek mitigation of the political risks affecting investments in power projects in Russia.

TABLE 7-1

GASENERGO/SHAKHTINSKAYA RISK PROFILE

Typical Risk Category	Current Structure for Shakhtinskaya Project	Preliminary K&M Recommendations for Improvement	Gasenergo Response to K&M Suggestions
<i>Political Risks</i>			
Enforcement of Contracts	Arbitration Court if No Decision is Reached	Arbitration Procedures Incorporated into Agreements, Performance Bonds	Possibility for Gasenergo to Revise Agreements
Changes in Tax Laws, Customs, Licensing Procedures	Tariff Set is High to Absorb Impact	Tariff Provisions to Absorb Cost Increases	Project Responsibility
Constraints on Currency Convertibility and Profit Repatriation, Expropriation	None for Project	MIGA/OPIC Insurance for Expropriations, Pledge from Rostovenergo to Compensate for Expropriation	Foreign Investor Responsibility
Political Force Majeure: War, Terrorism	None for Project	MIGA/OPIC Insurance, Gosincor	Foreign Investor Responsibility
<i>Commercial Risks</i>			
Failure by Utility to Make Payments	0.5% Penalty Built-Into Power Purchase Agreement, Purchasing Utility Part Owner in Project	Arbitration Procedures Incorporated into Agreements	Possibility for Gasenergo to Revise Agreements
Construction Delays Due to Owner	Project Responsibility	Project Company Liable for Losses	Project Responsibility
Construction Delays Due to Construction Contractor	Project Responsibility	Contractor Responsible for Construction Delays and Payment of Penalty	Risk Insurance Being Pursued by Gasenergo

<b>Typical Risk Category</b>	<b>Current Structure for Shakhtinskaya Project</b>	<b>Preliminary K&amp;M Recommendations for Improvement</b>	<b>Gasenergo Response to K&amp;M Suggestions</b>
Operating Losses Due to Faulty Design	Project Responsibility	Minimized Through Selection of Experienced Equipment, Contractors and Proven Design	Risk Insurance Being Pursued by Gasenergo
Outage or Losses Due to Operator Error	Project Responsibility	Responsibility of Operator, May be Insured	Risk Insurance Being Pursued by Gasenergo
O&M Expense Overrun, Operator Breach of O&M Agreement or Operator Insolvency	Project Responsibility	Operator Responsible for O&M Plan Overruns, Indemnity from Operator	Risk Insurance Being Pursued by Gasenergo
Personal Injury During Construction and Operation	Social Benefits	Third Party Liability Insurance	Risk Insurance Being Pursued by Gasenergo
Fuel Unavailability	Fuel Supply Agreement	Long Term Fuel Supply Contract with Liquidated Damages	Possibility of Rostovenergo Guaranteeing Fuel
<b><i>Financial Risks</i></b>			
Exposure to Hyperinflation	Expected Tariff Adjustment to Inflation by Federal Commission	Tariff Indexation	Project Responsibility
Exposure to Exchange Rate Changes	Expected Tariff Adjustments to Inflation by Federal Commission	Tariff Indexation	Project Responsibility

<b>Typical Risk Category</b>	<b>Current Structure for Shakhtinskaya Project</b>	<b>Preliminary K&amp;M Recommendations for Improvement</b>	<b>Gasenergo Response to K&amp;M Suggestions</b>
Fuel Price Increases	Expected Tariff Adjustments	Tariff Indexation, Purchasing Utility Procures Fuel	Project Responsibility, Possibility for Utility Procurement of Fuel
Competition from Lower Cost Producers/ Imports	Little Competition Expected from RAO and Power Imports	Long Term Power Purchase Agreements	Project Responsibility
<b><i>Technological Risks</i></b>			
Equipment Failure	Manufacturer Warranty Expired, Experienced Equipment Selected	Liquidated Damages Agreement with Manufacturer, Extension of Warranty Agreement	Possibility of Warranty Extension for 1 Year
Equipment Sub-Performance (Output & Environmental)	Manufacturer Replaces Equipment, Experienced Equipment Selected	Liquidated Damages Agreement with Manufacturer	Possibility of Warranty Extension for 1 Year
<b><i>Non-Political Force Majeure</i></b>			
Natural Disasters	No Insurance	May be Insured, Capacity Payments Could Continue According to Contract	Risk Insurance Being Pursued by Gasenergo

Note: This risk analysis is based on typical risks that may be present in small projects that are developed by Gasenergo as a controlling private developer.

## **8.0 Russian Laws and Regulations Affecting Foreign Investment**

### **8.1 Introduction**

Much has been done in Russia to develop a favorable environment to attract private and foreign investment and encourage international business activity since the adoption of the Law on Foreign Investments in the [former] Russian Soviet Federation in 1991. A series of laws and regulations have been developed and adopted with promises of further reforms and incentives to foreign investors. These significant reforms of the overall legislative framework have resulted in attracting a number of small to medium-sized investments. To a large extent, however, investments in capital-intensive sectors which require specific legislative and regulatory frameworks, such as for the power industry have not yet been forthcoming. Attracting such investments will require further reforms in certain key areas identified in this section.

This chapter analyzes the overall institutional framework for investment currently existing in Russia, and develops findings and conclusions regarding potential opportunities to reduce institutional constraints and provide incentives for local and foreign private investments specifically in the electric sector. This section focuses primarily on the political, legislative and regulatory issues affecting private investments in new power generating facilities in Russia.

### **8.2 Political Overview**

The President of Russia is the republic's highest ranking official and heads the country's executive branch. The President and the government of the Russian Federation have the ability to issue corresponding decrees and decisions to implement already approved laws, or address issues that are not legislated. Laws have precedence over all decrees and resolutions of the executive branch.

In general, the President of Russia as well as most members of the Duma are committed to the notion of privatization and economic reform, and Russia has made significant progress to date in these areas. The future pace of these reforms, however, will be largely determined by the yet uncertain relationship between the executive and legislative branches, and the effect of reforms on the dominant sector of the economy that continues to rely on state ownership.

Unlike many other republics of the former Soviet Union, Russia has already adopted a constitution through a nationwide referendum that took place on December 12, 1993. This constitution guarantees the rights of Russian private citizens to own and use

all types of property, including buildings, equipment, factories, and land. The constitution also guarantees against state confiscation of property without fair compensation, and citizens' fundamental rights to engage in entrepreneurial activity. These rights have also been legally extended to foreign citizens and investors.

### 8.3 Legislative Framework

#### 8.3.1 Framework for Private Enterprise

The Law on Privatization of State-Owned and Municipal Enterprises, adopted in July 1991 and amended in June 1992, and the Law on Investment Activity in the RSFSR adopted in June 1991, provide the basis for privatization and private investment activity in Russia. The legal framework for privatized business activity has been further established with the passage of additional laws regarding contracts and arbitration, banking sector activity, insurance, and environmental regulations, as well as a series of presidential decrees on industrial privatization and economic deregulation.

A wide variety of corporate structures are recognized and protected by Russian legislation, including limited liability companies, joint stock companies, production cooperatives, and joint ventures. Most business activities are unrestricted by the government. Investors can freely choose the capital structure of their companies, obtain commercial credit in domestic or foreign currency, and issue securities. Enterprises can without restriction enter into contractual relations, assume liability, plan their activities, determine their products and services, and choose their suppliers, buyers, and executive officers.

A limited number of activities, termed natural monopolies, transformed into joint-stock companies during privatization, operate in Russia on a privatized basis as state regulated entities. In the energy sector, these activities include the ownership of utilities, and upstream oil and gas activities. The Russian Law on Monopolies envisaged the creation of a federal commission to regulate the tariffs of enterprises in this sector.

Russian laws also provide a framework for enforcement of contracts and dispute resolution. The Russian Federation Arbitration Code of 1992 and the Russian Statute on Procedure for Settling Disputes of 1992 provide clearly articulated and legally binding dispute resolution procedures through Russian arbitration courts. Russia's legal system generally favors arbitration in cases of international disputes and will recognize arbitral judgements as well as enforce awards.

~~Privatization in Russia has proceeded at a relatively rapid pace over the past three years. During the current transition stage much of the economy is being corporatized and slowly transformed into independent and commercially viable~~

entities. This is designed to lead to an eventual elimination of state subsidies for enterprises. A State Committee on property management, GKI, has been formed, and has been entrusted with government-owned shares in enterprises nationwide. In many enterprises, shares have already been distributed to the employees of those companies, or been auctioned on securities markets. Vouchers have been issued to Russian citizens nationwide to be traded as stocks of GKI or of specific privatized enterprises.

### 8.3.2 Taxation Structure and Customs Duties

Russia has instituted a relatively complex system of taxes that affects local as well as foreign investments and business activity alike. The taxation structure affecting corporate entities in Russia is shown in Table 8-1.

The Value Added Tax (VAT) of 20% (and 3% Special Tax) applies to all purchases and sales of products and services of companies. It is calculated on the basis of the incremental value (cost) added to the manufacture of a product or service, and ultimately passed through to the final consumer. Investments in the working capital of companies are exempt from VAT taxation, but other forms of capital investments are subject to the tax.

Equipment and materials imported for use in manufacturing processes are subject to customs duties that vary by product. While Russia's taxation structure is still in a state of evolution, regional and local governments have shown signs of willingness to extend certain tax privileges to foreign investors. For example, the City Government of St. Petersburg recently granted \$3.8 million in tax privileges to Coca-Cola for investing in a \$34.5 million bottling project. The tax privileges were in the form of exemptions from profit tax, property tax, land tax, and taxes on lease payment on land in 1994 (Moscow Times, 5/28/1994).

### 8.3.3 Foreign Investment Laws

Foreign corporations and individual investors are allowed to make investments in all legal categories of enterprises as full or partial owners. This may take the form of a joint venture, joint-stock company or limited liability company. They can acquire buildings, land and other property, as well as shares of enterprises, and other types of securities and assets. To qualify for potential tax advantages in certain regions of the country, though, joint ventures may be required to have a minimum of 60% foreign ownership.

Russian law extends guarantees against expropriation, nationalization, discriminatory treatment, and unlawful confiscation of foreign investments conducted without fair compensation. Foreign enterprises are also allowed unrestricted transfers of capital, including revenues, profits, compensation,

interest payments, and liquidated investments in hard and domestic currency. Russian law guarantees the ability of foreign enterprises to convert earnings to hard currency on open currency exchanges and repatriate profits. Foreign corporations and joint ventures operating in Russia are subject to the same tax structure as domestic enterprises.

With regards to conflict resolution, the Law on Foreign Investments of 1991 stipulates that disputes between foreign investors or enterprises and private or state Russian organizations may be resolved through the arbitration court of Russia. Foreign enterprises may also stipulate in their agreements with Russian parties a resort to international means of resolution of disputes. The ability for foreign investors to seek international resolution of disputes with Russian counterparts has been further emphasized in the Law on International Commercial Arbitration adopted in July 1993.

The presidential decree of September 1993 provides further guarantees against future uncertainties for foreign companies operating in Russia by delaying the application of any unforeseen administrative measures that have an adverse effect on the operating environment of those companies for three years of operation from the date of execution of such measures.

#### 8.3.4 Bilateral Agreements

Russia has signed three significant bilateral agreements with the United States to encourage investments by US firms in Russia. The first is an agreement between Russia and the Overseas Private Investment Corporation (OPIC). The agency has agreed to provide investment insurance against political risk, project financing, loan guarantees, and overall investor services for US private investors in Russia. OPIC coverage also includes inconvertibility coverage thus enforcing the legal right to convert local currency into hard currency. OPIC has recently authorized \$2 Billion for coverage of US investors in Russia.

Russia has also signed a bilateral treaty with the US concerning encouragement and reciprocal protection of investment, and a treaty on avoidance of double taxation. These treaties guarantee non-discriminatory treatment of US investments in their admission to Russia and the right to repatriate into hard currency profits earned in Roubles. These treaties also ensure against double taxation of income and provide guarantees for prompt, effective, and adequate compensation in the event of expropriation, and the right to third party international arbitration in the event of a dispute between a US investor and the Russian government.

### 8.3.5 Government Guarantees and Insurance

The government of Russia has not formulated a uniform set of concessions to private power producers and commercial lenders for sovereign guarantees to backstop commercial agreements between foreign investors and state-owned enterprises. Nevertheless, government guarantees can be provided on a case by case basis depending upon the perceived need for a particular project.

Beyond sovereign guarantees, however, the government is in the process of creating a number of mechanisms to protect foreign investment in Russia. By presidential decree in early February 1993, the State Investment Corporation, Gosincor, was created to provide services that address the needs of foreign investors in Russia. The decree allowed for the capitalization of an insurance company to provide investors with guarantees against all types of political risks.

Since the issuance of the presidential decree Gosincor has established an off-shore subsidiary in the Bahamas to provide political risk insurance to investors in Russia. So far this fund has been capitalized with \$100 Million, or 10% of the value called for by the decree. Gosincor has also received significant cooperation from OPIC, which has committed additional coverage of political risks through this corporation.

### 8.3.6 Electric Power Sector Legislation

The Russian Federation Law on Privatization of State and Municipal Enterprises does not restrict the ownership and operation of electric utilities on a privatized basis. By applicable law, the electric power sector is currently considered a regulated industry. In August of 1992, a presidential decree established RAO EES Rossii as a company with a minimum of 49% equity in the 72 regional electric generation and distribution utilities of Russia, 100% of central dispatch agency, Integrated Power System (IPS) transmission facilities and property of regional operation of dispatch agencies and 100% equity in large generation plants. These plants belonging to RAO EES are identified as all existing thermal power stations over 1000MW, and all hydro-electric station larger than 300MW. All nuclear plants were entrusted to the Ministry of Atomic Energy (MinAtom). However, some regions of the Russian Federation have not transferred electric grids to RAO yet.

The presidential decree of November 5, 1992 further established the ownership structure of RAO EES, its subsidiary companies, and the regional utilities. The government decided to retain ownership of 51% of RAO's shares, which during three years were transferred to GKI. The remainder of shares may be distributed to the employees of RAO (1%) and employees of regional companies (28%), while 20% have to be earmarked for sale for privatization vouchers. As for

regional utilities, RAO retained 49% ownership of the joint stock companies while 51% of shares were distributed to the employees of those companies.

The decentralization of the management of the electric power of Russia provided the legal precedent for the operation of regional utilities and power stations on a privatized basis. It should be noted that little enabling legislation exists that clearly defines relations between electric power sector enterprises, in particular, the role of local and foreign private and direct (controlling) investments in power generation, transmission and distribution. Little or no precedence exists for independent power production with full private ownership.

#### 8.3.7 Environmental Protection

The primary legislation for environmental protection in Russia was adopted in December of 1991. This law outlines the principles and objectives for environmental regulation, and provides an overview of requirements and mechanisms for environmental protection. This also serves as a framework for accountability to environmental standards by polluters and the administration of penalties and mechanisms for dispute resolution.

According to a government resolution on environmental protection adopted in April 1994, the responsibility for the promulgation and enforcement of specific environmental standards lies with the regional organizations and branches of the Ministry of Nature of Russia. These regional organizations have the authority to define ecological and sanitary standards and requirements, develop and implement comprehensive environmental monitoring and inspections programs, and administer non-compliance penalties.

#### 8.3.8 Enforcement of Legislation

While the Russian government is in the process of developing comprehensive legislation to provide a framework of commercial operation and improve the institutional environment for foreign investments, it is widely recognized that one of the most important constraints to the implementation of this legislation is the enforcement of laws and regulations. Russia, not unlike all countries of the former Soviet Union and Eastern Europe, does not have a long history of judicial processes and it can be assumed that such experience will only develop over time.

Russian law and several bilateral treaties guarantee the rights of foreign companies to settle disputes with the Russian government either through the national arbitration court or international third party arbitration. The national courts will also recognize and enforce international arbitration judgements. There has been no such experience and precedents to date in the electric sector. It is inevitable, therefore, that inefficiencies and potentially long delays, and even

inequities will arise in the first cases of dispute resolution until such a body of experience is established.

One convincing example of inefficiencies arising from the settlement of disputes is the growing level of inter-enterprise non-payments that is causing a national economic crisis. This condition is also prevalent in the electric power sector evidenced by the staggering level of receivables reported by RAO EES Rossii as compared with its reported payments for power sold to regional utilities. In response to this economic crisis the President of the Russia Federation issued a decree on May 23, 1994 directing the Central Bank to implement measures leading to more timely payments for goods and services among state-owned enterprises. It also directs the Bank to make it easier to initiate bankruptcy procedures against enterprises that fail to honor their monetary commitments. RAO has also been allowed by decree to cease service to its non-paying customers but it has so far met with considerable resistance in exercising this authority.

## 8.4 Regulatory Framework

### 8.4.1 Federal Regulatory Institutions

There are numerous government organizations in Russia involved in policy and regulatory issues in the power sectors. The major institutions include the Ministry of Economy, which is driving economic reform, the State Committee of Property (GKI) which is organizing the privatization process in the country, the Ministry of Fuels and Energy, which was former parent of RAO EES, the Federal Power Commission, and independent regulatory commissions in each of the 72 regions of the country.

The Federal Power Commission (FPC) is a newly formed organization which has jurisdiction over all regulatory issues affecting the wholesale market of electric power, the organizer of which is RAO EES Rossii. The primary function of this commission is to set the amount of the subscribers' payment and power tariffs in the wholesale market for RAO. The commission also has jurisdiction over the determination of tariffs for all large plants that supply the wholesale power market. These plants include large hydro-electric (over 300 MW) and thermal plants (over 1000 MW) wholly or partially owned by RAO, and nuclear plants owned and operated by the Ministry of Nuclear Energy.

~~Operating leadership and members of the FPC were appointed by the government of the Russian Federation by decree on March 25, 1994. The FPC consists of 29 high ranking officials of key Russian ministries, large industrial customers, and two executives of RAO EES. Among the organizations that participate in the FPC are representatives of the railway, metallurgy, defense, and petrochemical~~

industries, and officials of communications, science, labor, nuclear energy, finance, and agriculture ministries. Also included are directors of seven of the largest electricity consuming industrial enterprises of Russia from the aluminum, chemical, fertilizers, as well as municipal utilities. The commission can also invite additional representatives and experts from the leading branches of the Russian economy to participate in the organization's activities.

While comprised primarily of users of electric power, the FPC is committed to approve the amount of the subscriber's payment at a level that will allow RAO EES to have the means to sustain electric power sector investments without reliance on sovereign expenditures. The investment component in the subscriber's payment of RAO has been set at 68%. The investment fund is entirely allocated for new investments.

#### 8.4.2 Regional Power Institutions

Regional power commissions are tasked with the determination of retail customer tariffs for regional energy companies. Small (non-RAO) generation plants operating in the region are not separate entities and they function as operating divisions of the regional utilities. Therefore, agreements between the regional utilities and these smaller plants do not exist and power tariffs at that level are consequently not regulated.

Regional power commissions are appointed by regional governments of the Federation. The relationship between regional commissions and the FPC, however, has not been fully defined by law. The FPC has, by and large, assumed the authority to settle disputes arising between regional utilities and regulatory commissions. Not all regional commissions have agreed to implement these recommendations as they are not administrative orders per se. The complex interrelationship between the FPC and regional power commissions is expected to be further clarified with the adoption of relevant laws and regulations for the sector.

Each regional power commission has the authority to regulate tariffs only in accordance with the order established by the government of Russia. As a result, the basic principles underlying regional utility regulation do not differ significantly between regions or from the FPC's approach. This approach is based upon the traditional cost plus return regulatory framework comparable to such Western regulatory systems as those of the United States. The utility company is treated as a natural monopoly for transmission and distribution of power to rate consumers. Essentially, the revenues of the utility company are regulated by independent regulatory commissions that ensure a reasonable stream of revenues on utility investments and costs while ensuring against monopolistic abuses of consumers.

In most regions retail utility rates are set to ensure an allowed level of revenues on invested capital (or ratebase) and recovery of operational expenses. This allowed rate of return may vary significantly from one region to the other depending on the cost of generation and availability of generation capacity and is generally set to allow for reinvestment for the future growth of the power sector. Unlike in the United States, there are few elaborate rate case proceedings, costly audits, or lengthy public hearings on a regular basis, but most regions have come to an agreement with their utility with regards to the net asset base of the company. In many instances, though, utilities undergo annual reviews with their regulatory commission to determine any adjustments in the capital base and general level of investment and cost of the company. During the year, most regional commissions may have to adjust retail tariffs every quarter to reflect monthly inflation or fuel cost increases.

The current ratemaking approaches in many regions also reflect the power sector's integral role in social protection of the population and some branches of industry. In all regions, retail tariffs are differentiated so that certain groups of consumers in the region subsidize tariffs for other groups. In some regions such cross-subsidization by industrial areas of residential and vital agricultural sectors drastically affects the activity of the latter.

While most regional commissions have not clearly formulated policies to attract or regulate IPPs within their territories, attitudes towards private power issues may vary widely among regions depending on a number of factors. These factors include the need for additional power in the region and the utility's ability to meet those needs, the experience of the region with privatization and attitudes towards reform in general, and the willingness of administration and utility leaders to experiment with further utility deregulation.

Each of the four project evaluation volumes prepared as part of this study include further analysis of the region-specific regulatory issues that would affect those projects if implemented on an IPP or private power basis. The following section provides an overview of regulatory approaches and ratemaking mechanisms implemented at the federal level, impacting RAO EES Rossii and potential IPPs that would supply power directly to the Integrated Power System.

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#### 8.4.3 Current Ratemaking Mechanisms

RAO's wholesale tariffs at the national level are determined as the weighted average of RAO's purchased power costs from independent plants and regional utility power overflows. This tariff is adjusted quarterly on the basis of inflation. All large independent plants, either directly interconnected to RAO or connecting through regional utility grids, have entered into direct agreements with RAO to provide power on the basis of a two-part tariff. The first part of this tariff is a

capacity charge with a modest built-in return on investment to allow for plant upgrades, other incremental investments and dividends to shareholders. The second part of this tariff is the energy charge, which compensates the plant for fuel costs. The allowed return on a given plant's investment is determined on a case by case basis and varies from one plant to another.

The power purchase agreements between these plants and RAO are not long term agreements. RAO renegotiates plant dispatch and availability terms with each plant on an annual basis, and guarantees capacity payments on the basis of the required plant availability for the next 12 months.

RAO adds the cost of high voltage transmission, operation and maintenance, and expected transmission system losses to its power purchase costs to submit its wholesale tariff for regional utilities to the Federal Power Commission for approval. RAO tariffs consist of two components. The first is a pass-through of the average cost of purchased power. The second is the subscriber's payment, approved by the FPC, covering all RAO administrative and transmission costs, as well as RAO's allowed profit. This payment also includes an investment fund contribution component to enable capital investments for system upgrades. The subscriber payment is a fixed monthly charge to regional energos based on the kWh power transfers to each energo. Table 5-1 provides a detailed breakdown of this charge.

Regional utilities purchase power from RAO's high voltage transmission lines at the weighted average wholesale tariff. While wholesale tariffs have been determined separately for each of the 6 major geographical divisions of Russia, the FPC is in the process of consolidating these tariffs into one weighted average tariff for the country as a whole. The purpose of this change is to prevent industries that are located in regions with lower cost fuel resources, such as hydro, to be the sole beneficiaries of low electricity prices resulting from past investments made at the expense of national resources. During the first quarter of 1994, tariffs have already been averaged across three geographic divisions, the Northwest, the Urals, and the Center. The remainder of the Integrated Power System will be incorporated into one national averaged tariff by the end of the year.

Tariffs set by the regional power commissions are the retail (electricity and heat) prices for end-users. These tariffs are calculated on the basis of a given utility's generation costs and wholesale power purchases, with an additional modest return on the cost of system investment and maintenance. The tariff for final consumers also includes the subscriber's payments of AO-Energos for the services rendered by RAO EES Rossii. The retail utility tariffs for power vary widely (between 16 and 80 Roubles per KWh in June 1994) from one region to the other due to significant differences in the availability of fuel and hydro resources. This wide

variance is expected to be decreased with the adoption of one national wholesale tariff.

While many independent (RAO-owned) plants actually transmit power to RAO over the regional utility's grid, no transmission access fee is charged to RAO. The utility is expected to maintain adequate capacity for these transfers. The issue of transmission access has not yet been addressed in Russia at the policy-making level.

In addition to the RAO and regionally-owned power generation assets, a limited number of "block" stations operate in Russia independently of any regulatory structures. These small stations, generally owned by enterprises provide power to single large enterprises or a group of enterprises through dedicated lines. Their excess power is sold to the grid of AO-Energo on the basis of tariffs determined by regional commissions. In spite of the fact that these block stations constitute a very small portion of power generation in the country, they represent an important example for the realization of independent power projects in Russia.

#### 8.4.4 Private Power Issues

While the Russian electric sector is heading increasingly towards a more competitive wholesale market for power, the regulatory framework that will establish the role of private power developers is not yet fully developed. What is clear, however, is the commitment of key policy-making institutions in the country towards the utilization of local and foreign capital as an important source of financing for investment in the power sector.

Private power projects can be structured in three general ways in Russia and negotiated on a case by case basis with RAO or other purchasing entities. For example, a private power project could be developed with a direct interconnection to RAO transmission facilities through direct negotiations with the IPS, thereby by-passing negotiations at the regional level. There are no pre-set limitations on the structure of power purchase contracts between RAO EES and private producers, but the pricing aspect of all such agreements needs to be approved by the FPC.

Alternatively, a private developer may opt to supply power directly to a regional utility. As long as power transactions occur at the regional grid's voltage levels (less than 330 KV), either RAO or the FPC would have no jurisdiction over the ~~power supply agreement reached with the regional utility.~~ The corresponding regional regulatory commission, however, would have jurisdiction over approving such agreements. It is difficult to predict the types of concessions that regional utilities and commissions would agree to because there has been no experience yet in Russia in this type of regulation. Again, projects can be structured on a

case by case basis depending on the situation in each region, until clearly articulated regulatory and concession policies are developed at the regional level.

Private power projects can also be developed on the basis of a plant supplying an individual industrial customer through dedicated interconnection facilities. Under such a circumstance, the project would not be subject to either federal or regional pricing regulations except for the share of excess power that it may supply to the wholesale grid. There are no limitations to the development of such privatized projects. These projects, however, will generally be limited in their size.

The need for clearly defined regulations and policies for private power becomes most apparent when the project intends to either wheel power to a group of industrial end-users through existing utility interconnections, or to sell to the high voltage wholesale system by first accessing the regional utility system. While the FPC has in principle endorsed the use of such innovative power transactions as a necessary step towards a truly competitive marketplace, policies are not yet developed to define principles and pricing issues of power wheeling and transmission access fees.

Even prior to the development of comprehensive regulations and policies in the power sector, the creation of a consolidated policy-making institution with transparent internal policy-making processes would prove highly beneficial to inspiring a level of confidence to private investors. In the current transitioning environment, a variety of institutions, including the Council of Ministers, the Ministry of Economy, the Ministry of Energy, RAO, and the FPC are in some capacity involved in developing and promulgating policies that will define the future of the power sector. The centralization of this policy-making function, while incorporating the input of industry stakeholders, would not only allow for more clearly articulated regulations, but also act as the driving force for the future evolution of the power sector.

## 8.5 Legal Outlook

A series of recent presidential decrees have demonstrated the administration's efforts to develop a favorable environment for foreign private investments in Russia. For example, a presidential decree to nullify (for three years) any future governmental actions that may adversely impact foreign operations in Russia has been supplemented by a recent decree to guarantee foreign investments in Russia from non-commercial risks. Furthermore, the Government announced on May 20, 1994, that foreign companies in Russia would soon benefit from an income tax holiday during their first three years of operation.

In September 1993, the President of the Russian Federation issued a decree directing the Council of Ministers to propose a variety of legislation, including changes in the taxation structure, to ensure a more favorable environment for foreign investment. This

specifically included a directive to submit to the state Duma drafts of legislation addressing changes in the 1991 Law on Foreign Investments, the development of free economic zones, and the formulation government concessions, for adoption in 1994.

On May 23, 1994, the first six of a series of forthcoming presidential decrees to stabilize the Russian economy and improve conditions for foreign investments were issued. With regards to taxes, it was decreed that by September of 1994, draft laws be submitted to the Duma to reduce VAT and profits taxes by 10-20%, and to decrease profits taxes charged to projects with at least 80% foreign investment.

These decrees must still be enacted in legislation by the Duma to be accorded the full weight of the Russian Federation and thus are still subject to the political process. The decrees are however, indicative of the current trend of the Russian Government.

With regards to the legislative and regulatory framework for private investment in the electric sector, no draft laws have been submitted to date to the Duma, although committees organized within the Ministry of Economy are expected to submit legislation by the end of 1994.

## 8.6 Conclusions

Russia has achieved significant accomplishments within the area of overall legislative framework development with regards to foreign investment and privatization since its independence in 1991. A relatively far reaching legislative structure has been developed for private business activity, and measurable progress has been demonstrated in the critical process of corporatizing public sector enterprises for operation as commercially viable companies. With a commitment to further reform, Russia has entered a stage of rapid yet uncertain transition.

In general, one of the main constraints to significant inflow of foreign investment into Russia at this time is the lack of established experience with judicial processes to support the existing legal infrastructure. This key element, which is common to all formerly communist nations, is manifested in a variety of ways. For example, difficulties associated with effective implementation of existing laws have become an issue that can only be resolved over time. Also, despite the existence of numerous commercial arbitration codes and procedures, it is inevitable that the judicial conflict resolution process will require time and experience to evolve into an efficient process. Furthermore, investors may also be concerned at this stage about the limited record of precedents in the resolution of legal and contractual disputes between foreign organizations and Russian private or government entities.

With regards to the institutional environment in the electric sector, one of the main legislative constraints is the absence of enabling legislation that provides a legal basis for independent power production. The primary constraint, however, is the absence of a

regulatory framework that addresses private power issues. While potential investors are encouraged to contractually negotiate their projects on a case by case basis, the absence of precedents of IPPs that can serve as examples raises uncertainties that can most effectively be addressed through the development of comprehensive and clear policies and regulations for private power. This needs to be done both at the federal as well as regional levels.

The issue of taxes is also a significant obstacle to attracting investors in the power sector. Tax policies have been under constant revision through a series of Presidential decrees, government statements and legislative actions. This has created a considerable amount of uncertainty not only regarding the existing structure of taxes, but also the future system as well. Foreign investors, for example, may opt to wait until the Government's promises of tax holidays are enacted through legislation rather than less effective decrees, to proceed with any investments.

In the final analysis, however, many of the uncertainties presented by the current regulatory structure are both expected and possible to resolve through innovative project structuring. Tremendous progress has been made in a very short period of time to restructure the electric power sector, and it is at this point clear that there is a definite role for independent private producers both in the transition and the final stages of the power industry.

## TAXATION STRUCTURE

TYPES OF TAXES AND OBLIGATORY PAYMENTS	THE RATE	THE AMOUNTS OF TAX (PAYMENTS) ARE PAID TO THE BUDGETS OF:
<b>1. FEDERAL TAXES. VAT</b>	20% of the taxable sales turnover	Federal Budget
Enterprise Profit Tax	38% of the gross profit	Federal Budget — 13% Budgets of the Subjects of the Federation 25%
Taxes on securities transactions:		
— when registering securities	0.5% of the nominal amount issues	Federal Budget
— when buying state securities	1 rouble per each 1000 rouble	Federal Budget
— when concluding the transaction on buying-selling securities	each participant of the transaction is to pay 3 roubles per each 1000 rouble	
Taxes for setting Highway Funds:		
— imposed on uses of highway	0.8% of the product output (work, services)	Federal and Territorial Highway Funds
— imposed on owners of vehicles	the tax rate is set proceeding from the trend of the vehicle, capacity of the motor and the amount of annual tax per each unit of capacity	Federal and Territorial Highway Funds
— to buy a vehicle	The rate of the tax is set by the type of vehicle in % of the selling price without VAT	Federal and Territorial Highway Funds
Stamp Duty (on transaction with securities)	0.1% of the nominal amount of the emission	Federal Budget
— when registering the securities emission prospectus		Federal Budget
— collected from each participant of the transaction with securities	1 rouble per each 1000 roubles	Federal Budget
State Duty	Rates are set by the type of operation (actions) having juridical value	Federal Budget (economic disputes) Local Budget
Charge for using the name "Russia"	up to 0.5% of the cost of the product	Federal Budget
Special Tax	3% of the taxable sales income	Federal Budget
Transport Tax	1% of the fund	Federal Budget
<b>2. TAXES OF THE REPUBLICS FORMING PART OF THE RUSSIAN FEDERATION, REGIONS, AREAS, AUTONOMOUS AREA, AUTONOMOUS DISTRICTS, ENTERPRISE PROPERTY TAX</b>	The maximum rate of the tax cannot exceed 2% of the taxable base (fixed assets, non-material assets and reserves included into the taxpayer's balance sheet). Specific tax rates are set by laws of the republics forming part of the Russian Federation or by decisions made by the bodies of state power of the regions, areas, autonomous areas,	The Budget of the Subject of the Federation and Local Budgets in equal shares.

**TABLE 8-1  
TAXATION STRUCTURE**

TYPES OF TAXES AND OBLIGATORY PAYMENTS	THE RATE	THE AMOUNTS OF TAX (PAYMENTS) ARE PAID TO THE BUDGETS OF:
Payment for water taken by industrial enterprises from water systems	autonomous districts. Specific tax rates are set by laws of the republics forming part of the Russian Federation or by decisions made by the bodies of state power of the regions, areas, autonomous areas, and autonomous districts.	Budget of the Subject of the Federation
Charge for educational establishments collected from juridical persons	Tax rates are not higher than 1% of the annual s fund of the enterprise.  Specific rates of the charge are set by laws of the republics forming part of the Russian Federation or by decisions made by the bodies of state power of the regions, areas, autonomous areas, and autonomous districts.	Budget of the Subject of the Federation
<b>3. LOCAL TAXES</b>	Specific rates of set by legislative acts of the republics forming part of the Russian Federation or by decisions made by the bodies of state power of the regions, areas, autonomous areas, and autonomous districts, districts, cities	Local Budget
Payment for Land		Local Budget
— land tax		Local Budget
— lease payment		Local Budget
Target charges for maintaining police, improving territory, educational needs and other purposes	The rate of the charges during the year cannot exceed 3% of the annual salary fund calculated proceeding from the minimal monthly salary established by law. Specific rates are set by Local legislative authorities.	Local Budget
Advertising tax	The tax rate does not exceed 5% of the advertising services cost	Local Budget
Tax on reselling cars, computers, PC	Tax rate is not higher than 10% of the transaction amount	Local Budget
Charge for vehicle parking	The rate is set by Local bodies of legislative power	Local Budget
Charge for using Local symbols	Up to 0.5% of the product cost	Local Budget
Charge collected from transactions made at exchanges excluding transactions envisaged by legislative acts on taxation of securities transactions	Rate is not more than 0.1% of the transaction amount	Local Budget

LE 8-1  
**TAXATION STRUCTURE**

TYPES OF TAXES AND OBLIGATORY PAYMENTS	THE RATE	THE AMOUNTS OF TAX (PAYMENTS) ARE PAID TO THE BUDGETS OF:
Charge for cleanup of the territory of the populated parts	The rate is set by Local bodies of legislative power.	Local Budget
Tax collected for monitoring housing fund and social and cultural facilities	The rate is not more than 1.5% of the sales (costs to maintain these facilities are excluded).  Specific rates are set by Local bodies of legislative power.	Local Budget
<b>4. OBLIGATORY PAYMENTS AND DEDUCTIONS</b>		
Payments for discharge (disposal) of contaminating agents	In roubles per discharge (disposal) 1 ton by types of contaminating agents considering the coefficients of ecological of the region.	Federal and Territorial Ecological funds (9%) Federal Budget (10%)
— normative payment for maximum acceptable discharge (disposal) of contaminating agents		
— normative payment for discharge (disposal) of contaminating agents within established limits		
Social Insurance Fund	3.4% as regards calculated payment for labor	Extra-Budget Funds
State Employment Fund	2% as regards calculated payment for labor	Extra-Budget Funds
Obligatory Medical Insurance Funds	3.6% as regards calculated payment for labor	Extra-Budget Funds
Pension Fund	28% as regards calculated payment for labor	Extra-Budget Funds

SOURCE: RAO EES ROSSII