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**KYRGYZSTAN ANALYSIS OF
KYRGYZENERGO HOLDING COMPANY
(Deliverable 3 4)**

**NIS Institutional Based Services Under the
Energy Efficiency and Market Reform Project
Contract No CCN-Q-00-93-00152-00**

**Kyrgyzstan Energy Sector Regulatory Reform
and Restructuring
Delivery Order No. 6**

Final Report

Prepared for

U S Agency for International Development
Bureau for Europe and NIS
Office of Environment, Energy and Urban Development
Energy and Infrastructure Division

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December 12, 1996

Kyrgyz Republic

Privatization and Restructuring of the Power/Heat Sector

Prepared For

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USAID CCN-0002-Q-00-3152
Delivery Order No 6-01 - KR
Republic of KR
Privatization and Restructuring of the Power/Heat Sector

Final Draft Report

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Acronyms

CHP	Combined Heat and Power
EBRD	European Bank for Reconstruction and Development
FSU	Former Soviet Union
GAAP	Generally Accepted Accounting Principles
G&A	General Administration
GDP	Gross Domestic Product
GOK	Government of Kyrgyzstan
HB	Hagler Bailly Consulting Inc ,
IAS	International Accounting Standards
ICB	International Competitive Bidding
JSC	Joint Stock Companies
KR	Kyrgyz Republic
KSEC	Kyrgyz State Electricity Corporation
KNEHC	Kyrgyz National Electricity Holding Company
LCB	Limited Competitive Bidding
MIS	Management Information System
NEP	National Energy Program
O&M	Operations and Management
PES	Basic Distribution Utilities
PW	Price Waterhouse LLC
RES	Regional Electric Distribution System
SEA	State Energy Agency
TACIS	Technical Assistance for the Confederation of Independent States
T&D	Transmission and Distribution
TES	Thermal Electric Stations
TOM	Target Oriented Management
USAID	United States Agency for International Development
WB	World Bank

CURRENCY

1US\$ = 15Som (Used here as an average of today s rate but not reflected in all calculations herein)

100 tyins = 1Som

UNITS

Gcal	Giga Calories
GWh	Giga Watt hour
kV	kilo Volt
kWh	Kilo Watt hour
MW	Mega Watat

I. Executive Summary

This report on the privatization and restructuring of the Kyrgyz Republic (KR) power and heating sector (Sector) includes an overview of the Sector, the alternatives to restructuring the Sector, and recommendations on a) privatization of the Sector and b) improvements to the Sector's central institution, KNEHC. The Sector in the KR is evolving at an accelerating rate. By clarifying the current situation, presenting alternatives for privatization and restructuring, and providing specific recommendations, the authors offer some tools to the Sector's participants to improve the Sector's operations.

After a brief background on the Sector and this study's origins in Section II, a review of the current status of the Sector is presented in Section III. Operating data through year-end 1995, as well as an overview of KNEHC, are included in this section.

Section IV puts the current restructuring activities of the Sector in perspective with a review of the international trends in the power sector restructuring. Covering both the horizontal and vertical aspects of restructuring, this discussion provides background on the structure, ownership and regulation that has evolved world-wide when energy sub-sectors privatize.

The analysis and findings contained in Section V cover the restructuring options, the legal framework surrounding the Sector, the staffing and management of KNEHC, and management information systems. The information on the restructuring options was presented in the September, 1996 report entitled Assessment of Restructuring Options for the Kyrgyz Power Sector by Hagler Bailly Consulting, Inc. A financial analysis of these alternatives follows the discussion of restructuring alternatives and covers the implications for pursuing the different alternatives.

The final section of the report contains four sets of conclusions and recommendations covering 1) the restructuring option best suited for KNEHC, 2) the modifications to KNEHC's organization and staffing that are needed to make the restructuring successful, 3) the improvements to the management information system that contribute to successful commercialization of previous government provided services and 4) the legal issues that immediately affect the restructuring process.

The recommended alternative for restructuring and privatizing KNEHC has the best chance of improving the operations and financial health of the Sector. By partially privatizing KNEHC through a near term coupon auction and then instituting vertical unbundling of the system, the Sector will introduce commercial incentives to the operations and create management accountability. The evolving legal environment includes an independent Sector regulator to facilitate the restructuring and to balance the needs of the Sector's constituents. This regulator is essential to a successful restructuring because the Sector has specific issues e.g., timely and appropriate tariff adjustments and manipulation of tariffs that must be addressed with local sensitivity and creativity in the process of constructing a successful, commercialized and competitive heat and power industry.

II. Introduction

A Background

The power and heat sector (Sector) affects the Kyrgyz economy both directly, as one of its largest industries, and indirectly through its impact on the price levels of other commodities produced in the economy. In addition, its importance has been emphasized further by the shortage in the availability of other energy sources such as coal and gas. According to recent World Bank (WB) statistics the final consumption of petroleum products, coal and natural gas declined by 30 percent to 70 percent while the consumption of electricity remained constant. This increased dependence on electricity as a key energy resource, as well as the relative importance of the sector in the economy, has elevated the need to improve the performance of Kyrgyz National Electricity Holding Company (KNEHC), the national utility responsible for the operation of the Sector.

The Sector's current performance is weak. This is due in part to the poor condition of the system and declining levels of investment. It is further affected by factors internal to KNEHC and the regional macroeconomic decline. Since independence, the Kyrgyz Republic (KR) has experienced a dramatic decline in economic activity. This resulted from a drastic structural change in both the Kyrgyz and regional economies. Prior to the break up of the Former Soviet Union (FSU), the KR's economy had a large industrial sector highly integrated with FSU, accounting for 40 percent of Gross Domestic Product (GDP). After its breakup, the Central Asian region experienced significant economic decline in part because of the disruption of trade between Republics. The recession in regional activity also led to a shortage of coal and gas which, in turn, led to dramatic increase in the import price of these products from Kazakstan and Uzbekistan. As a result, the Government of KR (GOK) has actively been pursuing a policy to encourage the use of electricity as a substitute energy source, especially for domestic heating.

The above factors have had a negative impact on the performance of KNEHC. For example, the regional recession resulted in a decline in revenues from export of electricity. It also caused the contribution of the industrial sector to fall from 40 percent of GDP in 1994 to approximately 26 percent of GDP in 1995, leading to a dramatic decrease in electricity consumption and revenues generated by that particular customer class. However, at the same time, consumption by residential customers, whose rates are below the cost of service, has increased. The changed customer mix has contributed to the further decline in KNEHC revenues and overall financial performance.

Recognizing the urgent need to improve KNEHC's performance, GOK has embarked on a ambitious program to reform and restructure the Sector. As part of this effort, it approved Decree # 592 on December 10, 1993 to transform the Kyrgyz State Electricity Corporation (KSEC) to the KNEHC, a Kyrgyz State Joint-Stock Holding Company. Currently, the GOK is preparing preliminary drafts of privatization and restructuring policies for the Sector.

B Objectives

In order to assist the GOK in achieving its reform goals for the Sector, the WB, and the United States Agency for International Development (USAID) have initiated a study to

- identify and analyze the long-term options for restructuring and privatization of the Sector and Sector entities,

- conduct a financial analysis of the Sector based on each of these options, and
- develop recommendations based on these analyses for the future direction of the Sector

C Scope of Work and Methodology

This study was conducted by the Technical Advisors from Hagler Bailly Consulting, Inc (HB) and Price Waterhouse LLC (PW), as a part of the Operations and Management Assessment Study, funded by USAID. It was divided into two phases. The first phase, Phase A, focuses on analyzing options for restructuring. The key tasks in Phase A were

- defining GOK/KNEHC objectives,
- developing criteria for evaluating options,
- defining the "base case" for KNEHC operations, and
- evaluating the options and providing ranked alternatives to GOK/KNEHC

The key tasks in Phase B focused on the following areas of KNEHC's operations

- organizational structure,
- legal structure,
- financial structure and performance,
- manpower and staffing, and
- management information systems

In an effort to meet the objectives of the study, the study Team undertook the following tasks

- an analysis of the general legal framework in KR governing corporations, state enterprises, and the Sector,
- an investigation of the KNEHC organizational framework and subsidiaries' control,
- an analysis of staffing and manpower management implications which would result from the commercialization of the Sector, and
- an investigation of the company's Management Information System (MIS) and its applicability in a transformed and restructured sector

This involved reviews and analyses of the following

- relevant legislation and documentation pertaining to the Sector, and proposed legislation related to Sector reform,
- documentation relative to the organizational and management structure, as well as the operational and financial performance of KNEHC,
- KNEHC's management information systems and accounting systems,
- meetings with representatives from GOK, KNEHC, the State Property Fund, and the WB and
- international restructuring experience

III. Current Status of the Sector

A System Overview

The total electric capacity in the KR system is 3532 MW. There are an additional 610 MW under construction. The majority of existing capacity including that under construction is hydro power. There are two Combined Heat and Power (CHP) plants included in the system mix. These are located in Bishkek and Osh and have a combined capacity of 659 MW. In addition to supplying KR's customer's needs, KR makes annual contract sales to Kazakhstan and Uzbekistan. These sales contribute heavily to KR's annual revenues. The developed hydro plants in KR are estimated to be only about 10% of the hydro potential. Electricity is, therefore, seen as an important export commodity for the future. The Table below provides a summary of vital system characteristics.

Table 3 1 Power System Characteristics

	1994	1995
Installed Capacity	3 532 MW	3 532 MW
Peak Demand	2 173 MW	2,324 MW
Reserve Margin	62.5 %	54.5 %
Electricity Production	12 860 GWh	12 291 GWh
Hydro	11 720 GWh	11 122 GWh
Thermal	1 140 GWh	1 169 GWh
Net Sales	10 336 GWh	8 543 GWh
Auxiliary Use	360 GWh	N/A
System Losses	2 164 GWh	N/A
KNEHC Exports	2 505 GWh	1 368 GWh
Heat Capacity (GCal/hr)	2 290	N/A
Heat Sales	2 698 Tcal	2 643 Tcal
Industry	498 Tcal	284 Tcal
Agriculture	96 Tcal	86 Tcal
Residential	1 502 Tcal	1 504 Tcal
Other	601 Tcal	769 Tcal
Number of KNEHC's Employees	15 200*	15 200*

* KNEHC has recently begun a program to reduce the number of employees. As of September 1996 the employees numbered 11 500.

B Issues Facing the Sector

KR's hydro resources serve a dual purpose. They are used for electricity generation and for irrigation purposes. The latter benefits Kazakhstan and Uzbekistan. Thus, the problems besetting the Sector need to be resolved in consideration of its impact on irrigation, viz., the effect on strategic waterways, control of water flows, and international relations.

The most daunting problem facing the Sector is the shortage of funds for rehabilitation work. An estimated \$650 million required \$380 million to repair existing facilities and \$270 million to complete construction of Kambarata 2. The break-down of funding needed for repair and rehabilitation includes the following:

	\$80	million for the Bishkek Thermal Station,
	\$65	million for District Heating,
	\$145	million for repairs and improvements to the transmission and distribution system,
	\$70	million for the hydro plants downstream of the Toktogul Reservoir and
	\$20	million for other hydro plants and miscellaneous facilities,
Total	\$380	million

Of the \$380 million, about \$70 million is to be provided by the WB and the Asian Development Bank. The loan will be made available to the KR, provided the Sector takes on specific institutional reform actions, including the creation of an independent regulatory framework and the provision of a "social safety net" to mitigate adverse effects of tariff reform on low income consumers.

Much hope for the growth of KR's economy is placed on the development of the 1900 MW Kambarata project. This project has been estimated to cost about \$4 billion—about \$2 billion for construction of the reservoir and plant and about \$2 billion for transmission. There are currently studies being conducted to determine the potential market for the power.

In addition to providing power, KNEHC also maintains and operates the CHP plants. The operation of the CHP plants further complicates matters for KNEHC. In order to operate the district heating plants, KNEHC must procure natural gas and coal from Kazakhstan and Uzbekistan. Because of the shortage of cash, most of the coal and oil purchases have been made through barter. This has exaggerated already severe cash flow problems. KNEHC is at a disadvantage since it barter low cost hydro-electricity to its trading partners in exchange for high priced coal and gas. Overall this makes the operation of the CHP plants uneconomic. In addition, given the unfavorable terms of trade, CHP operations must be cross-subsidized by the revenues from electricity sales. The combination of these unfavorable circumstances constrains the KNEHC from realizing its true profit potential.

Operational problems of the Sector include very large accounts receivable balances and extremely high losses—technical and non-technical.

C Electricity Demand

There has been an overall decline in the demand for electricity in the industrial and agricultural sector, while there has been an increase in consumption for residential customers. The table below shows historical electricity consumption by customer class for the last six years.

Table 3.2 Consumption by Customer Class (KWh)

	1990	1991	1992	1993	1994	1995
Industrial	3468	3509	2974	2464	2031	1991
Agricultural	1913	1986	1872	1846	1526	892
Residential	1111	1455	1951	2455	3159	3251
Other	1152	1179	1314	1220	1114	1041
Total	7644	8129	8111	7985	7830	7175

D Electricity Supply

1 Generation

As mentioned above, currently 81% of KR's installed capacity is accounted for by hydroelectric generation. This represents approximately 10% of the country's total estimated hydro potential. KNEHC operates 20 power plants with a total installed capacity of 3,532 MW. Of these, 18 are hydropower plants with 2,873 MW of installed capacity. The Toktogul Cascade on the Naryn River has a capacity of 2,180 MW. The downstream plants of this Cascade are used as peaking units. Several small hydro plants on other rivers supply another 83 MW.

There are two combined heat and power thermal electric stations (TES) 609 MW in Bishkek and 50 MW in Osh. The system provides centralized heating in the cities of Bishkek, Osh, Karakol, Kyzyl-Kiya and Kara-Kul. The heating systems have a total length of 460 kilometers. The heat sources of the power system generate 5500 to 5700 thousand giga calories of heat per year, or 39% of the thermal energy consumed by KR.

The annual energy output of KNEHC in 1994 was 12,860 GWh, of which 11,720 GWh was from hydro plants and 1,140 GWh from thermal power plants. The net energy loss in the system was approximately 2,164 GWh, accounting for excess of 16 percent of energy sent-out. Of the total energy sales, 2,505 GWh was used for energy export to Kazakhstan and Uzbekistan. At present, the regional electricity trading is based on a series of bilateral agreements.

Although KNEHC's 1995 installed capacity is approximately 55% in excess of its peak demand, availability has been relatively low. The effective capacity of the existing system is no more than about two thirds of the installed capacity due to operational and fuel related constraints. Fuel related constraints are from the CHP plants in Bishkek and Osh. The poor condition of some of the older hydro units contribute to the low availability. Most plants were built in the last 25 to 30 years, and have had minimal upkeep and maintenance. Further, many of the turbines in the CHP's have been in operation for over 180,000 hours. Details on the major generation facilities are presented below.

Table 3.3 Generation Resources

Type	Plant	Capacity (MW)
Thermal	Bishkek Thermal Plant	609 MW
	Osh Thermal Plant	50 MW
Hydro	Naryn River Cascades & Other	2 873 MW
	Total	3 532 MW

2 Transmission & Distribution

The transmission system operates at two main voltage levels of 500 kV and 220 kV. In addition, there are a number of 110 kV lines in the less developed parts of the country. The KNEHC system has a total of 498 substations at 500 kV, 220 kV, 110 kV and 35 kV voltage levels, with a total capacity of 8,620 MVA. The transmission and distribution (T&D) network is divided into eight administrative centers (Osh, Chui Valley, Jala Abad, Issi-Kul, Naryn, Bishkek, Kemin, Talas) serving the total KNEHC system. The transmission grid within KR is interconnected to the Central Asia Grid.

KR's geography made it necessary to divide the power system into northern and southern halves connected by a single 500 kV overhead line running from the Toktogul Hydropower Plant to the Frunze Substation. The southern half of the system provides surplus power to offset the shortages in the northern half.

Overall, both the T&D systems are in need of repair or upgrade. The need for immediate maintenance is critical for the distribution system, which is experiencing rapid growth due to the use of electrification for

heating Estimates indicate that 22% of the 10kV and 36% of 0.4kV lines need to be reconstructed Additionally, an average of 26.5% of all transmission substations have been in operation for more than 25 years and are in urgent need of rehabilitation Details of the T&D system are presented below

Table 3.4 Transmission & Distribution Facilities

Type	Total Length
Transmission Lines	
500 kV	541 km
220 kV	1,252 km
110 kV	4,338 km
Distribution Lines	
35 kV	4,245 km
10 kV	30,282 km
0.4 kV	29,369 km

E Institutional Framework

1 Management and Operations

The Sector in KR has historically been owned and operated as a state-owned monopoly Subsequent to the break up of the FSU, control of the Sector was given to the KSEC, with the State Property Fund acting as the owner on behalf of the GOK In 1994, KSEC underwent a transition from a state-owned company to a joint stock State company, now known as the KNEHC

KNEHC operates twenty four subsidiaries of which sixteen are involved in the core business of power generation, transmission, distribution, district heating, O&M activities, supply store maintenance and training activities Five other subsidiaries are engaged in design, research, construction and manufacturing of steel structures Three other subsidiaries have been converted to joint stock companies which are in the businesses, respectively, of civil construction, cement production, and manufacturing of transmission and distribution towers and poles

KNEHC's President is appointed by the Prime Minister It has an hierarchical organizational structure, with the President having authority over all operational issues A distinct feature of KNEHC's organizational structure is the large number of personnel reporting to the President At present, approximately 24 heads of enterprises and 11 executive directors report to the President This dispersed reporting structure results from a lack of consolidation of departments by function

2 Legislative/Regulatory Framework

With the recent enactment of the Energy Law, KNEHC is to become a licensed regulated entity The President of KNEHC reports to a Deputy Prime-Minister KNEHC must also adhere to various accounting and labor policies adopted by that Committee under the earlier FSU regime Although, the day-to-day operations are the responsibility of KNEHC's management, the ability of the Government to influence issues such as tariffs, salaries and wages severely restricts management's ability to address financial and organizational challenges

F Tariffs

Electricity tariffs are on an average between 14% and 37% of world prices Tariffs are maintained at such low levels due to social concerns (such as, ability to pay) and the possibility of increasing inflation Though these are valid concerns, their relative importance in justifying the low cost of electricity in KR does not hold merit Surveys show that the ability to pay may not be a 'real' factor Also, though the poorest segment of the

population may not be able to afford the electricity, it could be argued that the average customer need not be subsidized. The present tariff schedule is presented below

Table 3 5 Tariff by Customer Class

Type	Tariff (tyins/kWh)	Tariff (cents/kWh)	World Price (cents/kWh)
Industry	25	1 67	4 5 -7 5
State Enterprise	25	1 67	4 5 -7 5
Residential			
< 700 kWh	12	0 80	3 6-6 0
> 700 kWh	25	1 67	7 5-12 5

A vast segment of the population that does not require a subsidy is receiving it under the current tariff structure. The average monthly consumption per household is 230 kWh, with rural consumption much higher than that in urban areas (rural 286 kWh and urban 151 kWh) due to a lack of heating and cooking fuels in rural areas. The table below, presents data for consumption by various classes from 50 kWh and below to 200 kWh and above, which is helpful in illustrating the inefficiencies of the current tariff structure

Table 3 6 Consumption for Different Levels (1994)

Consumption	KR's	Urban	Rural	None	Low Inc	Med Inc	High Inc
<50 kWh	5%	8%	3%	0%	10%	6%	3%
50-100 kWh	30%	43%	21%	31%	30%	20%	29%
101-150 kWh	15%	18%	12%	19%	12%	13%	15%
151-200 kWh	14%	13%	14%	21%	9%	10%	18%
>201 kWh	36%	18%	50%	29%	39%	51%	35%

It is evident from the above table that 52% of the low income households consume less than 150 kWh per month and that the overall monthly consumption for 50% of the population in KR is less than 150 kWh. This highlights the major drawback of the current tariff structure. The 300 kWh cut-off for the life-line tariff may be higher than a subsistence consumption level.

The losses due to the current tariff structure are further exacerbated by the increasing consumption of electricity by both urban and rural households, while the consumption by industrial customers has simultaneously declined. This shift is due to the GOK's policy to substitute electricity for expensive imported fuels such as coal, gas and petroleum products. Without the proper adjustments to the current tariffs the increased residential consumption has enlarged the magnitude of the financial losses.

Under the current tariff structure, residential customers are subsidized at the expense of industrial customers who must pay double the residential tariff (after including the lower rate for 0-300 kWh). Also, there is no time-of-day or seasonal tariff for industrial customers to compensate KNEHC for supplying electricity during high demand hours.

* This cut off value for the life line tariffs has been recently raised to 700 kWh further complicating the subsidy problems

G Financial Performance

The financial performance of KNEHC over the last three years has been unsatisfactory, although KNEHC has managed to earn meager profits. Summary operating income over the last three years are presented below.

Table 3.7 Sales and Operating Income

	1993	1994	1995
Electricity Sales (GWh)	9,009	10,336	8,543
Heat Sales (000 GCal)	3,989	2,715	2,740
Operating Income Elec (\$mil)	35.2	62.7	13.7
Operating Income Heat (\$ mil)	(12.7)	(20.0)	(15.9)
Operating Income Total (\$ mil)	17.5	42.7	(2.3)

The production and supply of electricity has an operating profit whereas district heating is operating at a loss. District heating losses stem from a decline in sales and high operating costs resulting from high fuel costs. Coupled with extremely low tariffs, this situation is responsible for the losses in district heating. The burden of these losses is then distributed to all electricity customers through the internal cross subsidy. This subsidy has detrimental social consequences at a national level by increasing energy costs in poor rural regions. In general, the smaller city and rural electric customers throughout the country are subsidizing the urban heating customers. For example, the urban heating customers of Bishkek account for about 80% by heating load but only 12% of electricity load.

Although the electricity business has an operating profit, the financial performance is determined more by export sales than domestic operations. Electricity sales domestically have stagnated and export sales have been bolstering KNEHC's performance. From 1993 to 1994, the doubling of export sales under favorable tariff terms between Kazakhstan and KR resulted in a two-and-a-half fold increase in operating income. In 1995 export sales went back to the 1993 level with revenues declining by one half. These numbers are not inflation adjusted. Now, KNEHC expects 1996 export sales to increase again with revenues more than doubling from 1995. All of these variations have a dramatic effect on operating income creating significant uncertainty in the financial health of the company.

H Accounting and Financial Management

The effects of KNEHC's accounting methodologies, which follow the FSU system, and therefore differ from International Accounting Standards (IAS), must be taken into account in analyzing the results of KNEHC's performance. KNEHC is severely short of cash, to the extent that it has been unable to pay salaries for staff, in some cases up to eight months. There is a complex barter system in place which accounts for approximately 75% of sales, including sizable barter transactions between Kazakhstan and Uzbekistan where electricity is traded for coal and gas. These transactions are coordinated through a barter clearinghouse and accounted for as cash. This large portion of KNEHC's revenues are essentially illiquid. To further compound the situation, KNEHC has large accounts receivable balances for both electricity and heat. The accounts receivable balance as of year-end 1995 for electricity customers was 226 days, and approximately 134 days for export sales. The above factors have led to a severe liquidity crisis as well as the degradation of the physical system.

In addition to problems collecting the current tariff from customers, the overall tariff structure has severely hurt KNEHC's financial position as explained above. At present, the cost of electricity is below the cost of production for most classes of customers. A cross-subsidy, which is essentially funded by KNEHC commercial and industrial customers, is built into the tariff system. But the actual subsidy provided to all classes of customers may still be higher since there are various financial factors that have not been accounted

for in deriving the tariff, namely (i) fixed assets for KNEHC have been severely undervalued and therefore the depreciation charges and reserves for rehabilitation are not adequate, and (ii) KNEHC is operating with a capital structure that has essentially little debt and no commitment to provide dividend on equity

I Staffing & Personnel

At present, the KNEHC provides service to about 970,000 consumers throughout the country. Although electricity / heat supply is a critical source of energy with an increasing demand (consumers are switching from thermal heating to electrical heating), to date, the KNEHC has not been able to formulate a strategic human resources plan which ensures optimum utilization of human resources in the years to come. A detailed breakdown of available human resources in various subsidiaries are summarized in Tables 3.7 and 3.8 before and after reduction of personnel, respectively.

According to the data provided, KNEHC's total manpower strength has been reduced from 15,500 to 11,509 during the last one year. A typical distribution of employees by employee category is given in Figure 3.8 for the KNEHC subsidiary - Energy Repair Company, 81% consist of semi-skilled technical services and unskilled field services, while 19% consists of skilled technical grades.

Table 3.7 indicates the data on the distribution of manpower, between the four areas, generation has absorbed 3,627, 23.7% of the total, transmission and distribution about 8,311, 54.3% of the total manpower strength, and the construction and other related services are 2,801 personnel, 18.3%. The head office staff accounted for 571, 3.7% of the staff.

Table 3 7
Personnel Information of KNEHC's Enterprises - 1995
(Before Personnel Reduction)

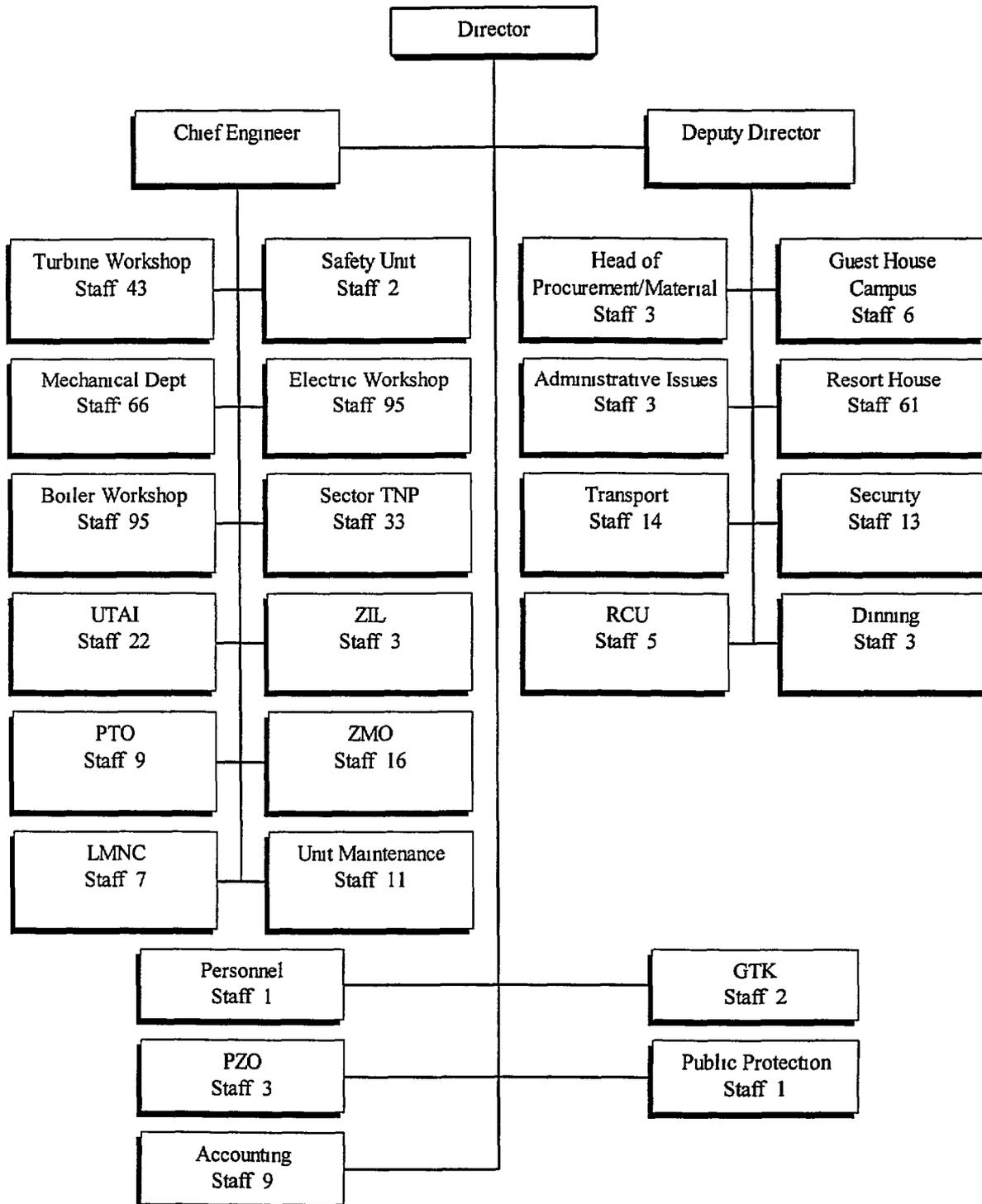
No	Enterprise	Total Employees	Engineers	Workers	Personnel Flow		Frequency of Absence ¹	
					1994	1995	1994	1995
1	TES Bishkek	1850	355	1495	19 5%	14 9%	4/7	2/6
2	TES Osh	292	71	221	24 9%	16 9%	8/36	10/15
3	Cascade of Tortogul	1165	266	899	6 0%	5 5%	6/12	—
4	Chu PES	1258	307	951	10 7%	11 2	14/14	7/12
5	Bishkek PES	802	235	567	16 8%	15 6%	1/5	1/20
6	Kemin PES	561	121	440	14 4%	12 9%	—	1/3
7	Talas PES	447	96	3570	10 1%	10 1%	2/4	—
8	Osh PES	1540	355	1180	5 6%	5 2%	13/80	14/135
9	Jalal—Abaa PES	1266	296	967	6 3%	3 0%	2/7	1/3
10	Issyk—Kul PES	1148	248	890	9 0%	5 1%	2/2	1/1
11	Naryn PES	831	214	609	4 7%	6 7%	18/23	8/16
12	Bishkek Thermal Heating Network	458	92	347	4 7%	11 3%	—	—
13	KES ² Company Tower Line	850	158	682	22 3%	12 0%	16/58	18/34
14	Kyrgyz Energy Construction	577	99	478	27 3%	18 1%	32/81	10/103
15	Construction & Repair	408	39	226	24 8%	33 6%	—	—
16	Concrete	185	39	145	12 9%	10 4%	5/5	3/14
17	Repair	518	101	401	19 9%	32 4%	6/13	37/54
18	Training Center	57	31	26	12 3%	24 8%	—	1/1
19	Procurement	54	19	35	17 7%	41 5%	2/2	—
20	Head Office	571	336	222	10 1%	10 6%	—	—
21	Under Construction Hydro Plant	320	115	205	9 9%	23 5%	8/9	6/9
22	Energy Institute R&D	25	20	5	15 0%	23 1%	—	—
23	Energy Research Institute	61	51	10	25 0%	71 0%	—	—
24	Energy Design Institute	66	51	15	20 0%	7 0%	—	—
Total		15310	3715	11366	13 3%	11 5%	136/353	145/410

¹ Number of employees absent / Number of consecutive days absent

Table 3 8
Average Number of Employees
by Enterprises for Nine Months
(as of September 1996)

No	Enterprise	Total Number of Employees	Workers	Manager	Specialist	Other
1	TES Bishkek	1635	1337	186	102	10
2	TES Osh	298	225	42	23	8
3	Cascade of Tortogul	665	456	96	108	5
4	Chu Pes	1232	131	41	152	8
5	Bishkek PES	786	567	76	118	25
6	Kemin PES	506	364	62	72	8
7	Talas PES	430	336	44	47	3
8	Osh PES	1518	1149	155	207	7
9	Jalal Abad PES	1196	902	123	153	18
10	Issyk-Kul PES	1011	778	103	119	11
11	Naryn PES	657/52	506/42	64/10	83/-	4/
12	Bishkek Thermal Heating Network	456	361	25	64	5
13	Construction & Repair	253	215	23	13	2
14	Repair	494	386	54	48	6
15	Under Construction Hydro Plant	320	209	47	57	7
Total		11509	7964	2051	1366	127

Figure 3 8
Energy Repair Company



IV. International Trends in Power System Restructuring

A Introduction

This section relates to a draft report entitled Assessment of Restructuring and Ownership Options of the Kyrgyz Power Sector, prepared by Hagler Bailly Consulting, Inc., and circulated in Bishkek in September, 1996. It is referred to herein as the Report. The Report studies restructuring of electric utility systems worldwide, arrives at five potential options for KR's system, and recommends an option for KR.

The recent power sector restructuring trend began in Chile in the late 1970s. That example, followed by the reorganization of the U.K. power sector in 1990s, created a rising tide of power sector restructuring worldwide. Since then, the traditional vertically integrated sector structure has been widely questioned, as has the role of the public sector as owner and operator.

A common thread in countries where restructuring has taken place is the separation of distribution facilities from the generation and transmission functions. A meeting at KNEHC revealed that (a) KNEHC is considering splitting off the CHP from the generation function, and (b) that it plans to accomplish the separation of the distribution function first, before the generator unbundling. KR is also considering separating distribution functions from generation and transmission.

This section has surveyed available information on restructuring in the Report with special attention to the structure, ownership, and regulation of the distribution subsector. Some of the major trends that have emerged are indicated herein.

B Horizontal and Vertical Division and Privatization

It is clear that the trajectory of international restructuring is towards vertical and horizontal division of the power sector. To promote competition in bulk power markets, existing generation assets have been divided and new capacity is being provided by new players. Transmission assets have been recognized as being of great strategic importance in the power sectors. It has been common for all transmission infrastructure to be consolidated and managed by one organization, though in some countries transmission assets are still owned in common by other power sector enterprises.

The spin off of the distribution subsector has accompanied changes in bulk supply described above. In none of the countries examined in the Report have any distribution assets been absorbed by an enterprise that operates generation or transmission facilities, though common share holding has occurred in some countries.

Significant change in ownership has accompanied the vertical and horizontal division of power sectors. Ownership has shifted from public to predominantly private, though with great variety in ownership structure between countries. Increased private participation has been motivated, among other reasons, by the search for improved sector efficiency and access to new sources of financing.

The restructuring process has taken a long time in some nations (12 years in Chile, for example) but has been much faster in others. The length of time has depended on the size of the sector and the degree of break-up and divestiture contemplated. More time has been required when public debate has been

undertaken in order to build confidence in, and consensus for, reform. In some countries restructuring has perhaps taken too much time, resulting in ongoing situations where unattended power sector problems have created severe social problems.

Different emphasis has been placed on various aspects of reform. Three scenarios described below illustrate these different emphases:

- If low generator availability and efficiency were the original drivers behind reform, then policy makers placed emphasis on maximizing generation competition — by encouraging new participants to supply power, reforming pooling arrangements and allowing direct access.
- If the drivers were high technical and non-technical losses or unliquidated accounts payable, then efforts were directed at unbundling the distribution subsector and reforming business practices.
- If the driver was the need to rehabilitate, modernize or expand the system, then devising institutional reforms necessary to induce capital investment became the focus.

Since separation of distribution from generation and transmission has been undertaken for a multitude of reasons, it is difficult to gauge the effect distribution problems have had on power sector restructuring. What is clear, however, is that distribution assets have been separated for two major reasons: first, to isolate and directly address distribution problems, and second, to facilitate a functional independence of generation/create a neutrality of transmission that would increase competition in bulk power markets.

C Horizontal Breakup of Distribution

In the countries studied in the Report, horizontal breakup has resulted in as few as four, and as many as 300 distribution enterprises. When addressing the spin off of distribution, none of the nations presented in the Report grouped all such assets in one enterprise. Rather, the grid network logic of the transmission and distribution systems seems to suggest “natural” divisions in the structure of the distribution subsector.

There appears to be no question that the creation of competition has been one of the objectives of reform for the generation subsector. Likewise, competitive forces have been stimulated within the distribution subsector through breakup and subsequent benchmarking. Benchmarking is the comparison of entities relative to each other, or to an external standard. Also used to stimulate competition are the implementation of innovative rules on distribution concessions, direct access, tariff design and self-generation.

Also, the distribution subsector has been fragmented in order to create discrete markets for the purchase of bulk power in order to limit the exercise of monopoly power in the generation subsector.

To create new distribution companies, corresponding assets have been split along regional lines. They have been divided according to the logic of the branching of distribution power lines, which usually follow differences in population density, political administration, and geographic land-form. These “natural” divisions have served as the boundaries of the new distribution subsector enterprises. In some cases, such natural boundaries have introduced limits to economies of scale in rural areas.

When designing the division of the distribution subsector, particularly in a country where a shortage of qualified administrators and technicians exists, policy makers have been careful not to establish an excessive number of distribution companies. This could have resulted in inadequate administrative and technical capacity in the new companies, dooming a new company to commercial failure.

To avoid such problems, regional differences in distribution subsector operations, maintenance, and administrative costs have usually been given serious consideration by policy makers when formulating the break-up of the distribution subsector.

D Separation of Policy and Regulatory Framework

Accompanying the disaggregation and changes in ownership discussed above, a major aspect of reform has been the creation of a new institutional framework for the power sector. In particular, independent

regulatory bodies have been established in order to separate more clearly the government's policy, regulatory, and operational functions with respect to the power sector and to insulate commercial enterprises from day-to-day political interference. After the creation of these relatively independent regulatory bodies, national governments and ministries continue to determine and give broad policy guidance for the power sector, but they delegate to the regulatory authority sufficient authority to oversee the implementation of the government's policies.

Commercial enterprises are thus able to concentrate on improving operational efficiency within a transparent and predictable regulatory environment as established and maintained by the regulatory body. The independence of the regulatory body gives confidence to private investors by assuring stable and transparent "rules of the game" for all participants in the power sector, assuring that new entrants receive fair treatment. This facilitates obtaining sufficient and timely financing for the power sector.

A major responsibility of the regulatory body is the setting of electricity tariffs. In some countries, the regulatory body acts autonomously and sets tariffs directly. In others, the regulatory body submits its recommended tariff proposals to a higher authority within the national government. In Chile, for instance, the Minister of Economy can refuse to approve tariffs submitted by the regulatory body, but only if certain conditions are believed to have been violated. If the Minister refuses to approve, there is an automatic appeal to the judiciary and the judiciary will decide whether the Minister correctly withheld approval.

In many of the countries examined, electricity price reform has accompanied restructuring. In these countries electricity tariffs now more generally correlate with the long run marginal costs of electricity production and supply. This has allowed for an appropriate valuation of electricity relative to other factors of production, and has improved efficiency. Most importantly, such a tariff level is necessary if the Sector is to attract the investment capital required for rehabilitation, modernization and expansion of the system. Without reasonable expected streams of cash revenues, banks and other private investors will not risk investing their financial resources. If they do so, they will require a very high risk premium, or more stringent requirements for guarantees either directly (through government guarantee of debt) or indirectly (through long term purchase power agreements backed by government).

By separating regulatory and policy functions from the operation of power sector enterprises, utilities are able to focus on improving their operational activities. Such improvement has been facilitated by corporatization and commercialization. Corporatization has involved the establishment of new organizational structures and objectives for power sector enterprises, as well as the clarification of the responsibilities of management and owners. This has resulted in better control of costs, increased revenues, and more efficient management of power sector enterprises.

V. Analysis and Findings

A Restructuring Alternatives*

1 Two Basic Choices—Whether to Demonopolize or Denationalize

Most governments evaluate four basic options when considering whether and how to either demonopolize and/or denationalize their power sectors. We believe the GOK should do the same. The decision to demonopolize (restructure and unbundle) is separate and distinct from the decision to denationalize (increase private participation). Both decisions, however, are related to reform of the Sector and should be considered together. The four basic options are to

- 1 *Separate the power sector from the GOK by creating a joint stock company that is wholly owned by the government and create a regulatory agency to oversee Sector policy and implementation of GOK policy.* This option results in two significant institutional reforms in the Sector but it does not by itself represent either de-nationalization or demonopolization.
- 2 *Keep the Sector as a fully integrated monopoly and sell a percentage of its shares to a strategic investor or, otherwise, enter into a long term lease of its assets to a strategic investor.* This option denationalizes the Sector but does not demonopolize it.
- 3 *Unbundle the Sector but keep it in public ownership.* This usually involves the division and transfer of ownership of distribution systems to local authorities. This option de-monopolizes the Sector but does not denationalize it.
- 4 *Both unbundle and privatize all or parts of the Sector.* This involves separating the Sector into generation, transmission and distribution corporations and then, with respect to each of the various individual parts of the unbundled Sector, decide whether to
 - retain state ownership,
 - divest state ownership to local authorities,
 - sell a minority share to passive investors, or
 - sell a majority share or lease assets to active, strategic investors

The four basic denationalization and demonopolization choices being discussed now in RK are shown in the following diagram. There are two variants of Alternative 4. One is shown here as Alternative 4 and is a scenario of partial unbundling and privatization. The second variant is shown as Alternative 5 and is a scenario of full unbundling and privatization.

The information contained in this section is replicated from the report entitled Assessment of Restructuring Options of the Kyrgyz Power Sector as issued by Hagler Bailly Consulting Inc. in September 1996. It is included here in part for the sake of continuity and completeness in the analysis of alternatives.

**THE FOUR BASIC WAYS TO
DEMONOPOLIZE AND/OR DENATIONALIZE**

- 1 Keep KNEHC vertically integrated and 100% GOK owned
- 2 Keep Sector vertically integrated and sell or lease to one foreign investor
- 3 Unbundle KNEHC and keep it all in public ownership
- 4 Unbundle KNEHC and keep, lease or sell parts

**The Four Basic Ways to
Demonopolize and/or Denationalize**

	Nationalized (Public Ownership)	Denationalized (Private Participation)
Monopolized (Vertically Integrated Monopoly)	<p>1</p> <p>Status quo</p>	<p>2</p> <p>18-year lease to one foreign investor</p>
Demonopolized (Unbundled KNEHC)	<p>3</p> <p>Keep generation & transmission in state ownership, divest state ownership of distribution assets to local authorities</p>	<p>4</p> <p>Retain public ownership of some parts and lease or sell other parts to foreign & domestic investors</p>

a ALTERNATIVE WAYS TO DENATIONALIZE AND/OR DEMONOPOLIZE

The need for Sector reform is clear. The objectives of this reform include the following:

- To raise capital for system repair and expansion,
- To improve financial performance of the Sector by increasing efficiency, reducing losses, and operating on a commercial basis,
- To assure future domestic supply at prices that are fair, socially acceptable and encourage energy efficiency,
- To reduce and phase out GOK subsidies,
- To reduce the need for GOK financial guarantees and free up its credit capacity, and
- To enable the development of power export opportunities

Based on the nature and extent of the problems in the Sector and on the lessons learned from other countries that have used the strategies of denationalization and demonopolization to reform their power sectors, at least five alternative concepts merit serious consideration.

In each case, the new regulatory body, the SEA, serves as an independent regulator of KNEHC and any other energy enterprises that eventually participate in the Sector

In those alternatives that involve denationalization by bringing in strategic investors, the GOK has the choice of which mechanism it prefers to use—sale, economic lease, joint venture, or management contract for all or various parts of the system. The primary decision at this point is not which mechanism to use, but how far and how fast to demonopolize and denationalize—that is, which concept of Sector reform the GOK wants to pursue and at what pace

Once the GOK selects one of the concepts to pursue in earnest, then more detailed analysis, based initially on data and information supplied by KNEHC, can be made. The analysis could be based upon several decision criteria that are important to the GOK. These criteria include

- potential effect on tariffs,
- the time frame for repair and modernization of system facilities,
- the time frame for improved financial performance and ability to self-finance,
- fair value of the assets (including reduction of liabilities),
- potential effect on employment levels,
- potential effect on the KR budget and the GOK's credit capacity,
- the likely impact on regional water issues and international relations,
- political feasibility, and
- the likely effect on the GOK's reputation in the global financial community

The five alternatives considered in this report are as follows

Alternative 1 Status Quo

This alternative would maintain the status quo. KNEHC would remain a vertically integrated entity and would be regulated through the State Energy Agency (SEA). The duties of the SEA are to balance the interests of consumers and producers, to set tariffs that are fair and reasonable and recover costs, and to help bring about the improved financial performance of the Sector

Alternative 2 Lease the Vertically Integrated Monopoly

Alternative 2 is accomplished in two Phases. First, KNEHC is maintained in its present form as a vertically integrated utility, but will be privatized up to 10% of its shares through a coupon auction and employee share distribution (Phase 1). Second, KNEHC would be further privatized by leasing the entire, vertically integrated system to a foreign investor (Phase 2)

Alternative 3 Decentralize Distribution

The Sector would be partially unbundled by transferring the low voltage transmission and distribution systems to local authorities and encouraging them to enter into joint ventures with private investors. There could be savings introduced by a reduction of the technical and social losses currently incurred, and an improvement in the current collection system. It is assumed that new methods of restructuring will be introduced by management consultants to the management of the newly formed distribution systems. This consultant advice would lead to the restructuring of these companies into Western style corporations which could be self sufficient in the competitive market

Alternative 4 Partially Unbundle and Partially Privatize

Alternative 4 is also a two Phase option. Under Phase 1, the main hydro plants of the Toktogul Cascade and the high voltage transmission lines would be made into Joint Stock Companies (JSC) in order to offer up to 10% of their shares in a coupon auction as described in Alternative 2. KNEHC would then be further unbundled and further privatized under a variety of mechanisms, as most appropriate for each part of the system and the KNEHC conglomerate

Alternative 5 Fully Unbundle and Fully Privatize

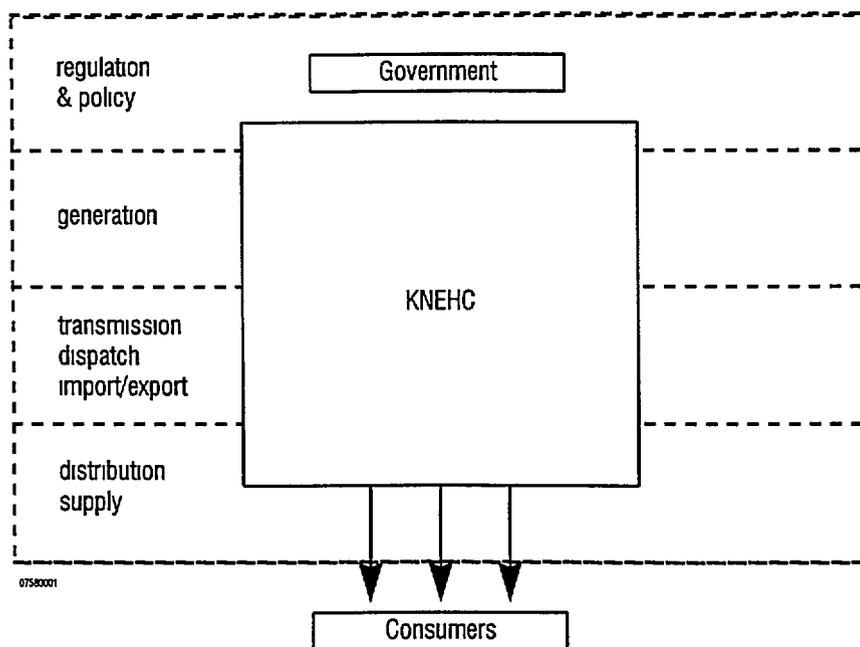
Alternative 5 creates the most drastic change from the status quo. The transmission grid and dispatch functions would each be created as a JSC. Separate JSCs would be created for all of the different generating stations and all of the eight distribution companies. These JSCs would then be corporatized and commercialized. Open access would be created to the transmission and distribution grids. Finally, a least cost dispatch and a settlements function in the transmission company would be created.

Each of these alternatives are illustrated and discussed further on the following pages.

2 Five Alternatives

a ALTERNATIVE 1 STATUS QUO

The GOK took the first step toward reform in 1993 when it created KNEHC as a JSC. This first step is illustrated below.



The GOK took Sector reform one step further when it again restructured the Sector’s institutional framework by creating the independent SEA.

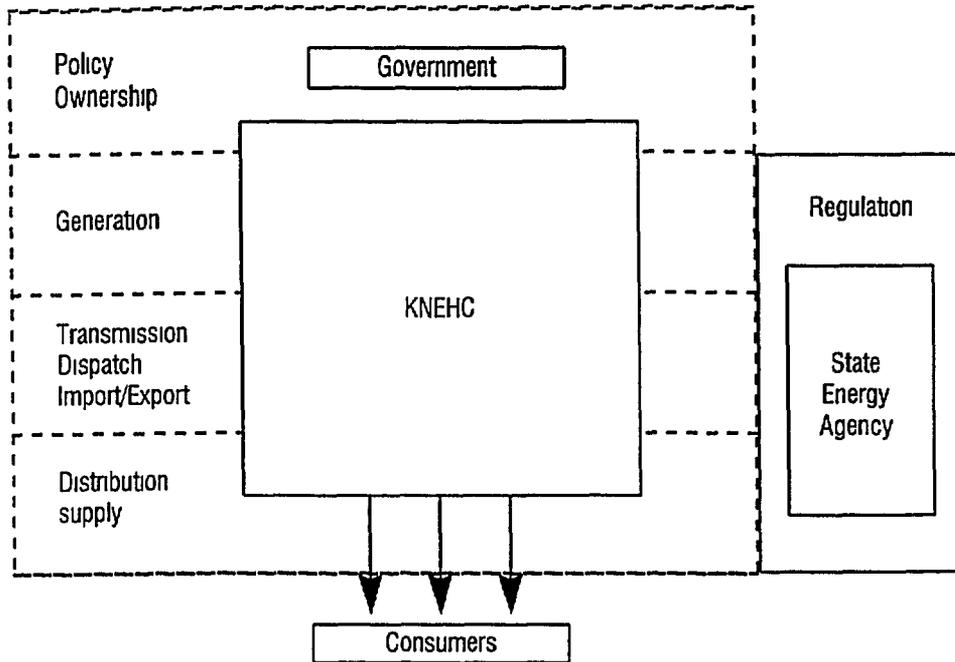
Alternative 1 would consolidate the gains from taking this additional step, but would go no further toward denationalization or demonopolization. Under Alternative 1, the financial performance of the Sector would gradually improve. This improvement would be due to the steady adoption of commercial business practices, tariff reforms, and investments made on the basis of economic rather than political criteria.

Relative to the other four alternatives, this alternative has the advantage of facing the least internal political opposition, but the disadvantages of

- Slower adoption of commercial business practices,
- Slower improvement in Sector’s financial performance, and
- More limited access to investment capital.

Alternative 1 is illustrated below.

**Alternative 1
Status quo**



b ALTERNATIVE 2 LEASE THE VERTICALLY INTEGRATED MONOPOLY

Alternative 2 - Phase 1 allows a small share of the entire Sector to be privatized quickly through the mass privatization program. A recent survey showed that there is very high public interest in KNEHC being offered in the coupon auction, and that KNEHC is the primary entity for which people have been holding back their coupons.

Phase 1 of this Alternative, while politically appealing, if not a political imperative, brings little of value to KNEHC. It does not bring in capital, nor does it bring in commercial business expertise because the coupon auction winners can only be passive investors.

Real privatization would occur in Phase 2, when the entire vertically integrated monopoly would be offered in an 18-year "Economic Lease" to a foreign, strategic investor. This can only take place after the thermal plants have been separated from the system. The thermal plants are currently a significant financial burden to the system and in need of \$65 million in capital.

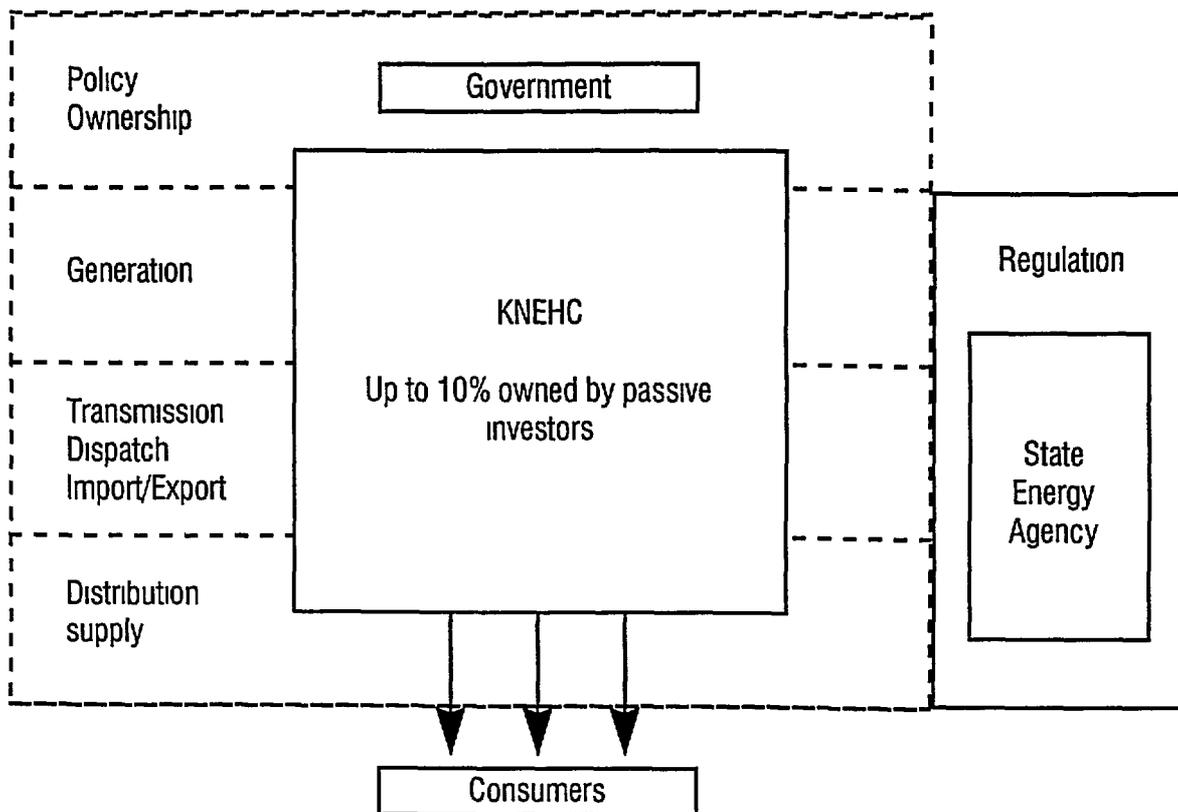
Under such an Economic Lease of all KNEHC assets, the investor would presumably pay a nominal up-front fee and a scheduled annual fee and be required to invest a sizable amount of capital over an agreed upon time frame. In exchange, the investor would be given complete control of the operations of the entire system, and be allowed to earn an unlimited rate of return as long as the rates charged to customers did not exceed a certain level. This could be spelled out in the lease document that would specify the starting point for tariffs. A rate path for the next five years, and a provision that escalations would be tied to an agreed upon economic index could also be incorporated into the lease document.

While this option has the political appeal of not giving up ownership of the system, it has the equivalent long-term effect of a sale because it turns over the economic value, as well as operational control, of the entire system to the foreign investor for the 18 years of the lease.

Both Phase 1 and Phase 2 of this Alternative are illustrated below and on page 25 respectively.

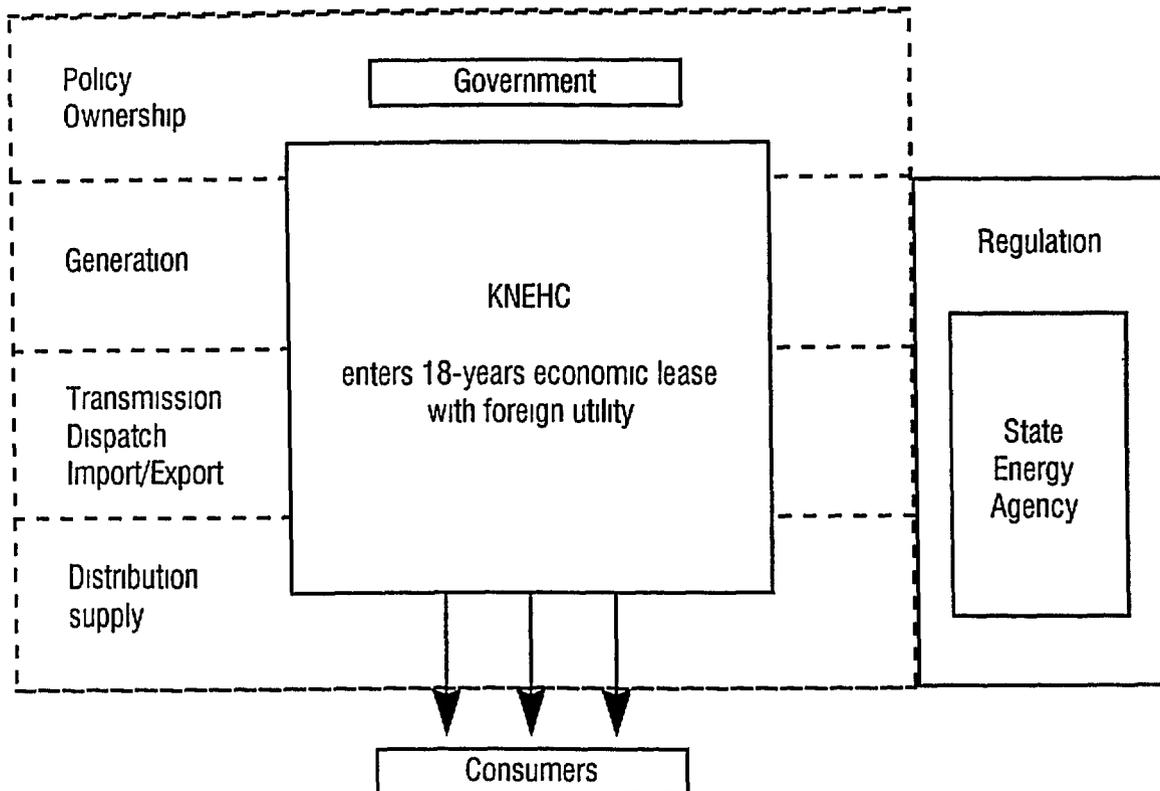
Alternative 2 - Phase 1

Offer up to 10% of the entire KNEHC in coupon auction



Alternative 2 - Phase 2

Long-term economic lease to foreign investor



The “Economic Lease” being proposed by TACIS consultants is innovative and has not been tried frequently, if at all. It appears to be a concession in some aspects, and a lease in other aspects, most particularly in its shorter time frame.

The more standard mechanisms, those used most frequently to bring private sector participation into public enterprises, include Management Contracts, Lease Agreements, Concessions, and Asset Sales to a Strategic Investor. These are described in brief below.

Management Contracts are the most limited form of private participation. The private entity is involved only in the operation and maintenance of the facilities for a period of 3 to 5 years, and does not provide any significant capital investment. The GOK/KNEHC would receive the revenues and pay the scheduled operating costs for the services thereby continuing to assume all commercial risks. The management contractor is paid a fixed fee for its services, together with any incentive fees for increasing revenues beyond targets, lowering annual costs or achieving various targeted performance criteria. The main benefit of this arrangement is that it allows the public enterprise to benefit from the expertise in management through the involvement of an experienced private sector organization with very little investment in a relatively short period of time.

Lease Agreements move towards establishing a longer-term involvement by a private sector operator. Given the longer time horizon of lease agreements, they not only bring to bear operational efficiencies through commercial management practices, but also begin to attract private capital for system improvements. In a lease contract, the fixed investments and debt service would remain the Lessor’s obligation, but short term assets and working capital would be financed by the Lessee. The Lessee bears full net revenue responsibility and commercial risk, usually with a revenue sharing agreement with the Lessor. The increased efficiency in operation and the related increase in customer satisfaction, combined with the reduced financial burden of financing system investments, are the major benefits to the Lessor.

Concessions are essentially long-term lease agreements, ranging from 15 to 50 years. With the longer involvement, there is a commensurate increase in the obligations of the concessionaire. Unlike lease agreements, where the Lessee finances only short-lived assets, a concessionaire is liable for long-term investments for the growth of the system. In essence, the concessionaire becomes the de facto owner/operator of the system for the duration of the concession and assumes all commercial risks. At the conclusion of the concession the assets are returned to the Lessor, including the investments made over the life of the concession by the contractor. The Lessor gets an initial concession fee, an annual concession fee and a negotiated profit participation.

Asset Sales to Strategic Investor(s) can mark a change in ownership from public to private entities, resulting in full commercial discipline. The ownership of the assets can vary in degree, from the private investor owning a minority share to the private party having full ownership. Under such an agreement the buyer takes control of both operating and non-operating assets. Inventorying and valuing the assets prior to the sale becomes a major undertaking of the Seller. Most importantly, the powers and duties assumed by the Seller need to be conveyed explicitly to private owners in a purchase and sale agreement. Such an agreement would include the right to enter onto private property, the power of condemnation (taken with compensation) of land, granting of easements, and other matters.

It is important to note that under any of these arrangements, the GOK can regulate the behavior of the private participants through performance agreements developed under the auspices of the SEA.

Relative to the other options, Alternative 2, to lease the entire vertically integrated system, has the following advantages and disadvantages:

Advantages

- Easiest way to offer part of KNEHC for mass privatization in coupon auction,
- Brings in foreign capital,
- Brings in foreign management expertise,
- Brings about rapid adoption of commercial business practices, and
- Has political appeal because it retains state ownership of entire system (even though it gives up operating control over the entire system to a foreign investor, possibly to another state-owned monopoly)

Disadvantages

- Maintains centralized decision making authority and political leverage in one dominant entity that is still a monopoly, but now controlled by a foreign investor,
- Introduces the likelihood of disinvestment in last years unless Lessee holds a purchase option or knows the lease will be renewed (in effect making the lease equivalent to a sale),
- All improvement in sector's financial performance benefits the investor unless enforceable performance incentives and profit sharing mechanisms are made conditions in the licenses issued by the SEA,
- Maintains cross-function and cross-regional subsidies within the vertically integrated monopoly rather than solving problems at their root,
- Loss of flexibility because it closes GOK's opportunity to restructure the sector for at least 18 years, and
- Likely to preclude either market competition in generation or benchmark competition in distribution for at least 18 years

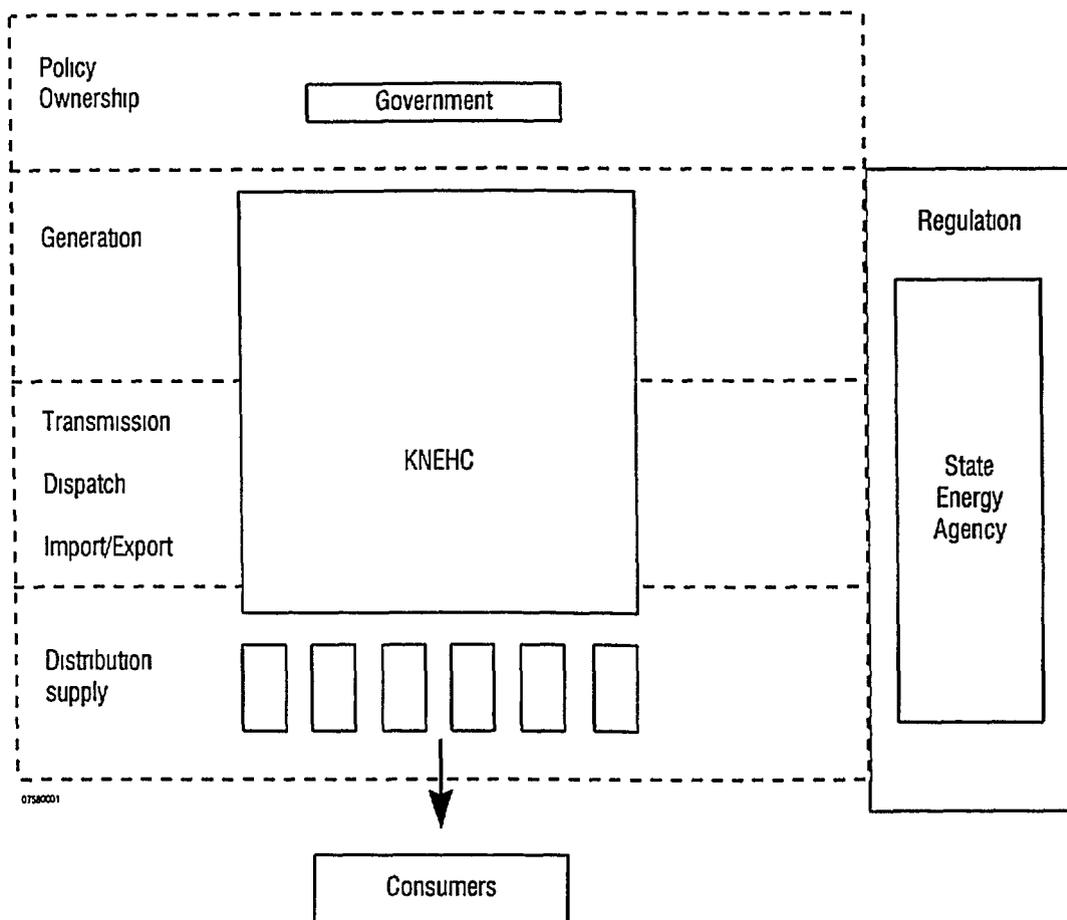
c ALTERNATIVE 3 DECENTRALIZE DISTRIBUTION

This alternative would transfer the low voltage transmission and distribution systems to local authorities, who could then lease or sell them to private investors, enter into joint ventures with private investors, or turn them into employee-owned or consumer-owned cooperatives depending on their potential to become commercial enterprises.

Relative to the other alternatives, this alternative has the advantage of delegating solution of the accounts receivable problem to local authorities. This is an important step in the right direction, since the Report studies show that decentralization of management and financial systems is the key to solving problems such as exceptionally high accounts receivable and losses due to various forms of theft. However, it has the disadvantages of slower adoption of commercial business practices and more limited access to investment capital. Both these disadvantages are lessened to the extent that local authorities involve the private sector in joint ventures. Although the notion of customer-owned rural cooperatives is being considered in KR, these cooperatives have the added disadvantage of requiring subsidies in one form or another from the GOK.

This Alternative is illustrated below

Alternative 3
Transfer distribution to local authorities



d ALTERNATIVE 4 PARTIALLY UNBUNDLE AND PARTIALLY PRIVATIZE

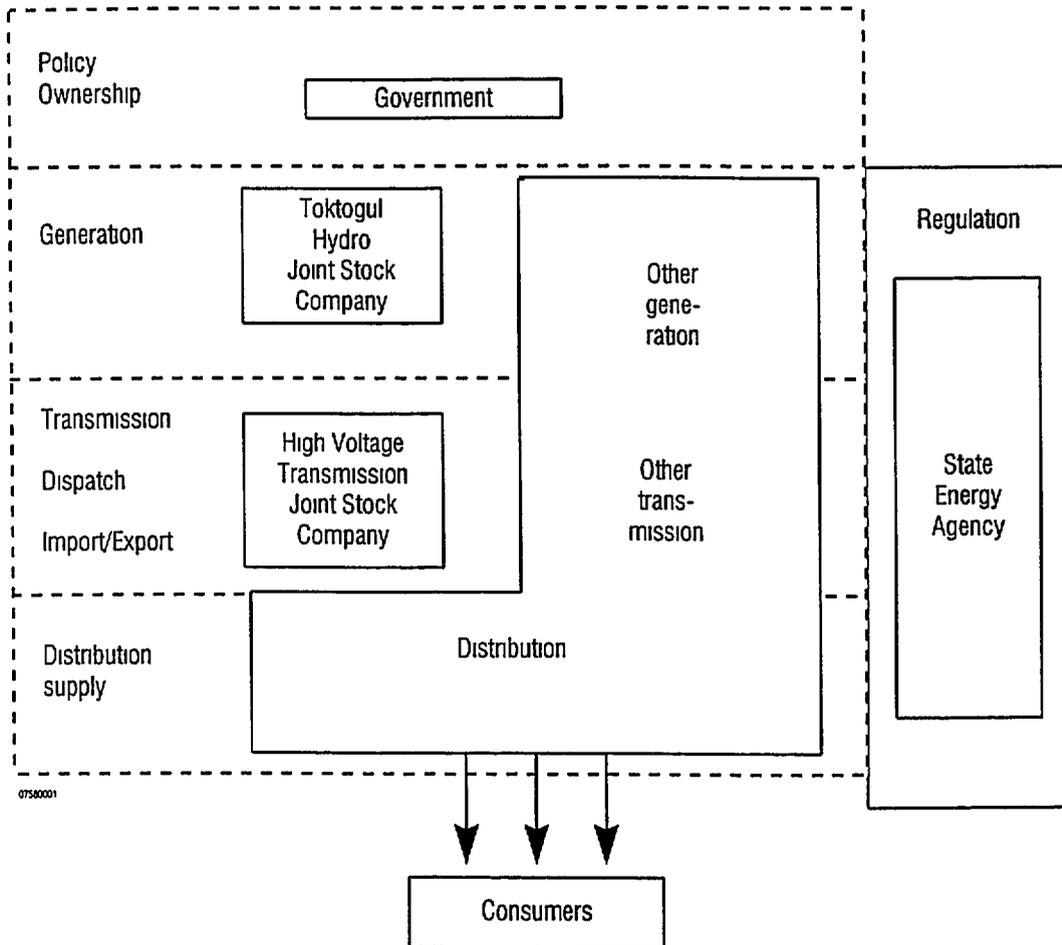
In Phase 1 of this alternative, the main hydro plants of the Toktogul Cascade and the high voltage transmission lines would be formed into two JSCs and up to 10% of their shares would be offered in the coupon auction for mass privatization. About 3% of the shares would be distributed to employees. Another 2% of the shares would be held in escrow for employees and distributed to them after two years based on productivity gains in plant operations, similar to the program Canada used recently when denationalizing its transportation sector. The remainder of the Sector would be retained by the GOK within KNEHC until the next steps were taken in Phase 2 of this option.

In Phase 2 of this alternative

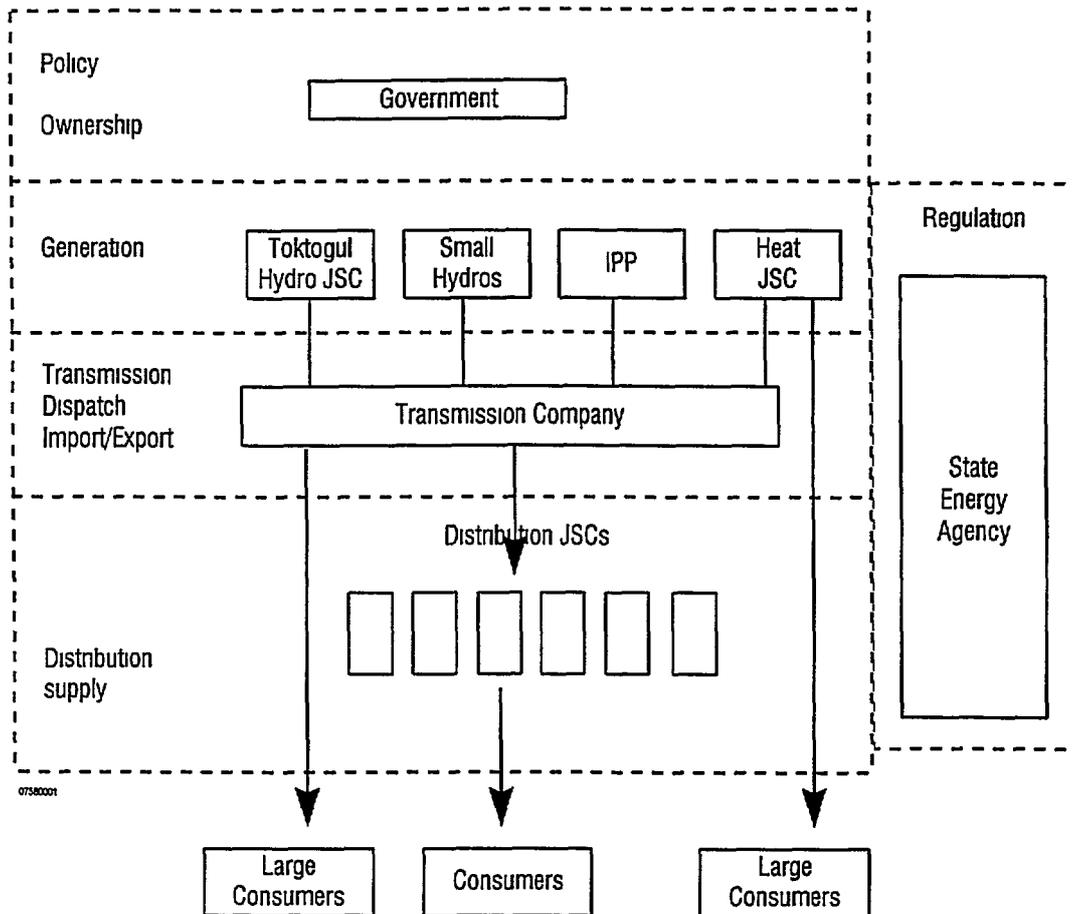
- KNEHC would retain 85% ownership interest in and 100% operational control of the Transmission Company, and no further privatization would take place in the transmission subsector, except for the possibility of KNEHC entering into a fee-based (either a flat fee-for-services or a percentage-of-profits) management contract whose primary purpose is to speed the adoption of commercial business practices,
- KNEHC would also retain an 85% ownership interest and 100% operational control of the Large Hydro Company. To raise capital at some later time, however, the GOK would have the option of selling up to 33% of the shares without loss of controlling interest in the plants. Or, also at some later time, the plants could be leased to a foreign investor if the GOK were willing to give up operational control of the plants and their strategic water flows,
- The small hydro plants would be offered for sale or lease to private investors,
- The thermal plants would be put into a JSC and offered for sale or lease, backed for the first few years by a guaranteed agreement by KNEHC to purchase a specified amount of power at a specified price,
- New generation would be provided by independent power producers, and Kambarata 1 would be developed as a joint venture of the GOK with private investors, backed by purchase power contracts in the export market,
- The distribution sector would be divided into 6 to 10 systems and put into JSC's or transferred to local authorities for lease, sale, joint venture, or cooperative enterprise depending on their economic profile, and
- Non-energy related enterprises in the KNEHC conglomerate would be sold, leased, spun off, set up under contract or divested as appropriate.

Phase 1 and 2 of Alternative 4 are illustrated on pages 29 and 30 respectively.

Alternative 4 - Phase 1
Offer up to 10% of large Hydro and high voltage transmission
JSC in coupon auction



Alternative 4 - Phase 2
Partial restructure and further privatization



Relative to other alternatives, Alternative 4 has the following advantages and disadvantages

Advantages

- Brings in foreign capital,
- Keeps control of electricity import and export by retaining both ownership and control of transmission,
- Keeps control of strategic waterways and flows by retaining at least majority share of large hydro plants,
- Brings in foreign business management expertise,
- Fosters timely adoption of commercial business practices,
- Disperses decision-making authority and political leverage among several energy enterprises rather than just one dominant monopoly,
- Benefits of Sector's improved financial performance are automatically shared among different owners (public and private) and between owners and customers through tariff setting authority of the SEA, and
- Focuses KNEHC on energy functions by divesting all non-energy related assets and operations

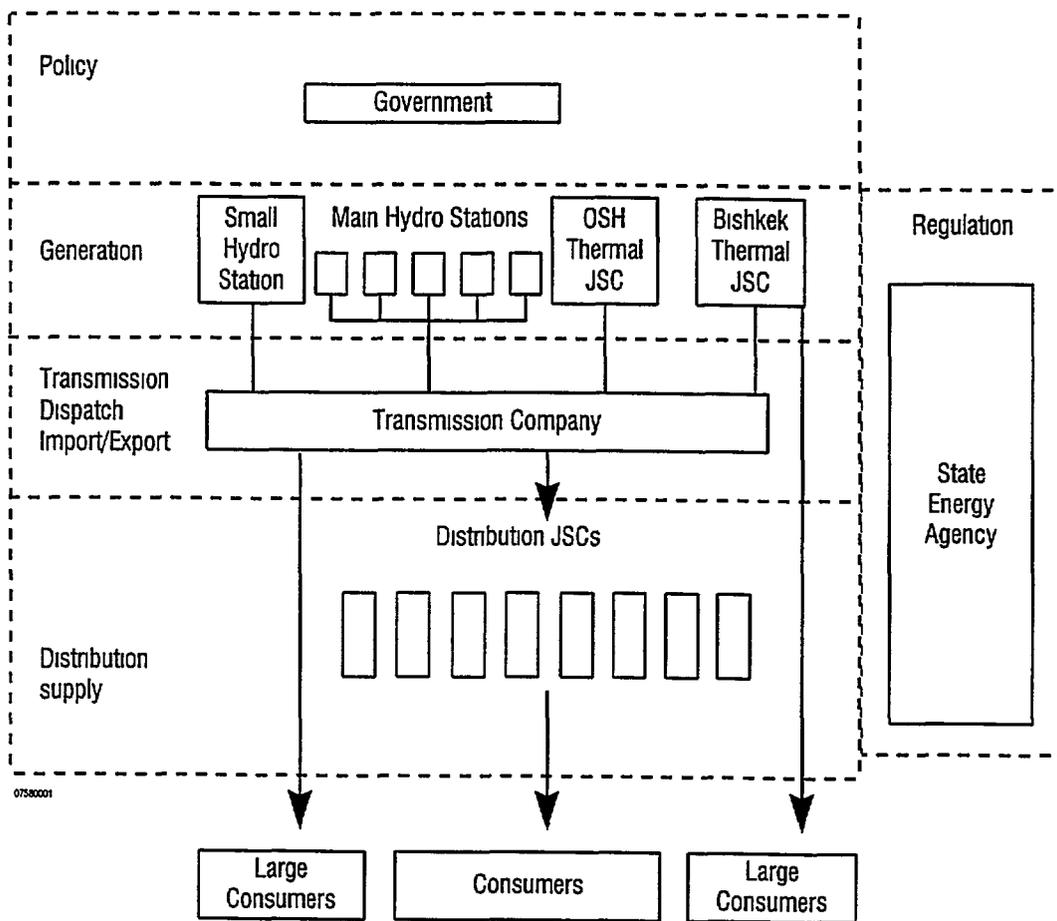
Disadvantages

- Complicates, but does not preclude putting KNEHC into coupon auction by the deadline,
- Involves several negotiations and transactions rather than just one and will take longer to complete, and
- Removes political opposition to sale of any energy facilities

e ALTERNATIVE 5 FULLY UNBUNDLE AND FULLY PRIVATIZE

Alternative 5 is illustrated on page 32

Alternative 5
Fully Unbundled KNEHC and privatized sector



Alternative 5 reflects a completely unbundled Sector, with the generation companies made into separate JSCs, the transmission company into an independent JSC, and the 54 distribution divisions combined into 8-10 groups of separate JSCs, depending on size, geography and population distribution. When all of these JSCs are corporatized and commercialized, and the legal/regulatory and tariff reforms have been made, they can then be privatized by selling them to give the maximum expected return to the GOK because investors will give them the highest possible valuation relative to the other alternatives.

Not only does this alternative offer the advantage of maximum revenues to the GOK, it also offers maximum opportunity for efficiency gains throughout the Sector. However, it has the disadvantage of significant political opposition because it involves the sale of the hydro plants and the transmission system.

B Financial Analysis of Restructuring Alternatives

1 Introduction

An evaluation of the impact of financial restructuring on KNEHC starts with an analysis of the current economic and financial condition of the company. That analysis, if it is to be meaningful to international lenders or investors, must utilize company data written in a common language - IAS using generally accepted accounting principles (GAAP). Furthermore, that IAS data must relate to the business units that will be separated and/or reorganized into new entities. Unfortunately, KNEHC does not maintain its internal accounting systems in IAS or GAAP basis, however, it is in the process of obtaining computer systems to enable it to create accounting information on an IAS.

While this study was able to obtain 1995 consolidated financial statements in IAS, disaggregated (or enterprise level) data was available only on the journal order system which requires translation to generally accepted accounting format. Corporate Solutions of the United Kingdom is in the latter stages of implementing a system to perform this translation. Once that system has been installed and tested, KNEHC will be in a position to prepare data in a way that can be used for detailed, rigorous financial evaluation of the company and the financial implications of restructuring.

In the absence of recent tested data, the following discussion relies upon the 1995 consolidated statements financial statements in IAS, compilations and forecasts by the company, and the April 1996 forecast by the WB. This data was used to develop an analysis of the condition and restructuring alternatives developed by Hagler Bailly with the assistance of an IAS format, financial model developed for KNEHC by the WB the (Model). The assumptions to this model are contained in the WB Staff Appraisal Report of January 1996. KNEHC supplied revised 1996 first half actual and second half forecasted data for use in this report.

In the course of seeking reliable raw data for the evaluations requested in the Terms of Reference, useful recent compilations of operating revenues and costs for the enterprises were acquired. These compilations may be used, in conjunction with the translation system developed by Corporate Solutions, to assemble disaggregated analyses of KNEHC. (At the time of this writing the Corporate Solutions system was not available to PW.) Appendix 5B.1 contains a listing of the KNEHC information available and a methodology to develop disaggregated analyses.

2 Summary of Alternatives Analysis

As described earlier in this report, the consultant has reviewed five alternatives for restructuring KNEHC. These five alternatives are status quo, long term lease, separation of distribution function into a new company (including separation of the thermal system), partial vertical disaggregation of generation (separation of thermal company and some unbundling of the hydroelectric system) and full disaggregation (including unbundling of the large hydroelectric systems).

For the analysis of Alternative 2, the Lease Alternative, the Model was modified to approximate the value of the electric system to a lessee. In this analysis the following five years of operation were the basis for an 18 year lease. New investments were assumed to be funded by the lessee however these investments ended

in 2002. In this leasing arrangement, the lessee would make some net cash investments in the early years and receive cash in the later years.

Assuming a 20% after tax discount rate (a typical yield for investments in less developed countries), the net present value of revenues to the lessee would be approximately 900 million soms. In other words, a lessee who expected the resultant cash flows (both negative and positive) should be willing to make a front end payment of 900 million soms to lease the system. This payment compares to the current book value of the electric system of 4,410 million soms, or a one time payment of 20% of the book value. This payment also could seem small in comparison with the potential addition to the electric system value from five years of efficiency gains due to unbundling of the KNEHC system.

Utilizing the Model as a base tool and making assumptions about the operational implications, a preliminary cost/benefit analysis was developed for Alternatives 3, 4, and 5 (See Table 5B.1 below). In this table, net benefits have been assumed for each Alternative in comparison to the Status Quo Alternative. For Alternative 3 additional costs are expected due to the added operating costs for the different distribution operating units. Using a 2% additional cost factor to O&M, salaries and G&A, the annual additional cost to the KNEHC system is approximately 17 million soms per year. The additional cost on a net present value basis over a five year period is 80 million soms.

For Alternatives 4, net benefits result from additional revenues collected by the private operators of the distribution systems. The assumed additional collections include reductions in technical and economic losses total 50% of the unaccounted for electricity sales. These additional kWh's are priced at the average rate per kWh. These additional revenues have a dramatic effect on the value of the KNEHC system. If these revenues can be realized in conjunction with the expected cost savings from more efficient operations (8% savings due to distribution system efficiencies and 4% to 5% savings for generation and transmission efficiencies), KNEHC could realize over 240 million soms per annum. Using a discount rate of 10%, the net present value of the revenue and savings for the five year period beginning 1997 is over 1 billion soms.

Similarly for Alternative 5, cost savings are expected for more efficient operations, however, these savings are smaller because they stem only from incremental generating efficiencies. Using 2% to 3% savings rates, this unbundling creates an additional net present value of approximately 100 million soms.

Only broad statements can be made about the consequence of any restructuring because, until there is enterprise level financial data available, it is impossible to inspect the consequences of system changes on the operations of each separated entity. At that time financial statements may be developed to evaluate the re-aggregation of KNEHC's operating units into distinct companies that reflect the specific restructuring alternatives.

Table 5B 1
 COST/BENEFIT ANALYSIS OF RESTRUCTURING ALTERNATIVES
 (in millions of soms)

		<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>
Alternative 3 Decentralized Distribution							
Cost Savings							
O&M Savings	2%	(10)	(10)	(10)	(11)	(11)	(11)
Salary Savings	2%	(1)	(1)	(1)	(1)	(1)	(1)
G&A Savings	-2%	(7)	(7)	(7)	(7)	(7)	(8)
Total Savings (Cost)		(17)	(18)	(18)	(19)	(19)	(20)
NPV of Savings @	10%	(80)					
Alternative 4 Partial Unbundling							
Additional Revenues - 50% of Unaccounted for Electricity							
		139	155	131	151	153	169
Cost Savings							
O&M Savings	8%	39	40	41	42	43	45
Salary Savings	8%	4	4	4	4	4	4
G&A Savings	8%	26	27	28	29	29	30
Total Distribution Savings		207	226	204	226	230	246
Additional Cost Savings							
O&M Savings	5%	24	25	26	26	27	28
Salary Savings	4%	2	2	2	2	2	2
G&A Savings	4%	13	13	13	13	13	13
Total Savings from Partial Unbundling		246	266	245	267	272	291
NPV of Savings @	10%	1 142					
Alternative 5 Full Unbundling							
Total Savings from Partial Unbundling							
		246	266	245	267	272	291
Additional Cost Savings							
O&M Savings	3%	14	15	15	16	16	17
Salary Savings	2%	1	1	1	1	1	1
G&A Savings	2%	7	7	7	7	7	8
Total Savings from Full Unbundling		268	288	268	291	296	316
NPV of Savings @	10%	1 244					

3 Alternative 1 Status Quo

The Status Quo Alternative uses KNEHC operating data through year end 1995 and the first half 1996. The following assumptions differ from those used in the WB staff appraisal report of April 1996 based upon discussions with a KNEHC official. Immediately following this list, a discussion of the financial condition of an integrated KNEHC is presented.

a DISCUSSION OF ASSUMPTIONS

Thermal Plant Operations

KNEHC has reduced the electricity production at the TES's in line with reduced demand (in 1995 the TES production was at 1,169 GWh and in 1996 the forecast is 1,025 GWh TES production). Using average hydro conditions KNEHC can meet its customer demand producing 1,280 GWh per year from the Bishkek and Osh TES's. Based upon the suggestion a KNEHC official, a lower assumption of TES energy (1,280 GWh per year) was used for 1997 through 2002.

Electricity and Heat Tariff Rates

The tariff rates adopted in July 1996, and as modified in October 1996, were inserted into the rate sections of the spreadsheet. No discounts were included in the tariff schedule however a 30% loss from technical and economic factors referred to in the 1995 annual financial statements was incorporated into the tariff and operating figures. A 29% effective loss rate was maintained in 1996 by reducing the statutory tariff rates by 15% in addition to the 14% unaccounted for electricity. The overall loss rate reduces to 21% in 2002 (15% from economic losses and 6% from unaccounted for electricity). Similar adjustments were made for heat losses.

Asset Values

Starting in 1996, the assets of KNEHC were increased to reflect the statutory values mandated by the government. The additional assets from the investment program and the revalued asset values were added proportionally to the electric and district heating operating units of KNEHC to include depreciation on the operating statements.

Investment Program

No investment in the Kambarata 2 project was assumed in the Status Quo Alternative. This project and its associated power lines cannot be financed from internally generated funds unless extraordinary events allow full collection of the tariff rates. And, according to a KNEHC official, the project will only be developed when there is an export market for the power which has not been assumed in the energy sales forecast.

b FINANCIAL EVALUATION OF STATUS QUO ALTERNATIVE

Electric Operations

The electric portion of KNEHC becomes more profitable after the introduction of the new tariff rates. Given the tariff changes to residential rates in October 1996, no residential rates increases were assumed other than the 10% increase assumed by the WB in the year 2000. Costs also increase due to increasing sales. However, revenues increase faster.

District Heating Operations

The district heating system still operates at a loss until the additional 10% tariff increase in 2000. While the system should experience some fuel savings as a result of the renovations to be funded by the donor.

agencies, at this time none were incorporated in the assumptions, thereby leaving room for some improvement in performance of the operation

Consolidated Financial Results

The company's equity triples as of 2002 with corporate leverage reducing to only 30%. The company shows cash of 2.3 billion soms in 2002 because there is no dividend. With a normal 80% payout ratio, the GOK could realize a 4% return on the 1996 revalued equity (an 18% return on the "un-revalued" equity in the company).

See Appendix 5B 2 for a complete set of financial reports of the Status Quo Alternative using the WB financial model.

4 Alternative 2 Lease Alternative

The Lease Alternative case approximates the value of the electrical system to a lessee. By taking only the operating income from the electric portion of KNEHC, adding depreciation and deducting for taxes and investments, it is possible to approximate the net after tax cash flow to the operator.

a DISCUSSION OF ASSUMPTIONS

Thermal Plant

Rates for the thermal plants have been adjusted to make the District Heating system operate at break-even after tax cash flow (see analysis discussion below). Starting in 1997, O&M, Salaries and G&A have been reduced by 8% to reflect operating efficiencies gained from separating the heating system (see Alternative 3 discussion below).

Lease Term

18 years

Operating Income

Operating income from the Status Quo Alternative was used up to the year 2002. After that year, the operating income was held constant.

Return to Lessee

A 20% after tax return to lessee for invested capital has been assumed in this case.

Investment Program

The investment program for electric assets has been funded by after tax cash flow and lessee contributions. No new investments have been added in the electric operations after the year 2002. All investments after 2002 have been assumed to be funded by efficiency gains from operations of the system.

b FINANCIAL EVALUATION OF LEASE ALTERNATIVE CASE

This sensitivity analysis to the Status Quo Alternative produced a net present value of 900 million soms for the electrical system. Therefore, a lessee should be willing to make a payment up front equal to that 900 million soms. A lessee would be able to earn more than the assumed 20% return by increasing operational efficiency, lowering the cost of maintenance at existing facilities and increasing the realization of revenues.

The single largest factor in this alternative is the transfer of the thermal stations to local agencies. This assumption relieves the electricity sector from the subsidies afforded the thermal customers. In order to operate the thermal plants at break-even, rates would have to increase a minimum of 25% in 1997 and

another 7% for 1998. Subsequent annual tariff increases of 7% and 3% in 1999 and 2000 respectively, would also be necessary. Thus, tariffs would rise another 65% from 1996 to 2000.

Another significant factor affecting the value of the electric system is the residential tariff rate. As of October, the base rate for the first 700 kWh/month was kept at 12 tyn/kWh. Because residential sales are a large proportion of the electrical revenue, any real increase in rates will affect the value of the system to the lessee.

A secondary issue then becomes whether the lessee will or can enforce collection of the tariff rates. If, through such enforcement actions numerous customers are cut off due to non-payment or additional energy conservation occurs, the demand forecast may overstate kWh sales and the lessee would realize insufficient revenues to maintain operations and to produce the expected return on lessee invested capital. KNEHC and the Sector regulator should seek to transfer that risk to the lessee by stipulating maximum tariff increases in any given year and provide for tariff decreases based upon meeting both financial and operational targets. Another method of transferring the risk to the lessee is to maximize the front end payment for the lease of assets.

Finally, a concern in the lease alternative is that the lessee may "run down" the system in the later years. At some point during the lease, it becomes more economically advantageous for the lessee to cease maintaining parts of the system because the benefits from maintenance accrue to the owner or operator after the end of the lease. The lease agreement should have regular monitoring mechanisms to avoid this adverse consequence.

See Appendix 5B.3 for a complete set of financial reports of the Lease Alternative using the WB financial model.

5 Alternative 3 Decentralize Distribution Alternative

This case can only be indirectly analyzed due to the lack of enterprise level operating data.

a DISCUSSION OF ASSUMPTIONS

Additional costs of 2% in O&M, Salaries and G&A have been used to show the impact of additional costs in the distribution system.

b FINANCIAL EVALUATION OF DISTRIBUTION COMPANY SEPARATION ALTERNATIVE

Using a 2% additional cost factor has only a modest impact on the net revenues of the system. As seen in Table 5B.1 the amount of additional cost is 15 million soms in 1997 rising to 18 million soms in 2002. Of greater concern is additional unaccounted for electricity and heat sales. Other countries have experienced significant increases in economic losses (greater than 10%) after devolution of distribution due to inadequately trained staff and poor collection mechanisms. The implication for KNEHC is a catastrophic reduction in revenues putting the system at great risk.

6 Alternative 4 Partially Unbundle and Partially Privatize Alternative

As in Alternative 3, this case can only be indirectly analyzed due to the lack of enterprise level operating data. Using the expected advantage of greater collections by local agencies (under a lease or management contract), the Status Quo Alternative was modified to include a) greater revenues for both the electric and district heating operations b) cost savings from greater operating efficiencies.

a DISCUSSION OF ASSUMPTIONS

Starting in 1997 the revenues include 50% of the unaccounted for product (see proforma statements labeled Electricity Generation and Heat Balance). This additional product was priced at the average tariff.

Cost savings for more efficient distribution operations of 8% in O&M, Salaries and G&A have been included in the Operating Statements of the Electric and District Heating systems. Additional savings of 5% in O&M and 4% for salaries and G&A were assumed for greater efficiencies in generation and transmission operations of the electric system.

b FINANCIAL EVALUATION OF PARTIAL UNBUNDLING ALTERNATIVE

The company's financial situation improves significantly. The additional revenue, without additional expenses to generate such revenue, go directly to the bottom line.

As can be seen in the Operating Statement for the District Heating system, the losses in District Heating operations improve dramatically. This improvement is based upon the additional revenue recovered. However, as a stand alone entity, the District Heating system is still not a financially viable enterprise. Assuming all capital improvements are funded by debt and the entity must pay normal taxes, the District Heating system as a company has negative after tax cash flows. Thus, rates still must rise in order to keep the District Heating system financially viable.

Similarly, the Operating Statement for the Electric System improves dramatically. Net Operating Income increases by the amount of new cash collected and reduced operating costs.

See Appendix 5B 4 for reports on the Partial Unbundling Alternative using the WB financial model.

7 Alternative 5 Fully Unbundle and Fully Privatize Alternative

As mentioned earlier the data for a financial analysis of the fully unbundled and fully privatize case is not available from KNEHC at this time. A methodology for developing such an analysis is contained in Appendix 5B 1.

Full unbundling would add value through the additional savings (greater efficiency) from separating the large hydro operations. As stated in the Summary above, only modest efficiency increases were assumed, due to limited amount of operations affected by the unbundling.

On the thermal side, further unbundling of the district heating system into two companies would ensure no cross-subsidization. Also, the Bishkek thermal company may be able to optimize its own economic operation by balancing direct sales to large industrial heat customers with power generation opportunities from waste heat.

C Legal Framework

1 Objective and Methodology

This section of the report identifies the major issues related to the existing legal framework for the Sector. Included in this part of the study is an analysis of the legislation relevant to the regulation of the Sector and the basis for its future development as well as an analysis of KNEHC corporate documents.

This study was conducted with the assistance of a reputable Kyrgyz lawyer during two of the Team's trips to KR. The lawyer together with the Team reviewed current privatization and corporate legislation, draft laws and regulations regarding the Sector, the KNEHC Charter and other corporate documents. A list of the documents reviewed and considered in the analysis are attached in Appendix 5C 1 and selected documents of more direct relevance are also included.

The PW Team also met with representatives of the Privatization Department of KNEHC. This department is responsible for the Charter and other corporate documents such as the Founders' Document. Several meetings and working sessions were held with the representatives of this department to review, in detail, these documents, to identify the deficiencies in the Charter and conflicting documentation, and to obtain an understanding about the realistic corporate governance in effect at KNEHC, as opposed to the provisions of the Charter.

The text of this section identifies the major issues related to the existing privatization and corporate legislation, proposed and draft laws for regulation of the Sector and the KNEHC corporate documents. Detailed summaries and analyses of the documents are provided in Appendices 5C 2 through 5C 8.

Prior to the analysis of the existing legal framework, it is essential to define the development of KNEHC as it currently exists. Therefore, the following section is an explanation of the development of KNEHC,

followed by an analysis of the stage for future privatization. The fourth part discusses the corporate governance issues identified in the KNEHC Charter. A fifth section introduces the legislation currently governing this sector and the final section summarizes the major findings and issues in the current legal framework of the Sector.

2 The Development of KNEHC and Critical Issues

There are two major documents which define the development of the Sector enterprises and their reorganization into the current form of KNEHC. A summary of these documents can be found in Appendices 5C 2, 5C 3, 5C 7, and 5C 8 and the documents themselves in Appendices 5C 9, 5C 10, 5C 14, and 5C 15. In the Soviet era, these enterprises were part of a monopoly. In 1992, the state energy companies were declared "State Energy Holding Company Kubat" by Decree of the Kyrgyz President. By definition a holding company owns shares of joint stock companies. However, the companies held were not joint stock companies. It was only in 1993 by Government Resolution (#562, December 10, 1993) that the energy companies became a state joint stock holding company "Kyrgyz State Joint Stock Energy Holding Company."

Government Regulation #592 (reviewed in Appendix 5C 3 and attached in Appendix 5C 10) was issued on December 10, 1993 on the transformation of the "State Energy Company" into "Kyrgyz State Joint Stock Holding Company."² As a result of this regulation, KNEHC was formed from the property of the 16 enterprises which comprised the State Energy Company and from the state share of three related joint-stock companies: KyrgyzElektroSetStroy, KyrgyzEnergoStroy and Prefabricated Reinforced Concrete Articles Plant. However, in 1995, KyrgyzElektroSetStroy and KyrgyzEnergoStroy were 100% privatized. Prefabricated Reinforced Concrete Articles Plant was partially privatized. Currently, 70% of the shares remain as state property, and therefore held by KNEHC. As a result of this regulation, "State Energy Company" ceased to exist because it was transformed into the "Kyrgyz State Joint Stock Holding Company." Nonetheless, the Charter and Founders' Agreement identify this "State Energy Company" as one of five founders of the "Kyrgyz State Joint Stock Holding Company," though it no longer exists.

As mentioned at the beginning of this section, Regulation #592 was the first legal reference to a joint stock holding company. It is important to note the legal status of KNEHC as defined by the form of ownership. The Decree of the Parliament, Jogorku Kenesh, # 1386-XII of January 12, 1994 defines a holding company as a joint-stock company which owns controlling shares of other joint-stock companies. The 16 enterprises of the former Kyrgyz State Energy Company are held by the holding company, though these enterprises are not joint stock companies.

3 The Legal Basis for Future Privatization

Denationalization and privatization in the KR are carried out according to the Programs for 1991-1992, 1992-1993, and the Concept on denationalization and privatization for 1993. Jogorku Kenesh (Parliament) adopted the Concept of denationalization and privatization in 1994-1995 by Resolution of January 12, 1994. This Concept identifies which state owned enterprises should be transferred into joint-stock companies in a period of four months excluding the enterprises where such programs are prohibited.

The January 12, 1994 law restricts the privatization of the State Energy Company. This apparently refers to the complete privatization, meaning that the companies may be privatized if 51% remains state owned. Land codes stipulate that land, forests, water and other natural resources are objects of exclusive ownership and can only be rented. Such resources are regulated by special laws drawn up on an as-needed basis.

² It is important to note and understand the difference between the Kyrgyz State Energy Company and the Kyrgyz State Joint Stock Holding Energy Company. The former refers to 16 state owned enterprises essentially the generation, transmission and distribution companies. These companies were once the Kyrgyz State Energy Company and are now part of the Holding Company. The property of these entire companies was transferred to the Holding Company along with the state share of three other joint stock companies. The transformation of the Kyrgyz State Energy Company into the Kyrgyz State Joint Stock Holding Energy Company and its inclusion of three joint stock companies is defined in the Regulations referred to above and detailed in the Appendices.

Additionally, as provided by the Concept of denationalization for 1994-1995, 51% of state owned shares of KNEHC is considered "indivisible property," referring to electric networks and high voltage transmission lines. This means that the given property must be owned by one entity. Despite the legal framework limitation on full privatization of the energy companies, Article 3 of KNEHC's Charter provides for the "realization jointly with SPF further denationalization and privatization of companies comprising KNEHC."

4 Corporate Governance Issues in the KNEHC Charter and the Funders' Agreement

A detailed examination of both the Charter and the Founders' Agreement has been performed. The text below identifies the division of power, the strengths and weaknesses of its provisions and how they impact the framework for development in this sector and the adoption of a proposed option. Appendix 5C 7 examines each section of the Charter and provides detailed support to this analysis. Appendix 5C 8 summarizes the Founders' Agreements. As indicated in this section, there are many changes currently needed to the Charter to reflect the changes that have taken place in this industry since the inception of the Charter, on January 20, 1994.

a THE CHARTER (ATTACHED IN APPENDIX 5C 14)

The Charter identifies the management organs as the general meeting, the Council, the Board and the President. However, much decision-making power is delegated to the President.

i General Meeting

The General Meeting as defined in the Charter is the supreme management body which meets at least once a year. A quorum is defined as the presence of 60% of the delegates. In practice, there has only been one general meeting since the inception of this holding company, on December 28, 1993. There are 200 delegates, including 2 representatives from each enterprise. Despite the delegation of critical powers provided by the Charter described in the Appendix 5C 7, there is a lack of definition on who the delegates are and how they are chosen, and who represents the State share in a vote.

ii The Council

KNEHC, through its Charter, creates a Council to be elected by majority vote at the General Meeting to "perform certain functions related to the competence of the general meeting and it shall exercise control over the activities of the board (Section 9, paragraph 25)." The composition and size is ambiguous and the provision that exists is for the initial composition. There have yet to be any changes from the initial composition.

The President of KSEHC shall be Chairman of the Council. The Council is to meet at least once every three months. According to the KNEHC representatives, most decisions regarding KNEHC are made by the Council. The Council's powers are enumerated in the attached Appendix 5C 7.

However, there are several ambiguous areas regarding the Council. For example, on what basis does the Council vote? What is the relationship between the Council and the General Meeting? It is unclear as to how many representatives constitute this Council. In actuality, the Council currently consists of 28 representatives, on the theory that there will be at least one representative from each enterprise, plus two from the SPF, and a representative of the Trade Union.

iii The Board

The Board is the executive organ acting on regulations validated by the Council. It consists of 9 members also validated by the Council, with the President as the Chairman of the Board. The Board is the organ used by the President to carry out the management on current activities. It is not clear how the 9 members of the Board are chosen. The Charter states that it is "formed by the President." This implies that the members are chosen by the President.

iv President

Much of the power lies in the jurisdiction of the President. He is the Chairman of the Council and the Chairman of the Board. Appendix 5C 7 details his powers and supports this conclusion.

Some powers delegated to the President represent possible conflicts with legislation. For example, the President's authority to appoint and dismiss the directors of enterprises under KSEHC and to validate joint stock company managers potentially conflicts with the Concept of denationalization of 1994-95. This Concept calls for preliminary denationalization of KNEHC with a transfer of the economic managing function and corresponding authorities to the entities themselves. In the event that these enterprises become joint-stock companies, there will also be a conflict with the full economic independence principle called for in the Law on Joint-Stock Companies. As in the Charter, it is understood that the shares of the enterprises are given to KNEHC with the rights to manage. It is not explicitly clear, but is said to refer to the three joint stock companies and not the 16 enterprises of the former KSEC.

There is little limit on the President's power and no explicit check or overrule. It can be interpreted that, since directors are appointed by the President, and can be dismissed by him, they therefore do not have independence from him. As they are the representatives at the General Meeting and presumably the Council, they would be less likely to vote for something the President does not support.

All of his roles represent significant conflicts of interest as the manager of the company and the head of the Council. This may be acceptable now when the President is the GOK/ major shareholder appointee, while the holding company is a state owned company. But, with any privatization or denationalization, changes will be needed.

State Auditors and Audit Commission

The Charter provides for an Audit Commission, of at least 3 members elected at the General Meeting. There is a provision for extraordinary audits. They shall be made if there is a written request by the majority of the Council. However, there is no information on the necessary qualification of the members of the Audit Commission. There is no provision for participation of the internal audit department or external auditors and the process of choosing the external auditors. These members will most likely be managers or directors of enterprises, whereas, members of the Audit Commission should not be managers or directors, in order to preserve the independence of the audit function.

In the Appendix 5C 7 there are additional comments regarding issues such as the language in the Charter, the need for keeping the Charter current with changes, policies regarding profits and dividends at KNEHC, and privileged shares.

b THE FOUNDERS' AGREEMENT (ATTACHED IN APPENDIX 5C 15)

This document was signed by the five founding entities on December 28, 1993 and is quite similar to the Charter. It contains appropriate provisions for obligations vis-a-vis the GOK and the holding company, and its participants. Nonetheless, there are some points of contention with other legislation noted in this section.

KNEHC is identified as the entity responsible for the future privatization of the enterprises of Kyrgyz State Energy Company (paragraph 4 7). However, it states nothing of consulting the employees, though this is a provision of the Law on the Transformation of State Joint Stock Companies.

Privatization's free of charge transfer of shares to employees is threatened as KNEHC grants itself the right to sell 10% of the shares by exchanging employees' privatization points and those of contractors, through investment funds with which KNEHC has agreements. The Founders' Agreement also potentially grants KNEHC the control of 10% of 20% of the shares that a government regulation allocated for sale on the stock market or to investment trade. This is a potential issue as KNEHC could control the buyers of those shares for sale.

There is a discrepancy regarding dividends earned on the State shares. Government Regulations state that such dividends are transferred to the State Budget, whereas the Founders' Agreement states that they can be used, and a report sent to the SPF on their usage, implying that they are not transferred to the budget.

5 Current Legislation Governing the Power Sector

The legal framework for the Sector is currently being developed. Much progress is being made. On April 30, 1996 the Regulations "On the State Energy Agency under the Government of the Kyrgyz Republic" were passed. In late October, the Law on Energy was signed by President Akaev, and as of early November, 1996 the June 28, 1996 draft of the Law on Electricity was being discussed in Parliament. Its approval is expected to be followed by the approval of the "Concept of Denationalization and Privatization of the Energy Sector," which is currently also in draft form. The recent GOK laws are quite flexible and foresee changes in the structure of the Sector.

6 Major Findings and the Critical Issues of the Existing Legal Framework

In addition to the critical issues discussed in this report, this section identifies several findings of the overall legal environment in the power and heat sector, focusing on inconsistencies in the legislation and corporate documentation.

International corporate governance refers to those individuals or entities responsible for initiating an organization as "founders." This implies that those entities contribute the original capital for the organization and are the original owners. This Charter states the "KSEHC's founders on the basis of the Kyrgyz State Energy Company are SPF, Kyrgyz State Energy Company, KyrgyzElektroSetStroyTrust, KyrgyzEnergoStroy Construction Department, and Prefabricated Reinforced Concrete Articles Plant." The decision on the holding company and the entities to be included in it were determined by the GOK. These entities which were state owned enterprises at the time of inception, were required to turn over their state

owned shares to the holding company and therefore became controlled by the holding company. The founders give their capital to the entity that will control them.

The question then arises, do they willingly become founders of the holding company. In so much as they are state owned, it may be assumed that the state, as represented by the SPF, willingly forms the holding company. The willingness is protected in privatization legislation that precludes reformation of ownership of state enterprises without the joint decision of the SPF and collective. The second question arises when privatization begins. Once the given "founders" are no longer owned by the state, they may choose not to belong to the holding company.

It is interesting to note the current situation of the Founders. The Charter and the Founders' Agreement indicate the "founders" of KNEHC as the Kyrgyz State Energy Company, the State Property Fund and the three above-mentioned joint-stock companies. However, Kyrgyz State Energy Company was transformed into the KNEHC, hence ceasing to exist. Excluding, then, the enterprises of the former Kyrgyz State Energy Company, the following remain as "founders" of KNEHC: KyrgyzElektroSetStroy, KyrgyzEnergoStroy and Prefabricated Reinforced Concrete Articles Plant and the State Property Fund. These changes in the overall capital and structure of the holding company have not been reflected in the Charter.

The Charter gives the holding company the authority to, jointly with the SPF, determine future demonopolization and privatization of KNEHC's enterprises. The Founders' Agreement delegates this solely to KNEHC. The Concept on demonopolization and privatization for 1994-95 (Chapter III Methods of demonopolization) however, states that "energy enterprises, regardless of their size, will not be privatized, but will go through initial demonopolization under which the formation of state companies will transfer management functions and coordinating authority directly to the economic subjects", or companies themselves. Furthermore, according to privatization legislation, transfer of state enterprises into joint-stock companies is decided jointly by the SPF and the labor collective. The Charter of the holding company was adopted at a conference of the founders on December 28, 1993. The collective was not involved.

Articles two and six of the last edition of the Law on Joint-Stock Companies provides for full economic independence in the determination of the form of management, on decision-making in business activities, in pricing and use of profit for joint-stock companies. However, KNEHC's Charter calls for the "entrusting of management rights" of the three joint stock companies included in the holding company, to the holding company (Chapter 5, paragraph 11). This means that the energy companies would surrender their economic independence rights provided to them in the Law on Joint Stock Companies to KNEHC. They may legally claim that the law precluded them from forfeiting their rights to KNEHC.

D Staffing and Management

1 Importance of Organizational Structure

An organization structure is an arrangement of tasks and people designed to accomplish the organization's goal. It involves a way of dividing tasks into sub-tasks (division of labor), grouping of similar tasks into clusters (departments), and the assignment of responsibility and authority to perform those tasks. Since the sub-tasks need to be coordinated, it is usual for a further division of labor to emerge, i.e. between the doers of tasks and those who coordinate or supervise. From this pattern has grown the familiar pyramidal (or hierarchic) structure, where similar tasks are clustered into departments, each with its supervisor, and departments in turn are clustered into larger groupings headed by higher level supervisors or managers.

It is important to emphasize that an organization structure does not exist for its own sake. It is there to provide a framework for the functions and activities of the organization to be carried out. It is only good as far as it serves this function. If it impedes the performance of tasks, it needs to be changed. Moreover, a good structure per se does not guarantee success. Employees have to perform and there has to be commensurate authority to match responsibility, and adequate resource allocations. However, an improper structure would definitely stand in the way of goal achievement.

2 KNEHC and Subsidiary Organizational Structures

The present organizational structures of KNEHC and major subsidiaries are shown in Figures 3.9 and 3.10. KNEHC carries out its activities through two groups of subsidiaries: the generation, transmission, distribution, district heating enterprises (twelve) and six other enterprises involved in training, constructing design and research. In Appendix 5D.1, detailed organizational charts of the following subsidiaries' are included:

- a) Organizational Structure of Bishkek Thermal Electric System,
- b) Organizational Structure of Bishkek Thermal Network,
- c) Organizational Structure of Tortugul Hydro Station,
- d) Naryn Distribution Enterprise, and
- e) Organizational Structure of Osh PES

At the apex of the KNEHC organization is the President of the company. The Board which should be responsible for policy matters at the highest level has limited authority. As illustrated in Figure 3.9, Organizational chart of KNEHC, there are over twenty-five chief executives of KNEHC and Subsidiaries reporting directly to the President of the company. This is the most unreal and ineffective organizational structure. In reality, the KNEHC does not function as a holding company, nor as a commercial entity. All investment, commercial, operational and labor decisions are highly centralized and directly controlled by the President of the company in every aspect.

The President of the KNEHC reports directly to the Deputy Prime Minister of the country instead of to the Minister of Industry, Trade Resources Except KNEHC and Mineral Resources Exploration, all other energy related organizations (for example Gas distribution, Coal Mining, Coal Distribution, Petroleum Exploration and Development, etc) report directly to the Ministry The organizational relationship of KNEHC’s President with the Deputy Prime Minister indicates that the Government retains a strong role in policy matters such as tariffs, borrowing, investments and the appointment of the management staff of KNEHC and its subsidiaries

Figure 3 9
Organizational Chart of KNEHC Head Office

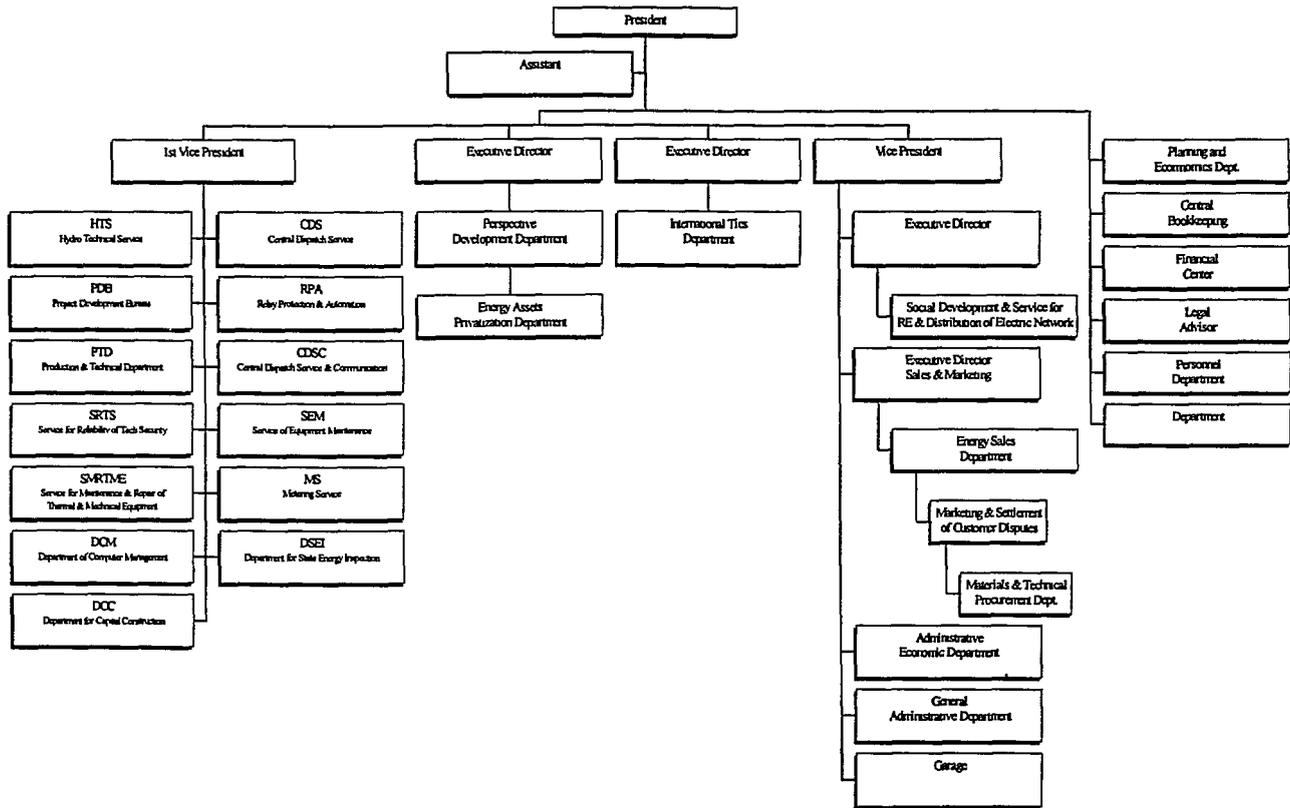
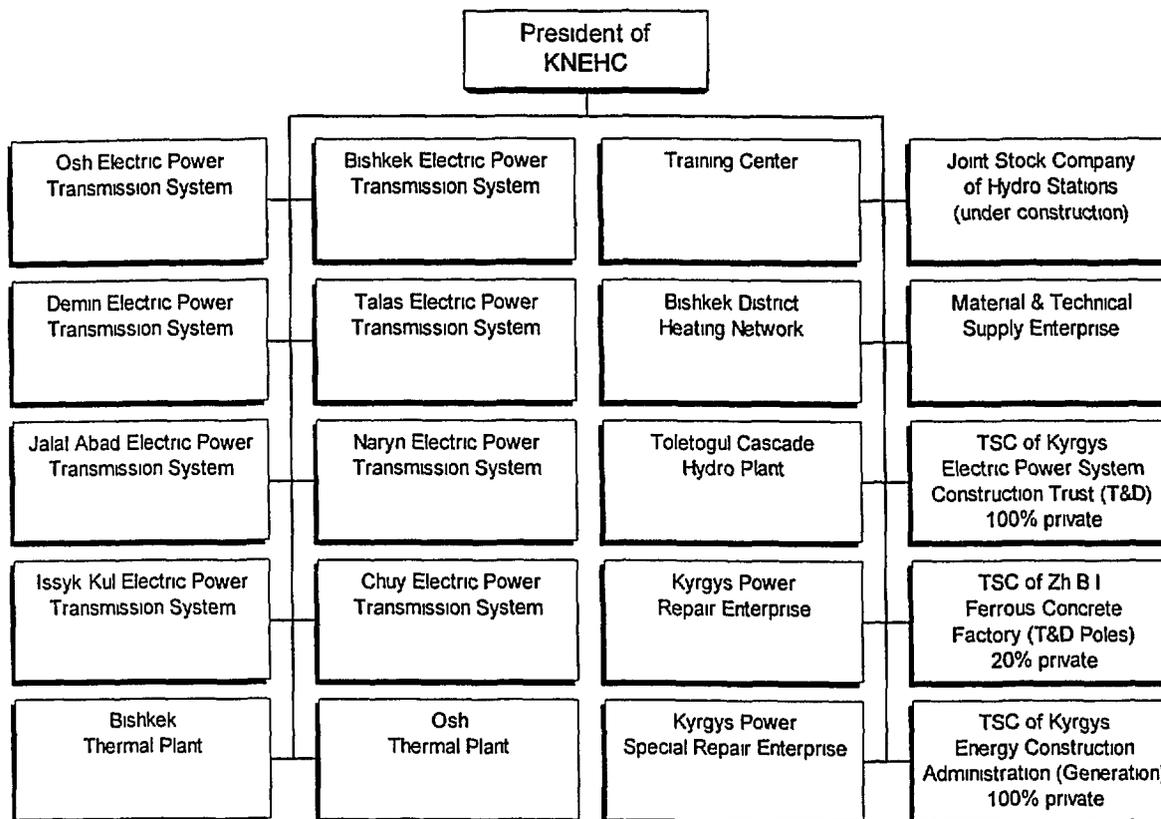


Figure 3 10
Subsidiaries Under KNEHC's Control



3 Issue

The organization of KNEHC is an organic process, responding to changing government needs of efficient management and to the steadily increasing demands placed upon the KNEHC and the subsidiaries for the structural adjustments for continued economic growth. KNEHC now faces difficult decisions concerning fundamental structural changes in the separation and decentralization of district heating and power generation and distribution. Less apparent but equally important are changes it must now adopt for the establishment of profit centers in all subsidiaries for strategic operations management and strategic financial management, and responsive procedure for budget, accounting and audit.

The key collective issue is therefore that of which structural and procedural changes are required in order to improve the overall performance of KNEHC. This involves a number of sub-issues focused on i) organizational and operational efficiency, ii) the corporate strategic planning and budgeting process, iii) human resources management and development, iv) management information systems for operational and financial management, and v) strategic planning and the setting of KNEHC objectives. In recent years, many organizational changes have been recommended by various other studies. These recommendations now need to be assessed from a holistic and strategic perspective with the intention to recommend to KNEHC a program of improvements and to assist KNEHC to implement those organizational improvements.

Recommendations on structural and procedural changes for KNEHC and its subsidiaries must therefore take into account the new legal and regulatory framework of the sectors, in order to give KNEHC the autonomy it requires to function effectively while maintaining appropriate organizational accountability.

4 Comments About Present Structure

The present organizational situation of KNEHC is characterized by few genuine strengths and many negative aspects (which should be ratified for institutional development of KNEHC), so that it can function as a commercial entity These negative aspects and the need to set up an efficient commercial management have led us to recommend some major changes in the organizational structure

a QUALITY OF MANAGEMENT

During meetings, in all the spheres of activity, we noted the presence of qualified staff This is particularly so in the technical field where KNEHC has a solid body of engineers -- mostly electrical, mechanical, and civil engineers almost exclusively employed in the generation and transmission sectors -- and very few business and financial professionals

The quality of the managerial staff is by and large quite satisfactory in many units which means that new "Systems" (such as the concept of "Profit Centers") could be tried out under satisfactory conditions

Generally, most of the managerial staff is aware that improvements need to be made to the KNEHC management system

b DECENTRALIZATION

Efforts for decentralization have been made particularly in the distribution field where at the level of a basic unit (a distribution utility called a (PES)), a Chief Engineer is by himself in charge of a wide range of responsibilities covering network administration --repairs, dealing with customers, and new facility installations The staff he manages can reach 50 or more in number, and he is also in charge of network operation

The Province Manager is answerable for practically all Distribution activities at the Province level He has a structured staff which could exceed 100 in number His responsibilities are quite extensive

Similar examples exist in other operational fields such as generation with reference to the functions of the Power Station Manager and of the Power Plant Complex Manager

c IMPLEMENTING OPERATING INSTRUCTIONS

The operating instructions are not strictly followed There are at least two reasons for this

- In the absence of Target Oriented Management (TOM), the link between the usefulness or the need of rules, and the objectives of the utility, is not always easy to establish by those who are to follow them
- The tiresome chore of up-dating procedures manuals, could lead, due to delays, to enforcing rules that have not yet been officially approved

It should be noted that, at the present stage of KNEHC's rapid evolution, entailing frequent adjustment of rules and procedures, the system of manual is a requirement which slows down evolution

d DISTRIBUTION UTILITIES

The regional level organization is not capable of assuring its driving and synthesizing role due to the weakness, or even lack of appropriate functional staff to assist the head of the Division

No department is responsible for defining policy and determining targets with reference to customer management

Some studies carried out by KNEHC reveal the existence of varying means amongst provinces, to accomplish the same kind of activities The differences are not completely due to each province's peculiarity The absence of a clear policy defined in each field (technical, commercial and customer, human resources) is also partially responsible

The volume of the PES Chief Engineer's duties and their diversity will cause, sooner or later, a structural problem. As a matter of fact, the existing organization is suited to cater to a specific number of customers, but when this number increases, the Chief Engineer's duties will be too much for him alone. The present solution adopted by the KNEHC is to increase the number of Regional Electric Systems (RES) without modifying the PES's structure, even though the geographical dimension of the RES (the distance between the main office of the RES and the furthest end of the network under its control) and the operational conditions do not justify this increase. We feel that the solution to this problem will be, in order to distribute the duties according to their nature and for cost reasons, to modify the organizational structure of the PES so as to adapt it to the volume and to the nature of the tasks, without having to excessively increase the number of RES.

e PLANNING AND ECONOMIC DEPARTMENT

This department is in charge of high level responsibilities covering a wide range of fields, it has to manage long-term plans and to manage on-going projects on a day-to-day basis.

This solution affords the advantage of minimum risks of misunderstanding between the two functions, all the same there is a major problem, the responsibilities to be undertaken in each of these two fields, are of major importance. They require different management qualities which seem difficult to simultaneously mobilize, most particularly in the intense development stage which the KNEHC is going through.

Moreover, the management of the Planning and Economic department should not be concerned with the short-term activities of Distribution planning. This unduly burdens the Planning and Economic Department's activities with various tasks depriving the attention of the major investment program needs.

f PERSONNEL AND TRAINING

The fact that these two areas are presently merged in a single structure together with many other different activities does not permit due attention in keeping with their full value. In particular the recruiting and training policies are quite insufficient for the professional staff.

5 Need For Organizational Structures

Our preliminary review of KNEHC's organization structure reveals that even with separation of heat and electricity sectors, KNEHC's current organization does not enable it to effectively and efficiently provide for the needs of its services. KNEHC's operational deficiencies directly reflect the manner in which it has been organized. Specifically, KNEHC's organization (subsidiaries) is currently structured to enable individual units and divisions to function in isolation from one another.

Under the current organizational structure, the only way to force coordination between different subsidiaries and divisions is to develop organizational bridges to enable individuals and units to perform different functions, coordinate efforts, exchange information, and share accordingly for actions taken. Currently, no such institutionalized interaction exists in a consistent manner. Given the present requirements of market oriented organizational performance, such a lack of organizational integration hinders KNEHC's ability to operate effectively and efficiently.

The establishment of a new structure, by itself, will not enable a utility to improve its mode of function and results. The results produced by an organization is the outcome of a dynamic system wherein several factors interact.

- the organizational structure
- the management system
- an environment which would ring out the best performance of employees at all levels

A utility is nothing more than the quality of the personnel. Through their skill and motivation the Utility becomes a profitable enterprise.

The structure, on the contrary, enables one to enhance the efficiency of the personnel and implement methods in a constantly changing environment.

6 Specific Areas of Weakness

a GENERAL ISSUES AFFECTING ORGANIZATIONAL CHANGE

Major issues such as the movement of KR's economy from one central planning to free market, the advent of competition in the supply of goods and services, substantial change in the fuel procurement process, and the privatization of section industry, represent gross changes in the external environment in which the KNEHC is operating. The KNEHC and its subsidiaries need to respond to those changes if it is to be effective.

This study indicates that the primary responses to such enormous changes are fragmented in the organization's mission and strategy, work cultural changes in the organization, and the leadership to encourage the people in the organization to make the changes that are necessary.

i Productivity Indicator

The most striking feature relates to the number of staff employed in the KNEHC and its subsidiaries, compared with Western and other Eastern European countries. At present KNEHC employs 11,509 people for 3500 MW (0.30 MW/person) where as in Bulgaria and Romania (predominantly thermal power generation systems which require high number of plant personnel) the staffing level is about 0.60 to 0.80 MW/person. In the United States, staffing level varies from 1.5 to 1.8 MW/person.

ii Staffing and Personnel

In response to the question of adequacy of staff, most units chiefs indicated that they had sufficient personnel, as far as their own operations were concerned. One unit chief indicated that he had too many people, especially in view of the fact that some of his functions were scheduled to be computerized and/or privatized. Another stated that in general there was too much staff. This condition came about, he said, because when a new General Administrator takes over, he brings in a new team and existing personnel are displaced and relocated.

In general, replies by the various unit chiefs indicated that in their opinions their personnel were capable of performing their designated tasks. There is no evaluation of personnel made by the company, nor is there presently available a historical record of individual performance or a description of the requirements for a particular position.

Other personnel issues confronting KNEHC are

- There is a high turnover because of low salaries/wages. Over the last three years the overall staffing of KNEHC has been reduced to 11,509 from 15,200. The highly skilled employees are moving to the commercial/private sector.
- All employees are members of trade unions. The benefits of the unions are limited as workers cannot strike. Energy sector is a protected industry and it is illegal to strike.
- Employees are allowed to stay and continue to work after retirement age (retirement age for men is 60, for women 55), as is the current trend due to the low pension payments. During the Soviet era, when pensions were reasonable and inflation was non-existent, employees retire at the age granted.

iii Investment Planning

The procedure for making project investment proposals is found to be lacking in rigors, and in a situation where there was competition for scarce resources to be allocated among various subsidiaries there is no clear system of prioritization.

The responsibility for investment planning is vested in one engineer in the Prospective Development Department. Of concern is the limited time value for these plans, normally one or two years. The role of this person seemed limited to the collection of investment data without any correlation with the investment funding sources and/or the development of the power market.

iv Procurement Procedures

The procurement systems are rudimentary by the WB standards. Although the answers to the interview questioning indicated the procurement activities competently carried out, there is little or no understanding of the WB, ICB and LCB competitive requirements. Answers to questions sometimes indicated that tendering procedures on a competitive basis were seldom used in practice, it was reported, due to bartering arrangements with Russia, and fuel procurement from neighboring countries.

Multilateral technical assistance in the areas of bid document preparation and ICB/LCB procurement training program would improve KNEHC's institutional capability.

v Training Programs

There are both short and long-term training programs available at the training institutes managed by the KNEHC. The training program offers both classroom and hands-on training. In Appendix 5D 2, a typical list of training courses for the skilled technicians is included. However, the Training Center needs upgrade to modern tools and equipment in all areas.

Several of the business skill seminars have been funded by international donor organizations such as USAID and EU-TACIS. Appendix 5D 2 shows a list of bilateral training/seminars.

KNEHC system is 81% hydro with high transmission and distribution losses and rudimentary billing, metering, and revenue collections set-up. Training/seminars in the following areas would help to develop KNEHC's institutional capability.

- Various seminars/courses on hydro system management in the areas of dam inspection and sedimentation control,
- Courses on hydro/thermal optimization, power transaction and pooling,
- Courses on transmission and distribution system technical and non-technical loss reduction,
- Courses on district heating system rehabilitation and efficiency improvement, and
- Courses on improved billing, metering and collections.

7 Factors Discouraging Managerial Staff

The KNEHC has a good corporate image amongst university students. However, many young professionals are disappointed after a few years of service. The reasons are partly beyond the control of the KNEHC—such as the salary level in comparison with those offered in Russia or in foreign countries.

Others are within the control of the KNEHC, sometimes of both KNEHC and the Government. The latter is the case when state supervision, which is sometimes excessive, does not allow KNEHC the amount of freedom needed to solve problems of this kind.

Several meetings displayed that promotion to key positions is based on ethnicity and not recognition of merit and lack of definite targets were greatly responsible for discouraging the staff.

The discouraging factors either tend to reduce the efficiency of the officers who remain in KNEHC service or encourage them to leave the service. This is particularly true in the case of highly skilled dynamic engineers in the technical fields (Russian ethnic background).

8 Wages/Salaries

The wages/salaries of the professional, technical and workers are very low as indicated in tables of Appendix 5D 3. The wages/salaries system is cash and barter based, with payments to all grades of staff to be made on a monthly basis, however, often for months, staff are not being paid. The means of compiling the payroll and the number of people involved in various related parts of the operation is somewhat cumbersome.

While the facility to award a bonus to staff for good performance was seen as a good motivator, there was no evidence of a formal, documented staff appraisal system in which a performance related pay or bonus

system might be based Annual bonus can be as high as 170% of annual salary for some staff Historically, in 1995, all staff received annual bonuses as per the salary and wage regulations of KNEHC

In a number of instances, dissatisfaction over the level of salaries was indicated Discussions in this area of salaries elicited comments that the current classification of personnel is badly out-dated, especially when applied to positions which currently require a higher degree of technology and training

9 Corporate Planning

An analysis of replies to interview questions and discussions indicates that there is a lack of awareness, at all levels of the company, of any overall coordinated and rationalized long range plan for KNEHC The reason stated for this is that there has been no stable budget for corporate planning

10 Manuals

There are no current and official manuals describing the duties and responsibilities of any supervisor or employee of KNEHC In some instances, specifically in the case of special projects, duties and responsibilities of a general nature are set forth At the present time there is no centralized, organized, program in effect to prepare such manuals Out-dated job descriptions are used by the Personnel Department based on the old Russian book of "Qualifications Reference Book for Positions of Managers, Specialists & Employees" (See Appendix 5D 4 for the outline of the Job Description Manual)

11 Information Flow

There are no established procedures by which information in one directorship is determined to be required by another directorship Requests for information from a unit in one directorship to a unit in another directorship requires a request and a response by way of the directors Routine interchange of information between units is non-existent, even when information is freely exchanged among the directors

12 Budget

The budget for the government is based on a system of accounts which differs from the system of accounts used for KNEHC's own accounting records Furthermore, the budget assumes a level of expenditures which is based on government approved capital additions It further assumes that the income required to cover such expenditures will be available to KNEHC whether or not firm financing commitments have been obtained

The budgeting system is not computerized and consequently a timely monthly comparison of actual versus budget can be made Also, as stated above, the budget has not been prepared by the various departments of each directorship or even by the directorship themselves on a global basis, so that monthly comparisons of actual versus budget, even if they were to be made on a timely basis, would not provide a meaningful analysis for control of expenditures

13 Other Management Problems

- There is the tendency among those in management positions to isolate themselves into their positions
- Most directors, managers and certain administrative assistants work late hours into the night almost on a daily basis
- Directors and managers do not have qualified replacements during their absence from the office, their employees feel that "when the boss is out, the place collapses "
- the above is the result of directors, managers, and supervisors having the tendency of not delegating responsibilities to others, thereby providing the needed training for temporary replacements or promotions, providing continuity in the performance of the various duties of the directorships
- Work is scheduled on the basis that "urgent work has priority," which is the case most of the time except when "urgent work is replaced by another urgent work " This cycle continues without any effective planning to carry out activities

E Management Information Systems

An evaluation of the KNEHC financial accounting procedures and the existing computer systems to support financial accounting business functions shows that very little has changed since the holding company concept was introduced in 1993. The accounting system consists of a uniform chart of accounts, which is specified at a relatively elementary level. It does not allow for the collection of data consistent to support management and cost accounting in a competitive environment. The system is designed to comply principally with existing tax reporting requirements. Producing accounts that comply with IAS is not effectively possible under this structure, nor is it clear whether they will comply with future regulatory requirements.

The European Bank for Reconstruction and Development (EBRD) is assisting KNEHC in modernizing its financial practices to bring them into conformity with IAS, introducing cost accounting and financial management systems, and implementing the above practices/systems and training staff in their use.

Corporate Solutions, a London company, is in the process of supporting the installation of a general ledger package called SunAccount by Systems Union Incorporated. The product is supported in Russian and will provide financial statements in accordance with IAS. Corporate Solutions has accurately identified the shortcomings of the current accounting practices in a Phase I report dated January, 1996 and has since issued a Phase II report which further identifies what needs to be done to implement the suggested accounting reform. While there may be minor areas of disagreement between the Corporate Solutions recommendations and the findings of this PW evaluation, the fundamental problem and solution approach identified by Corporate Solutions is basically sound. The SunAccount ledger package should offer a quick near term solution to the IAS reporting requirement and should serve as an excellent learning tool for KNEHC personnel and management.

1 Financial Management System Characteristics

A key to the success of KNEHC in KR will be the ability of their management to effectively lead the entity in the newly created competitive market environment. Coming from an environment where all funding for plant expansion and operation came from the state, KNEHC management is now faced with the challenge of raising capital through the public and private markets. As the company competes with other investment opportunities within the country and throughout the world, investors will be scrutinizing the company and its management to determine what the risk and opportunity is for investment. Such factors as strategic and business planning, financial planning, accounting principles and practices, financial strategies for securing capital, and corporate financial policies will be closely watched on an ongoing basis and will be barometers for success of the companies.

The ability to meet these requirements drives the need for a well defined and properly designed financial management and accounting system. A sound information structure will need to be developed which assists the company in managing operations in an effective manner. This is achieved through a system which monitors activities, provides control over assets, accumulates financial and operating data and prepares financial and operating reports for evaluating current and future operations. Such an information structure will need to be fully integrated so that all corporate data is available to all users requiring access to this data in order to have the necessary information to make management decisions. The data should be in a data base management environment allowing for one time entry of the data and the maximization of its integrity. This will be the most economical way to manage corporate data over time. With the volume of information that will be required and which will exist, having the data in a data base environment will allow activities to be performed which would not be technically or economically feasible in a manual environment.

A financial management system is responsible for satisfying both internal and external demands. Internal requirements include the accumulation of operational and accounting data, preparation of reports summarizing activities, strategic planning and other management demands. The financial management system should maintain a system of internal accounting controls which provide reasonable assurance that company policies and procedures are complied with, assets are safeguarded, and transactions are executed with appropriate authorization and recorded in a manner which permits management to meet its

responsibility for the preparation of financial statements. External requirements include the preparation of financial statements and other information for government agencies, investors, creditors and other third parties.

External parties will require that the company prepare financial statements in accordance with IAS. This financial information is in addition to that currently required for KR statutory reporting purposes. There will also be an increased demand for more data and information in order to make the types of management decisions that will be required in order to effectively manage the company. The financial management system should be designed to comply with these financial statement and information requirements in a manner which makes best use of automated functions and eliminates any need to keep multiple sets of accounting records for different bases of accounting.

2 Information Technology Characteristics

Before proceeding with the implementation of any computer applications for KNEHC, consideration should be given to several architecture, design and implementation decisions which will need to be made. The cost of hardware, software and development effort is high, but even higher is the cost of low productivity and lost competitiveness if an organization fails to fulfill its purpose. To date a package has been selected which is driving many of these issues, but a more strategic approach could save a lot of time and money in the long run. After all, a financial management system is a production system which will handle high volumes of corporate data and, if properly designed, will be operational for a long period of time to support important corporate functionality.

The following list of issues should be addressed in the context of cost and the ultimate direction that the company wishes to take in terms of information systems management and support effort.

Which development platform will be used ?

This is a question of support and cost. Most software today can run in both a Windows environment or under DOS or OS/2. To stay a generation behind in both software and hardware can save money, but does not put you with the latest technology. The company must decide which platform they are prepared to support, and if they want to work with a tried and tested environment or try to step up to the latest technology.

Which hardware configuration will be used ?

KNEHC will be working with large applications and high volumes of corporate data. They will need to determine whether they want to use large mainframe computers or PC network configurations with a client server to manage data base files. Because of physical locations of the companies in relationship with the KNEHC headquarters, it is highly probable that they will need network connectivity. Here again the issue will be cost and what they are prepared to support.

What language do they use ?

Even the best packages do not handle every possible situation so the company will be writing code from time to time. Whether they have an internal development team or use contractors, they will want to be sure that the proper level of trained support is available for enhancements and maintenance.

Will they use application generator tools ?

Modelers, designers, builders and other rapid application development tools are common and readily available on the market today. They can select to use such tools to the maximum or they can mostly write code. There are costs and benefits to both approaches and a thorough evaluation of these options would be a good strategy at some point in time.

Do they use a local database manager or a database server?

The simplicity of using a products internal database manager cannot be discarded lightly, but there are clear benefits that a client server database manager can offer, particularly when applications become distributed and interfacing becomes important

What level of security needs to be provided ?

These are for the most part widely distributed applications creating and maintaining corporate data with the requirement for a high degree of data integrity Who has the right to view this data and who has the right to update it are security issues that should be addressed up front

Will hardware and software platforms be standardized ?

The 18 operating entities have, at the present time, an opportunity to start from a clean base point with the development of hardware and software platforms Setting standards for the growth and development of these platforms now can save significant money in the long run Being faced with a mixed platform environment will most likely complicate the effort and increase the expense of any future growth and development

As previously mentioned many of these issues have already been defined to some degree by the selection of a general ledger accounting package None-the-less, addressing these issues and developing a specific strategy for them prior to continuing implementation of major corporate systems will not only help to assure the success of these systems, but will also establish sound information systems strategies which will save the entities money and time in the long run These issues are therefore addressed at this time in the hope that they will become a part of an overall information systems plan for KNEHC

It is of course possible to let a purchased package define the strategy for some of these issues, but to ignore the issues all together would not be in the company's best interest and would most certainly cause some major problems, and most likely increased expense, down the road Building applications based on a well considered design philosophy and a solid, flexible architecture is the way to go

3 Integrated Financial Management System Summary

The ledger accounting that is currently being implemented by Corporate Solutions is but one of many system modules that will be required in order to have a fully integrated financial management accounting system for KNEHC This can be thought of as the final collection point for all accounting information that is recorded for the company The detail for all this accounting information however, starts at the various entities within KNEHC and should be entered into the various "feeder systems" which provide the accounting data to the general ledger in a fully integrated systems environment This implies that there is one time entry of data into the integrated accounting system and that from that point forward the information can be transferred, tracked, analyzed and reported in whatever manner is necessary in order to analyze the company, report financial information, and support the management decision making process

In addition to the ledger accounting module, Systems Union Incorporated can provide modules to support

- Fixed Assets
- Multi-Currency
- Corporate Allocation
- Purchase Order Processing
- Purchase Invoice Register
- Inventory Control

This is not to say that these are the best systems solutions for the business requirements, but only that they are modules offered as part of a total Sun System solution In addition to these functional business solutions, systems would need to be provided to support the following functionality groups

- Accounts Receivable

- Accounts Payable
- Payroll
- Fuel Management
- Cash Management
- Planning and Control
- Billing and Collection

These systems provide a high degree of source data into the general ledger and would need to be automated in order to have an effective and fully integrated financial management systems group. It would also be desirable to have a construction management and maintenance management system to support accounting needs, as well as the other functional support capabilities from such systems. However, from an accounting viewpoint these systems could be "manual feeds" and still be effective because of the lower volume of accounting data coming from these systems as compared to the others listed here.

In order to successfully implement these systems into an integrated systems environment, a well planned strategy should be in place. Besides addressing the systems issues as defined earlier, the strategy should include a functional systems design for all of these systems. The functional systems design is a planning tool which helps to establish and maintain communications among users of business systems, all levels of management, and the information systems functions.

The planning process begins by identifying those business activities that are currently carried out by the company and that will continue to evolve in the privatization process. This is then enhanced with business activities that the company will be required to carry out in the future but have not been a part of past business practice. Business activities are then compiled into logical functional groupings that could be supported by a computer system. After all activities to be supported by a computer system are analyzed, the total system design requirements can be documented for planning purposes. All systems contain a specific and unique functional capability for each activity to be supported by the system.

This planning process is a critical first step to designing the information systems architecture that the enterprises will need in order to effectively operate as market driven, profit oriented entities. This approach assures that the systems are developed in order to support the necessary business activities of the company. Following this plan will not only assure that the business processes are driving the systems development efforts, but it will also help the company to identify those activities that are not yet supported by computerization, thus allowing them to keep their systems development efforts properly focused.

At this point in the planning process, system implementation can be prioritized so that there is a logical sequence for development and installation of the various modules. Having a well defined overall strategy will help assure total integration when all systems are completed, and will allow the enterprises to maximize benefits along the way.

4 Options

The option of utilizing manual systems to support the accounting functions in KNEHC has already been precluded with the installation of the SunAccount general ledger system. While this system will help data collection to support reporting requirements, the Company will find that the effort required to input all the necessary data to effectively utilize the system will be greater than what can be sustained over the long term. Detailed data necessary for effective cost control and decision making support will not be available as long as journal order accounting is utilized. It is not recommended that manual systems be utilized at the KNEHC enterprises.

Another option would be to develop the various financial management system components in-house using company personnel and contractors. This approach could provide a high degree of functionality in the systems and develop a capable system maintenance staff. However, the lack of qualified development staff could drive the cost up. The time it would take to develop the system in-house would, in all likelihood, be too long to respond to competitive situations. A rough estimate is that this approach would cost

approximately \$50,000,000 to \$70,000,000 for hardware and software development, with a time frame of at least three years. This estimate includes all systems identified in earlier and assumes that development runs concurrently on several systems at one time to complete within a three year time period. The systems would then be available for all enterprises within KNEHC.

The last option would be to purchase fully integrated systems. This would provide fully integrated accounting plus financial management functionality at all enterprises as well as headquarters. The negatives to this approach would be the high up-front cost and the difficulty of intense training efforts. The fact that the general ledger systems is already being installed and training efforts have begun, will improve and support this intense training requirement.

Information from Systems Union Incorporated indicates that the six (6) additional modules that their company could provide, as indicated on page 55, would cost \$200,000 and \$300,000 per site (enterprise) for hardware, software and installation. This cost range would provide capability for either 4 or 8 users at each site, putting the total cost for these modules at between \$3,800,000 and \$5,700,000 for KNEHC.

This would still leave the remaining systems identified on page 56 to be purchased. Estimates based on packages sold in Europe and the U.S. put this total cost at between \$4,500,000 and \$5,000,000 per site for these total system packages, or between \$85,500,000 and \$95,000,000 for KNEHC. This cost would cover hardware, software, and installation. Some of these systems are much more complex than others, and some, such as the billing and collection system will most likely not be available on the market because of the uniqueness of functionality. These systems will therefore need to be developed with in-house staff and/or contractors.

Costs shown in this section are estimates only. A specific package and/or vendor would have to be identified before detailed time and cost schedules could be put together.

VI. Conclusions and Recommendations

A. Introduction

This report covers numerous aspects of KNEHC's operations in an evolving regulatory, economic and operating environment. The following conclusions and recommendations concentrate, however, on three areas of the company that can make near term improvements to the commercial evolution of the Sector. While the section entitled Restructuring Alternatives will require a Sector-wide effort, the recommendations on Organization and Staffing and Management Information Systems should be able to be accomplished by KNEHC alone. These latter recommendations can assist KNEHC management deal with sectoral issues and can provide other Sector participants with the needed information to make informed decisions on how to regulate and improve the commercial operation of the entire Sector.

B. Restructuring Alternatives

CONCLUSION KNEHC would benefit from a restructuring of its system. The system is in drastic need of repair; it has an abysmal collection history, the tariffs are not set in accordance with the costs, and there is practically no chance that the company will be able, in the foreseeable future, to solicit and obtain needed funding to correct the situation.

RECOMMENDATION It is recommended, given the special circumstances in the KR and the lessons learned on experience in restructuring and privatizing power sectors around the world, that Alternative 4 be adopted as the restructuring alternative to be pursued by the KR.

It offers the best opportunity to result in real reform throughout the sector so that the serious problems can be solved, but it does so without the GOK having to give up controlling interest in the large hydro plants and, especially, ownership or control of the transmission system. Alternative 4 can be done without delaying the coupon auction, and it preserves flexibility to pursue a variety of mechanisms in the near future, including some combination of lease, sale or management contract for the various parts of the system.

C. Organization and Staffing

CONCLUSION KNEHC is overstaffed and does not meet the necessary criteria to be considered a modern national utility. The company has an abundance of traditions and attitudes which have been carried over from FSU times. Although this is understandable, a major restructuring effort is necessary.

RECOMMENDATION The study team recommends the following steps to be taken for the re-organization of the electricity and heat sectors of KNEHC:

- Step #1 the decentralization of authority and operations, within the headquarters organization and particularly between headquarters and the provincial or regional distribution organizations,
- Step #2 the authority of KNEHC must be qualified as provided in the new legislation (Electricity Act); the status of functional autonomy of KNEHC to carry out its responsibilities effectively; and new or reaffirmation of authority required to implement an Institutional Review and Development program to assist the KNEHC in its continuing process to streamline and enhance its operations as a modern national utility.

- Step #3 establishing the accountability of KNEHC officers and staff in the effective performance of their roles, both through clear definition of position responsibilities and through setting of performance targets,
- Step #4 KNEHC be given the capability to carry out a dynamic process of corporate planning, including requirements of strategic planning, operational planning and performance targeting and an integrated management information system, and
- Step #5 the development of training in planning and other aspects of human resource development which will form a key input to a MIS and a strategic planning process therefore enabling KNEHC to make the best future use of its human resources

D Management Information Systems

CONCLUSION Although KNEHC has begun many steps to enhance its system in the MIS area, much is still lacking in order for the system to become a corporatized privatized economically functioning competitive utility in today's market

RECOMMENDATION Assuming funds can be made available for and/or by KNEHC to proceed with the development of a fully integrated financial management systems group the following set of recommendations result in the development of a specific strategy that will move the effort forward

- Develop a functional systems design for all the business systems identified on page 55 This will serve as an excellent planning tool as KNEHC moves forward with implementation of packages Knowing exactly what functionality is required will allow the company to select the best package to meet their business needs This approach assures that the business needs drive the systems development rather than systems defining the business As a rule of thumb, if a package does not support at least 80% of the functional requirements, then the package is not likely to be a good fit for the business
- Despite the fact that the purchase of SunAccount has already defined certain systems strategy issues, a full IT strategy, as addressed on pages 55 and 56, should be developed prior to purchasing any more packages The SunAccount package does not, on the surface, appear to be a bad choice technically It does operate under Windows 95 which is a common and well supported software environment today It does have a Relational Data Base Manager (RDBM) which is a desirable DBM for managing large amounts of variable data Future packages will need to be compatible with this environment in order to assure total integration when all systems are installed If the company finds as it moves forward that they are having great difficulty interfacing other systems with the SunAccount general ledger, then they may have to consider dropping this package for something more compatible This can be a very difficult decision to make when one has so much time and money invested in a certain software package, but it is sometimes the best strategic move in the long-run This is not to say here that the SunAccount package is not the right choice, and there is no indication by PW at this time that it will not meet its intended purpose The issue is only raised here to identify the fact that there are still choices, though they may be more costly at this point
- Develop an information systems implementation sequence priority plan This plan should address all the systems that are required for a fully integrated financial management system, and identify which system should be implemented first, second, third, and so forth This sequencing is based on dependencies to other systems and the volume of data that each system will provide as a feeder system to the general ledger This plan will help assure that maximum benefit will be captured as soon as possible in a long implementation schedule such as this one It will also facilitate decision making when limited funds are available for systems development and implementation
- Re-examine the account coding structure that is recommended by Corporate Solutions to be sure that this coding structure is sufficient to move the company ahead with accounting practices Testing this coding in the new general ledger package will help to evaluate its structure Be sure that types of resources can be effectively tracked and that projects can be identified and types of cost by project can be tracked
- Develop a data communications matrix which identifies which system creates each data element, and which organizational units in the company use this data to support their business practices Such a matrix

will help to identify which organizational units in the company will need access to the systems, and will also assist in the development of reports for the various business units throughout the company

- Develop hands on training sessions for people who will be using the various systems as they are implemented. Be sure that effective user manuals are provided for each system. At the same time begin to train managers on the use of financial information to support the decision making processes throughout the company. Where possible utilize exchange programs, such as those provided by United States Energy Association, to introduce personnel to Western accounting practices and the use of accounting and financial information.

Following these recommendations will provide an overall strategy which can then be followed as system modules are purchased and/or developed according to the implementation sequence plan. When all systems are installed, this strategy will assure that the company will end up with a fully integrated financial management system that supports the business needs of KNEHC. If work is delayed for financial, or any other reasons, the company will know exactly where they stand and where they need to begin again when resources become available.

It is also recommended that when possible, packages be purchased as opposed to developing in-house. This will in most cases, be cheaper and faster in the long run. However, as previously stated, some functionality will not be available in a package and will need to be developed with in-house staff or contractors. In either case, having a functional systems design available for all required systems will allow the company to make the most informed choice as to which approach will best fit their business needs.

E Legal Framework

CONCLUSION	There appear to be many conflicting areas in the make up of the legal framework of KNEHC. Many internal company policies conflict with each other and with laws of the GOK.
RECOMMENDATION	When a decision is made as to which option of restructuring will be pursued by GOK relative to KNEHC, a full legal review be made of the affected documents. Those documents found not to be in conformance with the laws must be amended or superseded accordingly.

Methodology to Develop Unbundled Analysis of KNEHC

KNEHC, Corporate Solutions and the World Bank have developed several schedules that would be useful to an unbundled analysis. Using these schedules it should be possible to develop enterprise level proforma statements for KNEHC and then perform sensitivity analyses to evaluate the consequences of various unbundling strategies.

Listed below are the schedules obtained during the October - November trip to Kyrgyzstan by Price Waterhouse. Under each schedule comments have been added to provide direction in developing detailed, unbundled analyses.

KNEHC Documents

"Report of a company, organization, institution, or production costs according to the type of activity - industry consolidation statement on the Kyrgyzenergo holding for the period of 12 months of 1995"

The report contains operating cost data for two years data (1994 and 1995) for the 19 enterprise level operating units. According to Corporate Solutions this data was developed using journal order accounting system that does not segregate costs by IAS or GAAP. Corporate Solutions, however, developed a methodology for analyzing such data in their Phase II study and that methodology may be adequate to interpolate this report data into meaningful figures.

Therefore, this report may be used to assemble the operating costs for the generating, transmitting and distribution groups to be analyzed in an unbundled evaluation.

"Monthly report of heat and electricity distribution/sales"

KNEHC produces reports monthly of the electricity distribution. This report is broken down by PES. Again this report is compiled using journal entry data which produces unreliable figures. This data can be used in conjunction with the Corporate Solutions report labeled "B Annual Domestic Sales as Booked by each Distribution Centre" to develop revenues for the PES's.

"Re-Evaluation of Fixed Assets of the Kyrgyz National Energy Holding Company"

KNEHC produced a statement revaluing its assets in accordance with the Resolution of the Kyrgyz government of October 23, 1995 #442. Attached is a copy of this schedule translated into English.

This statement may be used to parse KNEHC's assets amongst the operating units. It also has an allocation between "productive" and "non-productive" assets which may allow for more accurate re-valuing according to revenue generation.

Corporate Solutions Documents

“Kyrgyz State Energy Holding Company Annual Financial Statements, Year Ending 1995”

Corporate Solutions prepared financial statements for KNEHC in accordance with IAS and GAAP. While these statements are unaudited, they provide valuable data in a usable format.

“Summary of 1995 Power Sales by Month”

“KNEHC Sales and Receivables Analysis for 1995”

“Annual Domestic Sales as Booked by Each Distribution Centre”

“Year End Receivables as Recorded by each Distribution Centre”

Corporate Solutions developed a series of statements supporting the annual financial statements. The above documents provide data on production, revenue and receivables that can be used to complete the operating statements for unbundled operating units.

World Bank Documents

“April 1996 Staff Appraisal Report”

The Staff Appraisal report contains demand and expenditure forecasts that provide a basis for projections involving the operating entities.

“Financial Model contained in the Staff Appraisal Report”

The financial model has heat balance and operating data for the Bishkek and Osh TES. This data and the financial report formats provide a basis for analyzing the unbundled alternatives.

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 2

	Electricity Sales (GWh)											
	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Domestic Market												
Residential												
Urban	573.1	819.6	1 096.7	1 520.5	1 433.0	1 480.0	1 850.0	1 900.0	1 937.5	1 975.0	2 000.0	2 025.0
Rural	881.6	1 131.0	1 358.2	1 638.5	1 818.0	1 960.0	1 850.0	1 900.0	1 937.5	1 975.0	2 000.0	2 025.0
Agriculture	1 985.7	1 872.1	1 846.4	1 525.9	892.0	1 078.0	1 175.0	1 225.0	1 300.0	1 375.0	1 450.0	1 525.0
Industry	3 508.6	2 974.2	2 445.6	2 000.8	1 991.0	2 320.0	2 150.0	2 200.0	2 250.0	2 300.0	2 375.0	2 450.0
Transport			24.6	28.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Public Organizations	1 179.5	1 314.7	1 185.2	1 085.8	1 041.0	1 175.0	1 175.0	1 225.0	1 300.0	1 375.0	1 450.0	1 525.0
Other			19.1	30.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	8 128.5	8 111.6	7 985.7	7 830.3	7 175.0	8 013.0	8 200.0	8 450.0	8 725.0	9 000.0	9 275.0	9 550.0
Export Market												
Kazakhstan	4 292.8	2 175.9	1 023.0	2 505.0	1 368.0	2 100.0	1 500.0	1 500.0	1 500.0	1 500.0	1 500.0	1 500.0
Uzbekistan						500.0						
China												
10-kV			0.2	0.3	0.3	0.0	0.4	0.4	0.4	0.4	0.4	0.4
220-kV							10.0	20.0	30.0	35.0	40.0	40.0
Subtotal	4 292.8	2 175.9	1 023.2	2 505.3	1 368.3	2 600.0	1 510.4	1 520.4	1 530.4	1 535.4	1 540.4	1 540.4
Total Sales	12 421.3	10 287.5	9 008.9	10 335.6	8 543.3	10 613.0	9 710.4	9 970.4	10 255.4	10 535.4	10 815.4	11 090.4
Average Revenue per kWh Sold (tyrn)												
Domestic Market												
Residential												
Urban			0.96	3.81	5.60	8.50	15.00	15.00	15.00	18.50	16.50	16.50
Rural			0.82	3.45	5.40	9.35	15.00	15.00	15.00	18.50	16.50	16.50
Agriculture			2.23	8.34	9.50	15.30	17.00	17.00	17.00	18.70	18.70	18.70
Industry			3.70	9.24	10.70	16.16	17.00	17.00	17.00	18.70	18.70	18.70
Transport			3.05	9.66	10.70	16.15	21.25	21.25	21.25	23.38	23.38	23.38
Public Organizations			2.54	8.27	10.70	12.75	21.25	21.25	21.25	23.38	23.38	23.38
Other			3.22	9.18	10.70	12.75	21.25	21.25	21.25	23.38	23.38	23.38
Average Realized Tariff Rate			2.28	6.67	8.19	12.46	16.71	16.72	16.74	18.45	18.48	18.51
Export Market												
Kazakhstan (Energy)			11.98	28.74	25.00	38.00	30.50	48.80	48.80	48.80	48.80	48.80
Uzbekistan						40.00						
China												
10-kV				17.56	17.00	18.00	16.20	14.58	13.12	11.81	10.63	9.57
220-kV							36.60	36.60	36.60	36.60	36.60	36.60
Average			11.97	29.60	44.56	38.44	30.63	48.73	48.65	48.62	48.58	48.58
Overall Average			3.39	12.22	14.02	18.83	18.87	21.60	21.51	22.85	22.77	22.69
Domestic Tariff Increase (%)					23.4	52.4	34.4	0.4	0.4	10%	0%	0%
Revenues from Electricity Sales (Roubles/soms million)												
Domestic Market												
Residential												
Urban	21.6	67.5	10.6	57.9	80.2	125.8	277.5	285.0	290.6	325.9	330.0	334.1
Rural	8.1	42.0	8.4	56.5	98.2	183.3	277.5	285.0	290.6	325.9	330.0	334.1
Agriculture	25.1	256.7	41.2	127.3	84.7	164.9	199.8	208.3	221.0	257.1	271.2	285.2
Industry	140.4	2 942.6	90.5	185.0	213.0	374.9	365.5	374.0	382.5	430.1	444.1	459.2
Transport	1.2	8.3	0.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Public Organizations	48.9	504.7	30.3	89.8	111.4	149.8	249.7	260.3	276.3	321.4	338.9	356.5
Other	0.6	0.6	0.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	245.9	3 822.5	182.5	521.9	587.6	998.7	1 368.9	1 412.6	1 461.0	1 660.4	1 714.2	1 768.0
Export Market												
Kazakhstan	151.9	3 158.5	122.5	720.0	342.0	798.0	457.5	732.0	732.0	732.0	732.0	732.0
Tajikistan				0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkmenistan				0.9	1.2	1.3	1.5	1.5	1.6	1.6	1.6	1.7
Uzbekistan				20.5	200.5	200.0	0.0	0.0	0.0	0.0	0.0	0.0
China												
10-kV			0.0	0.0	47.8	0.0	0.1	0.1	0.1	0.0	0.0	0.0
220-kV					0.0	0.0	3.7	7.3	11.0	12.8	14.6	14.6
Subtotal	151.9	3 158.5	122.5	741.5	609.8	999.3	462.7	740.9	744.6	745.4	748.3	748.4
Total Sales	397.9	6 980.9	305.0	1 263.4	1 197.3	1 998.1	1 832.6	2 153.5	2 205.6	2 406.8	2 462.5	2 516.4

16-Dec-96

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Electricity Generation (GWh)

Annex 5.2
Appendix 3

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Hydroelectric												
Toktogol Cascade	9 816 0	9 032 0	8 812 0	11 449 0	10 865 0	11 090 0	9 850 0	10 300 0	10 300 0	10 300 0	10 300 0	10 300 0
Atbashi	123 0	139 0	150 0	155 0	148 0	145 0	120 0	120 0	120 0	120 0	120 0	120 0
Kemin	40 0	39 0	46 0	40 0	43 0	40 0	40 0	40 0	40 0	40 0	40 0	40 0
Alamedin	79 0	68 0	71 0	76 0	66 0	70 0	80 0	80 0	80 0	80 0	80 0	80 0
Kambar Ata 1												
Kambar Ata 2										0 0	0 0	0 0
Subtotal	<u>10 058 0</u>	<u>9 278 0</u>	<u>9 079 0</u>	<u>11 720 0</u>	<u>11 122 0</u>	<u>11 345 0</u>	<u>10 090 0</u>	<u>10 540 0</u>				
Thermal												
Bishkek	3 685 0	2 397 0	1 898 0	1 052 0	1 121 0	980 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0
Osh	229 0	205 0	194 0	88 0	48 0	45 0	80 0	80 0	80 0	80 0	80 0	80 0
Subtotal	3 914 0	2 602 0	2 090 0	1 140 0	1 169 0	1 025 0	1 280 0	1 280 0	1 280 0	1 280 0	1 280 0	1 280 0
Total	<u>13 972 0</u>	<u>11 880 0</u>	<u>11 169 0</u>	<u>12 860 0</u>	<u>12 291 0</u>	<u>12 370 0</u>	<u>11 370 0</u>	<u>11 820 0</u>				
Unaccounted for Elec.	11 10 %	13 40 %	18 34 %	19 63 %	30 49 %	14 20 %	14 60 %	15 65 %	13 24 %	10 87 %	8 50 %	6 17 %
16-Dec-96												
Thermal Generation												
Bishkek						980 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0
Osh						45 0	80 0	80 0	80 0	80 0	80 0	80 0

65

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Heat Balance (Thousand Gcal)

Annex 5.2
Appendix 7

A. Sales

	ACTUAL						FORECAST						
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Industry	2 097 0	2 100 0	1 647 0	904 2	498 2	284 0	298 0	400 0	420 0	450 0	450 0	450 0	450 0
Residential	1 894 0	1 843 0	1 876 0	2 216 1	1 502 2	1 504 0	1 826 0	2 000 0	1 950 0	1 880 0	1 840 0	1 840 0	1 840 0
Greenhouses	197 0	194 0	135 0	86 7	95 6	86 0	130 0	160 0	160 0	160 0	160 0	160 0	160 0
Public Organizations	1 210 0	1 286 0	1 139 0	759 8	801 3	769 0	814 0	740 0	750 0	750 0	750 0	750 0	750 0
Total	5 398 0	5 423 0	4 797 0	3 966 8	2 697 5	2 643 0	3 068 0	3 300 0	3 280 0	3 240 0	3 200 0	3 200 0	3 200 0

B. Production

Bishkek	4 360 3	4 462 0	4 045 0	3 407 0	2 415 3	2 596 0	3 102 0	3 550 0	3 420 0	3 280 0	3 190 0	3 140 0	3 140 0
Osh	1 031 0	1 030 0	796 0	690 0	451 4	240 0	420 0	450 0	450 0	450 0	450 0	450 0	450 0
Karakot	242 7	247 0	249 0	156 0	103 6	85 0	108 0	140 0	140 0	140 0	140 0	140 0	140 0
Kyzyl Kiya	55 0	44 0	42 0	36 0	25 7	17 0	18 0	25 0	25 0	25 0	25 0	25 0	25 0
Electric Boilers	22 8	23 0	21 0	22 0	17 2	18 0	22 0	24 0	24 0	24 0	24 0	24 0	24 0
Purchases	—	—	—	—	19 8	21 0	18 0	35 0	35 0	35 0	35 0	35 0	35 0
Total	5 711 8	5 806 0	5 153 0	4 311 0	3 033 0	2 977 0	3 686 0	4 224 0	4 094 0	3 954 0	3 864 0	3 814 0	3 814 0
Unaccounted for Heat	5 49%	6 60 4	6 91 4	7 96 4	11 06%	11 22 4	16 77%	21 88%	19 88 7	18 06%	17 18%	16 10%	16 10%

C. Revenues per Gcal
(Som/Gcal)

Industry	45 7	101 2	124 0	186 0	206 7	206 7	206 7	206 7	227 4	227 4	227 4	227 4
Residential	1 9	10 6	20 9	81 0	120 0	120 0	120 0	120 0	132 0	132 0	132 0	132 0
Greenhouses	28 2	79 1	124 0	186 0	206 7	206 7	206 7	206 7	227 4	227 4	227 4	227 4
Public Organizations	22 5	84 8	84 6	186 0	206 7	206 7	206 7	206 7	227 4	227 4	227 4	227 4
Average Realized Tariff Rate	16 4	46 3	53 9	123 5	154 2	155 2	155 2	156 4	172 5	172 5	172 5	172 5
Tariff Increase			0 4	186%	25 4	0 4	0 4	0 4	10%	0%	0%	0 4

D. Total Revenues
(Som million)

Industry	41 3	50 4	35 2	55 4	82 7	86 8	93 0	102 3	102 3	102 3	102 3
Residential	4 1	15 9	31 4	147 9	240 0	234 0	225 6	242 9	242 9	242 9	242 9
Greenhouses	2 5	7 6	10 7	24 2	33 1	33 1	33 1	36 4	36 4	36 4	36 4
Public Organizations	17 1	51 0	65 1	151 4	153 0	155 0	155 0	170 5	170 5	170 5	170 5
Total	65 0	124 9	142 4	378 9	508 7	508 9	506 7	552 1	552 1	552 1	552 1

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 5

Consumption of Coal Fuel Oil and Natural Gas

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Coal (thousand tons)												
Bishkek	896	957	857	713	889.5	710.0	1 100.5	1 080.7	1 059.4	1 045.7	1 038.0	1 038.0
Karakol	95	101	71	49	40.6	30.6	58.0	58.0	58.0	58.0	58.0	58.0
Kyzyl Kya	18	17	18	11	5.2	7.5	10.4	10.4	10.4	10.4	10.4	10.4
Total	1 008	1 075	944	773	735	748	1 169	1 149	1 128	1 114	1 108	1 108
Fuel Oil (thousand tons)												
Bishkek	190	37	31	23	1.1	0.3	101.8	99.8	97.8	96.5	95.8	95.6
Osh	111	88	78	54	38.5	32.2	49.1	49.1	49.1	49.1	49.1	49.1
Kara kul	—	—	—	—	—	—	—	—	—	—	—	—
Total	300	124	109	77	40	33	151	149	147	146	145	145
Natural Gas (million cm)												
Bishkek	978	688	480	178	291.5	223.8	160.8	157.9	154.8	152.8	151.7	151.7
Osh	56	52	44	24	2.8	4.0	22.7	22.7	22.7	22.7	22.7	22.7
Total	1 034	740	504	203	294	228	184	181	178	176	174	174

Cost of Fuels (Som per Unit)

Coal (per/t)												
Bishkek			49.48	179.89	254.6	309.3	451.4	451.4	451.4	451.4	451.4	451.4
Karakol			73.69	210.44	314.0	492.6	622.2	622.2	622.2	622.2	622.2	622.2
Kyzyl Kya			57.10	158.55	178.7							
Average												
Fuel Oil (per/t)												
Bishkek			425.29	830.62	1 201.0	1 069.1	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2
Osh			313.24	736.34	974.0	930.4	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2
Kara kul												
Average												
Natural Gas (per/cm)												
Bishkek			164.79	691.47	731.6	828.0	939.4	939.4	939.4	939.4	939.4	939.4
Osh			170.75	788.17	840.3	860.0	939.4	939.4	939.4	939.4	939.4	939.4
Average												

Cost of Fuels (\$ per Unit)

Coal (per/t)												
Bishkek	0.0	0.0	9.8	19.3	24.1	27.3	37.0	37.0	37.0	37.0	37.0	37.0
Karakol	0.0	0.0	14.6	22.5	29.7	43.4	51.0	51.0	51.0	51.0	51.0	51.0
Kyzyl Kya	0.0	0.0	11.3	17.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Oil (per/t)												
Bishkek	0.0	0.0	84.2	88.9	113.6	94.2	126.0	126.0	126.0	126.0	126.0	126.0
Osh	0.0	0.0	62.0	78.8	92.1	82.0	126.0	126.0	126.0	126.0	126.0	126.0
Kara kul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas (per/cm)												
Bishkek	0.0	0.0	32.8	74.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Osh	0.0	0.0	33.8	82.2	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Cost of Fuels
(million Soms)Annex 5.2
Appendix 6

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Coal												
Bishkek	92 8	3 737 1	42 406 8	128 3	175 5	219 6	496 8	487 8	478 2	472 0	468 6	468 6
Karakol	17 2	666 5	5 237 6	10 4	12 7	15 1	38 1	38 1	36 1	36 1	36 1	36 1
Kyzil Kyya	0 9	37 3	895 4	1 7	0 9	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Total	110 8	4 440 8	48 539 9	140 3	189 2	234 7	532 9	523 9	514 3	508 1	504 7	504 7
Fuel Oil												
Bishkek	74 7	645 5	13 145 8	19 4	1 3	0 3	156 2	153 3	150 3	148 4	147 3	147 3
Osh	73 2	2 030 2	24 454 3	38 7	37 5	30 0	75 5	75 5	75 5	75 5	75 5	75 5
Total	147 9	2 675 7	37 600 1	58 1	38 8	30 3	231 8	228 8	225 8	223 9	222 8	222 8
Natural Gas												
Bishkek	287 3	7 695 1	75 836 4	123 3	213 3	185 3	151 1	148 4	145 4	143 6	142 5	142 5
Osh	15 8	729 3	7 513 2	18 7	2 4	3 4	21 3	21 3	21 3	21 3	21 3	21 3
Total	303 1	8 424 4	83 349 6	142 0	215 6	188 7	172 4	169 7	166 8	164 9	163 8	163 8
Total	561 8	15 540 9	169 490	341 5	443 6	453 7	938 8	922 5	906 9	896 9	891 3	891 3

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	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Investment Program (Roubles/Soms)											
Generation												
Kambara 1					0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Kambara Ata 2	81 8	598 0	4 208 0	37 4	44 7	0 0	0 0	0 0	0 0	0 0	0 0	488 0
Sharmaldisay	69 0	416 6	2 939 0	35 0	33 0	38 3	43 9	0 0	0 0	0 0	0 0	0 0
Tashcourtyr	0 2	139 7	1 094 8	16 1	22 3	25 5	29 3	0 0	0 0	0 0	0 0	0 0
Bishkek TES						5 8	42 7	42 7	67 1	30 5	24 4	0 0
Urch Kugan						0 0	0 0	12 2	48 8	48 8	38 6	0 0
Al Bashi						0 0	0 0	6 1	24 4	24 4	18 3	0 0
Sub-Total	151 0	1 154 3	8 239 8	88 4	100 0	69 6	115 9	61 0	140 3	103 7	79 3	488 0
Transmission												
500-kV												
Frunzenskaya Kemin					0 0	0 0	12 2	97 6	244 0	244 0	73 2	0 0
Kambar Ata 2 Extension					0 0	0 0	0 0	0 0	0 0	146 4	158 8	0 0
Kambar Ata 2 Kemin					0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
220-kV												
Issikuls kaya Narin	4 3	145 0	7 326 8	58 2	3 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Issikuls kaya Karakol					2 0	278 4	231 8	0 0	0 0	0 0	0 0	0 0
Frunzenskaya-Ajar Cha					0 0	0 0	0 0	122 0	219 6	0 0	0 0	0 0
Chyyskaya Substation					1 0	11 6	0 0	0 0	0 0	0 0	0 0	0 0
110-kV to 35-kV	19 6	152 9	669 8	9 3	4 0	102 1	112 2	117 1	122 0	128 9	131 8	136 6
Sub-Total	23 9	297 9	7 896 6	67 5	10 0	392 1	356 2	336 7	585 6	517 3	363 6	136 6
Distribution	17 7	189 1	1934	13 5	24 0	102 1	112 2	117 1	122 0	128 9	131 8	136 6
District Heating												
Bishkek	18 3	272 8	952 2	1 2	4 0	58 0	122 0	183 0	61 0	61 5	15 9	16 3
Osh	2 7	88 2	79 0	0 3	1 8	12 8	13 4	183 0	61 0	61 5	15 9	16 3
Karakol	0 8	3 0	22 4		1 5	0 2	0 2	0 2	0 0	0 0	0 0	0 0
Kyzyl Kyya					4 5	4 0	5 3	5 4	5 6	5 7	5 8	5 9
Kara kul					0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Sub-Total	21 9	362 0	1 053 6	1 5	11 8	75 9	141 0	371 7	127 6	128 7	37 5	38 6
Other Investments												
Housing	15 6	115 8	523 6	16 5	5 6	2 3	3 7	4 9	6 1	7 3	8 5	8 8
Schools		0 5	0 8		0 0	1 2	1 3	1 5	1 6	1 7	1 8	2 0
Other	4 3	30 4	26 6	14 4	19 7	1 2	1 2	1 2	1 2	1 2	1 2	1 2
Sub-Total	19 8	146 7	551 0	30 9	25 3	4 6	6 2	7 6	8 9	10 2	11 6	12 9
Interest During Construction						10 4	29 0	50 0	62 7	0 0	0 0	0 0
Total Investment Program	234.3	2.150.0	19.774.6	201.8	171.1	654.7	760.6	944.1	1047.1	888.8	623.7	812.8

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5 2
Appendix 9Investment Program
(US\$ million)

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<u>Generation</u>												
Kambara Ala 1					0 0							
Kambara Ala 2	1 0	2 0	4 2	4 0	4 1	0 0	0 0	0 0	0 0	0 0	0 0	4 0 0
Shamaldisy	0 8	1 4	2 9	3 7	3 0	3 3	3 6					
Tashcumir	0 0	0 5	1 1	1 7	2 1	2 2	2 4					
Bishkek TES						0 5	3 5	3 5	5 5	2 5	2 0	
Urch Kugan								1 0	4 0	4 0	3 0	
At Bashu								0 5	2 0	2 0	1 5	
Sub-Total	1 8	4 0	8 2	9 5	9 2	6 0	9 5	5 0	1 1 5	8 5	6 5	4 0 0
<u>Transmission</u>												
500-kV												
Frunzenskaya-Kemn							1 0	8 0	2 0 0	2 0 0	6 0	
Kambar Ala 2 Extension										1 2 0	1 3 0	
Kambar Ala 2 Kemn												
220-kV												
Substalon Naryn	0 1	0 5	7 3	6 2	0 3							
Issikkulskaya-Karakol					0 2	2 4 0	1 9 0					
Frunzenskaya Alar Cha					0 0			1 0 0	1 8 0			
Chyskaya Substalon					0 1	1 0						
110-kV to 35-kV	0 2	0 5	0 7	1 0	0 4	8 8	9 2	9 6	1 0 0	1 0 4	1 0 8	1 1 2
Sub-Total	0 3	1 0	7 9	7 2	0 9	3 3 8	2 9 2	2 7 6	4 8 0	4 2 4	2 9 8	1 1 2
Distribution	0 2	0 6	1 9	1 4	2 2	8 8	9 2	9 6	1 0 0	1 0 4	1 0 8	1 1 2
<u>District Heating</u>												
Bishkek	0 2	0 9	0 9	0 1	0 4	5 0	1 0 0	1 5 0	5 0	5 0	1 3	1 3
Osh	0 0	0 3	0 1	0 0	0 2	1 1	1 1	1 5 0	5 0	5 0	1 3	1 3
Karakol	0 0	0 0	0 0	0 0	0 1	0 0	0 0	0 0				
Yasi Kul					0 4	0 4	0 4	0 4	0 5	0 5	0 5	0 5
Kara kul												
Sub-Total	0 3	1 2	1 0	0 2	1 1	6 5	1 1 6	3 0 5	1 0 5	1 0 5	3 1	3 2
<u>Other Investments</u>												
Housing	0 2	0 4	0 5	1 8	0 5	0 2	0 3	0 4	0 5	0 6	0 7	0 8
Schools	0 0	0 0	0 0	0 0	0 0	0 1	0 1	0 1	0 1	0 1	0 2	0 2
Other	0 0	0 1	0 0	1 5	1 8	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Sub-Total	0 2	0 5	0 5	3 3	2 3	0 4	0 5	0 6	0 7	0 8	1 0	1 1
<u>Interest During Construction</u>						0 9	2 4	4 1	5 1	0 0	0 0	0 0
<u>Total Investment Program</u>	2 7	7 4	1 9 8	2 1 6	1 5 8	5 8 4	6 2 3	7 7 4	8 5 8	7 2 7	5 1 1	6 6 6

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Schedule of Commissioning of Assets

	BUDGET	FORECAST							
	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Investment Program	---	171.1	654.7	780.6	944.1	1047.1	886.8	623.7	812.8
Additions to Work in Progress		106.0	353.8	317.2	219.6	463.6	390.4	231.8	488.0
Less Assets Commissioned during the year		0.0	0.0	12.6	755.6	0.0	695.4	0.0	82.1
End of Year Work in Progress	222.1	328.1	881.9	988.5	450.5	914.1	609.1	840.9	1246.8
Additions to Gross Assets End of Year		85.1	300.9	458.0	1480.1	583.5	1191.8	391.9	406.9
Cumulated Gross Assets	389.6	454.7	755.6	1211.6	2691.6	3275.1	4466.9	4858.8	5265.7

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Debt Schedule

Annex 5.2
Appendix 8
Page 1 of 2

	ACTUAL		FORECAST							
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
A. Foreign Loans (US\$)										
Russian (Fuel Purchases)										
Beginning Balance	00	18	1.2	00	00	00	00	00	00	00
Disbursements	18	00	00	00	00	00	00	00	00	00
Principal Repayments	00	06	1.2	00	00	00	00	00	00	00
End Balance	18	12	00	00	00	00	00	00	00	00
Interest at 8%	01	01	00	00	00	00	00	00	00	00
World Bank Rehabilitation Loan										
Beginning Balance			00	6.2	6.2	6.2	6.2	6.2	6.2	56
Disbursements			6.2							
Principal Repayments			00	00	00	00	00	00	06	06
End Balance			6.2	6.2	6.2	6.2	6.2	6.2	56	50
Interest at 5%			02	03	03	03	03	03	03	03
Swiss Loan										
Beginning Balance			00	00	50	50	50	50	50	50
Disbursements				50						
Principal Repayments			00	00	00	00	00	00	00	05
End Balance			00	50	50	50	50	50	50	45
Interest at 0%			00	00	00	00	00	00	00	00
EBRD (Transmission Kumtor Gold Mine)										
Beginning Balance			00	40	263	380	342	304	286	228
Disbursements			40	223	117					
Principal Repayments			00	00	00	38	38	38	38	38
End Balance			40	263	380	342	304	266	228	190
Interest at 10.6%			02	15	3.2	3.6	3.2	2.9	2.5	2.1
Japanese Loan										
Beginning Balance			00	20	40	40	40	40	36	32
Disbursements			20	20						
Principal Repayments			00	00	00	00	00	04	04	04
End Balance			20	40	40	40	40	36	32	28
Interest at 4%			00	01	02	02	02	02	01	01
Belgian Government										
Beginning Balance			00	03	03	03	03	03	00	00
Disbursements			03							
Principal Repayments			00	00	00			03		
End Balance			03	03	03	03	03	00	00	00
Interest at 0.6%			00	00	00	00	00	00	00	00
Proposed Asian Development Bank										
Beginning Balance			00	00	50	150	250	300	270	240
Disbursements				50	100	100	50			
Principal Repayments			00	00	00	00	00	30	30	30
End Balance			00	50	150	250	300	270	240	210
Interest at 8%			00	02	08	16	2.2	2.3	2.0	1.8
Proposed EBRD (Jerue Gold Mine)										
Beginning Balance			00	00	00	137	273	410	389	328
Disbursements				00	137	137	137			
Principal Repayments			00	00	00	00	00	41	41	41
End Balance			00	00	137	273	410	389	328	287
Interest at 10.7%			00	00	07	21	34	39	35	31
Proposed IDA Credit										
Beginning Balance			00	00	30	100	170	200	180	160
Disbursements				30	70	70	30			
Principal Repayments			00	00	00	00	00	20	20	20
End Balance			00	30	100	170	200	180	160	140
Interest at 8.4%			00	01	05	11	15	15	14	12
Proposed DANIDA Loan										
Beginning Balance			00	00	10	40	70	80	80	75
Disbursements				10	30	30	10			
Principal Repayments			00	00	00	00	00		05	05
End Balance			00	10	40	70	80	80	75	69
Interest at 8%			00	00	0.2	0.4	0.6	0.6	0.6	0.6
Proposed Nordic Fund										
Beginning Balance			00	00	10	30	50	60	60	55
Disbursements				10	20	20	10			
Principal Repayments			00	00	00	00	00		05	05
End Balance			00	10	30	50	60	60	55	49
Interest at 8%			00	00	0.2	0.3	0.4	0.5	0.5	0.4

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	ACTUAL		FORECAST							
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Proposed Swiss Loan										
Beginning Balance			00	00	10	25	40	55	50	44
Disbursements				10	15	15	15			
Principal Repayments			00	00	00	00	00	06	06	06
End Balance			00	10	25	40	55	50	44	39
Interest at	8.4		00	00	01	03	04	04	04	03
Future Borrowings										
Beginning Balance			00	00	00	00	156	484	993	1351
Disbursements				00	00	156	328	509	358	466
Principal Repayments			00	00	00	00	00			
End Balance			00	00	00	156	484	993	1351	1818
Interest at	8%		00	00	00	06	26	59	94	127
Total Foreign Debt in US\$										
Beginning Balance	00	18	12	125	528	1017	1507	2049	2416	2618
Disbursements	18	00	125	403	489	528	580	509	358	466
Principal Repayments	00	06	12	00	00	38	38	142	155	160
End Balance	18	12	125	528	1017	1507	2049	2416	2618	2924
Interest	01	01	04	24	62	105	148	185	206	225
Total Foreign Debt in Som										
Beginning Balance	00	144	127	1371	6439	12406	18384	24894	29473	31944
Disbursements	90	00	1349	4877	5967	6442	7074	8207	4368	5690
Principal Repayments	00	58	129	00	00	464	464	1728	1896	1957
End Balance	144	127	1371	6439	12406	18384	24994	29473	31944	35677
Interest	04	11	48	276	755	1276	1803	2252	2515	2751
Foreign Exchange Losses	53	39	24	391	(00)	(00)	00	00	(00)	00
B. Local Debt (soms)										
W/C Increase										
Beginning Balance	29	29	15	00	00	00	00	00	00	00
Disbursements	00	00	00	00	00	00	00	00	00	00
Principal Repayments	00	15	15	00	00	00	00	00	00	00
End Balance	29	15	00	00	00	00	00	00	00	00
Interest at	6.4		02	01	00	00	00	00	00	00
Government (IDC)										
Beginning Balance				00	104	394	894	1521	1369	1308
Disbursements				104	290	500	827	00	00	00
Principal Repayments				00	00	00	00	152	63	63
End Balance				104	394	894	1521	1369	1306	1244
Interest at	01			06	30	77	145	173	161	153
Total LTD										
Beginning Balance	29	173	142	1371	6543	12800	19278	26515	30842	33250
Disbursements	90	00	1349	4781	6257	6942	7701	8207	4368	5690
Principal Repayments	00	70	144	00	00	464	464	1880	1858	2019
End Balance	173	142	1371	6543	12800	19278	26515	30842	33250	36921
Interest	05	12	48	282	785	1353	1946	2425	2676	2904
Foreign Exchange Losses	53	39	24	391	(00)	(00)	00	00	(00)	00

16-Dec-96

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5 2
Appendix 1

Operating Statements
(Som million)

A. Electricity

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Revenues	317 6	1 225 6	1197 3	1998 1	1832 6	2153 5	2205 6	2406 8	2462 5
Operating Expenses										
Fuels	61 5	87 5	281 0	254 6	442 8	442 8	442 8	442 8	442 8	442 8
Imports	2 8	11 2								
O&M	35 9	323 9	384 9	442 6	482 4	502 2	515 3	528 7	542 4	558 5
Salaries and Wages	8 8	24 5	35 4	40 8	44 4	46 3	47 5	48 7	50 0	51 3
G&A	18 2	116 9	280 5	299 6	328 5	339 9	348 8	357 8	367 1	378 7
Other	8 7	61 3	95 8	110 2	120 1	125 0	128 2	131 6	135 0	138 5
Depreciation	3 8	5 1	9 2	233 7	241 4	253 1	280 9	305 8	336 3	348 3
Total	139 7	840 3	1048 8	1381 4	1657 6	1709 2	1773 4	1815 4	1873 6	1912 1
Operating Income	177 9	585 3	150 5	616 7	175 0	444 2	432 2	591 5	588 9	604 3
Note Total Sales (GWh)	9 009	10 336	8 543	10 613	9 710	9 970	10 255	10 535	10 815	11 090
Revenue/kWh (tyrn)	3 5	11 9	14 0	18 8	18 9	21 6	21 5	22 8	22 8	22 7
Cost/kWh (tyrn)	1 6	6 2	12 3	13 0	17 1	17 1	17 3	17 2	17 3	17 2

B District Heating

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Revenues	65 0	124 9	142 4	378 9	508 7	508 9	508 7	552 1	552 1
Operating Expenses										
Fuels	107 9	244 0	222 3	311 6	484 2	479 7	464 1	454 1	448 5	448 5
Purchases	1 5	2 5	7 1	8 1	8 8	9 2	9 4	9 7	9 9	10 2
O&M	13 4	37 1	45 8	52 6	57 4	59 7	61 3	62 9	64 5	66 2
Salaries and Wages	1 8	6 5	9 1	10 5	11 5	11 9	12 2	12 6	12 9	13 2
G&A	1 5	5 3	10 4	12 0	13 1	13 6	14 0	14 3	14 7	15 1
Other	1 9	15 1	19 7	22 7	24 7	25 7	26 4	27 1	27 8	28 5
Depreciation	1 0	1 2	2 3	31 3	40 5	51 9	64 6	75 3	82 9	92 7
Total	129 0	311 7	316 8	448 8	650 1	651 8	652 0	655 9	661 2	674 4
Operating Income	(64 0)	(186 8)	(174 4)	(69 9)	(141 4)	(142 9)	(145 3)	(103 8)	(109 1)	(122 3)
Note Total Sales (MGcal)		2 697 5	2 643 0	3 068 0	3 300 0	3 280 0	3 240 0	3 200 0	3 200 0	3 200 0
Revenue/Gcal (Som)		46 3	53 9	123 5	154 2	155 2	156 4	172 5	172 5	172 5
Cost/Gcal (Som)		115 6	119 9	146 3	197 0	198 7	201 2	205 0	206 6	210 7

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Domestic Market only = 1 0

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.1
Page 1 of 3Consolidated Income Statements
(som million)

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Revenues										
Electricity	317.6	1225.6	1197.3	1998.1	1832.6	2153.5	2205.6	2406.8	2462.5	2518.4
District Heating	65.0	124.9	142.4	378.9	508.7	508.9	506.7	552.1	552.1	552.1
Other	12.8	79.2	102.0	117.2	127.8	133.0	136.5	140.0	143.7	147.4
Subtotal	395.4	1429.7	1441.7	2494.2	2469.1	2795.4	2848.8	3099.0	3158.3	3215.9
Expenses										
Fuel	169.4	341.5	483.3	566.2	936.9	922.5	906.9	896.8	891.3	891.3
Purchases	4.3	13.7	7.1	8.1	8.8	9.2	9.4	9.7	9.9	10.2
O&M	49.3	381.0	430.6	495.2	539.8	581.9	576.5	591.5	606.9	622.7
Salaries and Wages	10.6	31.0	44.6	51.3	55.9	58.2	59.7	61.3	62.8	64.5
G&A and Other	30.3	188.6	386.4	444.4	484.4	504.3	517.4	530.8	544.8	558.8
Non Allocated	12.3	41.0	52.8	60.7	68.1	68.9	70.6	72.5	74.4	76.3
Depreciation	4.8	6.3	11.5	265.0	281.9	305.0	355.5	381.2	419.2	439.0
Subtotal	281.0	983.0	1416.3	1890.9	2373.9	2429.9	2498.1	2543.8	2609.1	2662.8
Operating Income	114.4	436.7	25.3	603.3	95.2	365.5	352.7	555.2	549.2	553.2
Interest (net)		1.2	4.8	17.9	49.4	85.3	132.1	242.5	267.6	290.4
Foreign Exchange Losses			2.4	39.1	(0.0)	(0.0)	0.0	0.0	(0.0)	0.0
Income Tax	3.5	56.4	11.5	183.9	19.8	84.1	86.2	93.8	84.5	78.8
Net Income	110.9	379.0	6.6	382.4	26.0	196.2	154.4	218.9	187.1	184.0
Operating Ratio	71%	89%	98%	76%	96%	87%	88%	82%	83%	83%

18-Dec-96

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.1
Page 3 of 3Balance Sheets
(Soms million)

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Assets										
Current Assets										
Cash	5.3	6.8	0.0	(0.0)	258.0	1 456.4	726.1	1 459.7	872.0	1 042.3
Accounts Receivable	323.2	869.5	513.5	615.0	405.9	459.5	466.3	509.4	519.2	528.6
Stocks	29.9	217.2	279.6	321.5	350.5	364.8	374.3	384.1	394.0	404.3
Other	48.5	258.1	332.2	382.0	416.4	433.5	444.7	456.3	468.2	480.3
Total	406.9	1 351.7	1 125.3	1 318.6	1 430.8	2 714.2	2 013.5	2 809.5	2 253.3	2 455.6
Fixed Assets	256.5	389.6	454.7	10 065.9	10 366.8	10 822.8	12 302.9	12 886.4	14 078.1	14 470.1
Less Accum Deprec.	70.4	87.8	99.3	4 394.7	4 676.8	4 881.6	5 337.1	5 718.2	6 137.4	6 576.4
Net Fixed Assets	186.1	301.8	355.4	5 671.2	5 690.2	5 941.2	6 965.8	7 168.1	7 940.7	7 893.6
Work in Progress	127.2	222.1	328.1	681.9	986.5	450.5	914.1	609.1	840.9	1 248.8
Other Assets	16.9	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8	26.8
Total Assets	737.1	1 902.2	1 835.4	7 698.4	8 134.2	9 032.7	9 920.1	10 613.5	11 061.7	11 622.8
Liabilities and Equity										
Current Liabilities										
S-T Borrowings	8.3	1.5	155.1	8.5	0.0	0.0	0.0	0.0	0.0	0.0
Accounts Payable	400.2	867.1	513.5	615.0	405.9	459.5	466.3	509.4	519.2	528.6
Other	3.2	12.8	16.5	19.0	20.7	21.6	22.1	22.7	23.3	23.9
Current Portion of LTD	0.0	14.4	0.0	0.0	46.4	46.4	188.0	195.8	201.9	201.9
Subtotal	411.7	895.8	685.1	642.5	473.0	527.4	678.4	727.9	744.4	754.5
Long Term Debt	17.3	14.2	137.1	654.3	1 280.0	1 927.8	2 651.5	3 084.2	3 325.0	3 692.1
Less Current Portion	0.0	14.4	0.0	0.0	46.4	46.4	188.0	195.8	201.9	201.9
	17.3	(0.2)	137.1	654.3	1 233.6	1 881.4	2 463.5	2 888.4	3 123.1	3 490.1
Equity	308.1	1 006.6	1 013.2	1 395.6	1 421.6	1 617.8	1 772.2	1 991.1	2 168.2	2 372.2
Additional Equity due to Revaluation				5 006.0	5 006.0	5 006.0	5 006.0	5 006.0	5 006.0	5 006.0
Total Liab & Equity	737.1	1 902.2	1 835.4	7 698.4	8 134.2	9 032.7	9 920.1	10 613.5	11 061.7	11 622.8
Current Ratio	1.0	1.5	1.6	2.1	3.0	5.1	3.0	3.9	3.0	3.3
Accounts Receivable	298	222	130	90	60	60	60	60	60	60
Debt:Debt & Equity	5.4	1/	12.4	9%	17.4	23%	28%	31%	32%	33%

16-Dec-96

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.1

Sources and Applications of Funds
(som million)

Page 2 of 3

FORECAST

	1995	1996	1997	1998	1999	2000	2001	2002
Operating Income	25 3	603 3	95 2	365 5	352 7	555 2	549 2	553 2
Add Depreciation	11 5	285 0	281 9	305 0	355 5	381 2	419 2	438 0
Subtotal	36 8	888 3	377 1	670 5	708 2	936 4	968 4	992 2
Less Increase in WC	131 8	89 3	61 6	30 6	20 2	20 7	21 3	21 8
Interest	4 8	17 9	49 4	85 3	132 1	242 5	267 8	290 4
Principal	14 4	0 0	0 0	46 4	46 4	188 0	195 8	201 9
Income Tax	11 5	163 9	19 8	84 1	66 2	93 8	84 5	78 8
Subtotal	162 6	271 0	130 8	246 3	264 9	545 0	569 1	592 9
Cash Available for Invest.	(125 7)	597 3	246 3	424 2	443 4	391 3	399 2	399 2
Investment Program	171 1	654 7	760 6	944 1	1 047 1	886 8	623 7	812 6
Financial Gap	296 8	57 4	514 3	519 9	603 7	495 5	224 5	413 6
Financed by								
Long Term Borrowings	134 9	478 1	625 7	694 2	770 1	620 7	436 6	569 0
Capital Increase								
Cash Increase/Decrease	(161 9)	420 7	111 4	174 3	166 4	125 3	212 1	155 4
Cash Beginning of Year	6 8	(155 1)	265 5	378 9	551 2	717 5	842 8	1 054 9
Cash End of Year	(155 1)	265 5	376 9	551 2	717 5	842 8	1 054 9	1 210 3
Debt Service Coverage Ratio	1 9	48 6	7 6	5 1	4 0	2 2	2 1	2 0
Self Financing Ratio	30%	113 4	31%	46%	46%	46%	52%	53%
16-Dec-96								
Electricity Tariff Increase	0 4	104 7	0%	0%	0%	10%	0 4	0%
Heat Tariff Increase	0%	188 4	0%	0%	0%	10%	0 4	0%
Kambarata Factor (yes 1)		0 0						

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 2

Electricity Sales
(GWh)

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
ic Market												
total	573.1	819.6	1096.7	1520.5	1433.0	1480.0	1850.0	1900.0	1937.5	1975.0	2000.0	2025.0
ure	881.6	1131.0	1358.2	1638.5	1818.0	1960.0	1850.0	1900.0	1937.5	1975.0	2000.0	2025.0
ure	1985.7	1872.1	1846.4	1525.9	892.0	1078.0	1175.0	1225.0	1300.0	1375.0	1450.0	1525.0
ort	3508.6	2974.2	2445.6	2000.8	1991.0	2320.0	2150.0	2200.0	2250.0	2300.0	2375.0	2450.0
Organizations	1179.5	1314.7	1195.2	1085.8	1041.0	1175.0	1175.0	1225.0	1300.0	1375.0	1450.0	1525.0
al	8128.5	8111.6	7985.7	7830.3	7175.0	8013.0	8200.0	8450.0	8725.0	9000.0	9275.0	9550.0
Market												
hstan	4292.8	2175.9	1023.0	2505.0	1368.0	2100.0	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0
estan						500.0						
V			0.2	0.3	0.3	0.0	0.4	0.4	0.4	0.4	0.4	0.4
kV							10.0	20.0	30.0	35.0	40.0	40.0
total	4292.8	2175.9	1023.2	2505.3	1368.3	2600.0	1510.4	1520.4	1530.4	1535.4	1540.4	1540.4
Sales	12421.3	10287.5	9008.9	10335.5	8543.3	10813.0	9710.4	9870.4	10255.4	10535.4	10815.4	11050.4

Average Revenue per kWh Sold
(byn)

ic Market												
total			0.96	3.81	5.60	8.50	15.00	15.00	15.00	16.50	18.50	18.50
ure			0.62	3.45	5.40	9.35	15.00	15.00	15.00	16.50	18.50	18.50
ure			2.23	8.34	9.50	15.30	17.00	17.00	17.00	18.70	18.70	18.70
ort			3.70	9.24	10.70	16.18	17.00	17.00	17.00	18.70	18.70	18.70
Organizations			3.05	9.66	10.70	16.15	21.25	21.25	21.25	23.38	23.38	23.38
al			2.54	8.27	10.70	12.75	21.25	21.25	21.25	23.38	23.38	23.38
ge			3.22	9.18	10.70	12.75	21.25	21.25	21.25	23.38	23.38	23.38
ge			2.28	6.67	8.19	12.48	16.71	16.72	16.74	18.45	18.48	18.51
Market												
hstan (Energy)			11.98	28.74	25.00	38.00	30.50	48.80	48.80	48.80	48.80	48.80
estan						40.00						
V				17.56	17.00	18.00	16.20	14.58	13.12	11.81	10.63	9.57
kV						18.00	38.60	36.60	36.60	36.60	36.60	38.60
ge			11.97	29.60	44.56	38.44	30.63	48.73	48.65	48.62	48.58	48.58
age Realized Tariff Rate			3.39	12.22	14.02	18.83	18.87	21.60	21.51	22.85	22.77	22.69
stic Tariff Increase (%)					0.4	104.4	0.4	0.4	0.7	10%	0%	0%

Revenues from Electricity Sales
(Roubles/soms million)

ic Market												
total	216	675	106	579	802	1258	2775	2850	2906	3259	3300	3341
ure	81	420	84	565	982	1833	2775	2850	2906	3259	3300	3341
ure	251	2567	412	1273	847	1649	1998	2083	2210	2571	2712	2852
ort	1404	29426	905	1850	2130	3749	3655	3740	3825	4301	4441	4582
Organizations	12	83	07	27	00	00	00	00	00	00	00	00
al	489	5047	303	898	1114	1498	2497	2603	2763	3214	3389	3565
Subtotal	0.6	0.6	0.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	245.9	3822.5	182.5	521.9	587.6	998.7	1369.9	1412.6	1461.0	1660.4	1714.2	1768.0
Market												
hstan	151.9	3158.5	122.5	720.0	342.0	798.0	457.5	732.0	732.0	732.0	732.0	732.0
hstan				0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
enistan				0.9	1.2	1.3	1.5	1.5	1.6	1.6	1.6	1.7
hstan				20.5	200.5	200.0	0.0	0.0	0.0	0.0	0.0	0.0
V			0.0	0.0	47.9	0.0	0.1	0.1	0.1	0.0	0.0	0.0
kV					0.0	0.0	3.7	7.3	11.0	12.8	14.6	14.6
Subtotal	151.9	3158.5	122.5	741.5	609.8	999.3	462.7	740.9	744.6	746.4	748.3	748.4
Sales	397.9	6980.9	305.0	1263.4	1197.3	1998.1	1832.6	2153.5	2205.6	2406.8	2482.5	2516.4

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Electricity Generation (GWh)

Annex 5.2
Appendix 3

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Hydroelectric												
Toktogol Cascade	9 816 0	9 032 0	8 812 0	11 449 0	10 865 0	11 080 0	9 850 0	10 300 0	10 300 0	10 300 0	10 300 0	10 300 0
Atbashi	123 0	139 0	150 0	155 0	148 0	145 0	120 0	120 0	120 0	120 0	120 0	120 0
Kemin	40 0	39 0	46 0	40 0	43 0	40 0	40 0	40 0	40 0	40 0	40 0	40 0
Alamedin	79 0	68 0	71 0	76 0	66 0	70 0	80 0	80 0	80 0	80 0	80 0	80 0
Kambar Ata 1										350 0	650 0	1 100 0
Kambar Ata 2												
Subtotal	<u>10,058.0</u>	<u>9,278.0</u>	<u>9,079.0</u>	<u>11,720.0</u>	<u>11,122.0</u>	<u>11,345.0</u>	<u>10,090.0</u>	<u>10,540.0</u>	<u>10,540.0</u>	<u>10,690.0</u>	<u>11,190.0</u>	<u>11,640.0</u>
Thermal												
Bishkek	3 685 0	2 397 0	1 896 0	1 052 0	1 121 0	980 0	1 200 0	1,200 0	1,200 0	1,200 0	1,200 0	1,200 0
Osh	<u>229.0</u>	<u>205.0</u>	<u>194.0</u>	<u>88.0</u>	<u>48.0</u>	<u>45.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>
Subtotal	3 914 0	2 602 0	2 090 0	1 140 0	1 169 0	1 025 0	1 280 0	1 280 0	1 280 0	1,280 0	1,280 0	1,280 0
Total	<u>13,972.0</u>	<u>11,880.0</u>	<u>11,169.0</u>	<u>12,860.0</u>	<u>12,291.0</u>	<u>12,370.0</u>	<u>11,370.0</u>	<u>11,820.0</u>	<u>11,820.0</u>	<u>12,170.0</u>	<u>12,470.0</u>	<u>12,920.0</u>
Unaccounted for Elec	11 10.4	13 40%	19 34.4	19 63.4	30 49%	14 20.4	14 60.4	15 65.4	13 24%	13 43.4	13 27%	14 16%
16-Dec-96												
Thermal Generation												
Bishkek						980 0	1 200 0	1 200 0	1 200 0	1 200 0	1,200 0	1,200 0
Osh						<u>45.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>	<u>80.0</u>

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Heat Balance (Thousand GCal)

Annex 5.2
Appendix 7

A. Sales

	ACTUAL						FORECAST						
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	2 097 0	2 100 0	1 647 0	804 2	498 2	284 0	298 0	400 0	420 0	450 0	450 0	450 0	450 0
Households	1 894 0	1 843 0	1 876 0	2 216 1	1 502 2	1 504 0	1 826 0	2 000 0	1 950 0	1 880 0	1 840 0	1 840 0	1 840 0
Organizations	197 0	194 0	135 0	86 7	95 8	88 0	130 0	160 0	160 0	160 0	160 0	160 0	160 0
Organizations	1 210 0	1 285 0	1 139 0	759 8	601 3	789 0	814 0	740 0	750 0	750 0	750 0	750 0	750 0
Organizations	5 398 0	5 423 0	4 797 0	3 966 8	2 697 5	2 643 0	3 068 0	3 300 0	3 280 0	3 240 0	3 200 0	3 200 0	3 200 0

B Production

Total	4 360 3	4 462 0	4 045 0	3 407 0	2 415 3	2 596 0	3 102 0	3 550 0	3 420 0	3 280 0	3 190 0	3 140 0	3 140 0
Households	1 031 0	1 030 0	796 0	690 0	451 4	240 0	420 0	450 0	450 0	450 0	450 0	450 0	450 0
Organizations	242 7	247 0	249 0	158 0	103 6	85 0	108 0	140 0	140 0	140 0	140 0	140 0	140 0
Organizations	55 0	44 0	42 0	36 0	25 7	17 0	18 0	25 0	25 0	25 0	25 0	25 0	25 0
Boilers	22 8	23 0	21 0	22 0	17 2	18 0	22 0	24 0	24 0	24 0	24 0	24 0	24 0
Boilers	19 8	19 8	21 0	16 0	19 8	21 0	16 0	35 0	35 0	35 0	35 0	35 0	35 0
Total	5 711 8	5 806 0	5 153 0	4 311 0	3 033 0	2 977 0	3 688 0	4 224 0	4 094 0	3 954 0	3 864 0	3 814 0	3 814 0
Percentage for Heat	5 49 4	6 60 7	6 91 7	7 98 7	11 06 6	11 22 4	16 77 6	21 88 7	19 88 7	18 06 6	17 16 4	16 10 6	16 10 6

C Revenue per Gcal
(Som/Gcal)

Total				45 7	101 2	124 0	188 0	258 4	276 5	295 8	303 2	303 2	303 2
Households				1 9	10 6	20 9	81 0	150 0	160 5	171 7	176 0	176 0	176 0
Organizations				29 2	79 1	124 0	188 0	258 4	276 5	295 8	303 2	303 2	303 2
Organizations				22 5	84 8	84 6	188 0	258 4	276 5	295 8	303 2	303 2	303 2
Weighted Realized Tariff Rate				16 4	46 3	53 9	123 5	192 7	207 5	223 8	230 1	230 1	230 1
Percentage Increase						0%	258 4	56%	7%	7%	3 4	0 4	0%

D Total Revenue
(Som million)

Total				41 3	50 4	35 2	55 4	103 4	116 1	133 1	136 4	136 4	136 4
Households				4 1	15 9	31 4	147 9	300 0	313 0	322 9	323 9	323 9	323 9
Organizations				2 5	7 6	10 7	24 2	41 3	44 2	47 3	48 5	48 5	48 5
Organizations				17 1	51 0	65 1	151 4	191 2	207 3	221 9	227 4	227 4	227 4
Total				65 0	124 9	142 4	378 9	635 9	680 7	725 2	736 3	736 3	736 3

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 5

Consumption of Coal Fuel Oil and Natural Gas

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Coal (thousand tons)												
Bishkek	898	957	857	713	689.5	710.0	1 100.5	1 080.7	1 059.4	1 045.7	1 038.0	1 038.0
Karakol	95	101	71	49	40.6	30.6	58.0	58.0	58.0	58.0	58.0	58.0
Kyzyl Kya	18	17	16	11	5.2	7.5	10.4	10.4	10.4	10.4	10.4	10.4
Total	1 008	1 075	944	773	735	748	1 169	1 149	1 128	1 114	1 108	1 108
Fuel Oil (thousand tons)												
Bishkek	190	37	31	23	11	0.3	101.8	99.8	97.8	96.5	95.8	95.8
Osh	111	88	78	54	38.5	32.2	49.1	49.1	49.1	49.1	49.1	49.1
Kara kul												
Total	300	124	109	77	40	33	151	149	147	146	145	145
Natural Gas (million cm)												
Bishkek	978	688	460	178	291.5	223.8	160.8	157.9	154.8	152.8	151.7	151.7
Osh	58	52	44	24	2.8	4.0	22.7	22.7	22.7	22.7	22.7	22.7
Total	1 034	740	504	203	294	228	184	181	178	176	174	174

Cost of Fuels (Som per Unit)

Coal (per/t)												
Bishkek			49.48	179.89	254.8	309.3	451.4	451.4	451.4	451.4	451.4	451.4
Karakol			73.69	210.44	314.0	492.6	622.2	622.2	622.2	622.2	622.2	622.2
Kyzyl Kya			57.10	158.55	176.7							
Average												
Fuel Oil (per/t)												
Bishkek			425.29	830.62	1 201.0	1 069.1	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2
Osh			313.24	736.34	974.0	930.4	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2
Kara kul												
Average												
Natural Gas (per/cm)												
Bishkek			164.79	691.47	731.6	828.0	939.4	939.4	939.4	939.4	939.4	939.4
Osh			170.75	768.17	840.3	860.0	939.4	939.4	939.4	939.4	939.4	939.4
Average												

Cost of Fuels (\$ per Unit)

Coal (per/t)												
Bishkek	0.0	0.0	9.8	19.3	24.1	27.3	37.0	37.0	37.0	37.0	37.0	37.0
Karakol	0.0	0.0	14.6	22.5	29.7	43.4	51.0	51.0	51.0	51.0	51.0	51.0
Kyzyl Kya	0.0	0.0	11.3	17.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fuel Oil (per/t)												
Bishkek	0.0	0.0	84.2	88.9	113.6	94.2	126.0	126.0	126.0	126.0	126.0	126.0
Osh	0.0	0.0	62.0	78.8	92.1	82.0	126.0	126.0	126.0	126.0	126.0	126.0
Kara kul	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Natural Gas (per/cm)												
Bishkek	0.0	0.0	32.6	74.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Osh	0.0	0.0	33.8	82.2	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 6

Cost of Fuels
(million Soms)

	ACTUAL				FORECAST							
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
yk	92.8	3 737.1	42 406.9	128.3	175.5	219.6	496.8	487.8	478.2	472.0	468.6	468.6
ol	17.2	666.5	5 237.6	10.4	12.7	15.1	38.1	36.1	36.1	36.1	36.1	36.1
nya	0.9	37.3	895.4	1.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	110.8	4 440.8	48 539.9	140.3	189.2	234.7	532.9	523.9	514.3	508.1	504.7	504.7
l	74.7	645.5	13 145.8	19.4	1.3	0.3	156.2	153.3	150.3	148.4	147.3	147.3
ik	73.2	2 030.2	24 454.3	39.7	37.5	30.0	75.5	75.5	75.5	75.5	75.5	75.5
	147.9	2 675.7	37 600.1	59.1	38.8	30.3	231.6	228.8	225.8	223.9	222.8	222.8
Gas	287.3	7 695.1	75 838.4	123.3	213.3	185.3	151.1	148.4	145.4	143.6	142.5	142.5
ik	15.8	729.3	7 513.2	18.7	2.4	3.4	21.3	21.3	21.3	21.3	21.3	21.3
	303.1	8 424.4	83 349.8	142.0	215.6	188.7	172.4	169.7	166.8	164.9	163.8	163.8
	561.8	15 540.9	169 490	341.5	443.6	453.7	936.9	922.5	906.9	896.9	891.3	891.3

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	ACTUAL				FORECAST							
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Generation												
Kambarata 1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kambarata Ala 2	61.8	598.0	4 206.0	37.4	44.7	0.0	0.0	0.0	0.0	0.0	0.0	488.0
Shamaldisyay	69.0	416.6	2 939.0	35.0	33.0	38.3	43.9	0.0	0.0	0.0	0.0	0.0
Tashcumir	0.2	139.7	1 094.8	16.1	22.3	25.5	29.3	0.0	0.0	0.0	0.0	0.0
Bishkek TES						5.8	42.7	42.7	67.1	30.5	24.4	0.0
Urch Kugan						0.0	0.0	12.2	48.8	48.8	38.6	0.0
At Bashi						0.0	0.0	6.1	24.4	24.4	18.3	0.0
Sub-Total	151.0	1 154.3	8 239.8	88.4	100.0	69.6	115.9	61.0	140.3	103.7	79.3	488.0
Transmission												
500-kV												
Frunzenskaya Kernin					0.0	0.0	12.2	97.6	244.0	244.0	73.2	0.0
Kambar Ala 2 Extension					0.0	0.0	0.0	0.0	0.0	148.4	158.6	0.0
Kambar Ala 2 Kamun					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220-kV												
Issikulskeya Narin	4.3	145.0	7 326.8	58.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Issikulskeya Karakol					2.0	278.4	231.8	0.0	0.0	0.0	0.0	0.0
Frunzenskaya Alar Cha					0.0	0.0	0.0	122.0	219.6	0.0	0.0	0.0
Chyiskaya Substation					1.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0
110-kV to 35-kV	19.6	152.9	669.8	9.3	4.0	102.1	112.2	117.1	122.0	128.9	131.8	136.8
Sub-Total	23.9	297.9	7 996.6	67.5	10.0	392.1	358.2	336.7	585.6	517.3	363.8	136.8
Distribution	17.7	189.1	193.4	13.5	24.0	102.1	112.2	117.1	122.0	128.9	131.8	136.8
District Heating												
Bishkek	18.3	272.6	952.2	1.2	4.0	58.0	122.0	183.0	61.0	61.5	15.9	16.3
Osh	2.7	86.2	79.0	0.3	1.6	12.8	13.4	183.0	61.0	61.5	15.9	16.3
Karakol	0.8	3.0	22.4		1.5	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Kyzyl Kiya					4.5	4.9	5.3	5.4	5.6	5.7	5.8	5.9
Kara kul					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	21.9	362.0	1 053.6	1.5	11.6	75.9	141.0	371.7	127.6	128.7	37.5	38.6
Other Investments												
Housing	15.6	115.8	523.6	16.5	5.6	2.3	3.7	4.8	6.1	7.3	8.5	9.8
Schools		0.5	0.8		0.0	1.2	1.3	1.5	1.6	1.7	1.8	2.0
Other	4.3	30.4	26.6	14.4	19.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Sub-Total	19.8	146.7	551.0	30.9	25.3	4.6	6.2	7.6	8.9	10.2	11.6	12.9
Interest During Construction						10.4	29.0	50.0	62.7	0.0	0.0	0.0
Total Investment Program	234.3	2 150.0	19 774.6	201.8	171.1	654.7	760.6	944.1	1047.1	886.8	623.7	812.8

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 9Investment Program
(US\$ million)

	ACTUAL				FORECAST							
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<u>Renewables</u>												
Area Ala 1					00							
Area Ala 2	10	20	42	40	41	00	00	00	00	00	00	400
Additional	08	14	29	37	30	33	36					
Renewables	00	05	11	17	21	22	24					
TES						05	35	35	55	25	20	
Investment								10	40	40	30	
Renewables								05	20	20	15	
Total	18	40	82	95	92	60	85	50	115	85	65	400
<u>Transmission</u>												
Area Ala 2 Extension							10	80	200	200	60	
Area Ala 2 Extension										120	130	
Station Naryn	01	05	73	82	03							
Station Karakol					02	240	190					
Station Alar Cha					00			100	180			
Station Substation					01	10						
35-kV	02	05	07	10	04	88	92	96	100	104	108	112
Total	03	10	79	72	09	338	292	276	480	424	298	112
<u>Renewables</u>	02	06	19	14	22	88	92	96	100	104	108	112
<u>Heating</u>												
Area Ala 1	02	09	09	01	04	50	100	150	50	50	13	13
Area Ala 2	00	03	01	00	02	11	11	150	50	50	13	13
Area Ala 3	00	00	00	00	01	00	00	00				
Area Ala 4					04	04	04	04	05	05	05	05
Total	03	12	10	02	11	65	116	305	105	105	31	32
<u>Investments</u>												
Area Ala 1	02	04	05	18	05	02	03	04	05	06	07	08
Area Ala 2	00	00	00	00	00	01	01	01	01	01	02	02
Area Ala 3	00	01	00	15	18	01	01	01	01	01	01	01
Total	02	05	05	33	23	04	05	06	07	08	10	11
<u>Dunng Construction</u>						09	24	41	51	00	00	00
Investment Program	2.7	7.4	19.6	21.6	15.8	56.4	62.3	77.4	85.8	72.7	51.1	66.6

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	BUDGET	FORECAST							
	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total Investment Program		171 1	854 7	760 6	944 1	1 047 1	888 8	623 7	812 8
Additions to Work in Progress		108 0	353 8	317 2	219 6	483 6	390 4	231 8	488 0
Less: Assets Commissioned during the year		0 0	0 0	12 8	755 6	0 0	695 4	0 0	82 1
End of Year Work in Progress	222 1	328 1	881 9	988 5	450 5	914 1	609 1	840 9	1 248 8
Additions to Gross Assets End of Year		85 1	300 9	456 0	1 480 1	583 5	1 191 8	391 9	408 9
Cumulated Gross Assets	389 6	454 7	755 6	1 211 6	2 691 6	3 275 1	4 466 9	4 858 8	5,285 7

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 8
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Debt Schedule

		ACTUAL		FORECAST							
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Long Term Loans (US\$)											
Oil (Fuel Purchases)											
Opening Balance		0.0	1.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Disbursements		1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Principal Repayments		0.0	0.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Balance		1.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest at	8%	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bank Rehabilitation Loan											
Opening Balance				0.0	6.2	6.2	6.2	6.2	6.2	6.2	5.6
Disbursements				6.2							
Principal Repayments				0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
Closing Balance				6.2	6.2	6.2	6.2	6.2	6.2	5.6	5.0
Interest at	5%			0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Loan											
Opening Balance				0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0
Disbursements					5.0						
Principal Repayments				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Closing Balance				0.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5
Interest at	0%			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(Transmission - Kumtor Gold Mine)											
Opening Balance				0.0	4.0	26.3	38.0	34.2	30.4	26.6	22.8
Disbursements				4.0	22.3	11.7					
Principal Repayments				0.0	0.0	0.0	3.8	3.8	3.8	3.8	3.8
Closing Balance				4.0	26.3	38.0	34.2	30.4	26.6	22.8	19.0
Interest at	10%			0.2	1.5	3.2	3.6	3.2	2.9	2.5	2.1
Lease Loan											
Opening Balance				0.0	2.0	4.0	4.0	4.0	4.0	3.6	3.2
Disbursements				2.0	2.0						
Principal Repayments				0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
Closing Balance				2.0	4.0	4.0	4.0	4.0	3.6	3.2	2.8
Interest at	4%			0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1
1 Government											
Opening Balance				0.0	0.3	0.3	0.3	0.3	0.3	0.0	0.0
Disbursements				0.3							
Principal Repayments				0.0	0.0	0.0			0.3		
Closing Balance				0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0
Interest at	0%			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
World Bank Asian Development Bank											
Opening Balance				0.0	0.0	5.0	15.0	25.0	30.0	27.0	24.0
Disbursements					5.0	10.0	10.0	5.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0
Closing Balance				0.0	5.0	15.0	25.0	30.0	27.0	24.0	21.0
Interest at	8%			0.0	0.2	0.8	1.6	2.2	2.3	2.0	1.8
World Bank EBRD (Jerve Gold Mine)											
Opening Balance				0.0	0.0	0.0	13.7	27.3	41.0	36.9	32.8
Disbursements					0.0	13.7	13.7	13.7			
Principal Repayments				0.0	0.0	0.0	0.0	0.0	4.1	4.1	4.1
Closing Balance				0.0	0.0	13.7	27.3	41.0	36.9	32.8	28.7
Interest at	10%			0.0	0.0	0.7	2.1	3.4	3.9	3.5	3.1
World Bank IDA Credit											
Opening Balance				0.0	0.0	3.0	10.0	17.0	20.0	18.0	16.0
Disbursements					3.0	7.0	7.0	3.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0
Closing Balance				0.0	3.0	10.0	17.0	20.0	18.0	16.0	14.0
Interest at	8%			0.0	0.1	0.5	1.1	1.5	1.5	1.4	1.2
World Bank DANIDA Loan											
Opening Balance				0.0	0.0	1.0	4.0	7.0	8.0	8.0	7.5
Disbursements					1.0	3.0	3.0	1.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0		0.5	0.5
Closing Balance				0.0	1.0	4.0	7.0	8.0	8.0	7.5	6.9
Interest at	8%			0.0	0.0	0.2	0.4	0.6	0.6	0.6	0.6
World Bank Nordic Fund											
Opening Balance				0.0	0.0	1.0	3.0	5.0	6.0	6.0	5.5
Disbursements					1.0	2.0	2.0	1.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0		0.5	0.5
Closing Balance				0.0	1.0	3.0	5.0	6.0	6.0	5.5	4.9
Interest at	8%			0.0	0.0	0.2	0.3	0.4	0.5	0.5	0.4

	ACTUAL		FORECAST							
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Proposed Swiss Loan										
Beginning Balance			00	00	10	25	40	55	50	44
Disbursements				10	15	15	15			
Principal Repayments			00	00	00	00	00	06	06	06
End Balance			00	10	25	40	55	50	44	39
Interest at 8%			00	00	01	03	04	04	04	03
Future Borrowings										
Beginning Balance			00	00	00	00	158	484	993	1351
Disbursements				00	00	156	328	509	358	466
Principal Repayments			00	00	00	00	00			
End Balance			00	00	00	156	484	993	1351	1818
Interest at 8%			00	00	00	06	28	59	94	127
Total Foreign Debt in US\$										
Beginning Balance	00	18	12	125	528	1017	1507	2049	2416	2818
Disbursements	18	00	125	403	489	528	580	509	358	486
Principal Repayments	00	06	12	00	00	38	38	142	155	180
End Balance	18	12	125	528	1017	1507	2049	2416	2818	2924
Interest	01	01	04	24	62	105	148	185	208	225
Total Foreign Debt In Som										
Beginning Balance	00	144	127	1371	6439	12406	18384	24994	29473	31944
Disbursements	90	00	1349	4877	5967	6442	7074	6207	4366	5690
Principal Repayments	00	56	129	00	00	484	484	1728	1896	1957
End Balance	144	127	1371	6439	12406	18384	24994	29473	31944	35677
Interest	04	11	48	276	755	1276	1803	2252	2515	2751
Foreign Exchange Losses	53	39	24	381	(00)	(00)	00	00	(00)	00
B. Local Debt (soms)										
W/C Increase										
Beginning Balance	29	29	15	00	00	00	00	00	00	00
Disbursements	00	00	00	00	00	00	00	00	00	00
Principal Repayments	00	15	15	00	00	00	00	00	00	00
End Balance	29	15	00	00	00	00	00	00	00	00
Interest at 6%	02	01	00	00	00	00	00	00	00	00
Government (IDC)										
Beginning Balance				00	104	394	894	1521	1369	1306
Disbursements				104	290	500	627	00	00	00
Principal Repayments				00	00	00	00	152	83	83
End Balance				104	394	894	1521	1369	1306	1244
Interest at 0.1				06	30	77	145	173	181	153
Total LTD										
Beginning Balance	29	173	142	1371	6543	12800	19278	26515	30842	33250
Disbursements	90	00	1349	4781	6257	6942	7701	6207	4366	5690
Principal Repayments	00	70	144	00	00	464	464	1880	1956	2019
End Balance	173	142	1371	6543	12800	19278	28515	30842	33250	36921
Interest	05	12	48	282	785	1353	1948	2425	2676	2904
Foreign Exchange Losses	53	39	24	391	(00)	(00)	00	00	(00)	00

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 1Operating Statements
(Som million)

A Electricity

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
ies	317.6	1,225.6	1,197.3	1,998.1	1,832.6	2,153.5	2,205.6	2,406.8	2,482.5	2,518.4
ng Expenses	61.5	97.5	261.0	254.8	442.8	442.8	442.8	442.8	442.8	442.8
is	2.8	11.2								
es and Wages	35.9	323.9	384.9	442.8	482.4	502.2	515.3	528.7	542.4	556.5
	8.8	24.5	35.4	40.8	44.4	48.3	47.5	48.7	50.0	51.3
	18.2	116.9	260.5	289.6	326.5	339.9	348.8	357.8	367.1	376.7
ciation	8.7	61.3	95.8	110.2	120.1	125.0	128.2	131.6	135.0	138.5
	3.8	5.1	9.2	233.6	241.2	252.6	289.9	304.6	334.6	336.5
l	139.7	640.3	1,046.8	1,381.3	1,657.4	1,708.8	1,772.4	1,814.2	1,871.9	1,902.3
iting Income	177.9	585.3	150.5	616.8	175.2	444.6	433.2	592.7	590.6	614.1
otal Sales (GWh)	9,009	10,336	8,543	10,613	9,710	9,970	10,255	10,535	10,815	11,090
venue/kWh (lyrn)	3.5	11.9	14.0	18.8	18.9	21.6	21.5	22.8	22.8	22.7
st/kWh (lyrn)	1.6	6.2	12.3	13.0	17.1	17.1	17.3	17.2	17.3	17.2
ng Income					175.2	444.6	433.2	592.7	590.6	614.1
preciation					241.2	252.6	289.9	304.6	334.6	336.5
c @ 30%					52.6	133.4	129.9	177.8	177.2	184.2
estments for Generation T&D					584.4	514.8	847.9	747.9	574.6	761.3
sh Flow					220.6	49.1	254.8	28.4	173.4	5.1
om 1997 @ 20%					900.0					

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 2

	Electricity Sales (GWh)											
	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Domestic Market												
Residential												
Urban	573.1	819.8	1096.7	1520.5	1433.0	1480.0	1850.0	1900.0	1937.5	1975.0	2000.0	2025.0
Rural	881.6	1131.0	1358.2	1638.5	1818.0	1860.0	1850.0	1900.0	1937.5	1875.0	2000.0	2025.0
Agriculture	1985.7	1872.1	1848.4	1525.9	892.0	1078.0	1175.0	1225.0	1300.0	1375.0	1450.0	1525.0
Industry	3508.6	2974.2	2445.6	2000.8	1991.0	2320.0	2150.0	2200.0	2250.0	2300.0	2375.0	2450.0
Transport			24.6	28.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Public Organizations	1179.5	1314.7	1195.2	1085.8	1041.0	1175.0	1175.0	1225.0	1300.0	1375.0	1450.0	1525.0
Other			19.1	30.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	8128.5	8111.6	7985.7	7830.3	7175.0	8013.0	8200.0	8450.0	8725.0	9000.0	9275.0	9550.0
Export Market												
Kazakhstan	4292.8	2175.9	1023.0	2505.0	1368.0	2100.0	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0
Uzbekistan						500.0						
China												
10-kV			0.2	0.3	0.3	0.0	0.4	0.4	0.4	0.4	0.4	0.4
220-kV							10.0	20.0	30.0	35.0	40.0	40.0
Subtotal	4292.8	2175.9	1023.2	2505.3	1368.3	2000.0	1510.4	1520.4	1530.4	1535.4	1540.4	1540.4
Total Sales	12421.3	10287.5	8008.9	10335.5	8543.3	10613.0	9710.4	9970.4	10255.4	10535.4	10815.4	11090.4

Average Revenue per kWh Sold (tyn)

Domestic Market												
Residential												
Urban			0.96	3.81	5.60	8.50	15.00	15.00	15.00	16.50	18.50	16.50
Rural			0.62	3.45	5.40	9.35	15.00	15.00	15.00	16.50	18.50	16.50
Agriculture			2.23	8.34	9.50	15.30	17.00	17.00	17.00	18.70	18.70	18.70
Industry			3.70	9.24	10.70	16.18	17.00	17.00	17.00	18.70	18.70	18.70
Transport			3.05	8.66	10.70	16.15	21.25	21.25	21.25	23.38	23.38	23.38
Public Organizations			2.54	8.27	10.70	12.75	21.25	21.25	21.25	23.38	23.38	23.38
Other			3.22	9.18	10.70	12.75	21.25	21.25	21.25	23.38	23.38	23.38
Average			2.28	6.67	8.19	12.46	18.71	16.72	16.74	18.45	18.48	18.51
Export Market												
Kazakhstan (Energy)			11.98	28.74	25.00	38.00	30.50	48.80	48.80	48.80	48.80	48.80
Uzbekistan						40.00						
China												
10-kV				17.56	17.00	18.00	18.20	14.58	13.12	11.81	10.63	9.57
220-kV							36.60	36.60	36.60	36.60	36.60	36.60
Average			11.97	29.60	44.56	38.44	30.63	48.73	48.65	48.62	48.58	48.58
Average Realized Tariff Rate			3.39	12.22	14.02	18.83	18.87	21.60	21.51	22.85	22.77	22.69
Tariff Increase (%)				0%	104%	0%	0%	0%	0%	10%	0%	0%

Revenues from Electricity Sales (Roubles/soma million)

Domestic Market												
Residential												
Urban	21.6	67.5	10.6	57.9	80.2	125.8	277.5	285.0	290.6	325.9	330.0	334.1
Rural	8.1	42.0	8.4	56.5	98.2	183.3	277.5	285.0	290.6	325.9	330.0	334.1
Agriculture	25.1	258.7	41.2	127.3	84.7	164.9	199.8	208.3	221.0	257.1	271.2	285.2
Industry	140.4	2942.6	99.5	185.0	213.0	374.9	365.5	374.0	382.5	430.1	444.1	458.2
Transport	1.2	6.3	0.7	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Public Organizations	48.9	504.7	30.3	89.8	111.4	149.8	249.7	260.3	278.3	321.4	338.9	356.5
Other	0.6	0.6	0.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	245.9	3822.5	182.5	521.9	587.6	993.7	1368.9	1412.6	1461.0	1660.4	1714.2	1768.0
Export Market												
Kazakhstan	151.9	3158.5	122.5	720.0	342.0	798.0	457.5	732.0	732.0	732.0	732.0	732.0
Tadzhikistan				0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turkmenistan				0.9	1.2	1.3	1.5	1.5	1.6	1.6	1.6	1.7
Uzbekistan				20.5	200.5	200.0	0.0	0.0	0.0	0.0	0.0	0.0
China												
10-kV			0.0	0.0	47.9	0.0	0.1	0.1	0.1	0.0	0.0	0.0
220-kV					0.0	0.0	3.7	7.3	11.0	12.8	14.6	14.6
Subtotal	151.9	3158.5	122.5	741.5	609.8	899.3	462.7	740.9	744.6	746.4	748.3	748.4
Total Sales	397.9	6980.9	305.0	1263.4	1197.3	1898.1	1832.6	2153.5	2205.6	2406.8	2482.5	2516.4
Recovered Electricity Revenue							138.6	154.6	131.0	150.8	152.9	169.4
New Total Sales							1971.2	2308.0	2336.6	2557.6	2615.4	2685.8

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5 2
Appendix 3

Electricity Generation (GWh)

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Hydro	9 816 0	9 032 0	8 812 0	11 449 0	10 865 0	11 090 0	9 850 0	10 300 0	10 300 0	10 300 0	10 300 0	10 300 0
Thermal Cascade	123 0	139 0	150 0	155 0	148 0	145 0	120 0	120 0	120 0	120 0	120 0	120 0
Thermal	40 0	39 0	46 0	40 0	43 0	40 0	40 0	40 0	40 0	40 0	40 0	40 0
Wind	79 0	68 0	71 0	76 0	66 0	70 0	80 0	80 0	80 0	80 0	80 0	80 0
Other										350 0	650 0	1 100 0
Total	<u>10 058 0</u>	<u>9 278 0</u>	<u>9 079 0</u>	<u>11 720 0</u>	<u>11 122 0</u>	<u>11 345 0</u>	<u>10 090 0</u>	<u>10 540 0</u>	<u>10 540 0</u>	<u>10 890 0</u>	<u>11 190 0</u>	<u>11 640 0</u>
Unaccounted for Elec.	3 685 0	2 397 0	1 896 0	1 052 0	1 121 0	980 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0
Unaccounted for Elec. (50% of Unaccounted for Elec.)	<u>229 0</u>	<u>205 0</u>	<u>194 0</u>	<u>88 0</u>	<u>48 0</u>	<u>45 0</u>	<u>80 0</u>					
Total	3 914 0	2 602 0	2 090 0	1 140 0	1 169 0	1 025 0	1 280 0	1 280 0	1 280 0	1 280 0	1 280 0	1 280 0
Total	<u>13 972 0</u>	<u>11 880 0</u>	<u>11 169 0</u>	<u>12 860 0</u>	<u>12 291 0</u>	<u>12 370 0</u>	<u>11 370 0</u>	<u>11 820 0</u>	<u>11 820 0</u>	<u>12 170 0</u>	<u>12 470 0</u>	<u>12 920 0</u>
Accounted for Elec.	11 10%	13 40%	19 34%	19 63%	30 49%	14 20%	14 60%	15 65%	13 24%	13 43%	13 27%	14 16%
Unaccounted for Elec. (50% of Unaccounted for Elec.)							829 8	924 8	782 3	817 3	827 3	914 8
Total Revenue from Recovered Electricity (@ average rate)							138 8	154 8	131 0	150 8	152 9	169 4
16-Dec-06												
Generation						980 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0	1 200 0
Unaccounted for Elec.						<u>45 0</u>	<u>80 0</u>					

KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 7

Heat Balance (Thousand GCal)

A Sales

	ACTUAL						FORECAST						
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Industry	2 097 0	2 100 0	1 647 0	904 2	498 2	284 0	298 0	400 0	420 0	450 0	450 0	450 0	450 0
Residential	1 894 0	1 843 0	1 878 0	2 216 1	1 502 2	1 504 0	1 826 0	2 000 0	1 950 0	1 880 0	1 840 0	1 840 0	1 840 0
Greenhouses	197 0	194 0	135 0	86 7	95 8	86 0	130 0	160 0	160 0	160 0	160 0	160 0	160 0
Public Organizations	1 210 0	1 286 0	1 139 0	759 8	601 3	769 0	814 0	749 0	750 0	750 0	750 0	750 0	750 0
Total	5 398 0	5 423 0	4 797 0	3 966 8	2 697 5	2 643 0	3 068 0	3 300 0	3 280 0	3 240 0	3 200 0	3 200 0	3 200 0

B Production

Bishkek	4 360 3	4 462 0	4 045 0	3 407 0	2 415 3	2 596 0	3 102 0	3 550 0	3 420 0	3 280 0	3 190 0	3 140 0	3 140 0
Osh	1 031 0	1 030 0	796 0	690 0	451 4	240 0	420 0	450 0	450 0	450 0	450 0	450 0	450 0
Karakol	242 7	247 0	249 0	156 0	103 6	85 0	108 0	140 0	140 0	140 0	140 0	140 0	140 0
Kyzyl Kiya	55 0	44 0	42 0	36 0	25 7	17 0	18 0	25 0	25 0	25 0	25 0	25 0	25 0
Electric Boilers	22 8	23 0	21 0	22 0	17 2	18 0	22 0	24 0	24 0	24 0	24 0	24 0	24 0
Purchases					19 8	21 0	16 0	35 0	35 0	35 0	35 0	35 0	35 0
Total	5 711 8	5 806 0	5 153 0	4 311 0	3 033 0	2 977 0	3 686 0	4 224 0	4 094 0	3 954 0	3 864 0	3 814 0	3 814 0
Unaccounted for Heat	5 49%	6 60/	6 91/	7 98.4	11 06/	11 22.4	16 77.4	21 88.4	19 88.4	18 06.4	17 18.4	16 10%	16 10.4
Recovered Heat (50% reduction of losses)								462 00	407 00	357 00	332 00	307 00	307 00

C Revenues per Gcal
(Som/Gcal)

Industry				45 7	101 2	124 0	186 0	206 7	206 7	206 7	227 4	227 4	227 4
Residential				1 9	10 6	20 8	81 0	120 0	120 0	120 0	132 0	132 0	132 0
Greenhouses				29 2	79 1	124 0	186 0	206 7	206 7	206 7	227 4	227 4	227 4
Public Organizations				22 5	84 8	84 6	186 0	206 7	206 7	206 7	227 4	227 4	227 4
Average Realized Tariff Rate				16 4	48 3	53 9	123 5	154 2	155 2	158 4	172 5	172 5	172 5
Tariff Increase							0%	186.4	0.4	0%	0%	10%	0%

D Total Revenues
(Som million)

Industry				41 3	50 4	35 2	55 4	82 7	88 8	93 0	102 3	102 3	102 3
Residential				4 1	15 9	31 4	147 9	240 0	234 0	225 8	242 9	242 9	242 9
Greenhouses				2 5	7 6	10 7	24 2	33 1	33 1	33 1	36 4	36 4	36 4
Public Organizations				17 1	51 0	65 1	151 4	153 0	155 0	155 0	170 5	170 5	170 5
Total				65.0	124.9	142.4	378.9	508.7	508.9	506.7	552.1	552.1	552.1
Recovered Unaccounted for Heat								71 2	63 1	55 8	57 3	53 0	53 0
New Total Revenues								579.9	572.1	562.5	609.4	605.1	605.1

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 5

Consumption of Coal Fuel Oil and Natural Gas

	ACTUAL					FORECAST						
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<u>ousand tons</u>												
Coal	896	957	857	713	689.5	710.0	1 100.5	1 080.7	1 059.4	1 045.7	1 038.0	1 038.0
Oil	95	101	71	49	40.6	30.6	58.0	58.0	58.0	58.0	58.0	58.0
Gas	18	17	16	11	5.2	7.5	10.4	10.4	10.4	10.4	10.4	10.4
	1 008	1 075	944	773	735	748	1 169	1 149	1 128	1 114	1 106	1 106
<u>l (thousand tons)</u>												
Coal	190	37	31	23	1.1	0.3	101.6	99.6	97.8	96.5	95.8	95.8
Oil	111	86	78	54	38.5	32.2	49.1	49.1	49.1	49.1	49.1	49.1
Gas	---	---	---	---	---	---	---	---	---	---	---	---
	300	124	109	77	40	33	151	149	147	146	145	145
<u>Gas (million cm)</u>												
Coal	978	688	460	178	291.5	223.8	160.8	157.9	154.8	152.8	151.7	151.7
Oil	56	52	44	24	2.8	4.0	22.7	22.7	22.7	22.7	22.7	22.7
Gas	1 034	740	504	203	294	228	184	181	178	178	174	174
Cost of Fuels (Som per Unit)												
<u>er/l)</u>												
Coal			49.48	179.89	254.6	309.3	451.4	451.4	451.4	451.4	451.4	451.4
Oil			73.69	210.44	314.0	492.6	622.2	622.2	622.2	622.2	622.2	622.2
Gas			57.10	158.55	176.7							
<u>l (per/l)</u>												
Coal			425.29	830.62	1 201.0	1 069.1	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2
Oil			313.24	736.34	974.0	930.4	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2	1 537.2
Gas												
<u>Gas (per/cm)</u>												
Coal			164.79	691.47	731.6	828.0	939.4	939.4	939.4	939.4	939.4	939.4
Oil			170.75	768.17	840.3	860.0	939.4	939.4	939.4	939.4	939.4	939.4
Gas												
Cost of Fuels (\$ per Unit)												
<u>er/l)</u>												
Coal	0.0	0.0	9.8	19.3	24.1	27.3	37.0	37.0	37.0	37.0	37.0	37.0
Oil	0.0	0.0	14.6	22.5	29.7	43.4	51.0	51.0	51.0	51.0	51.0	51.0
Gas	0.0	0.0	11.3	17.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>l (per/l)</u>												
Coal	0.0	0.0	84.2	88.9	113.6	94.2	126.0	126.0	126.0	126.0	126.0	126.0
Oil	0.0	0.0	62.0	78.8	92.1	82.0	126.0	126.0	126.0	126.0	126.0	126.0
Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>Gas (per/cm)</u>												
Coal	0.0	0.0	32.6	74.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0
Oil	0.0	0.0	33.8	82.2	77.0	77.0	77.0	77.0	77.0	77.0	77.0	77.0

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 6Cost of Fuels
(million Soms)

	ACTUAL				FORECAST							
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Coal												
Bishkek	92.8	3 737.1	42 406.9	128.3	175.5	219.6	496.8	487.8	478.2	472.0	488.6	488.6
Karakol	17.2	666.5	5 237.6	10.4	12.7	15.1	36.1	36.1	36.1	36.1	36.1	36.1
Kyzyl Kya	0.9	37.3	895.4	1.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	110.8	4 440.8	48 539.9	140.3	169.2	234.7	532.9	523.9	514.3	508.1	504.7	504.7
Fuel Oil												
Bishkek	74.7	645.5	13 145.8	19.4	1.3	0.3	156.2	153.3	150.3	148.4	147.3	147.3
Osh	73.2	2 030.2	24 454.3	39.7	37.5	30.0	75.5	75.5	75.5	75.5	75.5	75.5
Total	147.8	2 675.7	37 600.1	59.1	38.8	30.3	231.6	228.8	225.8	223.9	222.8	222.8
Natural Gas												
Bishkek	287.3	7 695.1	75 836.4	123.3	213.3	185.3	151.1	148.4	145.4	143.6	142.5	142.5
Osh	15.6	729.3	7 513.2	18.7	2.4	3.4	21.3	21.3	21.3	21.3	21.3	21.3
Total	303.1	8 424.4	83 349.6	142.0	215.6	188.7	172.4	169.7	166.8	164.9	163.8	163.8
Total	561.8	15 540.9	169 490	341.5	443.6	453.7	936.9	922.5	906.9	896.9	891.3	881.3

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Investment Program
(Roubles/Soms)

	ACTUAL				FORECAST							
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Generation												
Kambarata 1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kambarata 2	81.8	598.0	4 206.0	37.4	44.7	0.0	0.0	0.0	0.0	0.0	0.0	488.0
Sharmaldisay	69.0	416.6	2 939.0	35.0	33.0	38.3	43.9	0.0	0.0	0.0	0.0	0.0
Tashcumir	0.2	139.7	1 094.8	16.1	22.3	25.5	29.3	0.0	0.0	0.0	0.0	0.0
Bishkek TES						5.8	42.7	42.7	67.1	30.5	24.4	0.0
Urch Kugan						0.0	0.0	12.2	46.8	48.8	36.6	0.0
At Bashi						0.0	0.0	6.1	24.4	24.4	18.3	0.0
Sub-Total	151.0	1 154.3	8 239.8	88.4	100.0	69.6	115.9	61.0	140.3	103.7	79.3	488.0
Transmission												
500-kV					0.0	0.0	12.2	97.6	244.0	244.0	73.2	0.0
Frunzenskaya Kemn					0.0	0.0	0.0	0.0	0.0	148.4	158.6	0.0
Kambarata 2 Extension					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220-kV												
Issikulsakaya Nann	4.3	145.0	7 326.8	58.2	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Issikulsakaya Karakol					2.0	276.4	231.8	0.0	0.0	0.0	0.0	0.0
Frunzenskaya-Alar Cha					0.0	0.0	0.0	122.0	219.6	0.0	0.0	0.0
Chylakaya Substation					1.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0
110-kV to 35-kV	19.6	152.9	669.8	9.3	4.0	102.1	112.2	117.1	122.0	126.9	131.8	136.6
Sub-Total	23.9	297.9	7 996.6	67.5	10.0	392.1	356.2	336.7	585.6	517.3	363.6	136.6
Distribution	17.7	189.1	1 934	13.5	24.0	102.1	112.2	117.1	122.0	126.9	131.8	136.6
District Heating												
Bishkek	18.3	272.8	952.2	1.2	4.0	58.0	122.0	163.0	61.0	61.5	15.9	16.3
Osh	2.7	66.2	79.0	0.3	1.8	12.8	13.4	163.0	61.0	61.5	15.9	16.3
Karakol	0.8	3.0	22.4		1.5	0.2	0.2	0.2	0.0	0.0	0.0	0.0
Kyzyl Kya					4.5	4.9	5.3	5.4	5.8	5.7	5.8	5.9
Kara kul					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sub-Total	21.9	362.0	1 053.6	1.5	11.8	75.9	141.0	371.7	127.6	128.7	37.5	38.6
Other Investments												
Housing	15.6	115.8	523.6	16.5	5.6	2.3	3.7	4.9	6.1	7.3	8.5	8.8
Schools		0.5	0.8		0.0	1.2	1.3	1.5	1.6	1.7	1.8	2.0
Other	4.3	30.4	26.6	14.4	19.7	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Sub-Total	19.8	146.7	551.0	30.9	25.3	4.6	6.2	7.6	8.9	10.2	11.6	12.9
Interest During Construction						10.4	29.0	50.0	62.7	0.0	0.0	0.0
Total Investment Program	234.3	2 150.0	19 774.6	201.8	171.1	654.7	760.6	944.1	1047.1	886.6	623.7	812.6

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 9

Investment Program
(US\$ million)

	ACTUAL				FORECAST							
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<u>tion</u>												
ara Ata 1					0.0							
ara Ata 2	1.0	2.0	4.2	4.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	4.0
aidisay	0.8	1.4	2.9	3.7	3.0	3.3	3.8					
umr	0.0	0.5	1.1	1.7	2.1	2.2	2.4					
sk TES						0.5	3.5					
ugan								3.5	5.5	2.5	2.0	
shu								1.0	4.0	4.0	3.0	
								0.5	2.0	2.0	1.5	
Total	1.8	4.0	8.2	9.5	9.2	6.0	9.5	5.0	11.5	8.5	6.5	4.0
<u>ission</u>												
V												
zenskaya-Kemin							1.0	8.0	20.0	20.0	6.0	
bar Ata 2 Extension										12.0	13.0	
bar Ata 2 Kemin												
V												
aton Naryn	0.1	0.5	7.3	6.2	0.3							
kulsakaya-Karakol					0.2	24.0	19.0					
zenskaya-Alar Cha					0.0			10.0	18.0			
skaya Substation					0.1	1.0						
V to 35-kV	0.2	0.5	0.7	1.0	0.4	8.8	9.2	9.6	10.0	10.4	10.8	11.2
Total	0.3	1.0	7.9	7.2	0.9	33.8	29.2	27.6	48.0	42.4	29.8	11.2
<u>tion</u>	0.2	0.6	1.9	1.4	2.2	8.8	9.2	9.6	10.0	10.4	10.8	11.2
<u>Heating</u>												
ek	0.2	0.9	0.9	0.1	0.4	5.0	10.0	15.0	5.0	5.0	1.3	1.3
	0.0	0.3	0.1	0.0	0.2	1.1	1.1	15.0	5.0	5.0	1.3	1.3
<u>oil</u>												
kul	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.5	0.5	0.5
kul					0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Total	0.3	1.2	1.0	0.2	1.1	6.5	11.6	30.5	10.5	10.5	3.1	3.2
<u>investments</u>												
ing	0.2	0.4	0.5	1.8	0.5	0.2	0.3	0.4	0.5	0.6	0.7	0.8
ols	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2
	0.0	0.1	0.0	1.5	1.8	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	0.2	0.5	0.5	3.3	2.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1
<u>at Durring Construction</u>						0.9	2.4	4.1	5.1	0.0	0.0	0.0
Investment Program	2.2	7.4	19.6	21.6	15.8	56.4	62.3	77.4	85.8	72.2	61.1	66.6

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Schedule of Commissioning of Assets

	BUDGET	FORECAST							
	1994	1995	1996	1997	1998	1999	2000	2001	2002
Investment Program									
Assets to Work in Progress		171.1	654.7	760.6	944.1	1047.1	888.8	623.7	812.8
Assets Commissioned during the year		106.0	353.8	317.2	219.6	463.6	390.4	231.8	488.0
Assets to Gross Assets End of Year		0.0	0.0	12.6	755.6	0.0	695.4	0.0	82.1
Assets to Work in Progress	222.1	328.1	881.9	985.5	450.5	914.1	609.1	840.9	1246.8
Assets to Gross Assets End of Year		85.1	300.9	456.0	1480.1	583.5	1191.8	391.9	406.9
Related Gross Assets	389.6	454.7	755.6	1211.6	2691.6	3275.1	4466.9	4858.8	5265.7

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Debt Schedule

		ACTUAL		FORECAST							
		1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
A. Foreign Loans (US\$)											
Russian (Fuel Purchases)											
Beginning Balance		0.0	1.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Disbursements		1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Principal Repayments		0.0	0.6	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End Balance		1.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest at	8%	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
World Bank Rehabilitation Loan											
Beginning Balance				0.0	6.2	6.2	6.2	6.2	6.2	6.2	5.8
Disbursements				6.2							
Principal Repayments				0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6
End Balance				6.2	6.2	6.2	6.2	6.2	6.2	5.6	5.0
Interest at	5%			0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Swiss Loan											
Beginning Balance				0.0	0.0	5.0	5.0	5.0	5.0	5.0	5.0
Disbursements					5.0						
Principal Repayments				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
End Balance				0.0	5.0	5.0	5.0	5.0	5.0	5.0	4.5
Interest at	0%			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EBRD (Transmission Kumtor Gold Mine)											
Beginning Balance				0.0	4.0	26.3	38.0	34.2	30.4	26.6	22.0
Disbursements				4.0	22.3	11.7					
Principal Repayments				0.0	0.0	0.0	3.8	3.8	3.8	3.8	3.8
End Balance				4.0	26.3	38.0	34.2	30.4	26.6	22.8	19.0
Interest at	10%			0.2	1.5	3.2	3.6	3.2	2.8	2.5	2.1
Japanese Loan											
Beginning Balance				0.0	2.0	4.0	4.0	4.0	4.0	3.6	3.2
Disbursements				2.0	2.0						
Principal Repayments				0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4
End Balance				2.0	4.0	4.0	4.0	4.0	3.6	3.2	2.8
Interest at	4%			0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.1
Belgian Government											
Beginning Balance				0.0	0.3	0.3	0.3	0.3	0.3	0.0	0.0
Disbursements				0.3							
Principal Repayments				0.0	0.0	0.0			0.3		
End Balance				0.3	0.3	0.3	0.3	0.3	0.0	0.0	0.0
Interest at	0%			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proposed Asian Development Bank											
Beginning Balance				0.0	0.0	5.0	15.0	25.0	30.0	27.0	24.0
Disbursements					5.0	10.0	10.0	5.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0	3.0	3.0	3.0
End Balance				0.0	5.0	15.0	25.0	30.0	27.0	24.0	21.0
Interest at	8.4%			0.0	0.2	0.8	1.6	2.2	2.3	2.0	1.8
Proposed EBRD (Jereq Gold Mine)											
Beginning Balance				0.0	0.0	0.0	13.7	27.3	41.0	36.9	32.8
Disbursements					0.0	13.7	13.7	13.7			
Principal Repayments				0.0	0.0	0.0	0.0	0.0	4.1	4.1	4.1
End Balance				0.0	0.0	13.7	27.3	41.0	36.9	32.8	28.7
Interest at	10.4%			0.0	0.0	0.7	2.1	3.4	3.9	3.5	3.1
Proposed IDA Credit											
Beginning Balance				0.0	0.0	3.0	10.0	17.0	20.0	18.0	16.0
Disbursements					3.0	7.0	7.0	3.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0	2.0	2.0	2.0
End Balance				0.0	3.0	10.0	17.0	20.0	18.0	16.0	14.0
Interest at	8.4%			0.0	0.1	0.5	1.1	1.5	1.5	1.4	1.2
Proposed DANIDA Loan											
Beginning Balance				0.0	0.0	1.0	4.0	7.0	8.0	8.0	7.5
Disbursements					1.0	3.0	3.0	1.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0		0.5	0.5
End Balance				0.0	1.0	4.0	7.0	8.0	8.0	7.5	6.9
Interest at	6%			0.0	0.0	0.2	0.4	0.6	0.6	0.6	0.6
Proposed Nordic Fund											
Beginning Balance				0.0	0.0	1.0	3.0	5.0	6.0	6.0	5.5
Disbursements					1.0	2.0	2.0	1.0			
Principal Repayments				0.0	0.0	0.0	0.0	0.0		0.5	0.5
End Balance				0.0	1.0	3.0	5.0	6.0	6.0	5.5	4.9
Interest at	8%			0.0	0.0	0.2	0.3	0.4	0.5	0.5	0.4

	ACTUAL		FORECAST								
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
ed Swiss Loan											
ing Balance			00	00	10	25	40	55	50	44	
gements				10	15	15	15				
al Repayments			00	00	00	00	00	06	06	06	
alance			00	10	25	40	55	50	44	39	
st at	8%		00	00	01	03	04	04	04	03	
Borrowings											
ing Balance			00	00	00	00	156	484	993	1351	
gements				00	00	156	328	509	358	486	
al Repayments			00	00	00	00	00				
alance			00	00	00	156	484	993	1351	1818	
st at	8%		00	00	00	06	26	59	94	127	
oreign Debt in US\$											
ing Balance		00	18	12	12.5	52.8	101.7	150.7	204.9	241.6	281.8
gements		18	00	12.5	40.3	48.9	52.8	58.0	50.9	35.8	48.6
al Repayments		00	06	1.2	00	00	3.8	3.8	14.2	15.5	16.0
alance		18	12	12.5	52.8	101.7	150.7	204.9	241.6	281.8	292.4
st at		0.1	0.1	0.4	2.4	6.2	10.5	14.8	18.5	20.6	22.5
oreign Debt in Som											
ing Balance		00	14.4	12.7	137.1	643.9	1,240.6	1,838.4	2,499.4	2,947.3	3,194.4
gements		9.0	00	134.9	467.7	596.7	644.2	707.4	620.7	438.6	569.0
al Repayments		00	5.6	12.9	00	00	48.4	46.4	172.8	189.6	195.7
alance		14.4	12.7	137.1	643.9	1,240.6	1,838.4	2,499.4	2,947.3	3,194.4	3,587.7
st at		0.4	1.1	4.8	27.6	75.5	127.6	180.3	225.2	251.5	275.1
in Exchange Losses		5.3	3.9	2.4	39.1	(0.0)	(0.0)	0.0	0.0	(0.0)	0.0
il Debt (soms)											
crease											
ing Balance		2.9	2.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
gements		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
al Repayments		0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
alance		2.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
st at	6%	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ment (IDC)											
ing Balance				0.0	10.4	39.4	89.4	152.1	138.9	130.6	
gements				10.4	29.0	50.0	82.7	0.0	0.0	0.0	
al Repayments				0.0	0.0	0.0	0.0	15.2	6.3	6.3	
alance				10.4	39.4	89.4	152.1	138.9	130.6	124.4	
st at	0.1			0.6	3.0	7.7	14.5	17.3	16.1	15.3	
TD											
ing Balance		2.9	17.3	14.2	137.1	654.3	1,280.0	1,927.8	2,651.5	3,084.2	3,325.0
gements		9.0	0.0	134.9	478.1	625.7	694.2	770.1	620.7	438.6	569.0
al Repayments		0.0	7.0	14.4	0.0	0.0	48.4	46.4	188.0	195.8	201.9
alance		17.3	14.2	137.1	654.3	1,280.0	1,927.8	2,651.5	3,084.2	3,325.0	3,692.1
st at		0.5	1.2	4.8	28.2	78.5	135.3	194.8	242.5	267.6	290.4
in Exchange Losses		5.3	3.9	2.4	39.1	(0.0)	(0.0)	0.0	0.0	(0.0)	0.0

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KYRGYZ NATIONAL ENERGY HOLDING COMPANY

Annex 5.2
Appendix 1Operating Statements
(Som million)

A Electricity

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Revenues	317 8	1 225 6	1187 3	1898 1	1971 2	2308 0	2336 6	2557 6	2615 4	2885 8
Operating Expenses	61 5	97 5	261 0	254 6	442 8	442 8	442 8	442 8	442 8	442 8
Fuels	2 8	11 2								
Imports	35 9	323 9	384 9	442 6	419 7	436 9	448 3	459 9	471 9	484 2
O&M	8 8	24 5	35 4	40 8	39 1	40 7	41 8	42 9	44 0	45 1
Salaries and Wages	18 2	116 9	260 5	299 6	287 4	299 1	308 9	314 9	323 1	331 5
G&A	8 7	61 3	95 8	110 2	120 1	125 0	128 2	131 6	135 0	138 5
Other	3 8	5 1	9 2	233 7	241 4	253 1	290 9	305 8	336 3	346 3
Depreciation										
Total	139 7	640 3	1046 8	1381 4	1550 4	1597 8	1658 9	1697 9	1753 0	1788 4
Operating Income	177 9	585 3	150 5	816 7	420 8	710 5	877 7	859 7	862 4	897 4
Note Total Sales (GWh)	9 009	10 338	8 543	10 613	9 710	9 970	10 255	10 535	10 615	11 090
Revenue/kWh (tyin)	3 5	11 9	14 0	18 8	20 3	23 1	22 8	24 3	24 2	24 2
Cost/kWh (tyin)	1 6	6 2	12 3	13 0	16 0	16 0	16 2	16 1	16 2	16 1

B District Heating

	ACTUAL			FORECAST						
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Revenues	65 0	124 9	142 4	378 9	579 9	572 1	562 5	609 4	605 1	605 1
Operating Expenses	107 9	244 0	222 3	311 6	484 2	479 7	464 1	454 1	448 5	448 5
Fuels	1 5	2 5	7 1	8 1	8 8	9 2	9 4	8 7	9 9	10 2
Purchases	13 4	37 1	45 8	52 6	52 8	55 0	56 4	57 9	59 4	60 9
O&M	1 8	8 5	9 1	10 5	10 5	11 0	11 3	11 8	11 9	12 2
Salaries and Wages	1 5	5 3	10 4	12 0	12 0	12 5	12 9	13 2	13 5	13 9
G&A	1 9	15 1	19 7	22 7	24 7	25 7	26 4	27 1	27 8	28 5
Other	1 0	1 2	2 3	31 3	40 5	51 9	64 6	75 3	82 9	92 7
Depreciation										
Total	129 0	311 7	318 8	448 9	643 6	645 0	645 0	648 7	653 8	668 8
Operating Income	(64 0)	(186 8)	(174 4)	(69 9)	(63 7)	(72 9)	(82 5)	(39 4)	(48 8)	(61 8)
less Interest Expense					0 0	16 9	59 8	69 2	77 7	74 4
Taxes @	30 4				0 0	0 0	0 0	0 0	0 0	0 0
Principal Payments plus Depreciation					0 0	14 1	49 9	57 6	64 7	82 0
Net After Tax Cash Flow					40 5	51 9	64 6	75 3	82 9	92 7
					(23 1)	(52 0)	(127 6)	(90 8)	(108 3)	(105 5)
Domestic Market only	1 0									
New District Heating Loan										
Beginning Balance					0 0	141 0	498 6	576 3	647 3	620 1
Disbursements					141 0	371 7	127 6	128 7	37 5	38 6
Principal Repayments					0 0	14 1	49 9	57 6	64 7	82 0
End Balance					141 0	498 6	576 3	647 3	620 1	596 7
Interest at	12 /				0 0	16 9	59 8	69 2	77 7	74 4
Note Total Sales (MGcal)		2 697 5	2 643 0	3 068 0	3 300 0	3 280 0	3 240 0	3 200 0	3 200 0	3 200 0
Revenue/Gcal (Som)		46 3	53 9	123 5	175 7	174 4	173 6	190 4	189 1	189 1
Cost/Gcal (Som)		115 6	119 9	146 3	195 0	196 6	199 1	202 7	204 3	208 4

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Domestic Market only = 1 0

Legal Framework Table of Appendices

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C Legislation Governing State Enterprises and Corporations			
Decree of the Government #65 of February 14, 1996			
Decree of the Jogorku Kenesh (Parliament) # 1386-XII of January 12 1994			
Law on Joint-Stock Companies			
Law on Enterprises in the Kyrgyz Republic of April 19, 1991, #436-XII and of December 17 1992, #1086			
Law of the Kyrgyz Republic "On foreign investments in the Kyrgyz Republic (of May 7 1993 #1221-XII and of September 26 1995 # 20-1)			
D Legislation Governing Privatization			
Conception of denationalization and privatization In 1993 (Parliamentary Decree)			
Conception of denationalization and privatization In 1994-5 (Parliamentary Decree Jan 12, 1994)			
Program for privatization in 1991-1992 (Government Decree)			
Law "On General beginnings for denationalization privatization and entrepreneurship in the Kyrgyz Republic" of December 20, 1991 and the following amendments of March 6 1992 # 876 II of July 2 1992, #939 XII of January 8 1993 # 1229-XII of June 23 1995 # 5 I of October 11, 1995 # 30-1			
Decree of the State Property Fund of April 6 1994 "The order of state owned enterprises transfer into open joint stock companies "			
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“Regulations on the Energy Companies included in the Composition of the State Energy Company of the Kyrgyz Republic working on the internal system economic account,” passed by the KNEHC President, July 1, 1992

- 1 These regulations declare the energy companies independent economic subjects with the rights of a legal entity. The right is given to the energy companies to sell, transfer from the balance, exchange or write off property upon agreement with the State Energy Company,
- 2 It also gives the right to the Energy Companies by decision of the labor collectives to become independent companies with full balance responsibilities while maintaining their obligations to Kyrgyz State Energy Company,
- 3 One of the tasks set forth calls for conducting denationalization and privatization of property in cooperation with the laws,
- 4 The director of the energy company is hired and fired by the president of Kyrgyz State Energy Company through a contract. The deputy director, senior engineer is approved and released by order of the president as well,
- 5 These regulations give specific attention to the labor collectives. Social and economic issues regarding the activities of the energy company are decided by its management body with the participation of the work collective.

Resolution #592 of the Government of December 10, 1993 "On the State Energy Company's transfer into State Joint-Stock Holding Company "

- 1 This resolution transformed the Kyrgyz State Energy Company into the Kyrgyz State Joint Stock Holding Energy Company with the three independent joint-stock companies included in the composition,
- 2 The resolution also declares the distribution of shares of the authorized capital as 51% to the State, 20% to the stock market or investment trade, 27% to sale on specialized trades and auctions, and 2% to the workers collectives,
- 3 The Resolution calls for the transfer of management rights of the state share to the holding company,
- 4 Dividends earned on the state share are to be forwarded to the state budget and are used for the development of the energy system,
- 5 The document determines the management bodies to the General Meeting, the enterprise Council and the Board and states that the holding company president and vice president are appointed by the Kyrgyz Government It appoints the founders to create the Charter and submit it for Governmental approval This resolution was approved by the Prime Minister

Legislation Governing the Power Sector

Regulations “on the State Energy Agency under the Government of the Kyrgyz Republic” of April 30, 1996

The regulation was accepted by the “Decree of the Government of the Kyrgyz Republic on the State Energy Agency (SEA) under the Government of the Kyrgyz Republic ” The decree identifies KNEHC as one of several organizations to be regulated under the SEA

These regulations state that the SEA is to encourage competitive markets and the entrance of competitors The regulation provides for the inclusion of private ownership in the electricity sector The SEA will have authority to issue licenses, establish pricing mechanisms and set tariffs, participate in setting safety standards, issue and monitor the implementation, develop penalties for non-compliance, and even set personnel ceilings for state-owned enterprises

The organization of the SEA is defined in the regulation, however, there are several confusing points According to the regulations, the SEA shall consist of an executive board of three members appointed by the Prime Minister and confirmed by the President Every two years, the President will appoint one member of the Board as Director Section III, paragraph 9 states that “Each Executive Member shall have equal rights in voting on Agency decisions ” Section III, paragraph 23 states however, “the Director of the Agency shall identify issues that are subject to approval of the Executive Board and call the meetings of the Board, on behalf of the Agency sign its rules, regulations, licenses or rejection to issues a license ” Then paragraph 24, point 7 states that the identification and separation of responsibilities between the Executive members shall be considered only at the meeting of the Board ” These statements leave holes for interpretation and need to be cleared

Section III, paragraph 25 states the power of majority rule in decision making and states that only the presence of 2 members is required The decision making in the event of the presence of only two members, however, is not addressed

Section IV, paragraph 31 states that the energy enterprises will transfer monthly fees to the bank account of the Agency However, it is not stated how much money should be transferred and when Such details are expected in legislation such as regulations Paragraph 32 calls for the transfer of surplus funds of the Agency to the Republic budget This provision will be a major budgeting disincentive for the SEA

Law on Energy of the Kyrgyz Republic, October 1996 (Presidential approval)

This law has been analyzed based upon the version that was approved by Parliament and submitted to President Akaev for approval. Upon signing, the President made some changes which, at the time of this report, were unavailable.

The Law on Energy includes the following major provisions:

1. this law is on the fuel-energy sector and looks to the future, anticipating changes in the structure of the industry,
2. all primary energy resources are the exclusive property of the state and may only be exploited in accordance with Licenses. These licenses grant use, not ownership of the resources,
3. energy enterprises can be of any legal form of ownership,
4. delegation of functions between the government, local administrations, and the State Energy Agency, and
5. precludes the government from interfering in the particulars of economic activity. However, the government will control the exploitation and the maintenance of energy resources.

Law on Electricity of the Kyrgyz Republic, June 28, 1996 (in Parliament)

This law provides more detail to the more general Energy Law and is currently in Parliamentary discussion
The major provisions include

- 1 objectives of the law, detailed as to assure reliable and safe supply of electricity to all customers at safe prices, to promote efficiency in the generation, transmission, distribution and consumption of electricity, to attract domestic and foreign investments into the sector, to accelerate the process of denationalization and privatization, and to encourage and permit the introduction of markets and competition
- 2 separation of functions of the role of the Government, SEA, and energy companies The role of the Government is to "define economic policy and to oversee policy implementation The Government shall not interfere in the operation of an Energy Enterprise" The SEA shall have "sufficient authority to assure that the interests of the producers and consumers are fairly balanced" And the functions of the energy companies is licensed operation of their facilities
- 3 general provisions for all electricity licensing, requiring licenses for sale of electricity and connection to the National Grid It is worth noting that paragraph 16 gives self-generators the right to produce electricity for their own use with permission of the State Energy Agency But it is stated that the self-generators must receive "permission" to connect to the National Grid or to sell electricity It should shat that the self-generators must receive a "license", and
- 4 Section 9, Article 26 delegates tariff-setting authority to the agency and no longer with the ministry of economy

KNEHC Charter

MANAGEMENT ORGANS

The Charter identifies the management organs as the general meeting, the Council, the Board and the President. However, much decision-making power is delegated to the President.

General Meeting

The General Meeting is defined in the Charter as the supreme management body which meets at least once a year and is quorum by presence of 60% of the delegates. Despite the delegation of critical powers provided by the Charter, there is a lack of definition on who the delegates are and how they are chosen in the Charter. Furthermore, regarding the 60% quorum, it is not indicated whether or not this includes the privileged shareholders. As this is still a state owned company and will continue to be at least 51% owned by the state (due to the provisions of the Concept 1994-5), there needs to be definition in the Charter on who will represent the "state" in the General Meeting. Though paragraph 24 states that "the powers of the State Property Fund (SPF), the principal shareholder, are effected through the President of KSEHC, who is appointed by the Government of the Kyrgyz Republic, and KSEHC Council members- representatives of the SPF," it is not clear who the voice at the general meetings will be.

The "exclusive competence" of the general meeting requires 2/3 vote and includes

- 1 making amendments and alterations to the Charter, changing the authorized capital, making decisions on sale, renting, exchanging or other ways of KSEHC's property disposal which exceeds 10% of its assets,
- 2 making decisions on creation of branch enterprises and participation of KSEHC in other enterprises, and enterprise associations,
- 3 making decisions on KSEHC's merger, join and reorganization into an enterprise of a different organization and legal form,
- 4 making a decision on the liquidation of KSEHC and validation of its report,
- 5 determination of KSEHC's principal activity directions, validation of its plans and reports on their implementation.

The remaining powers only require a majority vote and include

- 1 the election and recall of members of the Council and Audit Commission,
- 2 validation of results of annual activities, reports and conclusion of the audit Commission on order of profit distribution and coverage of losses,
- 3 decision making on legal steps against KSEHC officials to make them answer property accountability,
- 4 the validation of rules in procedures and other domestic documents of KSEHC, and
- 5 determination of the organization structure of the society.

In practice, there has only been one general meeting since the inception of this holding company and it was held on December 28, 1993. There are 200 delegates, including 2 representatives from each enterprise.

The Council

KNEHC through its Charter creates a Council, to be elected by majority vote at the General Meeting to "perform certain functions related to the competence of the general meeting and it shall exercise control over the activities of the board (Section 9, paragraph 25). The composition and size is ambiguous stating that the "Initial composition and KSEHC Council member candidates are proposed at the founders members meeting (Section 9, paragraph 27). Note that this provision is for the initial composition. There have yet to be any changes regarding the composition determined.

The President of KSEHC shall be Chairman of the Council. The Council is to meet at least once every three months, with a quorum considered by the majority of the members. It is important to note that the powers granted by the Charter to the Council include the power to recommend the amount, conditions and order on increase or decrease of the authorized capital, to validate the regulations on the Board presented by the President, to determine policy and decision making on lending issues, and to determine the labor remuneration for KSEHC officials. According to the KNEHC representatives, most decisions are made by the Council.

The Board

The Board is the executive organ acting on regulations validated by the Council, consisting of 9 members also validated by the Council. The President as the Chairman of the Board. Board members cannot be members of the Council or the Audit Commission. The Board is the organ used by the President to carry out the management on current activities.

President

Much of the power lies in the jurisdiction of the president. He is the Chairman of the Council and the Chairman of the Board. Chapter 11, point 32 states "The President of KSEHC carries out the operative management of the Society's activities, and, according to the legislation of the Kyrgyz Republic, is given all powers necessary to fulfill this mission." This essentially gives the President absolute powers. Point 35 states, "The President of KSEHC has the right to act on behalf of KSEHC without the power of attorney." The President carries out the management on current activities by KSEHC and the Board. Paragraph gives the President the right to "hold Council sittings by means of written form interrogation of absent members of the Council." This point should be more explicit as it is unclear whether this grants proxy power to the President or just the right to call the meeting. The President validates the management apparatus structure as agreed with the government of the Kyrgyz Republic. He determines condition on employment and laying off staff.

State Auditors and Audit Commission

The Charter provides for an Audit Commission, of at least 3 members elected at the General Meeting. These members may not be Board members. Decision is made by majority vote, but it does not explicitly state that a specific percent of members constitutes a quorum. There is a provision for extraordinary audits. They shall be made if there is a written request by the majority of the Council.

Additional Critical Issues in the Charter

The following additional issues have been noted in the Charter:

- In the language of the Charter, there is an issue worth noting. The word "Society" is used in what can be assumed reference to the Holding Company, whereas this word does not even appear in the legal title. However, this is not identified up-front in the Charter, though advisable to avoid potential confusion. The word "participants" is used several times. However, it is not explicitly clear who is meant by the "participants." Despite the fact that from the text it is implied that by participants they mean shareholders, such issues should be cleared up as to not cause any confusion in the future,
- There have not been any changes to the Charter to address the new status the three JSC's that have recently been privatized,
- There is no information on a dividend policy, or who makes it. There is no incentive for efficiency, cost-cutting, no understanding of profits,
- SPF is not a necessary founder. Its interests are represented in the fact that the companies are still state owned. In accordance to the Government Regulation #592, management rights of the state companies are transferred to the Holding Company. There is no role for the SPF in the HC.

- The amount of shares issued and the amount of privileged (non-voting) shares is not indicated in the Charter, and
- Why is the Charter signed by the president of KNEHC if it is approved by the government?? The founders should sign the document, not the majority owner (government) appointed president

Recommendations to the Charter

As the holding company is going through reorganization, it can be expected that the Charter quickly loses its applicability. However, it is essential to make the necessary changes in the Charter in order to ensure that the Charter defines and addresses the current situation of the company. The current problem is that KNEHC representatives have indicated there are certain norms in practice that are not provided for in the Charter. The purpose of a company charter is to provide a legal basis for the norms of that enterprise.

For example, at the time the Charter was written, two joint-stock companies had yet to be privatized, and therefore, they were included as part of the holding company because the state share was held by the holding company. Since that time these two JSC's have been privatized. However, according to this Charter, they are still part of the holding company. This is a potential legal issue.

In general the Charter lacks detail in defining the decision-making mechanism.

Founders Agreement

on the reorganization of Kyrgyz State Energy Company into the State Joint Stock Holding Energy Company of the Kyrgyz Republic "Kyrgyz State Energy Holding "

The agreement states that the founders are responsible for presenting each other with all necessary information and declares this agreement void if there are less than three founders remaining. Currently there are three founders.

Many points are made in the Founders' Agreement regarding privatization. Kyrgyz State Energy Holding Company is identified as the entity responsible for the future privatization of the enterprises of Kyrgyz State Energy Company (paragraph 4.7). According to the Founders' Agreement, 51% of the companies of Kyrgyz State Energy Company will always remain with the Holding Company.

There is a provision (paragraph 4.3) for the free of charge transfer of 2% of the authorized capital to the work collective. The same paragraph states that the distribution of shares will be conducted in a closed fashion. It is not explicitly clear that this refers to the transfer to the labor collective, and therefore could be interpreted to mean any share sales.

The Government Regulation authorizes 20% of the shares to be sold on the stock market or to investment trade. However, Paragraph 4.4 indicates that KNEHC can control the sale of 10% of that 20%.

Paragraph 4.5 provides KNEHC with the right to sell 10% of the shares by exchanging employees' privatization points and those of contractors, through investment funds with which KNEHC has agreements. This right to sell the state shares was delegated to KNEHC by the SPF.

Paragraph 4.9 states that the shares of the Holding Company must be purchased by the Holding Company by January 1, 1997. It is not clear why the holding company would be purchasing its own shares.

The Founders' Agreement states that dividends earned on state shares can be used by KNEHC, by merely sending a report to the SPF on their usage, implying that they are not transferred to the budget. Appendix 5C.9

Confirm

The President of the State
power company of the
Republic KR
G T Tuleberdiev
July 1, 1992

The regulation about power undertaking, entered in the structure of the State power company of the Republic KR, which worked on intersystem cost accounting

PART 1 GENERAL REGULATIONS

- 1 1 Power undertaking is independent economic subject with the right of judicial person, which on the basis of labour group's property using realizes one among industrial functions of the State power company (Kyrgyzgosenergocompaniya)
- 1 2 In the company's structure on power undertakings' rights, which worked on intersystem cost accounting, enter power-stations, electric and heat network, PRP, KSRP, the plant GBI, the Studying plant, PMGOi K and personnel with central industrial services
These regulations define general legal, economic and social basis of the power undertaking's organization and activity
- 1 3 The power enterprise takes part in the process of power supply of national economy and personal consumers in accordance with concluded agreements and set regime of work on the basis of intersystem cost accounting and self-financing
Power enterprise, except the main function, may conduct several kinds of activity in the same time, if they are not prohibited by the legislative bills of the Republic KR
- 1 4 Power enterprise's property is formed by basic funds, means of circulation, and other values, which value is reflected in the independence and fixed after it on the right of complete economic keeping, delegated to the Power enterprise by State power company of the Republic KR
- 1 5 Power enterprise has right according to the agreement with State power company to sell, to transfer from balance, to exchange as well as to write off the property
- 1 6 The sources of the Power enterprise's property financing are own means, state investments, banks' credits as well as other sources, foreseen by legislation

Power enterprise has its own separate balance and accounts in the enterprises of banks

PART 2 TASKS OF THE POWER ENTERPRISE

The main tasks of the power enterprise are such

- 2 1 Guarantee of continuous and qualitative power supply of consumers of the Republic, safe work of equipment, units, working order of buildings, constructions and communications
Development of power and electrification of the Republic in accordance with coordinated power program
Conducting of denationalization and privatization of property in the order, determined by the law
- 2 2 Absolute fulfilling of dispatcher's orders (for electric and thermal circuits as well as electric power stations)
- 2 3 Executing of state supervision of technical state of electrical and heat utilized units, control of rational use and quality of electrical thermal energy on the enterprises of the region

- 2 4 Satisfaction of social and economic interests of labour group members and continuous improving of labour conditions and women’s conditions of life, especially having children, as well as concession for women of other privileges, foreseen by legislation
- 2 5 Introduction into operation of the objects of social sphere
- 2 6 Guarantee of necessary conditions for labour safety on the industrial enterprise, introduction of new means and methods of industrial traumata warning
- 2 7 Guarantee of actions realization on improving of work with the staff, strengthening of labour discipline, decrease of staff fluctuation, development and introduction of new methods of qualification increase and staff retraining with account of new technical mastering
- 2 8 Doing services of production character, production of consumer goods and doing of paid services for population

PART 3 GENERAL PRINCIPLES OF THE POWER ENTERPRISE MANAGEMENT ORGANIZATION

- 3 1 Power enterprise’s management, which worked on intersystem cost accounting, including into the “Kyrgyzgosenergocompaniya”, is realized according to The regulations of the State power company, which confirmed by the Government of the Republic KR N280 from June 10, 1992 and this “Regulation about power undertaking” on the basis of principles’ condition of labour group’s self-management, owner’s rights of economic use of the “Kyrgyzgosenergocompaniya’s” property
- 3 2 The basis of power undertaking’s activity is agreements, which concluded with consumers, suppliers of material-technical resources and the “Kyrgyzgosenergocompaniya”
- 3 3 Power undertakings have a right to conclude agreements in their functional duties’ limits
- 3 4 The relations with local budget of pay of land, water, building’s tax, pay of blowouts and faults of unhealthy substances into environment, assistance employment of population fund, insurance of State property, medical insurance and pay for guaranteeing fire safety of national economy’s objects are realized by power enterprises according to the “Kyrgyzgosenergocompaniya’s” control missions Other payments to budget, mutual calculations are realized by the “Kyrgyzgosenergocompaniya” in centralized way
- 3 5 Power undertaking as to agreement with the “Kyrgyzgosenergocompaniya” defines management’s structure, is independent in staff’s putting, rate of wages definition in limits of earning means
- 3 6 Power undertaking as its labour group can become independent undertaking on complete cost accounting and self-repayment with, preservation for this undertaking obligations before the “Kyrgyzgosenergocompaniya”

Director is at the head of power undertaking, who appointed to the post and excused from the post by President of the “Kyrgyzgosenergocompaniya” With him is concluded contract in which defined rights, obligations and responsibility of manager, conditions of his financial guaranteeing and excusing from the post with taking into consideration guarantees, which foreseen current legislation

- 3 8 Vice director, chief engineer of power enterprise are appointed to the post and excused from the post according to established order by the “Kyrgyzgosenergocompaniya” President’s order
- 3 9 Chiefs of RES and RTS are appointed to the agreement with the “Kyrgyzgosenergocompaniya” Managers of staff’s subdivisions and structure’s units of staffs (shops, departments, branches, parts and etc), and also foremen, chief foremen are appointed to the post by the manager of power company
- 3 10 The decision of social-economic questions, which concerned power undertaking’s activity, are worked out and decided by its management’s body with labour group’s participate Main form of realization of labour group’s powers is general meeting (conference)

- 3 11 Judicial form of regulation labour relationship of working and administration of power undertaking is collective agreement (understanding)
- 3 12 The collective agreement (understanding) is concluded with the purpose of regulation of industrial and labour relationship, questions about labour's payment and labour's guarding, social development of group
At rise of discords at conclusion or execution of the collective agreement (understanding) they solve in order, which put by the legislation of the Republic KR
- 3 13 Power enterprise has a right on own initiative to decide and put social privileges in earning means' limits, if they do not contradict the current legislation and the present situation
- 3 14 Power enterprise brings whole completeness responsibility for observance state interests and citizens' rights, safety and multiplying property, the fulfillment of taken obligation and guaranteeing of income, which is necessary for work in conditions of complete cost accounting, strengthens industrial and labour discipline
- 3 15 Power enterprise has a right to pensioners, who have worked before leaving for pension at power enterprise, to let existing possibilities of medical service, guaranteeing of dwelling, accommodation cards in sanatoriums, and also according to labour group's decision to let other social services and privileges

PART 4 ECONOMIC ACTIVITY OF THE POWER ENTERPRISE

- 4 1 In the conditions of work on the principle of work on the principle of intersystem cost accounting the power enterprise from the means, obtained from the "Kyrgyzgosenergocompaniya", and in limits of these means as well as from the means, obtained from realization of works and services into other hands, independently plans its industrial activity, executes social protection and fulfills payment of labour at the expence of means, earned by the labour group
- 4 2 Financial result on other activity of the power enterprise is transferred to the "Kyrgyzgosenergocompaniya" for forming of the funds of stimulation, social and industrial development of the power system
- 4 3 The "Kyrgyzgosenergocompaniya" transfers by financial plan to the power enterprise the means of funds on industrial development and financial stimulation (these means are formed at the expense of profit, remaining in the company disposal)
- 4 4 The fund of industrial development is used by the power enterprise on financing of capital investments of industrial appointment, executing of research works, paying off long-term credits of the bank and percentage on them, accretion of the normative of own means of circulation and for staff training
- 4 5 The fund of social security development is used by the power enterprise on financing of capital investments of objects of non-industrial character, maintenance of health service objects, children's pre-school institutions, pioneer camps, objects of culture and sport, housing-municipal utilities as well as on social needs of collective body purchasing of permits for medical treatment, recreation and excursions, giving out of advances free of interest for young families and partial paying off indebtedness an advances for co-operative building, sport, cultural-mass measures and other social needs
- 4 6 The fund of financial stimulation is used by the power enterprise for concession of financial assistance, extraordinary stimulation for execution of specially important production tasks, extraordinary grants for being pensioned off, paying of stimulations by results of work per annum, paying of grants for mothers during leave for care after child from 1 5 till 3 years, expenses, connected with paying of bonus for creation and mastering of new technology, compensation of inflation of cost of public catering and other payments, foreseen by acting normative documents and resolutions of the company council
- 4 7 The power enterprise directs amortization allocation for complete reconstruction on financing of capital investments in limits of the financial plan The last part is centered in the "Kyrgyzgosenergocompaniya"

- 4 8 The power enterprise forms relations with other enterprises, organizations and citizens in all spheres of economic activity on the base of agreements
- 4 9 The power enterprise has a right to open a pay-sheet for keeping of costs and executing of all kinds of account, credit and cash operations by their locality Accounts of the power enterprise on its obligations with other enterprises and organizations is executed, as a rule, in clearing
- 4 10 The means of circulation, fixed for the power enterprise, are in its complete disposal and are not the object of withdrawal
The power enterprise has to guarantee safety, rational use and acceleration of turnover of means of circulation
- 4 11 The power enterprise executes technical and productive operative and book-keeping account of results in its work, conducts statistical and book-keeping accounts Statistical and book-keeping accounts are produced for bodies of state statistics
- 4 12 The power enterprise guarantees executing of acting rules of safety conditions, fire safety conditions of state and other normative documents

PART 5 RESPONSIBILITY AND CONTROL OF ACTIVITY

- 5 1 The power enterprise bears the complete property responsibility, foreseen by legislation of the Republic KR, for infringement of agreement obligations and other rules of economic activity
- 5 2 The “Kyrgyzgosenergocompaniya” is not responsible for obligations of the power enterprise and the power enterprise is not responsible for obligations of the “Kyrgyzgosenergocompaniya”
- 5 3 Inspection of economic activity of the power enterprise is executed by the “Kyrgyzgosenergocompaniya” not less than once a year
- 5 4 Liquidation and reorganization (merging, joining, division, apportionment, transformation) of the power enterprise are executed on the resolution of the “Kyrgyzgosenergocompaniya” president

It is agreed by

Davydov I A	Mambetov E A
Komarov M I	Suraeva L A
Rygykh L I	Slivnov A P
Pilipenko N G	Abdykalov E A
Arystanov G A	Kydyralieva R A
Botaev B A	Kulchinov T M
Mamytov S M	Kyyalbekov I T
Kolpakov V I	Zyryanov A G
Ablyazimov O B	Boltenko E T

The Government of the Kyrgyz Republic

The Decree

Bishkek, the Government Building

from December, 10, 1993 N592

About reorganization the Kyrgyz state power company to the Kyrgyz state-joint stock holding power company

With purport of the future power engineering's developing, safe the items exploitation of the power system, fuller and continual guaranteeing national economic complex with electric and heat energy, drawing into national economic turnover the largest republic's hydro-electric resources, improving of the management's structure and system power engineering complex, changing of the property's forms and market economics realization advantages the Government of the Kyrgyz Republic decrees

- 1 To reorganize the Kyrgyz state power company to the Kyrgyz state-joint stock holding power company with formation in its structure independent joint stock companies the trust "Kirghyzelectroset stroy", the reinforced concrete goods plant (GBI), the construction's administration "Kyrgyzenergostroy"
The list of the joint stock companies, undertakings and organization of the Kyrgyz state-joint stock holding power company is applied
- 2 The founders of the state-joint holding power company are the State property fund of the Kyrgyz Republic, the Kyrgyz state power company, the trust "Kyrgyzzelectroset stroy", the reinforced concrete good's plant, the constuction s administration "Kyrgyzenergostroy"
- 3 The founders of the Kyrgyz state-joint stock holding power company according to the laws "About general beginnings disstatement, privatization, enterpreneurship in the Kyrgyz Republic" and "About joint stock companies in the Kyrgyz Republic" till January, 1,1994 must prepare in the determining order the constituent document's packet and give to the State property fund of the Kyrgyz Republic
- 4 To determine the next statutory capital stocks distribution of the Kyrgyz state-joint stock holding power company 51 per cent to the state (control packet), 20 per cent to sell on stock—exchanges or investment auctions, 27 per cent to sell on specialized auctions, 2 per cent is gratuitous transference stocks to the labour group
To give the management license of the stocks state part to the Kyrgyz state-joint stock holding power company
The stocks' state part dividends are sent to the budget and are used in priority's order to power engineering's development
To determine as management body of the Kyrgyz state-joint stock holing power company the stockholders meeting, company's council and board The President of the Kyrgyz state-joint stock holding power company and Vice-president are adopted by the Government of the Kyrgyz Republic
- 5 To recommend to the founders of the Kyrgyz state-joint stock holding power company attract, as company's participants with the stocks selling, adjacent undertakings of fuel and technological equipment, large foreign firms and undertakings
- 6 The founders of the Kyrgyz state-joint stock holding power company must elaborate and produce the chapter on confirmation by the Government of the Kyrgyz Republic

Prime minister

T Chynghyshev

DECREE OF THE GOVERNMENT OF THE KYRGYZ REPUBLIC
on the
STATE ENERGY AGENCY
under the Government of the Kyrgyz Republic

To implement the March 4, 1996 decree of the President of the Kyrgyz Republic "On Structure and Membership of the Government of the Kyrgyz Republic", the Government of the Kyrgyz Republic decrees

- 1 To approve the attached Provisions on the State Energy Agency and the list of the enterprises under its regulation
- 2 To identify assessments on units of energy generated as the Agency's source of funding and agree with the suggestion of the State Energy Agency to set the following assessments starting with April 1, 1996 on 1000 k Wh of electricity - 11 tyyn, 1000 tons of mined coal - 250 som, 1000 tons of raw oil - 500 som, 1000 cubic meters of natural gas - 1 som, refer no more than 40% of the collected money to the salary fund of the Agency
- 3 To set the personnel ceiling of the Agency as 25 people, not including staff on clearing and guarding services
To allocate 50000 som from the reserve fund of the Government to the Agency to use for it setting up with further repayment before August 1, 1996
- 4 To have two deputies of the Director in the State Energy Agency
- 5 To entrust the Director of the Agency to approve the structure of the Agency, its list of the personnel and conditions of the salary payment
- 6 To identify the location of the Agency in the city of Bishkek, 119, Akhunbaev street KSEHC must transfer the building to the Agency's balance
- 7 The Administration of the President must provide the Agency with one car
- 8 KSEHC must provide the Agency with two cars, furniture and equipment which will be considered as the advanced payment of the assessments in accord with item 2 of this Decree

Prime-Minister

A Jumagulov

The List of the Energy Enterprises Under Regulation of the State Energy Agency

- 1 KSEHC
- 2 "Kyrgyzgas" (natural oil)
- 3 "Kyrgyzneft" (oil)
- 4 "Kyrgyzkomurholding" and other coal-mining enterprises regardless of the form of the ownership
- 5 "Kyrgyzmunaizat" and other oil products suppliers regardless of the form of the ownership
- 6 "Kyrgyztopsnaab" and other coal suppliers regardless of the form of the ownership
- 7 "Kyrgyzjilkomunsoyuz" and other thermal energy generators regardless of the form of the ownership

PROVISIONS

on

State Energy Agency under the Government of the Kyrgyz Republic

II General provisions

- 2 The State Energy Agency under the Government of the Kyrgyz Republic (hereinafter referred to as Agency) is a state regulatory entity, independent of all Energy Enterprises and which does not directly carry out an operating role in any Energy Enterprise
- 3 In its activities the Agency will be guided by the Constitution of the Kyrgyz Republic, Laws OF THE Kyrgyz Republic, Decrees of the President, the Jogorku Kenesh and the Kyrgyz Government, and this Provisions
- 4 The Agency is a legal entity and possesses a seal with the Kyrgyz State Emblem and its name in Kyrgyz and Russian
- 5 The Agency will conduct its business according to the following principles
 - a) For the regulation of monopoly activities, the Agency shall endeavor to regulate primarily through the use of incentives, Performance Agreements, and the incorporation of conditions on the Licenses it issues
 - b) For activities where competition is feasible, the Agency shall encourage the development of competitive markets and the entrance of competitors and shall create a regulatory environment that is conducive to competition
- 1 The Agency will regulate the fuel-energy complex in the Kyrgyz Republic in order to assure that Energy Enterprises operating in the Kyrgyz Republic
 - e) Provide safe and reliable supplies of electricity, thermal energy and gas that are adequate for consumer needs and the economic development of the Republic, consistent with the National Energy Program and the policies of the Government,
 - f) Provide electricity, thermal energy and gas throughout the Republic at fair, reasonable, and non-discriminatory prices,
 - g) Increase efficiently in the generation, transmission, distribution and use of electricity, thermal energy, gas, coal and oil products through appropriate and effective incentives,
 - h) Improve their financial performance in order to attract investment
- 1 The Agency will also assure
 - f) The balancing of the interests of consumers and producers, consistent with the objective economic and social conditions of the Republic, and
 - g) The timely, and steady transition of the Electricity Sector to include private ownership and competition consistent with Government policy

I Functions, main authorities and responsibilities of the Agency

- 2 The following authorities will be delegated to the Agency
 - a) Issue licenses to all entities that engage in the generation, transmission/transportation, distribution or sale of electricity, district heating, and natural gas (*coal*) and oil products
 - b) Establish pricing mechanisms and set tariffs that are fair, reasonable and non-discriminatory,
 - c) Pursue the policy of the demonopolization of producers by encouraging the entrance of new producers and the development of competitive markets, assuring that all competitors have equal conditions and opportunities for access to essential facilities,
 - d) Set and enforce standards of service to captive customers,
 - e) Encourage the efficient use of electricity, thermal energy, and natural gas, coal and oil products and promote Energy Savings by consumers and producers,
 - f) Participate in setting safety and technical standards,
 - g) Establish mechanisms for resolving consumer complains and settling disputes between consumers and producers and among producers,
- 1 Issue and monitor the implementation, develop penalties for non-compliance of rules, regulations, guidelines, instructions, and other legal requirements necessary to carry out its activities
- 2 Set personnel ceilings for state-owned enterprises
- 3 Summarise the experience of implementation of the laws pertaining to the fuel-energy sector, and work out improvements, amendments to the legislation, justification of draft bills and other legal documents, and submit them for consideration of the President and the Government of the Kyrgyz Republic
- 4 Participate in negotiations on the investments for the energy sector, where the Government is the borrower
- 5 Develop transparent procurement procedures and during transition oversee tenders on major investments or delegate this function to other bodies, and oversee utilization of the investments and repayment of the credits
- 6 Request any kind of information on internal and external debts of the Energy Enterprises and in collaboration with the competent governmental entities oversee monetary movement
- 7 In conjunction with the governmental bodies coordinate programs of technical assistance on energy issues

I Organisation of the Agency

- 3 The Agency shall consist of
 - a) An Executive Board of three Members appointed by the Prime-Minister and confirmed by the President, and
 - b) Such qualified, professional staff as are necessary to enable the Energy Agency to carry out its responsibilities
- 1 Upon presentation of the Prime Minister, every two years the President will appoint one Executive Member to serve as the Director The two other Executive Members will perform administrative functions of the Director's Deputies

Each Executive Member shall have equal rights in voting on Agency decisions

- 3 The Executive Members shall serve for a term of six (6) years Executive Members may be re-appointed, but none may serve more than 12 consecutive years
- 4 Each Executive Member shall have free and full access to information, records and documents of all employees of the Agency, and the Director shall keep each Executive Member fully and currently informed about all activities of the Agency and about actions taken by the Director on behalf of the Agency
- 5 The Executive Members shall serve full time and shall not engage in any other business, vocation or employment while serving on the Agency, except for scientific and pedagogical activities in accord with relevant laws of the Republic
- 6 The Executive Members may only be removed from office by the President for reasons of
 - a) Conditions of health as determined by an independent medical commission, or
 - b) Conviction of malfeasance in office or another criminal act defined in the Criminal Code
 - c) Gross or systematic violations of official duties,
 - d) Loss of citizenship, or
 - e) Request for resignation or retirement
- 1 While carrying out his responsibilities Director of the Agency will have social and everyday privileges set for Ministers of the Kyrgyz Republic, and his Deputies will have privileges of the Deputy Ministers
- 2 The Agency shall have full access to the accounts, records, information and documents of all Energy Enterprises In order to fully carry out its role and perform its duties, the Agency is authorized to verify all documents of all documents including those which are confidential and belong to or are in the possession of an Energy Enterprise
- 3 Information provided to the Agency by an Energy Enterprise in the course of obtaining a License or other approval or decision from the Agency shall be considered public information, unless the Agency by formal decision upon the request of the Energy Enterprise finds that it contains information of a proprietary nature which would cause commercial harm if disclosed
In cases where the Agency has obtained such proprietary information, no Executive Member or employee of the Agency may disclose that information or use it for personal benefit No Executive Member or employee of the Agency, however, will be liable to any legal corporation or individual or subject to suit because of any action taken in the good faith exercise of his official responsibility
- 9 All Energy Enterprises regardless of the form of ownership must submit their balance sheets and profit and loss statements to the Agency
The Agency will have the right to request for audit of financial documents of the Energy Enterprises
- 10 The Agency shall have full access to the accounts, records, information and documents of employees of any Energy Enterprise To secure such access, the Executive Members may enter any facility owned or operated by such enterprise during normal business hours or any time during an emergency
- 11 No Executive Member or any other employee of the Agency may own directly or indirectly any shares in and Energy Enterprise subject to the jurisdiction of the Agency or engage in any action which would impair his or her ability to act in an impartial manner

- 12 The Agency shall set forth all its decisions in writing and present in public documents the facts, conclusions and reasoning that support its decisions
- 13 Such decisions of the Agency are not subject to further review or modification by any official or employee of any governmental entity except that such decisions of the Agency may be referred to the Supreme Arbitration Court of the Kyrgyz Republic for appeal and judicial review under applicable Kyrgyz law, or, as may be provided for by prior agreement, to international arbitration
Decisions of the Agency can be reviewed by the Government of the Kyrgyz Republic if the consequences of these decisions could worsen the socioeconomic situation of the Kyrgyz Republic
- 14 The Executive Members shall
 - n) be personally responsible for carrying out the Agency's responsibilities,
 - o) identify responsibilities of each Executive Member and chiefs of the Agency's departments
- 1 To implement the existing Laws, Decrees of the President, Jogorku Kenesh and the Government of the Kyrgyz Republic Director of the Agency will issue and enforce instructions and orders, approve the structure and list of the staff, salary conditions, and provisions on the departments of the Agency
Director of the Agency shall identify issues that are subject to approval of the Executive Board and call the meetings of the Board, on behalf of the Agency sign its rules, regulations, licenses or rejection to issue a license
- 16 The following issues shall be considered only at the meeting of the Executive Board of the Agency
 - p) licenses,
 - q) drafting of the laws, improvements and amendments to legislation pertaining to the Energy Sector,
 - r) approval of annual reports on the activities of the Agency,
 - s) making decisions on attaching punitive sanctions if License holders violate existing
 - t) legislation or the conditions of their licenses,
 - u) issuing rules and regulations,
 - v) planing of the activities of the Executive Board,
 - w) identification and separation of responsibilities between the Executive Members
- 1 A meeting of the Executive Board will be competent if not less than 2 members are present on condition that all Executive Members are aware of the meeting A majority of votes is required for approval of any matter
- 2 The Executive Board of the Agency will issue rules and regulations in accord with the existing legislation and within its authorities
- 3 Decisions of the Executive Board of the Agency will be apply to all energy enterprises regardless of the form of ownership and be compulsory for implementation
- 4 No matter than 30 days after the close of the fiscal year, Director of the Agency shall submit to the Government and to the President a report of the activities the Agency has carried out

1 PROPERTY AND FUNDING

- 2 On behalf of the Government of the Kyrgyz Republic the Agency will own property which is transferred to it in accord with the applicable laws of the Kyrgyz Republic
- 3 The Agency is authorised to set fees for issuing Licenses, annual fees for the duration of such Licenses, and assessments on units of energy generated, transmitted/transported, distributed, or sold. These fees and assessments shall be set high enough to enable the Agency to be self-financing, but shall not be set so high as to unduly increase the price of Energy Services to consumers
- 4 To assure functioning of the Agency and carrying out its responsibilities all Energy Enterprises regardless form of ownership will transfer monthly fees to the bank account of the Agency
- 5 Director of the Agency will regularly report to the Executive Board on budget implementation and if the amount of fees exceeds the necessary budget he will transfer the surplus to the Republic Budget
- 6 The financial accounts of the Agency shall be kept using international accounting standards and practices and will be subject to an annual audit by the Ministry of Finance
- 7 34 Buildings, different types of property that belong to the Agency constitute State property and are not subject to denationalisation and privatisation or lease with further redemption

October 30, 1996

ENERGY LAW OF THE KYRGYZ REPUBLIC

This Law determines main principles of the organization and regulation of activities in the Fuel-Energy Sector, and applies to all Energy Enterprises regardless of the form of ownership

Article 1 Fuel-Energy Sector

The Fuel-Energy Sector in the Kyrgyz Republic is composed of Energy sub-Sectors. Each Energy sub-Sector and Energy Activity performed within Energy sub-Sector shall be governed by specific provisions of this Law and by other legislation of the Kyrgyz Republic

Article 2 Objectives of the Law on Energy

The objectives of this Law are to increase economic efficiency and reliability of the operation in the Fuel-Energy Sector and protect interests of consumers and producers

Article 3 Definitions

As used in this Law, the meaning of the words and phrases listed below shall be interpreted as follows

- 1 Energy Activities
Production, generation, transportation, transmission, distribution, storage, refining, conversion, transformation, selling or trading of energy resources and products
- 2 Energy Services
The generation, transmission, distribution, storage, transportation or sale of energy resources
- 3 Energy sub-Sector
A portion of the Fuel-Energy Sector (coal, oil and gas, electricity and others)
- 4 Fuel-Energy Sector
The aggregate of interrelated branches of economy, which includes both state and non-state structures, involved in systems that supply or consume coal, oil, natural gas, electricity, or thermal energy, including territorial sub-systems
- 5 Performance Agreement
An agreement negotiated between the state entity and a License Holder specifying expected results and outcomes of efforts to improve the efficiency of performance of the License Holders
- 6 Primary Energy Resources
Those resources existing in their natural state which can be used as fuel, (such as petroleum, natural gas, oil shale, coal, peat and others) such other resources as water, solar, wind, geothermal, and nuclear fuel which can be converted into other forms of energy
- 7 Renewable Energy Resources
Those resources which occur naturally and are continuously renewed by nature and which can be converted into energy, including geothermal, solar, wind, and water
- 8 Secondary Energy Resources
Those energy resources resulting from conversion of Primary Energy Resources with the loss of portion of the original energy content through process of such conversion

Article 4 State Ownership of Primary Energy Resources

All Primary Energy Resources located in the Kyrgyz Republic are the exclusive property of the State. Primary Energy Resources may only be exploited in accordance with Licenses granted in accord with legislation of the Kyrgyz Republic.

Article 5 Forms of Ownership of Energy Enterprises

- 1 Energy Enterprises may be of any legal form and of any form of ownership (state, communal and private)
- 2 Program of denationalization and privatization of the Fuel-Energy Sector shall be developed by the Government of the Kyrgyz Republic and approved by both Assemblies of the Jogorky Kenesh of the Kyrgyz Republic

Article 6 Authorities of the Government in the Fuel-Energy Sector

- 1 The Government of the Kyrgyz Republic is responsible for defining energy policy and controlling policy implementation for the Fuel-Energy Sector in accord with this law and subsequent legislation and does not interfere directly into the operations of Energy Enterprises
- 2 The Government's duties in the Fuel-Energy Sector include
 - 1 The granting and transferring of property rights and rights of use of water, mineral and other energy resources,
 - 2 The control over operation, and maintenance of energy resources,
 - 3 The creation of conditions necessary for attracting investments in the Fuel-Energy Sector,
 - 4 The elaboration and implementation of the National Energy Program,
 - 5 The elaboration of programs to protect the environment during the development and operation of Energy Activities
 - 6 The elaboration and implementation of demonopolization and privatization programs for Energy sub-Sectors
 - 7 The elaboration and implementation of energy savings programs
 - 8 These functions may be delegated to specific government entities

Article 7 Role of Local Authorities

Relations between Local Authorities and Energy Enterprises shall be governed by the legislation of the Kyrgyz Republic

Article 8 The State Energy Agency

- 1 The State Energy Agency is established under the Government of the Kyrgyz Republic as a government entity which functions as a permanent regulatory body independent of all Energy Enterprises and which does not directly carry out an operating role in any Energy Enterprise
- 2 The State Energy Agency will conduct its business according to the following principles
 - (a) To avoid negative consequences of the monopoly activities in the Fuel-Energy Sector the State Energy Agency shall use Performance Agreements
 - (b) For activities where competition is feasible, the State Energy Agency shall encourage the development of competitive markets and the entrance of competitors and shall create a regulatory environment that is conducive to competition
- 3 The Provisions of the State Energy Agency will be approved by Decree of the Government of the Kyrgyz Republic

Article 9 Delegation of Functions to The State Energy Agency

This Law hereby delegates to the State Energy Agency authority to

- 1 Issue licenses to all entities that engage in the generation, transmission/transportation, distribution, or sale of electricity, thermal energy and natural gas,
- 2 Establish pricing and tariff mechanisms that are economically justified and socially affordable,
- 3 Pursue the policy of the demonopolization of producers and encourage the development of competition, assuring that all competitors have equal conditions and opportunities for access to essential facilities,
- 4 Monitor the effectiveness of measures intended to foster competition and notify the competent government entities with respect to anti-competitive behavior or violation of the anti-trust laws of the Kyrgyz Republic
- 5 Enforce standards and normative documents on service delivery to consumers of energy resources in accord with legislation of the Kyrgyz Republic,
- 6 Encourage the efficient use of electricity, thermal energy, natural gas, coal, oil and oil products and promote Energy Savings,
- 7 Encourage the creation of conditions favorable to the development of Renewable Energy Sources
- 8 Co-ordinate standards in the energy sector,
- 9 Establish mechanisms for resolving consumer complaints and settling disputes between consumers and producers and among producers,
- 10 Issue and monitor the implementation of rules, regulations, guidelines, instructions, and other legal requirements necessary to carry out its activities,
- 11 In conjunction with other governmental entities, coordinate programs of technical assistance and programs on attracting investments to the Fuel-Energy Sector,
- 12 Order and enforce scientific and technical programs that allow improved efficiency of the Fuel-Energy Sector,
- 13 Set tariffs on electricity, thermal energy and natural gas

Article 10 Organization of the State Energy Agency

- 1 The State Energy Agency shall consist of
 - a An Executive Board of three Members appointed by the Prime Minister and confirmed by the President, and
 - b Such qualified, professional staff as are necessary to enable the State Agency to carry out its responsibilities under this Law
- 2 Each Executive Member shall serve for six-year staggered terms of office Executive Members may be reappointed, but none may serve more than 12 consecutive years Every two years upon consultation with Prime Minister, the President will appoint one Executive Member to serve as the General Director Each Executive Member shall have equal rights in voting on Agency Decisions

Article 11 funding for The State Energy Agency

Expenses on financing the State Energy Agency shall be included into the Republic Budget

Article 12 Access to Information

In order to fully carry out its role and perform its duties, the State Energy Agency within its authorities is authorized to have full access to all documents of Energy Enterprises

Article 13 National Energy Program

- 1 A National Energy Program (NEP) shall be developed by the Government of the Kyrgyz Republic and approved by both Assemblies of the Jogorku **Kenesh** of the Kyrgyz Republic and confirmed by the President the Kyrgyz Republic
- 2 The purpose of the NEP is to outline the goals of energy development for each of the Energy sub-Sectors, and its content shall include energy conservation and efficiency, more efficient energy supply systems, cleaner fuels, the protection of the environment, and the application of structural, scientific, technical, tax, price setting, and investment policy

Article 14 Environmental Protection

All Energy Activities shall be carried out only under permission of competent state authorities issued after evaluation of potential impact of the proposed Energy Activities on environmental protection

Article 15 Use of Land and Property

An Energy Enterprise holding a License may establish and operate on State, territorial, or other land and may use property in accordance with laws of the Kyrgyz Republic

Article 16 Responsibilities

- 1 Energy Enterprises holding a License shall be responsible for any damage to the owners or users of property, consumers of energy resources, environment caused by the licensed Energy Activity in accord with legislation of the Kyrgyz Republic
- 2 Government of the Kyrgyz Republic shall be responsible for making compensation payments for fuels to low income people and it shall be also responsible for those decisions of the State Energy Agency that worsen socio-economic situation in the Kyrgyz Republic

Article 17 Investment in the Fuel Energy Sector

The Government of the Kyrgyz Republic shall encourage and create stable and favorable conditions for investments in the Fuel-Energy Sector

Article 18 Encouraging Energy Enterprises

In order to encourage the progress and development of energy supply, and the generation, transmission/transportation, and distribution of Energy Services in the Kyrgyz Republic, this Law recognizes the role to be played by private legal entities or individuals and shall ensure to the maximum extent possible that they are accorded treatment commensurate with roles and contributions

Article 19 Insurance

Investors making investments in the Fuel-Energy Sector in the Kyrgyz Republic may place any and all insurance required with local or foreign insurers and the Government of the Republic shall not restrict, interfere or seek to influence in any manner whatsoever the negotiations, placement, or terms and conditions of the insurance sought by the investors

Article 20 Effect of the Law

This Law shall go into effect on the day of signing

June 28, 1996

ELECTRICITY LAW OF THE KYRGYZ REPUBLIC

This Law of the Kyrgyz Republic is based on the Energy Law of the Kyrgyz Republic and determines the organization and operation of Electricity Sector in the Republic

SECTION 1 GENERAL POLICY AND PURPOSE

Article 1 Objectives of the Law

This law is enacted in order to

- 1 Assure reliable and safe supply of electricity and improved quality of service to all consumers at fair, reasonable, and non-discriminatory prices,
- 2 Promote improved efficiency in the generation, transmission, distribution and consumption of electricity in the Republic,
- 3 Attract domestic and foreign investments into the Electricity Sector by creating stable, and favorable conditions for investment,
- 4 Accelerate the process of denationalization and privatization and promote the development of the private sector, and
- 5 Encourage and permit the orderly introduction of markets and competition into the Electricity Sector, with appropriate consideration for the multiple uses of hydro resources in the Republic

Article 2 Application of this law

All public or private legal entities or individuals that generate, transmit, distribute, sell, or consume electricity or district heating within the Kyrgyz Republic are subject to this Law

Article 3 Definitions

As used in this Law, the meaning of the words and phrases listed below shall be interpreted as follows

- 1 Captive Customer
An end-use consumer who is supplied with low voltage electricity or district heating exclusively by one Distributor
- 2 Connection Point
The boundary of property between a Distributor and a Captive Customer and/or between a Transporter and a Distributor
- 3 Delivery Point
The boundary of property between a Generator and a Transporter and/or between a Transporter and a Distributor
- 4 Distribution
The transfer of electricity from the National Grid and its delivery across local Distribution Networks
- 5 Distributor
A public or private legal entity or individual which holds a License for a specified geographical area for the purpose of supplying electricity

- 6 **Distribution Network**
The wire system, including the support structures, together with associated transformers and switching equipment used to distribute electricity and send it to the Connection Point
- 7 **Electricity Sector**
The complex of the public and private legal entities, enterprises, users, installations, equipment and facilities involved in the generation, transmission, distribution or sale of electricity or district heating
- 8 **Electricity**
Electric energy or capacity that is generated, transmitted, distributed, sold, or used for any purpose
- 9 **Energy Enterprise**
Any public or private legal entity or individual engaging in the generation, transmission, distribution or selling of electricity or district heating, including natural monopolies, regardless of the form of ownership
- 10 **Exclusive License**
Exclusive rights to carry out specified activities in the Electricity Sector
- 11 **Generation**
The production of electricity from any energy source
- 12 **Generator**
A public or private legal entity or individual which holds a License to operate a Power Plant or Hydro-Electric Works
- 13 **High Voltage Network**
Electricity networks and substations with a voltage at least equal to 35 KV
- 14 **Hydro-Electric Works**
Any installation for or associated with the generation of electricity by means of hydro-power
- 15 **Installation**
The whole of any plant or apparatus designed for the generation, transmission or distribution of electricity, including prime movers, all necessary plants, buildings and lands used in connection therewith, pipelines, supply lines, wires, equipment and consumer apparatus
- 16 **Interconnected System**
A number of transmission and distribution systems linked together by means of one of more interconnectors
- 17 **License Holder**
A public or private legal entity or individual holding a License for the Generation, Transmission, Distribution or Marketing of electricity or thermal energy
- 18 **Major Client**
A wholesale or final purchaser of electricity who is able to buy large quantities of electricity directly from a Generator
- 19 **National Energy Program**
A statement of Government policy and a strategic plan for the development of the Fuel-Energy Sector in the Kyrgyz Republic

- 20 National Energy System
A complex of existing Power Plants, Hydro-Electric Works, electric (including National Grid) and district heating network tied together by an integral operational regime under centralized management, carried out by the dispatcher service
- 21 National Grid
The system of conductors or other means of conveying or transmitting high voltage electricity, together with any casing, coating, covering, tube, pipe, insulator or post enclosing, surrounding or supporting the same or any part thereof, and any apparatus connected therewith, in the territory of the Kyrgyz Republic
- 22 Performance Agreement
An agreement negotiated between the State Energy Agency and a License Holder specifying expected results and outcomes of efforts to improve the efficiency of performance of the License Holder
- 23 Power Plant
The whole of any site, building, equipment and apparatus used to generate electricity or thermal energy by any means
- 24 Producers
Public and private legal entities or individuals that generate, transmit, or distribute electricity or district heating
- 25 Self-Generators
Any public or private legal entity or individual which generates electricity for its own use
- 26 Standard Supply Contract
A defined list of rights and obligations of both Distributors and Captive Customers that constitutes a contract to which agrees to abide by providing or receiving service
- 27 State Energy Agency
The governmental entity authorized in Section 3 of the Energy Law of the Kyrgyz Republic
- 28 Transmission
The movement of high voltage electricity on the National Grid for delivery to Major Clients or Distributors
- 29 Transporter
Any public or private legal entity or individual which holds a License to transmit electricity between the Delivery Point of the Generator and the point of reception by the Distributor or Major Client
- 30 Vertically Integrated Entity
Any public or private legal entity performing two or more of the activities of generation, transmission, or distribution of electricity or district heating

Article 4 Separation of Functions

It is the intent of the Kyrgyz Republic to bring about the smooth and well-organized transition of the Electricity Sector from a wholly state-owned system to one that includes competition and markets and various types of ownership of electricity installations, beginning with the separation of functions within the State between governmental entities that coordinate the development of the Electricity Sector and companies that are in charge of the generation, transmission and distribution of electricity and district heating. To this end, the Republic adopts the following policies:

- 1 The role of the Government in the Electricity Sector shall be to define economic policy and to oversee policy implementation. The Government shall not interfere in the operation of an Energy Enterprise.
- 2 The State Energy Agency shall be vested with sufficient authority to assure that the interests of producers and consumers are fairly balanced.
- 3 All public or private legal entities or individuals that generate, transmit, distribute or sell electricity and district heating in the Republic will be licensed and will be responsible for operation of their facilities.

SECTION 2 ASSIGNMENT OF RESPONSIBILITIES

Article 5 Policy for The Electricity Sector

The Government of the Kyrgyz Republic shall develop and implement policy for the Electricity Sector in accord with Article 4 of this Law.

Article 6 State Regulation of The Electricity Sector

The State Energy Agency will regulate the Electricity Sector in the Kyrgyz Republic in order to assure that Energy Enterprises operating in the Kyrgyz Republic:

- 1 Provide safe and reliable supplies of electricity and thermal energy that are adequate for consumer needs and the economic development of the Republic, consistent with the National Energy Program and the policies of the Government,
- 2 Provide electricity throughout the Republic at fair, reasonable, and non-discriminatory prices,
- 3 Increase efficiency in the generation, transmission, distribution and use of electricity and thermal energy through appropriate and effective incentives,
- 4 Improve their financial performance in order to attract investment.

The State Energy Agency will also assure:

- 1 The balancing of the interests of consumers and producers, consistent with the objective economic and social conditions of the Republic, and
- 2 The timely, and steady transition of the Electricity Sector to include private ownership and competition consistent with Government policy.

The State Energy Agency is vested with other functions and authorities specified in the Energy Law of the Kyrgyz Republic.

Article 7 Operation of the Electricity Sector

Public and private legal entities or individuals that generate transmit, distribute or sell electricity or district heating will be responsible for

- 1 Managing their installations and activities in a lawful, safe, and reliable manner,
- 2 Making decisions that result in the lowest reasonable cost, and
- 3 Initiating and taking actions necessary to provide safe, adequate and reliable service, attract foreign and domestic investment capital, and make necessary improvements in their technical, operation and managerial systems

SECTION 3 GENERAL PROVISIONS FOR LICENSING

Article 8 General Provisions

- 1 No public or private legal entity or individual is authorized to engage in the generation, transmission, distribution or sale of electricity or district heating unless it has obtained a License issued by the State Energy Agency
- 2 Licenses will be issued to an Energy Enterprise under procedures, criteria and conditions, for such terms and in such forms as are established in accordance with this Law, subsequent legislation and applicable laws of the Republic Licenses will be issued for a period of time equal at least to the period of construction (modernization or reconstruction) and recoupment period of a Power Plant, except the cases when they will be subject to Articles 10 and 11 of this Law
- 3 The State Energy agency will consider the application with the attached required documents and make a decision within 90 days The State Energy Agency will issue, review, amend, revoke, suspend, or modify and enforce a License using standard procedures established by the State Energy Agency rules and regulations
- 4 Any License Holder, regardless of its form of ownership, operating in the Electricity Sector has the right to cable in its activities for the generation, transmission or distribution of electricity or district heating under the conditions fixed in the License and under such rules or conditions as the State Energy Agency may prescribe
- 5 Any public or private legal entity or individual which generates, transmits, distributes or sells electricity pr district heating without such required License or which disregards conditions contained in a License is liable for revocation of the License and/or penalties under this Law, rules and regulation of the State Energy Agency, and the Administrative Code
- 6 All License Holders are obligated to comply with all rules and regulations, directives, and guidelines of the State Energy Agency, with normative documents on Standards set forth by government bodies, and with all applicable laws of the Kyrgyz Republic, including those related to environmental protection

Article 9 Construction Licenses

The State Energy Agency will issue licenses for the construction of Power Plants and High Voltage Networks The construction of a Hydro-Electric Work or a High Voltage Network of 220 KV or greater will also require the approval of the Government of the Kyrgyz Republic

Article 10 Revocation, Suspension or Modification of the License

- 1 The State Energy Agency shall revoke a License if the License Holder is unable to meet its obligation or violates the conditions prescribed by law or in the License
- 2 If the License Holder operates in manner that seriously endangers the safety of supply or the safety of life, health, property or the environment, the State Energy Agency may
 - (a) Suspend or modify the License, and/or
 - (b) Impose a fine or penalty
- 3 The State Energy Agency shall not revoke or suspend a License or modify the terms and conditions contained in the License unless prior notice has been given to the License Holder and the License Holder has been afforded an opportunity to respond in accord with State Energy Agency procedures or in the manner and under the conditions set forth in the relevant License
- 4 The License Holder may request the State Energy Agency to modify the terms and conditions of the License in the case of a substantial change in circumstances that affects the ability of the License Holder to perform under the conditions of the License

Article 11 Review of License

- 1 Before a License Holder may assign or sell a License, the Holder must notify and receive approval from the State Energy Agency, which may result in review and modification of the terms and conditions of the License
- 2 A substantial change of corporate structure or ownership of a License Holder through acquisition, merger, sale, separation, division or divestiture may result in the State Energy Agency's review and modification of the terms and conditions of the License

SECTION 4 LICENSES FOR THE GENERATION OF ELECTRICITY

Article 12 Generation Licenses

- 1 No Generator will be granted exclusive or monopoly right under Kyrgyz law. The market for electric and thermal energy in the Republic is open to competitive generation regardless of ownership structure, provided that Generators comply with the licensing requirements of this Law, operate in accordance with the National Energy Program, and comply with all applicable laws and regulations of the Kyrgyz Republic
- 2 Any Generator may sell its electricity or thermal energy to the National Grid, to Distributors, or to Major Clients
- 3 Generation Licenses issued by the State Energy Agency shall specify the conditions for the use of the resources involved in the generation of electric or thermal energy, the limitations of the rights of the Generator, and such other conditions as are appropriate

Article 13 New Generation Installation

Any proposal for the construction of new generation installations shall be made in accordance with the National Energy Program and executed under the conditions established in Section 8 of this Law

Article 14 Hydro Electric Works

The issuance of any License related to hydro electric generation must be subject to a prior study concerning the impact on the use of water for purpose other than electric generation. The results of that study must be transmitted for information to the Local Authorities in the geographic territory in which the Hydro-Electric Works will be located or will have effects.

It is compulsory that any call for tenders relating to Hydro Electric Works, either for the extension of existing power capacities or for the construction of new power capacities, shall contain a memorandum on such study and its results.

The construction of any Hydro-Electric Work must be approved by the Government of Kyrgyz Republic.

Article 15 Nuclear Plants

The construction of any nuclear power plant must be authorized by special law of the Kyrgyz Republic.

Article 16 Self Generators

- 1 No Generation License otherwise required under this Law shall be required for any legal entity or individual wishing to produce electric or thermal energy for its own use. However, Self-Generators must obtain all permission as may be required in accord with legislation of the Kyrgyz Republic.
- 2 Self-Generators are forbidden to sell to third parties and to be connected to the National Grid without the prior authorization of the Agency.

SECTION 5 LICENSES FOR THE TRANSMISSION OF ELECTRICITY

Article 17 National Grid Transmission License

- 1 The State Energy Agency will issue a Transmission License for the National grid, which will be operated as a integrated system under dispatcher control by the Holder of this Transmission License for the term of the License. Issuance of this License will also require the approval of the Government of the Kergyz republic.
- 2 However, the Holder of this License does not have any functional or geographic monopoly on the transmission of electricity except for the operation and dispatch of the National Grid.
- 3 The Holder of the National Grid Transmission License has the duty to operate, carry out economic dispatch, and maintain the national Grid and Interconnectors in accordance with the National Energy Program, this Law, and subsequent legislation.
- 4 The Holder of the National Grid transmission License shall not restrict access to the Grid, or impose unreasonable requirements on users of or sellers to the National Grid, except, however, that the Holder of the National Grid Transmission License may take any emergency action necessary to ensure the safety of persons or assets and the continuity of electrical service.

Article 18 Other Transmission Licenses

- 1 the State Energy Agency may issue other exclusive or non—exclusive licenses for the transmission of electricity within specified geographic territories and under specified conditions.
- 2 All Transmission Licenses shall provide for connection to Interconnected Systems on terms and conditions and for fees approved by the State Energy Agency.

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SECTION 6 LICENSES FOR THE DISTRIBUTION OF ELECTRICITY

Article 19 The Obligation of Distributors

Holders of Distribution Licenses are entrusted with duties in the public interest and are obligated to supply electricity to all customers who request service within a specified geographical area, including remote areas, provided, however, that such a request does not result in an unreasonable cost burden on other customers

Article 20 Standard Supply Contract

The State energy Agency will establish a Standard Supply Contract that will govern the minimum rights and obligations of Distributors and Captive Customers. None of the provisions of this standard contract can be changed by either party to the contract. However, Distributors may propose for state Energy Agency approval additional rights and obligations that do not conflict with the purpose and wording of the Standard Supply Contract

Article 21 Principles of Operation for Distributors

- 1 Distributors will operate their activities in a responsible manner and take reasonable action to
 - a Maintain a safe, adequate, and reliable supply of electricity,
 - b Adopt management practices that result in continual improvements in productivity and efficiency,
 - c Show respect for the interests and concerns of consumers, including matters of health and safety,
 - d Provide continual improvements in quality of service to consumers at reasonable cost,
 - e Respond to consumer complaints in a timely manner,
 - f Show respect for the environment,
 - g Maintain the confidentiality of sensitive or proprietary information obtained in the course of carrying out its activities
- 2 The State Energy Agency may develop incentive programs, based on Performance Agreement, that reward good management performance related to the principles listed above

Article 22 Distributors Right to Interrupt Service

- 1 if any consumer does not pay for three consecutive months the amounts billed and due for service provided, the Distributor may disconnect the consumer under conditions and procedures set forth in regulations of the State Energy Agency, but no disconnection can take place if it would result in a threat to life or safety of the people
- 2 The bills of Captive Customers who are unable to pay for service provided may be settled through the mechanisms provided for in Article 28 of this Law
- 3 consumers have the right to submit their complaints to the State Energy Agency if electricity and district heating supply is interrupted on supplier's fault

SECTION 7 ELECTRICITY MARKETING LICENSES

Article 23 Electricity Marketing Licenses

- 1 Any public or private entity or individual engaging in the import, export, sale or brokering of electricity is required to obtain a License from the State Energy Agency. Issuance of this License must be approved by the Government of the Kyrgyz Republic
- 2 The State Energy Agency shall not use this provision to obstruct or hinder international trade in electricity and shall encourage the timely development of regional and international energy markets

SECTION 8 TENDERS

Article 24 Call for Tenders

The competent government entity will call for international tenders for the construction of Installations for the generation, transmission, or distribution of electricity and district heating

Article 25 Tender Procedure

Details of the tender procedures and the criteria used to select tenders and award contracts will be set forth in a Decree of the Government of the Kyrgyz Republic and shall be published in the Official Gazette of the Republic

SECTION 9 TARIFFS

Article 26 General Authority

The State Energy Agency is authorized to establish, review, modify, approve and enforce tariffs and charges for the generation, transmission, distribution or sale of electric or thermal energy and for the interconnection of facilities for the generation, transmission, distribution and sale of electric and thermal energy

Article 27 General Principles

Tariffs shall be established by the State Energy Agency in accordance with the following principles

- 1 Full Cost Recovery
 - a Prices should reflect the full cost of producing, transmitting and distributing electric or thermal energy, including operating and maintenance costs, the recovery of the capital invested, the costs of borrowing funds and providing a return on investment
 - b Prices should be adjusted in an orderly manner that does not cause sudden economic hardship to either consumers or producers
- 2 Non-discrimination

All consumers within the same classification and with the same characteristics of usage and served by the same Distributor shall receive service under the same tariffs. Discrimination in price or quality of service is prohibited
- 3 differential Cost of Service
 - a Tariffs for each classification of consumer will reflect the full cost of providing service to that class. Subsidies from one class of consumer to another will not be permitted, and current subsidies across classes will be eliminated at a steady and reasonable rate of change
 - b Tariffs may be established to reflect the difference in the cost of providing service in different seasons and at different times of the day and the different costs of providing different types or quality of service when customers have the ability to select among options

Article 28 Provision for Low Income Consumers

The Government of the Kyrgyz Republic, Oblast, Rayon and City state Administrations, and the Bishkek City Administration may provide direct subsidies exclusively for low usage Captive customers who are unable to pay the full cost of a bas minimal amount of electric or thermal energy in accord with the rules and regulations of the State Energy Agency

Article 29 Metering, Billing and Collection

In the order determined by the Government of the Kyrgyz Republic every Distributor is required to install reliable and secure meters at every point of service delivery, to regularly read the meters, to bill, and to institute effective methods of collection

Article 30 Remedies for Non Payment and Theft

- 1 Major Clients whose bills for service provided are more than three months in arrears are subject to termination of service in accordance with legislation of the Kyrgyz Republic
- 2 Theft of electrical or thermal energy, tampering with meters, resetting or altering the read out of a meter, unauthorized connection will be subject to sanctions and penalties under the legislation of the Republic

Article 31 Time for Consideration of Tariffs

Energy Enterprises will submit tariff calculations for consideration of the State Energy Agency, and the Agency within six months will make a decision

SECTION 10 ACCOUNTING

Article 32 Accounting Standards

Regardless of legal form or type of ownership structure, License holders that generate, transmit, distribute or sell electricity or thermal energy in the Republic shall keep their books and records in accord with applicable laws of the Republic taking into consideration internationally accepted accounting standards and practices and if it is necessary submit to internationally accepted auditing procedures in accordance with applicable laws of the Republic

Article 33 Separation of Accounts

License Holders that are Vertically Integrated Entities shall keep separate accounts for their Generation, Transmission, and Distribution activities and separate accounts for district heating as if they were operated by separate entities and shall provide annually to the State Energy Agency a balance sheet and profit and loss statement for each activity

SECTION 11 ENVIRONMENTAL PROTECTION

Article 34 General Considerations

- 1 A License Holder shall strive, on a cost effective basis and in an economically efficient manner, to minimize any harmful environmental impacts resulting from its operations and shall take reasonable precautionary measures to prevent or minimize environmental degradation
- 2 License Holders should bear the cost of preventing or mitigating pollution from their operations, with due respect for public interest concerns, without creating significant distortions in investment patterns in the electricity cycle or in international trade, and in accordance with the environmental protection laws and regulations of the Republic

Article 35 Environmental Impact Assessment

The decision to site a new power plant or hydro-electric works shall be subject to an environmental impact assessment prior to the issuance of a construction permit The assessment must be made available to the public and subject to public inquiry in accordance with applicable legislation of the Republic

SECTION 12 CRISIS SITUATIONS

Article 36 Government Responsibility in Crisis Situations

In the event of a sudden crisis in the electricity market and where the physical safety or security of persons, installations or system integrity is threatened, the Government of the Kyrgyz Republic shall take the necessary protective measures and may invoke temporary limitations on the use of electricity

Such measures must cause the least possible inconvenience in the operation of the electricity market and must not be broader in scope than is strictly necessary to remedy the sudden crisis

SECTION 13 MISCELLANEOUS

Article 37 Fines and Penalties

Any public or private entity or individual who violates this law, subsequent legislation, or any conditions of a License will be subject to fines and penalties in accord with applicable laws of the Republic

The imposition of fines and penalties through disciplinary, civil, administrative or criminal proceedings will not relieve those entities or individuals found guilty from restitution for the damage caused as a result of the violation

Article 38 Dispute Resolution

1 The resolution of disputes between two or more public entities, national or local, should not harm the rights and privileges granted to License Holders

If disputes between domestic and foreign parties concerning the interpretation of rights and duties under a License can not be settled amicable through negotiation and mediation within a period of three months, either party may choose to submit the dispute to international arbitration in accord with prior agreement

The State Energy Agency will establish a simple, quick and transparent process through which conflicts arising between a Captive Client and a Distributor can be resolved Appendix 5C 13

THE GOVERNMENT OF THE KYRGYZ REPUBLIK
DECREE 21

January 20, 1994

**On the Charter of State Joint-Stock Holding
Energy Company of the Kyrgys Republic
"KYRGYZENERGOHOLDING"**

By this the Government of the Kyrgyz Republic resolves to validate the Charter of
"KYRGYZENERGOHOLDING " State Joint-Stock Holding Energy Company of the
Kyrgyz Republic attached to this paper

Prime-Minister A Jumagulov

Registered as N 70 BY Pervomayskaya District State Administration of the city of Bishkek on January 21,
1994

Validated by the Government of the Kyrgyz Republic as N 21 on January 20,1994

Agreed with State Property Fund of the Kyrgyz Republic on December 30, 1993

CHARTER

of the

State Joint-Stock Energy Holding Company of the Kyrgyz Republic (KSEHC)
KYRGYZENERGOHOLDING

1 GENERAL PROVISIONS

The State Joint-Stock Energy Holding Company of the Kyrgyz Republic, herein and after called KSEHC has been founded by Degree N592 OF THE Government of the Republic of KR on 10 December 1993 on the basis of enterprises and organisations of the Kyrgyz State Energy Company and shall be its successor

The KSEHC and the enterprises it comprises operate on the basis of the principle of 1 complete self-support and in accordance with legislation of the Kyrgyz Republic, the decrees and institutions of the Government and this Charter

2 LEGAL STATUS, FOUNDERS

KSEHC shall be a legal body since the moment of its registration, possesses property and enjoys the right to handle and make economic management over it, acquires proprietary and other rights and obligations, maintains its own balance sheet, a stamp with the Coat of Arms of the Kyrgyz Republic, clearing and other accounts both in the RK and foreign banks, engages in foreign economic activity, can appear as a claimant and defendant in court and in arbitration courts

KSEHC answers on its obligations with the property it possesses The State, its organs and organisations, do not answer on obligations by KSEHC, and, equally, KSEHC does not answer on obligations by the State, its organs and organisations

KSEHC does not answer on obligations by participants, the latter answer on obligations of the holding within the limits of their stare in the authorised capital

KSEHC's founders on the basis of the Kyrgyz State Energy Company are

- State Property Fund of the Kyrgyz Republic,
- KyrgyzElectroSetStroy Trust,
- KyrgyzEnergoStroy Construction Department,
- Prefabricated Reinforced Concrete Articles Plant

The Relations between the KSEHC and its participants shall be regulated by this Charter, the agreements and regulations agreed along process of joint activities as well as by other normative acts

Locations place of KSEHC Bishkek, Prospekt Jibek-Jolu, 326

3 PURPOSE AND SUBJECT OF ACTIVITY

KSEHC is created to carry out arrangements on further development of the energy sector, reliable operations of energy system facilities, to better meet the national economy's demand for electric power and heat supplies providing its ceaselessness, bring major hydropower resources of the Republic and energy complex control systems into the national economy's turnover effecting market economy advantages

KSEHC makes activities on the following subjects

- comprehensive solution of energy system development problems, elaboration and implementation of a programme on energy sector,
- improvement of the organisation of management, forms and methods of economic management,
- working out of long-term forecasts, forward and current plans on economic and social development of the energy sector, comprehensive purpose-oriented science and engineering and economic programs,
- management of the energy system of the Kyrgyz Republic,
- elaboration and justification of electric power and thermal energy tariffs,
- provide reliable and safe exploitation of energy sector installations observing the norms and rules currently in force,
- implement a common strategy in investment and capital attraction fields to solve general problems on development of energy system of KR, expansion, reconstruction and technical re-equipment of enterprises,
- take measures on environment protection,
- exercise state control over the effective utilisation of electric and thermal power, technical conditions and safe maintenance of electric and thermal power installations of consumers,
- engage in foreign economic activities, cooperation with foreign on trade and economic and science and engineering issues,
- carry out common policy in sphere of social protection of workers and work collectives,
- issuance and realisation of stocks and other types of securities

4 RIGHTS

KSEHC enjoys the following rights

- to manage the state property which is completely under its economic authority,
- to make management of state property shares and stocks, including the right to represent the state interests in the enterprises and organisations which are in the composition of KSEHC and the right to hire managers of the enterprises and organisations on contract(ual) basis Right to participate in

formation of management of joint-stock societies through state packages of stocks given to KSEHC with the right to manage them,

- carry out, jointly with the State Property Fund, further denationalisation and privatisation of KSEHC's enterprises and organisations,
- sell stocks (certificates) on state property of KSEHC's enterprises and organisations as agreed with the State Property Fund and it according to requirements of the currently in effect legislation

The existing electric power stations which form 51% of state property portion shall not subject to privatisation,

- carry out management functions in respect of unsold stocks and certificates on the state property portion of KSEHC's enterprises and organisations,
- carry out management over dividends incurred on the unsold state property stocks of enterprises and organisations in composition of the holding,
- come forward as a founder, participant of other associations, partnerships, commercial and non-commercial character societies as well to participate in capital of other legal persons

5 AUTHORISED CAPITAL, PROPERTY AND FUNDS OF KSEHC

As of October 10, 1993, the authorised capital of KSEHC amounts to 202,012 3 thousand som This sum is an initial authorised capital of KSEHC The authorised fund of KSEHC is formed by the whole property of the Kyrgyz State Energy Company and state property portion of being created joint-stock companies like KyrgyzElectroSetStroy, KyrgyzEnergostroy and Prefabricated Reinforced Concrete Articles Plant with entrusted to them managerial rights

The order and conditions of further reorganisation of KSEHC's enterprises, except existing electric power stations, into joint-stock companies and their interrelations with KSEHC shall be made on the grounds of the Charter worked out by newly being created joint-stock company

On further reorganisation of enterprises into separate joint-stock companies the state owned portion of enterprises' property is retained in the authorised fund of KSEHC

Privatisation of KSEHC's initial authorised capital and initial placing of shares issued for this capital is to be done according to the following scheme

- 51% - state package of shares formed out of indivisible property like power stations and high-voltage main grids,
- 2% - to be handed over to the work collective,
- 20% - to be sold out on stock-exchanges and investment bids,
- 27% - to be sold out on specialised bids

KSEHC issues, on amount of its authorised fund, inscribed ordinary stocks with nominal value of 100 som each and preference stocks with the same nominal value The holding's stocks have their own requisites

KSEHC has the right to issue other type stocks in accordance with laws in force and this Charter KSEHC's funds are formed at the account of

- profits, obtained as a result of its own economic production and commercial activities and investments, dividends on securities purchased by the holding including the ones from foreign companies and firms,
- some portion of dividends on unsold state property stocks,
- annual instalments coming out of the net profit (dividends) of KSEHC's enterprises and organisations in amounts determined by the Council of KSEHC,
- share and annual instalments voluntarily made by enterprises and organisations to fulfil a purpose-oriented tasks,

- credits from banks and other organisations,
- revenues and sources not prohibited by the current legislation

The Reserve Fund shall be formed in the amount of 15% of the authorised fund. Annually KSEHC allocates to it 5% of net profit. Upon decision of the Council of KSEHC other funds may be created.

MANAGEMENT ORGANS

GENERAL MEETING (CONFERENCE)

Supreme management body of KSEHC is a general meeting. Once a year an annual meeting is held. Besides the Annual Meeting extraordinary meetings can be called. The extraordinary meeting call can be initiated by President of KSEHC and the Board to consider any issues. The Board must call an extraordinary meeting upon request for it in written form is submitted by the majority of the members of the KSEHC Council, Audit Commission.

To open the general meeting a quorum of not less than 60% of delegates must be secured.

In lack of a quorum a new date for the general meeting must be set.

The following issues are in the exclusive competence of the general meeting:

- 1 To make amendments and alterations in the Charter
- 2 Change the authorised capital
- 3 To make decision on sale, giving in rent, exchange or other ways of KSEHC's property disposal which exceeding 10% of its assets
- 4 To make decision on creation of branch enterprises and participation of KSEHC in other enterprises, enterprises associations
- 5 To make decision on KSEHC's merger, join and reorganisation into an enterprise of a different organisational and legal form
- 6 To make a decision on the liquidation of KSEHC and validation of its plants and report
- 7 Determination of KSEHC's principal activity directions, validation of its plants and reports on their implementation
- 8 Election and recall of members of the company's Council and Audit Commission of KSEHC
- 9 Validation of findings on results on KSEHC's annual activities, validation of reports and conclusions made by the Audit Commission on order of profit distribution and coverage of losses
- 10 To make decision on taking legal steps against KSEHC officials to make them answer property accountability
- 11 Validation of rules in procedures and other domestic documents of KSEHC, determination of the organisation of the organisational structure of the Society

Decisions on items 1-7 are taken by 2/3 of the votes of those present at the meeting, for the remaining items - just by majority of votes.

Powers of the State Property Fund, which is a principal holder of the controlling bloc of shares, are effected through President of KSEHC, who is appointed by the Government of the Kyrgyz Republic, and the KSEHC Council members - representatives of the State Property Fund.

COUNCIL OF KSEHC

Council of KSEHC shall be created to perform certain functions related to the competence of the general meeting and it shall exercise control over the activities of the Board. Representatives from the work collective, trade-union organisations and other natural and legal persons can be included in the composition of the Council.

The KSEHC Council members are elected on the general meeting. The Council members' term is 2 years and they can be re-elected for the next term.

Initial composition and KSEHC Council member candidates are proposed on a founder members meeting (conference).

President of KSEHC by his post shall be Chairman of KSEHC Council.

The KSEHC Council must exercise regular control over the operation of the Board and the functioning of the KSEHC if they are in the line with aims, tasks, the legislation, the Charter of KSEHC and decisions of the General Meeting.

The Council sittings are held by necessity, but at least once in three months. The sitting is called by the Chairman of the Council or his deputies. A quorum is considered to be secured by presence of majority of the Council members.

KSEHC Council has following powers and must take decisions in accordance with them:

- recommend amount, conditions and order on increase of an amount of the authorised capital,
- validate the regulations on the Board of KSEHC presented by the President of KSEHC,
- adopt normative documents regulating the relations within KSEHC,
- adopt rules and agenda on holding sittings of the Council,
- determine the policy and take decisions on concerning lending issues (loans, credits, guarantees),
- take legal steps against KSEHC officials who exposed violations concerning property accountability,
- determine the labour remuneration conditions for KSEHC officials.

PRESIDENT OF KSEHC AND THE BOARD

The President of the KSEHC carries out the operative management of the Society's activities, and, according to the legislation of the Kyrgyz Republic, is given all powers necessary to fulfil this mission.

The President of the KSEHC performs his functions in strict observance with currently in force legislation and this Charter.

The Government of the Kyrgyz Republic appoints the President of KSEHC upon recommendation by the State Property Fund.

Vice-Presidents are appointed by the Government of the Kyrgyz Republic by introduction of the President of KSEHC.

The President of KSEHC has the right to act on behalf of KSEHC without the power of attorney.

The President of KSEHC has the right to hold the Council sittings by means of written form interrogation of absent members of the Council.

The Board is an executive organ of the KSEHC and acts on the grounds of the regulations validated by the CH Council. The President of the KSEHC by his post shall be Chairman of the Board.

On meetings the Board's point of view is presented by the President of the KSEHC.

The Board is formed by the President of the KSEHC and it consists of 9 members who are to be validated by the Council of KSEHC. The Board members can not be members of the Council and Audit Commission.

The KSEHC carries out the management on current activities by KSEHC and the Board.

In the absence of the President, the management of the current activities and the Board, chairing on the Council sittings are carried out by First Vice-President.

The President of KSEHC validates KSEHC's management apparatus structure as agreed with the Government of the Kyrgyz Republic. Determines conditions on employment and lay off of staff.

Directors of enterprises and organisations under KSEHC are appointed and dismissed by the President of KSEHC on the grounds of a contract. Joint-Stock Society managers are validated by the President of the KSEHC.

ACCOUNTING AND REPORTING IN KSEHC

The first financial year of KSEHC starts from the date of its registration and ends on the 31 December of the current year. The subsequent financial years correspond to the calendar ones.

The balance sheet, the profit-and-loss account as well as other documents for reports are drawn up in conformity with the currently in effect laws.

On place where KSEHC is located full documentation record keeping is made, which includes

- founding documents as well as normative documents regulating relations within KSEHC with subsequent alterations and amendments,
- all documents for book-keeping needed to for own audits concluding as well as inspections by relevant state organs according to currently in force legislation,
- protocols of sittings and meetings held by KSEHC Council and Audit Commission,
- list of persons who have power of attorney to represent KSEHC,
- list of the members of the KSEHC Council and KSEHC officials.

AUDIT COMMISSION

The General Meeting of KSEHC elects Audit Commission consisting of at least 3 members. The Board members shall not be members of the Audit Commission.

Audit Commission takes decisions by its members majority of votes. Upon request of the Council of KSEHC the members of Audit Commission can attend its sittings.

Ten days before the annual meeting, the Audit Commission presents a report on outcomes of annual inspection to the Council made out in accordance with rules and order on financial report making and book-keeping.

Extraordinary audits shall be made by Audit Commission if there is a written request made by majority of KSEHC Council members.

LIQUIDATION OF KSEHC

KSEHC can be liquidated in accordance with the legislation of the Kyrgyz Republic.

The Charter has been adopted at the conference of the founding members on 28 December 1993, and comes into force since the moment of its registration.

President of KSEHC

J Tuleberdiev

The Constituent Agreement

about reorganization the Kyrgyz state power company to the Kyrgyz state-joint stock holding power company of the Kyrgyz Republic "Kyrgyzzhosenerghoholding"

Bishkek December, 28, 1993

This Agreement's participants

- 1 The State property fund of the Kyrgyz Republic - the Head of the Board is Omuraliev E K ,
- 2 The Kyrgyz state power company - the President of this company is Tuleberdiev G T ,
- 3 The Trust "Kyrgyzelectroset stroy" - the Manager of the Trust is Turdubaev A G ,
- 4 The Construction's administration "Kyrgyzenergostroy" - the Chief of the administration is Ghidulyan U I ,
- 5 The reinforced concrete goods' plant (GBI) - the Director is Nam B I

named in future "The founders", using the Decree of the Government of the Kyrgyz Republic from December, 10, 1993, N592 "About reorganization the Kyrgyz state power company to the Kyrgyz state-joint stock holding power company", made this Agreement about reorganization the Kyrgyz state power company to the Kyrgyz state-joint stock holding power company of the Kyrgyz Republic "Kyrgyzzhosenerghoholding"

The founder's addresses and pay-sheets

- 1 The State property fund of the Kyrgyz Republic
address 720040, Bishkek, Prospekt Erkindik, 57
pay-sheet 001609623, joint stock commercial bank "Kyrgyzstan" MFO 303101504,
- 2 The Kyrgyz state power company
address 720070, Bishkek, Prospekt Gibek golu, 326 pay-sheet 000221206, Promstroybank MFO 330101328,
- 3 The Trust "Kyrgyzelectroset stroy"
address 722191, Alamedinskyy rayon, Alamedin-3, uliza Ivanizima, 60 pay-sheet 000221015,
Promstroybank, MFO 330103328,
- 4 The Construction s administration "Kyrgyzenergostoy"
address 720022, Bishkek, uliza Lermontova, 2 pay-sheet 000220003, Promstroybank MFO 330101328,
- 5 The Plant "GBI"
address 720065, Bishkek, prospekt Chuy, 2 pay-sheet 000221921, Promstroybank MFO 330103328

Article 1

The name, the location "Kyrgyzzhosenerghoholding"

The name Holdingcompany

"Kyrgyzzhosenerghoholding"

The address of the "Kyrgyzzhosenerghoholding" the Kyrgyz Republic, Bshkek, uliza Gibek goly, 326

Article 2

Judicial status of the "Kyrgyzzhosenergoholding"

- 2 1 The "Kyrgyzzhosenergoholding" is judicial person from the moment of its registration in Pervomaysk district state administration, Bishkek
- 2 2 The "Kyrgyzzhosenergoholding" is confirmed and realizes its activity on the basis of the Decree of the Government of the Kyrgyz Republic from 10th December, 1993, N592, the current legislation of the Kyrgyz Republic and other normative bills, also this Agreement and the Statute of the "Kyrgyzzhosenergoholding"
- 2 3 The working language of the "Kyrgyzzhosenergoholding" is Kyrgyz and Russian. All documents, which connected with "Kyrgyzzhosenergoholding's" activity, are composed on the working languages
- 2 4 The "Kyrgyzzhosenergoholding" has the independent balance, the seal with Emblem of the Kyrgyz Republic and indication of its name, the corner stamp, opens pay-sheet and other accounts in banks
- 2 5 The "Kyrgyzzhosenergoholding" has its trade mark, which model is adopted by the Company's council and registered in determining order
- 2 6 The "Kyrgyzzhosenergoholding" carries responsibility of its obligations in limits of its property, on which can be turned the penalty as to the current legislation
- 2 7 The founders of the "Kyrgyzzhosenergoholding" do not answer for "Kyrgyzzhosenergoholding's" obligations and the "Kyrgyzzhosenergoholding" does not answer for its obligations and other stockholders, except when it is in the Statute. The state does not answer for "Kyrgyzzhosenergoholding" obligations, the "Kyrgyzzhosenergoholding" does not answer for the state's obligations. Stockholders answer for "Kyrgyzzhosenergoholding's" obligations in limits of their stock's part

Article 3

Purposes, tasks "Kyrgyzzhosenergoholding's" activity

- 3 1 The purposes "Kyrgyzzhosenergoholding's" activity are future power engineering's developing, safe the items exploitation of the power system, fuller and continual providing of national economic complex with electric and heat energy, drawing into national economic turnover the largest republic's hydro-electric resources, improving of the management's structure and system power engineering complex, changing of the property's forms and market economics realization advantages
- 3 2 For getting these purposes the "Kyrgyzzhosenergoholding" realizes such tasks
 - elaboration long-terms forecasts, perspective and current plans of the power engineering's economic and social development, special purpose complex scientific-technical and economic programs,
 - conduction into life one technical policy for improving and exploitation technical means of the power engineering on the newest science and technology improvements' basis,
 - the "Kyrgyzzhosenergoholding's" management system improving, which is directed for the further development of market relations in the power engineering and power construction, securing of equal in rights interaction different property forms ,
 - adoption economic decisions labour payment, profit's distribution, financial, economic and technical policy conducting, which belonged to its competence,
 - conducting one investment policy in including foreign capital's attraction, organization joint undertakings, firms, joint stock companies,

- interaction with other state and international power bodies and interests' representation of the Kyrgyz Republic in these organizations, fulfilment of the taken obligations of inter-government agreements with foreign states, participation in co-ordination foreign activity in the power engineering's sphere as to the republic's sphere as to the republic's interests,
 - the users' safety power's supply as to the concluding agreements,
 - state supervision's realization of technical conditions of electric and heat using plants, control after rational using electric and heat power at the undertakings,
 - creation its representations, branches, on the Kyrgyz Republic's territory and abroad as to law's order,
 - realization of the labour protection's, environment protection's measures,
 - conducting one policy in the sphere of workers' and labour groups' social protection,
 - elaboration and ground of the tariffs for electric and heat power,
 - realization of the investment activity, acquisition and realization any shares and stocks,
 - realization of the activity's kinds, not forbidden by the legislation,
- 3 3 The "Kyrgyzghosenergoholding's" financial and industrial activity will be fulfilled according to the "Kyrgyzghosenergoholding's" plans on basis of the complete economic and commercial independence

Article 4

The "Kyrgyzghosenergoholding's" Statute fund

- 4 1 For the "Kyrgyzghosenergoholding's" creation and securing its activity there is organized the "Kyrgyzghosenergoholding's" Statute fund, which consisted of the "Kyrgyzghosenergoholding's" whole property's cost and cost of the state part's property in the organizing joint stock companies "Kyrgyzenerghostroy", "Kyrgyzelectroset story", the plant "GBI" During the period of the "Kyrgyzghosenergoholding's" organization its Statute fund can be changed as to the founders decisions, which drawn up as changes and additions to this Agreement
- 4 2 The Statute fund on 01 10 93 is organized
- the Kyrgyz state power company's property n the sum 200205 thousand soms,
 - the state part (65%) properties of the "Kyrgyzenergostoy" in the sum 404 258 thousand soms, the "Kyrgyzelectroset story" in the sum 962 455 thousand soms, the plant "GBI" in the sum 440 618 thousand soms
- 4 3 According to the Decree of the Government from December, 10, 1993, N592, the State property fund of the Kyrgyz Republic gratis transfers to the labour group's, equal to 2% from the "Kyrgyzghosenergoholding's" Statute fund The stocks' distribution is organized in closed way
- 4 4 The "Kyrgyzghosenergoholding" receives the right for accommodation and sale the sum, is equal to 10% from the Statute fund from meant by the Government for selling at stock-exchange and investment auction
- 4 5 The "Kyrgyzghosenergoholding" receives the right for realization the sum, is equal to 10% from the Statute fund in exchange for special payment means of the "Kyrgyzghosenergoholding's" labour group and adjacent undertakings through investment funds with which the "Kyrgyzghosenergoholding" will conclude agreements
- 4 6 The primary payment is equal to 25% from the sum of stocks, permitted for sale in priority order to labour group is transferred during 2 years

- 4 7 Further privatization of enterprises of the Kyrgyz state power company, emission, spreading and sale of stocks for the corresponding Statute capital is executed by the "Kyrgyzghosenergoholding" in accordance with acting legislation of the Kyrgyz Republic, the Decree of the Government from December, 10, 1993 N592 and the Resolution of the State property fund. In addition to that the state share of stocks of these joint stock companies is kept in the Statute fund of the "Kyrgyzghosenergoholding"
- 4 8 Dividends, counted on the state share of stocks, are directed in the budget and are used in the priority order on development of power system. The "Kyrgyzghosenergoholding" must give for the State property fund the report about use of dividends, accounted on the state share. If dividends are used not on the purpose, the dividends sum must be returned by the "Kyrgyzghosenergoholding" to the State property fund.
- 4 9 The part of Statute capital share, unredeemed by the "Kyrgyzghosenergoholding" till January, 1, 1997, will be pulsed to the state share.
- 4 10 The "Kyrgyzghosenergoholding's" founders and other stockholders can execute their installments for payment of stocks in the kind of
- monetary means (in soms and foreign currency),
 - different kinds of property (buildings and constructions, raw materials, fuel and other material valuables) on the agreement with the "Kyrgyzghosenergoholding",
 - securities
- 4 11 At depositing installments in foreign currency in the Statute fund of the "Kyrgyzghosenergoholding" for payment of stocks these installments are recounted in soms according the rate of Kyrgyz republic national bank.
- 4 12 Property installments for payment of stocks are given to the "Kyrgyzghosenergoholding" and kept in property way, chosen at its discretion. The "Kyrgyzghosenergoholding" assumes the responsibility of the safety of property, given to it.
- 4 13 The "Kyrgyzghosenergoholding" executes emission of stocks of such kinds
- inscribed ordinary,
 - inscribed licensed,
 - ordinary on demand,
 - licensed on demand

The owners of licensed stocks are guaranteed to obtain the income on the level _____ % of stocks' face value per annum. The owners of these stocks have only the right deliberative vote on the general meeting.

Article 5

The organizers' duties

- 5 1 The founders must give to each other the information, necessary for elaboration of separate questions, concerned to acting of the "Kyrgyzghosenergoholding"
- 5 2 If the obligations on the agreement are not executed or are executed improperly by one of the founders, this founder must compensate for other founders the losses, caused by unexecution or unprotected execution. Besides he must compensate the losses (production expenses, forfeiture or rejection from representation of rights or property), directly stipulated by breach of the agreement. Non-direct losses and missed advantage are not to be compensated.

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- 5 3 The “Kyrghyzghosenergoholding’s” founders bear soldiery responsibility for caused losses during a year from the day of registration. Such responsibility takes place if the losses are caused by the incorrect information in produced accounts, concerned the size on foundation of the “Kyrghyzghosenergoholding” or on valuation of property, given by the founders to the “Kyrghyzghosenergoholding”
- 5 4 The State property fund of the Kyrghyz Republic gives the paramount right for the “Kyrghyzghosenergoholding” on realization of 10% stocks from the Statute fund in exchange for special payment means of the “Kyrghyzghosenergoholding” labour group and the adjacent enterprises through the investing funds, with which the “Kyrghyzghosenergoholding” will conclude the agreement
- 5 5 The State property fund gives right for the “Kyrghyzghosenergoholding” on realization of 10% stocks from the Statute fund, as to the Government Decree for sale on stock-exchanges and investment auctions
- 5 6 The State property fund directs means, obtained from realization of the “Kyrghyzghosenergoholding’s” stocks, on the development of power system in accordance to the State program of power development
- 5 7 The “Kyrghyzghosenergoholding” must give to the State property fund the report about use of dividends, counted on the state share. If the dividends are used not answering to the purpose, the sum of dividends must be returned by the “Kyrghyzghosenergoholding” to the State property fund

Article 6

The “Kyrghyzghosenergoholding’s” supervisory bodies

- 6 1 In the “Kyrghyzghosenergoholding” there are formed such supervisory bodies

- general meeting (conference),
- Council of the “Kyrghyzghosenergoholding”,
- board

The President and the Vice-president of the “Kyrghyzghosenergoholding” are appointed by the Government’s decree in accordance to the Kyrghyz Republic Government’s decree from December, 10, 1993 N592

- 6 2 Competence and regulations of work of the “Kyrghyzghosenergoholding’s” supervisory bodies is defined by acting legislation of the Kyrghyz Republic and the “Kyrghyzghosenergoholding’s” Statute

Article 7

Solution of controversies

The “Kyrghyzghosenergoholding’s” participants will make all efforts to solve all arising discords and controversies, connected with, execution of this agreement, by the way of negotiations

If the discords and controversies can not be solved by the way of negotiations, they are examined in the ordinary course in the court or in the arbitration. The Court of Referees’ decree is decisive and obligatory for the litigants

Article 8

Conclusive theses

- 8 1 This agreement is concluded for the indefinite term and acts till the moment of its cancellation or till the moment of its dissolution or till less than 3 founders will be in “Kyrghyzghosenergoholding”
- 8 2 The founders have not right to pass the rights and duties, following from this agreement, in the infringement of the Statute and written consent of another founders
- 8 3 This agreement may be changed and added with the consent of the founders

8 4 If any regulation of this agreement become invalid, it will be not a cause for last regulations acting stopping

8 5 The Statute of the "Kyrgyzghosenergoholding" is enclosed to this agreement

Article 9

Coming into force

9 1 This agreement comes into force from the moment of its subscribing by all the participating parties The agreement is drawn up in 5 copies one by one for each participant of the agreement

The subscriptions of the founders

For the State property fund of the Kyrgyz Republic -
Head of the fund board Omuraliev E K

For the Kyrgyz state power company -
President of the company Tulebidiev G T

For the trust "Kyrgyzelectroset story" -
Manager of the trust Turbudaev A G

For the Construction's administration "Kyrgyzenergostroy" -
Chief of administration Gidulian U I

For the plant "GBI" -
Director Nam B I

To
From
Date May 7, 1996
Re Legal documents regulating Energy sector activities

I understand my task in order to analyze exclusively legal documents regulating Energy Sector's activities But I needed more documents to be studied to answer the questions that I've been asked That's why I studied legal documents beginning with Conception on denationalization and privatization, including all periodical editions articles in magazines and newspapers

Legal documents studied in the process of this memo preparing

- 1 Conception of denationalization and and privatization in 1993(Decree of the Jogorku Kenesh (Parliament)
- 2 Program for privatization in 1991 - 1992 (Decree of the Government)
- 3 Conception for denationalization and privatization in 1994 - 1995 (Decree of the Jogorku Kenesh, January 12, 1994)
- 4 Law " On General beginnings for denationalization, privatization and enterpreneurship in the Kyrgyz Republic" of December 20, 1991
- 5
 - a The same Law with additions and amendments in wording
 - b Of July 2, 1992, #939-XII
 - c Of January 8, 1993, #1229- XII
 - d Of June 23, 1995, # 5-1
 - e Of October 11, 1995, # 30-1
- 6 Decree the Government 65 of February 14, 1996
- 7 Decree of the Jogorku Kenech # 1386 XII of January 12, 1994
- 8 Decree of the State Property Fund of April 6, 1994 " The order of state owned enterprises' transfer into open joint -stock companies"
- 9 Law of the Kyrgyz Republic "On foreign investments in the Kyrgyz Republic" (of May 7, 1993, # 1221- XII and of September 26, 1995, # 20-1
- 10 Law on Join Stock Companies
- 11 Law on Enterprises in the Kyrgyz Republic of April 19, 1991, # 436-XII and of December 17, 1992, # 1086
- 12 Resolution # 592 of the Government of December 10, 1993, " On the State Energy Company's transfer into State Joint Stock Holding Company"
- 13 The Charter of the Kyrgyz State Joint -Stock Holding Company(KNEHC)
- 14 The Charter of the "Tsetrenergo" Generation Company (Kiev)
- 15 Articles in newspapers and magazines

All legal documents' summary will be given in the comments

May 10, 1996

I LEGAL BASIS FOR DENATIONALIZATION AND PRIVATIZATION IN THE KYRGYZ REPUBLIC

Denationalization and privatization in the Kyrgyz Republic are carried according to the Programs for 1991-1992, 1992-1993 and Conception on denationalization and privatization for 1993. The peculiarity of these documents is to create in a short time different types of ownership especially in the field of service in order to form self-regulating market mechanisms.

For 1994-1995 the Jogorku Kenesh of the Kyrgyz Republic has adopted by Resolution of January 12, 1994 the Conception of denationalization and privatization in 1994 - 1995 according to which state owned enterprises should be transferred into joint-stock companies during four months excluding enterprises where denationalization and privatization according to an above-mentioned program are prohibited.

State owned enterprises with the number of employees more than 100 to 1000 persons have been transferred into joint stock companies (item seven of the law).

Program for privatization of December 20, 1991 mentioned before where stages of denationalization and privatization have been foreseen, Resolution of the Jogorku Kenesh on Conceptions, Resolution # 65 of the Government of February 14, 1996 equally with the President's Decree are the legal basis for legislative regulation determining general beginnings of denationalization and privatization in the Kyrgyz Republic.

According to general regulations for holding companies' foundation on the basis of state enterprises there are restrictions for some state enterprises' privatization in accordance with the state privatization program until these restrictions are canceled by the corresponding state management bodies (Article 3, of Law "On denationalization" of January 12, 1994). The State energy company is included in the list where privatization and a holding company's creation are not foreseen. Land and bowels of the earth, forests, water and other natural resources are objects of exclusive ownership. One can only rent them and it is regulated by special laws. That's why some questions are arising when all laws are analyzed in total.

II KNEHC'S CHARTER

In Article 3 of the KNEHC's Charter there is the company's right providing "realization jointly with SPF further denationalization and privatization of companies consisted KNEHC. It is interesting that in accordance with the Conception of denationalization in 1994-1995 (Chapter III "Method for denationalization") energy companies in spite of how big they are not privatized. But they should be preliminary denationalized that means state owned companies' reform with transfer the economic managing functions and corresponding authorities direct to business entities. Unlike privatization that means purchase state ownership (shares) from state companies transferred into joint-stock companies. By the way 51% of state owned shares of KNEHC is an indivisible property - electric networks and high voltage transmissions lines.

The Law of January 12, 1994 determines a holding company as a joint-stock company which own shares of other joint-stock companies. It gives the vote enough to control their business. According to the KNEHC's Charter 51% of the state ownership of all enterprises should be given to the KNEHC with the right to manage (i.e. they are also indivisible).

The following metamorphosis looks interesting. The President of the "Kubat" state energy holding company (there isn't any idea of "joint-stock in the name) was approved by the President's decree of February 28, 1992, while the state energy company was transferred into KNEHC only on December 10, 1993 (Resolution # 592), i.e., the president of non-existing holding company was approved. As one sees from Charter (but already without "Kubat" in the name) the Charter was adopted at the foundation conference on December 28, 1993 and was approved by the Government Decree only on January 20, 1994. From above-state collisions should be in

application of legislation. So, the question of the state companies' transfer into joint-stock companies should be decided by SPF and labor collective jointly. But in the law on the former energy company's transfer these kind procedures are not provided. It was said before that the Law on Joint-Stock company in the Kyrgyz Republic has been added and changed three times. Articles six and two of the Law's last edition provides that a joint-stock company has a full economic independence in the point of determination of management forms, taking decisions in business activities, pricing and profit use. All these functions are included in the KNEHC's Charter, which is a joint-stock company. Thus, absence of joint decisions in the state energy company's transfer could lead to arguments arising, i.e., the Law itself gives grounds for collisions because the company has been transferred into a holding company by way of resolution.

III ABOUT AUDIT QUESTIONS

There is not any institute of auditing commissions both in the KNEHC's Charter and on other joint-stock companies' charter being parts of it. Articles 16, 17, 20 of the Law of denationalization and privatization of January 12, 1994 provide the order for

The SPF's decisions of the same kind could appear in the Government Law (from 7,8, Article 6)

IV LAW REGULATING THE ENERGY SECTOR

According to the Resolution # 268 of the Government of May 2, 1994 "on preservation of stability in energy supply electricity development is one of the necessary conditions for Republic's way out of crisis

Transformation to electricity heating of social and cultural institutions and residential could help to save 1,4 million tons of coal. But because of funds and materials lack construction, repairing and operation of electric networks of all voltage (35-220 km) and distribution lines (0,4-10 km) are partially completed. In Resolution of Government # 49 of February 4, 1993 "On construction and putting into operation important objects of energy system" and #50 "on measures for realization of The Kyrgyz Republic President's Decree of January 11, 1993 "On Priority development of an energy sector of the Kyrgyz Republic" is indicated that insufficiency of credit resources has practically stopped implementation of above-mentioned resolutions.

Up to now Tash-Kumyr Power Electric Plant is not put still onto the projected capacity.

In 1993 72 km of 35 km electrical transmission lines and 552 km of 0,4-10km have been put into operation, i.e., 17% of a total annual task.

For 1994-1995 further development of KNEHC and Narynhydroenergozostroi has been planned.

Meanwhile the Law on further development of energy resources in the republic is taken into consideration in the Jogorku Kenesh (from Tuleberdiev's speech on TV)

Of March 6, 1992, #876 - II

Comments on KSEHC's Charter

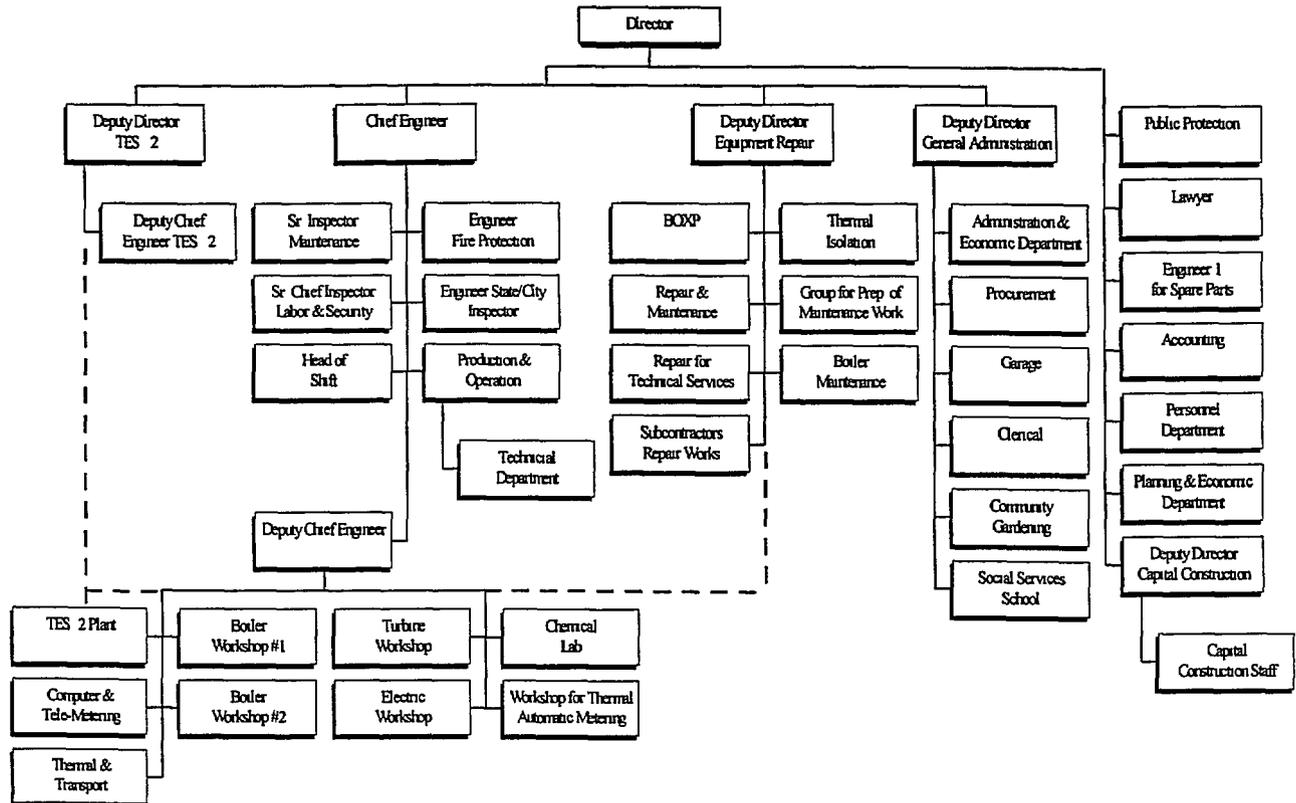
- 1 A new established company is named a "holding company", but it essentially is a state joint stock company (GAO, see charter 10, item 3, KSEHC is also named "Society" items 1, 5, 33 of the Charter)
 - Besides, why the Charter is signed by company's President if it has been approved by the Government
- 2 According to the chapter 5, item 11, KSEHC's Charter capital (fund) is established by all company's property and by state owned shares of joint-stock companies Kyrgyz Electric Network Construction Company, Kyrgyz Energy Construction Company of Ferro-Concrete Plant
KSEHC has the right to manage these shares
Thus, 19 companies' state owned shares are added to KSEHC's state ownership it means that KSEHC is going to be a state joint-stock company for a long time, i.e., different rules are used for managing of the same joint-stock company's ownership (51% - in KSEHC and 49% - in subsidiaries over KSEHC). It results from this that not only 51% of hydroelectric plants' state shares cannot be privatized but also all KSEHC's property including all 19 companies' 51% of shares given to KSEHC for management
Though item three, page 3, of the Charter indicates that KSEHC has the right to implement together with SPF further denationalization and privatization of companies and organisations formed KSEHC
How can 51% of ownership be privatized if they have been given for management and the rest part of ownership is remaining to be owned by 19 joint-stock companies?
- 3 As for question on managing bodies (see chapter 9, item 25), KSEHC has created Council which is to implement a number of functions concerning general meeting. But it's unknown
 - how is this Council formed - at a meeting or other way?
 - how many people does this Council include?Under these circumstances Council's function that is supposed to approve regulations on the basis of which KSEHC's Board is functioning seems senseless. The Council is turned out a formal body if it's unknown how it is formed and how many people are included in it. Moreover it is an ephemeral Council and Board. Managing bodies' structure and their functional responsibilities should be cleared up.
- 4 According to the Charter the President has the right to appoint and to dismiss Directors for KSEHC's companies and organisations (evidently, for those 19 companies which are forming KSEHC by their state owned shares). There are some problems. How the President can dismiss a Director and appoint another one if all these 19 companies gave the state owned shares to KSEHC only with the right to manage but they have remained the owners of them and the rest of the ownership not given to KSEHC. One should think that directors under the present legal situation could hardly be dismissed by KSEHC's President
Probably, according to each of 19 companies' Charter a Director is to be elected at company founders' general meeting. How can this collision be solved? This is an issue. Another matter that the control blocks of shares gives to KSEHC the right to take or refuse some decisions at a general shareholders' meeting.

There are also other collisions in KSEHC's Charter. In order to answer to raised legal questions and to give recommendations it is necessary to study

- The Decree # 592 of the Government of the Kyrgyz Republic of December 10, 1993
- All 19 companies' Charters (with the purpose to clear up contradictions between KSEHC's and included companies' Charters if there are any)
- KSEHC's documents and materials appeared after it has been transferred in a holding company, hasn't it been just formal renaming? How to improve KSEHC's work? It is a very delicate question because it can be possible required KSEHC's reconstruction
- current legislation regulating energy sector activities in Republic that could be changed after all this sector revision

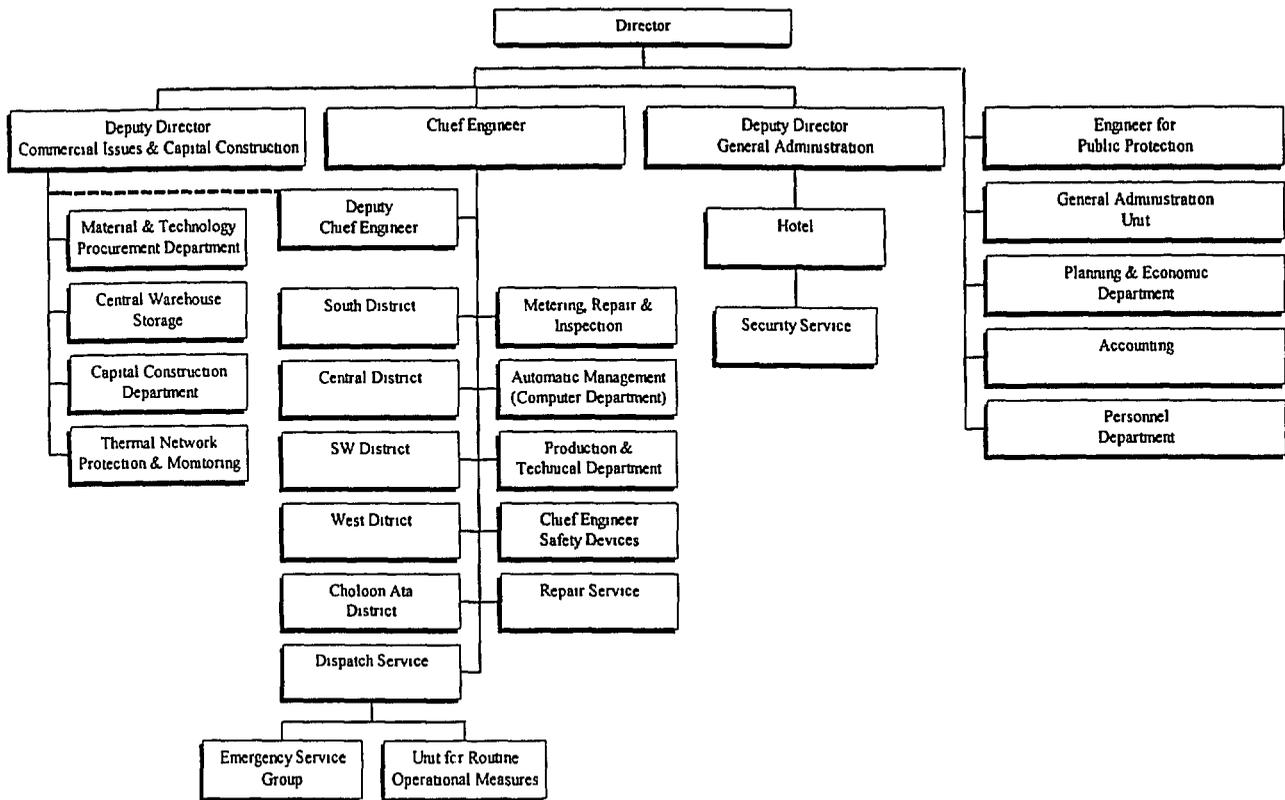
At present it is impossible to guess a scope of work. I will reflect its implementation in my reports. It follows from this that for implementation of this aim permanent and systematic work not only with documents should be done. Thus, for example, "Kyrgyz Electric Network Construction" company has announced its shareholders about company's annual meeting on April 18, 1996, that I am going to participate informally as a individual in order to clear up some questions. It will also be helpful to visit other KSEHC's companies meetings (for getting general information about activities of KSEHC's companies we are interested in).

Organizational Structure of
Bishkek Thermal Electric System

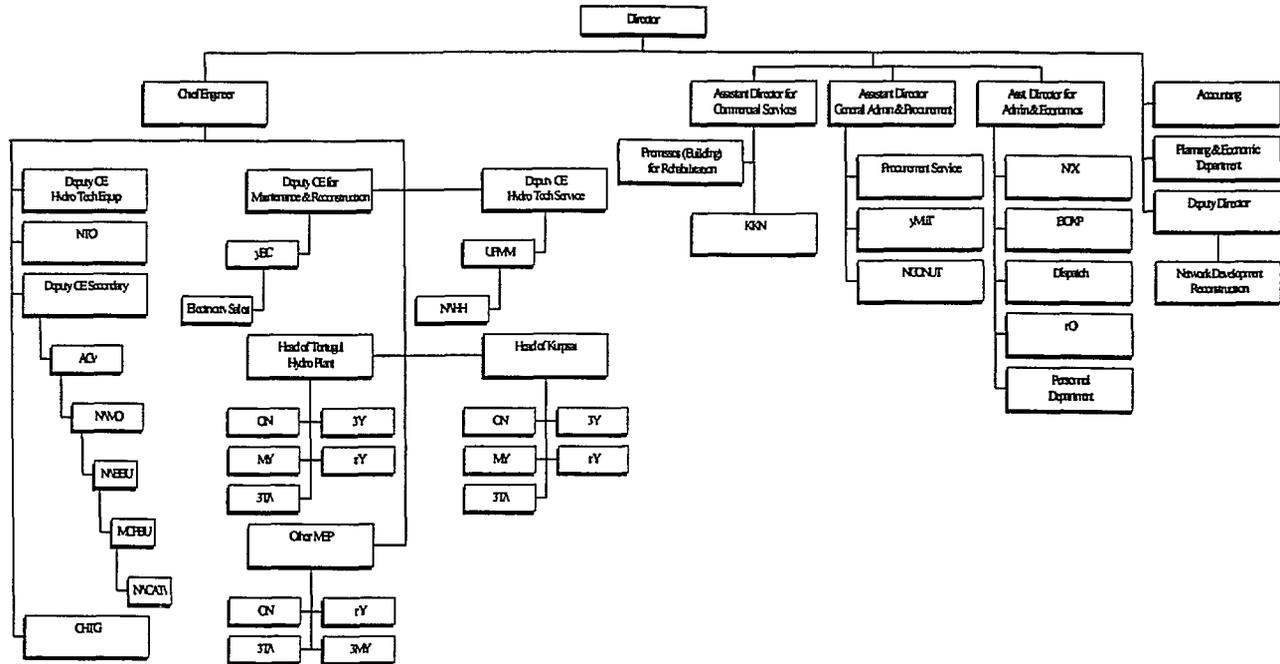


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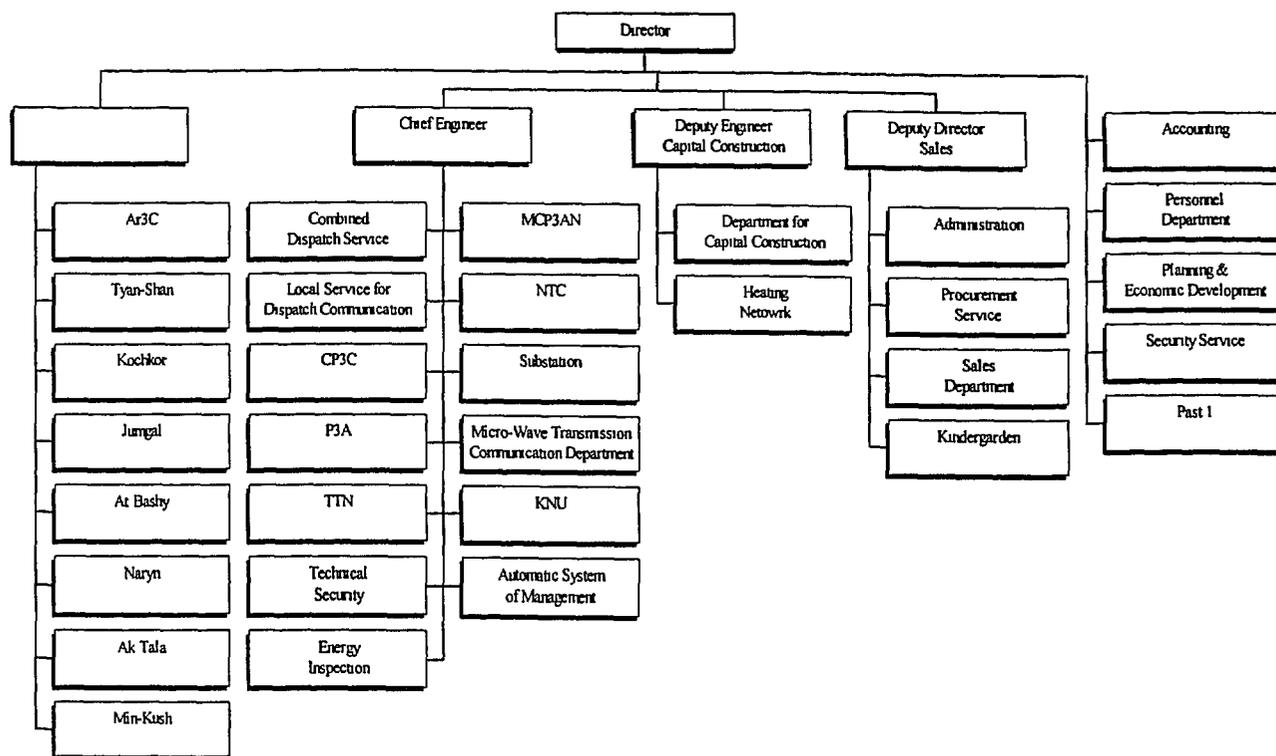
Organizational Structure of
Bishkek Thermal Network



Organizational Structure of
Tortugul Hydro Station

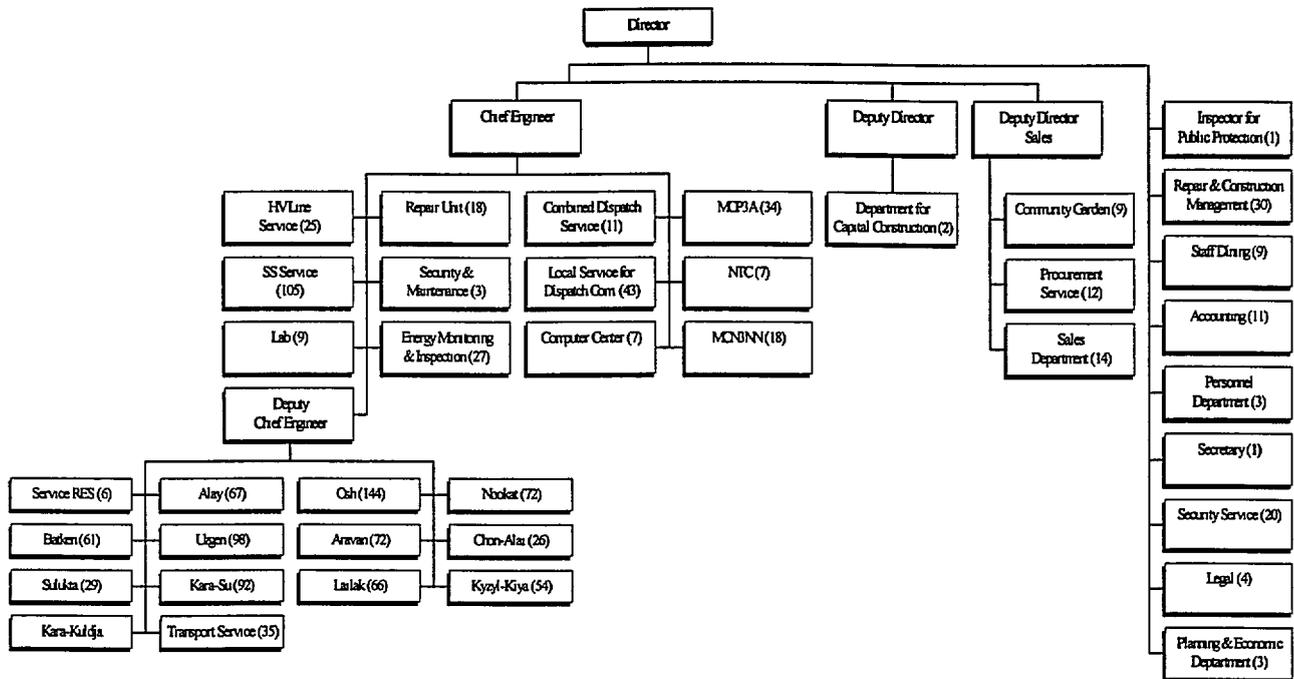


Naryn Distribution Enterprise



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Organizational Structure of
Osh PES



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Bishkek Training Center Program

The Bishkek Training Center has a total of 45 staff (2 training specialist and 11 trainers) In 1994, the Training Center has provided the following training programs

NUMBER OF EMPLOYEES WHICH HAVE COMPLETED TRAINING PROGRAMS

Full-time Program

Training of new Workers	425
Improvement of Worker skills	319
Improvement of Engineers skills	186

Part-time Program

Part-time training program	3300
Total	<u>4230</u>

A TOTAL OF 4230 PERSONS WERE TRAINED IN THE FOLLOWING AREAS

- Boiler Maintenance
- Transmission Tower Construction
- Hydro Turbine Repairs
- Distribution Maintenance
- Substation Maintenance and Operation
- Metal Works / Welding
- Maintenance of Batteries
- Laboratory Chemistry
- Safety Program
- Transformer Repair
- Repair of HV/LV Switches

LIST OF TRAINING / SEMINARS BY USAID

- 1 Tariff Structure, Rate Making and Electricity Pricing Course
- 2 A Project Finance Primer
- 3 General Corporate Management of an Electric Utility Company
- 4 Integrated Resource Planning and DSM Training Course
- 5 Economic Evaluation and Investment Decision Methods
- 6 Human Resource Development and Training Management

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LIST OF TRAINING PROGRAMS DELIVERED BY EU TACIS

- 1 Industrial Culture in the Commercial World
- 2 Business and Administration (Executive level of Management)
- 3 Human Resource Management
- 4 Organization - Practice and Theory
- 5 New Technology Under Market Economic Condition
- 6 Personal Development
- 7 Various Computer Courses

TARIFF SCALE

Labor tariffs and providing qualification grades to workers, specialists and other employees are achieved in accordance with Types of Work and Workers' Professionals, found in the "Qualifications Reference Book for Positions of Managers, Specialists and Employees"

A 17-grade tariff scale for industrial and production staff payment is in operation at KNEHC's enterprises, as shown in Attachment #1

In order to provide the differentiation of workers payment depending on their qualification and the level of difficulty of work performed, tariff grades 1 through 7 have been implemented as specified, including

- for workers occupied with equipment maintenance - seven tariff grades (1-7),
- for worker occupied with equipment repairs - six tariff grades (1-6)

For different groups and categories of managers, specialists and employees there is a common tariff scale of 17 grades (1-17), including

- employees - grades 1 through 3,
- specialist - grades 1 through 8, and
- division leaders in enterprises - grades 4 through 17

Workers payment are fixed as follows

- monthly rates of a tariff (rate of wages),
- common tariff rates for workers occupied both with equipment repairs and maintenance,
- monthly rates of a tariff (rate of wages) for drivers,
- rates of pay for time-workers and piece workers of "Kyrgyzenergogoccpetsremont" Construction Company and Ferro-Concrete Structures and Parts Production Plant

Rates of pay are established within ranges. The minimum rate of pay is established according to the level of the employees skill. Increase in the rate of pay within the range should take into consideration the employees individual skills, length of service, education, level of qualification within the grade, and business-like qualities

The organization of payment for managers, specialists, and employees is achieved in accordance with Resolution #1115 of September 17, 1986

In the chart for officials salaries there are

- Categories of qualifications,
- Salary ranges for each higher group of qualification exceed salary ranges for a subordinate group, and
- The order for determination of group for payment (company, district electricity distribution center, workshop, and sector)

Rates and conditions for payment of top officials are established by contract, concluded for a definite time period, with the President of KNEHC

Salaries for the first deputy of manager, senior accountant and for senior engineer deputy are 10-30% less than manager salaries

The following are additional payments and bonuses

A Additional Payments

- For a team leader (brigade), responsible with main activities, with up to ten team members, will receive 10% of the rate of pay, with more than ten team members, will receive 15% of the rate of pay
- For employees performing work during the night and overnight shifts, in the rate fixed by the April 14, 1987 Decree of Minenergo (Ministry of Energy) of the USSR, and by the Resolution #88/6-140 of March 7, 1989 of Goskomtrud (Labor State Committee) of the USSR and Trade Unions of the USSR, and Resolution #313/14-9 of August 6, 1990 and Resolution #242/10-9 of June 19, 1990
- For difficult and hazardous working conditions, the following rates apply
 - 4% - 11 soms
 - 8% - 22 soms
 - 12% - 32 soms
- For combination of professional and expansion of zones of service
- For car drivers unfixed working hours - 25% (a list of cars in accordance with Trade Unions should be approved by company management)

B Bonuses

- For bus and car drivers of 1 class - 15%,
- For truck and car drivers of 1 class - 25%,
- For truck and car drivers of 2 class - 10% of rate of pay

II PAYMENT FOR NON-INDUSTRIAL STAFF

Manager's salary and rates of pay for employees of a non-industrial group are estimated on the basis of current branch regulations for payment, decisions of company council and taking into consideration the minimum level for payment specified by the President's Decree of the Kyrgyz Republic

Rates of pay of non-industrial staff are not included in the common tariff scale. They are presented in the Regulations #21 - 29, according to specification of activities

Methodical approaches to the organization of payment are retained in a section and specified by the orders #64a of May 8, 1990, #140 of April 11, 1991, #158a of September 21, 1990, #163, and also addition payment and bonuses specified by the March 23, 1990 Resolution #58 of Goskomtruda of the USSR

III NORMATIVE BASE

KNEHC employee "work quota" setting is based on a branch and different branches normative documents, time norms, number normative approved by Goskomtruda of the USSR

If it is necessary, local norms could be developed and should be approved by a company's Chief Engineer and agreed upon by the Trade Unions

Head of Planning and Economic Department K M Ukulov

**Rates of Tariff (Rates of Salary) of Workers Occupied
with Equipment Repairs and Maintenance, Machine Works, and
Works in Specialized Workshops in KNEHC (with normal conditions of work)**

	Types of Work	Grades and Corresponding Rates of a Tariff						
		I	II	III	IV	V	VI	VII
1	<ul style="list-style-type: none"> ▪ Equipment maintenance at thermal and hydro electric plants and electric and thermal networks ▪ Enterprises of state energy supervision ▪ Production laboratories of energy systems 	153 237	170 263	188- 291	210- 326	233- 360	263 407	285- 443
2	<ul style="list-style-type: none"> ▪ Equipment maintenance at enterprises and equipment repairs workshops (rolling stock ships and cars) controlling and measuring apparatus and automatic devices ▪ Repairing and construction energetic foundry forge steam power plant compressor vent and humidifying and oxygen installations ▪ Purification works 	153- 237	170 263	188 291	210 326	233 360	263- 407	na-
3	<ul style="list-style-type: none"> ▪ Machining and Cold Stamping of metals and other materials ▪ Producing an repairing of equipment and machining for piece and time workers 	153 237	170 263	188 291	210- 326	233- 360	263 407	
4	<ul style="list-style-type: none"> ▪ Repairing and adjusting of the main technological electrical experimental and scientific equipment machines mechanisms ships cars and other mobiles electronic computers controlling and measuring apparatus and automatic devices for piece and time workers 	153 237	170 263	188- 291	210 326	233- 360	263- 407	

**Salaries for Specialists of
All Types and Groups of KNEHC's Companies**

Name of Position	Salary / Month in Soms	Grades of Payment in Common Tariff Scale
Lead Engineers Designer, Technologist on Work Quota Setting and Organization	285 - 443	7
Engineers Designer, Technologist I Category	270 - 419	6
II Category	255 - 396	6
III Category	233 - 360	5
Engineer on Work Quota Setting and Organization I Category	270 - 419	6
II Category	355 - 396	5
Lead Engineers of other Specialties Accountant Accountant-Inspector	258 - 401	6
Engineer Economist Accountant Accountant-Inspector, Legal Advisor Psychologist Sociologist Translator I Category	255 - 396	5
II Category	233 - 360	5
Engineer without Category	210 - 326	4
Technicians of all Specialties I Category	198 - 308	3
I Group		
II Group	255 - 396	5
III Group	230 - 356	4
Foreman of the Production Sector, Sector Inspector I Group	255 - 396	5
II Group	230 - 356	4
III Group	210 - 326	4
Chief of Civil Defense Headquarters	243 - 377	5

Salaries for Management Staff and Operational Services of KNEHC

Name of Position	Salary / Monthin Soms	Grades of Payment in Common Tariff Scale
First Vice President	525 - 814	13
Vice President	435 - 674	12
Executive Directors of Subsidiaries	435 - 674	12
Executive Director for Development and Maintenance of Distribution Network	435 - 674	12
Head of Technical Center	480 - 744	12
Head of Operation / Production Department	345 - 535	9
Head of Central Dispatch Service	330 - 512	9
Head of Operational Services according to the types of activities	215 - 488	8
Head of Dept OEV Financial Dept Commercial External Relation and Privatization	285 - 442	7
Head of Capital Construction	315 - 488	8
Environmental Protection Personnel Dept Project Design Office	278 - 430	7
Head of Sector Operational Services and Capital Constructions	263 - 407	6
Head of Sector of Other Departments	245 - 379	5
Head of Public Production Dept	237 - 367	5
Office Manager	210 - 326	4
Head & Senior Engineer of Central Energy Lab	308 - 477	7
Head of Operational Lab	269 - 416	6
Senior Master for Production Service or Operational Lab	237 - 368	5

State Committee of the Soviet Socialist Republics
on Labor & Social Issues

**Qualifications Reference Book
for Positions of Managers, Specialists and Employees**

Edition 1

Managers & Specialists of all Branches of Industry & Economy

Moscow, Economics 1987

INTRODUCTION

GENERAL ISSUES

1 Managers

Directors (General Director), Head of Department, & Managers (of Production Unit or Company or Enterprise), Senior Accountant, Senior Dispatcher, Senior Engineer, Senior Designer, Senior Metallurgist, Senior Meter Reader, Senior Mechanic, Senior Welder, Senior Technologist, Economist, Power Engineer, Head of Typist, Head of Archivist, Head of Pass Bureau (Security Department), Head of Office Clerks, Head of Copying Department, Head of Scientific and Technical Library, Head of Storage, Head of Photo Lab, Head of Economics Unit, Head of Central Storage, Deputy Director for Central Construction, Deputy Director of Quality Control, Head of Technology Control Department, Deputy Director on Commercial Issues, Master Controller, Master for Operation Center, Head of Labor Organization and Salary Payment Workshop, Head of Computer Center, Head of Instrument Department, Head of Research Lab, Head of Lab for Controlling Production, Head of Lab for Scientific Organization of Labor and Production Management, Head of Lab for Technology and Economic Researches, Head of Standards, Head of Department Management of Production through Computer, Head of External Relations Department, Head of Personnel Department, Head of Procurement Department, Head of Department Mechanization and Authorization of Production Process, Head of Department for Scientific and Technical Information, Head of Organization of Labor and Salary Payment, Head of Department for Labor Protection and Safety Devices, Head of Department for Patent and Discovery, Head of Department of Personnel Training, Head of Sales Department, Head of Standardization Department, Head of Planning and Economics, Head of Production/Operation Department, Head of Production and Dispatch Workshop, Head of Repair Workshops, Head of Shift, Head of Shift of Computer Center, Head of Technical Department, Head of Technological

Workshops Financial Department, Head of Technological Workshops Economy Department, Head of Central Lab, Head of Experimental Workshop, Head of Legal Department

2 Specialist

Accountant, Accounts Auditor, Dispatcher, Engineer Designer, Engineer for Computers, Computer Management, Production of Tools and Instruments, Engineer for Quality, Engineer for Metallurgy, Engineer for Mechanization and Atomization of Production Process, Engineer for Scientific and Technical Information, Engineer for Rate Setting,

Legal Consultant, Plant Engineer, Economist for Financial Work, Economist for Sales, Economist for Planning

3 Employees

Assistant for Procurement, Archives Workers, Duty and Bureau of Passes, Cashier, Official clerk, Typist, Expeditor, Draftsman, Secretary, Copy-Boy

4 List of Positions for Managers and other Employees

**Job Description for the Director (General Director, Manager, Head)
of Production, Association of Company Enterprise**

RESPONSIBILITIES

He/She should manage according to the legislation of the Social Enterprise He/She organizes the work of other structural subdivisions of the company He/She directs their activities for achievement of production and improving of operations He/She helps to make the company meet world standards in order to fully satisfy the demand of the national economy, and population in corresponding types of goods He/She is responsible for improving the labor production, efficiency of production and quality of goods on the basis of broad introduction of new techniques and progressive technology, scientific organization of labor, production and management, and improvement of the economical mechanism

He/She insures implementation by the Company of all tasks and plans given by the State or Country according to the established indicators of number and quality, program for renovation of products, plan for capital construction, all duties before state budget, supplies, clients and banks He/She organizes operational activities of the company on the basis of applying methods of scientifically based planning, material, finance and labor expenses

He/She is responsible for dissemination of works, mobilization of reserves of production, reaching high technical and economic indicators, improvement of the technical level quality of a product, rational and economical use of all kind of resources He/She takes measures on providing the Company with qualified staff, on the best use of their knowledge and experience, creation of safety and favorable conditions for their work, and keeping requirements of legislation on environment protection

Together with Social Organizations and labor collective, he/she organizes Socialistic competitions, summing up of results, definition of winners and solving issues awarding He/She realizes measures for Social development of the company He/She provides development, conclusions and implementation of collective agreement

He/She conducts work on upbringing of staff in the spirit of the Organization, good attitude toward work, and he/she should keep state interests, strengthening of labor and production discipline

He/She promotes development of creative initiative in labor activity of workers and employees He/She ensures correct applications of principle of social fairness, and combination of economic and administrative methods of management, undivided authority and collective leadership in discussion in solution of questions, material and moral stimulus for improvement efficiency of production, and also for strengthening responsibility of each employee for tasks he/she was responsible to carry out for the work results of the whole collective He/She solves all questions within the limits of his rights and he/she delegates implementation of some production functions to other officials and heads of divisions and also heads of subdivisions of the company

He/She insures the implementation of Socialistic legislation of the company and activities and uses legal means for management improvement, strengthening of discipline and accounting-records He/She consistently conducts into life decisions of party and Socialist Government

He/She should know

- resolutions and decisions of the Party and the Government,
- key direction of economy and CCCP, corresponding branch of economy,
- resolutions, instructions, orders and other materials of other leading bodies concerning companies' activities,
- profile specialization and peculiarities of the company structure,
- prospective technical, economical and social development of the branch of the company,
- production capacity of the company, production technology of the company,
- order of development and approval of plans of company's economic activities,
- methods of management of the company,
- order of conclusions and implementation of agreement,
- achievement of science and technologies in Soviet Union and abroad, in corresponding branch of production/economy,
- advance experience of other companies,
- forms and methods for organization of Socialistic competition, economics, production organization, labor and management organization,
- the basis of legislation of Soviet Union, and
- rules and norms of labor protection, safety devices, production safety and fire prevention

REQUIREMENT QUALIFICATIONS

He/She should possess a high Technical, Engineering or Economic Education Length of Experience for managing position in corresponding profile of the company should be less than five years

**Responsibility of a Chief Engineer
on Electricity Consumption**

RESPONSIBILITIES ARE AS FOLLOWS

- 1 Preparing the projects, laws, regulations, methodical documents on electricity supply and pricing questions
- 2 Substantiation and proposals on sanctions for the breach of agreed conditions of electricity consumption (fines, penalties, allowances and raise of tariffs and others)
- 3 Developing of standard agreements for electricity supply to consumers
- 4 Examination of the agreements for electricity supply to domestic consumers
- 5 Pretension work on keeping the agreed conditions for electricity supply to consumers
- 6 Correspondence work on pricing, observation of tariffs for electricity, electricity realization, observation of normative energy loss for transport, reduction of commercial loss and accounts receivable with the subsidiaries of KSEHC and users of the energy sector
- 7 Estimation of the tariffs for the average released electricity on the basis of analysis of the electricity consumption structure in the KSEHC and electricity utilities enterprises on whole
- 8 Setting up and systematic keeping of the catalog for consumers on the whole in Republic, in regions, in different branches of the national economy, banks and others
- 9 Analysis and preparation of proposals on structure and volume of electricity consumption per month, per quarter, per year and prospects The estimation of goods for sale (volume of sales in cash) on the basis of analysis of the structure of the electricity consumption by each electricity utilities enterprise
- 10 Estimation and substantiation of the special tariffs for
 - electric heating,
 - compensation of reactive capacity,
 - peak capacity,
 - two tariffs (peak and off peak),
 - regional tariffs, and
 - tariffs according to the categories of consumers (wholesale and others) taking into consideration the expenses for supplying the electricity to each category and compared expenses (fuel cost replacing by electricity to each category and compared expenses (fuel cost replacing by electricity, differences in electricity transportation to consumers located near or far from the source of energy, volume of purchased energy and a voltage class used for electricity supply and other criteria affected on the cost of the sold electricity to users)
- 11 Accumulation and application the information for tariff estimation for different groups of users Improving the skills on the questions of electricity supply, pricing and others Weekly, not fewer than four hours, skills should improve on the basis of self-instruction in the field of official responsibilities
- 12 Once a month classes on the questions of pricing, pretension work should be set up and conducted in the department, in the enterprises of the company, in the training center in accordance with the schedule for training
- 13 Developing of technical questions for programming the tasks on the questions of pricing, current and prospective electricity consumption, records on tariffs, electricity consumption and others

Job Description for Meter-Reader

Typical qualification requirements for a Meter-Reader / Electrician of a transmission and distribution enterprise

REQUIREMENT QUALIFICATIONS

Special electro-technical education and at least 3-year of service in the capacity of an electrician

a A METER-READER SHOULD KNOW

- 1 Types of meters, the way they work
- 2 Circuits of meters connection, one-phase and three-phase
- 3 Requirements to meters
- 4 Measuring transformers and their application
- 5 Tariffs
- 6 Methodology of the connected capacity estimates with the help of meters
- 7 Existing ways of stealing electricity Methods of its search and identification
- 8 Calculation of the amount of electricity consumed by a customer who was identified as stealing electricity
- 9 Claim validity
- 10 Billing of a residential consumer (a sample)
- 11 Circuits/charts of electricity supply to residential consumers Organization of relationship with customers
- 12 Periodicity of meters checking
- 13 Typical agreement with a customer on electricity consumption/utilization
- 14 Procedure of a residential consumer connection (having a one-phase or two-phase outlet)
- 15 Minimum cross-sections of wires used in connections extended from the poles to the premises, and requirements to isolated wires use
- 16 Safety grounding and zeroing
- 17 Requirements to protective/safety grounding while installing electric boilers, etc
- 18 Responsibility of a customer for meters safety
- 19 Requirements to location and precision of commercial meters being used
- 20 Connection point balance boundary

Job Description for Leading Engineer for Electricity Consumption

RESPONSIBILITIES

- 1 Develop the draft of laws, provisions, and methodological documents on the question of energy supply and pricing issues
- 2 Substantiations and suggestions on sections for breaking of agreement/conditions for electricity consumption (fees, reduction and/or increase in tariff and fine)
- 3 Develop typical agreement of electricity supply to consumers
- 4 Examine the agreement for electricity supply to consumers of the domestic market
- 5 Ensure that the agreed conditions for electricity is supplied to consumers
- 6 Correspond on pricing issues, observation of tariff for electricity, sale of electricity, observation of normal losses of energy for transmission and distribution, decrease in commercial losses and account receivables with subsidiaries of KNEHC and its consumers
- 7 Estimation and calculation of the average level of tariff for electricity (sale) on the basis of the structure of energy electricity consumption in total for energy company and its distribution company
- 8 Organize and maintain catalog or registration book with presentation of information on sum of accounts, receivables and payments, for customers, account receivables, debtors, Republic regions, branches of economy, and banks
- 9 Analyze and develop proposals for structure (rate) and volume of electricity consumption, by month, quarter, year and prospective development Estimate volume of sales in cash on the basis of analysis structure of electricity of each distribution enterprise
- 10 Estimation of special tariffs
 - for electrical heating
 - compensation reactive capacity
 - peak capacity
 - TOD tariff (time and day)
 - regional tariff
 - tariff according to categories of consumers (wholesale, retain and others)

Taking into consideration for providing with electricity each category and comparable expenses (cost of organic fuel which is replaced by electricity difference in transportation of electricity to consumer, located for or near the source of energy, volume of energy, purchasing energy and class voltage on the basis of which electricity supplied which have influence on the cost of the sold electricity)
- 11 Collecting information and its use in tariff estimation according to different groups of consumers Increasing of qualification on energy supply issue through weekly, not less than four hours, self-training classes on issues covered by job responsibilities
- 12 Not less than once a month, organize and conduct, in the training center in the department, in division of energy company, classes on pricing, agreement policy, affected work according to the schedule of training
- 13 Development of technical task on pricing issues, current and prospective consumptions, reporting on tariffs, electricity consumption and other issues