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**ASSESSMENT OF POLICIES AND REFORM
IN THE FUEL SUPPLY SUBSECTORS**

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INTRODUCTION

This report is a brief assessment of Georgia's national government energy policies and the status of restructuring, legal/regulatory reform, corporatization commercialization, and privatization in the fuel supply subsectors for electricity generation. This work complements other efforts by USAID to assist power sector operations.

This report examines the status of reforms in Georgia's fuels markets used for power generation. The oil and gas markets are examined. Coal and geothermal markets are not examined because there is consensus among both Georgian and foreign policymakers that Georgian coal and geothermal reserves have no potential as fuels for electricity generation. Policy recommendations are presented at the end of the report.

As the single greatest cost in the delivery of electricity to consumers, fuel and fuel supply issues are central to the financial viability of Georgia's power sector. Access to adequate supplies of high quality, low cost fuel will be essential for power sector enterprises to operate as profitable companies in the restructured Georgian power industry.

The most serious fuel-related problem facing the Georgian energy industry in the short term is power plant's inability to purchase fuel due to a lack of cash. This particular problem is rooted in the payment collections and cash flow process within the electric power industry and is in turn a product of the larger non-payment issues plaguing the overall economy.

Despite this seemingly insurmountable problem of low payments, many other major problems of fuel supply face the Georgian electricity sector. These include the total dependence on gas imported from Russia during winter months, incomplete reform in the domestic oil and gas industry, and the low levels of domestic hydrocarbon production.

THE GEORGIAN HYDROCARBONS SECTORS

This section and the next discuss the Georgian oil and gas sectors and their reform status

Natural Gas Market

The entire gas sector of Georgia has collapsed. Historically, natural gas had been the single most important energy source for the Georgian economy, accounting for over 70% of Georgia's primary energy use in 1989.

After the breakup of the FSU and beginning in 1992, the price of imported gas rose by 2500%, thus ruining the Georgian economy. Turkmenistan is currently owed close to \$400 million, which Georgia can not pay. The inability of Georgia to pay has resulted in an almost total interruption of gas supplies. A small amount of gas is still imported as and when funds are available, principally for the Rustavi Metal Works (0.5 mcm/day) and for electricity generation at Gardabani (2.5 mcm/day – when operating).

Thus, annual gas consumption has dropped from a high of 6.2 bcm in 1989 to an estimated 0.7 bcm in 1996. Industrial production in Georgia had fallen by 96% by 1995. Gas was historically used in Georgian industry (metallurgy, cement, chemicals and fertilizer), the energy sector (electricity generation and district heating), agriculture and food processing, as well as in households (250,000 in Tbilisi alone).

Natural gas production in the country has been negligible. Proven reserves are approximately 2.5 bcm, however, and estimated probable reserves are 95 bcm (15 years supply at 1989 consumption rates). The historic reason for the lack of exploration and production of indigenous gas was a plentiful and cheap supply from the FSU. Georgia could, given the will, develop its own gas production, however, certain alleged commercial relations between policy makers and importers may have acted as a disincentive to do so.

Until 1991, Georgia's sole source of gas supply was Russia. Beginning in 1992, Georgia started importing gas from Turkmenistan through the Itera International Energy Company (a company with offices in St. Petersburg, Florida, and reputedly controlled by the number two at Gazprom) via pipelines transiting Russia.

Georgia is paying Itera about \$54 per tcm for imported gas, which, on an annualized basis, equates to an import bill of approximately \$38 million at current consumption rates. At pre-1990 rates of consumption, Georgia's gas bill would be \$335 million at current prices. The IMF estimates Georgia's total exports in 1996 at only a little over

\$500 million and its total imports at over \$850 million, yielding a trade imbalance of close to \$350 million/year

Georgia is supplied (or was supplied) with natural gas from Turkmenistan. The gas is transported via a 1200 mm pipeline through Uzbekistan, Kazakstan and Russia. It enters Georgia from the north. The main trunk line continues through Georgia to Armenia. Within Georgia the transmission network was over 2300 km long, and traversed the length and breadth of the country servicing all major population centers. At one time the organization employed 12,300 people.

Due to poor construction, a lack of maintenance, a paucity of investment and civil disturbance, the entire system, save the main trunk line transiting the country to Armenia, has collapsed. The cost of repairing the system is well beyond the means of the country at present. Moreover, users and potential users are, for the most part, un-metered (nor is the gas metered when entering or leaving the country). Hence, there is no effective way to collect tariffs. Moreover, the complete absence of accounting systems renders any discussion of tariff methodologies moot.

Finally, the fact that a good part of the compression system was powered by Sakenergo, means that the system will require its own compression power sources if it is to be restored. The investment needed to restore the system easily exceeds \$100 million.

Unless Georgia develops its indigenous gas resources, Georgia's reliance on imported gas as a primary energy source will emasculate its ability to recover its industrial base, undermine its currency, ruin its budget, and compromise its existence as an independent state.

While domestic gas supplies could make a small contribution to the gas requirements of the Gardabani thermal power plant (estimates of around 5% of current consumption have been calculated by foreign experts), the payments risk and other constraints have impeded such development.

Georgian Oil Sector

Oil production in Georgia dates to the 1930's. Beginning in 1970 and effectively ending in 1986, Georgia enjoyed a brief period of indigenous oil production. At the height of production (in 1980), the country was pumping over 3 million tons of oil annually, but this was short-lived as poor field management, soviet era equipment and technology, and the absence of secondary recovery all conspired to reduce output. By 1986, production had fallen to 180 thousand tons, and it consistently stayed at low levels till 1993 when civil disruption caused production to fall away to a mere 40 thousand tons. Current oil production has recovered somewhat to about 100 thousand tons per annum.

Throughout the 1980 s Georgia s consumption averaged over 4.4 million tons (\$616 million at current prices) But Georgia has always been a net importer of fuel even in the halcyon days of 1980, when imports even then stood at 1.6 million tons

Estimated proven reserves for Georgia are 12 million tons and estimated probable reserves are 580 million tons (It should be noted however that these figures are highly questionable, and are derived from the Georgian s own estimates Chevron has independently reviewed the data and concluded that reserves may be no more than 300 million tons)

Saknavtobi is the de facto national oil company of Georgia It functions as the country s sole exploration and production enterprise and reports to the Ministry of Fuel and Energy though it is supposed to soon be corporatized and therefore transferred over to the supervision of the Ministry of State Property Management In 1993, the enterprise employed 7,538 employees Today it employs only 20% of that number the majority of whom are unpaid

Saknavtobi also had been responsible for the operation of all oil pipelines in the country through its budgetary sub-unit the Industrial Amalgamation of Main Oil Pipelines The principal asset of this enterprise was transferred to the Georgian International Oil Company GIOC, as part of the contract with AIOC for the rehabilitation of the Gachiani/Supsa portion of this line

Finally, Saknavtobi had been responsible for the operation of the Batumi Oil Refinery, which was built in 1928 and which had the capacity to refine up to 2.5 million tons of low grade crude This facility experienced a number of fires and now has ceased operations Independent surveys have concluded that rehabilitation of the refinery is not economic

Oil product wholesaling and retailing were once handled exclusively by the Saknavtoproducti budgetary enterprise through its 43 depots located around the country In the past five years private wholesalers and retailer have taken over most of the business though they use the assets of this SOE for storage and transportation

The infrastructure at these depots is extremely poor, threatening the environment and evidencing a widespread disregard to public safety The situation is complicated by the fact that private companies make extensive use of this enterprise s depots but are suspected of paying little or nothing for the service By the Ministry of Fuel & Energy s own account as much as 90% of the country s consumption is wholesaled and retailed privately

The oil distribution sector (when viewed from the perspective of the private operators) is one of the most profitable businesses in Georgia It generates substantial profits for the private sector which is using the state assets nominally held by this enterprise

Prior to the breakdown of the economy 49% of products consumed were Heavy Fuel Oils (HFO) of which 42% was used in electricity generation. The next largest product category was gasoline which represented 24% of total fuels consumed. Diesel Oil was the third largest product group (13%) with the majority of that fuel being used for agriculture. Based on figures available for Poti Port the current oil products mix is preponderantly gasoline by a factor of 2/1 over HFO. This is consistent with the general collapse of the Georgian economy, and the revival of private transport usage in the past 18 months.

Russia and Azerbaijan were the traditional suppliers due to favorable credit terms. Now that the business has been put on a cash and carry basis oil products are being imported from Bulgaria and Greece (Gasoline), Turkey (Kerosene, LPG and lubricants) and Diesel (Azerbaijan).

COMPANIES OF THE GEORGIAN OIL AND GAS SECTOR

This section of the report gives an overview of the operating companies and institutions involved in the Georgian oil and gas sectors. Currently, the oil and gas sector is composed of companies wholly owned by the Government in either the "Joint Stock Company" (JSC) form or as "State Enterprise" (SE).

The JSCs include the Georgian International Oil Corporation (GIOC) and the Georgian International Gas Corporation (GIGC). The SEs are departments of the Ministry of Fuel and Energy (MFE) such as Saknavtobi (Georgian Oil Co.) and Saktransgazmretsvi (Georgian Gas Transmission Co.).

Georgian International Oil Company (GIOC)

GIOC was founded as a joint stock company by Presidential Decrees No. 477 and No. 178, on November 11, 1995 and February 18, 1996, respectively, for the purpose of participating in the transport of "early oil" through Georgia. The corporation's shares are held by the Ministry of State Property Management (MSPM). The GIOC has signed a 30-year pipeline construction and operating agreement with the Azerbaijan International Operating Company (AIOC), a firm founded to expedite crude oil shipments from the Caspian Sea region to the Black Sea port of Supsa. AIOC is a consortium of 10 international operating companies. Existing segments of the pipeline are being refurbished and other sections are under construction. GIOC employs a staff of about a hundred persons. Its assets do not include the pipeline, that belongs to the State of Georgia.

Georgian International Gas Company (GIGC)

GIGC was established by Presidential Decree 206 on April 20, 1997 as a joint-stock company for the purpose of managing Georgia's natural gas pipeline network and to represent the State in agreements and negotiations on gas imports with foreign countries. In early 1998, it took over management of the operations Saktransgazmretsvi, the State gas transmission and wholesale distribution company. However, in April 1998, management control of Saktransgazmretsvi had been transferred again, this time to Interpak (see below).

Saknavtobi (Georgian National Oil Co)

Saknavtobi is the company responsible for exploration and production of hydrocarbons as well as for transportation, refining and sales of petroleum and petroleum products including imports. Once a part of the USSR Ministry of Petroleum, it owes its current existence to Decree No. 124 (January 17, 1996) whereby it was placed into the Ministry of Fuel and Energy (Decree 124 was replaced by Decree No. 612 dated September 18, 1996, again replaced by Decree No. 703 dated December 1, 1997, amended by No. 772 of December 29, 1997, but none of the latter refer to Saknavtobi). The corporation used to be the operator of the crude oil pipelines of the country, however, management of these facilities has been transferred by the Government to GIOC.

The corporation's structure includes divisions for Oil and Gas Production, Oil and Gas Exploration, Oil and Gas Technology, Oil Service, Construction, and a Bureau for Housing and Accommodation. Subsidiaries include Navtobsamecniaro Ltd (petroleum sciences, i.e., research), Navtobgeophysika Ltd (geophysical surveys and measurements), Samtomashveli Ltd (blow-out prevention and rescue services), Menavtobe Ltd (field operations), and a Komerციული ცენტრი (commercial activities) that is actually State Treasury property.

Navtobsamecniaro Ltd operates 18 engineering departments and laboratories responsible for geological appraisal, geochemical and petrophysical analyses, field survey design, drilling plans and well construction layout, field development and unitization, borehole testing, oil and gas production processes, gas storage design, and environmental protection measures. Navtobgeophysika Ltd operates seismic and gravimetric equipment and crews and a petrophysical laboratory, and conducts well logging, borehole geophysics and DST (perforation) tests. The responsibility of Samtomashveli Ltd is exploration and production safety. The Commercial Center is involved in crude oil sales and exports (a function since removed), in contracts for oil transportation from tanks at Samgori to the Batumi refinery and to load tankers, and in handling customs and registration matters. In addition, the Center collects payments.

Domestic oil and gas production has declined during the past few years, and Saknavtobi has had cash flow problems to conduct more than rudimentary exploration. As a result, it has entered into contracts for exploration and production of oil and gas with JKC, Ioris Valley, Ramco (also known as Khaketi Oil), Saracen (since canceled), and more recently with Frontera Resources. It may enter into production sharing with ARCO on offshore blocks in the near future and has been negotiating with Canadian Canargo Energy. It had been also responsible, through its subsidiary the Department of Industrial Amalgamation of Main Oil Pipelines, for the construction of the Samgori-Batumi 530 mm diameter pipeline, whose ownership had been transferred to GIOC. The pipeline is being rehabilitated for use by AIOC.

Saktransgazmretsvi (Georgian National Gas Co)

Saktransgazmretsvi is responsible for the transport and sale of natural gas. In its present form it was established by Order No. 48 of the Minister of Fuel and Energy on November 11, 1996, as successor to the companies Sakgaz and Saktransgaz and it is a State enterprise (a department of the Ministry). Gas supply in Georgia originally under Sakgaz was nearly ubiquitous: 46 cities and 230 villages had access through local distribution points, as were more than 800 industrial facilities and about 3500 communal installations. The responsibility for management of the gas distribution was conveyed in 1996 to municipal governments in each locality prior to the establishment of Saktransgazmretsvi. The State retained ownership of both the tangible and intangible assets (facilities and shares in each local distribution entity).

The main activities of the realigned Saktransgazmretsvi became the purchase, import and transportation of natural gas in Georgia (and trans-shipment to Armenia), supply to industry and to gas distribution companies, and design, construction, operation and maintenance of the gas pipeline network. The network consists of a 1200 mm diameter main transport pipeline connecting Georgia to Russia, a 1000 mm diameter (Saguramo-Tsiteli Khidi) line to Armenia and Azerbaijan and a domestic network of 1940 km length, some of it in need of rehabilitation. These, and the remaining pipeline segments are shown in Table 1. The design capacity of the entire system is 20 billion m³; that of the North Caucasian - Transcaucasian line is 16.4 billion m³, and that of the Saguramo - Tsiteli Khidi export line to Armenia and Azerbaijan is 3.6 billion m³. It is a low-pressure system operating at 2.5 MPa with a maximum allowable pressure of 5.5 MPa. Annual losses in the system amount to 144 million m³ according to the company.

In addition to its pipeline-related activities the company also manufactures and markets gas industry equipment, operates five gas transfer stations, drills and operates gas wells and geothermal and potable water wells (the geothermal activities are carried out by the subsidiary Sakburggeotermia). Saktransgazmretsvi has no LPG business although it controls nine LPG distribution companies operated by Sakthevadgazi. On April 1, 1997, the company employed 1569 people. According to the company, assets in 1997 comprised 37.2 million laris (about \$28 M), profit in 1995 was 1,267,000 laris (about \$1 M), no profit was declared for 1996, but in 1997 net revenues increased to \$3.8 million. The company's liabilities, on the other hand, are said to exceed \$100 million. Operational expenses in 1997 amounted to \$19 million. The firm's management rights have recently been transferred to GIGC, then subsequently to Interpak, a company registered on the Isle of Man (U.K., though headquartered in Moscow). The pipeline assets remained in State hands. Interpak bought five municipal gas distribution companies (Kutaisgazi, Bolnisi-gazi, Rustavgazi, Marneulgazi and Kaspigazi) in January, 1998, for a reported sum of \$430,000, and subsequently added one more (Gorigazi) for a total sale price of \$500,000.

According to the MSPM only management rights and no equity were transferred for a period of five years to Intergas a Georgian subsidiary of Interpak that also purchased the Rustavi cement plant a major gas consumer In April 1998 as a follow on the MSPM has issued a public tender for the sale of 76% of Tbilgazi the Tbilisi gas distribution company with a reservation price of \$6 million The MSPM intends to dispose 18 more gas distribution companies in the near future by means of tenders

GEORGIAN ENERGY POLICY

Ensuring that the Georgian power sector has adequate supplies of fuels requires continued deep changes to the way the Georgian energy sector is organized and led through the current major reform process. This section describes Georgia's energy policy.

The NIS countries, including Georgia, had been boundless users of energy during the Soviet era. Energy was priced cheaply, hence efficiency of utilization was ignored. Georgia's energy consumption per unit of GDP during the Soviet era was virtually double that of Western consumption per the same unit. Per capita consumption remains high in most former Soviet-sphere countries, and the exception in this regard in Georgia is ascribable to the chronic energy shortages of only the past few years.

Concepts of supply, demand and markets under the command economy system were either distorted or non-existent. Regulation was carried out by State enterprises on behalf of the Government, in collusion with their own interests. The case still extant in Georgia: Fuel choices were dictated without regard for economic cost or threats to the environment. Hence, gas was seldom used for home heating as distribution costs, relative to coal, were considered high so that it was flared at the well-sites. Georgia was an exception, cheap gas reached most of the population except the scattered, low-density rural settlements.

Conservation in the Soviet Union was a neglected concept. The population became used to artificially low pricing and to a system of subsidies. The elimination of the law of supply and demand, together with State monopolies, made it "unnecessary." Energy imports at artificially low prices (or as barter in return for labor and technology) were never threatened, hence, energy independence and diversification of supplies were not issues.

Given these conditions -- and the conditioning of the policy-makers of centrally planned economies in believing the conditions would remain in perpetuity -- there was no need for an energy policy expressing a rational planning of resource acquisition, utilization and value. The continuing energy crisis in Georgia, did however, bring about awareness of this issue, and energy policy formulation, however slowly, is under way.

The first published Energy Policy for Georgia -- elaborated at the end of 1995 -- estimated the time needed for rehabilitation and restructuring, as well as for full development of the sector as 20-25 years, an unusually long period given the energy shortages of the country. This policy also attempted to address other fundamental issues to be successful in attracting investment into the sector: elimination of the existing distortion in the fuel and energy price system so that prices reflect real economic costs,

recognition of environmental damage and inclusion of further effects in the price of energy regulation of natural monopolies and compliance of the industry with State policy, increase of energy efficiency setting a policy about energy imports and exports with reference to the European Energy Charter enticing foreign and domestic investment and participation of regional governments in the implementation of energy programs

The policy also addressed issues of the short-term (the next 5-7 years) For the short-term, preeminence was given to restructuring and privatization of the energy industry enacting legislation to combat monopolistic practices setting prices to reflect real economic costs, enabling energy forecasting establishing a regulatory system and supporting indigent consumers Unfortunately, this reasonably comprehensive approach has not been adopted by the Government

Although this policy recognized the problems of price distortion and subsidies not much has been done to change this Today only prices for imported oil products are fully liberalized with import and retail activities in the hands of traders Other energy prices are still controlled by the State The lack of full cost-recovery possibilities and the low rates of collecting payments for utility services have made the energy enterprises insolvent, leading to disrepair of the infrastructure that will come to haunt the nation as refurbishment costs will increase with time Although direct subsidies have been removed the indirect subsidies of energy commodities by the Government represent a substantial loss to the budget

A more recent and officially adopted policy (mid-1997) treats the energy sector in specifics, namely, sector by sector, but without taking into consideration the industry-wide issues discussed by the earlier draft policy The new policy apparently generated by the Ministry of Fuel and Energy omits any reference to the need for legislation and regulatory systems, control of natural monopolies, industry compliance, balancing imports and exports and similar important topics formulated in the earlier version Neither this policy or the earlier document addressed the separation of ownership and management responsibilities from policy making and regulatory powers

This most recent energy policy, aside from a few concepts in passing such as the desirability of energy audits and "actual prices", is distinct a reminder of central planning whereby the State made the decisions and industry carried out the directives Examples are the target figures for production of oil and gas, the "development of the oil and oil product transportation system (including transit), modernization and expansion of the oil processing industry, and building up the state oil product reserve to an optimum volume" Unfortunately, the policy states these objectives without specifying how such desires could be financed, given the near-bankrupt condition of the industry, the unpaid fuel bills to Turkmenistan, and the chronic budget deficits of the Government

When planning targets are set prices lose their signaling ability and allocative functions. Although the policy recognizes that non-payment of bills needs to be combated by metering consumption and improved collections it avoids the larger macroeconomic issue of energy pricing, regulatory functions, competition issues, consumer rights and environmental protection. It is unclear what is meant by "short and long term strategy intended for 5-7 years".

Without a doubt, it would be important to develop a more detailed and more comprehensive energy policy for Georgia. It appears, however, that there is no institutional responsibility for the execution of the energy policy as the policy document makes no assignments nor sets macroeconomic targets for the energy sector. This is in stark contrast to, e.g., the Hungarian energy policy, which not only targeted the responsible Government bodies but also the energy industry companies in the context of both domestic and international dependencies.

RECOMMENDATIONS

To ensure that the electric power industry is able to complete its ambitious reform program, and to facilitate the availability of the cheapest possible fuels for electricity generation, a number of governmental policies should be enacted immediately. We recommend the following policy measures:

- ▶ The development of a comprehensive national energy policy clearly indicating the future direction of energy reforms in Armenia. This national policy should focus on the process and scope of transforming state-owned energy enterprises into corporatized and privatized companies, and should outline the future development of fuel markets within the country. The policy should begin by identifying the government's energy sector reform goals and program objectives. Methods for achieving these goals and objectives must be identified and paired with financing sources, including international assistance. In addition to this basic structure, such a national energy policy should include
 - A re-evaluation of the current reform plans for the fuel sectors. The efforts to reform the fuel sectors should be brought in line with the vision for the reform of the entire energy industry.
 - An emphasis on reducing the role of the State in actual energy production and enterprise management in favor of the private sector. Privatization of state energy industries should be seen as a method for improving the health, attracting investment, and promoting the industry's development.
 - In addition to appropriate definition of policy-making and regulatory goals and mechanisms, the GoG must enact an appropriate legal framework for all energy sub-sectors as soon as possible.
 - A plan to restructure the State energy institutions to reflect the focus of the government on policy formation and regulation instead of on setting production targets and directing investment decisions. An immediate step is the creation of regulatory bodies responsible for gas distribution and oil and gas production.
 - The improvement of energy policy coordination between the various energy sub-sectors.
 - The creation of a timeline establishing milestones and dates for achieving the goals outlined in the policy. A timeline will help to visually organize the sequencing of reform activities and add to the coordination of the reforms between various energy sectors.
 - Establish greater transparency in the reform process by publicizing forecasts and restructuring plans.

- ▶ Implement significant legislative, institutional, and educational measures to convert the existing energy sector "enterprises" into profit-oriented and

corporatized, viable economic entities capable of raising capital and competing in a market environment. To accomplish this, the following measures should be taken:

- Implement International Accounting Standards and implement other commercial management systems in all energy supply enterprises. Carry out training courses for sector accountants.
 - Institute public auditing requirements compatible with the needs of international investors; develop standard charts of accounts for regulated enterprises; carry out scoping audits immediately, and expand public relations activities including the expansion of monthly data reporting on the operations of energy enterprises.
 - Require annual internationally recognized audits on all State-owned energy enterprises.
 - Focus energy company efforts on attracting, training, and keeping qualified personnel.
 - Assist energy sector companies to develop business plans to guide activities and improve technical and financial performance. Implement strategic planning.

- ▶ To ensure adequate supplies of fuels and to develop competitive fuel markets, the Government of Georgia must increase cash collections from electricity consumers by enforcing the "user pays" principle. Simultaneously, cash flows within the industry should be improved to ensure that electricity producers are paid the full value for the power that they produce. Unless generators are paid for the fuel they produce, they will not be able to operate or purchase fuel.

- ▶ The GoG should continue to liberalize domestic fuel prices by removing any residual administrative pricing controls in favor of market pricing, or prices regulated by appropriate regulatory commissions.

- ▶ The transportation industry, particularly the railroad, should also be corporatized and regulated to ensure that energy consumers are protected from monopoly abuse and to provide similar conditions for all suppliers. The GoG should encourage the development of alternative transportation and import options to give energy traders and consumers more choices and energy options. The current lack of supply options reduces competition within the fuel market and lowers reliability.

- ▶ Continued cooperation with donors and international lending institutions can provide technical, educational, and financial capital for the reform of the energy sector.