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**GEORGIA POWER SECTOR  
COMMERCIALIZATION STATUS ASSESSMENT**

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

**Delivery Order No 14  
Georgia Power Sector Reform**

*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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September 1998

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## BACKGROUND

Since mid-1995, the Georgian electric power sector has undergone a dramatic transformation. With the creation of a high level committee on power sector restructuring and the issuance of its recommendations in the form of Presidential Decree # 437 ( " On Power Sector Restructuring") in the summer of 1996, the Government of Georgia initiated an ambitious reform process. By mid-1998, most elements of this landmark restructuring program have been implemented as planned.

The former non-commercial state-run monopoly power sector is fast changing to an unbundled, commercialized, corporatized, and independently regulated industry. Distribution companies purchase power from the national transmission company (Sakenergo), which in turn purchases power from the national generating company (Sakenergo Generation) and independent generators. A new legal basis for the power sector has been established, multiple corporatized commercial enterprises have been created, and plans for privatization have been prepared. By the end of 1998 a new owner should have gained control over Telasi, the capital's distribution company, by way of strategic investor privatization.

The process of power sector commercialization is taking place within this reform context. While still unable to cover their full costs of operation, power companies are now increasing their revenue collections, paying their debts at higher rates, and operating according to contractual agreements as never before. These improvements in company performance are being facilitated by the establishment of a regulatory framework suitable for commercial operation of power companies. Tariff methodologies and market rules are being developed by the Georgian National Electricity Regulatory Commission, wholesale market rules are being negotiated by electric sector stakeholders, and a Chart of Accounts consistent with International Accounting Standards has been prepared for the reporting of financial and accounting information by power enterprises to the Commission.

This report assesses the commercialization progress made to date in the Georgian power sector. It consists of the following sections:

- ◆ Current Commercial Performance
- ◆ Goals for Commercialization
- ◆ Conclusions and Recommendations
- ◆ Appendix Small Privatized Hydroplants

## CURRENT COMMERCIAL PERFORMANCE

The Georgian power system serves some 1.2 million customers. 13 customers take service from the national transmission company (Sakenergo) at transmission voltages; these include nine industrial clients and four large urban distribution utilities (serving Tbilisi, Kutaisi, Rustavi, and Sochumi). Eight other large industrial customers also take service directly from Sakenergo, at lower voltages. All remaining distribution companies are served at 6 and 10kV from Sakenergo substations.

Since 1994 customers have not received 24-hour power supplies, although supplies have generally been better in the summer months than in the winter months -- due to the increased availability of hydropower in warmer seasons. Tbilisi residents receive far better service than the population in rural areas and other towns. During the summer of 1998, for example, service in Tbilisi was close to 24 hours, with rationing required only occasionally. In contrast, during the past winter service was reduced to an average of six hours per day in the capital. The power that is available is often of variable quality. Georgia's power supply situation is not good, but major improvements in system technical operation (frequency and voltage stabilization) and rationing scheduling have been achieved over the last five years.

### Collections and Tariffs

In 1997, approximately 7 billion kWh were supplied to the Georgian power system. Of this, only 4.7 billion kWh were billed to wholesale customers by Sakenergo. For these power deliveries Sakenergo received only 65% of billings, of which 45% was in cash. For sales to distribution companies the total payments rate was only 50%, of which only 25% was in cash. For the first three months of 1998 an improvement of distribution company wholesale payments rates to 58% was achieved. Although these collections rates are low, they are a major improvement over the 18% total collections rate for wholesale billings achieved in early 1995.

Residential customers in Georgia have traditionally measured their own electricity usage. No formal bills were issued and customers were expected to instruct their bank to transfer an appropriate amount from their account to that of the utility. Nowadays, distribution companies use "controllers" (bill collectors) to collect funds. These bill collectors make periodic visits to customer premises to check the accuracy of meter readings and collect money on the spot. This collection process, however, is not systematically managed or implemented. During 1998, and as ordered by a Presidential Decree, distribution

companies are moving customer meters outside apartments and into new secure boxes. This has had something of a positive affect on customer collections rates.

In principle, there is a single tariff across Georgia for all end-use customers. As of August, 1997, the electricity tariff has been 3.6 US cents (4.5 tetri) per kWh -- up from 2 US cents per kWh in 1996. The tariff is scheduled to be increased by October 1998 to 4.5 US cents (6 tetri) per kWh. Much of the population receives some form of subsidy from the Government that entitles customers to reduced billing for electricity use.

Currently, it is estimated that the cost of serving a residential customer exceeds 8 Tetri per kWh and that an industrial user's cost is in the neighborhood of 6 Tetri. These discrepancies between the real costs of service and the tariffs actually charged only compound the effects of the non-payment problem. Even if 100% of all kWh were properly billed and paid for under existing tariffs, the sector would still not recover its costs of service.

Due to the ongoing low payments problem, the electric sector's enterprises have accumulated huge payables and receivables. Many customers owe at least six months worth of electricity bills to distribution companies. Currently Telasi, the distribution company serving Tbilisi, owes Sakenergo more than 110 million Lari. Although debts continue to mount -- and in marked contrast to the pre-1997 period -- over the last year Georgian power sector companies have implemented procedures and mechanisms to accurately record their debts.

To improve revenue collection rates from customers, distribution companies must make investments to move meters outside apartments and implement a systematic monthly metering, billing, and collections process. Experience from Hagler Bailly's Rustavi pilot project shows that this costs approximately \$35 per customer. Unfortunately, distribution companies do not have this money to invest, thus they cannot improve their collections rate. Distribution companies are stuck in a vicious cycle of bad financial performance, with the only escape being strategic investor privatization.

Even if power sector financial flows were entirely transparent, power sector financial flows are still below what is required to cover operating costs (including winter fuel purchases). As such, Georgian power sector companies themselves have little chance to attract the financing required to rehabilitate the system. It is estimated that \$400 million is needed immediately to rehabilitate idle capacity and existing infrastructure. Additionally, more than \$1 billion is needed over the next ten years to meet demand and halt the further dilapidation of the power sector assets.

### **Commercial Systems**

Another major problem facing the Georgian power sector is that current management -- and the power sector workforce in general -- do not have the required skills to operate the power sector on a commercial basis. The vast majority of Georgia's power sector utility staff have only technical education and training and have little understanding of even the most basic commercial and management concepts and practices. Without this knowledge, it is difficult for current management to put Georgian utilities on a commercial footing and to direct staff quickly to improve utility financial and technical performance.

Complementing staff inadequacies, companies do not operate with adequate commercially-oriented internal systems. In addition, most customer and wholesale power metering is inaccurate and requires re-calibration. Power sector enterprises lack the required accounting and management information systems to conduct daily activities in an efficient and effective manner. Commercially-focused bookkeeping, record-keeping and Western financial accounting practices, supported by the requisite computerized systems, are virtually unknown in the Georgian power sector. The abacus is the technology of choice for accounting and bookkeeping.

While important changes to industry structure have been achieved to date, it is essential that distribution and generation assets be grouped to achieve economies of scale in operation, maintenance and the mobilization of required capital and know-how for rehabilitation and commercialization. There are currently far too many small distribution and generation companies. Asset grouping is being driven by the ongoing privatization process, as it will be required to achieve serious investor interest in the privatization program.

### **Corporatization**

With the issuance of Presidential Decree #437 ("On Power Sector Restructuring") in the summer of 1996, the corporatization of unbundled entities in the sub-sectors began. Individual generating stations, including the Gardabani thermal power plant, were corporatized, their charters filed with the appropriate courts, and equity shares issued (these shares are held by Sakenergo Generation until privatization). The only exception to this corporatization was the Inguri hydroplant, which operates in an area of great political uncertainty. Sakenergo was made a state commercial enterprise, but is not slated for privatization in the near future and thus not made a Joint Stock Company (JSC). Most of the distribution enterprises have been chartered as JSC's with municipalities holding the shares in anticipation of eventual privatization.

To conclude important commercialization progress has been achieved in the Georgian power sector, but much remains to be done to achieve commercial viability. The best way to improve collections rates, reform management for commercial operation, and attract the capital and know-how required to make these changes is by continued implementation of strategic investor privatization.

## GOALS FOR COMMERCIALIZATION

- ◆ ***Achieve a New Commercial Orientation for Georgian Power Sector Utilities***
  - Create utilities more efficient and effective in financial and technical operation Achieve utility technical and financial commercial viability
  - Achieve consistency with the country's new market economy context
  
- ◆ ***Create Commercially-Viable Utility Corporations***
  - Structure assets and organizations to capture economies of scale in commercial management and operation and to improve their ability to secure rehabilitation financing
  - Improve revenue flow through increased collections
  - Improve utility use of funds by more efficient financial management
  - Set tariffs to adequate levels
  - Define a regulatory and policy framework to achieve the above
  
- ◆ ***Establish a Suitable Regulatory and Policy Framework for Commercial Operation of Unbundled Power Companies***
  - Implement a clear tariff-making methodology
  - Define suitable market rules for the power sector
  
- ◆ ***Achieve Strategic Investor Privatization***
  - Achieve consensus within the GoG for strategic investor privatization
  - Implement strategic investor privatization
  - Remove GoG from enterprise activity in the power sector to remove political considerations from commercial operation of the Georgian power sector
  
- ◆ ***Mobilize Large Amounts of Required Investment for Rehabilitation***
  - Only commercially viable utilities are capable of raising the capital required for rehabilitation of assets and expansion to meet future demand
  
- ◆ ***Improve Management and Operations Capability***
  - Create utility management and workforce capable of commercial management of utilities
  - Install computer and other systems and procedures required for commercial operations, accounting, and budgeting
  - Convert financial and accounting activities to IAS-compatible Chart of Accounts

- Develop business plans to focus management on measures required to improve commercial operation

## CONCLUSIONS AND RECOMMENDATIONS

The principal conclusions and recommendations resulting from this commercialization assessment are as follows

### **Industry Structure and Privatization**

The most effective way to commercialize the Georgian power sector is to implement strategic investor privatization. Sector rehabilitation -- and the achievement of commercially-viable technical and financial performance as soon as possible -- require significant infusions of capital and management capability. This capital and capability would be best mobilized for Georgia by the sale of assets to international power companies with the experience and balance sheets appropriate to solve the problems. Until this capital and expertise is mobilized Georgian electricity customers will remain "in the dark"

To achieve strategic investor privatization, power sector assets need to be structured so that assets offered in privatization are large enough to attract the interest of investors. While Tselasi is of a size attractive enough to investors, many of Georgia's generation and distribution assets should immediately be grouped to facilitate privatization.

### **Regulatory Framework**

With or without strategic investor privatization, the establishment and institutionalization of a suitable regulatory framework is of the highest priority. Without adequate tariff methodologies and market rules, power companies cannot hope to operate as commercially-viable entities. Furthermore, political considerations must be entirely removed from dispatch and financial settlement decision-making processes to achieve power sector commercial operation.

### **Infrastructure Needs for Commercialization**

Immediate investments in infrastructure, equipment, and other assets are required to permit commercial operation of power companies. Distribution companies require adequate metering, billing, and collections systems and all meters re-calibrated and moved outside customer apartments. Transmission and generation companies need metering upgrades and other information processing and communications investments. Without these investments, companies will be unable to operate on a commercial basis.

### **Management Systems and Human Resources**

Although important improvements are underway Georgian power companies still lack the most basic information systems required for managers to understand their company's technical and financial performance. Unfortunately, even if this information was available, management does not yet have the skills and experience required to act on this information to improve technical and financial performance. For example, management scheduling, budgeting, basic accounting, finance, and record keeping skills are not highly developed.

Without these skills it is nearly impossible for Georgian power company managers to fully understand their predicament and to implement the measures required to solve their problems. All too often, technical "silver bullet" solutions are proposed by managers as a means of improving commercial performance. Instead, what is needed is more accurate technical and financial information on electricity supply and use and improved management systems and procedures to collect and allocate revenues.

Whether or not Georgian power companies are privatized, overall staff commercialization training programs must get underway immediately. Staff and management must be trained in the most basic areas of commercial operation and management. This includes information gathering and processing, accounting and finance, budgeting and scheduling, and personnel and systems management. Management has to quickly develop the new skills required to understand and function adequately within, the new commercial context within which they now work.

## **APPENDIX: SMALL PRIVATIZED HYDROPLANTS**

To date, 19 of Georgia's 103 hydroplants have been privatized. The plants were sold between 1993 and 1995 and were privatized as part of the government's overall business privatization program. The 19 plants that were privatized were the only stations sold out of a group of 37 small hydroplants earmarked for privatization in 1993. The small hydroplant privatization process was halted in mid-1995 pending implementation of an overall plan for privatizing the power sector.

Of the 19 small hydroplants sold between 1993 and 1995, most were sold to individuals, though two were sold via the creation of joint stock companies. The privatized plants range in size from one to 21 MW, with the vast majority in the one to two MW range. Sakenergo, the national vertically integrated power company at the time, was allowed no input in the process of bid evaluation, so little attention was paid to the technical qualifications and competency of buyers.

By far the largest hydroplant to be privatized was the Chitakhevi station in the Borjomi region of Georgia. The plant was built in 1949 and has an installed capacity of 21 MW. The plant is much larger than the average size of the other privatized plants, and it is not entirely clear why it was included in the privatization list. The purchase price for this hydroplant was reported to be in the US\$200,000 to 300,000 range – around \$12/kW. This is a very low sale price for such an asset, but in the range of the discounted cash flow value of the plant at the time, given the huge investment risks during the "Tbilisi War" period. This plant was recently sold to an Australian/American investment group for a price Hagler Bailly estimates to be in the US\$2 to 3 million range.

Another 4 plants totaling some 200 MW have been leased to private operators; these include the strategically important 130 MW Jinali storage/peaking plant close to Tbilisi, and the Ortachala and Zaghesi hydroplants located within the Tbilisi metropolitan area. The current leaseholders are operating under five-year lease arrangements granted in the 1993-1995 time period. It is not clear why only these plants were offered for operation by private leaseholders. These leases are due to expire soon, and current leaseholders are hopeful that their lease arrangements can be converted to outright sale agreements by way of privatization.

Over the past three years Hagler Bailly has visited, or talked to owners of, many of the privatized and leased hydroplants. In fact, we work very closely with the owner of the Kabali hydroplant – he is now the director of the Rustavi distribution company where we

are implementing a commercialization pilot project. The majority of new owners are longtime power sector insiders and/or former directors of the plants.

The privatized and leased hydroplants have been operated fairly successfully and produce about 10% of Georgia's total electricity output. The private hydroplants sell their production to the national transmission company and directly to some distribution companies, though apparently without adequate contracts. The distribution companies purchase a fraction of their power from the privatized hydroplants at prices that vary from between 1.3 and 1.7 US cents per kWh. Telasi, the distribution company serving the capital Tbilisi, is purchasing small quantities of electricity directly from privatized small hydroplants. As much as possible, the leased and private hydroplants sell electricity to commercial and industrial customers by way of direct contracts. For example, the Sheraton Metechi Palace Hotel in Tbilisi receives reliable power by way of a direct contract with the nearby Ortachala leased hydroplant.

### **Problems and Potential**

There are a number of serious problems facing the privatized hydroplants. The rules and fees that private stations face for wheeling their power over the nation's transmission lines are not entirely clear. Rules are emerging, as published by the Georgian National Regulatory Commission, though there are technical and other constraints to their full implementation.

The biggest problems facing private hydroplant owners is their ability to collect payment for the power they produce and sell to the national transmission company or other direct customers. Mr. Temuri Gelashvili, the first private owner of the Chitakhevi hydroplant, even obtained a judgement from Georgia's Supreme Court to enforce payment from a customer, though he has been unable to enforce the judgement. It appears, however, that the better connected an owner is to Georgian power sector policymakers and power company directors, then the higher the payments rate is for power sales from the national transmission company. In fact, we have even come across situations where the owners of private and leased hydroplants work at the national transmission company and are charged with determining which generators are paid and how much they are paid.

Despite their ongoing revenue collections problems, private hydroplant owners have made investments to rehabilitate abandoned or non-functioning capacity, and – in comparison to the hydroelectric stations belonging to the national generating company – better care for and maintain their hydro assets.

Over the past three years we have heard remarkable stories of high-risk entrepreneur-led efforts to successfully rehabilitate small hydro capacity. In addition, we have seen many

business plans by local entrepreneurs for new private development or rehabilitation of small hydroplants. Although these business plans are based on primitive financial analysis – and underestimate the viability of making investments in such a risky revenue-collection environment – they do illustrate the growth potential of this segment of the Georgian economy and the contributions it could make towards solving the nation's severe electricity problems.