



ENERGY UPDATE

ISSUE 2

MARCH/APRIL 2007

Powering Economic and Social Development through Expanded Access to Modern Energy Services

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ENERGY UPDATE

Is the bimonthly newsletter of the Energy Team, Office of Infrastructure and Engineering, Bureau for Economic Growth, Agriculture and Trade (USAID/EGAT/I&E/Energy Team).

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“Methane to Markets International Partnership: A Strategy for Energy and Climate Change”

SUBMIT ARTICLES

Initial submissions must be 500 words or less in length and include contact information.

The submission deadline is **June 15, 2007**. Please e-mail your articles to the Editor, Davida Wood (dwood@usaid.gov).

Articles are accepted for publication from employees of USAID, associated organizations, contractors, and other partners in development.

LETTER FROM THE GUEST EDITOR

Energy and the Transition Countries: 17 Years of USAID Assistance

The historic transformation of the countries of the former Soviet bloc to independent, mostly democratic countries has been a focus of USAID's Europe and Eurasia Bureau (E&E) over the past 17 years. It is amazing to realize that many of these countries are now members of the European Union members and others are pursuing a path to accession. Energy has played an important political, economic and social role in this transition and is of strategic interest to the United States as well as to Western Europe. The growing dependence of Western Europe and many former Soviet Union countries on energy imports, especially gas imports from Russia, is of course a central issue in the news. We view the process of energy sector reform in the region through the lens of energy security. This perspective involves not only a concern for supply diversification but also for the development of efficient and financially-sound energy sectors that can attract the investment needed to modernize existing infrastructure, develop economic and environmentally sustainable resources, and develop larger regional markets through collaboration on energy grids and transmission systems.

The Special Report from the Europe & Eurasia Bureau's Office of Economic Growth/Energy and Infrastructure Division, illustrates some of USAID's experiences during this interesting transition in key areas of strategic focus. Bob Archer examines the leading role that USAID has had in developing a modern energy regulatory framework and competent energy regulators. Bob Archer, Andres Doernberg, Jamshid Heidarian and Walter Hall show how weak and inefficient electricity systems can be turned around through restructuring, commercialization and privatization activities. The development of Caspian oil and gas resources and their export to the West is another vital area of US interest that Mark Schlagenhauf discusses. The potential for energy efficiency in this region remains enormous and Ira Birnbaum and Andres Doernberg highlight some of the interventions we have pursued at municipal and regional levels. Finally, Rajiv Rastogi and I outline some of the important new efforts to forge regional energy markets in Southeast Europe and Central Asia.

We hope you will find these cases interesting and helpful in stimulating greater cross-regional consideration of lessons learned through USAID programs. I wish to thank the EGAT Energy Team for this opportunity to provide a glimpse of E&E's involvement in the energy transition in Europe and Eurasia.

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Letter from the EGAT Energy Team Leader

In this issue we focus on a region where USAID has deployed a transformational approach to development for the past 15 years: Europe and Eurasia (E&E). The fall of the Wall in 1989 and the collapse of the Soviet Union in 1991 was followed by a US Government decision to provide assistance through USAID to assist with the transition to democracy and free-market capitalism. USAID responded administratively by setting up numerous thinly-staffed field missions backed up by a regional bureau heavily staffed with technical expertise.

As discussed in the articles comprising this Special Report, USAID focused most of its energy sector efforts on transforming the economic and institutional foundations of the sector, particularly the independent regulation and commercial operation of the electricity sector. USAID's energy sector reform efforts succeeded in reducing fiscal burdens on the state so that funds can go to social services, so that necessary investments in service delivery and environmental improvements can be made, and so that public involvement and transparency may be increased.

The E&E region presented several features that USAID had not encountered in other regions: virtually everyone in the region had access to modern forms of energy, and the workforce was highly literate with impressive technical and scientific knowledge. At first glance, it would seem that E&E would not have much relevance for regions in which access to energy services and technical capacity were major development issues. However, these services were provided on a heavily-subsidized and non-commercial basis by essentially self-regulating government departments. While technically adept, the managerial staff had limited to no experience with commercial business and accounting practices. With the end of Soviet subsidies, service provision became increasingly unreliable and limited, in effect leaving citizens in the dark. In this sense, the challenges of creating a viable sector -- unbundling, commercialization, regulatory development and tariff reform, as well as attracting private sector investment, were not unlike sector challenges elsewhere. Additionally, regional energy systems that were disrupted or never came to fruition with the dismantling of the Soviet Union meant that a new initiative to integrate regional markets was necessary.

The E&E experience with transformational development -- bringing about far-reaching, fundamental changes in governance and institutions, human capacity, and economic structure -- thus may hold lessons of use to regions elsewhere. In this context, EGAT is pleased to provide a platform for fostering the sharing of experiences and disseminating successful cases across regions.

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TRANSFORMATIONAL DEVELOPMENT: LESSONS FROM THE ENERGY TRANSITION IN EUROPE AND EURASIA

Europe and Eurasia Energy Regulatory Development: From National to Regional

By Robert Archer

The Key Role of Energy Regulation

The development of the energy regulatory framework is a central element in successful power sector reforms around the world. A World Bank survey¹ of 55 investors around the world indicated that tariffs, a central regulatory function, was the element most cited as the reason for success and failure of investment projects. The 2004 Eurelectric (Europe's association of generation companies) survey of its member companies indicated that the regulatory framework was the most important factor in investment decisions.

Regulatory framework development in E&E countries has focused on establishing a modern energy sector law and regulatory framework usually including an autonomous energy regulatory commission. This is part of the broader reform that separates matters of policy, regulation, operation and ownership.

USAID's Assistance Approach

USAID has supported the development of energy regulatory bodies in nineteen E&E countries. The assistance aims to develop energy regulatory bodies with sufficient Autonomy, Authority and Accountability (AAA) to facilitate the power sector reforms and attract investment. The initial technical assistance work to establish them focuses on organizational, operational and technical issues such as tariff methodologies, licensing and procedures for open public practices involving the public in the decision-making process.

To develop the E&E regulatory capacity, USAID has used three complementary assistance approaches which have proven to be effective: (1) Focused bilateral technical assistance, e.g., a long-term resident advisor and short-term advisors; (2) U.S. Regulatory Partnerships to introduce E&E regulators to U.S. practices; and (3) Access to neighbors' practices through participation in the Energy Regulators Regional Association (ERRA).

Power Sector Reform and National Regulatory Development

Power sector reform experience shows the importance of sequencing along the following lines: (1) establishment of a legal and regulatory framework; (2) restructuring the existing monopoly; (3) some degree of commercial improvement; (4) market design; and (5) privatization. The importance of power sector reform for sustainable economic growth is widely accepted. What is not often acknowledged are the accompanying political benefits. In the E&E region power sector reform is essential for successful political reform as well. Power systems were central tools of former Communist governments. Separation of the power systems from the political system is critical for achieving a sustainable, economic, environmentally sound power system, free of political manipulation and abuse.

The evolution of regulatory development over the past decade indicates that the initial focus on creating a sound regulatory investment framework to attract investment and upgrade operations is working. Poor service, blackouts and corruption have been reduced and services improved. As power system performance improves and privatization advances, the regulatory focus must increasingly be on (1) customer service and protection; (2) regulatory reporting for monitoring purposes; (3) increased quality of service; and (4) dispute resolution.

¹ Private Power Investors in Developing Countries, Survey 2002 – Preliminary Findings, World Bank Energy Forum 2002, Washington, DC.

The Evolution into Regional Regulatory Cooperation

As the number of regulatory bodies in the region increased, USAID supported networking among the national regulators to exchange experiences and information. This led to a strong bottom up demand for an ongoing institutional arrangement that allows regulatory bodies to continue their exchanges. As a result, the Energy Regulators Regional Association (ERRA) was established in Budapest, Hungary with USAID support. The regulators anticipated the evolution of the reform process toward regional electricity market arrangements that required cross-border regulatory communication and cooperation.

To support the establishment and development of ERRA, USAID formed a Cooperative Agreement with the U.S. National Association of Regulatory Utility Commissioners (NARUC), an association of 50 state regulators. NARUC has provided a valuable link for the E&E regulators to U.S. regulatory experience and practices. An indication of the relevance and effectiveness of the regulatory work is the fact that 14 E&E Missions have bought into the NARUC Agreement to complement Mission bilateral regulatory development efforts.

ERRA is now a professional organization of 22 energy regulators in the Europe and Eurasia region with the objectives of: improving energy regulation; fostering development of stable energy regulators with autonomy and authority; increasing communication and the exchange of information and experience; and promoting opportunities for training.

ERRA has grown to become a widely respected institution that provides on-going professional development to its members. Its annual conference serves as a neutral forum among utilities, investors, government officials and regulators for discussion of regulation and investment issues. ERRA's technical committees, working groups, website, annual conference and training program strengthen its members' professional growth.

ERRA's active technical committees and working groups currently consist of:

- Tariff/Pricing Committee
- License/Competition Committee
- Legal Working Group
- European Accession Working Group

The extensive output of technical issue papers can be found on the ERRA website at www.erranet.org.

There is a significant ongoing need for strengthening the capacity of the regulators and staff. Commissioners have limited terms and staff turnover occurs. In addition, as the reform process proceeds, the regulatory work can increase in complexity with the introduction of competition and privatization. To meet its members' needs ERRA is developing an ongoing training program that can be provided on a sustainable basis.

The strategy is to develop a core curriculum of courses, pilot test them in the classroom, transfer them to an e-learning platform on a sustainable cost-coverage basis. ERRA now has the following courses in place or under development with others to follow:

- Introduction to Regulation
- Intensive New Commissioners Course
- Tariffs and Pricing
- Regulatory Reporting and Monitoring
- Public Outreach and Participation
- Electricity Markets (Introductory and Advanced)

Current Regulatory Issues

There are several current issues in the reform process. First, the regulatory activities become even more demanding and sophisticated after reform and privatization. Ongoing professional development is needed. Second, short-term political interference in regulatory work remains a problem and undermines regulatory transparency, predictability and autonomy. Third, ongoing tariff reform requires that the social consequences on vulnerable households be addressed simultaneously. The regulators have a role in identifying the problem and responses, e.g., government social subsidies, tariff designs, or energy efficiency to reduce heating bills. Finally, regulatory reporting and monitoring of utility operations are increasing in importance as privatization occurs, customer expectations rise with respect to greater quality of service for customers.

Power Sector Reform and Privatization: Sequencing Reforms and the Role of the Regulator

By Robert Archer

Power Sector Reform and Privatization: Means to an End

Power sector reform has been a consistent element of USAID economic reform programs in the transition countries in Central and Eastern Europe and the Former Soviet Union including Ukraine, Moldova and Bulgaria. While some countries remain in the early and middle stages of this process many have successful reforms and lessons learned. The focus on strategic privatization of existing power sector distribution and generation companies has yielded significant results. Privatization has, appropriately, come later in the reform process. It is a strategic and effective means to achieve cost-effective reliable electricity supply. Power reform is not an end in itself but a necessary means to achieve economic growth, democratic systems and social progress.

Over the last three years Bulgaria has successfully privatized all its distribution companies and selected coal-fired power plants for over US\$1.5 billion. Earlier Ukraine privatized six distribution companies through international tender and Moldova three. The Moldovan privatization for US\$25 million was its largest foreign investment. Romania, Armenia and Macedonia have also privatized distribution and Albania is beginning to do so. For more information on privatization efforts and results in Albania, Armenia, Georgia, Macedonia, and Moldova, see articles by Doernberg, Hall, and Heidarian.

Power Sector Reform and Privatization: Economic, Political and Social Impacts

Development literature documents the positive impact of infrastructure development and reform on economic growth. What is less well recognized is the positive impact of power sector reforms and privatization on democratic systems and social well being.

The economic impact results from shifting from a system that requires budget subsidies to one with tax and privatization revenues, improves competitiveness and attracts foreign investment which brings modern management, technology and access to financing.

Power sector reform and politics are interwoven. Lenin's aphorism about socialism plus electricity equaling Communism reflected electricity's central role. Political considerations dominated power system development and operations including 100% coverage in many countries, subsidies, low tariffs and favored recipients. This adverse political linkage, similar in character to many developing countries around the world, was deep and is a continuing factor that can undermine reform sustainability.

Corruption has been a common thread in the transition including in the power sector reform process. In Moldova approximately US\$30-40 million of the annual US\$125 million in electricity generation and sales were not accounted for. System leakage and barter were systematic. The reform government decided that the only way to restore the system was to change ownership. Restructuring and privatization resulted in the purchase of three of the five electricity distribution companies by Union Fenosa of Spain. The resulting transparent commercial practices meant that US\$30 million a year was taken out of corrupt hands and put back in the legal economy. The power sector reforms are designed to increase transparency and reduce opportunity for corrupt practices.

The social impact of the Moldova privatization demonstrates the beneficial social impact that can be achieved. Blackouts were widespread in the winters preceding the electricity distribution privatization. Schools were closed and rescheduled to summer operation or operated only as long as children could function in the cold without light. Restoration of service by Union Fenosa was one of Moldova's most successful "people" programs. Documentation of this and other privatization experiences demonstrates that these reforms are "pro-poor." They have disproportionately benefited the poor who have traditionally suffered greater electricity shortages in the rural areas versus urban centers.

The Sequence of Reforms

Successful privatization is part of the sequence of power sector reform steps. These are:

1. Development of the Legal/Regulatory Framework

Framework: This is the key element for successful privatization and includes the establishment of a separate energy regulatory body with sufficient autonomy, authority and accountability to provide a sound predictable investment environment.

2. Restructuring: The de-monopolization of the power sector involves some degree of separation or “unbundling” of the existing monopoly company’s generation, transmission and distribution with the objective of increasing transparency, accountability, efficiency and introducing competition where possible.

3. Commercialization: Some targeted assistance measures to reverse poor performance such as billing and collections and initiating commercial practices may be useful to prepare for privatization. In selected cases, USAID has provided metering to facilitate the reduction of corruption and initiation of management reforms.

4. Electricity Market Development: With unbundled monopolies the potential for the introduction of national or regional competition is established. In smaller countries, the development of a regional electricity market opens up opportunities for wider trading and achievement of economies of scale and energy security.

5. Preparation for Privatization: To attract serious international strategic investors or regional investors, it is important to establish a clear privatization strategy with a regulatory framework that is consistent with international practices. In addition, country specific issues may arise such as sector debt, judicial weakness, labor terms, social safety net if tariffs are not yet at economic cost recovery levels, etc.

6. Privatization Process: It is important to have an experienced transaction advisor working with the Government. There is also a role for an independent advisor to the Government so that objective advice and assessments are available.

USAID has provided assistance in all of these areas to varying degrees in Ukraine, Moldova and Bulgaria.

Lessons Learned from Power Sector Reform and Privatization

Following is a summary of lessons learned:

1. Institutional Development: Power sector institutional development is long term and essential for sustainable economic reforms. The primary institutional developments are the establishment of a separate energy regulatory body and the new institutional arrangements in the power sector resulting from de-monopolization. Institutional development is a long-term process.

2. Political Will: In power sector reform, political will can be mixed because of the close connection of the energy sector and political and other interests. In some countries the energy ministry is opposed to reform and the economic/finance ministries are the strongest supporters.

3. One Person Matters: In several countries one person made a disproportionate positive contribution to power sector reform.

4. Donor Coordination and Duration of Assistance: Donor coordination can be pivotal in advancing reforms through periods of mixed political will. Institutional reform is a long-term process and requires donors and international financial institutions to maintain long-term engagement even as resources vary over time.

5. USAID Assistance: There are several lessons learned with respect to USAID energy assistance over the last decade.

- **Comparative Advantage:** USAID had a comparative advantage because of its involvement in developing the power sector regulatory environment in 15 E&E countries.
- **Focused and Timely Assistance:** Assistance was focused on key reforms such as legal and regulatory work and institutional development—not capital project investments. Energy assistance rarely exceeds 5% of the budget in any E&E country program while achieving results.
- **Continuity:** Long-term institutional development and power sector reform in general require an on-going presence. The potential for reform opponents to recapture the process exists throughout and only diminishes dramatically with substantial privatization.

- **Three-Pronged Assistance Approach:** Three complementary assistance approaches and mechanisms were very effective: (1) bilateral technical assistance with a long-term resident advisor and short-term advisors; (2) a U.S. Regulatory Partnership to introduce the national regulators to proven U.S. regulatory practices; and (3) participation in the Energy Regulators Regional Association (ERRA) which provides access to the experiences and practices of neighboring countries.

6. Regulatory Framework and Reform

Sequencing: USAID's assistance focuses on the key element needed for successful privatization: the regulatory framework. It supports the sequencing necessary to create the conditions needed and should include an adequate social safety net simultaneous with tariff reform.

7. Regional Engagement: It is important for countries to participate in regional mechanisms such as the regulatory network and emerging regional market arrangements. Harmonized international practices and improved energy security and economies of scale can be gained.

8. Public Policy Discussions: Because of the magnitude of the power sector reform, systematic discussion by the government with stakeholders is important to gain understanding and support for the reforms.

9. The Privatization Process: It is important to have a capable transaction firm manage the process with proper incentives. Sound pre-qualification criteria and simple selection criteria are critical. Using investment requirements as a selection criterion is problematic; use of quality of service standards that investors must meet is increasing. Transparency is essential. Finally, a clear but arm's length role for the regulator is necessary.

10. Post-Privatization: There is a need for continued limited technical assistance and advanced training for the Regulator for a period beyond privatization. Major international strategic investors bring sophisticated legal, regulatory and accounting expertise on tariff, regulatory reporting requirements, and quality of service and cross-border issues that push the regulator into new dimensions of regulation. Additionally, rising customer expectations require stronger regulatory performance on monitoring quality of service, dispute resolution and public outreach and participation.

Romania Electricity Sector Restructuring and Privatization

By Andres Doernberg

USAID has provided technical assistance in Romania's electric sector reform process for the past decade. In 1997, USAID consultant Bechtel prepared a "White Paper" on a new structure for the power sector, recommending the unbundling of generation, transmission and distribution. It proposed creation of three Gencos (generation companies) from the existing assets of the state-owned vertically integrated RENEL (Thermal, Hydro, and Nuclear), and a Transco (transmission company) and electricity exchange under a regulated third-party access model. The following year, the Romanian Government created the electricity regulatory agency ANRE, and soon after carried out unbundling largely as recommended in the White Paper. Lignite mines remained in separate state-owned companies as before. A transmission tariff was developed, and the single distribution company Electrica was further unbundled into eight regional distribution companies.

Implementation of the market model, where traders and eligible consumers were able to sign bilateral contracts with the generation companies and captive consumers continued to be supplied under regulated tariffs by the regional distribution companies, soon proved problematical. First, Nuclearelectrica, owner of the Cernovada station that came on-line in 1997, secured a long term power purchase agreement with Electrica, the holding company of the eight distribution companies. Second, competition in the generation sector was unworkable because Hidroelectrica's generation costs are three to five times lower than Termoelectrica's, which consists of large lignite-fired power plants and Combined Heat and Power (CHP) plants, some of which are reaching the limits of their useful life and are very expensive to run. The competitive model was further hindered by a national policy, in place to this day, of a uniform retail tariff.

As a result, the Ministry of Industry started to administer a complex system of allocations of electricity from the three gencos to the eight distribution companies. The Ministry also remained involved in administering quantities and prices of electricity exports, which depending on seasonal hydrology, can be substantial.

The government nevertheless embarked on a privatization program of distribution, which resulted in the sale of shares of four of the eight regional companies:

Banat and Dobrogea, sold to ENEL (Italy), followed by Oltenia to CEZ (Czech) and Moldavia to EON (Germany). The sales were for about 25% of the shares, with additional shares added by commitments to invest. By 2005, investors owned 51%. The Government was advised by international investment banks, but the process was far from perfect. The fifth and largest distribution company for the region that includes Bucharest was sold to ENEL of Italy, who offered 820 million euros (over US\$1 billion) for it in the summer of 2006.

Starting in 2001, USAID/Romania's Energy Program (Phase 1) addressed the issue of generation privatization. A Policy Framework prepared by Hunton and Williams in 2002 made the case that competition in generation be resolved by offering for sale bundled thermal and hydro units, four companies of approximately equal generation costs. The concept faced the obstacle of Romania's policy that water resources would not be privatized.

A follow-up USAID/ Romania Energy Program (Phase 2) was implemented by the Emerging Markets Group Ltd. By then, Termoelectrica had created several subsidiaries from among its largest power plants: Rovinari, Turceni, Craiova, and Deva, plus a fifth subsidiary combining its largest CHPs. The government was at that time being contacted by large European companies interested in buying power plants or lignite mines, or both, outside any formal tendering process. The Turceni Energy Complex became the focus of USAID's privatization program. Assets to be sold would include selected lignite mines that would be bundled with the power plant. A long-term contract with the state-owned railroad company that transports the lignite was included as part of the proposed package. During the course of the project, the Government of Romania signed a loan with the Japanese Government for a concessionary loan for environmental upgrades to the Turceni power plant. This commitment complicated the eventual sale, which is still pending any formal tendering process.

Features of Romania's Electricity Market

1. A regulated market for electricity and ancillary services trading on regulated contract basis (with regulated prices and regulated and usually firm quantities), as follows:

- Portfolio contracts (firm quantities and regulated prices);
- Contracts for electricity in cogeneration (quantities and regulated prices);
- Power Purchase Agreement contracts (long term contracts with regulated prices) – the “must run-must take” contract for SN Nuclearelectrica SA concluded for the whole output of the nuclear power plant;
- Ancillary services contracts (firm quantities, established by the System Operator, and regulated prices); and
- Transmission contracts (regulated tariffs).

2. A competitive market for electricity trade through bilateral contracts (firm quantities and negotiated prices) and by auction on the spot market (bulk transactions based on bids from producers).

The following contracts are concluded on the competitive market:

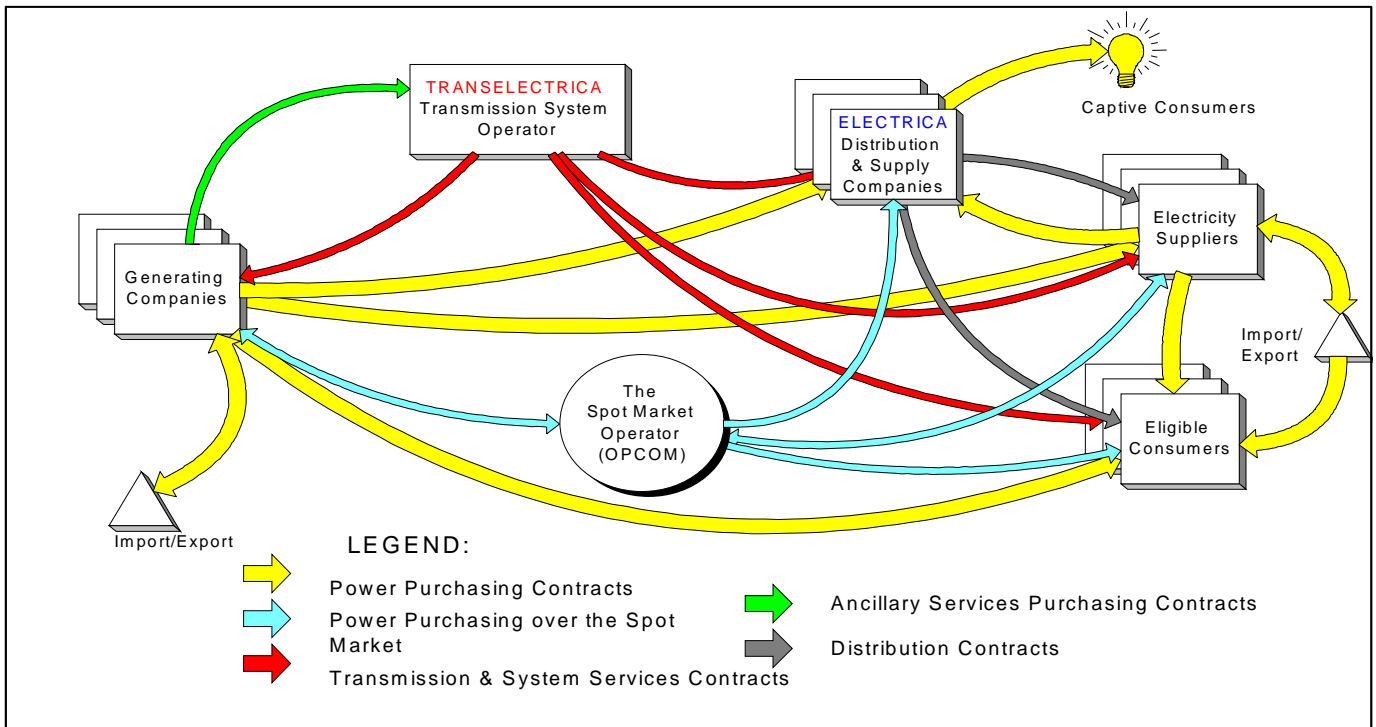
- Bilateral contracts between internal producers/suppliers with eligible consumers or with other suppliers for the eligible consumers' consumption;
- Import contracts (for the imbalances that arise in portfolio contracts);
- Export contracts;
- Negotiated contracts concluded by independent producers and self-producers, other than the owners of portfolio contracts;
- Transactions on spot market at the System Marginal Price; and
- Transactions on day ahead and balancing market.

The electricity market and the function of the market operator continue to develop. As of 2005, 80% of the market is open to competition, essentially the entire non-residential sector, which remains at about 80% of total sales. The competitive market includes bilateral contracts, a spot market, and a balancing market.

USAID will continue to support Romania's electric sector restructuring until December 2007.

The Romanian Energy Program (REP 3) is proposing that a market monitoring function be organized to monitor market concentration, and to assess market performance via pricing data and monitoring of selling/buying behavior in centralized and bilateral markets during various periods of the day/year, with a view of analyzing resulting market shares of individual market participants.

Trading Arrangements in the Romanian Market (2006)



Energy Reforms in the Caucasus Region

By Walter Hall

The Caucasus formed a regional unit of the single, integrated Soviet national electric and natural gas systems prior to 1989. Natural gas was produced in Russia's west and sold in the Caucasus at well less than world prices. Access to natural gas was near 100%. Electric generation was distributed in the Caucasus with the intention of inter-regional exchanges.

Following the Soviet Union's break-up, armed conflicts, including that between Armenia and Azerbaijan over Nagorno-Karabagh (N-K) and civil war in Georgia, natural disasters (the Armenian earthquake), and economic disruptions reduced the ability of the Caucasus to pay for predominantly Russian energy supplies. This resulted in a near total break-down of the region's energy delivery systems during the period 1992-1995. National economies contracted by up to 60% in each nation with recovery beginning only in the late 1990s. Severe energy shortages were experienced in Armenia (1992-1995) and Georgia (1992-2002), with local area shortages experienced in Azerbaijan. Described below, by country, is the USAID response to this human and economic crisis, with programs common to more than one country described in the Armenia discussion.

Armenia

USAID initially provided funds to purchase fuel oil for use as electric generation fuel for humanitarian relief. After the 1988 earthquake, the ANPP Nuclear Power Plant was shut down due to safety concerns. Also, following the N-K war, Azerbaijan closed off the principal natural gas pipeline serving Armenia, leaving available only a smaller pipeline through Georgia, which was prone to service interruptions. Azerbaijan and Turkey shut off four major transmission lines needed for regional electricity trade. Limited but inadequate electricity supplies were maintained by dangerously drawing down the level of Armenia's only large body of water, Lake Sevan, causing serious environmental damage. The natural gas system also contracted to 25% its previous size, and it was at this point (1994) that USAID began its humanitarian assistance program.

In 1995, Armenia restarted ANPP Unit 2 and the US and EU initiated a program that continues today, to identify and fund equipment and personnel training improvements to increase plant safety.

USAID also provided training in least-cost generation planning and decommissioning finance and engineering, to assist Armenia to define its electric generation options to permit retirement of the ANPP at the earliest cost-effective date.

A common government response to the economic collapse following the Soviet Union break-up was to permit citizens to not pay for consumed energy services. Such services had been heavily subsidized in the USSR, and with deterioration in service quality providing a popular justification, this subsidization was continued and grew as Russia began to demand higher world prices for the energy supplies it provided. Non-payment resulted in service collection levels of as little as 20 to 25% in both Armenia and Georgia through significant portions of the 1990s. The net effect was to create large debt burdens on the national government, held for the most part by Russia.

Beginning in 1996, USAID funded major programs to address this problem in both Georgia and Armenia. Three approaches were pursued. First, studies were conducted on the costs of providing modern energy service and plans were developed to increase prices over time to cost-compensatory levels. Training was provided to ministry, regulator and service provider personnel on how to develop and implement cost-compensatory rates, including rate designs that would encourage efficiency in use of service. By 2003, cost compensatory rates had been adopted in Armenia and for the privatized utility in Georgia. Second, modern approaches were introduced to measuring service usage, billing and pursuing collections. Soviet metering was mechanical, located inside the apartment and easily tampered with. Meters were removed from inside the apartment and placed in metal lock boxes to prevent user and public access. Programs of periodic accuracy testing and maintenance, and in some cases (such as where metering was fully absent), new higher quality metering was installed. Usage, payment and bills were tracked in computer systems, and programs to disconnect non-paying customers were established.

An additional problem was the ability of customers and meter readers to collude and thereby reduce reported usage and payments under Soviet collection procedures. To prevent this, systems of reviewing usage levels with several employees, or rotating meter readers over different areas, and collecting revenue other than through the meter reader (i.e. through a bank or a post office) were initiated.

A further problem was theft of service. Distribution lines in the former Soviet Union are the same gauge as household wiring, and thus those bent on stealing can hook directly into a distribution line (or a neighbor's access line) bypassing the meter. Inspection programs to catch such illegal connections, enclosing wiring within hardened shells and enhanced legal penalties for service theft were used to discourage this.

Finally, flow metering was installed (a \$15 million USAID financed program) throughout the transmission and in parts of the distribution system to permit operators to match electric flows with billed usage and thereby determine where serious theft was occurring, and further corrective measures were needed. Armenian government efforts and donor programs were successful in improving collections to approximately 80% by 2003.

A further problem addressed by donor programs was the poor condition of energy infrastructure equipment. This resulted in part from inadequate maintenance prior to the Soviet breakup, but even more so to the inability to maintain equipment with the limited funding available during the economic collapse following the breakup. USAID and other donors, therefore, provided funds used in major equipment rehabilitation, such as for ANPP safety improvements or hydro plant rehabilitation. However, the needs for capital throughout the energy system were much greater than could be matched with anticipated donor funding. It was thus desirable to develop a legal and business climate that would permit the attraction of private capital to assist in this necessary task.

This effort began with the passage of laws in 1998 governing electric and natural gas service which permitted private ownership, created a regulator to provide government oversight and established a stable business climate within which a private company could invest with the opportunity for a reasonable return on capital. During 1998 to 2003, much effort was expended in building the capacity of the regulator, the ministry and other government entities to operate effectively this stable environment. Restructuring of old Soviet national service providers into separate distribution, generation, a transmission company and an independent system operator, wholesale transaction settlement agent and other market operation entities were also completed.

Efforts also began to prepare electric service providers for privatization. These included inventorying property used in service operations, preserving legal rights to such property (particularly the right to easements and service buildings) as land ownership was privatized, building management and accounting systems within the companies to permit transparency as to their financial condition and similar such matters.

In 2002, after much effort, the electric distribution system was sold to a private company for approximately US \$45 million. Over the next three years, this company greatly improved service operations and collections (the latter to 100%), before selling the system to the Russian state owned electric system, RAO-UES, at a considerable profit. Armenia's electric generation and its natural gas system were never formally privatized as Armenia traded these assets (excepting one hydro-cascade) to the Russian Government in return for debt relief from the debts described earlier and future natural gas price concessions.

USAID also assisted Armenia to increase energy use efficiency and exploit its renewable energy sources. Methods of achieving greater energy use efficiency (including weatherization, more efficient motors, and natural gas substitution) were demonstrated, with more than US\$10 million expended. Also, a wind resource map was developed for Armenia, numerous small and mid-size hydro project resources were examined and documented, and pricing and licensing terms attractive to their development were suggested and implemented. Recently, World Bank, EBRD and a private donor have established a fund in excess of \$15 million to be used for partial financing of such projects employing procedures drafted by USAID contractors.

Georgia

Nearly all of the programs described above were pursued in Georgia as well. Early assistance (1994) was humanitarian in nature and involved fuel oil purchases. Energy shortages in Georgia were more pronounced than in Armenia (winter electricity blackouts exceeding half a day in the capital and all day in the winter in rural areas) and continued for a much longer period.

USAID assisted in designing and funding rehabilitation programs for major hydro generation (Rioni Cascade), as did other donors, but much capacity was destroyed in the civil war. Least-cost generation planning, management and accounting system implementation and best management/operations practices were introduced to improve near-term operations and pursue privatization.

As in Armenia, system rehabilitation needs well exceeded donor funds and the attraction of private investors was deemed necessary. USAID assisted in this effort, much as described above, through the drafting of legislation to create a regulator, establish a stable business climate and by establishing transparent market mechanisms to improve the attractiveness of investing in the Georgia energy sector.

In 1999, Telasi, the distribution system of Georgia's capital Tbilisi and Georgia's largest and most modern thermal generation (Mktvari) were sold to AES. The privatization and its aftermath have been skillfully captured in the award winning film "Power Trip."

Upon purchasing Telasi, AES sought to rehabilitate the major generation plants it operated and to improve service while commercializing operations within its service territory. USAID supported these efforts with metering, billing and collections demonstration and capacity building programs such as described above, and the company pursued an approximate US\$150 million metering and anti-theft program. Theft of electricity by small wholesale suppliers and customers in Tbilisi and as electricity was transported through rural areas to the capital, however, remained a major problem. As a result, collections, while improved from the pre-privatization 25% level, never exceeded 70%. USAID further supported development of an effective safety net for low income Georgians to assist in bill payments and funded two community NGOs to assist in resolving bill and other payment problems. After a loss of more than US\$200 million, AES sold Telasi to RAO-UES for US\$25 million.

In 2003, the Government of Georgia (GoG) agreed to donor proposals to establish incentive-based management contracts covering three sector entities – the Georgian Wholesale Electric Market, the Georgia Electric Transmission Company and the United Distribution Service Company (UEDC), the latter of which provides electric service through most of Georgia outside the capital. USAID developed drafts for each of these contracts and assisted in their negotiation. USAID contractor, PA Consulting, agreed to serve as Management Contractor of UEDC with USAID funding. UEDC was reorganized and its management structure greatly improved, metering, billing and collections was improved from 25% to 70% and much new acquisition or rehabilitation of equipment was accomplished. At present, GoG is privatizing UEDC.

USAID also assisted Georgia to attract investments in energy efficiency, with development of renewable energy projects and gas system extensions in rural areas and with environmental and social effect analyses associated with development of the Baku-Tbilisi-Ceyhan oil pipeline. Finally, USAID assisted with regulation, environmental protection and investment attraction for natural gas and oil production investments.

Azerbaijan

Because of statutory prohibitions, USAID was initially unable to provide assistance to the Government of Azerbaijan, but with the waiver of this prohibition in 2003, it began a program of assistance lasting through 2006. Areas addressed included establishment of an energy regulator and training on licensing and rate making, energy efficiency and an efficient steam heat pilot project, capacity building on management and accounting systems in the electric and natural gas service providers, proposal of a sector restructuring plan and support for an EBRD rehabilitation project at Azerbaijan's principal thermal generation plant.

Energy Restructuring and Privatization in Albania and Macedonia

By Jamshid Heidarian

USAID Support to Electricity Distribution Privatization in Albania

Albania has signed and ratified the Athens Energy Community Treaty² and faces major challenges in reforms based on European Union energy, competition and environmental directives, including opening the electricity market. With USAID assistance Albania has succeeded in establishing reasonable laws and a separate energy regulator, but the management and modernization of the electric utility -- Korporata Elektroenergjitike Shqiptare (KESH) -- is weak and lags behind other countries in the region. USAID's power sector assistance to Albania began in fall 2000 and focused on addressing systemic problems. A Strategic Action Plan was developed to address medium to longer term issues, such as laws and regulations, strengthening the regulatory agency, tariffs, unbundling and restructuring, investments and privatization, including improvements in billing, metering and collections.

The Albanian electric power sector is currently in a desperate financial situation as only 52% of the power supplied is paid for by consumers. The Government of Albania (GoA) has now expressed some urgency in wishing to privatize KESH's distribution operations within 18-24 months as of September 2006. This provides USAID and the donor community with an 18 month window of opportunity to provide the full range of support that will be necessary to successfully privatize the KESH distribution assets. Some European companies such as Italy's Enel, Austrian company EVN AG, and CEZ of the Czech Republic have already visited Albania and showed their interest to participate in the tender for KESH's distribution business.

The privatization of distribution assets in Albania is expected to improve the provision of energy services

by bringing much needed capital investment and by introducing modern commercial management practices that will bring greater liquidity to the sector. Experience indicates that investors will demand that the GoA implement a range of policy and regulatory reforms that will create an environment conducive to privatization. This includes passage of laws and regulations permitting private ownership of power sector assets, reforming the tariff methodology to bring rates closer to full cost recovery and full implementation of the Albanian market model for the power sector.

The GoA requested the International Finance Corporation's (IFC) Public/Private Partnership Office in Sofia to assume the role of Transaction Advisor and undertake the unbundling of KESH and is completing the contract for these services. USAID will provide independent advice and continue to focus on the legal, regulatory and market design and implementation aspects.

In September 2006 at the donor meeting in Tirana USAID agreed to provide support in three areas:

- Updating and implementing a Transitional Market Model;
- Key Legal & Regulatory Actions; and
- Related Government and Policy Actions: provide independent advice and work with the GoA to ensure that required actions for a successful transaction are undertaken in a coordinated manner.

Currently USAID activities in the energy sector of Albania consist of the following programs:

- Assisting the Ministry of Economy, Trade and Energy (METE) on legal and technical advice on Restructuring and the Privatization of the KESH Distribution Company;
- Assisting the drafting of legal and government reforms consistent with the Policy Statement;
- Analyzing and recommending an appropriate revised tariff methodology; and
- Assisting and training KESH staff on tariff modeling and calculation.

² For more information, read Robert Ichord's article on "Regional Energy Market Development: The "Athens Energy Community," at the end of this Special Report.

Distribution Company Privatization in Macedonia Raises 225 Million Euros (US\$315 million)

USAID has provided legal, regulatory and utility technical assistance to the Macedonian energy sector since 2000. Preliminary groundwork for the planned privatization of the State-owned electricity company occurred in 2001 and 2002. Before the privatization process the former Elektrostopanstvo Macedonia (ESM) was divided into three parts: transmission system-operator MEPSO, the distribution company ESM, and the generation company Elektrani na Makedonija (AD ELEM). The ESM distribution company has twenty-eight distribution branches with a distribution network of 35kV, 10kV and 0.4kV lines and coverage is extended to almost all populated Macedonian regions.

A major breakthrough occurred in April 2003, when ESM announced the start of preparations for internal restructuring. This process lasted five years and resulted in the privatization of the State-owned distribution company. The Government of Macedonia (GoM), through the Ministry of the Economy (MoE), asked USAID to provide legal and technical advice on market design and market structure and to provide legal support to Meinl Bank that advised ESM and MoE on the restructuring and the privatization of ESM. USAID agreed to provide legal and technical support for privatization of ESM and the following were done:

- Developed electricity market policy paper, in form of Electricity Market Design Plan;
- Developed Electricity Market Law, based on Electricity Market Design;
- Reviewed ESM restructuring plan drafted by Meinl Bank Consortium and participated in meetings related to restructuring plan for coordination with Electricity Market Design Plan concepts;
- Provided the preliminary Due Diligence exercise on ESM in preparation of privatization package for ESM Distribution Company; and
- Provided assistance with implementation of Electricity Market Design Plan, including development of interim agreements and recommendations for adoption of additional agreements, licenses, and tariffs.

The tender for the privatization of ESM was announced in December 2005, and 90 percent of the stock was offered for sale to investors. The Austrian company “EVN AG” outbid its two rivals (Italy Enel and CEZ of the Czech Republic) to win the tender. The new owner of the Macedonian Distribution Company offered 225 million Euros and investments worth 96 million Euros in the first three years.

After privatization of ESM, the collection rate from household and small commercial sector increased significantly. However, non-payment by Government (including state owned enterprises), high commercial losses, judicial problems in executing judgments for unpaid bills, and political and ethnic problems have continued to undermine the achievement of higher rates of collection.

Through this period, USAID worked with an interagency group to develop the market model for the new system which was adopted by the Government. This helped to create a clear framework for investment in terms of future evolution of the system. The model has not been fully implemented and issues of financial settlements among the unbundled segments of the sector remain. Problems with the pass-through of funds to the generation company (ELEM) have resulted in reduced maintenance and financing of power plant repairs. The situation has been compounded by strong demand for electricity and the high prices of imported power (due to regional supply shortages) that Macedonia was forced to import in larger quantities than projected. Passing on these higher prices and operation and maintenance costs is a challenge for the Government and the energy regulator. But the sustainability of the distribution privatization and the movement to the next phase of generation privatization will depend on solving these problems.

Caspian Pipeline Startup Highlights USAID Leadership in Regional Cooperation and Global Energy Security

By Mark Schlagenhauf



USAID, together with an interagency group led by the Special Ambassador on Caspian Basin Energy Diplomacy, supported the development of three Caspian pipelines to establish the East West energy corridor for Caspian oil and gas. The Early Oil Pipeline from Baku, Azerbaijan to Supsa, Georgia demonstrated the viability of Georgia as a transit country and has reliably produced over 100,000 barrels per day since the late 90s. The completion of the Baku-Tbilisi-Ceyhan (BTC) oil pipeline (see map) and the parallel South Caspian Gas Pipeline greatly enhanced regional and global energy security and provided significant revenues to the involved countries. The BTC oil pipeline will transport one million barrels oil per day at full capacity, expected to be reached next year, and avoids the environmentally sensitive Bosphorus straits. Current volume is about 700,000 barrels per day. The Shah Deniz gas pipeline, which started up in March 2007, provides an alternative gas supply line to Georgia and Turkey along the same pipeline corridor as BTC. Links to Europe through the Turkey-Greece interconnector (under construction) and the expansion of gas volumes in later years will make Azeri gas an important source of supplies to Europe.

Beginning in January 1996, assistance to the Government of Georgia was provided by USAID-funded consultants to establish a credible and functioning oil transport system in Georgia. These efforts resulted in the establishment of the Georgian International Oil Corporation (GIOC), the completion of contractual negotiations between GIOC and Azerbaijan International Operating Company, and the adoption by the Georgian Parliament of enabling legislation covering those agreements. As a direct result of this assistance, on February 24th, 1996, President Shevardnadze executed the agreements for restoration and operation of the Baku-Supsa oil pipeline. On April 2nd, 1996, Parliament ratified the various agreements. The agreements resulted in large investment in Georgia (more than US\$200 million), and have served as a catalyst for later investment. USAID-funded consultants were specifically cited for their assistance in a letter from former President Shevardnadze to former US Ambassador, William Courtney.



The signing in Istanbul of the intergovernmental agreement on the BTC pipeline

USAID also provided environmental and legal assistance for the BTC oil and Shah Deniz gas pipelines, supporting over \$5 billion of foreign direct investment in pipelines and a much larger sum in Azerbaijan production facilities. Twenty three environmental experts were engaged by USAID in environmental reviews of the pipeline corridor. This USAID-funded work was very valuable to the Dutch Environmental Commission, who followed up with extensive assistance to the Georgian government in environmental impact assessment (EIA). The Dutch government voted for a World Bank and EBRD loan for the pipeline on the basis of USAID's work, along with work done by British Petroleum's (BP) and the Dutch Environmental Commission. USAID also carried out work on environmental and other laws associated with pipelines. The re-emergence of private property ownership following the elimination of the Soviet regime created a need for a system to compensate for harm to private and public health, property, and national resources, both environmental and cultural, for damage caused by contamination by hazardous materials, and USAID-funded assistance was used to complete this work.

The BTC pipeline has already been featured (in fictional form) in popular culture: it was a central plot point in the James Bond film "The World Is Not Enough" (1999). One of the film's central characters, Elektra King, is responsible for the construction of an oil pipeline through the Caucasus, from the Caspian Sea to the Mediterranean coast of Turkey. Named the "King pipeline" in the film, it is a thinly disguised version of the BTC.

Energy Efficiency Programs in the Europe and Eurasia Region

By Ira Birnbaum

USAID's energy efficiency projects in the E&E region are intended to reduce energy use, especially in homes, schools, hospitals, cities, and heating networks, in order to save money and improve living and working conditions.

Why It Matters

Energy costs are increasing, leaving less money for buying other items. Energy costs increased from about 4% of a Bulgarian family's budget in 1995 to over 12%, ten years later. The impact is greatest among the lowest income groups, which pay a percentage two-to three times greater than average households. Similarly, energy represents a substantial percentage of municipal expenses, limiting the ability to provide high quality public services. However, energy costs can be reduced 20-40% through cost-effective projects. There are also important indirect benefits including improving comfort, supporting decentralization efforts, and improving the quality of services: schools and hospitals can buy more text books and medicine; school attendance increases; hospitals have lower re-infection rates; and streets are safer. Environmental benefits are achieved from reduced emissions from power plants, lowering emissions of greenhouse gases and other harmful pollutants.

Projects implemented by E&E through demonstrations and USAID Development Credit Authority (DCA) guaranteed loans have average payback periods of two to four years, as indicated in the table on the following page.

USAID-Funded Energy Efficiency Projects

Type	No.	Countries	Equipment	Cost Range	Average Payback
Hospitals	16	Bulgaria, Serbia, Lithuania, Czech Republic	Heating, ventilation, windows, lighting, controls, water	\$40,000 - \$380,000	2.9 years
Schools	18	Serbia, Macedonia, Bulgaria Hungary, Poland, Czech, Ukraine	Weatherization, heating, lighting, windows	\$1,800 - \$127,000	3.1 years
Housing (apartment buildings)	5	Albania, Poland, Slovakia, Ukraine	Weatherization, heating controls, lighting	\$3,600 - \$163,000	3.5 years
Street lighting	20	Serbia, Poland, Bulgaria	HPS lamps, timers, controls	\$5,000 - \$450,000	3.9 years
Municipal buildings	6	Bulgaria, Serbia	Heating, windows	\$83,000 - \$362,000	3.1 years
District heat distribution	2	Serbia, Bulgaria	Substations, drives/controls, insulated pipes	\$44,000 - \$393,000	2.8 years
Senior center	2	Serbia, Macedonia	Heating, hot water	\$5,000 - 173,000	2.0

Leveraging USAID's Impact

E&E builds awareness and capacity for municipal and residential heating and energy efficiency opportunities and best practices through the Municipal Network for Energy Efficiency (MUNEE), a regional network to promote innovative policies at the national and local levels, identify barriers to their successful adoption, and strengthen the capacity to develop and attract financing for projects throughout the E&E region.

E&E preparatory work for International Financial Institutions (IFIs) and preparation of national laws and strategies leveraged significant investments from the World Bank, Global Environmental Facility, and European Bank for Reconstruction and Development. As a result, tens of millions of dollars of energy efficiency projects have been implemented in Serbia, Bulgaria, Armenia, Ukraine, and Macedonia (recently established). Commercial financing has been stimulated in Bulgaria by DCA guarantees.

In Ukraine, energy audits coupled with IFI financing and partnerships between local and western energy services companies (ESCOs) will result in projects reducing gas consumption in industrial facilities.



A housing building in Elbasan, Albania, prior to weatherization



The same building after weatherization



The façade of a building undergoing an energy efficiency intervention



The same building after the energy efficiency intervention

Southeast Europe Energy Investment

By *Andres Doernberg*

USAID supports a regional transmission planning project in Southeast Europe that has identified and mobilized funding for critical transmission lines and has evaluated the transmission implications of generation investments for the next 15 years. USAID works within the framework of the Stability Pact for Southeast Europe and in close collaboration with the European Commission.

Evaluations have resulted in new investments for interconnections between Macedonia and Bulgaria through an EBRD loan, as well as new interconnections between Romania and Hungary, and between Serbia and Bosnia (see map below). These studies also supported planning that resulted in the October 24, 2004 synchronous interconnection of the Balkan region with the Western European grid.

USAID support to the Southeast Europe Cooperative Initiative (SECI) Project Group, which works on the development of interconnection of electric power systems of SECI countries, started in March 2001. The SECI Project Group is a collaboration of representatives of nine Transmission System Operators (TSOs) of Southeastern Europe with participation of representatives of neighboring TSO's (Turkey, Slovenia, and Italy) that do not receive USAID

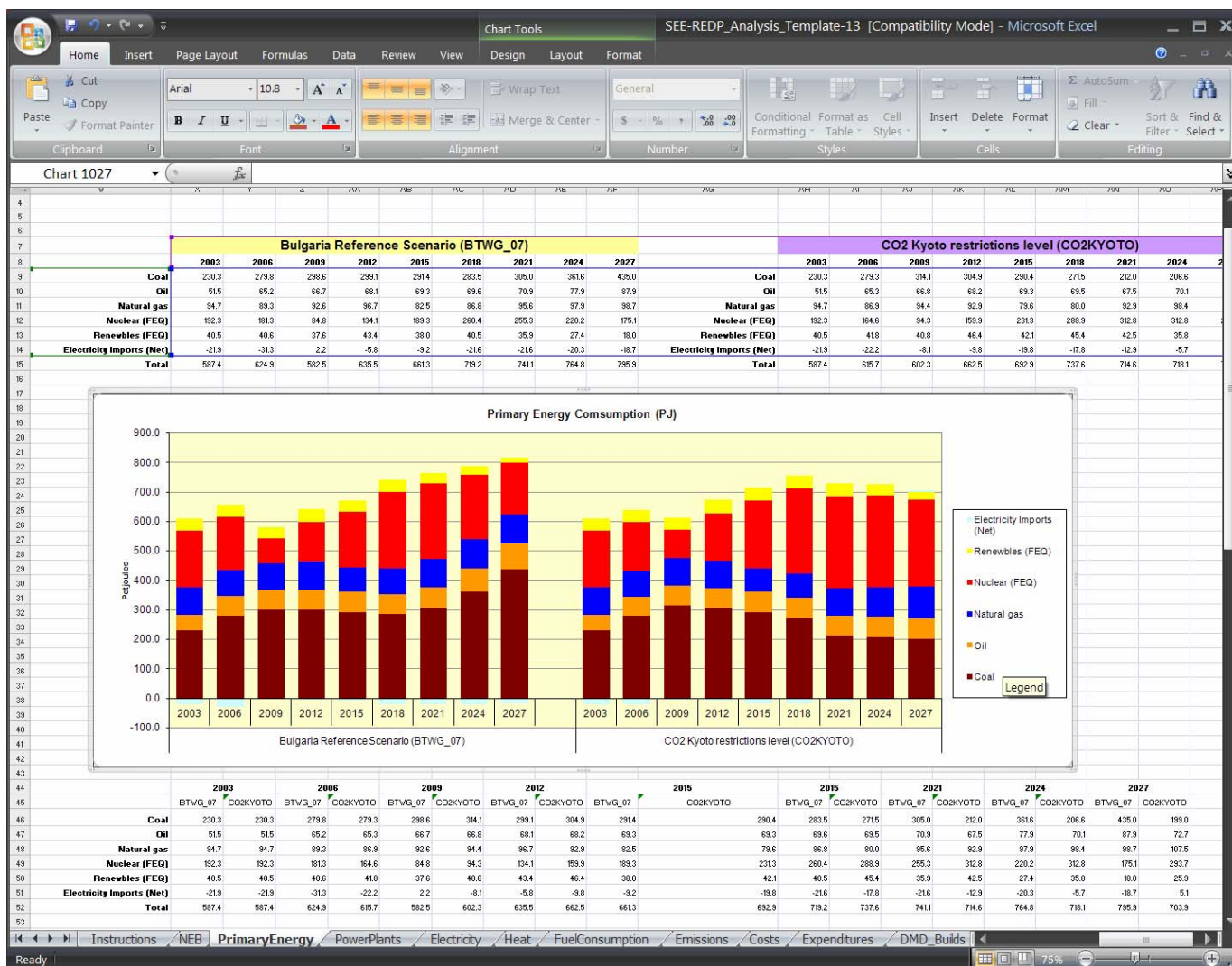
support. Load flow, short circuit and dynamic models of the transmission network (110kv to 400kv) for 2005, 2020 and 2015 for winter peak and summer light loads are used to analyze the economic impact of proposed interconnections. The project Group also utilizes its modeling capability in evaluating the investments in the transmission network needed to sustain a Generation Investment Study for Southeast Europe.

A related regional Southeast Europe project supports a Regional Energy Demand Planning working group that is carrying out energy systems modeling. It is aimed at cooperating with related activities in electricity generation and transmission investment as well as with economic studies of gasification from new sources of natural gas to the region. Members of a Technical Working Group of eight Southeast European countries have developed their respective national energy system models and during 2007 will be carrying out energy systems analyses to the year 2027 for alternatives that examine investments needed to meet recent EU targets for energy efficiency and renewables. A Steering Committee of representatives of national ministries guides these studies. The national systems analyses are modeled on a common approach (see Bulgaria data table on the next page), the SEE-Markal model. These analyses utilize an International Energy Agency/Energy Technology Systems Analysis Program to develop energy balances, forecasts, and estimates of the impacts of different policies.

New Regional Interconnections



Primary Energy Demand Projections 2003-2027 Reference Scenario (Bulgaria)



A Central-South Asia Energy Corridor

By Rajiv Rastogi

In 2005, US Secretary of State Condoleezza Rice announced REMAP - an initiative for the regional integration of Central Asian Regional (CAR) infrastructure with Afghanistan and South Asia, as a major US policy goal for stability, trade and investments. It involves linking of CAR world-class energy resources with huge markets in South Asia, to link these two complementary sub-regions, and to provide supply options for Afghanistan's reconstruction. The Trans-Afghan Pipeline, or the Turkmenistan-Afghanistan-Pakistan-India (TAPI Pipeline), offers a medium-term export potential for Turkmen gas and CAR petroleum products; however, in the near-term Tajik and Kyrgyz electricity exports to Afghanistan and Pakistan are more attractive. Under a World Bank led program, the Central Asia--South Asia Regional Electricity Market (CASAREM), four countries --Tajikistan, Kyrgyzstan, Afghanistan and Pakistan, -- signed a Memorandum of Understanding in Dushanbe, in November 2006, for 1000MW exports to Pakistan by 2010, and up to 4,000 MW, if available at a later date. The new transmission lines are expected to go via Kabul and provide Afghan off takes, as transit fees, to reduce dependence on high-cost imported diesel. The World Bank and Asian Development Bank are supporting feasibility studies that will lead to a Go, or No Go decision by summer 2007, and assist a four-country inter-ministerial council (IMC) to consider investments and institutional options.

The Regional Electricity Market Development Program (REMAP) managed by USAID's Central Asia Regional Mission in Almaty, and collaboratively developed with E&E and EGAT was launched in fall 2006. It provides targeted assistance for developing an open and transparent trading platform that supports electricity export through the "Energy Corridor" from Central to South Asia based on expanded regional trade. The purpose of REMAP is to improve the *investment climate* and advance *internal reforms* in the Central Asian Region (CAR). It provides market based solutions for water and energy tensions between upstream and downstream countries, and provides a way forward for cooperation on huge cross-border projects.

Several regional trends favor US intervention for transparency and institutional development through REMAP at this critical time. Most notably: electricity shortages are projected in Kazakhstan and Russia

driven by a strong economy; Kazakh power sector is largely privatized with functioning competitive markets, and a US-Kazakh Energy Partnership is in place under the US Secretary of Energy's initiative ; attractive sites in Tajikistan and Kyrgyzstan for low-cost hydro development; proximity to major demand centers and growing markets; major grids are under expansion linking CAR with neighboring systems; and large Chinese, Russian and Iranian investments are underway in the region.

Current REMAP participants include power utilities, grid operators, regulators and ministries from three CAR countries -- Kazakhstan, Kyrgyzstan and Tajikistan. Other partners include the CAR regional grid dispatch center, UDC/Tashkent, along with regional organizations like Eurasia Economic Community (EurAsEc), Central Asia Cooperation Organization (CACO), Commonwealth of Independent States (CIS) Energy Council, as well as donors and IFIs. In early February 2007, the United States Energy Association sponsored a key workshop for all stakeholders, in Almaty, to reach agreement on market design and collaborate on a common approach. In future, this may be expanded to include Turkmenistan and Uzbekistan reflecting internal reforms. A separate REMAP component focuses on bilateral assistance for Kyrgyz and Tajik sector reforms.

In addition to the Southern Exports CAR offers cost-effective options for the Afghan North East Power System (NEPS), critical for Afghan stability. By mid 2008, newly built 220kV lines will double the supplies in Northern Afghanistan and Kabul, by bringing in 300 MW Uzbek imports. Other donor funded lines under various stages of construction will add 300MW, each from Tajik and Turkmen, during 2009-10. REMAP will play a key role in ensuring reliable and sustainable supplies, through viable contracts, sound commercial practices and internal reforms. The E&E Bureau is working closely with the EGAT Bureau, the Asia and Near East Bureau, the Afghanistan Mission, and the South Asia Regional Initiative for Energy (SARI/E), in coordinating USAID programs in CAR, Afghanistan and South Asia to support this major US initiative for the Energy Corridor, led by the State Coordinator. E&E is also working closely with the US Trade and Development Agency, US Department of Energy, US Department of Commerce, potential private investors, and IFIs, principally the World Bank, on a tight time bound program for supporting the export studies and construction by 2010.

Regional Energy Market Development: The "Athens Energy Community"

By Robert Ichord

We have witnessed the tragic wars and ethnic conflicts in the Balkans. The word Balkanization is commonly used to describe a state of fragmentation and lack of cooperation. But in the aftermath of the Balkan wars of the 1990s, the Stability Pact for Southeast Europe was created and a renewed effort mounted to bring peace, stability and economic development to the region. It was within this multi-lateral framework that USAID began to work over six years ago with the European Commission and other donors on a vision for regional energy cooperation. Although the prospects for early accession of many of these countries into the European Union (EU) was limited or non-existent, the idea that emerged was a notion of a seamless integration of the electricity and gas sectors into the rapidly evolving Internal EU Energy Market. The countries would agree to adopt the energy, competition and environmental directives, the so-called "acquis communautaire" in this sector, in exchange for full rights and responsibilities as EU members in the electricity and gas sectors. Memoranda of Understanding at the Ministerial level were signed in 1991 and 1993 that committed the countries to creating this legal and regulatory framework and restructuring and unbundling their electricity and gas utilities. USAID was actively involved through both mission and regional Bureau programs in supporting these reforms in virtually every country in the region. A regional regulatory forum was established in the context of our broader regional networking effort (see Archer on page 4).

At the same time, USAID served as a catalyst to regional cooperation through the sponsorship of a project for a regional tele-information system and transmission planning that brought together all the transmission operators in the region to develop a common planning platform for analyzing key investments to improve the reliability of the transmission grid and facilitate trade. USAID's regulatory and transmission efforts formed the basis for the creation of a working group under the Memoranda of Understanding. The reconstruction of the destroyed transmission lines in Bosnia and Herzegovina through World Bank funding as well as Croatia's efforts to reestablish its major substation at Ernestinovo made it possible to synchronously reconnect the region (i.e. the former Yugoslavia, Albania, Romania and Bulgaria) with the Western

European grid in October 2004. A special fund was created to compensate countries for cross-border physical electricity flows in lieu of inter-country transit tariffs. In principle, it is now possible for electricity to be traded anywhere on the continent.

This progress led to an effort to transform the Memoranda of Understanding into a legally-binding Treaty. After intensive discussions, a Treaty was signed in Athens in the October 2005. The Treaty was hailed as reminiscent of the Coal and Steel Community that preceded the creation of European Economic Community. The Athens Treaty was the first multilateral treaty since the Balkan wars. It established a Ministerial Council, a Permanent High Level Group, a Community Regulatory Board, an Energy Forum, and a Secretariat in Vienna. The treaty was ratified by the contracting parties (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro, Romania, Serbia, and the United Nations Mission in Kosovo) and went into effect in July 2006.

USAID played a significant substantive role in promoting the policy and institutional positions and reforms needed to realize the Treaty. The collaboration among the donors and IFIs in supporting this process was and continues to be extraordinary. The World Bank approved a US\$1 billion Adjustable Program Loan to support regionally-important electricity projects and is preparing a similar one for gas. The collaborative process and now the legal commitments of the parties have helped to advance domestic reforms. In addition to the trade facilitation and regulatory issues, the Energy Community is beginning to turn to investment issues and how to attract the major new investments needed to meet growing demands as well as accelerate projects that are important not only for the region but also for Western European energy security (e.g. new gas pipelines from the Caspian). The Energy Community is therefore interested in possibly expanding to the East. Turkey, Ukraine, and Moldova are observers to the Treaty and potential future members. The development of a common regulatory space from Europe to Central Asia is articulated by senior EU officials as a policy priority in light of concerns over the growing reliance on Russia gas imports. USAID is supporting a number of initiatives that improve transparency and market monitoring, energy demand planning and efficiency, integrated investment promotion, and programs that address social protection and affordability.

NOTES FROM THE FIELD

World Bank's GPOBA Approves First USAID Project

In March 2007, the World Bank's Global Partnership for Output-based Aid (GPOBA) approved its first USAID-sponsored project, a slum electrification project in Mumbai, India. GPOBA is a multi-donor partnership at the World Bank, which provides increased access to reliable basic infrastructure and social services to the poor in developing countries through the wider use of explicit performance-based subsidies, or output-based aid, to support the delivery of basic infrastructure services where policy or social concerns would justify public funding to complement user-fees.

GPOBA will provide a \$1.5 million grant to the local utility, Reliance Energy Ltd., to support the program which will provide legal and safe electricity to more than 24,000 households in select slum areas and, more importantly, provide a scalable model for replication across Maharashtra and other states in India.

The project will require investment of more than \$4.5 million and represents a model public-private partnership and tremendous leverage opportunity for all partners - Reliance Energy Ltd (the local, private utility) will invest more than \$2 million, the International Copper Association (ICA, an EGAT GDA partner) will provide about \$200,000, EGAT will provide \$500,000 and the slum dwellers and communities will contribute about \$200,000.

GPOBA funds would provide targeted, output-based subsidies to defray connection and wiring costs for slum dwellers without legal connections; Reliance would undertake all investments required to take electricity to the slum areas which include upgrades to the network, drop line from substation, meter panel and household meter; ICA would provide technical assistance to negotiate bulk pricing for wiring and provide training to local electricians and community groups; USAID would work with community-based groups to encourage efficient and productive uses of electricity as well as provide training on electricity safety, energy conservation, micro-enterprise support and training and outreach in other areas (financial literacy, health awareness, etc.).

A key feature of the project will be the integrated approach of actively engaging the government, utilities and communities and, thus, address both supply- and demand-side issues. By addressing demand-side issues explicitly, it is expected that the project will maximize socio-economic benefits to the slum dwellers while establishing the necessary conditions for a more sustainable, long-term social contract between the communities and utility.

For more information on the USAID project, contact: Jas Singh, USAID/EGAT/I&E/Energy Team, email: jsingh@usaid.gov

For more information on GPBOA, please visit: www.gpoba.org <http://www.gpoba.org/>

NEWS & EVENTS

UN CSD-15: Focus on Energy

The fifteenth session of the United Nations Commission on Sustainable Development (CSD-15) is scheduled to convene in New York City from April 30 through May 11, 2007. This is the second of the two-year cycle which focuses on energy for sustainable development and is tasked with identifying barriers and constraints, lessons learned, and best practices in implementation. (CSD is responsible for providing policy guidance to follow up the Johannesburg Plan of Implementation.)

The mandate of CSD-15 is to build on the work of CSD-14 (the Review Session) and to adopt decisions on policy options and possible actions to expedite implementation in the thematic clusters of issues of energy for sustainable development, industrial development, air pollution/atmosphere and climate change. Through these fora, USAID has an excellent opportunity to showcase its partners and projects, promote the USG message, share lessons learned and best practices, and influence international action on energy for sustainable development.

USAID is already well featured in the CSD case study matrix which offers practical solutions to key energy-related challenges in developing countries (visit www.un.org/esa/sustdev/csd/matrix.htm).

For more information, contact Jas Singh, USAID/EGAT/I&E/Energy Team, email: jsingh@usaid.gov

Addressing Climate Change through Better Governance: Forestry and Electricity

A Side Event at UNCSD 15

WRI's side event at the 2007 meeting of the UN Commission for Sustainable Development discussed how improving transparency and public participation can improve understanding of social and environmental issues, frame problems more equitably, and create systems to manage inevitable tradeoffs. The side event served as the official launch of Empowering People: A Governance

Analysis of Electricity, a research report produced by the Electricity Governance Initiative (EGI). EGI is a collaboration of civil society, policymakers, regulators, and other electricity sector actors for which WRI serves as Secretariat. EGI was catalyzed and supported by USAID's cooperative agreement "Governing Ecosystems in Asia".

The report may be downloaded from <http://electricitygovernance.wri.org/publications>

For more information, please contact Davida Wood, USAID/EGAT/I&E/Energy, email: dwood@usaid.gov