



PROMOTING THE DEVELOPMENT OF ELECTRIC POWER SYSTEMS

Electricity is a basic building block of economic growth. Brown-outs, production slow-downs, and factory closures plague countries that have insufficient capacity to generate and distribute electricity. Because of this need, electricity and power projects are a core focus of the U.S. Trade and Development Agency's (USTDA) program.

USTDA advances economic development and U.S. commercial interests in developing and middle-income countries. The agency funds various forms of technical assistance, early investment analysis, training, orientation visits and business workshops that support the development of a modern infrastructure and a fair and open trading environment. USTDA's strategic use of foreign assistance funds to support sound investment policy and decision-making in host countries creates an enabling environment for trade, investment and sustainable economic development.

During fiscal year 2007, USTDA invested in 11 electric power projects and activities. The following is an illustrative list of USTDA-supported projects in this area:

East Asia

China Southern Power Grid Emergency Management System – USTDA approved \$533,682 to assist China Southern Power Grid Co., Ltd. in implementing and procuring an emergency management system and associated communication equipment for a regional power grid in Southern China. The proposed upgrades will help achieve greater efficiency and productivity, resulting in a more competitive energy market. Utility Consulting International was selected as the contractor for this assistance.

China Coal Mine/Coal Bed Methane (CBM) Power Plant – USTDA approved \$502,850 to provide technical assistance on the construction of a 120-megawatt (MW) power plant in Shanxi Province that uses coal mine/coal bed methane as a feedstock. The project is being implemented as the world's largest coal methane power facility through a partnership involving Chinese coal mining and power utility companies, Caterpillar, Inc., and the Asian Development Bank. It will reduce pollutants through greater dependence on a clean fuel source. SCS Engineers was the contractor for this assistance.

Europe and Eurasia

Romania Emissions Monitoring and Plant Performance - USTDA provided \$271,054 to Termoelectrica, the Romanian state-owned thermal power company, to determine the best plan to upgrade the emissions monitoring and control systems at 21 of their largest power plants. Worley Parsons Group, Inc. of Reading, PA is performing the study.

Kyrgyzstan Southern Transmission Upgrade - USTDA provided \$186,130 to the Ministry of Finance to fund a study for the National Electrical Grid of Kyrgyzstan on rehabilitation and decongestion of 220 kV power transmission lines. T&D Engineers and Consultants, Inc. of Downers Grove, IL is conducting the study.

Bulgaria Wind Farm - USTDA provided \$420,531 for a study on a proposed wind farm to be owned by the municipality of Karlovo, which might be replicated in other towns. Encon Services International is performing the study, and GE Wind will be involved in the project.

Russia Power Distribution - Through the European Bank for Reconstruction and Development, USTDA is funding a \$562,470 financial analysis of the forecast performance of RAO UES, Russia's state-owned generation and distribution company, for the next 15 years. Deloitte and Touche of Washington, DC, is conducting the work.

Serbia Belgrade District Heating Power Project - USTDA funded a \$757,245 study to evaluate a proposed co-generation power plant for electricity and heat production. The study will advise on whether to pursue a 200 or 600MW option. Worley Parsons Group, Inc. is performing the study.

Turkey Germencik Geothermal – In 2004, USTDA provided a grant of \$259,621 to Gurmat Energy Investment and Trade Co. to partially fund a feasibility study on geothermal power plant at Germencik, Turkey. Stone and Webster of the Shaw Group performed the study. Based on the study a 40MW power plant is under construction and more than \$15 million in U.S. exports have resulted.

Latin America and the Caribbean

Colombia Civil Aviation Renewable Energy – USTDA provided \$700,000 to the Unidad Administrativa Especial de Aeronautica Civil (AeroCivil) to assist in the conversion of the power supply for remote air traffic control and weather monitoring facilities in Colombia from diesel generators to renewable energy sources. The project will allow AeroCivil to improve the reliability of its remote power supply infrastructure while reducing cost.

Ecuador IIC Abanico Hydroelectric Power Project – USTDA has provided funding for the inspection and monitoring component of the proposed Abanico Hydroelectric Power Plant. The technical assistance, which was funded by the USTDA Evergreen Fund at the Inter-American Investment Corporation, transferred knowledge to local Ecuadorian power project developers and will increase the likelihood of project implementation.

Haiti Electricity Generation, Transmission, and Distribution – USTDA provided \$350,000 to Electricité d’Haiti (EDH), the state-owned national electric company, to support the development of new investment and priority reconstruction projects for electricity generation, transmission, and distribution. EDH will utilize the assistance to set the stage to revitalize and modernize Haiti’s electricity infrastructure.

Honduras Plataneros Geothermal Project – USTDA provided \$150,000 to the Secretaria de Recursos Naturales y Ambiente through the Inter-American Development Bank to analyze the viability, as well as the international competitiveness, of the Plataneros geothermal plant. The project is part of a national initiative to diversify the Honduran energy sector to include renewable and clean energy sources.

Uruguay Brazil Electrical Interconnection Project – USTDA is providing \$490,000 to the National Directorate of Energy and Nuclear Technology to fund analysis, recommendations and software tools with which the Uruguayan government can conclude the structuring of a \$200 million electrical interconnection project and carry out its implementation jointly with their Brazilian government counterparts.

Middle East and North Africa

Jordan National Electric Power Company (NEPCO) Reactive Compensation and Transmission Loss Reduction - USTDA is funding the evaluation and construction of an optimal planning approach to reduce transmission loss and manage reactive power sources for existing transmission lines in Jordan.

Morocco ONE reorganization – USTDA is providing \$820,000 to the Office National de l’Electricite (ONE) to optimize its internal reorganization to meet the requirements of upcoming electricity sector liberalization. The reorganization will facilitate the creation of an open electricity market by ensuring competition and transparency in a regulated industry.

Yemen National Rural Electrification Program – USTDA is funding a \$515,214 grant to the Yemen Ministry of Electricity and Energy to design the legal and regulatory framework necessary to support national rural electrification throughout Yemen. The technical assistance will also develop a comprehensive legislative proposal to establish a new rural electrification agency and support the formation of local electric cooperatives. The assistance will culminate in the demonstration of a model electric cooperative to be formed in the Ibb Governorate of Yemen.

South and Southeast Asia

Indonesia Seulawah Agam Geothermal Power Plant - USTDA is providing \$589,000 for a study of a proposed geothermal power plant in Aceh Province. Aceh’s power generation capabilities were severely damaged during the 2004 earthquakes and tsunami, and the plant could present a reliable, environmentally advantageous method to restore power to the area. Stone & Webster/Shaw Group is the contractor for this study.

Philippines Rural Electrification Financing Project - USTDA provided \$446,909 to the Philippine Rural Electrification Financing Corporation to partially fund technical assistance for 40 electric cooperatives. The assistance will identify electric power system infrastructure needs and generate loan documents for the cooperatives. The National Rural Electric Cooperative Association International Ltd. of Arlington, VA, provided the assistance.

Philippines Electric Utility Distribution Network Enhancement - USTDA provided \$489,000 to the Visayan Electric Company for a power quality and reliability study in south and central Philippines. This study was conducted and completed by EPRI of Palo Alto, CA.

India North Delhi Power Limited (NDPL) Distribution Automation – USTDA is assisting the recently privatized NDPL in reducing electric power losses through the implementation of its Automation Roadmap. The project will be a model for India as it improves the delivery of sufficient and reliable electricity to domestic and industrial users. KEMA was selected to provide the technical assistance.

Sub-Saharan Africa

Botswana Mmamabula Coal-Fired Power Plant – USTDA approved \$368,270 to the Ministry of Minerals, Energy and Water Resources to determine the viability of developing an export power station and a clear plan for financing the power plant. Delphos International was selected to carry out this technical assistance.

Nigeria Shiroro/Egbin Power Plants - A \$467,300 USTDA grant is funding technical assistance on the privatization of Nigeria’s two largest power plants, the 600 MW Shiroro Hydropower Plant and the 1,320 MW gas-fueled Egbin Power Plant near Lagos. The contractor will also provide training.

South Africa Khanya Consortium Bid Submission – USTDA approved \$550,900 to assist Tiso Energy with a bid submission on the construction and operation of two oil-fired open cycle gas turbine peaking power plants in Eastern Cape and KwaZulu Natal Provinces. The project is intended to address the potential electricity shortages in South Africa that are expected to occur as early as 2008. Tiso plans to submit a proposal on this project with the U.S. electric power developer, AES. AES serves as the contractor on the USTDA technical assistance.

Liberia Mount Coffee Hydropower - USTDA is providing \$531,500 for a study on the rehabilitation of the hydropower facility at the Mt. Coffee location on the St. Paul River. The study will provide the Government of Liberia with the basis to seek financing for the project either through international donors or through an international competitive Independent Power Producer tender.

Angola Electricity Distribution & Hydropower Development - USTDA is funding a \$626,850 grant to the Ministry of Energy and Water Affairs to develop master plans for two interior cities, Cuchi and Luena, on the implementation of a modern distribution system with increased generation capacity from small hydroelectric plants.