Restoring Power

September 2004

USAID's Role in Restoring Electricity to Iraq

Decades of minimal repairs and no regular maintenance had left the Iraqi national electrical system with limited power to light homes and power businesses. Before the conflict, the amount of power available varied throughout the country. Baghdad residents would have electricity for up to 24 hours a day while Iraqis in other parts of the country were forced to manage with far less – some as little as three hours per day, if any at all.

Due to U.S. Government reconstruction efforts of the past year, most areas of Iraq are now receiving 11-15 hours of electricity service a day. Working with the Ministry of Electricity, USAID-funded activities have added 340 megawatts (MW) to Iraq's power generating capacity. When USAID's new generation projects are completed in the next six to eighteen months, over 2,100 MW will have been added to the national power grid.

USAID and Partners Get the Lights On

USAID's Objective: To improve the reliability and quantity of electrical generation for Iraqi citizens through maintenance, rehabilitation and new construction of power plants.

USAID and Iraq's Ministry of Electricity
The Ministry of Electricity is setting priorities for rehabilitation projects and actively overseeing the reconstruction of Iraq's electricity sector.

USAID and the United States Army Corps of Engineers (USACE)
In addition to its own power projects, USACE is supplying experienced engineering staff to provide technical oversight and evaluate and monitor USAID's infrastructure reconstruction program.

One of Iraq's many power plants

Operations and Maintenance
USAID has a two prong approach for institutional training associated with the power plant work. For USAID's refurbishment and new plant projects, on-the-job and classroom training is provided as part of the contract requirements. For the other plants not worked in by USAID, a separate project is dedicated entirely to operations and maintenance training. It is called the Operations & Maintenance (O&M) Program.

The goal of the O&M Program is to establish best operational practices and modern management techniques at 19 power plants (113 generating units). It covers all aspects of power plant activities including operations, administration, planning, maintenance, and warehousing. This program will raise the operating standards, safety standards, and plant output reliability.

Placing a transformer at a power plant in northern Iraq—USAID's project at this site will add 325 MW of generation to the national power grid

Sector Snapshot

In close cooperation with the Iraqi Interim Government, USAID is restoring critical infrastructure, restoring the delivery of healthcare and education services, expanding economic opportunities, and improving governance.

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Sector Snapshot

Progress to Date:

- Intensive efforts from March to September 2003 to rehabilitate the power grid helped bring power production up to 4,400 megawatts by early October 2003.
- Since September 2003, most Iraqis have experienced increased hours and a more equitable distribution of power than prior to the conflict.
- Average daily power production has increased from 72,435 MW/hours in August of 2003 to over 109,904 MW/hours in August of 2004.
- Daily production peaks are now nearly 6,000 MW, compared to prewar levels of 4,400 MW.
- USAID rehabilitated a major, 205 kilometer long transmission line in southern Iraq.

Challenges:

- Completing construction and rehabilitation in the face of sabotage and general security problems.
- Planning long-term programs for sustainable operation and maintenance.
- Planning for increased electricity demand resulting from renewed economic reactivation.

USAID Power Assistance

MW Contributions at Major USAID Power Plant Improvement Projects	
At Tamim Governorate	325 MW
Baghdad Governorate	516 MW
Salah Ad Din Governorate	360 MW
Babil Governorate	255 MW
Gas Generation	230 MW
Maintenance	200 MW

USAID Major Projects at Iraqi Power Plants

Baghdad Governorate: Converted two combustion turbines to burn crude oil or heavy fuel which is readily available in Iraq instead of imported diesel fuel.

Installing two new, 108 MW combustion turbine units to run on heavy fuel oil. They will be fueled by natural gas when it becomes available.

Rehabilitating two units at a steam turbine plant; major repairs to turbine and generator rotors and control systems.

Salah Ad Din Governorate: Improved the operating efficiency of three large units at a plant to meet peak summer electricity loads in 2004. This project included operator training, improved maintenance procedures, installation of critical parts and inventories of spare parts. In addition, a major rehabilitation of two plant units is scheduled for completion before December 2005.

At Tamim Governorate: Installing two new natural gas-powered combustion gas turbines; one that produces 260 megawatts and one that produces 65 megawatts.

Babil Governorate: Providing spare parts and technical services to increase electricity production and improve reliability of four units.

Gas Generation: As part of Iraq's strategy to build natural gas-fired power generation facilities, USAID is developing a natural gas field and furnishing and installing combustion gas turbines and 132 kv transmission lines.

Operations and Maintenance Program: This work includes assessment and working with plants to identify and implement recommendations for improvements to the physical power plants as well as to plant safety and operation and maintenance procedures. It also provides on the job training for 1,500 plant employees.

Iraqi engineer repairs a turbine at a Baghdad power plant.

USAID

"We believe in economies that reward effort, communities that protect the weak, and the duty of nations to respect the dignity and the rights of all." – George W. Bush