



Project Information Sheet South East Transmission System Project (SETS)

Providing energy security in the South Eastern Provinces

Implementing Partner	AEAI
Project Start Date	February 2005
Anticipated Finish Date	Open

Overview

USAID strategy for the electric energy sector requires that projects focus on the need for the development of a self-sustaining and secure energy supply. This means that technical developments and projects must be accompanied by commercial and institutional developments necessary to ensure self-sustainability.

The South East Transmission System (SETS) is a part of a broader strategy effort to enhance the energy security in the southeastern provinces of Kandahar and Helmand, which are areas of critical strategic concern to the US and the Government of Afghanistan. The broader SETS strategy implementation efforts being carried out by USAID on behalf of the Ministry of Energy and Water include:

- The provision of emergency power to key market areas of Kandahar and Lashkar Gah to “keep the lights on” until the Kajakai development can supply the region’s electricity needs
- The redevelopment and expansion of the Kajakai Hydro Power Pant (HPP) for a total available capacity of 51 MW by June 2007
- The rehabilitation of the 110 KV transmission line and substations currently transmitting limited electricity from the Kajakai HPP to Lashkar Gah and Kandahar
- The assessment of requirements to develop a 220 kV transmission line and additional substations to support the planned expansion for Kajakai HPP

The success of the SETS strategy requires specific actions be completed for a fully functional system. Further implementation projects, currently unfunded, are:

- The development/rehabilitation of distribution systems within the service area of the system

- The development of an appropriate commercial structure to ensure a self sustaining entity to manage the system
- The upgrading of the billing and collection system

SETS provides electricity to populated areas that include Kajakai, Kandahar and Lashkar Gah in the Provinces of Kandahar and Helmand respectively with an approximate population of 1.7 million people. The population and market centers served by the system are interconnected from Kajakai through a 110 kV single circuit with a current maximum capacity of 19MW. The line is in poor condition due to war damage. Approximately 38,000 customer connections, reflecting roughly 380,000 people are presently serviced by the system.

Both the Kajakai Hydro Power Plant (HPP) and the transmission system are of vital importance to the region since there are no alternative sources of electric power other than high cost electricity from diesel units provided by, fueled, operated and maintained on behalf of MEW by USAID. The average cost of this electricity is 19 cents /kwh and is not sustainable.

The 110 kV transmission line is the principle conveyor of electrical power to the existing substations at Kandahar, Pushmool, Lashkar Gah and Sangin. In addition, Kakjakai, Musakala and Tangi are fed directly from 13.8 kV temporary lines located outside the Kajakai plant.



The South East Transmission Line



Project Accomplishments

- The 110 kV transmission line has been surveyed; the required refurbishments have been identified, establishing the need and feasibility for a 220 kV line
- The route and availability of right of way for the proposed 220 kV line have been checked
- The upgrade and refurbishments for the existing substations have been identified
- New substations to meet the load growth and facilitate services in new and emerging areas have been identified
- The sizing and equipment requirements have been prepared, including cost estimates



Future Activities

The future project activities include:

- Prepare basic design and determine quantities for 220 kV line and distribution system
- Prepare bid documents for construction and evaluate proposals
- Award engineering procurement construction contract
- Provide spare parts and tools for operations and maintenance
- Provide training and capacity building for the Afghan Engineers and Technicians in DABM to operate and maintain SETS
- Develop the appropriate commercial structure to ensure the sustainability of SETS