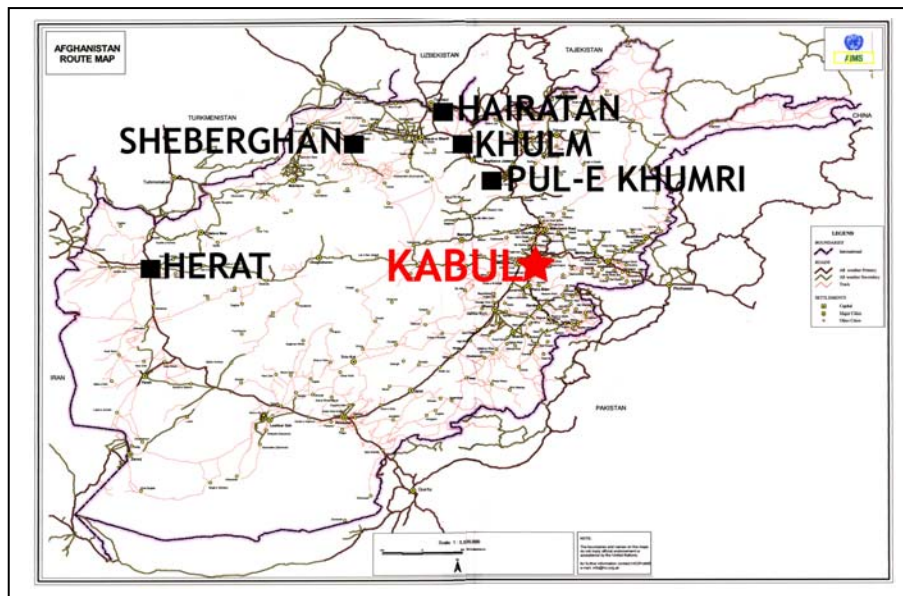


Priority Power Generation Projects

Project Summary

Subsector	Power
Location	Nationwide
Project Cost	\$400.0 Million
Project Type	Generation, Transmission and Distribution
Project Executing Firm/Agency	Ministry of Water and Power
Funding Agency	Not Identified



Project Outline

Afghanistan's power grid has been severely damaged by years of war, and only about 6% of its population currently has access to electricity. Transmission lines from the Kajaki Dam in Helmand province near Kandahar were hit by an airstrike in November 2001, but were repaired in early 2002. On several occasions since then, however, power to Kandahar has been cut off by attacks on the transmission lines. Other operational dams include the Dahla Dam in Kandahar province, the Breshna-Kot Dam in Nangarhar province, which has a generating capacity of 11.5 MW, and the 66-MW Mahipar dam which supplies Kabul.

Neighboring countries also supply electricity to some of Afghanistan's border regions. Turkmenistan supplies electricity to much of northwestern Afghanistan, including Mazar-e Sharif and Herat. This arrangement was affirmed in an agreement signed in August 2002 between the Karzai government and Turkmenistan, continuing an earlier agreement between the Taliban government and Turkmenistan. Uzbekistan also supplies electricity to the northern area around Mazar-e Sharif, supplementing a small local gas-fired power plant. Uzbekistan resumed its supply arrangement in August 2002,

after having terminated supplies of electricity in 1999 during the period of Taliban rule. Iran also supplies electricity to Afghanistan, in some areas directly adjacent to the Afghan-Iranian border in Herat, Farah, and Nimroz provinces.

Afghanistan's existing electricity infrastructure is as follows:

Kajaki Dam	Located in Helmand province near Kandahar; transmission lines to Kandahar repaired in early 2002, after being damaged by airstrikes in November 2001.
Mahipar Dam	Installed capacity of 66 MW. Near Kabul. Operational but currently lacking adequate water.
Naghlu Dam	Installed capacity of 100 MW. Operational. Provides most of the electricity used in Kabul.
Darunta Dam	Installed capacity of 11 MW. Operational. In Nangarhar province near Jalalabad.
Sarobi Dam	Installed capacity of 22 MW.
Dahla Dam	Kandahar province. Operational.
Mazar-i-Sharif Power Plant	Small natural gas-fired power plant near Mazar-e Sharif, partially operational at under 30 MW.

The objective of the projects listed below (provided by the Ministry of Water and Power) is to restore and modernize the electricity wholesale and retail distribution system in Afghanistan.

Technical Description

The Water and Power Ministry has created a master list of 58 power sector projects to bring power to the Afghan people. Apart from projects that have already been financed by donors, the two most critical projects are listed below. None of these projects have a definite funding commitment from any of the donors yet but are under consideration:

1. To put up a 220 KV transmission line from Hairatan up to Kabul via Khulm and Pul-e-Khumri. Possible JICA funding.
2. Construction of a 100 km long 220 KV transmission line from Goshky to Herat. This will also include 220/110/20KV substation built in Herat city (capacity will be 2x40 MVA). It is planned that electricity for this transmission line will be purchased from Turkmenistan.

The following list consists of a 2nd tier of priority projects to restore power (which also have not identified funding as of yet):

1. Rehabilitation of 110 KV transmission line from Shirkhan-Bandar to Kunduz.
2. Design/construction/commissioning of Sarobi Hydropower plant with an installed capacity of 128.3 MW.
3. Construction/Rehabilitation of Khanabad Hydropower plant with an installed capacity of 10.5 MW.

4. Construction and commissioning of Kajakai Power Plant third unit with an installed capacity of 18.6 MW.
5. Rehabilitation of 110 KV transmission line from Naghlu to Golbahar (war damage).
6. Construction of 110/35/10 KV Sub station at Maimana and Seripul province.
7. Rehabilitation of 82 km long 110 KV transmission line from Pul-e-Kumri to Kunduz (war damage).
8. Rehabilitation of Mahiper and Sarbobi Hydropower Plants.
9. Feasibility Studies for seven Hydropower plants on Kokcha river with a combined capacity of 1,900 MW.
10. Feasibility Studies for six Hydropower plants on Koner river with a combined capacity of 1,000 MW.
11. Feasibility Studies for 40 MW Hydropower plants on Wersach river in Takhar Province.
12. Feasibility Studies for a thermal power plant near Dariah coal mines.

The projects will be implemented under the overall coordination of the Afghan Assistance Coordination Agency (AACCA), but the various components of the proposed assistance program are proposed to be implemented through the Ministry of Water and Power.

Project Site

The various project sites are mentioned in the earlier section.

Project Status/Timeline

As indicated above, none of these projects have any identified financing yet but are considered high priority projects necessary to the reconstruction effort. These projects are in the preliminary stages of design and feasibility and it is anticipated that tendering for these projects will be initiated after funding commitments from the Donor Community are secured.

Equipment and Services

Procurement of works, goods and services and contract disbursements will be done through the AACCA. Monitoring of technical assistance and project administration will be undertaken by the Ministry of Water and Power.

Equipment needs include: circuit breakers; disconnecting switches; measurement transformers; protective relays; shunt reactors; transducers; remote terminal units; a new Supervisory Control and Data Acquisition (SCADA) system; new Regional Dispatch Centers (RDCs); a new National Dispatch Center (NDC); and all associated hardware and software that is required by these systems. The regional distribution networks also need

to upgrade the telecommunication systems, install commercial meters, and integrate metering systems at all levels in the systems.

U.S. Competitiveness

U.S. firms should be in the highly competitive range in the supply of SCADA systems and other software for the national and regional dispatch centers. The Ministry is very impressed with the GE installed Gas Turbine in Turkmenistan. U.S. firms should also be competitive in metering equipment but less so in civil works construction.

Project Financing

As indicated earlier, none of these projects have any specific financing identified yet. Unless the donor community agrees to finance these projects, implementers will have to come in with their own financing under BOT or other similar schemes. The Government of Afghanistan's ability to raise international financing and capital is severely limited. It also suffers from an extremely thin revenue base to allow capital improvement financing.

Conclusion

These projects offer very good procurement opportunities and some unique investment opportunities. All companies interested in a joint venture or investment relationship should complete rigorous due diligence studies prior to investing. While investing in the power sectors in Afghanistan is not for the faint hearted, there are some good matches for companies looking for long-term payoffs and diversification opportunities.

Key Decision Makers

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