

Power

USAID/Bechtel Iraq Infrastructure Reconstruction Program



Turbine deck at a thermal generating facility in Iraq that Bechtel is rehabilitating

Bechtel's Power program consists of reconstructing, repairing, rehabilitating, and upgrading Iraq's power system. This includes generation and transmission and institutional strengthening of the Ministry of Electricity (MOE). The program is being executed by directly procuring needed parts and other materials, managing subcontracts, assigning engineers to support the Coalition Provisional Authority (CPA) ministerial advisory functions and the MOE, and providing program management services.

Projects and Schedule

Bechtel is implementing a number of projects in the Power sector. These include facility rehabilitation; construction of new power plants for a total of 440 MW; and upgrading water treatment systems at selected operating power plants.

At the request of the US Agency for International Development (USAID), Bechtel is implementing the following additional programs to assist in the rebuilding of Iraq's power infrastructure:

Generation Support – Bechtel is providing technical expertise at individual power plants to help optimize generation output. We resolve technical issues, expedite delivery of needed parts, and provide guidance during critical events – such as a September 2003 fire in the Hartha Thermal Power Plant cable trench.

Outage Support – For years there has been no effective maintenance program in Iraq's power sector. Spare parts are frequently unavailable and there are few experienced maintenance planning personnel. Bechtel has supplied technical expertise to MOE and CPA to assist in developing an outage planning effort.

A homecoming story

When Ali Al-Mussawi left Iraq in 1981, he had to evade exit restrictions placed on engineers that had kept him in the country since 1970. In May 2003, the Bechtel employee returned to his birthplace – this time as one of a team of power engineers. He's looking forward to going home to the United States again – but not until the reconstruction job is done.



Ali Al-Mussawi, working in Iraq for the first time since 1981

Power (cont)

Transmission Restoration – Bechtel is currently tasked with the restoration of one key 400 kV transmission line.

CPA Program Support – Bechtel is providing technical expertise to various sections within the Power group of CPA. Examples of our work include development of the MOE operating budget and support to the 4,400 MW and 2004 Electrical Generation programs.

Bechtel's power program will complete by December 2004.

Benefits of the Program

The program will benefit all Iraqi citizens, delivering stable electrical power to Iraqi consumers for increasing amounts of time until 24/7 supply is achieved. This will foster economic growth, allow water treatment and supply, and improve service in virtually every sector of the economy from health, to fuel, to food supply.

Jobs Created by the Program

The Power program is expected to employ primarily Iraqis supported by international subcontractors as part of our USAID contract. We expect to hire up to 40 Iraqi engineers with experience in the power industry.

Project/Site Selection

Early in the program, Bechtel completed a countrywide assessment of Iraq's power infrastructure. We used a systems approach to evaluate our assessment results and categorized reconstruction needs into several broad categories: emergency electricity supply, power plant and transmission rehabilitation, water treatment plant restoration, and new generation and transmission. Bechtel is in continuous consultation with USAID, CPA, and MOE to evaluate and accommodate additional work that has emerged since completion of the assessment period.

Work Description

Our Power program encompasses a broad range of activities; below are three illustrative examples.

The **Daura Plant** consists of four thermal units and four combustion turbine units. Units 5 & 6 were built by Siemens (Kraftwerk Union) in 1978-1982 and are currently dismantled for complete boiler refurbishment. Our work covers turbine refurbishment as well as control system and switchyard component replacement.

Bechtel **supported MOE in development of its operating budget**. In the process, we relied on our contacts in the US utility industry to estimate maintenance costs for reestablishing a spare parts inventory for the country's power system.

Bechtel **also supported CPA in its long-term planning** for Iraq's power sector. We used our estimating capabilities to develop capital cost budgets to support new generation, communications and control, transmission, and institutional strengthening of the Iraqi power system.



Major components in the Power program include:

- Generation support
- Outage support
- CPA program support
- Project execution, including thermal and gas-fired power plants as well as water treatment systems at most MOE plants

"The resourcefulness of Iraqi engineers is remarkable. Their ability to keep these power plants running at all – with no investment, no spare parts, and no dependable supply of fuel – is a tribute to their ingenuity."

Dean Hagerty
Project Manager, Power Program