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# INSTALLATION OF TURBINE GENERATOR UNIT 2 AT KAJAKI DAM HYDROPOWER PLANT

DECEMBER 2013 – SEPTEMBER 2016

\$75 MILLION

## OVERVIEW

Installation of the third Turbine Generator at Kajaki Dam Hydropower Plant is part of a major U.S.-funded program in cooperation with the Government of Afghanistan. The first two turbines for Kajaki Dam were commissioned in 1975, and rehabilitated by USAID in 2005 and 2009, respectively. Successful installation and commissioning of the powerhouse's third hydroelectric generator will result in an addition of 18.5 MW to the existing plant generation capacity of 33 MW. The \$75 million on-budget installation began in December 2013 and will end in 2016.

In 2005, USAID awarded a contract for the design, manufacturing, and installation of the third turbine at Kajaki Dam. The turbine and generator components arrived in Afghanistan in 2008 and were transported to the site in collaboration with the British Military, via Operation Eagle Summit, one of the largest logistical operations since World War II. Due to security challenges, the equipment remained on site in secure storage.

In 2013 USAID and the Afghan government agreed that Da Afghanistan Breshna Sherkat (DABS), the national electric utility company that owns, manages, and operates the Kajaki Hydropower Plant, would implement the project. USAID and DABS signed an agreement in May 2013 to install the third turbine under DABS's overall management. DABS signed a contract with 77 Construction Corporation in December 2014 to serve as the contractor for Phase Two, which involves the actual installation and commissioning of the third turbine, plus completion of additional Kajaki power plant upgrades.

## **CURRENT ACTIVITIES**

- Phase Two construction activities are in progress with 85 percent of the project completed.
- Installation of the third turbine generator and the modern digital control.
- Upgrades to two existing turbines.
- Power plant upgrades with a more efficient digital control system.
- Installation of generator assembly and commissioning.

## **ACCOMPLISHMENTS**

- Transported all remaining equipment required for project completion to site.
- Completed all major civil works in May 2016.
- Completed turbine assembly.

## **EXPECTED RESULTS**

- Install and commission of third turbine, increasing Kajaki Dam power generation capacity by 18.5 MW.
- Mitigate power shortages for the nearly one million people served by the Southern Electrical Power System in Kandahar and Helmand Provinces.
- Reduce reliance on costly diesel fuel for electricity production in Helmand and Kandahar Provinces.
- Deliver up to 8 MW of additional power to consumers in Kandahar City, Afghanistan's second largest population center.
- Ensure sustainability of the Kajaki Dam Hydropower Plant by training engineers and technicians to operate and maintain the plant safely and effectively.

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