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SHEBERGHAN GAS DEVELOPMENT PROJECT (SGDP)

DECEMBER 2011 – AUGUST 2016

\$120 MILLION

OVERVIEW

The objective of this project was to design a roadmap for development of the Sheberghan gas fields in northern Afghanistan to address the country's critical power shortage. Under this project, USAID supported drilling/rehabilitating up to three gas wells, conducted a gas reservoir study to certify existing/producing field reservoir gas quantity, pressures and quality; and assisted the Afghan government to partner with the private sector to design, build and operate a central, expandable gas processing (sweetening) plant and a system to transport raw gas from wells to the processing plant. The project also encouraged the private sector to construct and

operate a series of gas-fired power generation plants, starting with an initial plant 200 megawatts (MW). These power plants would be built, owned and operated (BOO) as Independent Power Producers (IPPs). Afghan Gas Enterprise (AGE) would play a major role in supplying gas to the IPPs in collaboration upstream with private-sector gas exploration and production companies, mid-stream with private-sector processing companies and downstream by delivering processed gas (fuel) to the IPP.

Because coordination and collaboration among all stakeholders was essential to the success of this project, SGDP established the Sheberghan Gas Generation Activity (SGGA); its purpose was to provide Technical Assistance and build up the capacity of the Ministry of Mines & Petroleum, the Ministry of Energy and Water and the Afghan national power utility, Da Afghanistan Breshna Sherkat (DABS). This capacity-building activity had two primary objectives: (1) aid in the formation of the Afghan Gas Enterprise and enable it to regulate and administer gas production, gathering and processing, as well as supply gas to the centralized IPP(s); and (2) enable DABS-Northwest (NW) to operate and maintain the transmission and distribution of electric power from the Sheberghan central power center and to manage commercial power sales to residential and commercial/industrial customers. To confirm gas reserves for the sustained operation of a 200 megawatt gas-fired power plant, USAID committed to drilling/rehabilitating up to three gas test-wells in the Juma/Bashikurd gas field(s). The SGGA prepared, through a subcontract with McDaniels Associates (an internationally recognized petroleum engineering consultant), reports providing details on the gas reservoirs of eight (8) existing gas fields. Finally, the SGGA developed a critical path schedule that: (1) provides an overview of all proposed projects to utilize Sheberghan gas reserves as well as the transmission infrastructure necessary to deliver electricity into the grid; and (2) identify the timelines for the proposed projects along with funding sources or gaps that would necessitate additional financial support.

ACTIVITIES

- Track, prioritize and coordinate scheduling and development of the proposed Sheberghan gas and infrastructure activities with the Ministries of Mines and Petroleum, Finance, and Energy and Water, as well as DABS and other Afghan government agencies, donors and multilateral financial institutions to assure synergy and avoid duplication
- Provided technical expertise and prepared required technical documentation for tender offers, terms of reference for field oversight of procurement, installation, and commissioning of equipment for both gas- and power-related infrastructure
- Provided training to the Ministry of Mines and Petroleum (MoMP) and DABS personnel, both in Kabul and in Sheberghan, to build the capacity of these employees to be able to (1) operate and maintain gas production and processing facilities and (2) operate and maintain electrical power transmission and distribution systems

ACCOMPLISHMENTS

- Assisted MoMP to let a gas drilling contract to Turkish Petroleum Co. (TPAO) in December 2013
- Drilled one new gas well 3,500 meters deep and rehabilitated an existing gas well to reach a depth of 3,400 meters; established the Sheberghan Gas Generation Activity (SGGA) in December 2012
- Conducted gas reservoir studies, including Contingent Resources Reports, through McDaniels Associates petroleum engineers, of seven existing and producing gas fields: Gerquduq, Khoja Gogerdak, Yatimtaq, Jangal-e-Kalan, Shakarak, Chekh Che, and Khoja Bolan. Contingent Resource Reports indicated that these seven fields do not contain enough remaining gas (depleted after 50 years of continuous production) to provide fuel for 25-30 years to proposed large- to medium-sized IPPs
- SGDP, through McDaniels Associates, conducted a gas reservoir study, including a Contingent Resources Report, of the Juma/Bashikurd (to date undeveloped) gas field where the one new well and one existing well (Bashikurd #3) were drilled/tested. The test wells drilled by TPAO and existing data from prior Russian test wells indicated that commercial amounts of natural gas were available and could be produced in the future from the Juma/Bashikurd field. The reserve study and data from the test wells also indicated that the gas structures/formations in the Juma/Bashikurd field would require advanced drilling and production techniques for commercial production, meaning that commercial production would take five-seven years to come to fruition once professional exploration of the Juma Bashikurd field commenced.

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