

TAJIKISTAN



PamirEnergy

Following the collapse of the Soviet Union in 1991 and a five-year civil war, Tajikistan's electrical infrastructure was in need of significant investment. Among the most affected areas was the Gorno-Badakhshan Autonomous Oblast (GBAO), where economic and human development was stifled during the cold winter months as a result of a lack of electricity for heating and the consequent closure of schools, health centres and businesses.

Many of the region's 220,000 residents resorted to wood fuel for their heating and cooking needs during the winter, resulting in the decimation of 70 percent of the region's forests within a decade and a sharp increase in respiratory disorders due to smoke inhalation.

The Aga Khan Fund for Economic Development (AKFED), in partnership with the International Finance Corporation, formed the PamirEnergy company in 2002 to address the situation. Some US\$ 37 million has since been invested by the company to repair the electrical infrastructure of GBAO and

expand hydroelectric capacity. In the wake of these efforts, over 86 percent of the region's inhabitants now have access to electricity while tariff subsidies have ensured that even the poorest households are able to access power.

AKFED's Approach

Despite the dire need for electrical infrastructure in GBAO prior to PamirEnergy's founding, attracting private investment to the region was difficult, especially following the civil war. The legacy of Soviet subsidies meant that those fortunate to have electricity paid less than one-tenth of the production cost, while measuring consumption for billing purposes was nearly impossible in view of the dated electrical metering system.

In this fragile context, AKFED took bold but calculated steps to bring partners and resources to address the issue. Under a public-private partnership agreement signed with the Government of Tajikistan in 2002, the company assumed the operational management

of all power generation, transmission and distribution facilities of GBAO for a 25-year concession period.

To address cost issues, AKFED developed a pioneering subsidy scheme, making electricity both affordable to residents and financially viable for PamirEnergy. One of the subsidies ensures provision of a minimum "lifeline" monthly power supply to all households served by the company at a rate of US \$0.25/kilowatt-hour, one of the lowest in the world among privately-owned utilities.

Subsidies are generously funded by two grants, one by the Swiss Government (SECO) and the other by the Government of Tajikistan through financing by the International Development Association, a member of the World Bank Group.

Rehabilitation Efforts

Since taking over the electrical utility operations in GBAO, PamirEnergy has installed additional turbines and generators at Pamir I, the company's main generating plant, and retrofitted

After opening the cross-border transmission line between Tajikistan and Afghanistan in 2008, PamirEnergy connected four additional villages in 2010. UCA's programmes have benefited from this export of surplus power, allowing students in Shughnan, Afghanistan to participate in computer classes.



them with new equipment and systems. Renovations have also occurred at the company's nine mini hydropower plants, which provide power to villages and small settlements in remote areas. This has enabled an increase in the total installed capacity from 33 to 43.5 megawatts (MW).

PamirEnergy seeks innovative ways to provide power during the difficult winter months when power generation is restricted due to low river flows, yet electricity need is at its greatest. At Pamir I, the company has created a retention structure which can increase the Gunt River's flow by as much as 40 percent during the winter. Additionally, the company has consistently increased the accuracy of power billing by re-calibrating old electricity meters and installing new individual meters. Over 80 percent of all power sold in GBAO is now billed through individual meters, with the balance sold through group meters. This has enabled the company to improve its revenue collection process and set new standards for Tajikistan.

Following the accident at the Pamir 1 Hydro Power Plant (HPP) in February 2007, PamirEnergy renovated most of the plant and equipment, enabling the company to now provide a 24-hour supply throughout the year to customers on its main grid. As an integral part of ongoing improvements, the company

has reduced losses to 19 percent in 2010 compared to 39 percent in 2006.

Impact

PamirEnergy aims to be a model for public-private partnership in the restructuring of Tajikistan's power grid. As a result of PamirEnergy's efforts, 70 percent of its customers in GBAO (those who are connected to the main grid) now enjoy 24 hours of power a day for the first time since the end of the Soviet era, while the remaining 30 percent receive 16-18 hours of power a day.

The renewable energy produced by PamirEnergy's plants has displaced the need to burn trees or use high-polluting diesel generators. Due to its limited greenhouse emissions, PamirEnergy has been able to generate revenue by selling carbon credits abroad, in line with the terms of the Kyoto Protocol. In addition, the company continues to be a source of livelihood and skill development, providing employment opportunities to over 600 local residents and 200 contractual opportunities.

Looking Forward

PamirEnergy continues to expand its power generation capacity through rehabilitation of the small HPPs and connecting them to the main grid where appropriate. It is anticipated that by

the year 2027, the Company will have invested US\$ 50 million in electrical infrastructure, producing for the region a total economic benefit of US\$ 85 million.

Steps are being taken to address the challenge of increasing cost recovery in a manner consistent with household's ability to pay. Following the successful establishment of a Customer Service Centre in Khorog in 2009, PamirEnergy plans to open similar centres in other districts of GBAO, with connection to the company's grid and database, enabling representatives to more efficiently and effectively respond to customer inquiries.

A cross-border transmission line between Tajikistan and Afghanistan was opened in June 2008, enabling PamirEnergy to export surplus power in the summer months to Shughnan, Afghanistan. In 2010, PamirEnergy connected an additional 500 households, bringing the total to more than 1,000 households receiving low-cost energy 24 hours a day for the first time in history.

The next phases are expected to include providing power to villages of Darwaz and Ishkashim Districts in Afghanistan. Additionally, AKDN is looking at the construction of a second HPP in a nearby region, capable of supporting local needs and producing a surplus that can power the neighbouring region in Afghanistan.

The Aga Khan Development Network (AKDN) is a group of private development agencies working to empower communities and individuals, often in disadvantaged circumstances, to improve living conditions and opportunities, especially in Africa and Asia. Its agencies work in over 30 countries for the common good of all citizens, regardless of their gender, origin or religion. Its underlying impulse is the ethic of compassion for the vulnerable in society.

