

## TECHNICAL ASSISTANCE COMPLETION REPORT

Division: CWID

<b>TA No. and Name:</b> TA 3956-TAJ: Hydropower Development Strategy			<b>Amount Approved:</b> \$600,000	
			<b>Revised Amount:</b>	
<b>Executing Agency:</b> Ministry of Energy		<b>Source of Funding:</b> Japan Special Fund		<b>TA Amount Undisbursed</b> \$46,033.30
				<b>TA Amount Utilized</b> \$553,966.70
<b>Date</b>			<b>Completion Date</b>	
<b>Approval</b> 30 Oct 2002	<b>Signing</b> 08 Apr 2003	<b>Fielding of Consultants</b> 12 Jun 2003	<b>Original</b> 31 Aug 2003	<b>Actual</b> 22 August 2005
			<b>Closing Date</b>	
			<b>Original</b> 31 Aug 2003	<b>Actual</b> 26 April 2006
<b>Description</b> To support Tajikistan's economic development by exploiting the country's abundant hydropower and other energy resources, the Government needed assistance to prepare a realistic and affordable energy sector development program that will ensure the optimal use of the country's scarce capital and the efficient development of the sector. This is a follow-up of earlier Asian Development Bank (ADB) technical assistance, (TA 3209-TAJ: Power Sector Development Project), which recommended development of hydropower as the main domestic energy resource. At the request of the Government of Tajikistan, a TA for developing a hydropower development strategy was included in ADB's 2002 TA program. The TA identified export markets for the hydropower, developed a least-cost investment program, and provided a framework for coordinating external assistance for the sector, including the timing and priority of the proposed hydropower development projects, Rogun and Sangtuda, and other investments.				
<b>Objectives and Scope</b> The TA helped the Government to prepare a hydropower development strategy. The strategy identified for the Tajikistan energy sector the optimal energy development program that will meet domestic energy requirements and realized export opportunities given the energy resources available, existing power investments, and fiscal and other constraints. The strategy was expected to provide guidance to other funding agencies and investors interested in the sector.				
The TA (i) reviewed all energy and power sector studies that have been completed and interacted with those ongoing, including the Government's energy policy and its plans for hydropower sector development, (ii) established likely load forecasts for domestic and export markets for hydropower, (iii) considered new candidate projects, including phased construction of incomplete hydropower projects; (iv) undertook macroeconomic analysis to determine the fiscal constraints of the Government and self-financing ability of Barki Tajik; (v) developed a least-cost hydropower development strategy, including identification of external financing and investment possibilities; and (vi) provided planning software and training in planning to enable the Government to update the strategy on a regular basis.				
<b>Evaluation of Inputs</b> The TA letter was signed on 8 April 2003, and a consulting firm from Australia was fielded on 12 June 2003 to implement the TA. The TA design was adequate and the consultant's terms of reference was clear and comprehensive; no significant modifications were made during implementation. The TA was adequately supervised through regular meetings and review missions. The implementation of the TA required 18.75 (design: 16.0) person-months of international and 31.5 (design: 30) person-months of domestic consulting services. Despite the slight increase in person months, the overall cost of consulting services was lower than expected (7.7%).				
<b>Evaluation of Outputs</b> The TA design was generally adequate towards achieving the main goal in identifying the least cost hydropower development strategy for the country, phasing of the candidate projects, national potential and regional markets. Workshops and training have also been organized timely.				
The Ministry of Energy (MOE) was the Executing Agency for the TA. According to the requirements of the TA paper a planning team was setup within the MOE and the consultant held three workshops during the period September-November 2003 followed by the final workshop held on 6 July 2005 and two weeks additional training on the planning software from 11 to 22 July 2005. The TA had to be extended by 32 months from the initial closing date. These extensions were necessary firstly to cover the delays in implementation and thereafter, the TA account was kept open to cover eventual expenses to finance a survey of the future interconnection between Tajikistan to Pakistan via Afghanistan.				

The draft final report that was submitted on 1 October 2004 was found not satisfactory and the consultant was asked to review it according to the comments received from the EA and from ADB. The revised draft final report that was resubmitted on 26 April 2005 was found to be of acceptable standard and comprehensively addressing the terms of reference.

During the workshop held on 6 July 2005, in the presence of the Government agencies, ADB, other multilateral organizations, and potential private investors, the consultant presented the results of the study that covered: (i) the power sector development and load forecast for Tajikistan until 2015; (ii) the candidate hydropower projects mainly Rogun, Sangtuda I and II; (iii) the anticipated power market for the additional generation within and outside Central Area; and (iv) the required expansion of transmission facilities within and outside Tajikistan.

The final report, incorporating the comments received during the workshop, was submitted on 22 August 2005. All equipment purchased under the TA was turned over to the Executing Agency on 16 May 2005, and the final statement of eligible costs was received in 27 September 2005.

The delays in implementation were partly due to difficulties in getting the relevant information, logistical arrangements, and to the low quality of the first draft final report. Despite extended delays, the performance of ADB and the EA was satisfactory and the team (the consultants and counterpart staff) interacted efficiently and produced the required output.

### **Overall Assessment and Rating**

The final report met the TOR requirements and was satisfactory. The TA confirmed that the priority investments are the construction of the Rogun, Sangtuda I and Sangtuda II hydropower plants. Following the presentation of the final report in presence of future investors, these schemes have attracted the participation of foreign investors. Already the works resumed in Sangtuda I sponsored by RAO UES (Russia), a Built, Operate and Transfer Agreement has been signed between the Government of Tajikistan and the Government of the Islamic Republic of Iran for the construction of Sangtuda II and a detailed feasibility study is on-going for the Rogun scheme, financed by the Russian aluminum conglomerate RUSAL (Russia). In addition, the Governments of Pakistan and Tajikistan signed a MOU for the supply of 1000MW to Pakistan. Though one cannot conclude that the TA was entirely responsible of these recent developments, but the dissemination of its results to potential investors might have helped creating/accelerating the private sector participation momentum. On another hand, the dissolution of the planning team within the MOE by lack of budget funds might impede this momentum as a sound strategy is to be updated regularly. As such the TA is rated as partly successful.

### **Major Lessons Learned**

The delays in implementation of the TA were mainly due to the difficulties in getting reliable and detailed information. Such difficulties in Tajikistan are common and the design of the any future project in this country should take into account include sufficient time for data collection. In addition, it is suggested that the ADB carries out the preliminary key data collection in order to speed up the implementation of the project.

There were no provisions in the consultant contract for the translation of the reports that had to be carried out separately, resulting in additional delays in the implementation of the TA.

The MOE being a budgeted institution, they could not manage to get the necessary budget to financially support the planning team and the team was disbanded at the end of the TA. The design of the TA should have foreseen such budgetary difficulties and mitigation measures should have been thought during processing to ensure the sustainability of the TA.

### **Recommendations and Follow-Up Actions**

The TA created an initial momentum and permits to attract foreign investors in Tajikistan which needs to be pursued for the other opportunities identified by the report. ADB involvement in the development of the new generation and transmission facilities in Tajikistan is important to keep alive this momentum.