

## TECHNICAL ASSISTANCE COMPLETION REPORT

Division: CWEN

TA No., Country and Name			Amount Approved: \$300,000							
TA 4709-UZB: Preparing the Rural Renewable Energy Development Project			Revised Amount: \$300,000							
Executing Agency Ministry of Agriculture and Water Resources (MAWR)	Source of Funding Government of Finland <sup>1</sup>	Amount Undisbursed: \$1,651	Amount Utilized: \$298,349							
TA Approval Date: 2 December 2005	TA Signing Date: 5 February 2006	Fielding of First Consultants: 5 March 2006	<table style="width: 100%; border: none;"> <tr> <td colspan="2" style="text-align: center; padding: 5px;">TA Completion Date</td> </tr> <tr> <td style="padding: 5px;">Original: 31 July 2006</td> <td style="padding: 5px;">Actual: 14 August 2007</td> </tr> <tr> <td colspan="2" style="padding: 5px;">Revised: 30 September 2007</td> </tr> </table>		TA Completion Date		Original: 31 July 2006	Actual: 14 August 2007	Revised: 30 September 2007	
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<b>Description</b>										
<p>Uzbekistan's electricity production is based primarily on conventional thermal power generation, which accounts for about 87% of total electricity production. The remaining 13% of electricity comes from hydropower plants. About 70% of the country's 24.8 million people live in rural areas, often with insufficient access to quality basic services. In rural areas, electricity supply is unstable. This primarily impedes the operation of irrigation systems, which increases the risk of crop failure. Poor availability of electricity and absence of local generating capacity increase dependence on diesel-pumping stations. Lack of electricity in rural areas also results in lower levels of higher-value agricultural processing.</p> <p>Decentralized generation of renewable energy was recognized as a least-cost and more energy efficient option for meeting rural electricity demand. Because of seasonal complementarities, development of small hydropower plant (SHP) projects along the irrigation network could be the most suitable technical option for meeting peak electricity demand in the summer.</p> <p>Accelerating rural development by strengthening rural infrastructure and services is a strategic focus of ADB's country program. The strategy aims to forge linkages across rural development themes to encompass agricultural productivity; access to rural infrastructure, including water supply and renewable energy; and rural finance. In the energy sector, the strategy focuses on reforming energy utilities by means of increased transparency in financial reporting and improved sector management. Improved irrigation and a more reliable rural electricity supply will enhance farmers' crop production and income-generating capacity.</p>										
<b>Expected Impact, Outcome and Outputs</b>										
<p>The envisaged TA impact was to promote economic development in the rural areas of Andijan, Fergana, and Samarkand regions by providing reliable and environmentally clean energy. The TA outcome was an agreement with MAWR and other Government agencies on the Project's design, a detailed feasibility report, and the implementation arrangements for the Project. The TA outputs include technical assessments and project design reports.</p>										
<b>Delivery of Inputs and Conduct of Activities</b>										
<p>The total input of international and domestic consultants for the TA was 9 and 24 person-months, respectively. The consultants completed all tasks as contracted including (i) analyses of growth and electricity demand by region and assess a least-cost option for addressing the imbalance between demand and supply in the project area; (ii) review and update of the technical prefeasibility study reports; (iii) organization of stakeholders workshops; (iv) completion of baseline survey, social, poverty, ethnic minority, and gender assessments; (v) assessment of the potential for reducing carbon emissions under the Clean Development Mechanism (CDM); (vi) finalization of the project design and monitoring framework; and (vii) assessment of the financial management capabilities of the project implementing agency. The performance of the consultants was satisfactory.</p> <p>MAWR was the Executing Agency (EA). The Department of Economy and External Economic Relations of the Cabinet of Ministers was an overall coordinating and advisory agency. SA Uzsuvenego, a "Specialized Association" under MAWR that handles SHP projects, served as project manager and provided supervision and counterpart services for the international and domestic TA team. The performance of the EA was less than satisfactory. MAWR and Uzsuvenego received limited inputs due to lack of leadership, professionalism, skilled people, and adequate</p>										

<sup>1</sup> Through the Channel Financing Agreement (Technical Assistance Program) between the Government of Finland and the Asian Development Bank.

counterpart support as envisaged.

ADB fielded a TA review / loan fact-finding mission, loan appraisal mission, and a consultation mission in 2007. Two consultation workshops were held in Tashkent, Uzbekistan, to present to the Government and other stakeholders on the consultant's findings and recommendations. The Government highly recognized ADB's efforts in pursuing renewable energy development, and considered ADB's performance as satisfactory.

#### **Evaluation of Outputs and Achievement of Outcome**

The consultant team completed all assessment reports and submitted the final reports. An SHP investment project to be financed by an ADB loan was designed and proposed, including construction of the three SHP stations in three oblasts and associated project management and capacity building activities.

The proposed investment project was to effectively utilize SHP resources producing an increased electricity supply in rural areas by 123.5 gigawatt hours (GWh) per year. The new electricity supplies will allow Uzsuvenego to offset electricity consumption for its agricultural pumping applications and should result in improved electricity availability to the rural areas surrounding the SHP plant sites. An in-depth technical assessment has been undertaken to verify the technical viability of each of the subprojects, estimate their base costs, and identify key subproject impediments affecting their financial viability. A consultative approach has been utilized and discussions have been held with key stakeholders including the design engineers responsible for the preparation of the feasibility reports, Uzsuvenego, MAWR, and ADB mission members.

During the loan appraisal in June 2007, MAWR was concerned about the Project's financial and economic viability due to considerable price increase of the material and equipment and lack of a full cost recovered tariff mechanism. In addition, one of the proposed projects involved in the rehabilitation of a cross border canal, required further consultation with the Government of Kyrgyzstan. Although the financial analysis revealed that by taking into account the additional revenue from carbon credit trading under CDM, the proposed SHP projects were financially viable with acceptable financial internal rate of return at around 4-6%, MAWR expressed that further consultations among the government will be required prior to making final decisions on investment. As of date, no concurrence was achieved among the Government side to implement the proposed Project.

Although the TA did not result in an investment project immediately due to the Government's concerns on the Project's financial viability, it completed the envisaged deliverables, prepared a suitable investment project, and set sound foundation for future SHP development in the country.

#### **Overall Assessment and Rating**

The TA has been partly successful in achieving the objectives set out. While the consultants completed various deliverables on paper, the proposed investment project has not yet been realized.

Although development of renewable energy is one of the Government's strategic priorities in the energy sector, the Government was not yet ready to implement the SHP investment projects, due to low financial rate of return and lack of supporting policies on tariff and regulatory aspects at that time. It is envisaged that further debate will happen within the Government and it would take more time to reach consensus on implementing the Project.

#### **Major Lessons**

To promote renewable energy project development, a sound institutional, regulatory, and preferential tariff environment is a prerequisite and key factor for success. Without a full cost recovery tariff mechanism or other supporting policies from the Government, development of renewable energy will not be financially viable. Due diligence assessment on the readiness of the proposed investment project shall be given prior to the implementation of the PPTA,

Weak institutional capacity of the Government affected implementation and output. Although imparting on-the-job training and developing capacity of counterparts was one of the key outputs of consultants, few institutions capitalized on this opportunity. The Government counterpart staff had less motivation and proactive approach.

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

Development of clean energy and energy efficiency is the Government strategy and priority in the energy sector. Policy dialogue with the Government is under way. It is recommended that ADB keeps close consultations with the Government in the energy sector and seek suitable investment projects in the energy efficiency development.

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