

## TECHNICAL ASSISTANCE COMPLETION REPORT

Division: ECEN

<b>TA No. and Name</b> TA 4029-UZB: Energy Needs Assessment			<b>Amount Approved:</b> \$600,000 <b>Revised Amount:</b>											
<b>Executing Agency:</b> Department of Energy		<b>Source of Funding:</b> TASF		<b>TA Amount Undisbursed</b> \$40,920.78										
<b>TA Amount Utilized</b> \$559,079.22														
<b>Date</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"><b>Approval</b></td> <td style="width: 33%;"><b>Signing</b></td> <td style="width: 33%;"><b>Fielding of Consultants</b></td> </tr> <tr> <td>11 Dec. 2002</td> <td>8 Apr 2003</td> <td>7 Jul 2003</td> </tr> </table>			<b>Approval</b>	<b>Signing</b>	<b>Fielding of Consultants</b>	11 Dec. 2002	8 Apr 2003	7 Jul 2003	<b>Completion Date</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;"><b>Original</b></td> <td style="width: 50%;"><b>Actual</b></td> </tr> <tr> <td>31 Oct 2003</td> <td>29 Oct 2004</td> </tr> </table>		<b>Original</b>	<b>Actual</b>	31 Oct 2003	29 Oct 2004
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<b>Description</b> <p>Annual primary commercial energy consumption in Uzbekistan is about 1.5-2 times higher than in other developing countries on a gross domestic product basis. Current level of energy consumption could be reduced by 40% through improvement of the efficiency of energy consumption without compromising projected economic growth and basic energy requirement. In this context, the Government signed the European Energy Charter Treaty and the Energy Charter protocol, and on 14 February 2002 adopted an energy-saving program. The Government's energy-saving program was to be implemented in two stages. During the first stage, to be implemented in 2002-2005, the activities focused on the identification of appropriate measures for promoting investments in energy conservation, energy tariff reforms, and development of economic incentives for energy conservation. During the second stage, to be implemented during the period 2006-2010, the energy legislation and regulation would be made effective, and the implementation of selected energy conservation projects with payback period of up to 7 years would be taken up. In 2001, the Government requested ADB's assistance to develop the first stage.</p>														
<b>Objectives and Scope</b> <p>The TA was to help the Government: (i) strengthen the energy saving program in the power, natural gas, and district heating sectors; (ii) make recommendations for strengthening institutional and regulatory frameworks for the supply and consumption of commercial energy, and reforming energy tariffs in respect of increasing the availability of affordable commercial energy for the poor; (iii) identify the most effective energy-saving activities and projects in the power, gas, and district heating sectors to meet the Government's target for increased energy efficiency; (iv) recommend options for mobilizing the required investments for the development of such activities and projects, including the establishment of energy service companies; (v) assess the potential of using solar water heating systems to provide hot water to residential, commercial, and industrial consumers; and (vi) assess the potential for increased small-scale use of natural gas for distributed power generation and use in vehicles as compressed natural gas (CNG). The executing agency for the TA was the Department of Energy.</p>														
<b>Evaluation of Inputs</b> <p>The TA letter was signed on 8 April 2003, and a consulting firm from Germany was engaged on 30 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 17 (design: 14) person-months of international and 25.5 (design: 12) person-months of domestic consulting services. Despite the increase in person-months, the overall cost of consulting services was lower than expected (5%), mainly due to lower cost of equipment purchased. The TA was completed within the budget.</p>														

## Evaluation of Outputs

The consultant was fielded on 7 July 2003 and the working group consisting of representatives of energy sector stakeholders was created in August 2003. An inception mission (first tripartite meeting) was held on 25-26 September 2003 after receipt of the inception report. Due to the delay in the TA inception, the initial completion was postponed by 6 months, i.e., up to March 2004. A study tour was organized to visit Germany in March 2004 for four experts from the Cabinet of Ministers of Uzbekistan that focused on energy efficiency, district heating, renewable energy (mainly solar) and distribution of electricity and gas. The draft final report was submitted on 2 March 2004 and the final report on 20 October 2004. The consultant presented to the Government and ADB mission the results of their study that covered: (i) the power sector including generation, transmission and distribution; (ii) the review of steam, hot water and district heating systems; (iii) the natural gas sector and use of natural gas in distributed power generation; (iv) the review of the solar water heating systems; (v) institutional and regulatory frameworks; (vi) the energy tariff and economics; (vii) the review and recommendation for improvement of the draft energy saving program; and (viii) the pre-feasibility studies of the eight priority projects.

The Government and ADB found the report to be of acceptable standard and comprehensively addressing all the requirements of the terms of reference. However, during the final stage of the TA, the Navoi Asot cogeneration project (combined heat and power plant) that was earlier ranked by the Government as a high priority, and for which a significant part of consultant effort was spent in developing a feasibility study, was no longer considered a priority by the company management. Instead, the rehabilitation of an existing thermal power plant in Navoi Asot was included in the priority list, but it could not be suitably studied because of resource constraint.

All equipment purchased under the TA was turned over to the Executing Agency on 22 September 2004, and the final statement of eligible costs was received in March 2005.

The delays in implementation were mainly due to difficulties in getting the relevant information and logistical arrangements. Despite initial 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 all TOR requirements and was satisfactory. Despite delays, the project outputs, the pre-feasibility studies, and equipment purchased under the TA were appropriate; the study tour was practical and useful. The Government expressed satisfaction over the consultant's work and reiterated the need for investment of the shortlisted projects identified under the TA. Overall, the TA is rated as successful.

## Major Lessons Learned

In situations where a consultant is required to identify and prepare projects that involve enterprises that are administratively outside the government, a close coordination with the entities at all times is essential for building consensus regarding the priority.

Frequent staff changes in TA administration caused delays and communication gaps that could have been avoided.

## Recommendations and Follow-Up Actions

Uzbekistan has one of the highest per capita energy consumption in the region and the consumption has been increasing in the last 5 years. This TA created an initial momentum for energy efficiency and energy conservation related projects, implementation of which needs to be pursued during the second stage of the Government's energy-saving program.