



## Uzbekistan: Takhiatash Power Plant Efficiency Improvement Project

Project Name	Takhiatash Power Plant Efficiency Improvement Project								
Project Number	45306-001								
Country	Uzbekistan								
Project Status	Active								
Project Type / Modality of Assistance	Loan								
Source of Funding / Amount	<table border="1"><tr><td colspan="2"><b>Loan 3141-UZB: Takhiatash Power Plant Efficiency Improvement Project</b></td></tr><tr><td>Ordinary capital resources</td><td>US\$ 300.00 million</td></tr><tr><td colspan="2"><b>Loan: Takhiatash Power Plant Efficiency Improvement Project</b></td></tr><tr><td>Uzbekistan Fund for Reconstruction and Development</td><td>US\$ 270.00 million</td></tr></table>	<b>Loan 3141-UZB: Takhiatash Power Plant Efficiency Improvement Project</b>		Ordinary capital resources	US\$ 300.00 million	<b>Loan: Takhiatash Power Plant Efficiency Improvement Project</b>		Uzbekistan Fund for Reconstruction and Development	US\$ 270.00 million
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Uzbekistan Fund for Reconstruction and Development	US\$ 270.00 million								
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth								
Drivers of Change	Governance and capacity development Private sector development								
Sector / Subsector	<b>Energy</b> - Conventional energy generation - Energy efficiency and conservation - Energy sector development and institutional reform								
Gender Equity and Mainstreaming	Effective gender mainstreaming								
Description	The project, to be implemented in the Takhiatash thermal power plant (TPP), involves building two combined-cycle gas turbine (CCGT) units, decommissioning old and inefficient power generation units, improving energy efficiency, and increasing power supply to the Karakalpakstan and Khorezm regions. It includes a capacity development component to improve corporate performance and a social development component to foster gender equality.								

Project Rationale and Linkage to Country/Regional Strategy

Uzbekistan is one of the fastest-growing economies in Central Asia, aspiring to become an upper-middle-income country by 2020. The economy has sustained a high growth rate averaging over 8% (2007\_2013). Generally, stable macroeconomic conditions and robust growth are set to continue as Uzbekistan aims to develop a highly developed and diversified industrial and export base. In particular, the Karakalpakstan and Khorezm regions, inhabited by 3 million people and located in the western part of Uzbekistan, will continue to attract important investment projects. Reliable power supply is critical to support industrial development in these regions. Indeed, these regions expect power demand to grow at 3%, double the expected medium-term national average rate of 1.5%. The Takhiatash TPP is the main source of power supply in the Karakalpakstan and Khorezm regions. In 2012, power consumption in these regions was 2,293 gigawatt-hours (GWh) with maximum load of 466 megawatts (MW). By 2020, the power consumption is expected to exceed 3,620 GWh, with maximum load of 620 MW. With 730 MW of installed capacity, the Takhiatash TPP now comprises five gas-fired steam turbine generation units. Three units totaling 310 MW have passed their designed economic life, and have been operating with derated capacity (130 MW), low thermal efficiency (23.7%), and limited plant availability (25%). The other two units, totaling 420 MW, are 26 years old or less. However, their capacity is derated by 15%, the efficiency is low at 31%, and they are overutilized to meet demand, which prevents regular maintenance.

To ensure reliable power supply, the government and Uzbekenergo, the state-owned power utility, identified the project as a priority, and decided to (i) construct two CCGT units (230\_280 MW each); (ii) decommission three existing power units (Nos. 1\_3); and (iii) maintain two power units (Nos. 7\_8) for backup. This approach\_ construction of energy-efficient units while decommissioning old and inefficient ones\_ will be the first integrated modernization model and will pave the way to restructuring a power sector that faces acute issues with aging assets.

Indeed, Uzbekistan's power generation plants are generally old and inefficient, requiring urgent modernization. More than 75% of the power plant units are over 30 years old, reaching or exceeding their economic life. The thermal efficiency averages 31%, while that of energy-efficient CCGTs exceeds 50%. Replacing existing power generation assets with energy-efficient equipment is a key strategy for saving energy, securing reliable power supply, and reducing greenhouse gas (GHG) emission.

To date, Uzbekistan's power sector has shown steady progress in meeting new challenges. In an attempt to improve energy efficiency, one CCGT was commissioned in Navoi TPP and four more CCGT units are under preparation with confirmed funding. On the sector reform, the electricity tariffs have been steadily raised since 2004 to ensure financial sustainability. Financial transparency has improved since Uzbekenergo, with the assistance of the Asian Development Bank (ADB), adopted external audits based on the International Standards of Auditing (ISA) starting from fiscal year (FY) 2011. Further, to reduce high electricity losses and to spur demand-side energy efficiency improvement, Uzbekenergo has secured funding to introduce an advanced electricity metering program in nine of the 14 regions.

Nonetheless, further efforts to improve Uzbekenergo's corporate performance are necessary. The utility needs to develop a strategy and build the capacity to become more commercially bankable in the medium term. It needs to introduce a modern management system with performance accountability. Uzbekistan and Uzbekenergo will benefit from learning and adopting best international practices for tariff determination to improve efficiency and to ensure full cost recovery. Uzbekenergo's information technology infrastructure needs improvements in management information system. The project is consistent with ADB's country partnership strategy, 2012\_2016 for Uzbekistan, which includes a focus on energy efficiency and reliable power supply. The project is included in the country operations business plan, 2012\_2014 for Uzbekistan.

Impact	More reliable power supply in Uzbekistan
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### Project Outcome

Description of Outcome	Increased energy-efficient power supply in Karakalpakstan and Khorezm regions
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Progress Toward Outcome	EPC contract in Dec 2016. Registration ongoing.
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### Implementation Progress

Description of Project Outputs	<ol style="list-style-type: none"> <li>1. Energy-efficient power generators operational in Takhiatash TPP</li> <li>2. Developed Uzbekenergo's capacity to become commercially bankable</li> <li>3. Community social service center becomes operational</li> </ol>
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Status of Implementation Progress (Outputs, Activities, and Issues)	<p>Target achievable but with delay.</p> <p>Target achievable but with delay.</p> <p>Target achievable but with delay.</p>
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Geographical Location	Khorezm, Karakalpakstan
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### Safeguard Categories

Environment	A
Involuntary Resettlement	B
Indigenous Peoples	C

## Summary of Environmental and Social Aspects

Environmental Aspects	EIA was prepared and disclosed on website on 20 May 2013.
Involuntary Resettlement	Land acquisition and resettlement plan has been prepared and disclosed on website on 19 July 2013. LARP was updated in March 2015. The payment of compensation to affected households has been completed.
Indigenous Peoples	No adverse impact is expected. No people defined by ADB SPS 2009 as IP are present in project area.

### Stakeholder Communication, Participation, and Consultation

During Project Design	<p>As a part of the preparation of environmental impact assessment and land acquisition and resettlement plan, stakeholder consultations has been conducted by the project executing agency with the assistance of project preparatory technical assistance consultant.</p> <p>In addition, as a part of poverty and social assessment, a total number of 900 households was surveyed in Karakalpakstan and Khorezm region, including 100 households in Takhiatash city, 400 households in Karakalpakstan AR, and 400 households in Khorezm region.</p> <p>Further, PPTA consultant organized Focus Group discussion (FGD) in Takhiatash city and 20 structured interviews with major stakeholders in Karakalpakstan and Khorezm regions.</p>
During Project Implementation	<p>Civil society will be involved for the operation of the community service center in Takhiatash, and implementation of the energy efficiency campaign. A local social/gender specialist will be hired to ensure implementation of the key gender activities.</p> <p>The implementation consultant includes a safeguard specialist with responsibility for ongoing consultation and participation.</p> <p>Grievance redress mechanism will be established using existing community society and assigning a focal at project management unit.</p>

### Business Opportunities

Consulting Services	<p>A supervision consulting firm will be recruited using the quality- and cost-based selection method, with a 90:10 ratio for quality and cost, and following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) to help the executing agency implement the project.</p> <p>Under capacity development component, there will be one contract package for corporate management, cashflow analysis, and tariff study, one contract for risk profile assessment, an audit package (2 multi-year contracts), and two individual consultants (capacity development program manager and social and gender specialist).</p> <p>The project envisages advance contracting and retroactive financing of up to 20% of total financing.</p>
Procurement	<p>A turnkey contractor, which is expected to undertake both the construction and decommissioning works, will be selected under international competitive bidding, following ADB's Procurement Guidelines (2013, as amended from time to time).</p> <p>The project envisages advance contracting and retroactive financing of up to 20% of total financing.</p>

### Responsible Staff

Responsible ADB Officer	Musaev, Shokhimardon
Responsible ADB Department	Central and West Asia Department
Responsible ADB Division	Energy Division, CWRD
Executing Agencies	<i>UzbekEnergo</i> <i>6 Istiklol Street</i> <i>Tashkent, 100000, Uzbekistan</i>

### Timetable

Concept Clearance	16 Aug 2012
Fact Finding	20 May 2013 to 31 May 2013
MRM	23 Apr 2014
Approval	15 Jul 2014
Last Review Mission	-
Last PDS Update	30 Mar 2017

### Loan 3141-UZB

#### Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
15 Jul 2014	30 Oct 2014	30 Jan 2015	30 Apr 2021	-	-

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	430.00	Cumulative Contract Awards			
ADB	300.00	15 Jul 2014	241.78	0.00	81%
Counterpart	130.00	Cumulative Disbursements			
Cofinancing	0.00	15 Jul 2014	0.52	0.00	0%

Status of Covenants						
Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	-	-	Satisfactory	-	-

Project Page <https://www.adb.org/projects/45306-001/main>

Request for Information <http://www.adb.org/forms/request-information-form?subject=45306-001>

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