



Uzbekistan: Samarkand Solar Power Project

Project Name	Samarkand Solar Power Project	
Project Number	45120-003	
Country	Uzbekistan	
Project Status	Active	
Project Type / Modality of Assistance	Loan	
Source of Funding / Amount	Loan 3058-UZB: Solar Power Project	
	concessional ordinary capital resources lending / Asian Development Fund	US\$ 101.10 million
	Loan 3059-UZB: Samarkand Solar Power Project	
	concessional ordinary capital resources lending / Asian Development Fund	US\$ 8.90 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth	
Drivers of Change	Governance and capacity development	
Sector / Subsector	Energy - Renewable energy generation - solar	
Gender Equity and Mainstreaming	Some gender elements	
Description	<p>The proposed Samarkand Solar Power Project (the Project) aims to increase renewable energy generation and reduce greenhouse gas emissions (GHG) in Uzbekistan. The Project has two main components: (i) construction of a 100 megawatt (MW) grid-connected crystalline photovoltaic (PV) power plant with single axis tracking system; (ii) institutional capacity building on solar energy and grid integration, and (iii) project management and supervision.</p> <p>Uzbekistan has among the highest energy and carbon intensities in the world, both over six times the world average, calling for drastic increases in energy efficiency and renewable energy to reduce GHG emissions. Despite the huge potential, renewable energy supplies less than 11% of the country's power demand, and only hydro resources are being tapped. Over 89% of Uzbekistan's 12.6 gigawatts (GW) of installed capacity are conventional thermal power plants fueled by natural gas (76%), fuel oil (7%), and coal (6%). Half of this fossil-based energy is generated in power plants built before 1982, with only 10% generated in power plants built after 1997. Moreover, total grid losses is about 20%, due in part to long distance transmission and distribution. While Uzbekistan is almost 100% electrified, the demand_supply gap leaves many provinces, including Samarkand, with intermittent power. In addition, the domestic consumption of gas equals lost export revenues, estimated at over \$900 million for 2012 alone.</p> <p>The Project's impact is improved sustainability of the energy supply in Uzbekistan, and the outcome is increased renewable energy generation in Uzbekistan. The Project has two main outputs: (i) construction of a 100 MW on-grid crystalline PV power plant, transmission and support facilities; and (ii) capacity building, project management and supervision support for Uzbekenergo.</p>	

Project Rationale and Linkage to Country/Regional Strategy	<p>To address the high energy and carbon intensities, the government through its Welfare Improvement Strategy I and II, mandated reduced domestic gas use through energy efficiency and renewable energy, especially solar. Presidential Decree 4512 mandated the creation of high-technology solar industries. With Uzbekistan's solar irradiance (at over 1,800 kilowatt-hours per square meter) on par with leading countries, solar energy is deemed the most sustainable source that could provide a significant share in the power mix.</p> <p>The first of its kind and scale in Central Asia, the project will bring Uzbekistan closer to its vision of becoming the region's solar technology and knowledge hub. Uzbekistan's solar energy development road map envisions at least 21% renewable capacity by 2031, including at least 4 GW of solar capacity. The Asian Development Bank (ADB) approved a capacity development technical assistance (TA) that helped Uzbekistan create the International Solar Energy Institute (ISEI) to link research with industry. Another ADB TA project is conducting feasibility studies for up to six solar power projects. Measurements of solar and weather data are ongoing at the six sites to validate models based on 12 years of historical satellite data. The TA (i) conducted technical, financial and economic, governance, safeguards, and due diligence for the project; (ii) developed the solar energy development road map; and (iii) assisted ISEI in the design of its photovoltaic certification laboratory and test bed facility. A project preparation TA will assist in the preparation and procurement of bidding documents. Expected to generate 159 GW hours (GWh) of clean energy, the project will avoid 88,000 tons of carbon dioxide equivalent GHG emissions per year. By supplying electricity where it is consumed, the project will reduce grid losses.</p> <p>The project is aligned with ADB's Strategy 2020, and with a key pillar of the Energy Policy 2009. The project directly supports Uzbekistan's clean energy and energy security targets as prioritized under the country partnership strategy, 2012 -2016 for Uzbekistan and is identified in the country operations business plan, 2012_2014 for Uzbekistan</p>
Impact	Improved sustainability of the energy supply in Uzbekistan

Project Outcome

Description of Outcome	Increased renewable energy generation in Uzbekistan
Progress Toward Outcome	DBO contract signed 24 Dec 2016. Registration ongoing.

Implementation Progress

Description of Project Outputs	<ol style="list-style-type: none"> 1. Solar power plant, transmission, and support facilities operational 2. Institutional capacity of Uzbekenergo developed 3. Institutional capacity of solar energy stakeholders developed
Status of Implementation Progress (Outputs, Activities, and Issues)	<p>Target still feasible. After recruitment delay, Project mgt and supervision consultant who will undertake the capacity development activities mobilized in July 2015. DBO contract signed in December 2016 and for registration in 2017.</p> <p>Target still feasible, but with delay. Project mgt and supervision consultant mobilized in July 2015. Draft capacity development plan submitted in December 2015.</p> <p>Target still feasible, but with delay as procurement was delayed.</p>
Geographical Location	Samarkand

Safeguard Categories

Environment	B
Involuntary Resettlement	B
Indigenous Peoples	C

Summary of Environmental and Social Aspects

Environmental Aspects	<p>The project is a category B project following ADB's Safeguard Policy Statement (2009) and will involve the construction of a new photovoltaic plant and its supporting facilities, which include an access road and a transmission line.</p> <p>The initial environmental examination (IEE) for the construction of the new plant and its supporting facilities was carried out to assess impacts, and the environmental management plan (EMP) was prepared to provide guidance for minimizing any adverse impacts. Public consultations were carried out on 31 May 2013 in Samarkand city. The IEE report was disclosed on the ADB website on 16 September 2013. The project will not cause any significant environmental impacts. Minor and transient environmental disturbances may occur during the construction and operation phases. Appropriate mitigation measures have been developed in the EMP, which is subject to updating after the completion of the conceptual system design to include all technical aspects and to incorporate recommendations from the Samarkand Province Nature Protection Committee. The updated IEE and its EMP will need to be submitted to ADB.</p> <p>The PMU on behalf of the executing agency has overall responsibility for implementing the EMP throughout project implementation and completion. The contractor will implement the EMP to mitigate all impacts related with construction activities. The PMU and the implementation consultant teams will each have an environmental specialist to supervise the contractor implementing the EMP. A grievance redress mechanism will be established within the PMU under Uzbekenergo to resolve complaints, if any. The Uzbekenergo Environment, Health and Safety Unit will oversee the implementation of the EMP.</p>
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Involuntary Resettlement	<p>The project will require land acquisition for three types of components: (i) construction of the photovoltaic power plant, (ii) construction of the 220-kV transmission line to the national power grid, and (iii) widening of the 4-km access road from the power plant up to the existing paved road. The project is categorized as a B project for involuntary resettlement in accordance with ADB's Safeguard Policy Statement.</p> <p>The resettlement plan, presented as the Land Acquisition and Resettlement Plan (LARP), was prepared in close consultation with affected people. The total land to be acquired is 410.56 hectares (ha), of which total permanent land acquisition is 407.8 ha and temporary acquisition 2.76 ha. The permanent acquisition will be used for the power plant (405 ha), access road (1.96 ha), and transmission line (0.84 ha). The temporary land acquisition (2.76 ha) will be required only during construction of the transmission line. This land acquisition will affect 17 households with a total of 109 persons. The land acquisition for the power plant will have three households; these households belong to farmers and will be impacted severely because they will lose 29.1% to 41.5% of their productive land. The expansion of the access road and the transmission line will not cause any severe impact. None of the three project facilities (power plant, access road, and transmission line) will result in any physical displacement of residential assets or cause unemployment in affected farms. However, a 675-square-meter structure used for keeping livestock and hay will need to be demolished to construct the power plant. During consultation, two of the 17 households expressed willingness to give up land for compensation. They requested appropriate changes in their lease agreements to reduce their tax payments.</p> <p>The LARP for this project was prepared in line with national laws and regulations and ADB's Safeguard Policy Statement. The LARP study was carried out from May to July 2013. Six consultations were carried out in May, and three in July. The consultations were with affected people, local government agencies, and local communities. The estimated compensation costs for land acquisition is around \$240,000. Uzbekenergo has adequate experience in implementing a LARP and will be assisted by the PMU. The PMU will include a social safeguards and gender specialist to coordinate with local agencies to implement the LARP and submit reports to ADB. The established grievance redress mechanism will address both environmental and social complaints, if any. The LARP was disclosed through the ADB website on 16 September 2013.</p>
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Indigenous Peoples	<p>The survey for poverty and social assessment found that there is no community or group in the project area that maintains any particular culture, language, or properties distinct from the general population. There are four ethnic groups within the local community namely Uzbeks, Kazakhs, Russians, and Tajiks. None meet the ADB definition of vulnerable indigenous peoples, and therefore the project is categorized as a C project for indigenous people or ethnic minority requirements in accordance with the Safeguard Policy Statement. No further study is needed.</p>
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Stakeholder Communication, Participation, and Consultation

During Project Design	<p>Public consultations were carried out for the Initial Environmental Examination and the Poverty and Social Assessment.</p> <p>Project preparation employed a participatory approach to share information about the project and seek feedback particularly from women, poorer segments of the population, and civil society. Fifty-four participants attended the public consultations, amongst them representatives of (i) Makhalla (village) Committees of Samarkand and Postargom Districts, (ii) Hokimiyats district, (iii) the Nature Protection Committee of Samarkand, (iv) Uzbekenergo, and (vi) Zarafshan and Dustlik Local Power Distribution Networks.</p>
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During Project Implementation	<p>There is no civil society role directly linked to project implementation. But Makhalla and local women groups as community-based organizations CBOs will play the role of liaison between the project and society to disseminate the project information and collect any concerns, complaints, and grievances. The executing agency (EA) will publish project progress information regularly to the public through CBOs and receive opinions from the project area and affected people.</p>
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Business Opportunities

Consulting Services	<p>Uzbekenergo will recruit an implementation consultant following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time), using the quality- and cost-based selection method, to assist the PMU in project management and to implement the institutional capacity development plans.</p>
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Procurement Uzbekenergo will employ a turnkey contractor for the photovoltaic power plant EPC and O&M services following ADB's Procurement Guidelines (2013, as amended from time to time). The procurement will follow ADB's international competitive bidding procedure using a single-stage two-envelope bidding method without prequalification. For the bidding, ADB's User's Guide and Extended Standard Bidding Documents for Plant_Design, Supply, and Install will be used, and the turnkey contract shall use International Federation of Consulting Engineers Conditions of Contract for Design, Build and Operate Projects (general conditions, particular conditions and sample forms). The transmission line supply contract will follow government procedures since this will be financed by Uzbekenergo.

Responsible Staff

Responsible ADB Officer	Tiangco, Cinderella C.
Responsible ADB Department	Central and West Asia Department
Responsible ADB Division	Energy Division, CWRD
Executing Agencies	<i>Uzbekenergo-Samarkand SAMARKAND.PMU@GMAIL.COM 6 Khorezmskaya St., Taskhent, 100000, Uzbekistan Samarkand Solar Power Station Samarkand, Samarkand Province, Uzbekistan</i>

Timetable

Concept Clearance	29 May 2013
Fact Finding	10 Jun 2013 to 21 Jun 2013
MRM	19 Sep 2013
Approval	20 Nov 2013
Last Review Mission	-
Last PDS Update	31 Mar 2017

Loan 3058-UZB

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
20 Nov 2013	21 Nov 2013	04 Feb 2014	30 Sep 2019	-	-

Financing Plan		Loan Utilization			
	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	301.10	Cumulative Contract Awards			
ADB	101.10	20 Nov 2013	66.17	0.00	72%
Counterpart	200.00	Cumulative Disbursements			
Cofinancing	0.00	20 Nov 2013	0.00	0.00	0%

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

Loan 3059-UZB

Milestones					
Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
20 Nov 2013	21 Nov 2013	04 Feb 2014	30 Sep 2019	-	-

Financing Plan		Loan Utilization			
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	Total (Amount in US\$ million)	Date	ADB	Others	Net Percentage
Project Cost	8.90	Cumulative Contract Awards			
ADB	8.90	20 Nov 2013	6.60	0.00	82%
Counterpart	0.00	Cumulative Disbursements			
Cofinancing	0.00	20 Nov 2013	0.73	0.00	9%

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

Project Page <https://www.adb.org/projects/45120-003/main>

Request for Information <http://www.adb.org/forms/request-information-form?subject=45120-003>

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