

Environmental Monitoring Report

Semestral Report for July - December 2016

UZB: Samarkand Solar Power Project

Prepared by State Joint Stock Company UzbekEnergo for the Republic of Uzbekistan and the Asian Development Bank.

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ABBREVIATIONS

ADB	Asian Development Bank
EA	executing agency
GHG	greenhouse gas
GRC	grievance redress committee
GRM	grievance redress mechanism
IEE	initial environmental examination
PCP	Public Communications Policy
PIC	project implementation consultant
PMU	project management unit
PV	photovoltaic
SPS	Safeguard Policy Statement

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1.0 INTRODUCTION

1. The Samarkand Solar Power Project (the Project) aims to increase the renewable energy generation and to reduce greenhouse gas emissions (GHG) in Uzbekistan. The Project is expected to have two main outputs: (i) the construction of a 100 MW solar photovoltaic (PV) power plant including the transmission and support facilities; and (ii) institutional capacity development for Uzbekenergo and for solar energy stakeholders. The main objectives of the solar PV power plant are as follows:
 - Long-term use of solar energy for electricity production in Uzbekistan;
 - Increase the stability of the power system;
 - Improve the reliability of electricity supply in South-Western part of the system; and,
 - Increasing the efficiency and reliability of power supply for the national economy and the population of the Samarkand region.
2. The Project is being implemented in accordance with the Resolution of the President of the Republic of Uzbekistan on 3 March 2013 (No. 4512) regarding measures for further development of alternative energy resources and the Project's Feasibility Study was approved through the Resolution of the President of the Republic of Uzbekistan on 4 June 2014 (PP No. 2183).
3. On 20 November 2013, the Government of Uzbekistan received a loan of about \$110 million from the Asian Development Bank (ADB) to finance the Project. The Project's executing agency (EA) is the Joint Stock Company Uzbekenergo ("Uzbekenergo") and the Samarkand Solar Power Project Management Unit (PMU Solar) is established within Uzbekenergo to implement the Project.
4. According to the approved feasibility study, dated 04/06/2014 total project cost is 233,123,000 USD. The Government of Uzbekistan has requested ADB to finance the procurement of materials in the amount of \$ 110.0 million USD. State Fund for Reconstruction and Development of Uzbekistan will take part in financing the project in the amount of \$ 110.0 million USD. "Uzbekenergo" will finance from its own funds the purchase of local materials, installation, delivery and other construction work in the amount of \$ 13,120,000 USD. In addition, the Government will provide \$ 42.7 million USD. (Equivalent) through taxes and fees exemption.
5. The Project is located approx. 5 km north of the Sazagan settlement and requires about 255 hectare (ha) from the Pastdargom District and about 150 ha from Nurobod District. The access road will be about 4 km and the transmission line to evacuate the power generated will be 8 km of 220 kV.
6. According to ADB's Safeguard Policy Statement (SPS) 2009, the Project is classified as category B on environment requiring an initial environmental examination (IEE). The IEE was prepared and disclosed to ADB website in October 2013 as required by ADB's SPS 2009 and Public Communications Policy (PCP) 2011.
7. The IEE (October 2013) indicates that the Project falls under category III in compliance with Appendix 2 to the Cabinet Ministers' Decree of the Republic of Uzbekistan No. 491, paragraph 13 (December 2001). Following the national environmental regulatory procedures, the Project will be cleared by the Gosexpertisa under the Samarqand Province Nature Protection, a provincial branch of the State Nature Protection Committee (SNPC).

8. The consortium of GOPA-International Energy Consultants GmbH and Suntrace GmbH was contracted by Uzbekenergo in 2015 as Project Implementation Consultant to assist PMU Solar in (i) project management, (ii) implement the institutional capacity development plans, and (iii) assist in enhancing the Operation and Maintenance (O&M) skills of Uzbekenergo during the first year of project operation. Uzbekenergo is responsible for the following: (i) prepare the site; (ii) install the transmission line; and, (iii) construct the access road, perimeter fence, wells, and raw water supply facilities.
9. On 24.12.2016 Contract was signed with the Construction Contractor - «Zhuhai Singyes Green Building Technology Co., Ltd».

2.0 PROGRESS OF PROJECT IMPLEMENTATION

The Construction for the whole period from the beginning is from July inclusive to December 2016

10. In accordance with the loan agreement, JSC «Uzbekenergo" needs to carry out preparatory work at its own expense, including the construction of the access road to the Site. The construction of the fence around the site, the construction of septic tanks for water clarification, the construction of wells, construction of the 220 kV power output, ensuring the supply of electricity for the needs of construction works.
11. The area of the construction site is 404 hectares in the territory of Pastdargom district of Samarkand region. Currently the following works are done by Uzbekenergo:
 - Preparation of APL;
 - Territory cleaning;
 - Geological works;
 - Construction of bridge through the channel "Progress";
 - Construction of temporary 10 kV transmission line (length of 7.2 km) and a down transformer;
 - Construction of three wells;
 - Construction of fence around the construction site;
 - Topographical survey;
 - Water pond
 - Construction of 220 kV transmission line: for the construction of double circuit 220 kV transmission line with the 3.5 km length, 44 supports out of 54 pieces have been installed, 38 pieces of wire were purchased. Now, the foundation and the remaining 10 towers are under construction.
 - Reconstruction and construction of the access roads:
The 13-km access road to the project site has sections that require major work to enable safe transport of PV panels and heavy equipment. Rehabilitation works were started when the Government was considering rebidding the DBO contract in early 2016. For the 9 km section, the Samarkand regional Hokimiyat committed to finish gravelling and asphaltting, and rehabilitating the two bridges along the section to comply with standards by January 2017.
12. For the 4-km section, Uzbekenergo can only commit to resuming works and asphaltting in February 2017 after the Hokimiyat's 9-km section to avoid damage to the latter, and when funds are made available. However, as they already initiating pre –works activities, Syngyes says that they can start shipment within two months of contract signing. ADB requested Ministry of Finance intervention to expedite the works as well as other priority actions for the DBO contract.

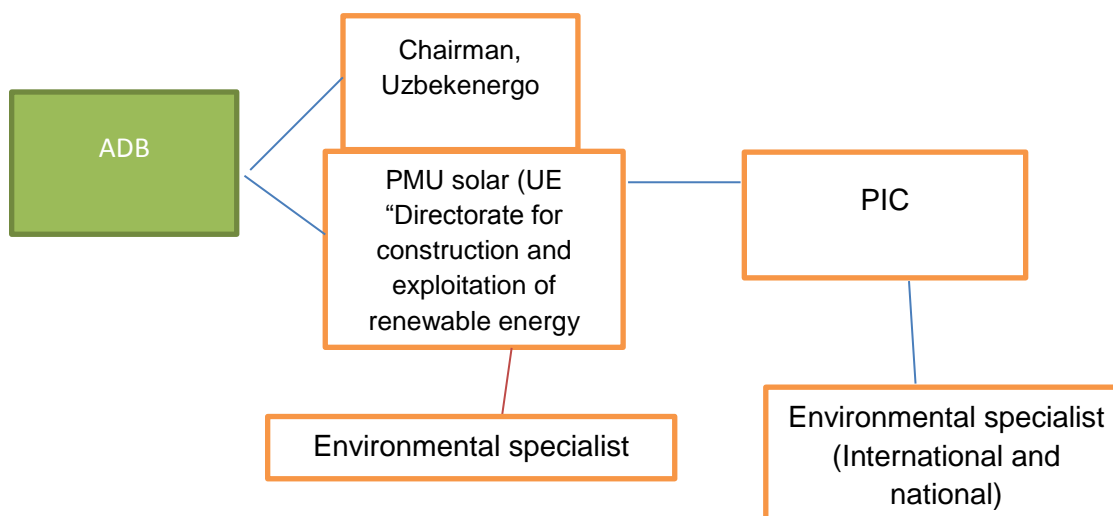
13. Currently excavating and concrete works underway for the construction of settler.
14. The progress of these construction works outside of EPC Contract is approximately 5%.

Annex 1 shows the activities at the Project site.

2.1 Project Management

15. During the reporting period, changes has been made in the composition of management and department name. The Solar PMU was renamed as Unitary Enterprise “Directorate for construction and exploitation of renewable energy sources” on June 10th, 2016. Director Mr.Umid Khashimov left the project in November 2016 and now formal director of is Mr. Shuxrat Isaev, also environmental specialist Mr.Jahongir Siddikov left the project in January 2016. Ms. Diana Rakhimova was assigned for this position from 1st February 2017 on a part time position.
16. Changes in Project Organization and Environmental Management Team are presented in Figure 2.1.

Figure 2.1: Project Management Organizational Structure.



17. The PMU Solar has a designated staff to deal with environmental issues, prepare the environmental monitoring reports required by ADB, and together with the PIC, monitor the environmental compliance of the EPC Contractor. The environmental staff of PMU Solar will ensure the implementation of the EMP.
18. Engineering, Procurement and Construction (EPC) Contractor - The contract for the EPC Contractor has been awarded by Uzbekenergo on 24.11.2016. The EPC Contractor is expected to have their Environment Specialist(s) to ensure the implementation of the mitigation measures identified in the environmental management plan (EMP) of the IEE, preparation of site-specific EMP, environmental monitoring, and to provide technical support in the grievance redress mechanism.
19. *Project Implementation Consultant (PIC)* - The contract with the PIC was signed and became effective on 10 July 2015. Subsequently, a kick-off meeting was conducted on 29-31 July 2015 including field works and site visits. A draft Project Implementation Manual that covers several plans for implementation, procurement, quality assurance, safety and

financial management was prepared by the PIC and the final version is scheduled to be finalized by April 2016 awaiting inputs from the EPC schedule.

20. The PIC will supervise and monitor the project implementation including the construction and commissioning works, and build the institutional capacity of Uzbekenergo and other solar stakeholders including relevant solar and scientific research institutes. The PIC includes Environment Specialists (international and national) as part of their team to oversee the overall implementation of environmental management plan, environmental monitoring, and compliance to the environmental requirements of ADB.

2.2. Associated Facilities

21. According to the Aid Memo dated 16-29 November 2016, p. 33 "consultant will assist the PMU in IEE updating and compliance monitoring in accordance with ADB requirements for protective measures. The consultant will send its local and international environmental experts to the project area".
22. Works on updating the IEE will be launched in February 2017.
23. Expert evaluation of protection against environmental impact as a result of work on the restoration of the access road and construction of the power line will be reflected in the quarterly report of the consultant prepared at the end of March 2017 and in the next semiannual report for January-June 2017.

2.3 Relationships with Contractors, Owner, Lender, etc

24. The team has constant communication with the Supervision Consultant, the Contractor is not hired yet.
25. SC is responsible for environmental capacity building, monitoring of implementation of SEMP's and for developing quarterly reports; Monitor safeguards and EMP, prepare the updated IEE which meets both the Government's requirements and ADB's Environmental Assessment Guidelines and ensure training of client counterpart staff through on-the job-training and classroom training programs.
26. ADB oversees project sites regularly and gives clear instructions for the project sites improvements with regard to environmental safeguards.
27. During the reporting period review missions and site visits conducted by PIU and ADB on safeguards is provided below:
 - 1) 8-9 Jun. 2013 (PIU site visit)
 - 2) 10-12 August 2016 (ADB mission)
 - 3) 16-29 November 2016 (ADB and PIU's site visit)

3.0 ENVIRONMENTAL MONITORING

28. According to the EIA (environmental impact assessment) baseline data regarding water, air, soil, flora and fauna are available, but since the construction activities has not yet started, the monitoring is not carried out.
29. Permanent environmental monitoring will be started immediately after the commencement of the civil works.

4.0 ENVIRONMENTAL MANAGEMENT

3.1 The Environmental Management System, site-specific environmental management plan (SSEMP) and work plans

30. **Annex 2** presents the environmental management plan (EMP) for the construction of the solar power plant based on the IEE (October 2013) posted in the ADB website prior to the approval of ADB's Management to finance the Project. This EMP will be revised and/or updated once the Detailed Design is completed. Consequently, Site-Specific EMP (SSEMP) will be prepared before commencement of civil works. SSEMP will be discussed with the EPC Contractor once the contract has been awarded and then approved by the PIU.

3.2 Site Inspections and Audit

31. Not yet applicable.

3.3 Non-Compliance Notices

32. Not yet applicable.

3.4 Corrective Action Plans

33. Not yet applicable.

3.5 Actions taken to reflect the findings of ADB mission carried out on 7-9 October 2015

34. Not yet applicable.

5.0 GRIEVANCE REDRESS MECHANISM

35. PMU Solar will finalize the grievance redress mechanism (GRM) as soon as the EPC Contractor is mobilized. GRM will ensure a process of receiving and resolving complaint(s) promptly from persons affected by the Project. Based on the requirements of SPS 2009, the GRM will be a process that is understandable, transparent, gender-responsive, culturally-appropriate, and easily accessible to affected persons without cost and retribution.
36. Broadly, the GRM will consist of a grievance redress committee (GRC) that will continue to function from construction until the operation phase. GRC will consist of representatives from the EPC Contractor (during construction), local government unit, designated environmental staff of PMU Solar, and witness of the complainant (or a third party representative for the complainant). PMU Solar will ensure the representation of women in the GRC.
37. GRC will convene once a month to resolve complaint (if any) within 30 days from the date of receipt and will keep a record indicating the name of complainant and nature of complaint, status of resolving the complaint, decisions or actions undertaken, and the date the decision was effected. Records on grievances will be summarized and included in the environmental monitoring reports to be submitted by PMU Solar twice a year to ADB during construction phase and annually during operation phase.

38. PMU Solar will disclose the grievance redress procedure to Project stakeholders such as the contact person and details on how and where to contact them, how to file a grievance, and the time for the GRC to resolve the concerns. PMU Solar will review GRM implementation regularly to assess the effectiveness of the process and to examine the ability to address grievances.
39. No complaints have been received during the reporting period from local residents, authorities or workers of project.

5.0 ACTION PLAN FOR THE NEXT REPORTING PERIOD

40. Assuming the award of contract for the EPC Contractor, the following is planned for the next reporting period:
- Set-up GRM and identify members of GRC - February-June 2017;
 - Prepare site-specific environmental management plan - March 2017;
 - Prepare stakeholders' consultation plan during construction phase (this will include disclosure of the GRM) - February-March 2017
 - Updating of IEE by the Engineer – February-March 2017.

Annex 1 – Project site photos

Fig.1 – The fence along the perimeter of the area



Fig.2 – The Water pond





Fig.3 – The Access road

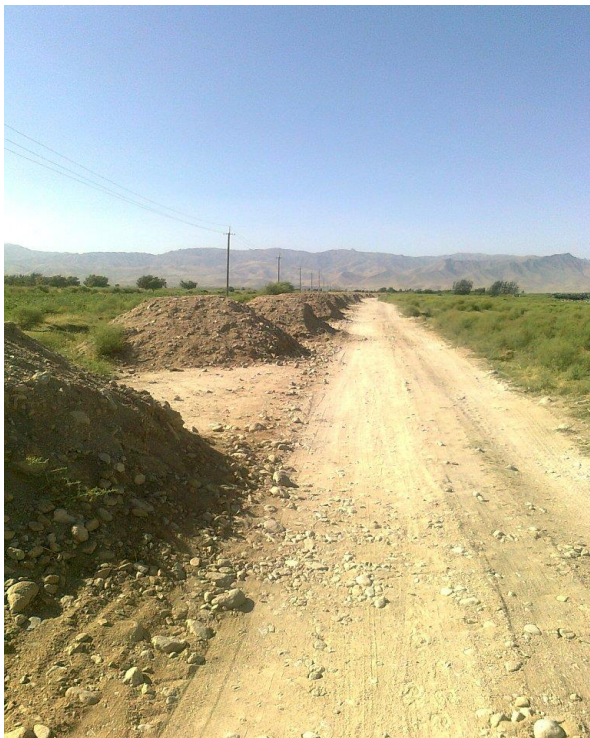


Fig.4 - 220 kV overhead transmission line



Annex 2 – Environmental Management Plan

ACTIVITIES	IMPACTS	MITIGATING MEASURES	MONITORING /DOCUMENTATION	RESPONSIBLE PARTIES
PRE CONSTRUCTION				
1. Soil exploration	<ul style="list-style-type: none"> Trimming of shrubs, drilling holes on the ground Occupation Hazards, accidents 	<ul style="list-style-type: none"> Soil sample is very small not mitigation measures needed Provide PPE, training and supervision 	<ul style="list-style-type: none"> Team report and log book, field inspection 	<ul style="list-style-type: none"> Survey Party supervisor
2. Land Acquisition	<ul style="list-style-type: none"> Temporary and Permanent Removal of the land from the land owners and its uses 	<ul style="list-style-type: none"> Proper appraisal of loss income and timely compensation On the job training for local personnel that could be hired by the project 	<ul style="list-style-type: none"> Land acquisition and resettlement plan 	<ul style="list-style-type: none"> PMU, safeguard officer
3. Possible extension of the territory of land acquired for the Power Plant construction	<ul style="list-style-type: none"> Change of the river beds, that could lead to significant adverse environmental impact 	<ul style="list-style-type: none"> Site selection for construction activity must avoid any extension affected on dry bed of rivers on the surround area 	<ul style="list-style-type: none"> Revising project layouts/Detail design documentation 	<ul style="list-style-type: none"> PMU, safeguard officer
4. Soil leveling, identifying places for PV panels bases	<ul style="list-style-type: none"> Disturb normal life of natural habitats, especially types living underground (turtles) 	<ul style="list-style-type: none"> Prior construction or any leveling works a study has to be done and corresponded mitigations should be developed based on the best practices 	<ul style="list-style-type: none"> Contractor – Environmental Engineer with involvement of local experts from Samangand Nature Protection committee or relevant research institute 	<ul style="list-style-type: none"> PMU, Contractor
CONSTRUCTION				
5. Removal of vegetation	<ul style="list-style-type: none"> Removal of vegetation through using chemical could lead to land contamination and die of inhabitants 	<ul style="list-style-type: none"> Using of chemicals and burn vegetation is prohibited. 	<ul style="list-style-type: none"> Team report and log book, field inspection, visual observation 	<ul style="list-style-type: none"> Contractors, Supervision Engineer
6. Soil leveling, excavation and piling works	<ul style="list-style-type: none"> Loss of topsoil Increase air pollution from Suspended Particulates from soil carried and left on the road by trucks used in construction 	<ul style="list-style-type: none"> Removed soil will be disposed at the area, indicated by khokimiyat or will be used for landscaping surround area Compact and cover excavated material stock pile especially during the rainy season Wet or cover the excavated 	<ul style="list-style-type: none"> Agreement between Contractor and local Khokimiyat, team report. Construction log book, minutes of the construction meeting, and the project 	<ul style="list-style-type: none"> Project Engineer and Contractor
	<ul style="list-style-type: none"> Grease and oil from leaks and spillage affecting the water quality Noise from heavy equipment especially during piling operation Increase air pollutants such as PM2.5, sulfur dioxide, nitrogen oxides from heavy trucks Items of archaeological or cultural significance accidentally discovered during earth moving and construction 	<ul style="list-style-type: none"> soil pile and dusty construction materials such as sand, lime etc during the dry season to reduce dust Wet the work area and other areas with exposed surfaces to reduce dust Periodic check up and maintenance of equipment especially oil seals, proper training and supervision of persons operating the equipment to report leaks, add grease and oil interceptor to the silt pond Fence the work area. All equipment should be provided with mufflers and noise reduction equipment Noisy equipment and activity such as piling should be done only at day time and if it is not possible prior notice should be given to the neighboring areas All equipment used must comply with the Uzbek emission laws Provide personnel involved in earth moving and excavation one or two hour seminar on protocol to follow if items of possible cultural significance is discovered Coordinate with local archeological authorities. In the meantime activities where the item is discovered is cordoned and construction activities suspended until the experts from archaeological department has given its opinion or procedure on how to proceed with the work 	<ul style="list-style-type: none"> engineer/consultant periodic reports to the EA and the Bank Set up a noise monitoring station at two areas located at the boundary of the construction site, and one site to a sensitive receptor with one km from the project site Complaints logbook 	
7. Delivering and installing equipment	<ul style="list-style-type: none"> Increase traffic congestion in the construction area especially heavy equipment are delivered and installed Noise from heavy equipment 	<ul style="list-style-type: none"> Coordination with the local authorities to reroute traffic, put necessary sign on the road, assignment of special personnel to direct the traffic if requested 	<ul style="list-style-type: none"> Construction log book, minutes of the construction meeting, and the project engineer/consultant periodic reports to the 	<ul style="list-style-type: none"> Project Engineer and Contractor
			EA and the Bank	
8. Life activity of workers	<ul style="list-style-type: none"> Generating solid wastes and waste water from workers life activity 	<ul style="list-style-type: none"> Solid wastes will be disposed on the municipal landfill, waste water will collected into the septic tanks 	<ul style="list-style-type: none"> Complaints logbook Construction log book, the project engineer/consultant periodic reports to the EA and the Bank 	<ul style="list-style-type: none"> Project Engineer and Contractor
9.	<ul style="list-style-type: none"> Accidents, hazards and other work areas related concerns 	<ul style="list-style-type: none"> PPE, first aid kit, and alarm system should be provided and used in the construction activity Workers should be properly briefed on proper work conduct, chain of command and responsibilities, and action to take during an emergency Key personnel will be trained on first aid. Periodic drills will be carried out. 	<ul style="list-style-type: none"> Construction log book and periodic report of the project engineer to EA and the Bank 	<ul style="list-style-type: none"> Project Engineer and Contractor
OPERATION				
10.	<ul style="list-style-type: none"> Wildlife, particularly birds, may be affected by the enhanced reflectivity and light in the project site causing temporary blindness, disorientation, and disrupted predator-prey dynamics 	<ul style="list-style-type: none"> Low reflectance and low heat-generating panels will be utilized to minimize impact on local wildlife. 	<ul style="list-style-type: none"> Attention during procurement of services of EPC or suppliers of equipment 	<ul style="list-style-type: none"> Project head
11.	<ul style="list-style-type: none"> Domestic effluent that will be discharged from the administrative building may pollute the nearby water body. 	<ul style="list-style-type: none"> Effluent will be treated by a conventional septic tank system prior to discharge. 	<ul style="list-style-type: none"> Periodic monitoring for leakages if any 	<ul style="list-style-type: none"> Project Engineer
12.	<ul style="list-style-type: none"> Potentially hazardous or toxic wastes may be generated during the operations phase. These include used petroleum, industrial fluids such as lubricants and paints, and damaged PV panels that can potentially contaminate the environment. 	<ul style="list-style-type: none"> Damaged PV panels will be collected by the PV supplier as part of their services for reuse as solar modules or as a different product. Industrial fluids and petroleum spills will be cleaned with spill kits which also details the management plan for the proper cleanup, collection, transport and offsite disposal of wastes. These wastes can be disposed to an off-site facility through accredited third party contractors. 	<ul style="list-style-type: none"> Documentation and recording of damaged, replaced PV panels and agency to which it has been given 	<ul style="list-style-type: none"> Plant head
13.	<ul style="list-style-type: none"> The Solar power plant has the potential for tourism, and therefore may attract local residents and outsiders to visit the facility. 	<ul style="list-style-type: none"> Serves as a positive education tool for large consumers for encouraging them to use solar appliances 	<ul style="list-style-type: none"> Communication material and displays 	<ul style="list-style-type: none"> Public relations incharge