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Environmental and Social Data Sheet

Overview

Project Name:	UZBEKISTAN SOLAR PV AUCTIONS
Project Number:	2021-0033
Country:	Uzbekistan
Project Description:	<i>The construction and operation of three independent solar PV plants totaling c. 897 MWac, located in Uzbekistan. Two of these projects are developed under the World Bank Group's Scaling Solar program, and the other project is developed under the Asian Development Bank (ADB)'s Uzbekistan Solar Program.</i>

EIA required: yes

Project included in Carbon Footprint Exercise¹: yes

(details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Environmental and Social Assessment

The project comprises the construction and operation of three solar PV plants and their ancillary facilities: two plants of 220 MWac each (Samarkand and Jizzakh) and one plant of c. 457 MWac (Sherabad), and includes connection to the public electricity network, owned and operated by the Uzbekistan Transmission System Operator (TSO). The total capacity of the three projects amounts to c. 897 MWac (1012 MWp). The overhead transmission lines are at 220 kV, with lengths of 4.5km for Samarakand, c. 15 km for Jizzakh and c. 50 km for Sherabad. The Samarkand project is located in the Katta Kurgan district (50km northwest of the city of Samarkand), the Jizzakh project is located in the Gallaorol district (23 km west of Jizzakh) and Sherabad is located in the Sherabad district (20 km southwest of the city of Sherabad).

The Samarkand and Jizzakh projects were tendered under the second Scaling Solar tender in the country. The Sherabad project was tendered under a similar program led by the ADB. The project benefitted from procurement advisory from the International Finance Corporation (IFC) under the Scaling Solar initiative of the World Bank Group for Samarkand and Jizzakh, and from the ADB under its solar program for Uzbekistan, including technical assistance for the preparation of the bidding process (technical requirements, E&S scoping, etc).

The approval process followed by the Bank for this project is executed in two stages (Stage I and Stage II).

¹ Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20,000 tonnes CO₂e/year absolute (gross) or 20,000 tonnes CO₂e/year relative (net) – both increases and savings.



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Environmental Assessment

If the plants were located within the EU, they would fall under Annex II of the EU EIA Directive 2011/92/EU as amended by Directive 2014/52/EU, leaving it to the competent authority to determine whether a full Environmental Impact Assessment ('EIA') is required. The transmission lines for Jizzakh and Samarkand would fall under Annex I and be subject to an EIA. In order to comply with the E&S Standards of the IFIs financing the project (including those of the EIB), Environmental and Social Impact Assessments (ESIAs) reports, including the outline of the Environmental and Social Monitoring and Management Plan (ESMMP), have been prepared for each plant and its grid connection. The documents are comprehensive and were developed using IFC Performance Standards as the benchmark throughout the process and documents. General quality of the ESIA reports, in terms of the impact assessment methodology, desk studies and field work conducted, is considered to be acceptable. In accordance with Uzbekistan EIA requirements, a separate national Environmental Impact Assessment (EIA) report was developed concurrently with the ESIA report required by the lenders. The national EIA report was submitted to and approved by the competent authority, which classified the three plants as category II "medium risk of environmental impact".

The PV plants are expected to generate acceptable impacts during both construction and operation phases. The schemes entail limited negative impacts mainly on landscape, soil and fauna. During the construction phase, main impacts are associated with the presence of machinery, vehicles, construction workers, and the erection of the PV plants infrastructures. The impacts relate to increase of dust and noise due to construction related activities, as well as increased traffic in the surrounding areas, soil erosion due to the loss of limited vegetation, and loss of habitats. During the operation phase, given the presence of the PV plants, connection infrastructures and other similar facilities in the surrounding area, the main impacts are related to loss and fragmentation of habitats, barrier effect, visual impacts and birds collision risk with the overhead transmission lines. The project will use dry (brush) cleaning for the cleaning of the panels during the operational phase, minimizing the use of water. The overall impact during construction and operation phases are considered to be acceptable.

Specific mitigation measures foreseen in the ESIA reports during construction and operation phases, vary per plant, but overall include:

- implementation of general prevention and mitigation measures during construction, in particular for dust and noise emissions, protection of soil and groundwater, traffic management, waste management;
- In relation to the risk of collision and electrocution of birds with the transmission line, mitigation measures based on the use of bird flight diverters
- Implementation of biodiversity monitoring and management programmes, including pre-construction surveys, revegetation, awareness training etc;

For Sherabad, a site selection process was undertaken by the Government of Uzbekistan, prior to the promoter securing the project, with support from international consultants as part of the preparation of the tender. The process considered technical, financial, environmental and social factors. The selected site has a longer grid connection than some other alternatives but was preferred due to its increased distance from designated areas for avian biodiversity, favourable topography and due to lower social impacts compared with alternative sites. For Samarkand and Jizzakh, the site selection process was undertaken by the Government of Uzbekistan, prior to the promoter securing the project. The selected sites largely avoided key E&S impacts due to the distances from designated biodiversity areas and avoidance of significant economic displacement. The predicted impacts can be mitigated, and the sites' location are not considered materially sub-optimal from an E&S perspective.



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The Jizzakh PV plant comprises a dedicated area of c. 562 ha. The land comprises sparsely vegetated areas or bare ground and is used as for livestock grazing. The site is not located in a protected area. No arable agriculture has been observed on site, potentially due to the lack of water sources for irrigation. The route of the overhead transmission line passes through agricultural land before crossing the Zarafshan river valley and reaching the existing substation. In certain areas and to the extent possible, the line will run parallel to existing transmission lines. The terrestrial ecology surveys carried out as part of the ESIA have identified the presence of the Central Asian tortoise (*Testudo horsfieldii*) within the project site (Vulnerable as per the IUCN Redlist). A total of 213 tortoises (0.38/ha) have been translocated to an area of similar habitat approximately 2 km North of the site, in accordance with regional government permitting requirements. The density is low compared to the areas supporting the population (>10 per ha) and the ESIA concludes that there is no reasonable likelihood that the plant area is of regional value for Central Asian Tortoise. There are two Important Bird Areas (IBAs) within a 30-40 km radius from the project site: Tuzkan Lake IBA² (approx. 36km to the north) and Dzhum-Dzhum IBA³ (approx. 25km to the south-east). No species listed as qualifying features of the Tuzkan Lake IBA were recorded during the ESIA field surveys, and the numbers recorded for the Dzhum-Dzhum IBA are unlikely to be significant of the IBA population. The ESIA indicates that further surveys confirmed that the Houbara bustard (Vulnerable as per IUCN) and the Sociable lapwing (Critically Endangered as per IUCN) were not observed and likely absent from the Project site (the site not being used as a major stop-over or flyway).

The Samarkand PV plant comprises a dedicated area of c. 438 ha. The site area is classified as rainfed agricultural land and was previously used for cultivation. The site is not located in a protected area. The route of the overhead transmission line passes through intensively cultivated agricultural landscape. The project is adjacent to several rural settlements in the Zarafshan river basin. The IBA Katta-Kurgan Reservoir is located 15km from Samarkand, but as per the project documentation, none of the species for which the IBA site was designated use the project site, with the exception of the potential for Asian houbara bustard, but site surveys confirmed that this specie was not observed and likely absent. Notable migratory species potentially using the flyway in the vicinity of the project area include sociable lapwing (Critically Endangered as per the IUCN Redlist). However, following consultation with local specialist, the ESIA report indicates that it was unlikely to be a stopover site for Sociable Lapwing during spring and autumn passage. This is also supported by the fact the Katakurgan IBA does not list this species as a biodiversity feature of the IBA. The central Asian tortoise is the single species of conservation concern that was recorded within the project site. However, its density at the site is very low, and is estimated to not exceed 0.1 individuals/ha (a total 52 tortoises were caught and relocated to the receptor area). Similarly to Jizzakh, there is no reasonable likelihood that the project area is of regional value for it.

The Sherabad PV plant comprises a dedicated area of c. 631 ha. The site is sparsely vegetated and is neither inhabited nor used for agriculture or cultivation. The Amudarya Floodlands IBA is located at c. 10 km south of the site, and is important for wintering and migratory waterbirds, but the project site does not contain any similar features that may attract such species. It is possible that birds fly over the proposed project site, however it is considered unlikely that birds regularly use habitat surrounding the project as stopover sites during migration. The biodiversity assessment undertaken for the project notes that the PV site could potentially support a number of reptile species and the marbled polecat, for which no loss is required to

² The Tuzkan Lake IBA supports globally threatened and near threatened species included on the IUCN Red List are: Dalmatian pelican (*Pelecanus crispus*), Pallas's fish eagle (*Haliaeetus leucoryphus*) and cinereous vulture (*Aegypius monachus*), ferruginous duck (*Aythya nyroca*) and Asian dowitcher (*Limnodromus semipalmatus*) occurring on migration

³ The Dzhum-Dzhum IBA supports Important bird species including cinereous vulture (*Aegypius monachus*) and lammergeier (*Gypaetus barbatus*).



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be achieved through a combination of mitigation measures including pre-construction translocation, adapted fencing and offset of lost habitat through restoration of the available modified habitat within the PV site. The Khaudag Ridge area at the eastern end of the transmission line has been classified as critical habitat for a reptile species, the Tajikistan Toadhead Agama, however permanent impacts will be limited to areas affected by tower footings and a net gain of the species will be achieved through habitat restoration in this area.

The ESIA's indicate that none of the proposed project site is located on a major bottleneck or geographical feature that would concentrate migrating bird species and does not contain features which would attract migrating or over-wintering birds. However, for both Jizzakh and Samarkand, the sites and transmission lines are located in proximity to areas which are important wintering habitat for Great Bustards (Vulnerable as per the IUCN Redlist) during cold winters. As outlined in the ESIA's, the habitats on the PV sites or transmission lines routes are unlikely to be of significant importance for this species. Nevertheless, since individuals could fly over the overhead lines, the airspaces occupied by the lines are classified as critical habitat on a pre-cautionary basis, however there is a low likelihood that the lines would cause significant impacts on this population. Since bird diverters are not fully effective for the Great Bustard, further measures focussing on a reduction of poaching (currently identified as the biggest threat to this species) will be developed to compensate for any collision impacts and to ensure a net gain.

For all three sites, the promoter will be required to develop and disclose a biodiversity action plan to elaborate on the mitigation strategies and monitoring of measures proposed in the ESIA, to demonstrate the no loss and net gain where applicable.

The project will also have positive environmental impacts as solar generated electricity will displace a significant volume of gaseous pollutants such as particulate matter, SO₂, NO_X and CO₂, compared with thermal generation. The project is also expected to increase the country's electricity supply, reduce load shedding, diversify the country's energy mix away from hydro and gas, and thus avoid, or at least reduce, the need for fossil fuel generation in the country.

The project is fully aligned to the goals and principles of the Paris Agreement as set out in the Bank's Climate Bank Roadmap and the Energy Lending Policy.

EIB Carbon Footprint Exercise

Solar PV power plant will not generate any absolute CO₂ emissions. In accordance with the Bank's current Carbon Footprint methodology, it is calculated that based on the avoidance of electricity generation from a combination of existing and new power plants in Uzbekistan (combined margin for intermittent generation), the total relative effect of the project is a net annual reduction in CO₂ equivalent emissions by 1194 kt CO₂-e per annum.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

EIB Paris Alignment for Counterparties (PATH) Framework

The borrower is in scope, being an SPV fully owned by Masdar. Masdar is assessed as the head of group and is screened out of the PATH framework for low carbon aspects, because it is not considered high emitting. It is screened in for resilience aspects and meets the formal requirements of the PATH framework.



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Social Assessment, where applicable

None of the plants required or will require any physical resettlement. The plants involve however some economic displacements, related to e.g. cattle grazing, access to land and temporary loss of crops during the construction (access roads, etc) and operation (permanent structure, restriction of use, etc). Some past economic resettlements have also been identified (see below). For each plant and associated infrastructure, a Livelihood Restoration Plan (LRP) has been prepared and will be subject to finalisation in consultation with affected people. The routes for the transmission lines are designed in consultation with affected leaseholders in order to avoid structures, high value crops or other social receptors where possible. All the land for the PV plants belongs to the Government land reserve. For each project, the promoter will also develop and implement a community development plan in consultation with the local communities that aims to provide a range of benefits, particularly to communities subject to land access restrictions to offset any residual impacts.

For Jizzakh, the boundaries were set to avoid sensitive areas in the communities (e.g., burial grounds). The land is currently used by community herders to graze sheep, goats and cattle or is used as an access to higher grazing areas. One community herder accesses grazing areas by crossing the site and will have to use longer alternative routes. Compensation for temporary and permanent impacts to 7 leaseholders along the line will also be provided (39 persons).

For Samarkand, the boundaries were optimised to use the available space excluding legally farmed land at the north end of the project Site, the northern portions of the site with uneven topography and deep gullies, and the cemetery. Five leaseholders were affected by historical economic resettlement when land was acquired by the State and allocated for its solar development at the beginning of 2020, before the tender and therefore before the involvement of the promoter and the lenders. These historic leaseholders used their land to primarily graze livestock (cows and sheep) and grow crops and have already experienced significant project impacts when their leaseholds were terminated or reduced to make way for the project. An audit of the historical land acquisition has identified gaps against Lenders' standards which will be addressed in the form of additional compensation for affected agricultural assets and provision of livelihood restoration measures including a specific land enhancement grant and technical assistance to improve the capacity of leaseholders remaining land. The site also provides relatively high-quality grazing and is used as a herding area by 42 herders (35 community and seven professional herders) and as a supply of vegetation used for winter livestock feed. 218 individuals were recorded as part of the 42 herder households. Livelihood restoration measures proposed include securing and enhancing alternative community grazing land, maintaining access to the project site to continue feed collection and development of feed storage facilities as well as specific measures for affected herders. Compensation for temporary and permanent impacts to 4 leaseholders along the transmission line will also be provided. A cemetery and mosque are located adjacent to the PV site; however, access will remain available during construction and operation and consultations have been conducted and will continue with users and the local authorities.

For Sherabad, economic displacement has been reduced since the PV site largely avoids agricultural lands. The area provides a relatively low-quality grazing area for livestock from three adjacent communities, including Two leaseholders who have leaseholds in the PV plant area that they were not using (but which they were planning to use for herding livestock and potentially agriculture). Land used by one informal user has largely been avoided by adjustments to the site boundary, however affected agricultural assets will be compensated. The project boundaries have also been adjusted to avoid a cemetery, and access to it will be maintained. It is also reported that herders occasionally use the project area during the spring months (but the project area is of inferior quality to the surrounding grazing land of which there



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is an abundant amount). Compensation for temporary and permanent impacts will be provided to 40 households and a cotton farm business which employs 18 households (270 persons in total).

Beyond the economic resettlements, the project's main social risks and impacts relate to traffic, increased presence of workers and labour risks. Increased traffic associated with the project, in particular during the construction phase, may pose some safety risks to surrounding communities. The development and implementation of a traffic management plan and of a security management plan is expected to reduce any community risks linked to traffic and security aspects. Workforce will either be accommodated in large population centres or in temporary labour camp as necessary. All accommodation will be managed in accordance with a workers accommodation plan (which will include an assessment of options to housework force, including impacts on community if relevant), and a local hiring plan will be developed to maximise employment opportunities for local communities. In addition, measures to mitigate potential influx of people and gender-based violence and harassment risks will be implemented. Adequate EHS (environment, health and safety) provisions will be included in the EPC and O&M contracts and the contracts with their sub-contractors. These provisions will include as a minimum: compliance with labour legislation and lenders E&S Standards, terms of OHS (occupational health and safety) management, and access to a workers' grievance mechanism including review and response to anonymous complaints. The project will also develop specific measures aimed at increasing the use of local workforce.

Recent reports are pointing out the possibility of use of forced labour in the supply chain of solar PV panels. The promoter has issued a Modern Slavery Statement and has a Suppliers' Code of Conduct in place, rejecting the use of forced labour and foreseeing corresponding due diligence mechanisms. The project shall also comply with the EIB Group Environmental and Social Policy and the EIB Environmental and Social Standards, which foresee a zero tolerance of forced labour. The promoter has used its reasonable efforts to assess and address the labour risks associated with the supply of the PV panels for the project by performing an enhanced due diligence on its short-listed suppliers (including by obtaining supply chain mappings).

Public Consultation and Stakeholder Engagement

Public consultation and stakeholder engagement started in 2020 during the preparation of the project and continued in 2021 and 2022 for the preparation of the ESIA's and associated studies (including the LRPs). The ESIA disclosure phases have been carried out in February 2023.

The project will further develop and implement a Stakeholder Engagement Plans (SEP), including a Grievance Redress Mechanisms (GRMs), to ensure the continuous and effective engagement of affected and interested parties, in particular surrounding communities.

Other Environmental and Social Aspects

The promoter is committed to sustainable development as highlighted in its Annual Sustainability Report, which indicates that it has in place a QHSE Policy statement and OHS Policy statement and, and that it is also certified for ISO 45001:2018. The promoter has experience in developing, building and operating similar projects in the country, and is used to International Finance Institutions E&S Standards. A lenders' advisor will also support the lenders in reviewing the E&S aspects of the project.

An Environmental and Social Management System (ESMS) for the construction and operational phases will be developed and implemented for the project. The ESMS will outline the set of management processes and procedures, including the roles and responsibilities and



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measures to be developed/taken by the various actors for duly addressing any project-related environmental and social risks and impacts.

Conclusions and Recommendations

Following the review of the Bank, it is concluded that this operation is acceptable to the Bank from an environmental and social point of view under the following conditions:

- The project's financing contract will include an Environmental and Social Action Plan (ESAP) that will provide the subsequent measures and actions required in line with the Bank's Environmental and Social Standards. The promoter shall ensure that the construction contractors have the resources and staff in place in a timely manner so as to be able to implement its obligations under the ESAP.
- The project will develop an Environmental and Social Management System and its associated plans in line with ESIA's (e.g., traffic management plan, waste management plan, biodiversity management plan, labour management plan, livelihood restoration plan, etc) for each plant
- The promoter will submit to the Bank annual E&S performance reporting (including on ESAP implementation, SEP implementation and resolution of grievance, etc). The Bank will reserve the right to request that the review of the ESAP / ESMS implementation be undertaken by a suitable third party, if deemed necessary by the Bank.

The finance contract will also contain an undertaking that the project will be implemented and operated in compliance with EIB's Environmental and Social Standards, including specific representations on Solar PV supply chain forced labour issue, as well as being in line with the measures and actions outlined in the environmental and social documentation⁴ and the environmental permits.

⁴ ESIA's, ESMP's, LRP's, SEP's, ESAP's