Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: November 28, 2024 | Report No: 193751-UZ

BASIC INFORMATION

Proposed Development

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Uzbekistan	P181627	Uzbekistan: Khorezm Solar IPP Project	ECARES MPA, P176375
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
Europe and Central Asia	December 13, 2024	December 13, 2024	Energy & Extractives
Lending Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing/Guarantees	Republic of Uzbekistan	Ministry of Economy and Finance	

Objective(s)

Project Development Objective is to increase private sector led renewable energy supply in Uzbekistan.

Components

IBRD PAYMENT GUARANTEE

Financing (in USD Million)

Financing Source	Amount
Total Project Cost	80.1
Equity financing	35.6
USD-denominated Long-Term Debt	44.5
IBRD Guarantee	3.50

B. Introduction and Context

Country Context

1. **The Government of Uzbekistan (GoU) has recently announced the "Uzbekistan – 2030" Strategy",**[1] which aims to reduce the poverty rate by half by 2026 and enable the country to reach upper middle-income status by 2030. With more than 37 million people as of April 2024, Uzbekistan is the most populous country in Central Asia. Combined with its proximity to some of the largest and most rapidly growing economies in the world, this presents an opportunity for the country to evolve from its reliance on natural resource use and minerals extraction, and become a hub for economic growth, trade and energy. Despite global uncertainties and challenges, structural reforms and effective economic management have thus far helped maintain macroeconomic stability and an environment to further accelerate market transition through the next phase of structural reforms. Over the past decade, Uzbekistan has maintained high and stable economic growth at 5.8 percent on average. Reforms to liberalize trade, exchange rate, domestic prices and the tax system have supported Uzbekistan's continued economic growth and the reduction of resource misallocations in the economy. Uzbekistan's economy grew by 5.5 percent in 2023 and is aligned with Uzbekistan's goal of reaching upper middle-income status by 2030.

2. **The reform efforts must also address the growing need to tackle climate change for the country to achieve a sustainable development path.** Uzbekistan has demonstrated increased commitment to climate initiatives by presenting its updated Nationally Determined Contributions (NDCs) with a target to reduce greenhouse gas (GHG) emissions per unit of GDP by 35 percent by 2030 compared with the 2010 levels (against the previous target of 10 percent). To this end, a Presidential Resolution dated October 5, 2019, approved the Strategy for Uzbekistan's Transition to a Green Economy over the period of 2019–2030. Additionally, in May 2022, Uzbekistan joined the Global Methane Pledge initiative to achieve a collective goal of reducing methane emissions by at least 30 percent by 2030 compared with the 2020 level.

Sectoral and Institutional Context

3. **Uzbekistan remains one of the most energy-intensive economies in the world.** Energy use is largely based on fossil fuels, although the country has significant renewable energy (RE) potential in solar and wind. Natural gas, partly supplied by a depleting domestic production, constitutes more than 80 percent of total primary energy consumption and around 70 percent of the power mix. These characteristics have contributed to Uzbekistan being one of the most energy-intensive economies globally. Indeed, GDP energy intensity is about 50 percent higher than that of neighboring Kazakhstan and around three times higher than that of Türkiye. While the country accounts for around 0.3 percent of global emissions, its energy sector accounts for three-quarters of the country's total GHG emissions. The energy system is also characterized by high losses and low reliability of supply, with transmission and distribution technical losses estimated at around 15 percent in net power generation and around 20 percent in domestic gas production. This level is almost twice as high as electricity losses in high-income and some middle-income countries and in its current condition the energy system cannot sustain the planned high penetration of RE.

[1] https://gov.uz/en/pages/2030_strategy

4. **The demand for electricity is expected to continue growing steadily in conjunction with economic growth, development trends, and changes in the structure of the national economy.** The demand for electricity is expected to almost double to above 130 TWh in 2030. The industrial sector currently represents the largest customer segment (41 percent), followed by residential (24 percent), agriculture (21 percent), commercial (11 percent), and others. However, the growing demand for electrical power was not satisfied in full, with unmet demand averaging at about 8 percent of demand. As a result, the country experienced severe energy supply shortages during the winters 2022-2023.

5. **With depleting domestic gas production and need for imports, the RE scale-up is the centerpiece of the GoU plans for the energy sector reform, security of supply and power sector carbon-neutrality by 2050.** In this regard, with support from the World Bank Group (WBG), the GoU has developed an Energy Sector Decarbonization Pathways Assessment Study suggesting that a significant expansion of renewables capacity between 2022 and 2050 is part of the least-cost pathway for power sector decarbonization in Uzbekistan. Renewables, including hydropower, are expected to account for 95 percent of the electricity generation in 2050, in the Decarbonization 2050 scenario. Energy storage, mainly Battery Energy Storage System (BESS), hydropower, and efficient thermal power plants, including plants with carbon capture and storage (CCS) and running on hydrogen in later years, support the scaling-up of renewables from 2022 to 2050. In this context, the proposed Project will provide a replicable and commercially viable solar project as part of the country's 2050 carbon neutrality target, while further building local capacity and attracting a new investor and developer, Voltalia, in the Uzbekistan energy market.

6. **The next wave of energy sector reforms includes acceleration of solar and wind energy scale-up,** further enhancing demand-side energy efficiency (EE), establishment of an energy sector regulator initiating the separation of policy and regulatory functions from the Ministry of Energy (MoE) established in 2019 to consolidate related functions, unbundling of the power transmission company to separate its transmission and single buyer functions, transitioning towards a competitive market, and carrying out of subsidy reforms with the objective to achieve end-tariff cost recovery by the end of 2026 . EE is also part of the ambitious sector reforms in Uzbekistan. The GoU declared its commitment to improve EE of the overall economy, including reduction of GDP energy intensity by 50 percent by 2030 (with 2015 as the baseline year), two-fold increase in EE and decrease in carbon intensity per unit of GDP by 35 percent from the level of 2010.

7. **The proposed IBRD Guarantee to Uzbekistan – Khorezm Solar IPP (Project) represents Phase 3 of the Europe and Central Asia Renewable Energy Scale-Up (ECARES) Program using the Multiphase Programmatic Approach (MPA)**, supporting several countries across Europe and Central Asia (ECA) region in accelerating their RE transition and achieving scale and impact through private investment, while fostering regional knowledge sharing. Fossil fuels (natural gas, oil and coal) still make up more than 80 percent of the region's energy mix, including Uzbekistan, and net import dependency is very high, at half or more of total energy supply in nine countries, The ECARES MPA hence seeks to create the enabling conditions and remove the barriers to unleash private capital for RE at scale in the ECA region, which requires the concerted efforts of the World Bank (WB), International Finance Corporation (IFC) and Multilateral Investment Guarantee Agency (MIGA), and thus position the region towards a more sustainable and energy secure future. In this context, the proposed Project is the fourth WB/IBRD

guarantee operation in a series under the WBG's solar program to support the development of 1,000 MW of large-scale solar energy deployment through private sector participation in Uzbekistan.

8. **The proposed Project is consistent with the new WBG Country Partnership Framework (CPF) for Uzbekistan (FY2022–FY2026).** Specifically, the Project contributes to the Objectives 1.1 Expand competitive access to market, 1.2 Enable private sector growth and investment, and 1.4 Improve the infrastructure for competitiveness and connectivity under High-Level Outcome 1 (HLO1), and Objective 3.1 Decarbonization and the greener development of industry and the economy and Objective 3.2 More efficient use of natural resources under HLO3. Moreover, the Project will contribute to the achievement of several CPF objectives indicators, including: (i) estimated US$84 million of private sector investment in RE projects enabled; (ii) 100 MW of additional generation capacity by private sector with WB support; and (iii) increasing the share of RE supported by WB in power generation mix to 4.3 percent. The Project is not only attracting the private sector capital, but also a crucial driver of integrated green, resilient, and inclusive development in Uzbekistan. The proposed Project will also contribute to the WB Climate Change Action Plan commitment to increase climate financing to 35 percent of total financing and the GoU's updated NDC target. Deployment of renewable energies will be among the key drivers facilitating the climate targets. Furthermore, the Project will leverage private and commercial financing to meet huge financing needs for the clean energy transition.

9. **The inclusion of the proposed IBRD Guarantee into the ECARES Program as Phase 3 serves multiple purposes**. First, the ECARES Program provides a framework that can facilitate a longer-term engagement between Uzbekistan and the WB around RE scale-up, which is crucial given the magnitude of the challenge lying ahead. Second, the ECARES Program provides a partnership platform for bilateral donors, climate funds, and multilateral development agencies for streamlining concessional co-financing and harmonizing preparation and implementation approaches, which can help Uzbekistan attract further private capital for RE scale-up. Third, the MPA learning agenda encourages participating countries and institutions to learn from each other and collaborate to disseminate new knowledge.

C. Proposed Development Objective(s)

10. **The MPA Program Development Objective (PrDO) is to increase renewable energy capacity in participating countries of the ECA region.** There are no changes in the PrDO and indicators in the ECARES Program MPA as defined under its Phase 1:

(a) Renewable energy capacity enabled (GW)[2];
(b) Projected lifetime net GHG emissions from results achieved (tCO2e).

11. **The proposed Project Development Objective (PDO)** is to increase private sector led renewable energy supply in Uzbekistan.

Key Results

12. **The proposed PDO indicators** for the Project are:

[2] This indicator measures in gigawatts (GW) the generation capacity of RE enabled reflecting the WB support to investments in enabling infrastructure that are expected to accelerate the expansion of RE capacity. It is aligned with WBG Scorecard.

(a) Renewable energy capacity enabled (GW);
(b) Electricity supplied by Solar PV plant into the grid (renewable/solar, GWh);
(c) Private capital mobilized (equity/debt, US$); and
(d) Projected lifetime net GHG emissions from results achieved (tCO2e).

13. **The Project's intermediate indicators** are:
(a) Physical implementation progress in solar PV plant (percentage); and
(b) Solar PV plant commissioning completed (Y/N).

D. Project Description

14. **The Khorezm Solar IPP Project component comprises a US$3.5 million IBRD payment guarantee** to implement the 100 MW solar power plant with a 3.2 km transmission line to connect to the grid. The Khorezm site covers a 177-hectare area of land located in the Tuprokkala District in the region of Khorezm. The expected RE generation over the lifetime of the Project averages 240 GWh/year, leading to the avoidance of 23.1 thousand tons of GHG emissions per year on average.

15. **The 100 MW solar power plant will be supported by the leading development finance institutions, including EBRD**. The proposed PV plant will be built in a single phase, over a construction period of up 12 months. The technical lifespan of the Project is expected to be 25-30 years, in line with international standards. The Project will connect to the national electricity network via a new 3.2 km 220 kV overhead transmission line (OTL) to be built by Voltalia to the existing Sarimay substation, located about 3 km North-East of the site.

16. **The Project contributes to Uzbekistan's climate change strategies and is aligned with the goals of the Paris Agreement guidelines on both mitigation and adaptation.** As per the latest NDC in 2021, Uzbekistan committed to reducing 35 percent of its GHG emissions by 2030. Among the key mitigation actions identified in 2021, NDC is to increase the share of RE sources to 30 percent of total power generation capacity. The achievement of this long-term goal will be with the support of international organizations, gaining access to advanced energy-saving and environmentally friendly technologies, climate finance resources. On mitigation, the underlying technologies – solar photovoltaic generation is categorized as universally aligned. The proposed operation's compliance with adaptation is not expected to pose a significant risk for Paris Alignment. The country does not yet have National Adaptation Plan, nevertheless, the adaptation priorities identified in Uzbekistan's National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) include support to the understanding of climate change impacts across key sectors, including energy. The main component under this project has gone through a climate and disaster risk assessment and was found to be moderately affected by potential climate change related hazards, including frequent heat waves, flooding, droughts, wildfires that may threaten water supply service. However, the risks were reduced to acceptable levels by taking measures such as choosing project equipment designed to withstand heatwaves. In addition, the selected project site is surrounded by parse vegetation to prevent the spread of potential wildfires. Thanks to these measures, residual risks of climate change related hazards have become low.

17. **The project has been prepared applying the Operational Policy 4.03 Performance Standards for Private Sector Activities.** The World Bank, in collaboration with EBRD, has conducted the due diligence and review of the Environmental and Social Impact Assessment (ESIA) and other E&S instruments. An Appraisal ESRS has been prepared for this project, which includes an Environmental and Social Action Plan

(ESAP). The ESAP was developed to mitigate E&S risks which supplements mitigation measures identified via the project ESIA. The ESRS was disclosed at WB's website on November 25, 2024.

E. Implementation

18. **The Khorezm Solar IPP Project Company namely Sarimay Foreign Enterprise LLC (Project Company) is the special purpose vehicle (SPV) established by the IPP investor Voltalia.** It is incorporated and registered in Uzbekistan to develop, finance, build, own, operate, and maintain the Khorezm Solar IPP Project. Voltalia will bring in long tenured and experienced staff to the board and management of the SPV. The construction and operation of the solar PV power plant at the Khorezm site will be implemented through an engineering, procurement, and construction (EPC) contract with China Machinery Engineering Corporation (CMEC) and an operation and maintenance (O&M) contract with a Voltalia O&M entity.

19. **For the proposed Project, the roles and responsibilities of the GoU (through its agencies and state-owned enterprises (SOEs)) and of the Governor (Khokimiyat) of the Khorezm region is described below.** These arrangements follow tested implementation arrangements from previous IPP transactions.

(a) The Ministry of Economy and Finance (MoEF) is the implementing agency for the project. It represents the Republic of Uzbekistan under the Government Support Agreement (GSA) signed with the Project Company and will also enter into the GSA Direct Agreement with the Project lenders. MoEF is the GoU agency responsible for developing long and medium-term socio-economic priorities for the country; management of key functions including budget, taxation and custom tariffs, accounting and financial reporting and price setting, as well as ensuring that macroeconomic indicators are achieved for GoU; and project coordination with IFIs and the GoU.

(b) The MoEF, on behalf of the Republic of Uzbekistan, will enter into an Indemnity Agreement with IBRD (by which the Republic of Uzbekistan commits to reimburse IBRD for any payment under the proposed guarantees in case of a call on the guarantees). The MoEF has been involved in the preparation of the Khorezm Solar IPP, particularly in relation to the fiscal impact of the transaction and the GoU financial obligations arising out of the project contracts (such as early-termination payments pursuant to the GSA signed by MoEF). The MoE provides policy direction on sector development, and on planning and procurement of power-generation capacities.

(c) NEGU, as the single purchaser of electricity from generation companies, including IPPs, is the off taker for the project's electricity and has entered into PPA with the Project Company. An independent engineer will be jointly arranged by NEGU and the Project Company to check the plant performance and monitor compliance with technical specifications under the PPA.

(d) The Governor (Khokimiyat) of the Khorezm Region is the party to the Land Lease Agreement with Voltalia in relation to the long-term leases (for a duration equal to the terms of the PPAs and an additional six months) of the project site.

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