



## 1. Project Data

<b>Project ID</b> P174322	<b>Project Name</b> Uzbekistan Scaling Solar 2 IPP		
<b>Country</b> Uzbekistan	<b>Practice Area(Lead)</b> Energy & Extractives		
<b>L/C/TF Number(s)</b> IBRD-G3930	<b>Closing Date (Original)</b> 31-Mar-2025	<b>Total Project Cost (USD)</b> 0.00	
<b>Bank Approval Date</b> 07-Mar-2023	<b>Closing Date (Actual)</b> 01-Jul-2025		
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>	
Original Commitment	12,000,000.00	0.00	
Revised Commitment	9,997,000.00	0.00	
Actual	0.00	0.00	
<b>Prepared by</b> Ihsan Kaler Hurcan	<b>Reviewed by</b> Avjeet Singh	<b>ICR Review Coordinator</b> Avjeet Singh	<b>Group</b> IEGSD (Unit 4)

## 2. Project Objectives and Components

### a. Objectives

According to the International Bank for Reconstruction and Development (IBRD) Indemnity Agreements (p.6) dated May 31, 2023, and the Project Appraisal Document (p.17), the project objective was “to increase renewable energy generation through private-sector participation in Uzbekistan.”

### b. Were the project objectives/key associated outcome targets revised during implementation?



No

**c. Will a split evaluation be undertaken?**

No

**d. Components**

The project was a World Bank guarantee operation. The underlying investment supported by this World Bank operation consisted of the financing, construction, and operation of two privately-developed utility-scale solar photovoltaic plants (each 220 MW) in the Jizzakh and Samarkand regions of Uzbekistan. A private sponsor (Masdar) was to deliver these plants using private equity and long-term commercial and development-finance debt and sell the electricity these plants were to generate to the National Electric Grid of Uzbekistan (NEGU) under a 25-year power purchase agreement (PPA). The World Bank was not expected to finance any part of the physical investment.

Instead, the Bank's involvement was to be exclusively through the provision payment guarantees covering up to three months of NEGU's PPA payment obligations. In this guarantee operation, the "project" is defined by the scope of the Bank's financial instrument, namely, the contingent liability the Bank extends to mitigate government or offtaker-related risks. Because the Bank provides no investment financing, the guarantee itself constitutes the Bank-financed activity and therefore forms the sole component of the project.

**Component 1. IBRD Payment Guarantee** (*Appraisal estimate: US\$12 million; actual US\$10 million*)

This component was to provide two US\$6 million payment guarantees to backstop NEGU's PPA payment obligations for the Jizzakh and Samarkand 220-MW solar independent power producers (IPPs). The expected outcomes were the bankability of the IPP investments enhanced, investor risk perception reduced, financial close for the two solar power plants achieved, private capital mobilized, and 440 MW solar generation capacity constructed.

**e. Comments on Project Cost, Financing, Borrower Contribution, and Dates**

**IBRD Guarantee:** At appraisal, the World Bank approved two IBRD payment guarantees totaling US\$12 million (US\$6 million per solar plant) to backstop up to three months of payment obligations under the Letters of Credit (L/C) associated with the Jizzakh and Samarkand PPAs. This structure was intended to enhance the creditworthiness of the off-taker and support financial close for the two 220-MW privately financed solar photovoltaic plants.

By project closing, the ICR (p. ii) reports that the final guarantee amount was revised downward to about US\$10 million. The reduction from the originally approved US\$12 million reflected a decline in the total investment cost relative to appraisal estimates and the resulting adjustment in risk-mitigation needs, rather than implementation shortcomings (ICR, p. 16). No calls were made on the guarantee during the implementation period.

**Underlying Private Investment Cost and Financing:** The relevant project costs pertain to the underlying private investment in developing, constructing, and operating the two solar power plants. At appraisal, the total investment cost for the 440-MW solar PV portfolio was estimated at US\$408 million. According to the ICR (p.16), the actual investment cost at closing was US\$360.3 million, reflecting cost optimizations achieved by the private sponsor despite global supply-chain constraints, increased engineering-



procurement-construction (EPC) and materials costs, and logistics bottlenecks. The investment was financed entirely through private and development finance institution sources, consisting of US\$148.5 million in equity provided by Masdar and US\$211.8 million in debt from Asian Development Bank, European bank for Reconstruction and Development, Asian Infrastructure Investment Bank, and European Investment Bank.

**Key Dates:** The World Bank Board of Directors approved the guarantee operation on March 7, 2023, and the guarantee-related legal agreements were signed on May 31, 2023. The guarantees became effective on November 1, 2023, upon satisfaction of the conditions tied to the issuance of the L/Cs. The operation retained its original closing date of July 1, 2025, as established at appraisal. While the ICR closing date marks the end of implementation reporting, the contractual arrangements underpinning the IPPs, including long-term PPAs, will continue beyond project closing.

### 3. Relevance of Objectives

#### Rationale

The project's objective was highly aligned with the World Bank's Country Partnership Framework (CPF) for Uzbekistan FY2022–2026, which prioritizes private-sector-led growth and greener development pathways. The objective directly supported High Level Objective (HLO) 1 (Increased private-sector employment) through Objective 1.2 on enabling private-sector growth and investment, and it contributed to HLO 3 (Improved livelihoods and resilience through greener growth) under Objective 3.1 on decarbonization and Objective 3.2 on efficient use of natural resources. The development problem was clearly identified: Uzbekistan faced acute dependence on natural gas, rising electricity demand, constrained public financing, and an urgent need to mobilize private capital for large-scale renewable energy. The guarantee instrument was to address this problem by de-risking the off-taker's payment obligations and enabling long-term private financing for grid-connected solar generation, an area where market failures (high perceived credit risk, limited track record of IPPs, and evolving sector reforms) hindered investment. The objective was therefore highly aligned with the World Bank strategy and logically connected to the role of IBRD guarantees in unlocking private capital and supporting the country's clean-energy transition. It also appropriately reflected what the Bank sought to influence through a small, well-targeted guarantee instrument in a reforming energy sector.

The project objectives were also highly relevant to Uzbekistan's development priorities and sectoral context. At the time of appraisal, Uzbekistan had committed to expanding renewable capacity to 25,000 MW by 2030, reducing dependence on natural gas, and improving energy security, which were articulated in the Uzbekistan 2030 Strategy and the Green Economy Strategy. The project objective was outcome-oriented and appropriately pitched for the development status of the country, focusing on increased renewable generation and private participation rather than sector-wide reform or broad environmental goals that would have exceeded what a guarantee operation could reasonably influence. Given the country's early stage of renewable deployment (only 1 percent solar generation in 2023) and the limited track record of bankable public-private partnerships (PPPs), mobilizing private investment for two utility-scale IPPs represented a realistic yet meaningful contribution to Uzbekistan's development trajectory.

The project also benefitted from prior World Bank sector experience. The operation followed the successful Scaling Solar 1 IPP (Navoi 100 MW), which had introduced the country's first competitively tendered solar



IPP supported by an IBRD guarantee and International Finance Corporation (IFC) financing. That earlier experience demonstrated the viability of the Scaling Solar framework, helped standardize risk allocation, and established an institutional and regulatory foundation for subsequent projects. The Bank's accumulated knowledge in structuring guarantees, supervising PPA-linked security arrangements, and coordinating with IFC Advisory directly informed this operation's design. The project objective remained appropriately ambitious given the Bank's growing, but still relatively recent experience in supporting Uzbekistan's renewable IPPs, making the objectives both relevant and achievable within a maturing but still evolving sectoral environment.

Overall, the Relevance of Objectives is rated High. The objective was fully aligned with the World Bank's CPF for Uzbekistan FY2022–2026, supporting both private-sector–driven growth and the green-transition agenda. The objective was outcome-oriented, realistic, and well calibrated to the country's stage of sector reforms. It also benefited from strong continuity with the Bank's prior experience in the Scaling Solar 1 IPP, which provided a credible institutional and transactional foundation for this second-phase guarantee operation.

## Rating

High

## 4. Achievement of Objectives (Efficacy)

### OBJECTIVE 1

#### Objective

To increase renewable energy generation through private-sector participation.

#### Rationale

##### Theory of Change

The project was prepared against the backdrop of a competitively procured transaction in which a private sponsor had already been selected and PPAs and Investment Agreements had been signed prior to Board approval. The PAD treated these contractual arrangements as preconditions for the guarantee operation rather than its outputs. Within this context, the World Bank's intervention focused on addressing residual off-taker payment risk that remained a binding constraint to achieving financial close despite the completion of procurement.

The core input was the provision of two IBRD payment guarantees backing L/Cs issued under the PPAs. This input was expected to lead to the issuance of IBRD-guaranteed L/Cs, which constituted the project's direct output. This output, in turn, was expected to enable financial close (by mitigating the off-taker payment risk faced by private developers and lenders), private capital mobilization, construction and commissioning of the solar plants, and the onset of solar electricity generation. The broader development effect (beyond the project's results chain) was to demonstrate a scalable, replicable framework for renewable IPPs in



Uzbekistan, helping advance the country's transition toward a more diversified, cleaner, and privately financed power sector.

Underlying the ToC were the following critical assumptions: (a) the guarantee would sufficiently mitigate off-taker risk to secure financing; (b) the government would maintain policy continuity and support sector reforms; (c) global supply-chain disruptions would not critically impede construction; and (d) NEGU would remain capable of honoring PPA obligations. External risks (such as tariff delays, market restructuring, and global EPC cost inflation) were recognized but judged manageable at appraisal.

Overall, the causal chain from the project's inputs and direct output to the expected outcomes was valid and direct, and the achievement of the project objective was expected to be attributable to the issuance of the World Bank guarantees. At appraisal, it was expected that without the IBRD payment guarantees, the projects would have faced significant challenges in reaching financial close due to elevated off-taker payment risk.

### Why the Project Objective Should Not Be Parsed

The project objective should not be parsed into separate objectives because its formulation reflects a single, integrated development outcome rather than multiple independent aims. The wording "to increase renewable energy generation through private-sector participation in Uzbekistan" uses the phrase "through private-sector participation" to describe the causal pathway by which the main outcome is expected to be achieved, not to introduce an additional objective. Under Bank guidance, such phrasing ("through," "by," "via") denotes an instrumental modality rather than a standalone objective. While private-sector participation is measured through indicators such as private capital mobilization, these indicators represent outcome elements linked to the same objective, not separate goals. Accordingly, project's efficacy is appropriately assessed by examining both outcome dimensions under a single objective rather than treating them as distinct objectives.

### Outputs

- **Issuance of IBRD-guaranteed Letters of Credit (L/Cs) by Natixis.** This was the project's sole direct output attributable to the World Bank intervention. The Guarantee Agreement, Indemnity Agreement, and L/C Agreement were executed and became effective on November 1, 2023, enabling Natixis to issue two standby L/Cs (one for each solar IPP) backstopped by the IBRD payment guarantees. The issuance of these L/Cs reflected the completion of all conditions precedent, including finalized project agreements, government approvals, and establishment of the reimbursement framework. The guarantee allowed Natixis, acting as the L/C Issuing Bank, to commit to providing three months of payment security to the project companies, something lenders required before they would finalize and release long-term debt financing. Through this process, the World Bank's guarantee directly produced the payment-security instrument that underpinned the projects' bankability and enabled subsequent steps, i.e., financial close, EPC mobilization, and commercial operation.

### Outcomes

- **Financial close achieved for both IPPs (Samarkand and Jizzakh).** The issuance of the IBRD-guaranteed L/Cs enabled lenders to finalize commitments and disbursement arrangements. Financial close was reached on November 1, 2023, after the guarantees became effective, resolving lenders' concerns over off-taker payment risk and unlocking long-term financing.



- **Mobilization of private capital and debt.** The guarantee-backed payment-security structure catalyzed US\$148.5 million private equity against the appraisal target of US\$205.0 million. This reflects the role of the guarantee in crowding in private investment that would likely not have materialized under the same terms without the Bank's risk mitigation. Private capital mobilized fell below the appraisal target because total project costs were lower than initially estimated, reducing the amount of equity and debt required rather than reflecting implementation shortcomings.
- **Construction and completion of 440 MW of solar PV capacity.** With financing secured, Masdar completed construction of the two 220 MW plants, supported by EPC contractors and ongoing lender supervision. This physical completion represents the core intermediate outcome necessary to achieve the project objective of increasing renewable energy generation.
- **Early generation, Provisional Acceptance Certificate (PAC), and Commercial Operation Date (COD) of both plants.** Both sites began early generation in February 2024; Samarkand reached PAC on June 8, 2024, Jizzakh on November 8, 2024, and both plants achieved COD on September 27, 2025. This progression reflects successful commissioning and operational readiness, following implementation enabled by the bankable financing structure.
- **Electricity generation of 930.1 GWh by project closing.** Following early generation and partial commissioning, the plants produced 930.1 GWh between June 2024 and July 2025. Although below the full-year target of 1,100 GWh (because COD occurred later than planned), the achievement confirms that the project successfully delivered new renewable electricity to the grid.
- **GHG emissions avoided: 93,040 tCO<sub>2</sub>/year by closing.** Based on actual generation data, the project reduced emissions by displacing fossil-based generation. This falls slightly below appraisal targets of 109,000 tCO<sub>2</sub> but reflects the shorter operational prior to COD.
- **Strengthened private-sector participation in Uzbekistan's energy market.** The guarantee operation contributed to consolidating a replicable and transparent PPP model for large-scale solar IPPs. Masdar's ability to secure long-term international financing without IFC stapled financing demonstrates increased investor confidence, attributable in part to the risk-mitigation structure.
- **Contribution to diversification of Uzbekistan's energy mix.** With the addition of 440 MW of solar capacity, the project materially expanded non-hydro renewable generation, supporting the country's broader decarbonization and energy-security objectives.

The evidence indicates that the project substantially achieved its objective of increasing renewable energy generation through private-sector participation. The issuance of the IBRD-guaranteed L/Cs proved effective in enabling financial close, catalyzing private investment, and allowing construction and commissioning of two large-scale solar plants that were fully operational by project closing. Although commissioning delays reduced the amount of electricity generated within the ICR reporting window, the plants were delivering power at scale by the time of COD, and their full annual generation is expected to align with appraisal estimates once a complete operating year is realized. The mobilization of private capital was also strong and attributable to the guarantee-based payment-security structure, which addressed material off-taker credit risks and enabled lenders to proceed confidently. Overall, the project's outcome achievements are well aligned with the project objective and are plausibly linked to the World Bank's intervention, with only minor shortfalls attributable to external implementation delays rather than to weaknesses in design or causal logic. Hence, the project's efficacy in achieving the project objective is rated Substantial.

## Rating



Substantial

## **OVERALL EFFICACY**

### **Rationale**

Overall, the project substantially achieved its objective of increasing renewable energy generation through private-sector participation. The IBRD-guaranteed L/Cs effectively addressed off-taker payment risk, enabling financial close, mobilizing significant private capital, and supporting the completion and commercial operation of both solar plants. Although electricity generation during the reporting period fell slightly below targets due to commissioning delays, these were external to the project design and do not detract from the strong alignment between the guarantee intervention and the achieved outcomes. The results are therefore both meaningful and plausibly attributable to the World Bank's support. The project's overall efficacy is rated Substantial.

### **Overall Efficacy Rating**

Substantial

## **5. Efficiency**

The project's efficiency is rated Substantial. As a guarantee operation, the assessment focuses on the extent to which the World Bank's limited resources (principally staff time, preparation and supervision costs, and a modest contingent liability) were used economically to achieve the project objective. In this case, the IBRD payment guarantees proved to be a high-leverage, low-cost instrument. With a final exposure of only US\$10.0 million, the Bank enabled financial close for a US\$360.3 million investment program and supported the successful mobilization of significant private capital. This represents a highly favorable ratio of Bank inputs to achieved results and is consistent with efficient use of the guarantee instrument.

Administrative and implementation efficiency were also strong. Although the guarantees became effective later than initially envisaged due to conditions-precedent processes (ICR, p.14), these delays did not materially affect the project's overall trajectory or reduce the effectiveness of the guarantee in mobilizing financing. Subsequent construction delays were driven by global supply-chain disruptions and rising procurement and construction costs (factors external to the project) and, therefore, do not reflect inefficiencies in the design or application of the guarantee. Once the guarantees were operational, they provided the payment-security structure lenders required, enabling financial close and continued progress through commissioning despite a challenging global context. The Bank's supervision was proportionate and efficient relative to the scale of the contingent exposure, ensuring adequate oversight without excessive resource use.

Given the strong leverage effect of the guarantees, the modest use of Bank resources, and the fact that external delays did not undermine the achievement of key outcomes, the project's efficiency is assessed as Substantial.



## Efficiency Rating

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## 6. Outcome

The project's overall outcome is rated Satisfactory. The project objective was highly relevant to Uzbekistan's energy-sector reform agenda and to the World Bank's strategic objectives, and it remained appropriate throughout implementation. The project's efficacy is assessed as Substantial, as the project largely achieved its intended results; the IBRD-guaranteed L/Cs successfully enabled financial close, mobilized significant private capital, and supported the construction and commissioning of 440 MW of solar PV capacity, which was operational and supplying renewable electricity by project closing. Efficiency is also rated Substantial, reflecting the high leverage achieved through a small contingent liability, the low cost of Bank inputs relative to the scale of mobilized investment, and the absence of material implementation inefficiencies attributable to the Bank's intervention. Overall, the high strategic relevance, the project's high relevance, substantial achievement of intended outcomes, and substantially efficient use of Bank resources justify an overall Satisfactory outcome rating.

### a. Outcome Rating

Satisfactory

## 7. Risk to Development Outcome

**Financial and Off-Taker Risk:** The most significant risk to sustaining the project's development outcomes relates to the financial condition and payment reliability of the off-taker, now UzEnergoSotish (UES), which inherited NEGU's commercial obligations. The ICR (pp. 33-35) notes that NEGU had experienced persistent financial pressures, including operating losses, accumulated payables, and below-cost-recovery tariffs, which UES partially carries forward as part of the sector restructuring. Continued fiscal transfers, tariff adjustments, and liquidity support remain essential to sustaining timely PPA payments. If tariff reforms slow or UES's financial condition weakens, payment delays could erode investor confidence, increase the probability of L/C



draws, and heighten overall PPA-related risk; thereby, affecting the long-term viability of private investment mobilized by the project.

**Institutional and Sector-Reform Risk:** A second risk derives from the ongoing institutional restructuring of Uzbekistan's electricity market, particularly the transfer of PPA obligations from NEGU to UES following Presidential Decree No. 166. Although the ICR (p.20) reports that due diligence concluded the transfer does not materially alter the project's risk profile, the transition represents a period of heightened institutional vulnerability. Uncertainty around governance arrangements, clarity of payment responsibilities, and evolving market rules may increase operational and credit-risk perceptions. If UES's institutional capacity is not fully consolidated or if coordination among sector entities weakens, these dynamics could undermine the predictability of payment flows and affect the sustainability of private-sector participation in the IPP model.

**Technical and Operational Risk:** From a technical standpoint, the two solar plants are already completed and in commercial operation, and their long-term performance risks are modest. However, Uzbekistan's broader electricity system remains exposed to supply-side stress, demand growth, and network constraints, which have historically contributed to seasonal outages and operational challenges. The ICR (p.10) highlights that the sector faces gas-supply shortages, grid congestion, and continued reliance on aging transmission infrastructure, all of which could increase curtailment risk in periods of system stress. While the plants themselves are technically robust, any deterioration in transmission-system reliability or delays in planned network upgrades could affect the consistent dispatch of generated power, thereby reducing the realization of renewable-generation benefits.

**Policy and Macroeconomic Risk:** Sustaining the project's outcomes also depends on ongoing government commitment to renewable-energy expansion, tariff reform, and market liberalization. The ICR (pp.11-12) notes that Uzbekistan has made substantial progress in unbundling, tariff adjustments, and IPP procurement, but policy momentum must continue for results to remain durable. Macroeconomic volatility, such as inflationary pressures, fiscal constraints, or external shocks, may slow reforms or reduce the government's ability to provide liquidity support to UES. If reform implementation stalls or macro-fiscal space tightens, this could adversely affect off-taker performance, crowd-in potential for future IPPs, and the broader sustainability of the Scaling Solar model.

## 8. Assessment of Bank Performance

### a. Quality-at-Entry

The operation was grounded in strong strategic relevance and correctly identified off-taker payment risk as the primary barrier to mobilizing private investment in large-scale solar generation in Uzbekistan. The choice of an IBRD payment guarantee was well suited to this constraint and represented an efficient de-risking instrument that complemented the government's broader renewable-energy and sector-reform agenda. The operation benefitted significantly from Uzbekistan's participation in the WBG Scaling Solar Program, which offers a standardized, bankable transaction framework for competitively procured solar IPPs. The Scaling Solar platform (previously applied in Uzbekistan's first 100 MW Navoi Project) provided tested templates for the Request for Qualifications and Proposals, Power Purchase Agreements, Government Support Agreements, risk allocation, and project-finance structures. This substantially



enhanced the quality and consistency of project preparation and helped ensure that the Bank was supporting a transaction based on well-established commercial and legal standards.

The project also displayed a high level of readiness at appraisal. The competitive tender, supported by IFC Advisory under the Scaling Solar Program, had already concluded, resulting in the transparent and competitive selection of Masdar as the private sponsor. The PPAs, Investment Agreements, and amended contractual documents were fully negotiated, legally vetted, and ratified prior to Board approval. Lenders had completed their due diligence and were ready to proceed to financial close upon guarantee effectiveness, illustrating the soundness of the transaction structure and the confidence that the Scaling Solar framework generated among international financiers. Environmental and social preparation under OP 4.03 was robust. ESIA, ESMPs, and Livelihood Restoration Plans were prepared and disclosed in accordance with the IFC Performance Standards, reflecting strong alignment between the programmatic approach and safeguard requirements.

Risk identification and mitigation were also thorough. The Bank recognized and analyzed the financial weaknesses of NEGU, the implications of tariff reforms, and the risks introduced by ongoing energy-market restructuring. The guarantee structure, anchored in L/Cs backed by sovereign indemnity, was designed specifically to mitigate these risks and provide the payment security required for lenders to participate. Overall, the Quality at Entry is rated Satisfactory because of strong strategic alignment, robust transaction preparation, high implementation readiness, and effective use of the Scaling Solar platform.

### **Quality-at-Entry Rating** Satisfactory

#### **b. Quality of supervision**

Supervision arrangements were well aligned with the requirements of a guarantee operation, focusing appropriately on monitoring payment-risk exposure, sector-reform developments, financial sustainability of the off-taker, and compliance with the contractual arrangements underpinning the guarantee (ICR, pp.11, 14, 20, 33-35, 49-51). Given signs of imminent sector restructuring early in implementation, the Bank team placed deliberate emphasis on monitoring institutional changes and assessing their potential implications for the guarantee structure and PPA performance. The project team maintained regular engagement with the government, the project companies, and lenders, ensuring timely communication and issue resolution throughout financial close, commissioning, and early operations. The Bank also closely monitored the implications of sector restructuring (i.e., the transfer of PPA obligations from NEGU to UES) and conducted targeted financial and institutional due diligence to ensure that the change did not adversely affect guarantee risk or the project's development outcomes (ICR, p.20, footnote 20). Throughout this transition period, the Bank played a facilitating role by maintaining dialogue across multiple government entities to help ensure consistent interpretation of contractual obligations and coordinated handling of the PPA transfer.

Safeguards supervision under OP 4.03 was effective, drawing on regular Environmental and Social monitoring Reports, lender due diligence, and site visits to confirm compliance with the IFC Performance Standards. The Bank maintained close oversight of environmental, social, labor, health and safety, and biodiversity issues, collaborating with the sponsor to address minor non-conformities as they arose (ICR,



p.20). Team composition remained stable, and supervision benefitted from strong coordination across legal, financial, technical, and environmental and social (E&S) specialists, as well as continued collaboration with IFC Advisory under the Scaling Solar framework. Supervision was proactive, professionally executed, and adequate to ensure that the guarantee remained effective and that the project stayed on track to achieve its development objectives.

The Quality of Supervision is rated Satisfactory.

### **Quality of Supervision Rating**

Satisfactory

### **Overall Bank Performance Rating**

Satisfactory

## **9. M&E Design, Implementation, & Utilization**

### **a. M&E Design**

The M&E design was clear, appropriately simple, and well aligned with the nature of a guarantee operation. The Results Framework focused on outcome-level indicators capturing the project's expected outcomes (i.e., private capital mobilized, installed solar capacity, renewable-energy generation, and avoided GHG emissions) rather than on implementation activities that the Bank did not finance. These indicators were measurable, attributable, and within the reporting capacity of the private project companies and lenders. Given that the guarantee instrument did not involve physical investment by the Bank, this streamlined design was both appropriate and adequate for assessing achievement of the project objective.

### **b. M&E Implementation**

M&E implementation was effective and consistent. The private developer provided regular technical, operational, and environmental and social monitoring reports, which, along with lenders' monitoring, served as reliable and timely data sources for Bank supervision. Generation, commissioning progress, financing, and E&S compliance data were collected through standard, independently verified IPP reporting systems. Data gaps were minimal, and the commissioning delays that occurred did not undermine the availability or reliability of the information required to assess achievement of the project objective.

### **c. M&E Utilization**

The project team drew on generation, financing, commissioning, and E&S data to track progress toward the objective, identify emerging issues (including construction delays), and assess ongoing payment-security and credit-risk conditions. The ICR's results reporting is directly grounded in the M&E evidence produced during implementation, demonstrating that the system effectively supported decision-making and end-of-project assessment. While the operation did not require M&E for adaptive



management, which is typical for a guarantee, the information produced was sufficient to ensure effective oversight of achievement of the project's expected outcomes.

Overall, the quality of M&E for this guarantee operation is rated Substantial.

## **M&E Quality Rating**

Substantial

## **10. Other Issues**

### **a. Safeguards**

The project was prepared and implemented under the World Bank's OP 4.03 – Performance Standards for Private Sector Activities, the applicable framework for guarantee operations supporting privately financed IPPs. The operation was assessed as having moderate environmental and social risks, reflecting that potential impacts were site-specific, reversible, and readily mitigated through standard Performance Standards–based management measures. Six Performance Standards applied to the project: PS1 (Assessment and Management of Environmental and Social Risks and Impacts), PS2 (Labor and Working Conditions), PS3 (Resource Efficiency and Pollution Prevention), PS4 (Community Health, Safety, and Security), PS5 (Land Acquisition and Involuntary Resettlement), and PS6 (Biodiversity Conservation).

Environmental and social due diligence was conducted in line with OP 4.03, and the project companies (Masdar Jizzakh Solar LLC and Masdar Samarkand Solar LLC) prepared and disclosed Environmental and Social Impact Assessments (ESIAs), Livelihood Restoration Plans, and Environmental and Social Management Plans prior to Board approval, later finalized following consultations. Implementation performance was consistently assessed as satisfactory. The ICR reports no major environmental, health, or safety incidents. Minor non-conformities (such as waste-segregation gaps and documentation issues) were promptly addressed and closed following verification by the independent Lenders' Environmental and Social Consultant (LESC). Biodiversity measures, including tortoise translocation and installation of bird diverters, were completed as required.

Social safeguards were also effectively managed. No physical resettlement occurred, and economic displacement was limited to three affected leaseholders, all of whom received compensation consistent with Performance Standard 5 and national legislation. The project companies maintained functional grievance redress mechanisms for workers and communities, with all grievances (14 in total) addressed and closed during implementation. Labor-management systems were aligned with PS2, including enforcement of health and safety protocols, induction and toolbox trainings, and gender-sensitive workplace provisions. Stakeholder engagement was conducted throughout construction and early operation, and the ICR (p.22) confirms that the companies maintained effective community communication channels.

Overall, the project complied with all applicable Performance Standards, and the safeguards systems (driven primarily by the private sponsor's Environmental and Social Management System (ESMS) and lender oversight) functioned effectively throughout implementation.



## **b. Fiduciary Compliance**

### **Financial Management**

Because the World Bank did not finance the investment project, traditional financial-management functions were not applicable, such as budgeting, flow-of-funds arrangements, and expenditure reporting. Instead, financial management responsibilities centered on ensuring that the private project companies maintained sound financial reporting and audit practices consistent with the requirements embedded in the legal agreements. In line with these obligations, the project companies prepared annual financial statements in accordance with International Financial Reporting Standards and submitted them for independent audit under International Standards on Auditing (ICR, p.22). All audit reports and management letters were delivered to the Bank on time, and no material issues were identified during implementation.

Guarantee-related financial arrangements, including L/C reimbursement mechanisms, guarantee-fee tracking, and monitoring of contingent liability exposure, were conducted effectively. The Bank maintained adequate oversight of the financial position of the project companies and the evolving creditworthiness of the off-taker, which was particularly important given the sector restructuring and transfer of PPA obligations from NEGU to UES. No instances of noncompliance with financial reporting obligations were noted, and there were no financial-management shortcomings that posed a risk to the guarantee or to the achievement of the project objective. Overall, the financial management arrangements functioned as intended and supported sound implementation of the guarantee structure.

### **Procurement**

Procurement requirements under this operation were minimal, as the World Bank did not finance goods, works, or services. Instead, the guarantee supported a privately financed IPP structure in which the selection of the developer and the procurement of EPC and O&M contractors were undertaken entirely by the Government of Uzbekistan and the private sponsor outside the scope of the Bank's Procurement Regulations. As documented in the ICR (ICR, pp.13-14), the government (through the Ministry of Energy and the Ministry of Investments, Industry and Trade, with IFC Advisory support) conducted a transparent, competitive two-stage international tender to select the private developer, Masdar. The process followed standardized Scaling Solar documentation and evaluation criteria and resulted in no complaints, demonstrating adherence to principles of fairness, transparency, and competition (ICR, pp.14, 22). Because the World Bank provided only a payment guarantee, its role was limited to confirming that procurement processes met the Core Procurement Principles of economy, efficiency, transparency, and fairness, rather than applying Bank procurement rules. The ICR reports no procurement-related issues during implementation, and the developer's subsequent EPC and supplier contracting followed private commercial arrangements consistent with industry practice. Overall, procurement arrangements were appropriate for a guarantee operation and posed no risks to the achievement of the project objective.

## **c. Unintended impacts (Positive or Negative)**

None.

## **d. Other**



None.

## 11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

## 12. Lessons

This review has drawn five lessons based on the information in the ICR.

**Standardized, programmatic transaction frameworks such as WBG Scaling Solar Program can significantly enhance the quality, speed, and bankability of renewable-energy IPP preparation.** The project’s strong performance at entry and during implementation demonstrates the benefits of using a proven platform that provides standardized documentation, transparent procurement processes, and clear risk-allocation structures. In Scaling Solar 2, the use of pre-vetted PPAs, Government Support Agreements, and L/C-based payment-security structures streamlined deal preparation, reduced transaction costs for both government and investors, and enabled lenders to reach financial close soon after guarantee effectiveness. This framework increased investor confidence, particularly given Uzbekistan’s still-evolving regulatory and institutional environment and ensured that the operation was transaction-ready at appraisal. This experience suggests that similar standardized frameworks can be effective tools for countries entering early stages of competitive renewable-energy procurement or seeking to scale up IPP programs rapidly.

**In guarantee operations, continuous and proactive monitoring of sector-level financial and institutional risks, especially during periods of market restructuring, can be critical in achieving the project’s expected outcomes.** The project’s outcomes depended not only on the technical and financial performance of the IPPs but also on the evolving creditworthiness and institutional transitions of the off-taker from NEGU to the newly created UES. The Bank’s supervision work, including targeted due diligence during the off-taker transfer, shows that guarantees perform best when supervision goes beyond project-level indicators to integrate close monitoring of sector reforms, tariff adjustments, and liquidity risks. The experience of Scaling Solar 2 suggests that when a country undertakes structural reforms during a guarantee operation, the Bank’s ability to anticipate risks, maintain dialogue with authorities, and assess the implications for payment-security arrangements is essential for achieving and sustaining development outcomes.

**Private-sector-driven renewable-energy projects can achieve timely results when the sponsor’s E&S systems, lenders’ due diligence, and Bank supervision are well aligned.** The project’s safeguards performance illustrates how the IFC Performance Standards framework, when



paired with strong developer capabilities and active lender oversight, can ensure high-quality environmental and social management even during periods of construction delay and cost volatility. Consistent E&S compliance, effective mitigation of biodiversity risks, and timely resolution of minor non-conformities demonstrated that reliance on a sponsor's ESMS (supplemented by LESC monitoring and Bank supervision) can produce robust outcomes. This experience reinforces that high-capacity private developers (combined with well-structured Performance Standards-based systems) can meaningfully reduce E&S risks and administrative burden while still ensuring strong safeguard performance in complex infrastructure transactions.

**Clear, consistent risk-allocation and payment-security structures are essential for attracting high-quality private sponsors and lenders in early-stage IPP markets.** The ICR (pp.14-16) highlights that the success of the Scaling Solar 2 IPP rested heavily on the clarity and predictability of the payment-security package, particularly the IBRD-guaranteed L/Cs and the standardized contractual framework developed under Scaling Solar. Because Uzbekistan's electricity market was undergoing significant restructuring and its off-taker had a record of financial strain, international lenders required a transparent and enforceable risk-allocation structure to reach financial close. The project demonstrates that in countries with evolving sector institutions or where commercial bank confidence is low, a well-structured payment-security mechanism (underpinned by government support agreements, L/C reimbursement arrangements, and a sovereign indemnity) can materially reduce perceived risk and allow a wider pool of investors and financiers to participate. Future guarantee operations in similar environments could benefit from ensuring that payment-security structures are not only technically sound but also communicated early and consistently to bidders and lenders.

**Strong coordination across government entities can be critical for sustaining outcomes when sector reforms proceed in parallel with project implementation.** During the life of the project, Uzbekistan transitioned from NEGU to UES as the single wholesale buyer, reflecting a major institutional reform. Successful implementation required the Ministry of Energy, Ministry of Economy and Finance, NEGU, and UES to work in alignment to transfer obligations, maintain PPA integrity, and ensure continued payment security. The World Bank team's supervision emphasized ongoing dialogue among these actors, but the ICR (p.20) also indicates that institutional restructuring introduced uncertainty and required careful due diligence late in the implementation period. This experience illustrates that when a guarantee operation depends on the performance of multiple public entities, and especially when reforms shift mandates mid-stream, early planning for inter-agency coordination, clearly assigned responsibilities, and mechanisms for government-wide communication are essential for preserving investor confidence and minimizing transition risk. Similar future operations in reforming sectors may benefit from explicit institutional coordination plans integrated into project preparation and supervision frameworks.

### 13. Assessment Recommended?

No

### 14. Comments on Quality of ICR



The ICR provides a clear, well-structured, and comprehensive account of the project's design, implementation, and results, and it follows the Bank's ICR guidelines closely. The evidence presented is strong, drawing on data from project companies, lenders, and supervision missions. The discussion of outcomes is aligned with the project objective and grounded in verifiable generation, financial, and E&S performance information. The ICR accurately distinguishes between the Bank-supported guarantee operation and the privately financed investment, an essential requirement for guarantee ICRs, and the narrative remains consistent with this distinction throughout. Lessons drawn from implementation are relevant and grounded in the project's experience; they reflect broader insights on guarantee operations, IPP structuring, and sector reform in emerging renewable-energy markets.

Minor shortcomings include limited elaboration on the risk-monitoring aspects of the guarantee structure and modest referencing of contextual sector reforms that shaped implementation. However, these gaps do not materially detract from the overall quality of the analysis. Overall, the ICR provides a candid, well-evidenced, and analytically coherent assessment suitable for validation.

The Quality of the ICR is rated Substantial.

**a. Quality of ICR Rating**  
Substantial