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The World Bank Group

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Report No:151016-UZ

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED IBRD PAYMENT GUARANTEE
IN THE AMOUNT OF UP TO US$5.1 MILLION

TO THE REPUBLIC OF UZBEKISTAN

AND ON A

PROPOSED IFC FINANCING CONSISTING OF
AN IFC "A" LOAN IN THE AMOUNT OF UP TO US$20 MILLION

A SENIOR LOAN IN THE AMOUNT OF UP TO US$20 MILLION FROM IFC
ACTING AS IMPLEMENTING ENTITY OF THE
CANADA-IFC BLENDED CLIMATE FINANCE PROGRAM

AND US DOLLAR INTEREST RATE SWAPS REPRESENTING A LOAN
EQUIVALENT EXPOSURE OF UP TO US$1 MILLION

TO NUR NAVOI SOLAR IPP FOREIGN ENTERPRISE LLC

FOR THE
NAVOI SCALING SOLAR INDEPENDENT POWER PRODUCER (IPP) PROJECT

AUGUST 24, 2020

Energy and Extractives Global Practice
Europe and Central Asia Region, World Bank

Infrastructure Department
Europe and Central Asia Region, International Finance Corporation

CURRENCY EQUIVALENTS

Exchange Rate Effective July 31, 2020

Currency Unit = Uzbekistan Sum (UZS)
UZS 10,180 = US$1

Calendar Year
January 1 – December 31
Fiscal Year
July 1 – June 30

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ASA	Advisory Services and Analytics
Capex	Capital Expenditure
CCGT	Combined Cycle Gas Turbine
COVID-19	Coronavirus Disease 2019, SARS-CoV-2
DFI	Development Finance Institution
DPO	Development Policy Operation
DSCR	Debt Service Coverage Ratio
EBIT	Earnings Before Interest and Tax
EBITDA	Earnings Before Interest, Tax, Depreciation, and Amortization
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
ENPV	Economic Net Present Value
EPC	Engineering, Procurement, and Construction
ERR	Economic Rate of Return
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESRIP	Energy Sector Reform Implementation Plan
ETMMD	Electricity Transmission Modernization and Market Development
FM	Financial Management
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoU	Government of Uzbekistan
GSA	Government Support Agreement
IFC	International Finance Corporation
IFI	International Financial Institution
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IPP	Independent Power Producer

IRR	Internal Rate of Return
ISA	International Standards on Auditing
L/C	Letter of Credit
LCP	Least-Cost Power
MIFT	Ministry of Investment and Foreign Trade
MIGA	Multilateral Investment Guarantee Agency
MoE	Ministry of Energy
MoF	Ministry of Finance
NES	National Electric Grid of Uzbekistan Joint-Stock Company (Also called National Power Networks of Uzbekistan Joint-Stock Company)
NPV	Net Present Value
O&M	Operations and Maintenance
PAD	Project Appraisal Document
PDO	Program Development Objective
PLR	Performance Learning Review
PPA	Power Purchase Agreement
PPL	Law on Public Procurement
PPP	Public-Private Partnership
PPPDA	PPP Development Agency
PS	Performance Standards (World Bank Group)
PV	Photovoltaic
RFQ	Request for Qualification
SEP	Stakeholder Engagement Plan
SOE	State-Owned Enterprise
SPV	Special Purpose Vehicle
TPP	Thermal Power Plant
UE	Uzbekenergo
UNG	Uzbekneftegaz

International Bank for Reconstruction and Development (IBRD)

Regional Vice President:	Anna M. Bjerde
Country Director:	Lilia Burunciuc
Regional Director:	Lucio Monari
Practice Manager:	Sameer Shukla
Practice Manager Guarantees:	Sebnem Erol Madan
Task Team Leaders:	Ferhat Esen, Zhengjia Meng, Maksudjon Safarov

International Finance Corporation (IFC)

Regional Vice President:	Georgina E. Baker
Global Industry Director:	Morgan J. Landy
Regional Director:	Wiebke Schloemer
Blended Finance Director:	Martin Spicer
Regional Industry Senior Manager:	Cheryl Edleson Hanway
Acting Global Industry Manager:	Nuru Lama
Blended Finance Senior Manager:	Kruskaia Sierra-Escalante
Regional Manager:	Cassandra Colbert
Regional Industry Manager:	Fuphan Chou
Portfolio Manager:	Emin Bulent Ikiisik
Investment Officers:	Waleed Saraf, Firouz Khairoullaev
Investment Analysts:	Dmytro Vintsevych, Nurzhan Serik
Blended Finance Investment Officers:	Pranab Ghosh, Neelam Patel
Lawyers:	Ekaterina Kushnareva, Basma Seif, Olena Guven

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PAD DATA SHEET

Republic of Uzbekistan

Navoi Scaling Solar IPP Project

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA REGION

Basic Information		
Project ID IBRD: P170598 IFC: 42525	Environmental Assessment Category B - Partial Assessment	IBRD Team Leaders: Ferhat Esen, Zhengjia Meng, Maksudjon Safarov IFC Investment Officers: Waleed Saraf, Firouz Khairoullaev, Dmytro Vintsevych, Nurzhan Serik

Lending Instrument Investment Project Financing, IFC A Loan, IFC Blended Finance Senior Loan and IFC USD Interest Rate Swaps	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]
Project Implementation Start Date 1-Nov-2020	Project Implementation End Date 31-Oct-2021
Expected Effectiveness Date 1-Nov-2020	Expected Closing Date 31-Dec-2023
Expected IBRD Guarantee Expiry Date: 31-Dec-2041	
Joint IFC Yes	

Practice Managers	Regional Director	Country Director	Regional Vice President
Sameer Shukla Sebnem Erol Madan	Lucio Monari	Lilia Burunciuc	Anna M. Bjerde

Regional Industry Manager	Regional Industry Senior Manager	Global Industry Director	Regional Director	Regional Vice President
Fuphan Chou	Cheryl Edleson	Morgan J. Landy	Wiebke	Georgina E.

Hanway		Schloemer	Baker

Borrower: Republic of Uzbekistan
Responsible Agency (Financing): Nur Navoi Solar Foreign Enterprise LLC

Contact: Sayeed Abayed Al-Ali		Title:	Senior Manager
Telephone No.:	+97126533333	Email:	sabayed@masdar.ae

Responsible Government Agency (Guarantee): National Electric Grid of Uzbekistan (NES)			
Contact:	Dadajon Isakulov	Title:	Chairman of the Board
Telephone No.:	+998712366808	Email:	info@uzbekistonmet.uz

Project Financing Data (in US$, Millions)					
[X]	IFC Loan	[ ]	IBRD Loan	[X]	IBRD Guarantee
[ ]	Credit	[ ]	IBRD Grant	[ ]	Other

Total Project Cost:	110.00	Total Bank Guarantee:	5.1
Financing Gap:	0.00	IFC A Loan: up to US$20 million IFC Blended Finance Loan: up to US$20 million IFC USD Interest Rate Swaps: loan equivalent exposure of up to US$1.0 million	

Financing Source (estimate)	**Amount (in US$, Millions)**
Equity	50.00
USD-denominated Long-Term Debt	60.00

Institutional Data
Practice Area (Lead)
Energy & Extractives
Cross Cutting Areas Climate Change, Public-Private Partnerships

Private Capital Mobilized
US$50 million (total mobilized by IBRD and IFC)
Proposed Development Objective(s)
The proposed Project Development Objective (PDO) is to increase and diversify electricity generation capacity through private investment in Uzbekistan.

Systematic Operations Risk-Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	Moderate
OVERALL	Substantial

Compliance				
Policy				
Does the Project depart from the Country Partnership Framework in content or in other significant respects?	Yes	[ ]	No	[X]
Does the Project require any waivers of Bank policies?	Yes	[ ]	No	[X]
Have these been approved by Bank management?	Yes	[ ]	No	[ ]
Is approval for any policy waiver sought from the Board?	Yes	[ ]	No	[X]
Does the Project meet the Regional criteria for readiness for implementation?	Yes	[X]	No	[ ]
Safeguards Policies Triggered by the Project	**Yes**		**No**	

PS 1. Assessment and Management of Environmental and Social Risks and Impacts	X	
PS 2. Labor and Working Conditions	X	
PS 3. Resource Efficiency and Pollution Prevention	X	
PS 4. Community Health, Safety and Security	X	
PS 5. Land Acquisition and Involuntary Resettlement	X	
PS 6. Biodiversity Conservation and Sustainable Management of Living Natural Resources	X	
PS 7. Indigenous People		X
PS 8. Cultural Heritage		X

Guarantee Legal Covenants[1]

Name	Recurrent	Due Date	Frequency
Usual and customary covenants for project financings of this nature	Yes	n/a	Ongoing

Description of Covenants

Usual and customary covenants for project financings of this nature (*See* Annex 1)
The Project Company will covenant that it will, among other obligations:

a. comply with applicable laws (including environmental and labor laws), the World Bank Performance Standards (PS), and the World Bank Group (WBG) Environmental, Health, and Safety Guidelines;
b. provide annual audited financial statements and other reports;
c. provide certain notices and other information to IBRD;
d. provide access to the Project;
e. not engage in (or authorize or permit any affiliate or any person acting on its behalf to engage in) any Sanctionable Practice[2] in connection with the Project;
f. comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the WBG list of firms debarred from WBG-financed contracts; and
g. obtain IBRD's consent prior to agreeing to any change to any material Project-related transaction document to which the Project Company is a party that would materially affect the rights or obligations of IBRD under the Guarantee Agreement.

[1] Please note that the legal documents are still under negotiation.
[2] "Sanctionable Practice" means any fraudulent, coercive, corrupt, collusive, obstructive, or fraudulent practice, as defined in the World Bank's *Anti-Corruption Guidelines for World Bank Guarantee and Carbon Finance Transactions*.

Guarantee Conditions[3]

Source of Funds	Name	Type
IBRD Guarantee	Conditions precedent to effectiveness	Usual and customary conditions precedent to effectiveness of guarantees for project financings of this nature

Description of Conditions

Usual and customary conditions precedent to effectiveness of guarantees in support of project financings of this nature.

a. Firm commitment for the financing necessary to complete construction of the Project, including satisfactory contribution of equity;
b. Execution, delivery, and effectiveness of all Project and Financing Documents, in form and substance satisfactory to IBRD, including, among others, the Indemnity Agreement, the Project Agreement, the Cooperation Agreement, and the Guarantee Support Agreement;
c. Delivery of all relevant host-country environmental approvals required for the operation of the Project, and compliance with all applicable World Bank requirements relating to Sanctionable Practices and environmental and social matters, including the World Bank PS;
d. Effectiveness of all required insurance (Third-party liability insurance to include IBRD as an additional insured);
e. Satisfaction of all condition precedents to the first disbursement under the Financing Documents, save for any condition that requires the effectiveness of the Guarantee Agreement to have occurred;
f. Payment in full of outstanding fees and expenses of IBRD's external counsel;
g. Provision of satisfactory legal opinions;
h. Payment in full of the Initiation Fee, Processing Fee (if invoiced), Front-end Fee, and the first installment/s of the Standby Fee and / or Guarantee Fee (if invoiced); and
i. Satisfactory integrity due diligence of Project Company (and related parties) and guaranteed parties

Gender Tag Does the activity plan to undertake any of the following? Please select Yes or No for each *(IFC operation)*:

Gender analysis and/or consultation on gender related issues. **Yes**

Specific actions to address the distinct needs of women and girls, or men and boys, or positive impacts on gender gaps. **Yes**

Mechanisms to facilitate monitoring and/or evaluation of gender impacts. **Yes**

[3] Please note that the legal documents are still under negotiation.

Team Composition			
Bank Staff			
Name	**Role**	**Title**	**Unit**
Ferhat Esen	Team Leader (TTL, ADM Responsible)	Senior Energy Specialist	IECE1
Zhengjia Meng	Team Leader	Senior Infrastructure Finance Specialist	IPGFS
Maksudjon Safarov	Team Leader	Energy Specialist	IECE1
Husam Mohamed Beides	Team Member	Lead Energy Specialist	IECE1
Anthony Molle	Team Member	Lead Infrastructure Finance Specialist	IPGFS
Koji Nishida	Team Member	Senior Energy Specialist	IECE1
Razvan Purcaru	Team Member	Senior Infrastructure Finance Specialist	IPGFS
Sameena Dost	Team Member (Guarantee Lawyer)	Senior Counsel	LEGSG
Hiwote Tadesse	Team Member	Operations Officer	IECE1
Elbek Yusupov	Team Member	Senior Financial Management Specialist	EECG1
John Bryant Collier	Team Member	Senior Environmental Specialist	SCAEN
Suryanarayan Satish	Team Member	Senior Social Development Specialist	SCASO
Aimonchok Tashieva	Team Member	Social Development Specialist	SCASO
Fasliddin Rakhimov	Team Member	Procurement Specialist	EECRU
Veronika Pak	Team Member	Team Assistant	ECCUZ
Asta Olesen	Team Member	Consultant	SCASO
Rokhila Yuldasheva	Team Member	Consultant	IECE1
Georgiy Egamnazarov	Team Member	Consultant	IECE1
IFC Staff			
Name	**Role**	**Title**	**Unit**
Waleed Saraf	Team Leader	Senior Investment Officer	CN2IN
Firouz Khairoullaev	Transaction Leader	Associate Investment Officer	CN2IN

Dmytro Vintsevych	Team Member	Investment Analyst	CN2IN
Nurzhan Serik	Team Member	Investment Analyst	CN2IN
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Basma Seif	Legal	Counsel	CLEM3
Olena Guven	Legal	Legal Analyst	CLEM3
Riad Khalil	Engineer	Chief Industry Specialist	CNGEN
Kruskaia Sierra-Escalante	Blended Finance Investment	Senior Manager	CBFNP
Pranab Ghosh	Blended Finance Investment	Principal Investment Officer	CBFNP
Neelam Patel	Blended Finance Investment	Investment Officer	CBFNP
Alexander Skrzynski	Compliance	Principal Risk Officer	CBRBR
Kelvin Kwan	Insurance	Senior Insurance Officer	CIRIN
Enrique Lora	Economist	Results Measurement Specialist	CSEIN
Aimilios Chatzinikolaou	Economist	Senior Strategy Officer	CCER2
Merima Zupcevic	Corporate Governance	Senior Corporate Governance Officer	CEGCG
Samir Besirevic	Environmental and Social	Senior Environmental Specialist	CEGIE
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Farai Sambo	Treasury	Associate Financial Officer	CTCEM
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Lilia Ward	Team Assistant	Program Assistant	CEUVN
Advisory Services			
Bernard Atlan	Advisory	Principal Investment Officer	CTAPU
Nikola Mihajlovic	Advisory	Investment Officer	CN2IN
Stanislava Barbova	Advisory	Operations Officer	CTAPU
Rustam Shamuradov	Advisory	Associate Investment Officer	CTAPU

I. STRATEGIC CONTEXT

1. **Uzbekistan has initiated major transformational reforms across the country and its economy, including the energy sector, aimed at the adoption of a market-based model for the sector in the medium and long term**. The World Bank Group (WBG) has been supporting the Government of the Republic of Uzbekistan (GoU) to formulate and implement critical reforms in the energy sector and has mobilized resources and leveraged WBG financing products and expertise for a strategic partnership. Energy sector sustainability is crucial for the security of supply, functioning of the economy and service delivery that the institutions, businesses and citizens rely on every day in Uzbekistan. Energy services are also essential in supporting the delivery of healthcare and public services during the current coronavirus (COVID-19) pandemic and in stimulating economic recovery and job creation, when COVID-19 crisis eases. In this context, this Project Appraisal Document (PAD) presents and appraises the proposed International Bank for Reconstruction and Development (IBRD) Guarantee and International Finance Corporation (IFC) financing for the Navoi Scaling Solar Independent Power Producer (IPP) (Project), which will be the first grid-connected utility-scale renewable energy IPP in Uzbekistan. The proposed Project will also strengthen investment potential in solar photovoltaic (PV), and World Bank guarantees and IFC investments will be crowding in private sector investment and leveraging mainstream and emerging renewable energy technologies.

A. Country Context

2. **Uzbekistan is a resource-rich, double-landlocked, lower-middle-income country that has the unique position of bordering all other Central Asian countries.** The country has the largest population in Central Asia—33 million as of 2018, which is growing annually at about 1.7 percent in recent years—over 70 percent of whom are under the age of 40. Uzbekistan ranks among the top 10–30 countries with the largest energy and mineral reserves, including natural gas, gold, copper, uranium and coal. It has significant potential in renewable energy sources, such as solar, wind, and hydro, that can cater to the country's growing energy needs and transition to a clean energy economy. Central Asia is adjacent to some of the largest and rapidly growing economies in the world, including the People's Republic of China, the Republic of India, the Russian Federation, and the Islamic Republic of Pakistan, which presents an opportunity for Uzbekistan to become a hub for energy production and trade.

3. **Uzbekistan has made strong progress in implementing structural reforms.** In September 2017, a major reform was launched to liberalize foreign exchange market controls and unify the official and market exchange rates through a 50 percent devaluation of the national currency against the U.S. dollar. Since then, the GoU has undertaken a wide range of other macroeconomic and sector-specific reforms. During this early stage of reforms, macroeconomic stability and sustainability have been broadly maintained. These positive outcomes have ensured widespread public endorsement of the reforms, as confirmed by the World Bank's recent Listening to the Citizens of Uzbekistan survey, where households expressed strong support for the exchange rate unification and increased private sector participation and competition. However, the survey also showed households' concerns around the slow pace of job creation and elevated inflation and the need to improve infrastructure and service delivery, including energy.

4. **Uzbekistan's macroeconomic position remains relatively well managed through the initial phase of reforms.** Prior to the onset of the COVID-19 crisis, Uzbekistan was on track for another strong year of economic performance in 2020, but the outbreak poses a significant threat to the ambitious economic and social transitions underway. Domestic restrictions and closures have brought most industrial output and commerce to a temporary halt. Efforts to attract foreign investment – through public-private partnerships (PPPs) and the imminent launch of an ambitious state-owned enterprise (SOE) reform and privatization strategy – are likely to temporarily slow down. Traditional sources of export-led growth, such as natural gas, metals, light manufacturing, chemicals and fertilizer have been severely affected as the economies of Uzbekistan's main trading partners have weakened. The GoU's continued use of subsidized credit to support SOEs, including energy and household economic activity is expected to continue during COVID-19 and its recovery period.

5. **Removing infrastructure bottlenecks becomes even more important for creating jobs and increasing labor productivity during COVID-19 and its recovery period.** According to the Growth Diagnostics for Uzbekistan, ensuring uninterrupted supplies of electricity, natural gas, fuel, and water remains key policy priorities for small and medium firms to thrive and grow. A large amount of manufacturing output estimated at 24 percent among large firms and 38 percent among small firms in 2016 is lost due to interruptions in physical infrastructure services, including electricity, gas, and water. Moreover, the policy of suppressed input prices for fuel and electricity promote capital and energy-intensive industries at the expense of labor-intensive industries that would create jobs for the rapidly increasing workforce. As the reform deepens, it is important for the GoU to address the next step of binding constraints for manufacturing firms, including an uninterrupted supply of electricity and gas, among others.

6. **The GoU regards the WBG as a trusted partner and a lead adviser on economic reforms.** The WBG program hence aims to capture the new opportunities by focusing on (a) sustainable transformation toward a market economy, (b) reform of select state institutions and citizen engagement, and (c) investment in human capital. The WBG's engagement in the energy sector places strong emphasis on institutional development, financial sustainability, clean energy, private sector participation, and market development.

B. Sectoral and Institutional Context

7. **Uzbekistan is one of the most energy-intensive countries in the world.** While Uzbekistan's energy intensity declined by about 45 percent during the last 15 years, the country's energy use per unit of GDP is 3.1 times higher than the average for the Europe and Central Asia region. The high level of energy intensity is common for all parts of the entire economy.

8. **Despite efforts to improve efficiency, the demand for electricity is expected to continue growing steadily in conjunction with the economic growth.** The demand for electricity in Uzbekistan is primarily driven by industrial and residential customers, and the supply-demand balance is generally tight. In 2018, the total electricity consumption was 63 TWh. Once the economy fully recovers from the COVID-19 impact, the demand for electricity is expected to grow up to above 101.0 TWh in 2030 according to the World Bank Least-Cost Generation Expansion Plan (base-case scenario). In terms of electricity consumption, the industrial sector currently

represents the largest customer segment (41 percent), followed by residential (24 percent), agriculture (21 percent), commercial (11 percent), and others.

9. **The COVID-19 outbreak is expected to be disruptive for Uzbekistan's economy as well as its energy sector.** An early assessment identifies that COVID-19 has been affecting the energy sector due to a drop in demand linked to slow-down in economic activities; change in demand profile (industrial versus residential) affecting the weighted average tariff; operational challenges to utilities; weakened collection efficiency due to increasing payment delinquency; supply chain disruptions, mobility restrictions and delays for maintenance and infrastructure works; and a worsening financial position of the utilities as a result. For the detailed COVID-19 utility impact assessment, refer to the sector financial analysis section in annex 3.

10. **Uzbekistan's energy system is characterized by high losses and low reliability of supply, partially due to the rapidly aging supply infrastructure that was mostly constructed during the Soviet era.** The weighted-average thermal efficiency of existing gas-fired thermal plants is 33 percent, which is low compared to new units with 53–56 percent efficiency. Transmission and distribution losses are estimated to be at around 20 percent of net generation. Both number and duration of outages are high by the region's standards. High system losses are a symptom of the aging electricity supply infrastructure, as the electricity transmission and distribution lines are, on average, approximately 30 years and need to be rehabilitated.

11. **The energy sector is highly dependent on natural gas, which is also a major source of commodity exports and revenue.** The depleting natural gas resources and energy system's over dependency on gas[4] prompted the country to seek sustainable energy transition pathways, in which the replacement of inefficient and old gas-fired generation units with new combined cycle gas turbines (CCGTs) and introduction of renewable energy (solar and wind) will reduce demand pressure and renationalize gas consumption for power, because insufficient capital investment into new gas exploration and production and network modernization pose challenges in gas supply. To better address the gas sector issues and improve the supply efficiency and financial sustainability, which also concern the electricity sector performance, the Government has already unbundled the Uzbekneftegaz (UNG, SOE in oil and gas) and has been developing a natural gas sector reform program with international financial institutions (IFIs) and sector stakeholders as being similarly implemented in the electricity sector. Diversification of Uzbekistan's electricity generation is limited as 85 percent of the total installed capacity of 13 GW in Uzbekistan is natural gas based, followed by hydropower (12 percent) and coal (3 percent). The price of natural gas for domestic consumption is kept at around 50 percent of the prevailing rate for Uzbekistan's regional gas export. The export price parity implies implicit subsidies to domestic gas consumers, including the electricity sector.

12. **Renewable energy is a promising source of energy to diversify the energy mix away from its dependency on natural gas**, but it is not yet exploited on a large scale, except for hydropower. The estimated technical potential of renewables (3,494 TWh) is significantly higher than the current demand for electricity (61.2 TWh) and they are increasingly becoming economically competitive, but the utilization of renewables remains a fraction of the potential (table 1). Some of the challenges identified include inadequacy of the institutional framework for

[4] Natural gas accounts for 86 percent of the total primary energy supply.

renewable energy development, subsidized pricing of energy services, and financial weakness of unbundled Uzbekenergo (UE) companies. To accelerate deployment of renewable energy potential, the GoU has embarked on major reforms to stimulate renewable energy investment including adopting the Renewable Energy Law, strengthening energy sector institutions, and establishing supportive investment legal and regulatory frameworks including PPP-related laws.

Table 1. Estimated Technical Potential for Renewable Energy Resources (Electricity Production)

Resource	Technical Potential (GWh/year)[a]	Utilized Potential (GWh/year)
Solar energy	2,058,000	2
Large and medium hydropower	20,934	1,650
Small hydropower	5,931	200
Wind	1,366,560	0
Biomass	1,496	0
Total electricity generation	**3,493,921**	**1,850**

Note: a. The technical potential is based on renewable resource availability and quality, technical system performance, topographic limitations, and land-use constraints only. They do not consider economic, market, or policy constraints.

13. **Despite high potential for domestic clean energy resources, increasing the share of coal in the power mix (3 percent) is a palpable environmental and climate risk in Uzbekistan.** About 70 percent of coal reserves[5] are brown coal/lignite and the remainder bituminous. Every year, Uzbekistan produces about 4 million tons of coal, of which 85 percent is supplied to the energy sector. With business as usual, the country plans to increase coal production to meet the demand and expand the use of coal in other areas such as household heating. Uzbekistan is a major emitter of greenhouse gas (GHG) (83 percent in the energy sector) in the Europe and Central Asia region. Given the environmental, health, and climate risks associated with coal, the promotion of grid-connected and distributed renewable energies, energy efficiency and regional connectivity with electricity trade are crucial to avoid coal meeting the energy demand.

Government Reform Program

14. **The GoU has initiated ambitious energy sector reforms** that envisage introducing market-based principles in sector management and operations with the support of IFIs, including the WBG. Despite COVID-19 impact, broader sector reforms remain in progress and the GoU is committed to further pursue such reform initiatives. Going forward, when embarking on such an ambitious and broad set of reforms, a high pace and sequencing of priority reforms could become a challenge, if not managed well by the GoU. The WBG, as a partner of choice, will continue playing a leading role in supporting the GoU on designing, prioritization and implementation of energy reforms and the PPP agenda. Key recent and ongoing reform measures include the following:

(a) In February 2017, the GoU approved a five-year Development Strategy for 2017–2021 that stipulates a broad market-oriented reform in the country's governance and all key areas of the economy. Subsequently, the GoU has undertaken several critical reviews of the energy sector with key considerations such as (i) improving service

[5] Reserves/Production ratio for coal is 125 years. BP Statistical Review 2019.

quality and reliability; (ii) leveraging private investment financing in power generation[6] and distribution; (iii) enhancing the financial viability of the sector; (iv) improving transparency and accountability of sector entities; (v) unbundling energy SOEs: UE – power and UNG - oil and gas - as an initial step toward the adoption of wholesale market models in the future; (vi) adopting good international practices; and (vii) implementing reforms as quickly as practical while ensuring prerequisite actions are taken on time.

(b) Sector oversight functions have been consolidated under the Ministry of Energy (MoE) established in February 2019. Before the MoE's establishment, energy sector entities, such as UNG and UE, reported to multiple deputy prime ministers and ministries and agencies; there was no regulator to oversee gas and electricity operations; and there was no clear delineation of policymaking, regulatory, and operational roles. After its establishment, the MoE has assumed consolidated responsibilities for policy-making and regulatory functions in relation to gas, coal, nuclear power, and electricity, while day-to-day operations are delegated to the sector entities such as UE and UNG.

(c) In March 2019, the GoU decided to unbundle the vertically integrated UE into separate functions: generation ('Thermal Power Plants' Joint-stock Company), transmission ('National Power Networks of Uzbekistan' Joint-stock Company or NES), and distribution ('Regional Distribution Network' Joint-stock Company). The same approach was adopted with UNG unbundling in June 2019. These reforms have contributed to the improved allocation of roles and responsibilities in the sector and to the progress of operationalization of newly established entities by far.

(d) With an explicit focus on increasing private investment in renewable energy generation, a new Renewable Energy Law was adopted in May 2019 addressing a fundamental institutional gap for renewable energy development in Uzbekistan, enabling greater private sector participation in renewable energy and creating opportunities for climate change mitigation and adaptation. The Renewable Energy Law also sets out key rights for private renewable energy producers, including guaranteed access to the power grid and dispatch of generated renewable energy. An Energy Sector Reform Implementation Plan (ESRIP) was prepared by the GoU in July 2019 building on a Conceptual Roadmap for Electricity Sector Institutional Reforms prepared by the World Bank. ESRIP outlines the priority power sector reform actions, their sequence and timeline, required resources for the effective corporatization and commercialization of the new electricity companies, and designated areas of electricity sector reform for donor support.

(e) The GoU is currently initiating the transmission and distribution network rehabilitation and expansion plans to 2030 (building on generation expansion plan) aimed at reducing the high system losses and facilitating grid integration of large-scale renewable energy (solar and wind) and efficient gas fired IPPs. An Energy

[6] Current installed capacity is 13 GW (11GW of gas, 85 percent; 1.6 GW of hydropower, 12 percent; and 0.4 GW of coal, 3 percent).

Sector Digitalization Strategy has also been developed and adopted by the GoU, which envisages the introduction of modern digital solutions. This development would also contribute to the commercialization of newly unbundled utilities.

15. **The GoU has requested the WBG to support the implementation of the electricity sector reforms and related generation expansion plans (renewables and CCGTs).** Building on the Navoi Scaling Solar IPP experience (Scaling Solar 1), a pipeline of potential generation projects included in the World Bank-supported Least-Cost Generation Plan have been identified for private investments and potential WBG support. These projects include, among others, the following (which are in various stages of preparation, with indicative timeline shown in table 2).

(a) **Renewables.** The GoU's renewable energy plans include development of renewable power (solar and wind) generation capacity of 8 GW planned to be developed by 2030. The share of new solar generation capacities will be 5 GW. Similar to the Navoi Scaling Solar IPP (100 MW), IFC Advisory has been engaged to develop an additional 900 MW solar PV capacity under two additional WBG Scaling Solar phases:

(i) **Scaling Solar 2**. 200 MW at Jizzakh site and 200 MW at Samarkand site, for which an RfQ has already been issued to reach commercial and financial close by January and September 2021, respectively.

(ii) **Scaling Solar 3**. 500 MW at two sites in Fergana and Bukhara regions, respectively, with commercial and financial close expected by October 2021 and February 2022, respectively.

Once the aforementioned 1,000 MW greenfield solar PV plants under the IFC Advisory Services are fully commissioned, these will contribute to the 20 percent solar deployment by 2030 targeted by the GoU.

(b) **CCGT**. The GoU plans to commission around 6,000 MW of net new CCGT capacities by 2030, in which the first plant will be the Syrdarya IPP project (greenfield 1,300 MW) to be competitively procured under IFC Advisory support with an expected commercial and financial close by September 2021 and March 2022 respectively. The Syrdarya CCGT will have a demonstration effect to initiate the replacement of old and inefficient gas-fired generation capacities, create natural gas savings and reduce gas emissions on a competitive procurement basis through a PPP/IPP model. Development of the Syrdarya CCGT with modern technologies will also increase the power system flexibility required to support higher level of renewable energy integration in the country.

Table 2. Indicative Time Table for IPPs Pipeline under IFC Advisory Services

Calendar-year	***2020***			***2021***				***2022***		***2023***	***2024***
	Q1	*Q3*	*Q4*	*Q1*	*Q2*	*Q3*	*Q4*	*Q1*	*Q4*	*Q2*	*Q1*
Navoi Solar (100MW)		fin.close					operation				
Scaling Solar 2 (400MW)	EoI	RfQ	RfP	com. close		fin.close			operation		
Scaling Solar 3 (500MW)			EoI	RfQ	RfP	com.close		fin.close		operation	
Syrdarya CCGT (1,300MW)	EoI	RfQ		RfP		com.close		fin.close			operation

Sector Financial Sustainability and Tariffs

16. **Before its unbundling in early 2018, UE, and by extension the power sector, was not financially viable.** UE generated around 85 percent of the electricity sector revenues supported mainly by gradual increase of the end-user tariffs and partially by demand growth. Despite the average annual increase of electricity consumption at 2.1 percent, UE experienced a sustained cash deficit. The sector cash deficit was mainly caused by (a) high technical and commercial losses in the sector, which were not fully recouped through the normative thresholds of losses established in tariff reviews; (b) low collection rates up to 2017 (the collection rate ranged between 83 percent and 93 percent of revenue invoiced) until 2017 when the utility bill collection responsibilities were temporarily transferred to the Bureau of Forced Execution with enforcement authority and capabilities; (c) increasing indebtedness in foreign currencies that has added to the currency mismatch between UE's revenues and expenditures, which was worsened by the currency devaluation in September 2017; and (d) below-cost recovery tariffs.

17. **Electricity tariff reform has commenced and remains a top priority to build a solid foundation for the sector development and private sector participation in Uzbekistan.** The GoU has committed to move toward full cost recovery through adjusting tariffs gradually and on a regular basis and has implemented two tariff increases in 2018 and 2019. The first increase occurred in November 2018 and made up 45 percent increase for nonresidential consumers and 9 percent for residential consumers. The subsequent tariff increases, effective as of August 15, 2019, raised the electricity tariffs by up to 36 percent and 18 percent for nonresidential and residential customers, respectively. These tariff adjustments collectively brought weighted average tariff from 70 percent at the beginning of 2018 to 92 percent of cost (including the equity portion for investments) recovery level in 2019, allowing for more cash for the sector. Despite the recent reforms,[7] the current level of weighted average retail tariff of UZS 411 per kWh (US¢4.2 per kWh) equivalent is still insufficient to recover the full costs, especially as the sector moves to a capital intensive phase, driven by the needs to expand and rehabilitate generation, transmission and distribution capacity. As part of the broader energy sector reform, the Cabinet of Ministers also issued a resolution in April 2019 that adopted a new electricity tariff methodology. The resolution also established a separate tariff commission under the Cabinet of Ministers and set out a path for tariffs to be adjusted to full cost recovery levels. Due to the COVID-19 impact on the country's economy and people, the GoU has put its tariff adjustment plans on hold in 2020.

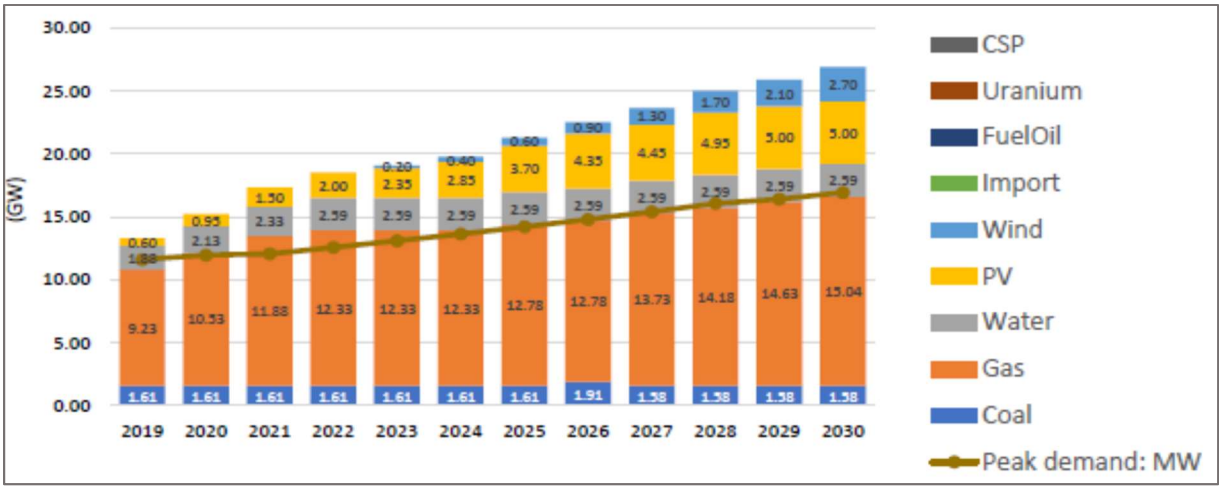
18. **Broader sector reforms, including tariff and cost recovery initiatives may become a risk for the sector sustainability and financial viability, if not managed well by the GoU.** Understanding the importance of sector reforms for the proposed Project and sector sustainability, the WBG will continue to support such initiatives, including through ongoing Strategy Programmatic Technical Assistance, Modernization and Upgrade of Transmission Substations Project (MUTSP), the pipeline Electricity Transmission Modernization and Market Development (ETMMD) project and potential DPO engagement.

[7] In parallel, the gas tariffs were increased by 10 percent for residential and 107 percent for commercial ones.

Investment and Private Sector Participation

19. **Least-Cost Power (LCP) Generation Expansion Plan for Uzbekistan, prepared with the World Bank support, recommends significant solar and wind addition to the generation capacity mix.** Diversification of power mix and economic opportunity cost of gas with shrinking reserves are among key drivers of large-scale deployment of renewable energy generation. Under the optimal LCP capacity mix for 2030, solar and wind will account for 28.6 percent of the total capacity mix (7.7 GW) and around half of the new capacity additions. In particular, the power system would require additional 15.42 GW installed capacity by 2030 to meet the expected demand. The net capacity mix in 2030 under the optimal LCP scenario comprises gas (15.04 GW, 55 percent); solar PV (5 GW, 19 percent); wind (2.7 GW, 10 percent); hydro (2.59 GW, 10 percent); and coal (1.58 GW, 6 percent). This translates to capacity additions of solar PV (+5 GW), gas (+6.61 GW), wind (+2.7 GW), coal (+0.3 GW), and hydro (+0.81 GW) (see figure 1). The proposed Project analyzed through site screening and resourcing tools is part of the least cost options in the planned generation expansion. This means sizable investments and significant knowledge and institutional capacity needs, while there is little prior experience in the sector in these areas. In addition, provisional estimates for transmission network expansion and rehabilitation would also increase the investments and capacity-building needs, which require private sector participation and support facilities, including WBG advisory, technical assistance, lending, and guarantee facilities.

Figure 1. Least-Cost Plan - Total Electricity Capacity Mix



Source: Uzbekistan Energy Transition: Generation Expansion Least-Cost Plan, June 2019.

20. **The GoU prioritizes PPPs and has thus established an institutional framework for the development and management of PPPs given substantial investment needs in the electricity value chain and limited public finances.** A Presidential Decree issued in October 2018 created the PPP Development Agency (PPPDA) under the Ministry of Finance (MoF). Various PPP units have also been set up within sector ministries such as energy and transport. The PPP Law enacted June 2019 aims to provide a consolidated legal framework for PPP investments to reduce risks and increase clarity for both investors. By successfully implementing PPP solar power transactions, it would help free up scarce public financial resources for other government priorities, such as social investments, which are particularly important for post COVID-19 recovery. On the other hand, there are significant private sector participation-related knowledge and institutional capacity gaps

that need to be filled to support the Government to successfully introduce power generation projects. The GoU has been approached by numerous investors with unsolicited proposals in multiple sectors including energy. The World Bank encourages the Government to develop power generation projects in a transparent and competitive manner to reduce the risks relating to unsolicited proposals as much as possible. The Government should pay special attention to pricing, risk allocation, and alignment to sector plans in screening unsolicited proposals to avoid project and reputational risks and fiscal impact.

Climate Change

21. **Uzbekistan is vulnerable to the impacts of climate change and is expected to experience a range of changes and risks associated with climate change across the country**. Specifically, the country is increasingly vulnerable to droughts, high temperatures, heat waves, heavy precipitation, mudflows, floods, and avalanches. The energy sector is among the most vulnerable sectors, exposed to risks from climate variability that may have an impact on energy supply (for example, disruptions due to increased extreme weather events) and demand (for example, due to a rise in annual number of hot days). Droughts may become more frequent due to river runoff decrease, specifically from the Amu Darya and Syrdarya Rivers, where hydropower stations (12 percent of power mix) are located. Aridity and drought risks are high, especially during vegetation periods and particularly for areas with increased demand and consumption from agriculture, economic development, and population growth. Landslides are also a major natural hazard risk, particularly for the southern and eastern areas. The proposed Project is expected to generate mitigation and adaptation co-benefits and with other pipeline operations will strengthen climate resilience by (a) including climate change adaptation and mitigation topics in design of new capacity-building activities and (b) ensuring that design of new renewable energy plants will consider climate change-related risks and vulnerabilities. Following assessments, the climate co-benefits were calculated using the Joint Multilateral Development Banks' Methodology for Tracking Climate Finance.[8]

C. Higher Level Objectives to which the Project Contributes

22. **The proposed Project would be the country's first competitively selected private investment in power generation, first grid-scale renewable energy project, and first World Bank guarantee operation in Uzbekistan, with strong demonstration effects in Central Asia and beyond.** The proposed Navoi Scaling Solar IPP Project supports the GoU's policy objectives and reforms in the energy sector. These include expanding generation capacity through renewables, improving security of supply from domestic energy resources and promoting private sector participation to strengthen the energy sector sustainability, which is crucial for economic recovery and growth and job creation. Support under this WBG initiative is expected to accelerate the Uzbekistan energy sector development and improve its efficiency by deploying new business and financing schemes in the form of PPPs/IPPs. The Navoi Scaling Solar IPP will also support the Government's commitments on climate change and its Nationally Determined Contribution[9]

[8] Climate co-benefits figures will be confirmed following the WBG Board Approval.

[9] Uzbekistan has set a mitigation target in its Nationally Determined Contribution to decrease specific emissions of GHGs per unit of GDP by 10 percent by 2030 from the level of 2010. The climate change mitigation efforts for

implementation, particularly through the development of renewable energy and avoidance of GHG emissions. The proposed Project's implementation and success will further accelerate the deployment of new renewable generation capacities, and hence the clean energy transition to stimulate economic recovery and development of appropriate infrastructure, when the COVID-19 crisis eases.

23. **The proposed Project will involve the first-time deployment of an IFC financing in the energy sector and the IBRD's risk mitigation product in Uzbekistan.** The Project will directly contribute to the Maximizing Finance for Development (MFD) /Cascade Approach goals and bring additional climate co-benefits from the development of scalable clean energy investment program. The WBG's support to the Government in the first competitively selected IPP and its successful financial close[10] is expected to create a lasting demonstration effect. In addition, the WBG presence also helped build institutional capacity within the GoU, including establishing best practice procurement process and replicable documentation. This effort is in line with the World Bank's ongoing policy dialogue and advisory support on private sector participation, including PPPs, promotion of clean and domestic energy resources, renewables, diversification of power mix, and sector sustainability.

24. **The Project is well aligned with and contributes to the World Bank Performance and Learning Review (PLR) of the Country Partnership Framework (CPF) for Uzbekistan, including adjusted in response to COVID-19**. The proposed Project builds on the World Bank energy program in Uzbekistan by charting a new direction of the World Bank activities in support of private sector participation in the energy sector and diversification of supply from domestic resources. The GoU requested the WBG to lead key themes for energy sector reform, including the institutional and structural reforms and renewable energy development, which are crucial for the security of supply, supporting the economic growth and well-being of Uzbekistan citizens, and are also an essential part of ensuring business continuity during the crisis period, including the current pandemic. In this context, the Project contributes to the GoU's initiatives on clean energy transition, demonstration of benefits of competitive and transparent processes, leveraging private and commercial financing to meet the sector's significant investment needs, and building institutional capacity on designing and implementation of PPP projects, including during COVID-19 and post-pandemic economic recovery period.

Relationship to the World Bank Group's COVID-19 Response

25. **The World Bank Group's engagement in Uzbekistan has been adjusted to the unexpected and historic opening of Uzbekistan's economy.** Adjustments to the FY16-20 CPF were made via the PLR in mid-2018 after an unexpected move by the Government to begin transforming the previously closed and statist post-Soviet economy.[11] The CPF focus areas remain relevant, supporting: (i) a sustainable transformation towards a market economy; (ii) reform of state institutions and citizen engagement; and (iii) investments in people. A new SCD and CPF are

Uzbekistan include targeted policies for energy saving, strengthening institutional capacity in the renewable energy sector, and energy efficiency.

[10] Expected in October 2020.

[11] Performance and Learning Review (PLR) of the Country Partnership Framework for Uzbekistan for the Period of FY2016–20, dated May 29, 2018; Report number: 126078-UZ.

under preparation. Both will have a strong emphasis on supporting a sustainable post-COVID recovery and an inclusive economic transition.

26. **After two decades of sustained poverty reduction, the pandemic could force up to a million people into poverty this year.** Based on data from April 2020, the share of households with at least one working member fell by 40 percent, and employment is well below both 2019 levels and the pre-COVID trend. The self-employed have been the most affected: the share reporting any self-employment fell 67 percent in April. Based on Bank projections, the poverty rate[12] could rise from the pre-crisis estimate of 7.4 percent to between 8.7 to 10 percent. A sharp decline in migrant remittances (20 percent lower than 2019) will push those already poor into deeper hardship.

27. **Lower external trade and the domestic economic disruption are projected to lower growth from 5.7 percent in 2019 to 1.6 percent in 2020** (pre-crisis forecast: 5.9 percent). Tourism, services, and horticulture, which are promising new areas of post-transformation growth, are acutely affected, and nascent private sector gains are at risk. Weaker revenues, a surge in health and social spending, and a weaker domestic and external trading environment have unanticipatedly worsened fiscal and external balances, with the fiscal deficit projected to increase from a pre-crisis estimate of 0.8 percent to 4 percent of GDP.

28. **Since late-January 2020, the authorities have systematically implemented strong anti-crisis measures to slow COVID transmission, protect livelihoods, and sustain the reform momentum.** A stringent lockdown phase between mid-March and end-May 2020 had a significant impact in slowing community transmission however the health system remains strained by a second – and more acute – COVID-19 wave of infections in July and August 2020. Alongside the lockdown measures, the Government announced a US$1.5 billion anti-crisis fund to achieve three short-term outcomes: (a) saving lives; (b) safeguarding the economy; and (c) sustaining the structural reforms. The government has significantly boosted health spending, expanded safety nets, and provided time-limited and targeted tax, debt, and cash flow relief to the most affected businesses and sectors of the economy. The authorities have also adjusted their reform plans in response to COVID-19. Measures with a positive social and poverty impact have been accelerated, and those that could amplify suffering via large adjustment costs for the poor have been deferred. Structural reforms without immediate poverty impacts – such as financial sector and SOE reforms – continue to be implemented with assistance from the Bank.

29. **The government's deficit financing strategy relies on a mix of development partner and private sector support.** The budget deficit in 2020 is estimated to be about US$2.5 billion (against projections of US$700 million in January). In addition to Bank support, the Asian Development Bank (ADB) has disbursed US$500 million in crisis financing, as has the IMF (US$375 million RCF/RFI). Further support is expected in October from the governments of Japan (US$125 million; co-financing of the World Bank DPO) and France (US$174 million). With access to external markets and a healthy external financial position, the Government expects to raise about US$600 million through domestic T-bills and external Eurobond issuances in 2020. To maximize net private inflows, increase external financing flexibility, and benefit from the market

[12] Using the LMIC US$3.2 per day poverty line, and data from the *Listening to Citizens of Uzbekistan* survey.

signaling linked with IFI support to its strong reform achievements, Uzbekistan has opted not to participate in the DSSI.

30. **The Bank's priority in FY21-22 is to sustain Uzbekistan's ambitious reforms in the context of a new post-COVID normal.** The Bank's program in Uzbekistan is well-balanced between supporting the emergency response and strengthening the economy post-COVID. The pipeline for FY21 includes eight operations for US$1.1 billion (IBRD and IDA). While the number of projects and financing amounts in the pipeline have not changed, three IPFs have already been adjusted to strengthen resilience and improve recovery prospects (in digital development, innovation, and energy sectors), and the other five projects (inclusive market transition DPO, guarantee in the energy sector, and IPFs in tax administration, financial sector development, and statistics capacity building) are being adapted to respond to the impact of COVID emergency in Uzbekistan. Of an indicative IDA19 allocation of US$1.5 billion, up to US$650 million may be front-loaded in FY21 (including for the DPO) to directly support the anti-crisis response. An extra will be available through a reduction to the pipeline (Digital project) and a partial cancellation (South Karakalpakstan Water Resource management Improvement Project) generated savings to be reprogrammed of about US$56 million. The current IBRD exposure limit leaves adequate room to deliver the FY21 pipeline. New lending will focus on sequencing and sustaining in the post-COVID "new normal" an effective withdrawal of the state from its control and ownership of the economy, while supporting the growth of an inclusive, sustainable, and private sector-led market economy. Specific areas of support include energy, banking sector liberalization, labor market reforms, privatization of state enterprises, and rural job growth from the agricultural transformation. More than quarter of 15 ASAs to be delivered in FY21 are high priority tasks focused on supporting the GOU in shaping relevant policies in the post COVID period, including the development and implementation of a comprehensive poverty reduction strategy.

31. **To respond to the COVID-19 crisis, sustain the reform momentum, and fill the domestic financing gap in 2020, a socio-economic task force, led by the Bank and UNDP, was created** at the request of the Government to coordinate partner assistance in shoring up the Government's health, social, and economic policy response to the crisis. Through this and other coordination platforms, the World Bank ensured that the FY21 pipeline remains focused on reform areas of strong government demand for Bank's knowledge and high relevance for economic recovery and transition. In addition, and despite turbulent global financial sector conditions, Uzbekistan remains an area of active interest to private sector investors. This is especially the case in the energy sector, where the Bank Group plays a leading role along with ADB and European Bank for Reconstruction and Development (EBRD) in supporting the implementation of the sector reforms and private sector participation through demonstrative projects such as this proposed Navoi Scaling Solar IPP Project.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

32. **The Project Development Objective (PDO)** is to increase and diversify electricity generation capacity through private investment in Uzbekistan.

B. Project Beneficiaries

33. **The direct Project beneficiaries are** (a) NES as the Project off-taker, and (b) Nur Navoi Solar Foreign Enterprise LLC (Project Company), a special purpose vehicle (SPV) established by the IPP investor, Abu Dhabi Future Energy Company PJSC – Masdar (the Sponsor) as the Project Company.

34. **NES** was established in June 2019 as a joint stock company including 14 regional transmission branches and a number of engineering, construction, and social subsidiaries and units. The sole shareholder of NES is the State Asset Management Agency (SAMA). NES, as an unbundled transmission company, in accordance with the Presidential Resolution (PP-4249), dated March 2019, is entrusted with the following key functions: (a) transmission system operation and development; (b) transmission of electricity within the country; (c) regional connectivity and electricity trade (export and import); (d) dispatch management of the power system; (e) single purchaser of electricity from generation companies, including IPPs; and (f) the sale of electricity to distribution companies. NES will benefit from the proposed IBRD Payment Guarantee under the Navoi Scaling Solar IPP Project (a) for its payment obligations under the power purchase agreement (PPA) signed with Masdar/ Project Company to cover the risk of nonpayment, capped at six months' equivalent of energy payments; and (b) through lower bid prices facilitated by the proposed WBG support which includes the IBRD Guarantees.

35. **Masdar is wholly owned by Mamoura Diversified Global Holding PJSC,** formerly Mubadala Development Company (credit rating: AA (S&P/Fitch) / Aa2 [Moodys]), which is in turn a company wholly owned by Mubadala Investment Company PJSC (a sovereign wealth fund and a strategic investment company of the Government of Abu Dhabi). Masdar was formed in 2006 to promote renewable energy and sustainable urban development. Masdar is active in over 30 countries and has investments in clean energy projects with a combined value of c.US$14.3 billion and a gross capacity of over 5 GW installed or under development. The technology deployed in these projects range from onshore and offshore wind projects to solar PV and CSP technologies in the Middle East, North Africa, Europe, North America and Australasia. Masdar was announced as the winning bidder in the competitive auction to develop the 100MW utility-scale PV solar plant, which will be located in the Navoi region. As the Project Sponsor, Masdar requested an IBRD Payment Guarantee as part of its bid submission.

36. **Ultimate Project beneficiaries will be electricity consumers in Uzbekistan**, including households and private and public sector consumers, since the Navoi Scaling Solar IPP will contribute to diversifying the power mix and increase cleaner and sustainable power supply in Uzbekistan. Additional power generated by the Navoi Scaling Solar IPP will contribute to productivity and spur economic growth by assisting with conversion of domestic solar resources into improvements in the power supply, assisting with job creation, reducing poverty, and improving the prospects for shared prosperity.

C. PDO-Level Results Indicators

37. **The Project will benefit from WBG support including an IFC investment and IBRD Guarantee**. The WBG instruments increase the attractiveness of the renewable IPP investment

opportunity in the country, which in turn helped mobilize quality international lenders and investors and drove down the project tariff.

38. **The proposed PDO indicators** for the proposed Navoi Scaling Solar IPP are:

(a) Power generation capacity constructed (renewable/solar), MW);
(b) Electricity supplied by the Project into the grid (renewable/solar), GWh);
(c) Private capital mobilized (equity/debt; US$); and
(d) Greenhouse gas emissions avoided (tCO_2/year).

39. **The project's intermediate indicators** are:

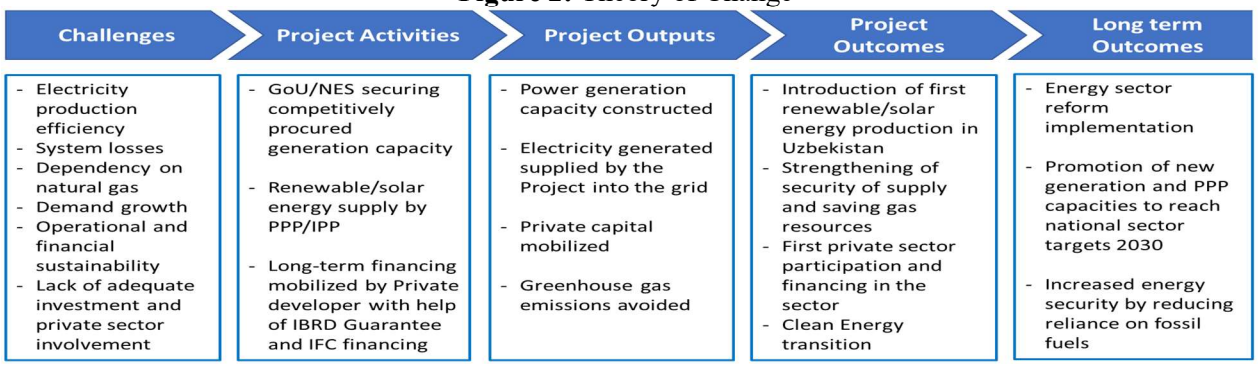
(a) Physical implementation progress in generation project constructed (percentage); and
(b) Project commissioning test completed (Y/N).

40. **The proposed PDO and indicators in this PAD relate to the Navoi Scaling Solar IPP.** Similar PDOs and indicators would also be developed for the subsequent projects being currently supported by IFC advisory services and requested by the GoU for the World Bank to consider its payment and loan guarantees. IFC will track development outcomes indicators for the Navoi Scaling Solar IPP as detailed in Section VII.

D. Results Chain

41. **The Project aims to support the GoU efforts to increase the power generation capacity and diversify its mix through introduction of renewables and private sector participation in Uzbekistan.** Inefficiency of sector operational performance through the supply chain, high dependency on gas resources, financial vulnerability, substantial investment needs and lack of private sector participation are among major challenges in the electricity sector in Uzbekistan. In this context, the proposed Project will hence address these challenges, especially through supporting the GoU/NES in mobilizing the long-term commercial and private financing using WBG instruments (IBRD upstream sector support and risk mitigation instruments and IFC advisory and financing) contributing to the diversification of the energy mix through clean energy deployment and promoting private sector participation, thus meeting the growing demand for electricity. The Project will also support the GoU's awareness and capacity building to structure and implement PPP projects through a competitive and transparent process, as well as analyze and monitor the fiscal impact of the PPP program.

Figure 2: Theory of Change

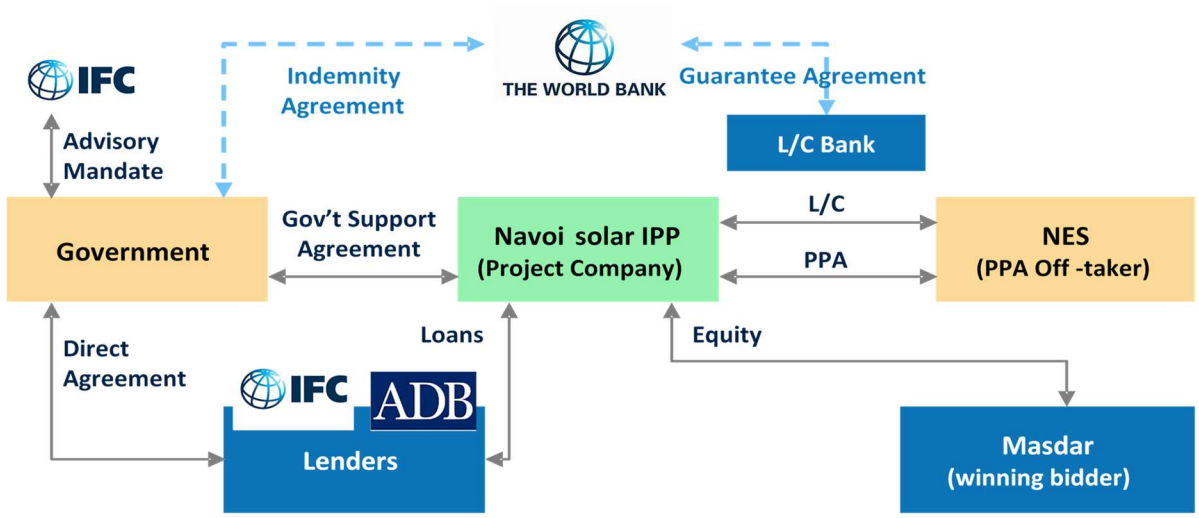


III. PROJECT DESCRIPTION

A. World Bank Group Scaling Solar Program

42. **The proposed Project is the Navoi Scaling Solar IPP developed under the WBG Scaling Solar Initiative.** WBG Scaling Solar brings together a suite of World Bank, IFC, and Multilateral Investment Guarantee Agency (MIGA) services and instruments under a single engagement aimed at creating viable markets for grid-connected solar PV power plants. It is an open, competitive, and transparent approach that facilitates the rapid development of privately owned, utility-scale solar PV projects, previously in Sub-Saharan Africa and now in Uzbekistan. It is capable of rapid implementation and offers a 'one-stop-shop' package of advisory services, contracts, financing, guarantees, and political risk insurance. This enables governments and utilities to procure solar power transparently and at the lowest possible cost. The program was designed to ease replicability in similar countries while taking into account local specificities (for instance, site availability).

Figure 3: Summary Contractual Structure for the Navoi Scaling Solar IPP

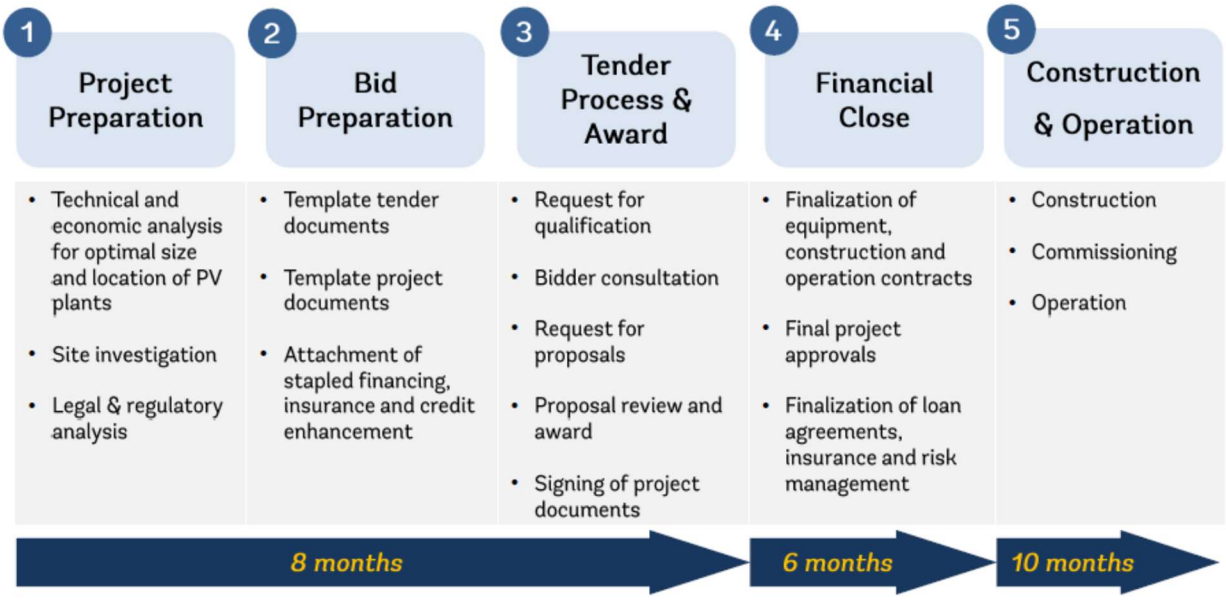


43. **As part of the WBG Scaling Solar program's original design, IFC Advisory Services (IFC Advisory) supports governments in preparing a competitive and transparent solar tender** based on template documents and processes. Based on the bid package, IFC Investment Services (IFC Investment), World Bank, and MIGA then provide term sheets for financing, guarantees, and political risk insurance, respectively. Bidders can decide to use none, a combination, or all of these WBG instruments. Bidders that pass the technical and financial criteria are then ranked based on the offered tariff.

44. **The objective of the WBG Scaling Solar Program is to target markets with perceived high risk for the private sector, playing a catalytic role in relatively more challenging markets.** A typical Scaling Solar market would have the following characteristics: (a) single-buyer electricity supply industry structure; (b) low credit quality off-takers; (c) governments with limited institutional capacity; and (d) nonexistent, limited, or poor track record with IPPs. Solar PV

technology for large-scale power generation solutions is now cost-competitive with other power generation solutions and has the added advantage of swift rollout and relatively long life. In the challenging markets that the program targets, the contractual framework is designed to address the single buyer context with appropriate risk allocation and appropriate government support to backstop credit risks. Standardized documentation makes it easier for governments to adopt the project framework and achieve speedy implementation. The Scaling Solar aims to start delivering energy within a two-year timeframe from initial government engagement. Figure 2 shows the key steps and expected time line for a Scaling Solar project.

Figure 4. Key Typical Steps and Expected Time Line for Scaling Solar Project



B. Uzbekistan Scaling Solar Background

45. **As part of its ongoing engagement, the WBG has been supporting GoU initiatives on solar energy deployment and PPP promotion,** including through this Project. The WBG initiated discussions with GoU counterparts to launch the Scaling Solar program in the country. In May 2018, the GoU entered into an advisory agreement with IFC to launch 1 GW of solar PV tenders under the WBG Scaling Solar framework, starting with the first phase of 100MWs at Navoi site. It will be a grid-connected utility-scale renewable energy IPP project selected through a competitive tendering process.

46. **IBRD has been supporting the GoU with upstream legal, regulatory, and institutional development – creating an enabling environment for renewable energy deployment, as well as with site identification screening, and also providing risk mitigation instruments.** In parallel, IFC Advisory carried out the pre-feasibility work on the 100MW plant and tendered it out to select private sector developers using the Scaling Solar open and competitive procurement process. Twenty-three companies submitted a Request for Qualification (RFQ) including many internationally reputable firms, of which eleven were prequalified. The winning bidder was Masdar with a bid of US¢2.679 per kWh, the lowest tariff for solar energy in Central Asia to date, fixed for 25 years.

C. Project Summary

47. **The Project presented for World Bank and IFC Board approval through this PAD consists of the development, design, financing, construction, ownership, operation and maintenance by Nur Navoi Solar Foreign Enterprise LLC** (the Project Company) of a new 100MWac (approximately 130Mwp) PV plant located in Navoi region, Uzbekistan (the "Navoi Scaling Solar IPP"). The electricity generated from the Project will be sold to the newly established Uzbek state-owned power utility, NES, under a 25-year PPA. The Navoi Scaling Solar IPP is expected to reach financial close in October 2020, following a second deadline extension request as a result of COVID-19-related supply chain disruptions and logistics uncertainties. Navoi Scaling Solar IPP will contribute to the diversification of the country's energy mix through deployment of clean energy resources and leveraging of private and commercial financing in Uzbekistan. The Project will increase the installed power generation capacity by 100 MW, supplying an incremental 270 GWh per year of renewable electricity to the grid, avoiding GHG emissions of 156,000 metric tons per year on average, and mobilizing nearly US$110 million private and commercial capital financing.

48. **Nur Navoi Solar Foreign Enterprise LLC was established to implement the Project.** The Project Company is 100 percent owned by Masdar, a leading renewable energy development company specializing in the development, financing, construction, and operation of renewable energy projects. Since its inception in 2006, Masdar financed renewable projects valued at more than US$14.3 billion and with a gross capacity of over 5 GWs, installed or under development.

D. World Bank Group Instruments

49. **All WBG instruments are optional for investors** and are designed to help mitigate (perceived) risks by potential long-term investors, foster higher participation in the bidding process, and improve the quality of bids and enhance competition and are ultimately expected to have a positive impact through more competitive and affordable electricity generation costs and electricity tariffs. This approach is in line with market precedents and World Bank experience in mobilizing commercial capital in similar circumstances where long-term investors (both international and domestic) would ask that government-related risks (including payment default risk by a public off-taker or other public authorities) be mitigated, or otherwise addressed, with WBG support. The WBG Scaling Solar Initiative approach includes in its design the offer of the World Bank Guarantees to private investors, alongside IFC lending and MIGA insurance (cover for equity investors). The Project will be supported by several WBG instruments in favor of the Project Company, Nur Navoi Solar Foreign Enterprise LLC. This includes an IBRD Payment Guarantee of up to US$5.1 million, an IFC A-Loan and a Senior Loan from IFC acting as implementing entity of the Canada-IFC Blended Climate Finance Program each of up to US$20 million, and one or more IFC US dollar interest rate swaps covering a notional amount representing up to 100 percent of the total debt to the Project Company. These interest swaps would represent a Loan Equivalent Exposure (LEQ) to the Project Company of up to US$1 million. For this first Project, the Sponsor has not requested MIGA political risk insurance.

IBRD Payment Guarantee

50. **The payment guarantee was selected as an effective IBRD instrument to support the first IPP development project in the country.** Past international experience has showed that the WBG Scaling Solar approach and the WB payment guarantee are effective and efficient tools to kick off renewable energy development, as they mobilize much needed capital, technology and management expertise from the private sector into frontier markets (see Section III.G below). The IBRD guarantees are particularly relevant in countries that go through market reforms with a high degree of macro, regulatory and institutional uncertainties. As the Uzbekistan energy sector moves forward with its sectoral reform agenda, with regulations, institutional capacity and payment track record not yet fully tested, the GoU and IBRD consider the application of the guarantee critical to mitigate (perceived) risks and to provide a signal to international renewable energy private investors of the government's commitment to stabilizing and implementing further reforms. The main risk factor of a call on the IBRD guarantee is NES' ability to make timely payments to the IPP, which is driven by NES' and the overall power market's financial sustainability. As key mitigants, GoU has committed to move towards a full cost-recovery-based tariff by 2023 and IBRD is providing support to NES to implement this tariff method and to improve NES' operational efficiency and financial condition. The risk of a call on the guarantee is assessed to be moderate after considering these mitigation measures. Details of NES' financial analysis are provided under Section VI – Sector Financial Analysis.

51. **The proposed IBRD Guarantee for the Project consists of a payment guarantee of up to US$5.1 million** (representing the equivalent of six peak months'[13] of PPA payments by the off-taker to the Project Company)[14] for 20 years. The payment guarantee will backstop the security mechanism (that is, a Letter of Credit (L/C)) in case of a draw on the L/C that the GoU or NES has not reimbursed within 12 months. A competitive RFP process was launched by NES on March 6, 2020 to select an L/C bank to provide a long-term standby L/C in favor of the Project Company. After careful evaluation based on criteria set out in the RFP, NES selected Natixis (the corporate, investment and financial services arm of Group BPCE, the second largest banking group in France) as the L/C bank. A tender award notification was issued to Natixis on June 26, 2020. The indicative terms and conditions of the IBRD Guarantee are included in Annex 1 (IBRD Payment Guarantee Term Sheet).

52. **Masdar requested the support of an IBRD Guarantee as part of its bidding conditions.** This was mainly due to the limited track record of the GoU, NES (off-taker) and key government agencies handling IPPs, as well as uncertainties relating to ongoing energy market reforms. The IBRD Guarantee comprises a 20-year Letter of Credit structure committed upfront to mitigate the PPA payment risks, which is critical to the bankability of the transaction. The IBRD Guarantee provided confidence to bidders and lenders to participate and provides a good opportunity for the GoU and the World Bank to continue assessing key risks preventing private investment on commercial terms and to devise appropriate action to improve the sustainability of the proposed Project and any future IPP projects.

[13] April to October.

[14] This Guarantee support is expected to help mobilize US$110 million in private/commercial capital, including private equity, shareholder loans, and commercial funding, including DFI financing.

53. **The successful implementation of this transaction will be critical to the success of both the power sector reform and the PPP agenda in Uzbekistan**, as it will confirm the viability of the financial, transactional, and regulatory systems put in place under the reform program. The Project will contribute to a low-cost base for new generation capacity while the GoU concurrently implements major sectoral reforms. In the longer term, as Uzbekistan's power sector reforms progress, it is expected that the need for risk mitigation as well as the transaction costs would decrease as electricity utilities (and, in particular, NES) establish a track record of successful financial and operational performance, and the overall policy, institutional and regulatory environment improves in line with progress in the implementation of power sector reforms in Uzbekistan.

54. **The proposed IBRD Guarantee backstops certain payment obligations undertaken by the PPA off-taker (NES), and the GoU in lieu of the PPA off-taker**. Under the Navoi Solar PPA, NES would provide security in the form of an L/C, issued through a commercial bank in favor of the Project Company for the amount corresponding to six peak-monthly PPA payment obligations of the off-taker. The L/C may be drawn in the event NES fails to make timely undisputed PPA payments to the Project Company, subject to certain grace periods. Following a draw under the L/C, NES/GoU[15] would be obligated under the Reimbursement and Credit Agreement (to be entered into among NES, GoU, and the L/C bank) to repay the L/C bank any amounts drawn under the L/C (plus accrued interest) within one year. If NES/GoU repays such amount within that agreed period, the L/C would be reinstated to the amounts repaid. However, if NES/GoU fails to repay the L/C bank within such period, the L/C bank would have recourse to the IBRD Guarantee for the drawn amounts (plus any accrued interest) under the Guarantee Agreement (to be entered into between IBRD and the L/C bank). In case of such a call on the guarantee, the maximum L/C amount and the corresponding IBRD Guarantee would be reduced by the amount of payment made by IBRD under the guarantee.

55. **The proposed IBRD Payment Guarantee will be priced as per the approved IBRD pricing policy for guarantees (fee structure and levels)**. For the proposed Navoi Scaling Solar IPP Project, IBRD's FY21 pricing applies and includes a guarantee fee ranging between 50 and 100 basis points per year depending on the guarantee average life, calculated on the highest annual guaranteed amount, and payable every six months in advance. In addition, there would be a front-end fee (25 basis points on the maximum exposure of the guarantee); an initiation fee (15 basis points on the maximum exposure of the guarantee or US$100,000, whichever is higher); and a processing fee (usually 50 basis points of the guaranteed amount) as well as the reimbursable expenses of each transaction. All such guarantee-related fees will be paid by the transaction Sponsor/Project Company.

IFC Investments

56. **The proposed IFC investment consists of** (a) an A Loan of up to US$20 million to the Project Company; (b) a Senior Loan of up to US$20 million to the Project Company from IFC acting as implementing entity of the Canada-IFC Blended Climate Finance Program (IFC Blended Finance Loan); and (c) one or more US dollar interest rate swaps to hedge the interest rate risk in

[15] The GoU supports the PPA payment by committing separately through the GSA to fully replenish the L/C balance if the L/C is drawn by the Project Company within 44 days of receiving notice of such draw event.

respect of the senior debt comprising the project financing in a notional amount of up to US$60 million. These interest swaps would represent an LEQ to the Project Company of up to US$1 million.

IFC Economic Capital

57. **The economic capital exposure for the proposed IFC investment is up to US$5 million.** As of June 30, 2020, IFC economic capital exposure in Uzbekistan was US$20 million and IFC's outstanding exposure to the Sponsor was US$150 million.

Project Additionality

58. **The Project additionality is both financial and nonfinancial.** The proposed financing package is part of the WBG Scaling Solar framework and will support the development of the first utility scale solar PV IPP in Uzbekistan. After winning a competitive tender, the client opted to use IFC's stapled debt financing package which includes IFC long-term financing, concessional funding, and WBG credit enhancement products. This package offers the Company financing not available to infrastructure projects in Uzbekistan, at terms that match the PPA period. Together with the deployment of IBRD credit enhancement products, IFC's participation in the Project will mitigate commercial risks and facilitate financial closure. IFC's sector knowledge and global experience is material to structure bankable financing documentation in line with international project finance standards.

Financial Additionality

59. **Financing structure.** IFC is providing a financing package of up to US$40 million, comprising a US$20 million A Loan and an IFC Blended Finance Loan of US$20 million. Debt financing for infrastructure corporates in Uzbekistan is severely restricted and not available at terms offered by IFC. Over the past five years, market data shows there were only seven US dollar-denominated syndicated loans have been provided to companies in Uzbekistan.[16] None of these loans were in the infrastructure sector. IFC financing is offered at terms that match the PPA period and the long life of the assets. The IFC financing and IBRD Guarantee, will contribute to lower cost of capital. Long-term financing is important for the development of renewable energy projects, especially in a nascent market with limited IPP track record such as Uzbekistan, and material to achieve the competitive project tariff and support long-term financial sustainability of the sector.

Non-Financial Additionality

60. **Noncommercial risk mitigation:** IFC is playing a leading role in structuring and de-risking the project by providing in-house expertise on renewable energy sector and IPP financing. IFC expertise, alongside the WBG instruments under the Scaling Solar approach, will ensure an adequate risk allocation and bankable project finance documentation and will facilitate a successful financial close. IFC additionality also stems from the role of IFC Advisory that preceded the investment, supported a competitive tender and signaled sound project fundamentals and

[16] Loans in other sectors with a combined total face value of US$ 2.11 billion and tenors ranging from 4-13 years. Source: IFC Global Macro and Market Research team.

transparency to potential investors. The deployment of the IBRD Guarantee to backstop the off-taker's financial obligations in the PPA, alongside the IFC financing package, will mitigate off-taker creditworthiness risks.

61. **Frameworks – Catalyzing regulatory change.** IFC's global expertise in renewable energy project finance will facilitate the successful completion of a critical project – the first-of-its-kind in Uzbekistan – developed on the back of the structural sector reforms. As a fundamental contributor to the WBG Scaling Solar approach, IFC is well-placed to catalyze the structural reforms supported by the IBRD, through the development of the first IPP in a nascent market. Given the lack of an IPP track record, IFC participation and successful closure of the Project is expected to test the effectiveness of Uzbekistan's recently reformed regulatory framework and send a signal to the market of its conduciveness to private participation in the development of additional renewable energy projects.

Table 3. IFC Additionality

IFC's Expected Additionality	Description	Indicator	Timing and Delivery
Financing structure	Up to U$40 million debt financing in the form of an IFC A-Loan and IFC Blended Finance Loan that will contribute to a lower cost of capital for the sponsors. The IFC financing package will be offered with tenor and terms not available in Uzbekistan from commercial banks.	Disbursement of IFC A Loan and IFC Blended Finance Loan	Q4-2020
Non- commercial risk mitigation, including trusted partnership	IFC's participation in the competitive tender and expertise to improve Project documents will ensure adequate risk allocation and compliance with international project finance standards and facilitate successful financial close.	Project's financial close	Q4-2020
Catalyzing regulatory change	IFC global expertise in renewable energy project finance will facilitate the successful completion of the first large-scale solar PV plant in a nascent market with a limited IPP track record.	Disbursement of IFC A-Loan and IFC Blended Finance Loan	Q4-2020

E. Project Costs and Financing

62. **The amount of equity to be provided to the Project Company by the Sponsor is expected to be up to US$50 million.** Total debt financing package of US$60 million will be provided by IFC (with an A Loan and an IFC Blended Finance Loan of US$20 million each) and ADB will provide a parallel loan to complete the debt financing. Table 4 reflects indicative project costs, financing structure, and the IBRD Guarantee for the project.

Table 4. Indicative Project Costs, Financing Structure, and IBRD Guarantee (US$ million)

Solar Power Plant Size	100 MW
Estimated Project Cost incl. contingency	110
Estimated Equity	50
Estimated Debt	60
of which Development Finance Institutions	60
of which Commercial Borrowing	-
Estimated Private Capital Mobilized	50
Estimated Payment Guarantee	5.1
Estimated Loan Guarantee	-
Estimated Total Guarantee Provided	5.1

F. IFC Blended Finance Rationale and Principles

63. **Debt financing for the Project will include a senior loan from IFC acting as the implementing entity of the Canada-IFC Blended Climate Finance Program**, a program funded by a Can$250 million contribution from the Government of Canada as part of Canada's Can$2.65 billion commitment under the Paris Agreement of December 13, 2015. The IFC Blended Finance Loan is managed by the IFC Blended Finance Department in collaboration with the IFC investment team managing the comprehensive financing package to support this first solar PV IPP in the country.

64. The Project meets the Development Finance Institution (DFI) Enhanced Blended Concessional Finance Principles for private sector projects as follows:

a) **Blended finance rationale.** Demonstration/participation constraints. Implementing the LCP Generation Expansion Plan requires billions of US dollars of investment, which will not be possible without private sector participation. Today, Uzbekistan faces significant barriers that hinder private sector investment at the scale needed, including the lack of a track record for private sector investment, lack of financial viability in the sector, and an untested regulatory environment. These barriers limit the availability of long-term financing for first-mover projects such as this one. Supported by blended finance, the Project will provide for a viable cost of generation as the GoU aims to add new generation while concurrently implementing major sectoral reforms, including the elimination of end-user gas and electricity subsidies.

b) **Minimum concessionality and crowding-in:** The 'minimum concessionality' principle requires that the level of subsidy should not be greater than necessary to induce the intended investment. The level of concessionality provided by the IFC Blended Finance Loan is estimated to be less than 3 percent of the total Project cost of US$110 million. The proposed investment is in line with the minimum concessionality principle as the proposed terms of the IFC Blended Finance Loan were offered to all pre-qualified bidders eligible for IFC financing, which ensured a level playing field for bidders and enabling the subsidy to be passed through the bid tariff. Analysis following the bid award shows a relatively modest contribution of blended finance to the Project tariff. The transparent tender process and other elements of the Scaling Solar framework, including the use of the IBRD Guarantee, have effectively attracted

private sector participation in a manner that supports the first tendered PPP in the country in alignment with the LCP Generation Expansion Plan and the GoU's sector reforms.

c) **Debt financing** for infrastructure corporates in Uzbekistan is severely restricted and not available at terms that are viable for this project. Over the past five years, market data shows there were only a few US dollar-denominated syndicated loans have been provided to companies in Uzbekistan, none of which were in the infrastructure sector. With this Project, blended finance can contribute to reducing the perceived high risk associated with long-term investment in Uzbekistan, where there is a limited track record of private sector investment, to eventually help attract more long-term capital into the sector.

d) **Commercial sustainability.** Despite recent tariff reforms, the current level of the weighted-average retail electricity tariff is still insufficient to recover full costs. In addition, natural gas prices for domestic consumption is also not cost reflective. The Project can send a strong signal to other governments in the region on how to develop financially sustainable solar PV-based power through private sector investment while also introducing major tariff adjustments and removing subsidies to reach cost recovery in the energy sector. If the Project is successful, future PV projects in Uzbekistan would need lesser or no subsidy.

e) **Reinforcing markets**. The GoU has initiated an ambitious reform program with several key objectives: (i) improving transparency and accountability of sector entities, (ii) unbundling the sector, (iii) improving service delivery and reliability, (iv) leveraging private financing in energy generation and distribution, and (v) enhancing the financial viability of the sector. The WBG is playing a lead role in the ongoing structural and institutional reforms, and this Project represents the first tangible private sector investment opportunity in the country.

f) **Promoting high standards.** Given the nature and purpose of blended concessional funds, transparency, results measurement, and effective governance have special importance. To ensure that the use of blended concessional funds have a strong development impact and will not undermine the functioning of private sector markets, the Project is subject to IFC's Blended Finance governance framework. The estimated subsidy level for this transaction was disclosed in the SII, and the Sponsor is aware that the blended finance co-investment is separate from IFC's own account investment. As noted, the proposed terms of IFC Blended Finance Loan were offered to all prequalified bidders eligible for IFC financing. The Project was approved by the Blended Finance Committee on August 5, 2020.

G. Lessons Learned and Reflected

65. The key lessons learned from the WBG's energy sector operations and project finance (limited recourse) transactions that are applicable to this proposed Navoi Scaling Solar IPP include the following:

a) **Comprehensive power sector reform program must be initiated in advance of major new PPP investments.** This approach helps establish a sound legal and regulatory framework and underpins the financial viability and sustainability of the power sector and new investments. Achieving sound institutional and governance arrangements has been a key focal point of the reform program. The ongoing reform

program in Uzbekistan consists of establishing necessary institutional and legal frameworks, unbundling of energy SOEs, restructuring of sector institutions, and adopting best practices in operations and financial management (FM), which are also highlighted as requirements of the COVID-19 risk mitigation factors to improve sector resilience. Implementation of reforms must be followed through, while investments come into the sector

b) **Successful IPP developments require not only risk mitigation instruments to attract private capital but also a financially viable power sector that is able to pay for the PPA in a sustainable way**. Past World Bank experiences in developing renewable energy IPPs in Zambia, Kenya and Armenia reaffirm this requirement. A robust risk mitigation package is necessary to attract private capital in newly opened market that does not have a track record of IPPs, however it cannot guarantee the future success of the project in the operation phase over 25 years if the power market is structurally unsustainable. For this reason, in addition to the risk mitigation package developed to support the solar IPP, continued support to implement Uzbekistan's power sector reform is needed.

c) **IBRD guarantee operations should be designed in parallel with other operations, which support improvements in the financial situation of the power sector value chain**. The IBRD guarantee operation is usually designed to enhance the creditworthiness of the off-taker. At the same time, the underlying reason for the lack of creditworthiness of the off-taker is not directly addressed in the operation. For Uzbekistan, the stabilization and improvement of NES' financials have been programed in ongoing World Bank support through Programmatic Technical Assistance (P168487) being implemented since 2018, a sequence of stand-alone Development Policy Operations (DPOs), and the proposed Electricity Transmission Modernization and Market Development (ETMMD, P171683). In the stand-alone DPOs approved by the World Bank Board in June 2018 and June 2019 (which also received supplemental DPO financing in June 2020; P166019, P168280 and P173948 respectively), the prior actions such as electricity tariff increases, transparency measures in utility FM, adoption of renewable energy law and introduction of first renewable generation into power mix (that is, commercial close of Navoi Scaling Solar IPP) were successfully implemented by the government, demonstrating GoU's commitment to the reform process. The World Bank ongoing and future policy dialogue will be designed to further support the improvement of PPP design, the update and execution of the sector's LCP NES commercialization and other measures to strengthen sector (in particular NES) financials.

d) **IPPs have made significant contributions to power generation capacity and are linked to the spread of renewable energy in both developing and developed world.** The risk of IPP mismanagement due to governance deficiencies are a lot more pronounced through unsolicited proposals and directly negotiated deals. In this context a transparent and competitive procurement process is strongly encouraged in

Uzbekistan. It is further recommended that the Government should seek best practice[17] to manage unsolicited proposals.

e) **Adequate sector planning is among key factors towards success of renewable energy deployment**. Comprehensive generation and transmission development planning should accompany large-scale renewable energy scale up to enhance the power/grid system to facilitate the integration of variable energy sources. With the support from the WBG, the GoU finalized a Least-Cost Generation Expansion Plan in 2019, and a Ten-Year Transmission Development Plan has recently been launched to strengthen the country's power system and grid capacity to connect future investment plans as well as to provide capacity-building activities through the electricity value chain.

f) **Competitive project selection, prudent structuring, and equitable contractual allocation of risks** between the various participating parties are critical ingredients to ensure a transaction's long-term sustainability. These principles are embedded in the WBG Scaling Solar Program for Uzbekistan and have been followed in ensuring the selected projects are part of the GoU LCP and in the preparation process for the Navoi Scaling Solar IPP.

g) **Readiness of core transaction agreement during the project preparation is key to reach commercial and financial close on time.** The WBG Scaling Solar Program embedded bankable transaction documents in the tender documents. The general acceptance of these documents by bidders allowed a smooth commercial close of the Project following the tender results. The bankability of these documents is also expected to reduce the time needed between commercial and finance close.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

66. **Nur Navoi Solar Foreign Enterprise LLC is an SPV incorporated and registered in Uzbekistan to develop, finance, build, own, operate, and maintain the Project.** Masdar is bringing in long-tenured and experienced staff to the board and management of the SPV. The construction and operation of the Navoi solar power plant will be implemented through an engineering, procurement and construction (EPC) contract and operations and maintenance (O&M) contract, respectively. Both the EPC and O&M contracts will be procured competitively by Masdar and will be agreed and signed as a prior condition to financial close. No Non-Disclosure Agreements have been entered into with respect to the Project, and IFC and IBRD will apply their respective Access to Information Policies for document disclosure.

[17] Policy Guidelines for Managing Unsolicited Proposals in Infrastructure Projects *https://ppp.worldbank.org/public-private-partnership/library/policy-guidelines-managing-unsolicited-proposals-infrastructure-projects*

67. **For the proposed Project, the roles and responsibilities of the GoU (through its agencies and SOEs) and of the Governor (Khokimiyat) of Navoi Region are as follows**:

(a) MIFT is the implementing agency for the Navoi Scaling Solar IPP and represents the GoU under the Government Support Agreement (GSA) signed with the Project Company and will also enter into the GSA Direct Agreement with the Project lenders.[18] Established[19] through the merger of the State Investments Committee and the Ministry of Foreign Trade, MIFT is the GoU agency responsible for implementation of the unified state investment policy; management of promotion of foreign investments, above all direct investments; and cooperation between IFIs and the GoU, as well as formation and management of the unified state policy in the field of foreign trade and international economic cooperation.

(b) The MoF, on behalf of the GoU, will enter into an Indemnity Agreement with IBRD (by which the GoU commits to reimburse IBRD in case of a call on the proposed guarantee). Through the PPP Development Agency (PPPDA) and its related units, the MoF has been involved in the preparation of the Navoi Scaling Solar IPP with MIFT including, among others, 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 MIFT).

(c) The MoE provides policy direction on the sector development, and on planning and procurement of power generation capacities.

(d) NES, as the single purchaser of electricity from generation companies, including IPPs, is the off-taker for the Project's electricity and has entered into a 25-year PPA with the Project Company. An independent engineering service will be jointly arranged by NES and the Project Company to check the plant performance and monitor the compliance with technical specifications under PPA.

(e) The Governor (Khokimiyat) of Navoi Region is the party to the Land Lease Agreement signed with Masdar in relation to the long-term lease (for a duration equal to the term of the PPA and additional six months) of the Project site (600 ha).[20]

B. Results Monitoring and Evaluation

68. **Overall monitoring of the Project outcomes and result indicators and reporting to the World Bank will be undertaken by MIFT (implementing agency)** based on reporting by NES/the MoE and the Project Company. IBRD will supervise the Project with MIFT based on the mandatory reporting by (a) the Navoi Scaling Solar IPP Project Company as required under IBRD

[18] MIFT also mandated IFC Advisory as transaction adviser to the GoU in relation to the Navoi Solar IPP project, and subsequently, for the additional 900 MW Solar IPP projects (under the same WBG-supported Scaling Solar Program for Uzbekistan) and for the 1,300 MW Syrdarya CCGT project.

[19] Pursuant to Presidential Decree #5643 dated January 28, 2019.

[20] Due diligence on land lease indicates the following: (a) land lease by a foreign investor from the GoU is provided for under the Land Code of the Republic of Uzbekistan; (b) long-term lease of land for non-agricultural purposes is authorized pursuant to Presidential Decree UP-5495 dated August 1, 2018; (c) the lease of the Project site to Masdar is authorized pursuant to Resolution No. 633 (enacted August 8, 2018) of the Cabinet of Ministers of the Republic of Uzbekistan. Furthermore, the same Resolution No. 633 authorizes the Governor (Khokimiyat) of Navoi Region to execute the land lease.

Project Agreement; (b) NES/the PPA off-taker as required under the Cooperation Agreement(s); and (c) the GoU as required under the Indemnity Agreement(s); as well as (d) through regular IBRD implementation support and supervision missions and field visits until the expiry of the proposed IBRD Guarantee. Evaluation of results indicators will be part of regular IBRD supervision missions. IFC will monitor development outcomes presented in the Anticipated Impact Measurement and Monitoring (AIMM) indicators table in Section VII. Section VII below presents the Project Results Framework that defines specific outcomes and results with indicators to be monitored.

69. **As part of the supervision plan, the Project team will pay special attention to NES' credit risks.** The ability of NES to make timely PPA payment to the Project Company is highly correlated to the overall success of the power sector reform, including, among others, achieving cost-recovery tariff, successful implementation of the IPP program to establish competitive cost of generations, reduction of technical and commercial losses as well as maintaining high collection rate achieved so far. Exogenous factors such as foreign exchange rate and power import/export price will also drive the NES' profit and cash position. GoU has demonstrated commitment to further pursue sector financial sustainability initiatives including gradual tariff increase to cost recovery level by 2023, formulation of a separate transmission tariff, loss reduction programs, and promoting private sector participation in generation and distribution. Understanding that envisaged broader sector reforms are critical to the proposed Project and sector sustainability, the WBG will continue to support priority sector reforms, including through the proposed Project, ongoing Strategy Programmatic Technical Assistance, DPOs, ongoing Modernization and Upgrade of Transmission Substations Project (MUTSP; P156584) and the ETMMD project under preparation. Before NES achieves its full cost recovery, including during the COVID19 period, the GoU is expected to continue supporting the company's balance sheet through budget transfer, public credit and cash injection into sector. The Project team will monitor all these key parameters of NES' financial position, payment discipline and contract compliance as well as sector reform progress as part of the regular project supervision. NES will be required to supply key financial information to the Project supervision team. During this transition period (between 2020 and 2023), the Project team will also conduct regular meetings with MIFT, MoE and MoF to discuss the sufficient provision of government resources for NES on the platform of this Project as well as ongoing Programmatic Technical Assistance, the proposed ETMMD project and potential DPO engagement.

C. Sustainability

70. **The Project is financially sustainable on account of the low tariff of US¢2.679 per kWh achieved through competitive bidding.** The sustainability is partially owning to the Government's direct and indirect contribution to the project. The GoU has made available public land to the private developer, established a favorable investment regime through a presidential decree and requested an IBRD Guarantee to mitigate project specific risks. These measures combined with the overall market opening, sector reform, and competitive terms of DFI financing created the condition for the lowest tariff in the region.

71. **As the first IPP to reach financial close, the Project will have a strong demonstration effect for future IPPs, in Uzbekistan, Central Asia and beyond.** The Project alone represents a relatively small portion (0.08 percent) of the current installed capacity in Uzbekistan and of the

developer's global projects portfolio but still an important achievement in initiating diversification of the power mix and attracting the private sector to take risks in entering a new market. The low-cost energy generation achieved through a competitive tender sets a good example for future PPP procurement. Due to COVID-19, the Project's financial close has been delayed by several months, while the Project Sponsor remains fully committed to the Project.

72. **The concessional resources provided in the case of the Project are expected to be significantly reduced for future IPP projects in the country.** For the Navoi Scaling Solar IPP, the Project Company is expected to receive publicly availed land with favorable solar irradiance, about US$28million in concessional loans (c.a. US$20 million IFC Blended Finance Loan, US$8 million ADB concessional loan) as well as the US$5.1 million IBRD Guarantee. While the concessional resources are critical to open the market and support the record-low tariff and therefore have a strong demonstrating effect for Uzbekistan and other countries in the region; for future solar IPP projects in the country the concessional support is expected to be scaled down. As long as the power sector reform resumes its pace after COVID-19 and the country starts to build a track record of IPPs, international sponsors and lenders can afford a lower risk premium, which should allow new projects to achieve the same level of tariff with less concessional resources. In addition, with the support of IFC Advisory and ADB, the Government is reviewing the risk allocation template for the Project and may seek further improvement for other solar IPP tenders.

Fiscal Impact Assessment

73. **The Navoi Scaling Solar IPP has a limited fiscal impact.** IPP programs, developed in the form of PPPs generally create contingent liabilities for the country. For the Navoi Scaling Solar IPP, the GSA provides for the Project Company's recourse to the Government in respect of termination payments and also include obligations for the Government's support to ongoing PPA payments. The Government's support to ongoing PPA payments and termination payments create contingent liabilities for the Government based on the International Public Sector Accounting Standards[21]. Due to its size, the Navoi Scaling Solar IPP will have a small impact on the Government's contingent liability. It has an ongoing annual PPA payment of about US$7 million and a peak termination payment amount of about US$100 million in certain termination scenarios.[22]

74. **The GoU has an ambitious PPP agenda including developing about 10 GW IPPs over 5 years.[23]** The impact assessment of these IPPs (10GW of solar, wind and CCGT) has demonstrated that it could have a potentially significant impact on the Government's contingent liability and fiscal situation. Such a stress analysis on fiscal impact assumes certain project costs and tariff structure based on estimates and public information, which was analyzed under a similar project risk allocation profile to the Navoi Scaling Solar IPP. The stress analysis indicates that if all contingent liabilities from every contract materialize (every PPA contract terminated) in one particular year, the overall IPP pipeline will have a material impact on the Government's debt-to-GDP ratio. For instance, in 2024 if every PPA terminated, the total termination payment could be as high as US$10 billion, increasing the debt-to-GDP ratio from 35 percent to 48 percent in the

[21] International Public Sector Accounting Standards (IPSAS) 32

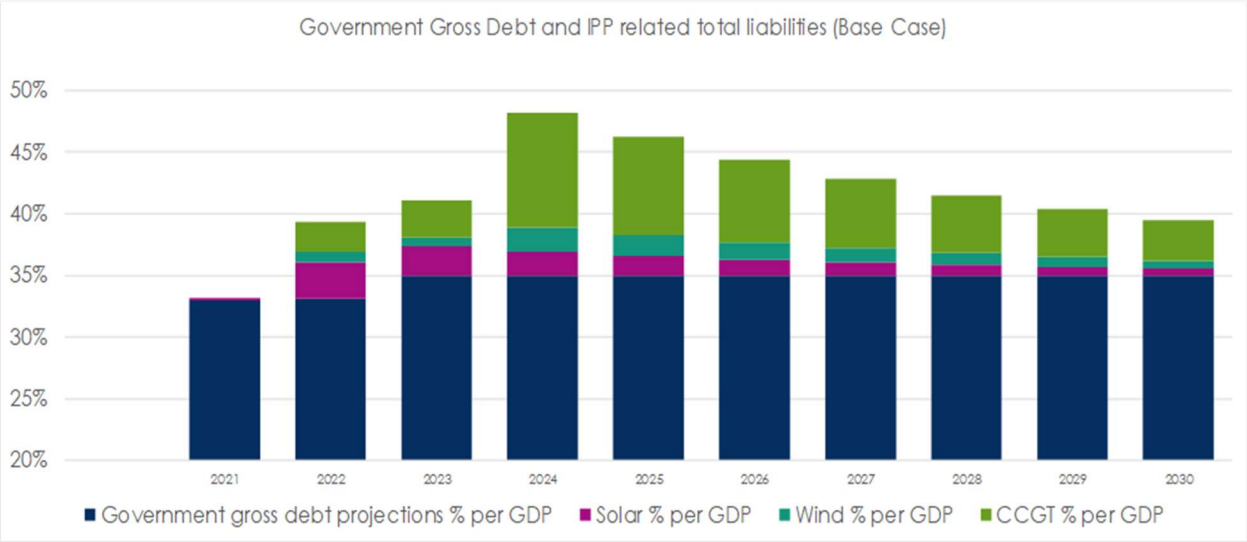
[22] For instance, the Purchaser's Event of Default, where the default was caused by NES's failure to comply with the PPA.

[23] The time line is based on publicly available information and government's estimation.

year of 2024. After 2024, because of GDP growth and amortization of Project debt, the total contingent liabilities will have a less incremental impact.

75. **The stress analysis considers a highly unlikely scenario where all PPA contracts would be terminated in one year.** Historically the default rate of project finance loans was about accumulative 10 percent over a 10-year period for all projects in the low middle-income country,[24] and the chance of default involving an actual PPA termination is even smaller. The scenario of every PPA in a country terminating within one year (for example, national expropriation) is an even more remote event. Even under such a stress case scenario, the GoU's Debt-to-GDP ratio, while increasing significantly would be within acceptable levels, partially due to its relatively low level of public debt today. Despite the comfort of the stress analysis result, the GoU is developing tools and policies to institutionalize the monitoring of its contingent liabilities generated from the ambitious PPP/IPP program carefully. If such contingent liabilities materialize, whether it is small or large, the GoU is to have enough resources and budget allocation to deal with such issues. In the next phase of IPP development, the GoU should endeavor to optimize the risk allocation with the objective of reducing contingent liabilities and the probability of risk materializing, while still attracting quality international developers and cost-effective financing. It is critical to achieve the above through deepening sector reforms and adopting risk mitigation strategies to achieve and maintain power sector financial sustainability.

Figure 5. Fiscal Impact Assessment of 10GW IPP program - Stress Analysis Result of Contingent Liabilities



[24] Based on a Moody's study on Project Finance default https://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_1114036

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

76. **The overall risk of the Navoi Scaling Solar IPP is Substantial, considering the following factors:** (a) it supports a utility-scale variable renewable/solar power generation (100 MW) investment in Uzbekistan with an environment where institutional and technical capabilities are still under development; (b) the country is dealing with a grid-scale renewable energy project (Navoi Scaling Solar IPP) for the first time such that familiarizing technical specialists with the proposed technology options will be crucial; (c) it is the first time that the country is introducing large scale private sector participation in the power sector; and (d) major reform and restructuring of the energy sector are ongoing that create uncertainty and challenge coordination of activities by new sectoral entities; and (e) impact of COVID-19 on the sector and ability of the Government to press ahead with the planned reform. The risks are considered 'Substantial' for political and governance, macroeconomic, sector strategies and policies, and institutional capacity for implementation and sustainability; and 'Moderate' for technical design, fiduciary, environment and social, stakeholders, and other risks. The WBG teams will closely monitor these during implementation. Meanwhile, it is worth noting that the risks on the Project and World Bank Guarantee are reduced as PPA tariff is lower than the expected generation tariff in the country and the size of the off-taker's payment for the Project is relatively small for the sector.

77. **Political and governance** – Substantial**.** Although the GoU and sector stakeholders' support for sector reforms continues to be strong, recent measures such as the increases in electricity and gas tariffs are complex and have generated public discussion and debate. Such critical tariff and institutional reforms—if poorly implemented—can create significant social risks and threaten the sustainability of the reform agenda. The GoU is aware of these risks and has taken a number of positive measures to mitigate them. It has established a tariff commission and a governmental working group to ensure that major reforms are enacted based on expert advice and robust information as well as regular consultation with the IFIs. It has also started practicing communication campaigns to better explain the need for the proposed reforms and collect citizens' feedback. As reform dialogue with the GoU, the World Bank's Programmatic Advisory Services and Analytics (ASA), supported by the World Bank-led Energy Sector Management Assistance Program (ESMAP), is in progress and has been comprehensively designed to support the GoU in formulation and implementation of its reform program in the energy sector. Similar Scaling Solar projects implemented in other countries have demonstrated that the sustainability of the energy sector reform programs is key to ensure additionality and impact of the World Bank engagement through guarantees. In this term, the proposed project will benefit from ongoing comprehensive reform program and its good track record with measures and actions taken in Uzbekistan. Since the beginning of the COVID-19 crisis, the GoU has demonstrated its intention to cope with new sector conditions and adjust its reform plans accordingly. The Presidential Resolution dated April 4, 2020 has approved a set of key policy measures on wholesale energy (electricity and gas) market creation, operational performance of gas SOEs, compliance control systems, and price liberalization of petroleum products to improve the operational efficiency and financial sustainability of the gas sector, which has been affected by the COVID-19-related reduction of export volumes and price decreases due to the economic slowdown in the markets.

78. **Macroeconomic** – Substantial. Risk to the project is considered substantial given the improvement in economic management, pre-COVID 19 robust growth and potential for fast recovery, relatively small project capacity (100 MW) and financing requirements compared to the installed generation capacity and sector investment needs, and low tariff obtained at the end of the competitive tender process. The impact of the Navoi Scaling Solar IPP over the GoU/sector contingent liabilities is expected to be limited. However, there is risk of potentially unaffordable contingent liabilities in the sector through increasing the number of IPPs with directly negotiated, unsolicited proposals with limited transparency being submitted to GoU officials, which are not necessarily in the sector investment plans. The World Bank will closely monitor through fiscal impact assessments, continue to advise the GoU on the sector policy and planning and advantages of competitively selected private investments, and endeavor to demonstrate such benefits through swiftly moving forward with the proposed projects in line with sector master plans. The success of the commercially closed Navoi Scaling Solar IPP tender is hence crucial to enhance the approaches prioritizing competitive tendering and procurement of new generation capacities.

79. **Sector strategies and policies** – Substantial**.** Uzbekistan is going through ambitious energy sector reforms, opening the hitherto state-dominated sector for private sector participation. High pace and sequencing of priority reforms could become a risk, if not managed well by the GoU going forward. Broader sector reforms currently remain of high priority and in progress, and the GoU is committed to further pursue such initiatives. The World Bank as a trusted long-term partner of the GoU for the design and implementation of the reform will continue to support the GoU in navigating the design and implementation stages of the reform to achieve transitions in a coherent manner. In this regard, the World Bank's active role in design and implementation of the GoU's ESRIP will be instrumental to strengthen the sector policies and strategies. On the financial viability side, the prevailing electricity tariff is still below cost recovery level and NES, as a recently established company, does not have a track record of dealing with IPPs. As part of the ongoing World Bank support to the energy sector reform, the World Bank will continue to support the GoU in broader electricity sector reforms, including on cost recovery initiatives through implementing the adopted electricity tariff-setting methodology and undertaking tariff adjustments on a regular basis to be jointly applied with social protection and mitigation factors for the poor and vulnerable population as well as sound communication strategies. In the COVID-19 sector context, the World Bank dialogue on the sector reform has recently included a stress test exercise to measure the impact of the COVID-19 conditions over the electricity sector utilities in coordination with other IFIs throughout the generation-transmission-distribution value chain. The dialogue and results of the analytical work will inform the GoU, IFIs, and World Bank operations, including the preparation of the pipeline PPP/IPPs projects supported by the IFC Advisory Services.

80. **Technical design of the Project** – Moderate**.** The Navoi Scaling Solar IPP will adopt proven technology (bifacial PV modules) for power generation, which will be taken as risk by the private investor, who is also responsible for constructing the power evacuation line (around 300 m). The land has been made available by the GoU to the Project Company through a Land Lease Agreement. Based on other countries' experience, the impact of the initial stages of renewable energy projects on power grid operation is expected to be manageable. The Project developer, Masdar, who manages the design, construction and operations, is an experienced sponsor with a track record of successful renewable energy development in an emerging market. A grid integration analysis identifies no major risk with the penetration of the Project to the country's grid

and power system. Despite the relatively low land and technical risks, as grid-scale renewable energy is new to the country, the World Bank team has been preparing a capacity-building and support program for institutional development to ensure that the national grid system operator/off-taker (NES) is capable of managing the variability of renewable energy. In this context, the World Bank project under preparation (ETMMD, P171683) aims to support the GoU's efforts in terms of investments in grid extension and rehabilitation, integration of new generation (renewable energy/solar and gas-fired) capacities, strengthening of system control and operations through digitalization, and system analysis and planning.

81. **Institutional capacity for implementation and sustainability** – Substantial**.** Given that the proposed Project is a PPP/IPP project in the energy sector, there is a significant risk that the GoU and NES (off-taker) are not sufficiently equipped to manage and implement the Project, including interactions with international investors. In addition, most of the key Project and sector stakeholders are either newly established (that is, MoE, NES, PPPDA, and so on) or recently restructured (that is, MIFT) and increase the risk of coordination and deviations from sector policies and plans. The WBG teams will mitigate the risk by constantly engaging senior officials of the GoU and sector stakeholders, clearly presenting the project scheme and success versus risk factors and providing technical assistance and institutional development support on several areas such as sectoral, legal/regulatory, technical, fiduciary, environmental, and social, as needed over time. The World Bank's ETMMD project under preparation will also strengthen NES' institutional, technical, operational and financial capacity to properly evacuate the electricity output from Navoi Scaling Solar IPP and other expected solar PVs and the Syrdarya CCGT under consideration, which will contribute to NES' financial sustainability as off-taker. On the FM side, NES, as a newly created entity will need to develop its FM and contract management capacities substantially to handle timely payment to IPPs. While NES inherited payment systems and policies from UE, the capacity is untested in relation to the IPP contracts. The World Bank sector dialogue and technical assistance as well as MUTS and ETMMD projects are directly targeting to build capacity to improve sector governance, increase PPP procurement transparency, optimize risk allocation and manage fiscal impact and contingent liabilities of PPPs.

82. **Stakeholders** – Moderate. Stakeholder risk is rated Moderate, because no major risks were identified at the time of appraisal relating to stakeholders, which could have an impact on the achievement of the PDO. To ensure timely implementation of the Project, the GoU also established an inter-ministerial working group led by MIFT to coordinate the efforts of different parties under the Project. Going forward, the Project team will conduct regular multi-stakeholder discussions to ensure timely mitigation of arising risks, successful implementation of the Project, and the achievement of targeted outcomes.

83. **Other –** Moderate. Other risk envisages the potential impact of COVID-19 on NES, its financial viability, and Project implementation. As outlined in the next section in detail, COVID-19 has been affecting the power sector and NES through a drop in electricity demand, change in consumption mix and reduced collection efficiency, resulting in a cash deficit for NES. The World Bank's recent COVID-19 impact analysis has informed the GoU's decision on the COVID-19 related impacts and resulted in various mitigation measures. Therefore, the GoU has already been taking certain measures to mitigate the potential risks, including through financial stimulus support to NES and the energy sector (refer to the next section for details). Going forward, the team will

closely monitor the situation to provide timely support the GoU to mitigate the COVID-19 implications.

VI. APPRAISAL SUMMARY

A. Technical

84. **WBG assistance supported the development of the design for the PV plant to be accordance with the Renewable Connection Code recently adopted by the GoU.** Hence, the PV plant, as well as the subsequent solar PV plants, will be designed in accordance with the Renewable Energy Connection Code in such a way that impacts on the power system are minimized and modern generation technologies are adopted. The introduction of significant amounts of variable renewable energy such as solar and wind, into a grid network can present operational challenges. The WBG carried out power flow and short circuit studies and confirmed that the connection of the initial 100 MW solar would not cause any overloading or voltage violations on the national transmission network.

85. **The proposed site was selected based on the following considerations.** First, NES identified cities across its network which, based on its own high-level assessment, had daily load profiles most suitable for solar PV supply. Based on this initial identification, the GoU indicated availability of potentially suitable land at the selected site, which was confirmed by an assessment by IFC Advisory.

86. **The Project will utilize bifacial monocrystalline dual glass modules as the chosen technology with horizontal single axis mounting structure.** The bifacial modules have a suitable track record and acceptable market-standard technical characteristics. They require relatively lower O&M resources and increase electricity generation due to bi-faciality. An independent engineer will be jointly appointed by the Project Company and NES to ensure prudent practices are applied and requirements are met. The PV plant will be operating under a standing dispatch instruction to deliver all electrical energy generated by the PV plant.

87. **As required by the Uzbekistan Grid Code, the Project Company will, at its own expense, install, test, and commission the metering system at the delivery point,** which will further be transferred to NES. The metering system will include the main meter and check meter, which should be able to measure at least energy and power (both active and reactive), current and voltage (in three phases), and frequency and total harmonic distortion. The Navoi Scaling Solar IPP (PV) plant will be connected to the existing 220 kV line through a loop in-and-out scheme, which mitigates impacts on the transmission network compared with the alternative T-branch connection. The MoE and NES, with the support from the World Bank, have initiated the preparation of a long-term Transmission Development and Renewable Energy Integration Plan to 2030. The plan will develop medium- and long-term investment needs to ensure the power system reliability, smooth grid integration of large-scale renewables and strengthen regional connectivity with neighboring countries. Furthermore, the GoU is considering development of a pilot battery energy storage system (BESS) coupled with one of the PV projects developed under Scaling Solar - Phase 3 program to improve power system flexibility and demonstrate BESS benefits and impact on integrating PV solar projects to the grid.

88. **The selected EPC Contractor – Shandong Electric Power Construction Corporation (SEPCOIII) – is competent and experienced to do the work.** The works for the Navoi Scaling Solar IPP are not particularly complex technically and there is no significant underground work. Close cooperation and effective interface management and supervision by the Owner's Engineer will be key to the successful execution of the works. The Owner's Engineer will coordinate with the EPC contractor with the objective of ensuring that works are performed according to specifications and delivered on time. Construction is expected to start shortly after financial close for a total duration of 12 months from initial mobilization and site preparation to commissioning of the PV plant.

B. Economic and Financial Analysis

Project Economic Analysis

89. **The economic rate of return (ERR) and net present value (NPV) of benefits are calculated using the WBG's standard cost-benefit analysis methodology**.[25] The country-specific economic discount rate is at 9.8 percent following the World Bank guidelines on discount rates (2 x long-term average annual real per capita GDP growth).[26] The detailed economic analysis of the Project was conducted with certain assumptions described in annex 3.

90. **Economic costs and benefits.** The economic cost for the Navoi Scaling Solar IPP captures (a) EPC cost, (b) Project development cost, and (c) O&M costs during the economic life of the plant. The main economic benefit is the avoided cost of the power plants, which will be displaced by this Project. Specifically, the Project will be displacing some of the generation at the Syrdarya Thermal Power Plant (TPP). The reason is that the variable operating cost is close to zero and in the country's merit order dispatch the Syrdarya TPP is identified as the plant with the highest marginal fuel cost in the system.

91. **Results of economic analysis.** Economic analysis confirms the viability of the Navoi Scaling Solar IPP. The average electricity generation of the Project is estimated at around 270 GWh per year over the Project life of 25 years (P50). The analysis indicates that the Project is economically viable with and without factoring in the GHG impact. The NPV of the Project is US$13.5 million, and US$79.1 million when the cost of carbon is factored in. The economic internal rate of return (EIRR) is 11.7 percent and 20.1 percent including GHG impact, which is above the hurdle rate and demonstrates positive economic returns of the Project. Table 5 provides the summary of economic analysis of the Project.

Table 5. Summary of Economic Analysis for Navoi Scaling Solar IPP

1	EIRR (EXCLUDING GHG IMPACT)	11.7%
2	EIRR (including GHG impact)	20.1%
3	NPV (excluding GHG impact)	US$13.5 million
4	NPV (including GHG impact)	US$79.1 million
5	Lifetime GHG emission, undiscounted	3.9 million tons CO_2

[25] Guidelines for Economic Analysis - Power Sector Investment Projects and Social Value of Carbon in Project Appraisal, 2014.
[26] Discounting Costs and Benefits in Economic Analysis of World Bank Projects, OPSPQ, 2016.

92. **Sensitivity analysis.** A sensitivity analysis was conducted to calculate the switching values for the key cost and benefit drivers in the economic analysis: (a) discount rate, and (b) capital cost of the plant. The economic value of the Project is positive and robust in all scenarios. The Project economic net present value (ENPV) with GHG impact turns negative only when the social discount rate exceeds 20.0 percent. The EIRR will go below the hurdle rate when the Project capital cost exceeds US$1.55 per W.

93. **Avoided GHG emission.** The benefits of avoided GHG emissions were estimated based on the avoided emissions from gas-fired electricity supply and the forecast low case shadow price of carbon,[27] and the Project is expected to contribute to the reduction of about 3.9 million tons of CO_2 over its lifetime and an average of about 156,000 tons per year.

94. **IFC AIMM.** The Project has an AIMM rating of Excellent based on an AIMM score of 71. The Project is the first in a set of sequenced interventions under the WBG Scaling Solar approach in Uzbekistan. The most significant Project level outcome is a reduction in the environmental footprint of Uzbekistan energy sector by introducing a renewable energy asset that will deliver electricity at a competitive tariff. At the market level, the Project will contribute to improving competitiveness of a nascent renewable energy sector by supporting the development of this PV solar IPP in Uzbekistan that will catalyze private sector participation in the power generation segment and improve resilience through the diversification of Uzbekistan's electricity generation mix (see detailed AIMM analysis in section VII).

Project Financial Analysis

95. **The project financial analysis** was conducted to assess its financial viability from (a) Sponsor/SPV's perspective and (b) sector's perspective.

96. **The analysis indicated that the Project is expected to generate sufficient cash-flows to cover operational and maintenance expenditure and debt service** and allow for regular dividend payments, providing the shareholders with a reasonable return for this kind of project. The lenders' base case further confirmed that Debt Service Coverage Ratios (DSCRs) are consistent with precedents for a project of this nature.

97. **Navoi Scaling Solar IPP will contribute to the power sector financial sustainability by reducing the average power purchase cost for NES, as off-taker**. While the proposed Project's tariff is set at US¢2.7 per kWh (flat with no indexation over 25 years of the PPA period), the weighted-average electricity purchase cost of NES is projected to grow to UZS 492.5 per kWh (US¢3.2 per kWh equivalent) by 2030 from UZS 285.3 per kWh (US¢2.7 per kWh equivalent) in 2021. The Navoi Scaling Solar IPP is expected to deliver a positive NPV for NES and the sector at US$10.4 million (when applying a discount rate of 5.375 percent, the yield of the 10-year Eurobond issued by the GoU in 2019).

[27] World Bank. 2017. *Guidance Note on Shadow Price of Carbon in Economic Analysis*.

Sector Financial Analysis

98. **Financial performance of NES in 2019.** Following the unbundling of UZ, NES, in the capacity of the wholesale electricity buyer (off-taker) and transmission company was established in June 2019[28]. During the first year (seven months) of operation, NES earned a small profit of UZS23 billion (US$2.6million), corresponding to a profit margin of 0.26 percent in 2019. During June-December 2019, the revenue generated by NES stood at UZS8,891 billion (US$997 million). Power purchase cost for 2019 amounted to UZS8,308 billion (US$931 million). The main cost items include finance cost (UZS 203 billion) and operating expenses (UZS 171 billion), among others. Additions to property, plant and equipment (PPE) amounted to UZS 69,648 million (US$ 7.8 million). The almost break-even net income in 2019 benefited from a significantly improved collection rate (over 95 percent), stable export revenues, and implementation of two tariff increase in 2018 and 2019[29], despite the overall sector tariff not achieving the level of full cost recovery (currently at about 92 percent, including partially [equity] capital cost).

99. NES has a solid balance sheet. Its total assets stood at UZS9,181 billion in 2019 with an equity position of UZS3,883 billion. The remaining balance sheet was funded by debt and payables. Its total outstanding debt stood at UZS2,235 billion (around US$251 million), most of which is long-term IFI loans. During 2019, mainly due to foreign currency denominated loans, NES had net foreign exchange losses of UZS174 billion (around US$20 million). NES is heavily dependent on the long-term sovereign and IFI financing to fund its capital expenditure (Capex) program. With the support of the World Bank[30], among others, NES will develop and implement a financial viability and sustainable debt management plan within the framework of the ETMMD project.

100. **COVID-19 impact on NES**. COVID-19 has had an adverse impact on the NES financials, especially cash position, as a result of: (a) changes in sales/consumption mix (that is, higher residential demand which has lower tariff and lower non-residential demand which has higher tariff, collectively leading to a lower weighted-average tariff / revenue); (b) decline in demand and sales; and (c) reduced bill collection efficiency. A stress test has been conducted by the World Bank jointly with NES to assess the impact. The preliminary results of the study suggest that COVID-19 is expected to result in a NES cash deficit of UZS 176 billion (approximately US$17 million) under the baseline scenario in 2020, on top of an expected UZS240 billion cash deficit (approximately US$24 million) in 2020 not related to COVID-19.

101. NES' cash deficit in 2020 is expected to be bridged through a combination of budget support from the MoF and increase of NES' trade payables to TPPs. During 2019, the MoF supported NES with around US$27 million of long-term budget financing to pay arrears to TPPs, so that in turn, TPPs could pay for their gas purchases.

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[28] The financial analysis of NES for 2019, as a baseline year, has been conducted by the World Bank team in consultation with NES based on: (a) NES opening balance as of July 1, 2019; and (b) NES interim (June-December) financial statements for the year 2019.

[29] The first increase occurred in November 2018 and resulted in a 45 percent increase for non-residential consumers and 9 percent for residentials consumers. The subsequent tariff increases in August 2019 raised the electricity tariffs by up to 36 percent and 18 percent for non-residential and residential customers, respectively.

[30] Through the Strategy Programmatic ASA and pipeline ETMMD project

102. **NES financial performance forecast assumptions.** The financial forecast developed a base case under the premise of the GoU achieving key reform milestones including time bound tariff increase, which is targeting at gradually increasing the end user tariff from 2021 (no tariff adjustments are expected in 2020 due to COVID-19) to cost recovery level in 2023. After 2023, the tariff should continue to be adjusted gradually and regularly in accordance with the cost base. Under this base case, NES will be able to generate positive cash flow to make timely payment for O&M expenses, power purchasing costs including payment to IPPs, and part of investment program.

103. Throughout the forecast period (between 2021 and 2030), the weighted-average cost of power purchase by NES from domestic generation companies and import is expected to increase by 1.7 times from UZS 283 per kWh in 2021 to UZS 486 per kWh in 2030. NES' average sale tariff is expected to increase from UZS 309 per kWh to UZS 528 per kWh (US¢$3.5 per kWh) to reflect the cost recovery level starting from 2023. Currently, NES has a total debt balance of around US$251 million equivalent, which is expected to grow up to US$910[31] million by 2030, mainly for financing the company's capital investment program on modernization and expansion of the transmission assets and digitalization of the grid. It is expected that the increase of debt will continue to be funded by long-term financing from IFIs and DFIs, averaging about US$65 million per year. No transmission loss reduction is factored into the base case, as the level of transmission losses are marginal[32].

104. **NES financial performance forecast result.** Under the base case, NES is expected to generate a positive albeit small profit margin and net cash flow starting from 2021, even before reaching full cost-reflective tariff target in 2023. The key factor driving positive net income and net cash flow is the export related net revenue. Because of the favorable power trading condition, the export revenue, in combination with high collection rate, is more than offsetting the effect of tariff below full cost recovery. After the implementation of tariff reforms by 2023, NES is expected to continue to grow its revenue, net profit and net cash, while meeting its investment requirement mainly through IFI/DFI long term financing. The full income statement of NES for 2020–2030 is presented in annex 3.

105. NES is expected to be able to meet its current liabilities including trade payables to IPPs on time, as the current ratio (current assets balance over current liabilities) is projected to be over 1.1 starting from 2021. The reliance on mainly long-term debt financing will increase NES' total annual debt service (principal and interest) from UZS106 billion (US$12 million) in 2019 to UZS 726 billion (US$49 million equivalent) in 2030. Under this base case scenario, NES is expected to maintain a healthy DSCR of over three times during the forecast period. Table 6 summarizes key financial performance indicators of NES during the forecast period. For detailed information on projected financial statements, please refer to annex 3.

[31] This assumption will be further updated based on the outputs of the 10-year Transmission Development Plan and Renewable Energy Integration Plan, launched recently with the World Bank's support.
[32] The current level of 2.5 percent is used throughout the forecast period.

Table 6. Indicative Projected Financial Performance of NES (baseline)

	2021	2022	2023	2024	2025	2030
Profitability						
Revenue growth (%)	38.80	17.60	9.60	9.90	9.40	12.10
EBITDA margin (%)	4.40	4.40	4.50	4.40	4.20	4.00
EBIT margin (%)	3.00	3.00	2.90	2.90	2.70	2.70
Liquidity						
Current ratio	1.24	1.34	1.46	1.57	1.67	1.97
Financial leverage						
Debt-to-equity	2.32	2.62	2.78	2.94	3.07	3.29
Debt-to-assets	0.70	0.72	0.74	0.75	0.75	0.77

Note: EBIT = Earnings before interest and tax; EBITDA = Earnings before interest, tax, depreciation and amortization.

106. **Sensitivity analysis**. A sensitivity analysis has been conducted to assess the impact of key risks to NES' financial viability under two scenarios: (a) delay in implementation of cost recovery initiatives and (b) no expansion in electricity trade**.**

a. *Delay in implementation of cost recovery initiatives*. Under this scenario, the implementation of tariff reform committed by the GoU will face a three-year delay, reaching full cost recovery level only by 2026 compared to the base case of 2023. While the cost of generation and accordingly the power purchase cost would be growing as projected under the base case scenario, the tariff only increases by about 9 percent per year (at around inflation) before 2026.

   Under this scenario, NES will generate a positive EBITDA and cash flow to cover its operational expenses and power purchase costs. It will not generate all the cash needed to finance 25 percent of the capital program assumed in the base case in 2021–2023. Partially driven by the export revenue growth, NES will be able to generate a positive net cash as soon as 2024. NES' annual net cash surplus would grow up to US$55 million once the full cost recovery tariff is implemented in 2026–2030. The net profit margin would range between –1.8 percent (2021–2024) and 1.0 percent (2025–2030).

b. *No expansion in electricity trade*. Under the scenario, expansion of electricity trade will be stalled over the forecast period (that is, annual electricity export and import are projected at 2019 actual level). It is further assumed that the loss of export revenue will not be compensated by additional tariff increase on top of the committed tariff reform (same tariff level as in the base case).

   Under this scenario, despite the weakened financial position due to the loss of important export revenue, NES will still be able to maintain a positive EBITDA, which means it will still able to cover its operational expenses and power purchase costs. Through the forecast period, it will not generate all the cash needed to finance 25 percent of the capital program assumed in the base case.

107. **Across the base case sensitivity cases, NES will be able to generate a positive EBITDA** (see Table 7) to fund operational expenses and power purchase costs. Its ability to use equity to finance a significant portion of the investment depends on the realization of full cost

recovery-based tariff and expansion of export revenue. The risks of delays will be mitigated by measures including (a) increasing the debt financing portion of individual investment programs in certain years (currently assumed at 75 percent); and (b) additional measures by the GoU including liquidity support, cash injection, and/or tariff adjustments.

Table 7. Sensitivity Analysis - Indicative NES EBITDA and Tariff Increase Required

(UZS million)

EBITDA (UZS million)	2020	2021	2022	2023	2024	2025	2030
Base case scenario	**630,633**	**1,007,362**	**1,195,587**	**1,323,760**	**1,434,212**	**1,498,074**	**2,148,249**
required domestic sale tariff, UZS/kWh	250	302	339	358	375	396	514
Scenario (a) delay in cost recovery initiatives	**630,633**	**136,062**	**204,284**	**505,809**	**854,596**	**1,179,077**	**2,148,249**
difference to base case (+/-)	-	(871,300)	(991,303)	(817,951)	(579,616)	(318,998)	-
additonal tariff increse needed, %		*4.2%*	*4.2%*	*3.1%*	*2.0%*	*1.0%*	
Scenario (b) no expansion in electricity trade	**630,633**	**948,749**	**723,029**	**825,915**	**488,751**	**521,481**	**1,090,644**
difference to base case (+/-)	-	(58,613)	(472,557)	(497,845)	(945,461)	(976,593)	(1,057,605)
additonal tariff increse needed (on top of base case), %		*0.2%*	*1.6%*	*1.5%*	*2.9%*	*2.7%*	*1.8%*

108. **Other risk factors.** The financials of NES are currently evolving because of the ongoing operationalization of the company following the sector unbundling in 2019. Early market development means NES and by extension the whole power sector in Uzbekistan is facing significant uncertainties. In addition to the end-user tariff and export revenue, there are several other risk factors which are less quantifiable.

a) According to the interim tariff structure introduced on August 15, 2019, NES' transmission tariff is computed as residual between end-user, generation, and distribution tariffs. Currently the share of NES' transmission revenue in total sector revenue is about 10 percent. Going forward, the GoU is intending to prioritize the payments to IPPs, along with the sector cost recovery initiatives. In this context, NES' ability to collect transmission charges might be squeezed by the rising generation costs and/or distribution charges, which could negatively affect NES' role as the transmission company to operate and reinforce its transmission infrastructure.

b) A higher weighted average generation cost of IPPs might significantly increase NES' liability under the 'take-or-pay' contracts if the incremental generation costs are not passed through to end users. The financial forecast was built under certain assumptions of IPP PPA price. If the actual PPA price discovered through competitive tender or negotiations turn out to be higher than the assumption, NES' financials would face downward risks without further tariff adjustment.

c) Potential concentration of gas risks at NES under CCGT PPAs through tolling arrangements being considered by the GoU and investors, in case those risks are not adequately transferred back to the gas supply company.

109. **The GoU has demonstrated strong commitment to the power sector reform** by implementing structural reforms including sector unbundling and significant end user tariff increase. Going forward, the GoU is committed to further pursue sector financial sustainability initiatives, including through: (a) implementation of tariff reforms to get the sector to cost recovery level by 2023, including through gradual removal of gas subsidy, while protecting vulnerable consumers; (b) formulation of a separate regulated tariff for NES; (c) implementation of loss reduction programs, especially in distribution segment, to improve the sector operational

efficiency; and (d) maintenance of state ownership over the transmission segment, as the backbone of the sector, while promoting private sector participation in generation and distribution, among others.

110. **As part of the policy measures to mitigate some of the risks, upon the request from the GoU, the World Bank will provide NES and the GoU support** to (a) implement the new tariff methodology with formulation of a separate regulated tariff for the transmission company; (b) help prepare and implement the company's financial sustainability plan to mitigate and manage risks; (c) demonstrate, introduce, and prioritize, including through the proposed Project, the benefits of transparent and competitive selection of private investors; and (d) improve NES' operational efficiency, financial sustainability, and capacity building. The World Bank support will be provided through the Programmatic Technical Assistance, ongoing MUTS project, the pipeline ETMMD project and potential DPO engagement. For details of economic and financial analyses, including sensitivity scenarios, refer to annex 3.

C. Financial Management

111. **The Navoi Scaling Solar IPP will benefit from a payment guarantee.** In case a guaranteed event takes place and a valid demand notice is submitted, the World Bank will make the payment to the L/C bank. There are no payments to the GoU and/or its agencies. On this basis, the provisions of the paragraph 7. Financial Management of the World Bank Policy on Investment Project Financing (October 2018) do not apply.

112. **Moreover, the overall FM of the proposed Project, the Navoi Scaling Solar IPP,** where an IBRD Payment Guarantee (with an L/C) of up to US$5.1 million will be deployed, will be undertaken by a privately-owned Project Company according to international best practices and national standards. A dedicated financial manager supported by qualified accountants will be hired by the Project Company to perform duties including accounting, reporting and planning, managing auditing and internal controls. The Project Company's annual financial statements will be prepared in accordance with International Financial Reporting Standards (IFRS) and will be audited in accordance with International Standards on Auditing (ISA). Copies of the authorized audit reports and Management Letters shall be provided to the World Bank within six months after the end of the reporting period.

D. Procurement

113. **The World Bank Procurement Regulations for IPF Borrowers:** Procurement in Investment Project Financing, Goods, Works, Non-Consulting and Consulting Services, dated July 2016, revised November 2017 and August 2018, do not apply for this Project where an IBRD Guarantee is provided by the World Bank, as stipulated in paragraph 2.2, Section II: General Considerations.

114. **The GoU (through the MoF, MoE, and MIFT, as appropriate) has conducted a competitive bidding process for selection of an investor to design, finance, construct, and operate the 100 MW Navoi Scaling Solar IPP.** IFC Advisory advised the GoU on structuring and tendering the Project using the WBG Scaling Solar approach. The prequalification phase was initiated in February 2019. The Request for Prequalification stipulated specific prequalification

criteria (including experience, technical, financial, and legal requirements). The GoU prequalified 11 investors out of 23 applications received. The bidding phase was initiated upon the issuance of the Request for Proposal on June 20, 2019. All prequalified investors were invited and only five submitted technical and financial proposals. The bidders were developers, investors, co-owners, and operators of a portfolio of power generation, large solar panel manufacturers and IPPs.

115. **On the basis of evaluation of technical proposal (on pass/fail basis) and financial proposals, Masdar was selected as the winning bidder** with the lowest proposed electricity off-take tariff of US¢2.679 per kWh. Signing of the main project agreements (PPA and GSA) between the GoU and Masdar occurred on November 8, 2019. No complaints were received on the outcome of the tender process. The economy and efficiency principles as required by the guarantees financing approach were followed.

E. Environment and Social

116. **The proposed Navoi Scaling Solar IPP is being processed and prepared in accordance with OP 4.03 (Performance Standards for Private Sector Activities)** with an environmental risk rating of Moderate and a social risk rating of Moderate—table 8 specifies which of the standards are applicable. Masdar has prepared a Preliminary Environmental and Social Impact Assessment (ESIA), which indicates that the selected site is appropriate for the planned solar project with no significant, unmitigable environmental or social impacts associated with the project. Masdar will ensure that the ESIA, including an Environmental and Social Management Plan (ESMP), is finalized based on the final design and that ESIA/ESMP will be used by the EPC to prepare the contractor's ESMPs. The proposed Navoi Scaling Solar IPP does not trigger the World Bank's Operational Policies on Projects on International Waterways (OP 7.50) or Projects in Disputed Areas (OP 7.60).

117. **Masdar has also prepared the following reports in relation to the Navoi Scaling Solar IPP and submitted the same to the World Bank for approval before appraisal:** Preliminary ESIA; Stakeholder Engagement Plan (SEP); and as a part of the SEP, a Grievance Redress Mechanism (GRM), while the IFC has prepared an Environmental and Social Action Plan (ESAP). The World Bank Group will continue to work with Masdar to ensure the monitoring framework for the Navoi Scaling Solar IPP (PV) power plant complies with the World Bank Group Performance Standards throughout implementation.

Table 8. Performance Standards (PS) that Apply

Performance Standards	Yes	No	TBD
PS 1: Assessment and Management of Environmental and Social Risks and Impacts	X		
PS 2: Labor and Working Conditions	X		
PS 3: Resource Efficiency and Pollution Prevention	X		
PS 4: Community Health, Safety, and Security	X		
PS 5: Land Acquisition[a] and Involuntary Resettlement	X		
PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	X		
PS 7: Indigenous Peoples		X	

Performance Standards	Yes	No	TBD
PS 8: Cultural Heritage		X	

Note: a. A long-term Land Lease Agreement, between the Navoi Scaling Solar IPP Project Company and the GoU (represented by the Governor/Khokimiyat of Navoi Region) in relation to the Project site and access rights to the site is being concluded.

118. **As indicated in table 8, the following Performance Standards are relevant:** PS1 - Assessment and Management of Environmental and Social Risks and Impacts, PS 2 - Labor and Working Conditions, PS 3 - Resource Efficiency and Pollution Prevention, PS 4 - Community Health, Safety, and Security, PS 5 - Land Acquisition and Involuntary Resettlement and PS 6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources. This is a Category B project according to IFC's Policy on Environmental and Social Sustainability. The proposed investment is expected to have limited impacts that are site-specific and temporary. Those impacts can be avoided or mitigated by adhering to applicable Performance Standards, procedures, guidelines, and design criteria.

119. **The PV plant will be built on government land, which until 2018 was leased out to two tenants,** using the land as grazing land. In 2018, the tenants were informed by the government of the planned change in land use, and subsequently surrendered their lease contracts and have no remaining claims under the national law. No physical displacement has occurred, and no complaints have been registered from the leaseholders. One person is still using the land for grazing of animals.

120. **As the cancellation of lease contract entails only economic resettlement of two farmers the Project Company will identify and describe the measures** that the responsible government agency plans to use to compensate affected persons in terms of provision of alternative land for lease. If these measures do not meet the relevant requirements of this Performance Standard, the Project Company will develop an ESAP to complement government action. This may include additional compensation for lost assets, and additional efforts to restore lost livelihoods where applicable.

121. **The appraisal considered the environmental and social (E&S) management planning process and documentation for the Project and gaps, if any, between these and IFC's requirements.** Where necessary, corrective measures, intended to close these gaps within a reasonable period of time, are identified. Through the implementation of these measures, the Project is expected to be designed and operated in accordance with Performance Standards objectives. A preliminary ESIA and a complete Environmental and Social Review Summary (ESRS) reflected in Annex 4 with detailed Action and Stakeholder Engagement Plans were disclosed on the WB and IFC websites on August 14, 2020.

F. World Bank Grievance Redress

122. **Communities and individuals who believe that they are adversely affected by a World Bank Group-supported Project may submit complaints** to existing Project-level grievance redress mechanisms or the World Bank's Grievance Redress Service (GRS) and IFC's CAO (Office of the Compliance Advisor/Ombudsman). These mechanisms ensure that complaints received are promptly reviewed in order to address Project-related concerns. Project-affected

communities and individuals may submit their complaint to the World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VII. RESULTS FRAMEWORK AND MONITORING

A. World Bank Results Framework: Uzbekistan - Navoi Scaling Solar IPP Project

123. **Project Development Objective:** The proposed Project Development Objective (PDO) is to increase and diversify electricity generation capacity through private investment in Uzbekistan.

124. **Project Development Objective Indicators:** Navoi Scaling Solar IPP.

PDO Indicator Name	Core (Yes/No)	Unit of Measure	Baseline (FY20)	End Target (FY24)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Indicator 1: Power generation capacity constructed (renewable/solar)	Y	MW	0	100	Annually	MoE Statistics, IPP SPV Reports	MoE
Indicator 2: Electricity supplied by the Project into the grid (renewable/solar)	Y	GWh/year	0	270	Annually	NES Statistics, IPP SPV Reports	NES
Indicator 3: Private capital mobilized (equity/debt)	Y	US$ million	0	50	Annually	MIFT statistics, IPP SPV Reports	MIFT
Indicator 4: Greenhouse gas emissions avoided	Y	tCO2/year	0	156,000	Annually	MoE statistics, NES, IPP SPV Reports	MoE

125. **Intermediate Results Indicators**: **Uzbekistan - Navoi Scaling Solar IPP Project**

Intermediate Indicator Name	Core (Yes/No)	Unit of Measure	Baseline	End Target	Frequency	Data Source / Methodology	Responsibility for Data Collection
Intermediate Indicator 1: Physical implementation progress in generation project capacity constructed	N	percentage	0	100	Annually	MoE/MIFT statistics, IPP SPV Reports	MoE
Intermediate Indicator 2: Project commissioning test completed	N	Y/N	N	Y	Annually	NES Statistics, IPP SPV Reports	NES

B. IFC Anticipated Impact Measurement and Monitoring (AIMM) Rating

126. The Project has an AIMM rating of Excellent based on an AIMM score of 71. On an unadjusted basis (that is, without a likelihood factor), the full potential AIMM score could reach 88. The Project is the first in a set of sequenced interventions under the WBG Scaling Solar approach in Uzbekistan. The most significant Project level outcome is a reduction in the environmental footprint of the Uzbekistan energy sector by introducing a renewable energy asset that will deliver electricity at a competitive tariff. At the market level, the Project will contribute to improving competitiveness of a nascent renewable energy sector by supporting the development of the PV solar IPP in Uzbekistan that will catalyze private sector participation in the power generation segment and improve resilience through the diversification of Uzbekistan's electricity generation mix.

AIMM SCORE				
Potential		Likelihood		Ex-Ante
88	–	17	=	71 Excellent

Assessment of Project Outcomes

127. The Project outcome rating is Strong with high likelihood of achievement. The likelihood assessment is supported by: (a) the strength and track record of the Sponsor, which has significant experience in developing and operating renewable energy plants in emerging markets (a portfolio of 2.3 GW and 2.9 GW under construction and development, respectively), and the EPC contractor's track record; (b) low risks to construction – including those emerging from delays in the project's financial close due to COVID-19 outbreak which are mitigated by contingency provisions; (c) low E&S risks to construction emerging from water scarcity and grievances associated with the Project, which are adequately mitigated by ESAP items on water management and stakeholder engagement; (d) low curtailment risks as the transmission grid has sufficient capacity; (e) strong Government support, as the Project is a pilot PV IPP which will be used to deepen the sector reforms and scale-up solar generation developed by the private sector; (f) bankable project documents based on the WBG Scaling Solar template adapted to the context of Uzbekistan; and (g) use of the World Bank Guarantee instruments to mitigate off-taker creditworthiness risks and facilitate financial closure. The main Project-level outcomes are summarized in the following paragraphs.

128. **Environmental effects – reduced GHG emissions**. IFC expects the Project will reduce carbon emissions by adding a renewable energy generation asset to Uzbekistan's energy mix, which will displace carbon-intensive generation in the merit order of dispatch. Currently, Uzbekistan's electricity sector has a very large carbon footprint accounting for 43 percent of the country's CO2 emissions. The Uzbek economy is one of the most energy intensive in the Europe and Central Asia region[33]. Approximately 87 percent of the generation comprises carbon intensive technologies operating with a grid emission factor of 506g CO2e per kWh and 33 percent efficiency factor[34]. The Project will introduce a new PV solar plant into the energy mix with a lower variable operating cost than aging thermal power generation

plants. Hence, it will displace in the merit order of dispatch obsolete generation from the Syrdarya TPP with the highest marginal fuel cost in the system. As a result, the Project will reduce approximately 156,000 tons of CO2 emissions reduction annually between 2021 and 2046. IFC has estimated the economic rate of return (ERR) at 20.1 percent. The ERR reflects the social benefits of CO2 emissions savings and fuel costs due to the displacement of the Syrdarya TPP. To measure progress in achieving this outcome, IFC will track reduction in GHG emissions.

129. **Stakeholder – increased supply of electricity at a competitive tariff**. IFC expects the Project will add a total of 100 MW of renewable energy generation installed capacity; which will supply electricity output to NES at a competitive tariff. Currently, Uzbekistan electricity consumption per capita is about 1,654 kWh and total electricity consumption is around 63 TWh[35]. Approximately 97 percent of the population has access to electricity, at end-user retail tariff that amounts to US¢ 4.2 kWh. NES purchases electricity at an average cost of US¢ 2.7 per kWh; cost that will increase by 2030 to US¢ 3.8 per kWh driven by capital investments and tariff reforms. In order to keep end-user tariffs at affordable levels the electricity generation system requires adding low-cost generation. The Project will develop a PV solar IPP, as part of the country's Least Cost Generation Plan (LCP)[36]. It will supply NES with 270 GWh of electricity - 0.4 percent increase in the country's electricity output - at a competitive generation tariff of US¢ 2.679 per kWh throughout the duration of the PPA (25 years). To measure progress in achieving this outcome, IFC will track the volume of power produced by the Project in GWh per year.

Assessment of Market Creation Contribution

130. The contribution to market creation rating is **Very Strong** with **medium** likelihood of achievement. The likelihood assessment is supported by (a) strong market oriented reforms undertaken by the GoU, and top priority given to the development of the first solar PV IPPs to meet future demand for electricity (b) WBG support to sectoral reforms aimed at attracting private participation and supporting financial viability; and (c) WBG support to develop and competitively tender the first solar IPP in the country, including the deployment of WBG Scaling Solar instruments. These are affected by the risk posed by structural and inherited elements of a sector in transition (for example, lack of NES and IPP track record, incipient institutional capacity, tariffs below cost recovery, legacy bilaterally negotiated renewable energy projects, and scarcity of commercial financing) and delays in the full implementation of key reforms (for example, full cost-reflective tariffs) due to the COVID-19 outbreak.

131. **Competitiveness.** IFC anticipates the Project will improve competitiveness by supporting the first utility scale solar PV IPP in the sector with strong potential to increase private sector participation and change the market structure through demonstration and replication effects and enabling frameworks through the WBG Scaling Solar approach.

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[33] Energy used to produce one unit of economic output in Uzbekistan is 47 percent higher than the Europe and Central Asia region economies.
[34] Lower than 53–56 percent efficiency factor of new TPPs.
[35] Demand for electricity is expected to grow by 4 percent annually from 61.2 TWh 2018 to 101.6 TWh in 2030
[36] LCP prepared by the WBG in support to the GoU (2019).

132. The Project is implemented on the back of structural market-oriented reforms supported by the WBG. In 2019, the GoU's unbundled UE which owned and operated the majority of Uzbekistan's power generation assets (approximately 96 percent of installed generation capacity). The WBG is currently providing technical assistance to support reform implementation, including: improving financial sustainability of unbundled utilities, establishing the institutional framework for renewable energy, reforming tariffs, and promoting private sector participation through PPPs. The GoU just recently enacted a PPP Law that sets the legal framework and increases clarity for PPP investments. Despite this progress in reforming the sector, Uzbekistan still faces inherent risks of a market in transition, such as: the lack of track record of the recently unbundled companies (in particular NES, the off-taker) and tariffs below cost recovery; which ultimately hinder private sector participation. At the same time, Uzbekistan requires significant infrastructure investment to meet future demand for electricity; an estimated of US$14.7 billion of investments by 2030 (approximately US$1.2 billion per year) to develop 15.42 GW of additional capacity.[37]

133. The Project is a beginning in a set of sequenced interventions - under the WBG Scaling Solar approach - aimed at supporting the GoU to competitively tender and attract private sector for the development of a total of 1 GW of PV solar capacity (approximately 20 percent of the additional PV solar installed capacity targeted by the GoU). IFC anticipates that these interventions, along with support from EBRD and ADB to tender wind and solar generation, will further catalyze private investments to develop PV solar projects that would represent around 17 percent of the country's total installed capacity by 2025 and reinforce a new and competitive market structure with increased IPP participation.

134. IFC will support the development of this utility scale solar PV IPP in Uzbekistan (100 MW in Navoi) deploying the WBG Scaling Solar instruments including IFC Advisory, IFC's stapled financing including the IFC Blended Finance Loan, and IBRD Guarantee. The successful financial closure of the Project will send a strong signal to private investors, demonstrating effectiveness of the recently adopted reforms and viability for private participation in renewable energy projects in a market with limited IPP track record. Being the first-of-its-kind, the Project will set a precedent of a bankable structure that can be successfully replicated to attract new private players to the market, to develop solar PV IPP projects under the country's LCP.

135. In addition, IFC expects replication of project documents–standardized tender and contractual agreement documents (PPA and GSA)–in two tenders of 900 MW PV solar generation projects following the WBG Scaling Solar approach. Scaling Solar 2 is at the RFQ stage and Scaling Solar 3 will launch the expression of interest stage by end of 2020; both with expectations to reach commercial close in 2021. Therefore, IFC will contribute to catalyze private participation to develop, in total, 1 GW of solar installed capacity.

136. Furthermore, IFC expects that the WBG Scaling Solar documents will set a precedent and a framework to continue procuring privately financed PV solar power generation to reach the target of 5 GW of solar PV installed capacity required by 2030 to meet electricity demand. After the success of the tendered Scaling Solar project, the GoU is committed to conduct

[37] Solar PV (+5 GW), wind (+2.7 GW), and hydro (+0.81 GW); and more efficient gas fired plans (+6.61 GW).

competitive and transparent tenders to procure additional renewable energy projects (including 900 MW under the WBG Scaling Solar approach). The GoU has also requested support from other DFIs to conduct additional competitive tenders (ADB 1 GW solar and EBRD 1 GW wind). The replication of a bankable structure initiated through the WBG Scaling Solar approach will reinforce a more competitive market structure with increased number of IPPs in the renewable energy generation segment of the electricity industry that will supply low-cost electricity to the grid. To measure this outcome IFC will track follow-on privately financed PV solar capacity in Uzbekistan (see table 9).

137. **Resilience.** IFC anticipates the Project will improve resilience through the diversification of Uzbekistan's electricity generation mix with privately financed low-cost renewable energy generation projects; and by facilitating the implementation of the GoU's reforms to improve cost recovery while preserving financial viability of NES.

138. Currently, Uzbekistan's power generation sector faces vulnerabilities that affect the stability of electricity supply. Electricity generation is dependent on a single source of generation; namely: TPPs that represent nearly 87 percent of installed generation capacity[38] and two-thirds of the country's electricity output. Approximately one-fifth (2.5 GW) of their installed capacity has exceeded 50 years of service. In general, TPPs in Uzbekistan operate with a 33 percent efficiency factor, 65 percent availability of installed capacity, and a variable cost of approximately US¢ 1.8 kWh per year. In addition, electricity generation in Uzbekistan is exposed to climate variability that reduces thermal power generation and poses high hydrological risks. This situation is affecting Uzbekistan electricity supply stability, production costs, and energy intensity. In contrast, the country has a significant but unrealized potential for renewable energy generation.[39] The electricity system is also characterized by tariffs that are in transition to full cost recovery (currently at 92 percent of full cost) due to recent adjustments by the GoU and the partial implementation of new tariff methodology.[40] Without full transition to cost-reflective tariff levels, the increasing cost of electricity generation would add pressure to the financial viability of NES.

139. IFC anticipates the Project will contribute to increase resilience of electricity supply by catalyzing private sector participation to develop renewable energy projects that will diversify Uzbekistan's energy mix. By demonstrating competitiveness of low-cost utility scale solar IPPs and catalyzing further private sector participation (as per the LCP), the share of PV solar in the energy mix is expected to increase to 17 percent (3.7 GW) by 2025 and to 19 percent (5 GW) by 2030. As other renewable energy projects (wind and hydro) materialize, the share of TPPs in the energy mix will reduce to 60 percent and 56 percent by 2025 and 2030, respectively. The development of low-cost renewable energy projects with variable cost of generation close to zero will facilitate the displacement of TPP in the merit order of dispatch and the retirement of obsolete capacities (about 0.68 GW). An energy mix with increasing

[38] Existing TPPs have an installed capacity of 12.9 GW, and Uzbekistan has 14.7GW total installed generation.

[39] Renewable energy technical potential estimated at 3,494 TWh per year; of which only hydro potential of 1,850 GWh (0.05 percent) is realized.

[40] The World Bank supported the GoU in the design and adoption of a new electricity tariff methodology, with the objective to move away from ad-hoc process of tariff setting towards a more robust approach that provides for full cost recovery and revenue requirements, service quality and performance levels, and compliance with regulatory standards.

share of renewable energy plants with lower variable costs will contribute to reduce pressures on the average cost of electricity purchases for NES, thereby facilitating the implementation of full cost reflective tariffs and supporting financial sustainability of the sector. To measure progress against this outcome, IFC will track the share of renewable energy (PV solar) in the electricity generation mix.

Results Measurement

140. **The key AIMM indicators** that will be tracked throughout the life of the Project are outlined in the table 9:

Table 9: AIMM Indicators Table[41]

Description of Outcome	Indicator	Baseline FY-2020	Target FY-2025	Category (check applicable)		
				Project	Market	Reporting
Environmental effects: reduction of CO2 emission	GHG emissions reduction (tons of CO2)	0 in 2020	156,000 tCO_2	X		
Stakeholder effects: increased supply of electricity at low cost	Volume of electricity delivered (GWh)	0 in 2020	270 GWh	X		X
Competitiveness: increased private sector participation	Additional competitively tendered and privately financed PV solar capacity in Uzbekistan	0 in 2019	2.7 GW by 2025		X	
Resilience: increased share of low-cost renewables in the electricity generation mix	Share of renewables (PV solar) in the generation mix in Uzbekistan (percent)	0 percent in 2018	17 percent in 2025		X	
Gender reporting	Number of direct employees	22	Track yearly			X
	Number of female direct employees	3	Track yearly			X

[41] Given the dynamic nature of markets, it may be that other factors also influence market movement. IFC, in certain cases, may consider additional data/research, on top of the Project's ex-ante set market-level indicator, to provide a more comprehensive assessment of whether the Project's ex-ante claim of market creation effects materializes. This will only be used in cases where IFC determines that the fundamental market movement posited in the Project's ex-ante market claim is not fully captured by the ex-ante set indicator and there is justifiable documented evidence available to complement the market-level indicator.

	Number of executive management (C-suite) positions	n.a.	Track yearly			X
	Number of females in executive management (C-suite) positions	n.a.	Track yearly			X

Annex 1: IBRD Payment Guarantee Term sheet
Uzbekistan

Navoi Scaling Solar IPP Project

*This term sheet contains a summary of indicative terms and conditions of a proposed guarantee ("**Guarantee**") by the International Bank for Reconstruction and Development ("**IBRD**") for discussion purposes only and does not constitute an offer to provide a Guarantee. The provision of a Guarantee is subject, inter alia, to satisfactory appraisal by IBRD of the proposed Navoi Scaling Solar Independent Power Producer (IPP) Project in Uzbekistan ("**Project**"), compliance with all applicable policies of the World Bank, including those related to environmental and social safeguards, review and acceptance of the ownership, management, financing structure (including in connection with shareholders, suppliers, equipment and Project design, and contracts proposed by the winning bidder), review and acceptance of project / transaction documentation by IBRD, and the approval of the management and Executive Directors of IBRD in their sole discretion. Without limiting the generality of the foregoing, IBRD is highly selective with regard to the clients and beneficiaries it works with and is diligent on Know-Your-Customer requirements for all Project participants (equity investors, ultimate shareholders, lenders, contractors, advisors) and will undertake an appraisal of the Project and the Project Company including an assessment on these parameters.*

*[This indicative term sheet is based on the draft versions of the Power Purchase Agreement ("**PPA**", dated [March 21, 2019]) and GoU Support Agreement ("**GSA**", dated [March 21, 2019]), and is designed to support obligations in those draft documents.]*

IBRD Guaranteed Letter of Credit ("L/C")	
L/C Applicant:	**National Power Networks** of Uzbekistan (a GoU-owned company, as Purchaser under the PPA)
L/C Beneficiary:	**Project Company** (a privately-owned company responsible for the implementation of the Project)
L/C-Issuing Bank:	A commercial bank acceptable to IBRD (as Guarantor under the Guarantee Agreement), the L/C Applicant, and the L/C Beneficiary. An acceptable L/C-Issuing Bank will be selected by the L/C Applicant, the GoU, and IBRD following a competitive selection process. *[Note also the minimum requirements under the PPA for L/C-Issuing Bank and Acceptable Bank.]*
Maximum L/C Amount:	The maximum amount available for draw under the L/C shall not exceed USD [5.1] million[42]. The Maximum L/C Amount may be reduced from time to time in accordance with the terms of the L/C and the Guarantee Agreement.
L/C Effective Date:	[Date][43]

[42] Based on (i) the requirement under the PPA for a payment security equivalent to up to six (6) months of payments under the PPA; and (ii) the winning bidder's projected cash flows for the Navoi Scaling Solar IPP Project.

[43] A date that (a) follows commercial close date (signing of the PPA) and the date when conditions precedent required by the L/C-Issuing Bank for the issuance of the L/C, but (b) precedes financial close date.

L/C Validity Period	[Term to be inserted once agreed with Masdar. Up to the term of the PPA plus some additional months to cover any post-termination payment obligations.]
Guaranteed L/C:	[Revolving] standby irrevocable letter of credit issued in favor of the L/C Beneficiary (Project Company) by the L/C Issuing Bank at the request of the L/C Applicant (Purchaser) to backstop the monthly payment obligations of the L/C Applicant (Purchaser) under the PPA following the occurrence of a Guaranteed Event (as defined below). Any amounts drawn by the L/C Beneficiary (Project Company) under the L/C that are repaid by the L/C Applicant (Purchaser) to the L/C Issuing Bank within the L/C Reimbursement Period (as defined below) would be reinstated. The obligation of the L/C Applicant (Purchaser) to repay the L/C Issuing Bank amounts drawn under the L/C would be guaranteed by IBRD up to the Maximum Guaranteed Amount. Any amounts drawn by the L/C Beneficiary (Purchaser) under the L/C that are subsequently repaid by IBRD (as Guarantor under the Guarantee Agreement) to the L/C Issuing Bank under the Guarantee would not be reinstated. That is, any principal amount repaid by IBRD would be deducted from the Maximum L/C Amount.
Guaranteed Events (Permitted Drawdown under L/C):	Failure by the Purchaser to pay any undisputed amount due and payable to the L/C Beneficiary (Project Company) pursuant to a monthly invoice according to the terms of the PPA. Failure by the GoU to make the same payment (in lieu of Purchaser) according to the terms of the GoU Support Agreement (GSA).
L/C Fees:	To be payable by the L/C Beneficiary (Project Company) to the L/C Issuing Bank. Level of L/C Fees must be acceptable to the L/C Applicant (Purchaser) and IBRD.
L/C Reimbursement & Credit Agreement (RCA)	
Borrower (of the L/C loan):	**L/C Applicant** (National Power Networks, as Purchaser under the PPA)
Lender (of the L/C loan):	**L/C-Issuing Bank**, as guaranteed lender.
L/C Reimbursement Period:	Following a draw under the L/C by the L/C Beneficiary (Project Company) following the occurrence of a Guaranteed Event, the amount drawn becomes a loan from the Lender (L/C-Issuing Bank) to the Borrower (Purchaser). The Borrower would be obligated to repay the Lender such L/C loan, together with accrued interest thereon, within a period of twelve (12) months (the "**L/C Reimbursement Period**") from the date of each draw (loan), pursuant to the RCA. In the event of a timely repayment of the L/C loan, the L/C will be reinstated by the amount of such repayment. In the event of a non-payment of the L/C loan by the due date, the L/C Issuing Bank would have the right to call on the Guarantee for principal amounts plus accrued interest due by the L/C Applicant (Purchaser) under this RCA.

Interest Rate charged by the L/C Issuing Bank:	An appropriate spread above [LIBOR[44]] acceptable to the L/C Issuing Bank, the L/C Applicant (Purchaser) and the GoU and agreed by IBRD (as Guarantor under the Guarantee Agreement). The maturity of the selected [LIBOR] base rate should ideally be 1 month.
IBRD Guarantee Agreement	
Guarantor:	**IBRD**
Guarantee Beneficiary:	**L/C Issuing Bank**, as guaranteed lender
Guarantee Face Value:	USD [5.1] million[45]
Guarantee Support (Scope):	IBRD (as Guarantor) will backstop the payment obligations of the L/C Applicant (Purchaser) under the RCA to the extent that (i) the said obligations result from a Permitted Drawdown under the L/C and (ii) the L/C Applicant has failed to repay the L/C Issuing Bank in accordance with the RCA; and (iii) the GoU has also failed to repay the L/C Issuing Bank pursuant to the terms of the GSA). That is, if the amount remains unpaid after the expiry of the L/C Reimbursement Period, the L/C Issuing Bank would have the right to call on the Guarantee for the principal amount (equal to the amount drawn under the L/C) plus accrued interest due from the L/C Applicant.
Maximum Guaranteed Amount:	Maximum Guaranteed Principal plus accrued interest thereon in accordance with the Reimbursement and Credit Agreement. IBRD (as Guarantor) may cover compound interest but IBRD will not cover penalty interest, default interest or charges of similar nature.
Maximum Guaranteed Principal:	The Guarantee Face Value, i.e. USD [to be inserted] million. Any principal amount paid by IBRD (as Guarantor) to the L/C Issuing Bank under the IBRD Guarantee would be deducted from the Maximum Guaranteed Principal and those amounts would not be reinstated.
Maximum Guarantee Period:	The L/C Validity Period plus 14 months.
IBRD Financial Exposure Limits:	The average life of the financial exposure of IBRD under the Guarantee will not exceed 20 years and the Maximum Guarantee Period will not exceed 35 years. Financial exposure of IBRD under the Guarantee will start on the L/C Effective Date.
Signing:	If the Guarantee-related legal agreements are not signed within [12] months following approval by the Board of Executive Directors of IBRD, IBRD (as Guarantor) may withdraw the offer of the Guarantee.
Exclusions, Withholding, Limitation/Suspension	Standard exclusion, withholding, limitation/suspension and termination events for transactions of this nature.

[44] The choice of base rate is currently under discussion with the L/C-Issuing Bank, the GoU, and the Masdar.
[45] Based on (i) the requirement under the PPA for a payment security equivalent to up to six (6) months of revenues payments under the PPA; and (ii) Masdar's projected cash flows for the Navoi Solar IPP project.

& Termination Events:	
Substitution of Guarantee:	If IBRD (as Guarantor) exercises remedies against the L/C Issuing Bank under the Guarantee Agreement for reasons attributable to the L/C Issuing Bank, then IBRD may enter into a new Guarantee Agreement with a substitute L/C Issuing Bank in substantially the same terms and conditions as the Guarantee Agreement and for the remaining term of the Maximum Guarantee Period.
Conditions Precedent to Effectiveness of the IBRD Guarantee:	Usual and customary conditions for financing of this type, including but not limited to the following: (a) Firm commitment for sufficient financing to complete the construction of the Project, including satisfactory contribution of equity; (b) Execution, delivery and effectiveness of all Project and financing agreements, in form and substance satisfactory to IBRD, including the Indemnity Agreement and the Project Agreement; (c) Delivery of all relevant host country environmental approvals required for the operation of the Project, and compliance with all applicable World Bank requirements relating to Sanctionable Practices and environmental and social safeguards, including the World Bank Performance Standards; (d) Effectiveness of all required insurance (to include IBRD as an additional insured on third-party liability insurance); (e) Satisfaction of all conditions precedent for first disbursement under the financing documents, save for any condition that requires the effectiveness of the Guarantee Agreement to have occurred; (f) Provision of satisfactory legal opinions; (g) Payment in full of the Initiation Fee, Processing Fee, Front-end Fee, the first installment of the Standby Fee and of the Guarantee Fee (as applicable) [and the reimbursement of IBRD's outside legal counsel expenses]; and (h) Satisfactory integrity due diligence of Project Company (and related parties) and guaranteed parties.
Subrogation:	If and to the extent IBRD makes any payment under the Guarantee, IBRD will be subrogated immediately to the extent of such unreimbursed payment to the L/C Bank's rights under the Reimbursement and Credit Agreement.
Governing law:	English law or New York Law.
Indemnity Agreement	
Parties:	IBRD and Uzbekistan (the "Member Country")
Indemnity:	The Member Country will reimburse and indemnify IBRD on demand, or as IBRD may otherwise direct, for all payments under the Guarantee and all losses, damages, costs, and expenses incurred by IBRD relating to or arising from the Guarantee.

Covenants:	Usual and customary covenants included in agreements between member countries and IBRD. Specific covenants, if any, will be determined during the Guarantee documentation phase.
Remedies:	If the Member Country breaches any of its obligations under the Indemnity Agreement, IBRD may suspend or cancel, in whole or in part, the rights of the Member Country to make withdrawals under any other loan, credit or grant agreement with IBRD or IDA, or any IBRD loan or IDA credit to a third party guaranteed by the Member Country, and may declare the outstanding principal and interest of any such loan or credit to be due and payable immediately. A breach by the Member Country under the Indemnity Agreement will not, however, discharge any guarantee obligations of IBRD under the Guarantee.
Governing Law:	The Indemnity Agreement will follow the usual legal regime and include dispute settlement provisions customary for agreements between member countries and IBRD.
Project Agreement	
Parties:	**IBRD** and the **L/C Beneficiary** (**Project Company**, a privately-owned company responsible for the implementation of the Project)
Representations and Warranties:	The L/C Beneficiary will represent, among other standard and project-specific provisions, as of the effective date, that: (a) it is in compliance with applicable environmental laws and the applicable World Bank guidelines, environmental and social safeguard requirements, including the World Bank Performance Standards and other applicable requirements; and (b) neither it (nor its direct and indirect shareholders and any other relevant project participants, as determined by IBRD), nor any of its affiliates has engaged in any Sanctionable Practices in connection with the Project. Note: "**Sanctionable Practices**" include corrupt, fraudulent, collusive, coercive, or obstructive practices, as defined in IBRD's Anti-Corruption Guidelines.
Covenants:	The L/C Beneficiary will covenant, among other things, that it will: (a) comply with applicable laws, including environmental laws, and the applicable environmental and social safeguards requirements under the World Bank Performance Standards; (b) provide annual audited financial statements and other reports; (c) provide certain notices and other information to IBRD; (d) provide access to the Project; (e) not engage in (or authorize or permit any affiliate or any other Person acting on its behalf to engage in) any Sanctionable Practices in connection with the Project; (f) comply with World Bank requirements relating to Sanctionable Practices regarding individuals or firms included in the World Bank Group list of firms debarred from World Bank Group-financed contracts; and

	(g) obtain IBRD's consent prior to agreeing to any change to any transaction document which would affect the rights or obligations of IBRD under the Guarantee Agreement or any other guarantee related agreement.
Payment of Fees to IBRD:	Payment of fees due to IBRD is the obligation of the L/C Beneficiary (Project Company). However, if the L/C Beneficiary fails to pay any installment of the fees due to IBRD in full or when due, [Other Party – bidder may propose another party, subject acceptance by the GoU of Uzbekistan and IBRD] can elect to pay the unpaid amount of the fees and seek reimbursement from the L/C Beneficiary.
Initiation Fee:	15 bps of the Guarantee Face Value (but not less than USD 100,000).
Processing Fee:	50 bps of the Guarantee Face Value. (In exceptional cases, projects can be charged over 50 bps of the guarantee amount.}
Front-end Fee:	25 bps of the Guarantee Face Value.
Standby Fee:	25 bps per annum, charged periodically and applied to that portion of the guaranteed amount that IBRD has contractually committed and for which IBRD does not yet have financial exposure under the Guarantee. The IBRD standby fee is normally charged semi-annually and accrues sixty (60) days after the date of signing of the agreement providing for IBRD's Guarantee. The Standby Fee must be paid in advance on regular payment dates.
Guarantee Fee:	[50-100] basis points per annum (depending on the Guarantee average life resulting from bidder's proposal – refer to separate pricing table). The IBRD Guarantee Fee is charged on that portion of the guaranteed amount that IBRD has contractually committed and for which IBRD has financial exposure under the Guarantee (Maximum Guaranteed Principal). The Guarantee Fee must be paid in advance semi-annually on regular payment dates. The Guarantee will terminate in the event of nonpayment of any installment of the Guarantee Fee.
External Legal Costs:	Reimbursement of IBRD external legal counsel expenses, if any, will be borne by the L/C Beneficiary.
Cooperation Agreement	
Parties:	**IBRD** and **National Power Networks of Uzbekistan** (a GoU-owned company, as Purchaser under the PPA and as L/C Applicant)
Cooperation agreement:	National Power Networks of Uzbekistan will covenant, among other things, that it will: (i) comply with all its obligations under the transaction documents; (ii) obtain IBRD's consent prior to agreeing to any change to any transaction document which would materially affect the rights or obligations of IBRD under the Guarantee Agreement or any other transaction document; (iii) provide certain notices to IBRD; (iv) take all action necessary on its part, in accordance with and as required by the terms of the Project-related agreements to which it is a party, to enable the L/C Beneficiary (Project Company) to perform all of the L/C Beneficiary's obligations

	under the Project Agreement, and other relevant transaction document; and (v) cooperate with IBRD and furnish to IBRD all such information related to such matters as IBRD shall reasonably request; and promptly inform IBRD of any condition which interferes with, or threatens to interfere with, such matters.

Guarantee fee applicable to IBRD Guarantees per average maturity

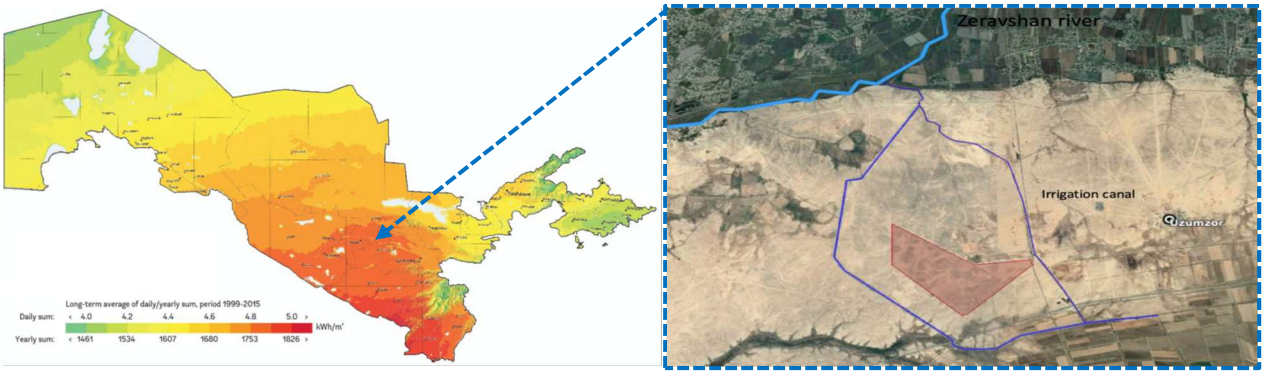
IBRD Guarantee Average Life	**IBRD Guarantee Fee**
Up to 8 years	50 bps
From 8 to 10 years	60 bps
From 10 to 12 years	70 bps
From 12 to 15 years	80 bps
From 15 to 18 years	90 bps
From 18 to 20 years	100 bps

Annex 2: Project Description

Uzbekistan
Navoi Scaling Solar IPP Project

The Navoi Region is one of the largest industrial contributors to the country's economy (6 percent of the national GDP and 10 percent of the total industrial production) and has important mineral resources. The GoU is heavily investing in the region to promote industrial modernization and diversification of local production, directed to develop high-tech industries. Most residents are employed in the industrial sector (25.1 percent), followed by the agricultural sector (22.3 percent), construction (13 percent), and education (12.5 percent). The local economy mostly relies on agricultural activities (cotton and wheat). The Navoi Scaling Solar IPP (PV) plant is located in Karmana District, Navoi Region, close to Road 213. The terrain of the Project area is almost flat, as concluded from the topographic surveys. There are no hills, mountains, or other far objects in the surroundings that could affect the PV plant performance.

Figure 2.1. Navoi Scaling Solar IPP Project Location



The objective of the plant is the production of electricity by converting sunlight into electrical energy. The Project is a PV plant with a nominal power of 100 MWac.

The medium-voltage (MV) network will be connected through underground 33 kV lines to a 33/220 kV substation. All 6.3 MVA LV/MV transformer stations will be connected in radial configuration to the MV switching station building by means of 18.9 MVA MV collection circuits in radial configuration. Each of those MV circuits will use directly buried cables interconnecting the transformer stations, from MV switchgears to the corresponding input feeder at the MV switching building. From the 33/220 kV plant substation located within the PV plant, a new double circuit 220 kV transmission line will be constructed to connect to the existing 220 kV overhead line 'TL-17-Ku Navoi CHP - KuyuMazar' through a loop-in and loop-out connection scheme. As the existing 220 kV line is immediately adjacent to the proposed PV site, the length of the new double circuit 220 kV line connecting to the existing 220kV line will be minimal. Design, construction, and commissioning of the new 220 kV line and associated equipment is under the PV plant developer's scope. A technical analysis on the grid integration of the PV plant was conducted with load flow and voltage violation studies on the overall transmission network. The analysis identified that the proposed 100 MW PV plant will not cause any overloading and voltage

violations on the transmission network and up to 300 MW of PV capacity can be connected at the site to the network.

The design of the PV plant, equipment, and materials and their installation, construction, and testing will be in accordance with local, national, and international codes and standards such as International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), and so on and will consider the anticipated impacts of climate change in the area.

All civil works will be designed to be capable of withstanding the effects of water, extreme winds, and other natural disasters, including the impacts of climate change. The drainage system is designed such that buildings, equipment and internal roads are protected. The plant monitoring and control system will perform supervisory control and data acquisition functions. The monitoring system for the plant will include the signals from the following equipment: meteorological stations, strings, inverters, MV switchgears, power plant controller, and weather forecast system. A settlement meter will be located at the point of common coupling in the switchyard. The metering concept and the meter devices will record the energy produced by the PV plant and energy consumed by auxiliary loads. The operation of the plant consists of all the works associated with the management, the monitoring and technical supervision of the PV plant, and associated equipment. All spares necessary for carrying out the work, including commissioning and during the warranty period will be provided. The water needs for the proposed solar PV plant are temporary needs (during the construction phase over 12 months) and permanent needs during the operation phase of 25 years, which are estimated at 4,620 m^3 per year.

Annex 3: Economic and Financial Analysis

Uzbekistan
Navoi Scaling Solar IPP Project

1. The economic and financial analyses presented in this annex are only relevant for the Navoi Solar Plant (100 MW PV). The analysis is conducted with certain assumptions described in the following paragraphs.

Methodology

2. The economic feasibility of proposed Project is assessed using a standard cost-benefit analysis. Net economic benefits of the project are calculated using the total costs (excluding tax and financial costs) and the total benefits from the avoided cost of generating the same unit of energy at marginal generation facilities. The country-specific economic discount rate used was 9.8 percent *(*2 × long-term average annual real per capita GDP growth), which complies with the World Bank guidelines on estimating discount rates.[46] The analysis marks a project as economically feasible when the ERR exceeds the hurdle (discount) rate of 9.8 percent.

3. GHG accounting has been undertaken for this Project to calculate the cost of avoided GHG emission.[47] The analysis used the World Bank's projected low shadow price of carbon to calculate the ERR with GHG impact.

4. Details of the counterfactuals, assumptions, results, and sensitivity analysis of the Project are described in the following sections.

A. Project Economic Analysis

5. A comprehensive economic analysis was carried out for the Navoi Scaling Solar IPP to validate the economic viability of the Project.

6. The economic viability of the Navoi Scaling Solar IPP was assessed through a cost-benefit analysis and was determined through assessment of the expected economic returns, which were evaluated in terms of the NPV and EIRR from total economic costs and benefits attributable to the Project. The economic costs and benefits are expressed in real price terms. The economic analysis is exclusive of any taxes and duties that might be applicable to the Project inputs and outputs.

7. The gas price forecast is based on the actual gas export contract of Uzbekistan with neighboring and other countries and forecast of European spot gas prices. The changes of the real spot price in European market were assumed to drive the change in export gas price for Uzbekistan.

[46] OPSPQ. 2016. *Discounting Costs and Benefits in Economic Analysis of World Bank Projects*.
[47] GHG impact was calculated using Guidance Note on Shadow Price of Carbon in Economic Analysis, November 12, 2017.

8. The Project technical assumptions and inputs (installed capacity of 100 MW, capacity factor of 29.9 percent, and grid connection cost) are based on the technical parameters received from the Sponsor.

9. The economic cost for the Navoi Scaling Solar IPP captures the (a) EPC cost, (b) Project development cost, and (c) O&M costs during the economic life of the plant. A summary of the assumptions and the results for the economic analysis is presented in table 3.1.

Table 3.1. Summary of Economic Analysis for Navoi Scaling Solar IPP

ASSUMPTIONS		
	Discount rate	9.8%
1	PV nominal capacity	100 MW
2	Implementation period	2020-2021
3	Commercial operation year	2021
4	Lifetime	25 years
5	Capacity credit of solar	0.0%
6	Emission factor for natural gas (open cycle)	0.58 kg per kWh
RESULTS		
7	EIRR (excluding GHG impact)	11.7%
8	EIRR (including GHG impact)	20.1%
NET PRESENT VALUE		
9	NPV (excluding GHG impact)	US$13.5 million
10	Avoided GHG emissions (discounted)	US$65.6 million
11	NPV (including GHG impact)	US$79.1 million
12	Lifetime GHG emission, undiscounted	3.9 million tons CO_2

10. The main economic benefit is the avoided marginal cost of the power plants, which will be displaced by this Project, specifically at the gas-fired Syrdarya TPP. As outlined, the Government plans to commission a new 'greenfield' 1,200-1,500 MW CCGT in Syrdarya region to meet the growing demand for energy and reduce reliance on dilapidated and inefficient power units, including at the existing Syrdarya TPP. The coal power plant was not considered as a marginal generation option (for displacement by the proposed solar plant), as coal (a) has a small share in generation mix (around 4 percent) and (b) does not have a load following characteristics in the country's power system.

11. The analysis takes a conservative approach to developing the counterfactual scenario: the capacity credit for the solar plant is assumed to be zero (0) percent (as the winter peak in the country is at or around 7 pm as per the hourly dispatch in Uzbekistan), and hence it is assumed that the energy produced by the solar plant will replace only the fuel cost from the thermal (gas and coal) power plants. It is assumed that the transmission and distribution losses for the solar plant and those of the alternative sources are the same. The average electricity generation of the Project is estimated at around 270 GWh per year over the Project life of 25 years (P50).

12. The ERR calculated for the Project is estimated to be 11.7 percent, which increases to 20.1 percent when the cost of carbon is incorporated. The ENPV is estimated at US$13.5 million, and with GHG impact, the net economic benefits increase to US$79.1 million.

13. **Avoided GHG emission.** The benefits of avoided GHG emissions were estimated based on the avoided emissions from gas-fired electricity supply and the forecast shadow price of carbon. Given that the marginal generation to be displaced by the 100 MW Navoi Scaling Solar IPP Project is based on natural gas, the Project is expected to contribute to the reduction of about 3.9 million tons of CO_2 over its lifetime and an average of about 156,000 tons per year.

B. Project Financial Analysis

14. The Project financial analysis was conducted to assess its financial viability from (a) Sponsor/SPV's perspective and (b) the sector's perspective.

I. Project Financial Analysis from Investor/SPV's Point Perspective

15. **Results of financial analysis.** Based on current assumptions, the financial analysis suggests positive returns to the Project and reflects the competitive tariff of the Project, demonstrating the benefits of transparent and competitive selection. The lenders' base case is expected to result in minimum DSCR that are consistent with precedents for a Project of this nature. Financial analysis might be further updated at the time of commitment.

C. Sensitivity Analysis

16. A sensitivity analysis was also conducted to calculate the switching values for the key cost and benefit drivers in the economic analysis: (a) discount rate, and (b) capital cost of the plant. The economic value of the project is positive and robust in all scenarios. The project ENPV with GHG impact turns negative only when the social discount rate exceeds 20.0 percent. The investments cease to be economically feasible when the solar plant Capex exceeds US$1.55 per W, which is relatively high compared to the recent solar PV market trends.

II. Project Financial Analysis.

17. Based on current assumptions, the financial analysis suggests positive returns to the Project and reflect the competitive tariff of the Project, demonstrating the benefits of transparent and competitive selection. The lenders' base case is expected to result in minimum DSCRs that are consistent with precedents for a Project of this nature. Financial analysis might be further updated at the time of commitment.

18. The financial analysis and the proposed PPA tariff at US¢2.7 per kWh suggest that the proposed 100 MW Navoi Scaling Solar IPP will contribute to the power sector financial sustainability by reducing the power purchase cost for NES, as off-taker. While the proposed Project's tariff is set at US¢2.7 per kWh (flat with no indexation over 25 years of the PPA period), the weighted-average electricity purchase cost of NES is projected to grow to UZS 492.5 per kWh (US¢3.2 per kWh equivalent) by 2030 from UZS 285.3 per kWh (US¢2.7 per kWh equivalent) in 2021. The Navoi IPP is expected to deliver a positive NPV for NES and the sector at US$10.4 million (when applying a discount rate of 5.375 percent, the yield of the 10-year Eurobond issued by the GoU in 2019).

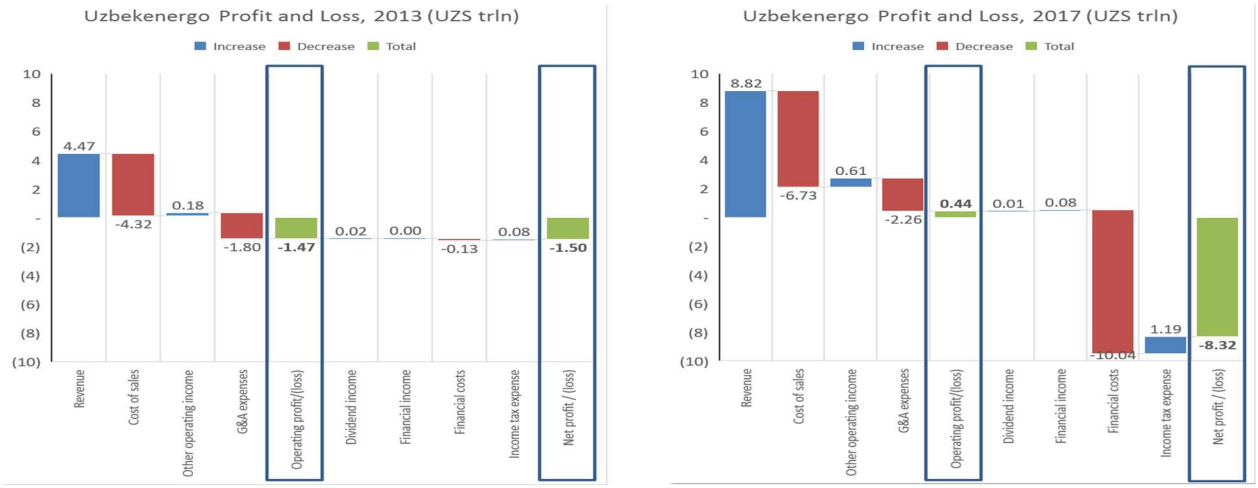
D. Sector Financial Analysis

19. **UE historical financial performance.** UE historical financial analysis was conducted based on the company's financial statements for 2013–2017, as reported by UE. The company's first-ever audited IFRS-based consolidated financial statements for 2015–2016 were issued with help from the World Bank, supported through the ongoing MUTS project and DPO 1. Analysis of the 2013–2014 and 2017 financial statements are based on national accounting standard compliant consolidated statements with some IFRS-required adjustments by UE management and the World Bank team.

20. During 2013–2017, UE generated around 85 percent of the sector revenue, and average revenue growth rate was around 18 percent annually. The growth was driven mainly by gradual increase of the end-user tariffs and partially by demand growth. Average annual increase of electricity consumption was 2.1 percent. In 2017, UE sold about 48.6 TWh of electricity at an average tariff of UZS 171.3 per kWh, which generated UZS 8.82 trillion of revenues. About 46.8 TWh was supplied to domestic consumers and about 1.85 TWh was exported to Afghanistan.

21. The financial performance of UE deteriorated during 2013–2017 due to the following key factors (see figure 3.1): (a) high technical and commercial losses in the sector, which were not fully recouped through the normative thresholds of losses established in tariff reviews; (b) low collection rates (ranged between 83 percent and 93 percent of revenue invoiced) until 2017, when the utility bill collection responsibilities were temporarily transferred to the Bureau of Forced Execution with enforcement authority and capabilities; (c) foreign exchange losses due to currency devaluation and currency mismatch between UE's revenues and expenditures; and (d) below-cost recovery tariffs.

Figure 3.1. Profit and Loss of UE in 2013 and 2017



Source: World Bank team estimate based on financial statements of UE.

22. Below cost recovery tariffs were among the key factors affecting UE and the overall sector financial sustainability. Although the GoU was annually adjusting energy tariffs (a) increases were made on an ad hoc basis; (b) tariff increases were not sufficient to compensate for increasing prices of gas (account for above 85 percent of generation mix) and fuel (heavy fuel oil, imported coal); and (c) only normative electricity losses (around 13 percent) were included in tariffs, while the

actual losses were around 20 percent. According to the World Bank tariff study, the average cost recovery level of end-user tariff was at around 70 percent in 2017 and 2018.

23. Mounting indebtedness together with decreasing share of local currency borrowing exposed UE to greater currency risk. The Government's investment program for modernization and construction of new power generation facilities drove increased international borrowing. In 2013, local currency loans constituted about a quarter of UE's debt, while by 2016 their share had already dropped to 4 percent. On September 5, 2017, the GoU announced foreign exchange liberalization as part of the reforms to move toward market-based principles. This resulted in devaluation of the local currency (Uzbekistan sum) by approximately 50 percent, and many large SOEs with large foreign borrowings saw their respective costs double while their revenues remain denominated in Uzbekistan sum. In 2017, UE had net foreign exchange losses of UZS 9.81 trillion (around US$1.2 billion), and net cumulative losses of UE in 2013–2017 reached UZS 11.3 trillion.

24. **Recent reforms.** The Government took several key measures to support the sector financial recovery and mitigate the impact of recent sharp currency devaluation:

- In 2016, according to the President Decree, overdue/delinquent trade receivables and payables of UE to 'Uztransgas' (gas supplier) for natural gas for the power generation in the amount of UZS 3,589 billion and UZS 3,241 billion, respectively, were written off. Reduction of payables relative to its net receivables improved UE's liquidity; the current ratio increased from 0.50 in 2015 to 0.92 in 2016.
- In 2017, the Bureau of Forced Execution formed under the General Prosecutor's Office was mandated with collection of electricity and gas bills. As of the end of 2017, the collection rate rose to 98 percent from 83 percent in 2016, mostly due to repayments by some SOEs and other entities of their arrears and some consumer prepayments for 3–4 months ahead.
- Following the currency devaluation in September 2017, the GoU issued a President Decree, dated September 4, 2017, to defer payments of SOEs, including UE, on their liabilities to the Uzbekistan Fund for Reconstruction and Development due in the remainder of 2017 and in 2018 for four years with payments resuming in 2022.
- The MoF also agreed to subsidize the changes in cost of service of sovereign guaranteed loans due to currency devaluation for the period of October 1, 2017, to the end of 2018.
- Starting from 2018, electricity tariff reforms have commenced and remain a top priority to build a solid foundation for the sector development and private sector participation. The GoU has committed to move toward full cost recovery through adjusting tariffs gradually and on a regular basis. Supported by the World Bank DPOs and Support for Preparation of Energy Sector Strategy Programmatic Advisory Services and Analytics (Energy Strategy Programmatic ASA), the GoU has implemented two tariff increases in 2018–2019. The first increase occurred in November 2018 and made up 45 percent increase for nonresidential consumers and 9 percent for residential consumers. The subsequent tariff increases effective as of August 15, 2019, raised the electricity tariffs by up to 36 percent and 18 percent for nonresidential and residential customers, respectively. These tariff adjustments collectively brought annual weighted average tariff from the level of 70 percent in 2018 to 81 percent of cost recovery in 2019 (expected at

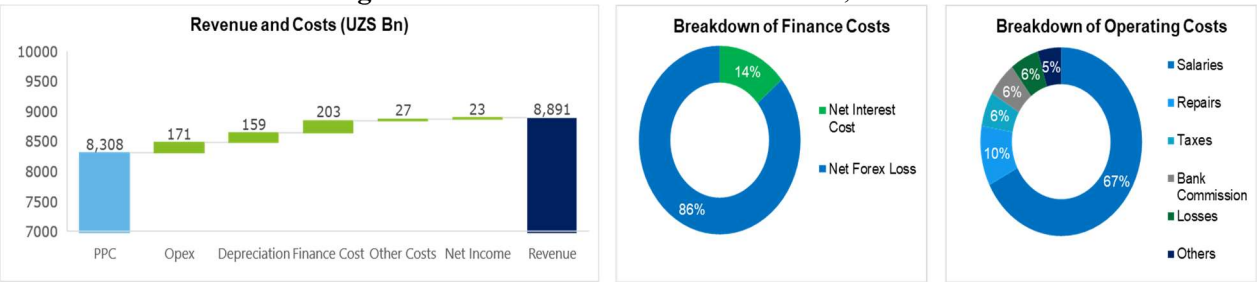
around 92 percent in 2020), allowing for more cash for the sector. Despite the recent reforms, the current level of weighted average retail tariff of UZS 411 per kWh (US¢4.2 per kWh) equivalent is still insufficient to recover the full costs, mainly Capex, especially as the sector moves to increase capital investments, predominantly in power generation assets to meet the growing demand.

- The GoU issued a resolution in April 2019 that adopts a new electricity tariff methodology to strengthen the robustness of the tariff setting process and improve financial viability of the sector. The resolution establishes a separate tariff commission under the Cabinet of Ministers and sets out a path for tariffs to be adjusted to full cost recovery levels. The primary goal of this reform is to move away from what has been a largely ad hoc process of tariff setting toward a more robust approach which provides for full cost recovery and revenue requirements, service quality and performance levels, and compliance with regulatory standards. A clear and systematic application of the adopted tariff methodology and the creation of a separate body to recommend tariff changes were important decisions on institutional tariff reforms. The effective implementation of these measures and further energy sector reforms will significantly contribute to improving the sector financial robustness and increase the independence of the final tariff decision. Going forward, the GoU aims to undertake the following combination of measures: (a) the tariff rates to continue to be adjusted on a regular basis toward full cost recovery and (b) a program aimed at technical and commercial losses reduction to be implemented jointly with development partners, including the World Bank.
- The GoU decided on divestment of non-core assets in the power sector to support the financial recovery of the newly unbundled companies. In preparation for UE unbundling process, a Governmental Working Group conducted a thorough inventory of core and non-core assets in the sector in January-February 2019 and identified 99 non-core assets for divestment. Subsequently, Presidential Resolution #PP-4249, dated March 27, 2019, 'Strategy for further development and reforms in the electricity sector of Uzbekistan' decided to transfer those 99 non-core assets from the power sector utilities to the State Assets Management Agency for further sale. The list of non-core assets includes, among others, warehouses, greenhouses, fitness centers, kindergartens, cafés, restaurants, and sewing factories.

25. **Financial performance of NES in 2019.** Financial analysis of NES for 2019, as a baseline period, has been conducted by the World Bank team in consultation with NES based on (a) NES opening balance as of July 1, 2019; and (b) NES unaudited interim (June-December) financial statements for the year 2019.

26. During June-December 2019, the revenue generated by NES stood at UZS8,891 billion (US$997 million). Power purchase cost for 2019 amounted UZS 8,308 billion (US$931 million). Main cost items include finance cost (UZS203 billion) and operating expenses (UZS171 billion), among others. The company earned a positive yet small profit of UZS23 billion with profit margin at 0.26 percent during the year. Additions to PPE amounted to UZS 69,648 million (US$7.8 million).

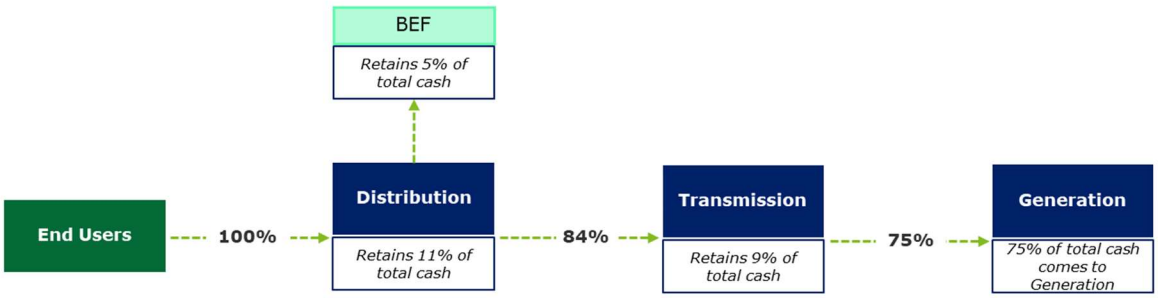
Figure 3.2.: Financial Performance of NES, 2019



27. Accounts receivables and payables stood at 59 days and 50 days, respectively. Understanding the below cost-recovery level of tariffs and consequently large amount of arrears among newly unbundled companies (inherited from UE), the MoF supported NES with UZS250 billion (around US$27 million) short-term concessional budget financing to pay accumulated arrears to TPPs, which in turn paid for their gas consumption. Although the GoU is planning to enable the sector to reach the cost recovery level by 2023, sector cash deficits/shortfall by that time might be addressed, among others, through trade payables among sector companies and to JSC 'Uztransgaz', the gas supply company, in relation to the gas purchases.

28. A *Cash Distribution Scheme (CDS)*, approved by the Tariff Commission in August 2019, serves as a transitional medium-term arrangement for distribution of funds received from consumers among generation, transmission and distribution utilities. The main objective of this temporary CDS is to ensure the payment discipline during the operationalization of the newly unbundled companies. The scheme provides for sequential payment to the special purpose accounts of these entities based on the distribution ratios prescribed by the Tariff Commission, regularly reviewed and adjusted to reflect the actual cost of companies. The SCD applies to the existing power utilities – all SOEs. Currently, electricity import obligations are prioritized and CDS does not apply for import payments, that is, NES export revenue will first finance the company's import obligations. Going forward, once the unbundled companies are operationalized and effectively run their businesses, the GoU intends to cancel the CDS and let the utilities run their operations on a commercial basis. Figure 3.3 illustrates the CDS.

Figure 3.3.: Cash Distribution Scheme



29. The total outstanding loan balance of NES stood at UZS2,235.7 billion (around US$251 million), which constituted mainly of long-term IFI-loans. During 2019, NES had net foreign exchange losses of UZS174 billion (around US$20 million), which was significantly affecting the company's financials in 2019. NES' Capex program will further depend on long-term sovereign

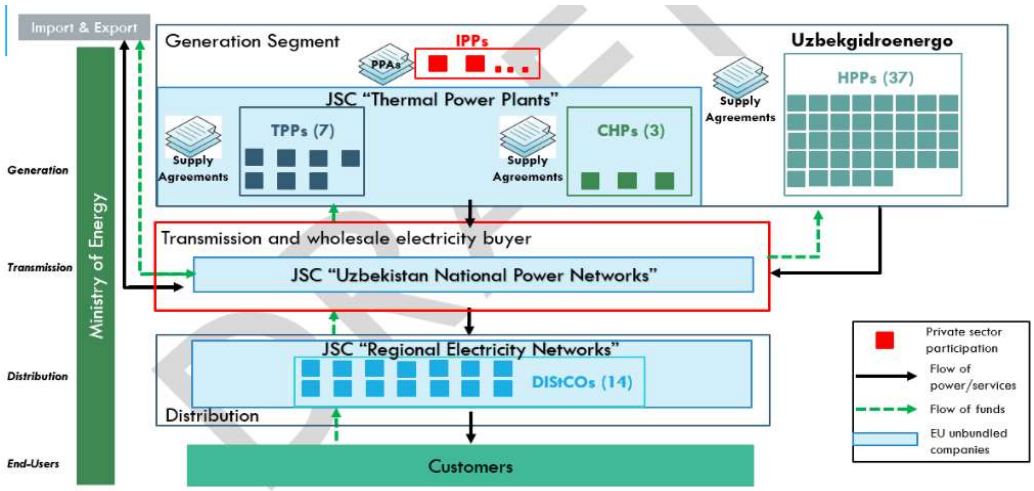
and IFI financing. This requires NES to develop and implement a sustainable debt management plan to assess the risks pertaining to foreign currency fluctuations and prepare a robust mitigation plan. This work will be supported through the World Bank's ongoing Strategy Programmatic ASA and pipeline ETMMD project.

30. **NES financial performance forecast.** Following the recent sector unbundling, a Liquation Committee was established in March 2019 to complete the delineation of accounts, assets, and liabilities of UE among the three new companies (generation, transmission, and distribution). Separate accounts were established, and all three new utilities started their business as separate companies in June 2019.

Box 3.1. NES Establishment and Key Functions

According to Presidential Resolution #PP-4249. dated March 27, 2019, and following the unbundling of UE, NES was established and officially registered as a joint stock company on June 1, 2019. NES is entrusted with the following key functions: (a) transmission system operation and development; (b) dispatch management of the power system; (c) transmission of electricity within the country; (d) regional connectivity and electricity trade (export and import); and (e) single purchaser of electricity from generation companies, including IPPs, as well as the sale of electricity to distribution companies. Figure 3.2 illustrates the new structure of electricity sector of Uzbekistan following the recent unbundling of electricity and cash flows.

Figure 3.4. New Electricity Market Structure (from June 2019)



31. Financial performance of NES has been projected considering an increase in electricity demand, supply of electricity from existing and projected new generation facilities, including IPPs and proposed Navoi Scaling Solar IPP Project, exports, and imports, as well as NES Capex program. This analysis will be further updated based on the actual 2019 financial statements of NES. Key assumptions used to project the company's financial performance are the following:

(a) LCP Generation Expansion Plan and dispatch efficiency analysis for Uzbekistan to forecast the electricity demand and energy balance, including generation, exports, imports, transmission, and distribution.

(b) Use of the newly adopted electricity tariff methodology allowing for cost recovery of NES.

(c) Electricity tariff model for Uzbekistan prepared by the World Bank building on the generation expansion plan to project average local generation cost.

(d) Transmission capital investments expected to be around US$1.2 billion equivalent in 2020–2030 building on historical capital investments and preliminary government forecast.

32. Financial parameters for 2019, as a baseline year, have been formulated by the World Bank team in consultation with NES based on (a) estimate of electricity transmission and trader data of UE during January-May 2019; (b) NES preliminary opening balance as of June 1, 2019; and (c) 2019[48] interim (June-December) financial statements.

33. The forecast suggests that NES will be able to generate positive cash flow to serve its cost and debt service, in case reforms including cost-reflective tariffs would be implemented as projected (no tariff adjustments are expected in 2020 due to COVID-19). Throughout the forecast period the weighted-average cost of power purchase by NES from local generation companies and import needs to increase by 1.7 times from UZS 283 per kWh in 2021 to UZS 486 per kWh in 2030, whereas the NES average sale tariff would be between UZS 309 per kWh and UZS 528 per kWh, which is expected to cover the company's operational expenses and debt service. Higher export tariff is a key driver of NES' profitability, among others.

34. NES' ability to meet its current liabilities, as measured by the current ratio, is projected to slightly grow from 1.2 in 2021 to 2.0 in 2030. The company is not expected to generate limited free cash flow for the investment purpose and will rely on development banks and the state to finance its Capex program. Currently, NES has the total debt balance of US$251 million, which is expected to grow to US$910 million by 2030, mainly for financing the company's capital investment program on modernization and expansion of the obsolete transmission assets and digitalization of the grid. As stated, concessional long-term financing is assumed mainly from IFIs. The total annual required principal and interest payments on debt are forecast to increase from UZS106 billion (US$12 million equivalent) in 2019 to UZS726 billion (US$49 million equivalent) in 2030, which is expected to be covered through tariff. Table 3.2 summarizes key financial performance indicators of NES during the forecast period. Under this base-case scenario, NES is expected to maintain a healthy DSCR of 3.7 in 2020 and 4.6 in 2030.

[48] For modeling and projection purposes, 2019 data were annualized then based on certain assumptions agreed with NES.

Table 3.2. Indicative Projected Financial Performance of NES

	2021	2022	2023	2024	2025	2030
Profitability						
Revenue growth (%)	38.80	17.60	9.60	9.90	9.40	12.10
EBITDA margin (%)	4.40	4.40	4.50	4.40	4.20	4.00
EBIT margin (%)	3.00	3.00	2.90	2.90	2.70	2.70
Liquidity						
Current ratio	1.24	1.34	1.46	1.57	1.67	1.97
Financial leverage						
Debt-to-equity	2.32	2.62	2.78	2.94	3.07	3.29
Debt-to-assets	0.70	0.72	0.74	0.75	0.75	0.77

35. *COVID-19 impact*. In the middle of an ambitious reform process, the economic impact of the pandemic has potential to cause widespread disruptions in the energy sector, tightening demand and jeopardizing crucial supply chains. The lockdown was announced on March 16, 2020, after the first case of COVID-19 was reported on the previous day. Strict restrictions began to be enforced toward the end of March 2020.

36. A COVID-19 impact study has been conducted by the World Bank jointly with NES to assess the potential implications of the pandemic on NES financial viability. COVID-19 has been affecting the power sector of Uzbekistan, including NES through the following three factors: (a) decline in demand; (b) change in sales/consumption mix (higher residential demand which has lower tariff and lower non-residential demand which has higher tariff, collectively leading to a lower weighted-average tariff / revenue); and (c) reduced bill collection efficiency. The results of the study suggest that COVID-19 is expected to result in a cash deficit of UZS176 billion (approximately US$17 million) (baseline scenario) in 2020 for NES. Furthermore, NES is expected to incur additional cash deficit of UZS240 billion (approximately US$24 million) in 2020 not related to COVID-19 under the business-as-usual scenario.

Figure 3.5. COVID19 impact on NES *(base case)*

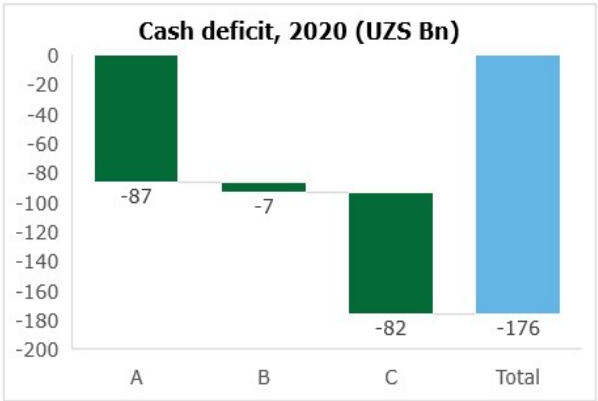
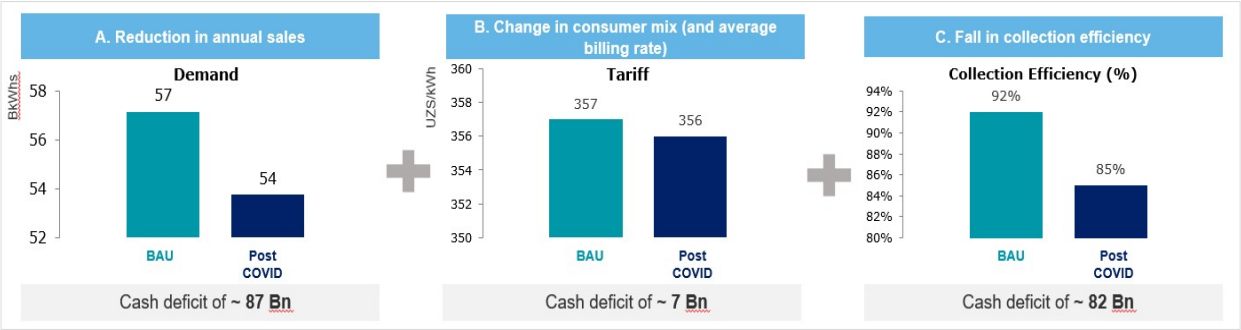


Figure 3.6. Composition of COVID-19 Impact on NES Cash Flow



37. Following the recommendations, including from the World Bank, the GoU has been considering certain measures to mitigate the COVID19 implications on NES. The measures include moratorium on public debt / budget loan (UZS 210 billion) and refunding NES tax overpayments (UZS 60 billion), among others. The analysis also informed the World Bank's decision in June 2020 on providing COVID19 support to NES through the allocation of expected savings under MUTS project (US$15 million) for financing the associated project's civil works (NES equity financing portion) due to the company's cash shortfall caused by the pandemic.

38. Despite the recent reforms, NES faces significant uncertainties which could affect its ability to fulfill the off-taker role. The risks include the following:

(a) As per the interim tariff structure introduced on August 15, 2019, NES tariff is computed as residual between end-user, generation, and distribution tariffs. Without a separate regulated transmission tariff, NES' financials might be squeezed by the rising generation costs and/or distribution charges, which could deprive NES of financial resources to operate, reinforce, and expand transmission assets.

(b) A higher weighted-average generation cost potentially because of new IPPs might significantly increase NES' liability under the 'take-or-pay' contracts if the incremental generation costs cannot be passed through to end users.

(c) Potential concentration of gas risks at NES (electricity off-taker) under CCGT PPAs, in case those risks are not adequately transferred back to the gas supply company ('mirroring').

(d) Unfavorable development in electricity export, which is expected to generate strong cash inflow and profit for NES; any further deviations from the projected export levels would potentially lead to NES revenue shortfall, if not adjusted through end-user tariff.

39. ***Sensitivity analysis***. A sensitivity analysis has been conducted to assess the impact of key risks to NES' financial viability under the following two scenarios: (a) delay in implementation of cost recovery initiatives and (b) no expansion in electricity trade

a. *Delay in implementation of cost recovery initiatives*. Under this scenario, the implementation of tariff reform committed by the GoU will face a three-year delay, reaching full cost recovery level only by 2026 compared to the base case of 2023. While the cost of generation and accordingly power purchase cost would be growing as projected under the base-case scenario, the tariff only increases by about 9 percent per year (at around inflation) before 2026.

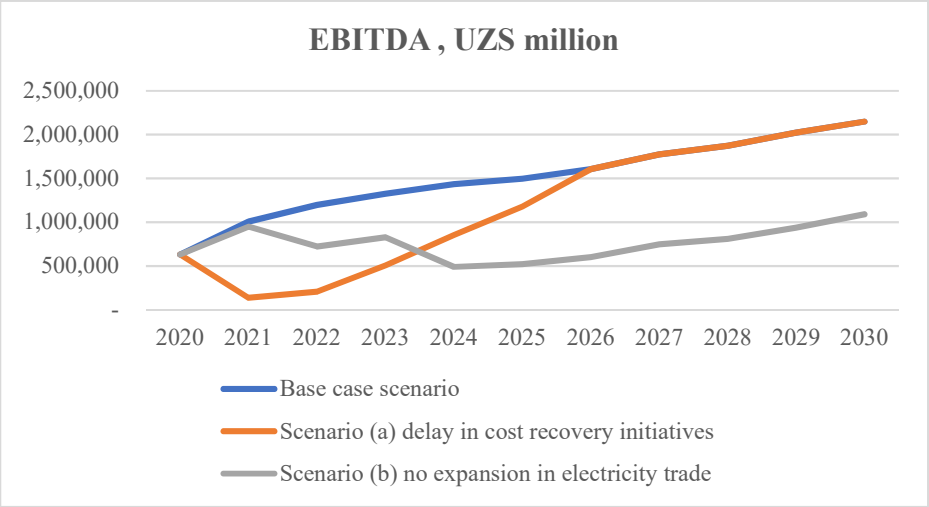
   Under this scenario, NES will generate a positive EBITDA and cash flow to cover its operational expenses and power purchase costs. It will not generate all the cash needed to finance 25 percent of capital program assumed in the base case in 2021–2023. Partially driven by the export revenue growth, NES will be able to generate a positive net cash as soon as 2024. NES' annual net cash surplus would grow up to US$55 million once the full cost recovery tariff is implemented in 2026-2030. Net profit margin would range between –1.8 percent (2021-2024) and 1.0 percent (2025-2030).

b. *No expansion in electricity trade*. Under this scenario, expansion of electricity trade will be stalled over the forecast period (that is, annual electricity export and import are projected at 2019 actual level). It is further assumed that the loss of export revenue will not be compensated by additional tariff increase on top of the committed tariff reform (same tariff level as the base case).

Despite the weakened financial position due to the loss of important export revenue, NES will still be able to maintain a positive EBITDA, which means it will still able to cover its operational expenses and power purchase costs. Through the forecast period, it will not generate all the cash needed to finance 25 percent of the capital program assumed in the base case.

40. Across the base case and sensitivity cases, NES will be able to generate a positive EBITDA (see figure 3.7.) to fund operational expenses and power purchase costs. Its ability to use equity to finance a significant portion of the investment depends on the realization of full cost recovery-based tariff and expansion of export revenue. The risks of delays will be mitigated by measures including (a) increasing the debt financing portion of individual investment program in certain years (currently assumed at 75 percent); and (b) additional measures by the GoU including liquidity support and cash injection and/or tariff adjustments.

Figure 3.7. NES EBITDA Trajectory under Different Scenarios



41. The GoU has demonstrated strong commitment to the power sector reform by implementing structural reforms including sector unbundling and significant end user tariff increase. Going forward, the GoU is committed to further pursue sector financial sustainability initiatives, including through: (a) implementation of tariff reforms to get the sector to cost recovery level by 2023, including through gradual removal of gas subsidy, while protecting vulnerable consumers; (b) formulation of a separate regulated tariff for NES; (c) implementation of loss reduction programs, especially in the distribution segment, to improve the sector operational efficiency; and (d) maintenance of state ownership over the transmission segment, as the backbone of the sector, while promoting private sector participation in generation and distribution, among others.

42. As part of policy measures to mitigate some of the risks, understanding the importance of envisaged broader sector reforms to the proposed Project and sector sustainability, upon the request from the GoU, the World Bank will provide NES and the Government the support to (a) implement the new tariff methodology with formulation of a separate regulated tariff for the transmission company; (b) help prepare and implement the company's financial sustainability plan to mitigate and manage risks; (c) demonstrate, introduce, and prioritize, including through the proposed Project, the benefits of transparent and competitive selection of private investors; and (d) improve NES' operational efficiency, financial sustainability, and capacity building. The support will be provided through the World Bank Programmatic Technical Assistance, ongoing MUTS and the pipeline ETMMD projects and potential DPO engagement.

Table 3.3. Indicative Projected Income Statement of NES (UZS, millions)

	2020e	2021f	2022f	2023f	2024f	2025f	2030f
Revenue							
Electricity sales	16,686,463	23,026,431	27,086,889	29,692,418	32,628,152	35,698,502	53,782,336
• Local market	15,519,926	21,780,073	24,779,845	27,261,218	28,974,896	31,887,962	49,294,490
• Export of electricity	1,166,537	1,246,359	2,307,044	2,431,200	3,653,257	3,810,540	4,487,846
Total revenue	**16,686,463**	**23,026,431**	**27,086,889**	**29,692,418**	**32,628,152**	**35,698,502**	**53,782,336**
Revenue growth, YOY, %	*45.2%*	*18.2%*	*38.0%*	*17.6%*	*9.6%*	*9.9%*	*12.1%*
Cost							
Cost of electricity purchase	(15,718,373)	(21,623,006)	(25,446,803)	(27,878,813)	(30,654,495)	(33,610,664)	(50,755,515)
Wages and salaries	(232,733)	(262,009)	(291,728)	(323,617)	(358,325)	(393,434)	(598,913)
Other operating expenses	(232,172)	(273,451)	(303,463)	(328,520)	(355,580)	(382,295)	(523,843)
EBITDA	630,633	1,007,265	1,195,478	1,323,646	1,434,094	1,497,956	2,148,106
Depreciation and amortization	(245,383)	(307,412)	(391,829)	(451,003)	(486,339)	(522,909)	(714,282)
EBIT	385,250	699,853	803,649	872,643	947,755	975,047	1,433,824
Finance income	1,036	1,036	1,036	1,036	1,036	1,036	1,036
Finance cost	(77,961)	(77,561)	(93,316)	(96,330)	(86,759)	(88,113)	(294,153)
Net foreign exchange gain/(loss)	(301,338)	(346,400)	(378,459)	(412,484)	(462,673)	(449,071)	(467,764)
EBT	6,987	276,927	332,910	364,865	399,360	438,900	672,943
Income tax expense	(1,048)	(41,539)	(49,937)	(54,730)	(59,904)	(65,835)	(100,941)
Profit after income tax	**5,939**	**235,388**	**282,974**	**310,135**	**339,456**	**373,065**	**572,002**

Annex 4: Environmental and Social Review Summary

Uzbekistan
Navoi Scaling Solar IPP Project

ENVIRONMENTAL AND SOCIAL REVIEW SUMMARY (ESRS)

Disclaimer

This Environmental and Social Review Summary (ESRS) is prepared and distributed in advance of the IFC Board of Directors' consideration of the proposed transaction. Its purpose is to enhance the transparency of IFC's activities, and this document should not be construed as presuming the outcome of the Board of Director's decision. Board dates are estimates only. Any documentation which is attached to this ESRS has been prepared by the Project Sponsor and authorization has been given for public release. IFC has reviewed this documentation and considers that it is of adequate quality to be released to the public but does not endorse the content.

Project Description

The proposed comprises the development, design, financing, construction, ownership, operation and maintenance of a 100MWac/130MWp solar photovoltaic (PV) plant in Navoi region of Uzbekistan (the "Project") under the Scaling Solar ("SS") programmatic approach. "Nur Navoi Solar" Foreign Enterprise LLC (the "Borrower" or the "Company") has been established to implement the Project. The Project is being developed by Abu Dhabi Future Energy Company PJSC ("Masdar"), a renewable energy and sustainable urban development company wholly owned by Mubadala Investment Company PJSC ("Mubadala"). The Project is also being supported by a US$5 million Guarantee from the International Bank for Reconstruction and Development ("IBRD"). The Project is expected to be completed within 12 months under a turnkey EPC Contract, with construction activities commencing in Q3/Q4 2020. The EPC contractor will also provide Operations & Maintenance ("O&M") services for the first 2 years following COD, subsequently to be replaced by an affiliate of Masdar. The plant is anticipated to be operational for 25 years.

The Project is located in the Navoi region, and the site is situated approximately 450 km southwest of Tashkent, 35 km east of Navoi City 3.2 kilometers away from the small village of Uzumzor within a 268-hectare plot of land. The proposed plant is a medium size utility grade grid-connected solar-PV power system consisting of approximately 300,000 PV panels, string inverters, power conditioning units, 220 kV step-up power transformers and grid connection equipment. Any interconnections to the grid will be constructed within the proposed boundary of the site. The plant will feed power directly into the grid with no batteries employed. Access to the site is via a short length of existing secondary road connecting to the national highway ("M37").

Two livestock farms are located in the northern and southern boundaries of the site. The closest identified residential areas are the village of Uzumzor (~600 inhabitants), located approximately

2.6 km east from the boundary of the site, and a small village-sized cluster (~100 inhabitants) of residential properties approximately 2.2 km south.

IFC has existing investments with Masdar (200 MW solar Baynouna Masdar Jordan #39339, disclosed in 2017 and 158MW Dolovo Wind Serbia #33839, disclosed in 2014) which are both currently under supervision. The Company's environmental and social ("E&S") performance to date has been satisfactory.

The Project is expected to employ approximately 140 workers at the construction start, 900 workers during peak construction and up to 117 workers at the end of construction; during operation, there is expected to be 22 workers in site working in shifts. The EPC site management team is expected around 30 individuals across the construction period.

Identified Applicable Performance Standards

While all Performance Standards are applicable to this investment, IFCs environmental and social due diligence indicates that the investment will have impacts which must be managed in a manner consistent with the following Performance Standards.

PS 1 – Assessment and Management of Environmental and Social Risks and Impacts
PS 2 – Labor and Working Conditions
PS 3 – Resource Efficiency and Pollution Prevention
PS 4 – Community Health, Safety and Security
PS 5 – Land Acquisition and Involuntary Resettlement
PS 6 – Biodiversity and Sustainable Management of Living Natural Resources

Based on IFC's review of the Project PS7: Indigenous People is not applicable as there are no indigenous peoples in the Project area; and PS8: Cultural Heritage is not applicable as the Project is not located in the area of known historical or cultural significance and does not impact any known cultural heritage. However, the Project will develop a chance finds procedure in case of the identification of cultural/archeological resources in the area.

If IFCs investment proceeds, IFC will periodically review the Project's ongoing compliance with the Performance Standards

Overview of IFC's Scope of Review

As a result of the travel restrictions arising from the COVID-19 pandemic, appraisal of the Project Company and the Project was conducted through a desktop and virtual appraisal (conducted via a series of video / phone conferences). The appraisal was conducted on the 7th July 2020 and consisted of a desktop review of available information, including an Environmental Social Due Diligence (ESDD) Report developed during the IFC Scaling Solar Uzbekistan advisory Project, the preliminary ESIA for the Project, the Company's Stakeholder Engagement Plan, the ESDD developed by the Lender's Technical Advisor (LTA) following a 2-day site visit as well as the company's responses to a series of ESHS questionnaires. IFC's appraisal focused on the company's capacity to manage ESHS risks and compliance with the Uzbek regulatory requirements and IFC's Performance Standards and the WBG's EHS Guidelines. Specific items

reviewed included: (i) the company's and contractor's capacity to manage ESHS risks of the Project; (ii) HR policies and procedures especially on working conditions, terms of employment; (iii) construction related occupational health and safety for its staff, contractors and any primary labor supply chain issues associated with migrant and/or seasonal workers i.e. forced and child labor; (iv) water resource availability; (v) community health and safety and security; (vi) ensuring previous land users are provided adequate alternate land; (vii) early engagement with surrounding communities and other stakeholders.

It should be noted that a local representative of the LTA did carry out a site visit, on the Lender's behalf, to verify site conditions. The company's ESIA consultant also participated in the virtual appraisal and provided an update related to the ESIA and stakeholder engagement activities.

Environmental and Social Categorization and Rationale

This is a Category B Project according to IFC's Policy on Environmental and Social Sustainability as the E&S impacts associated with the Project are limited, generally project-specific and can be addressed through the implementation of good international industry practices. Further, it is possible to design and implement engineering and management measures to mitigate adverse impacts during construction and operation. The environmental and social risks are rated as moderate (as per IBRD classification) and for those that have been identified, the client's E&S management system and the agreed E&S Action Plan (ESAP) provides appropriate mitigation.

PS1 - Assessment and Management of Environmental and Social Risks and Impacts

Environmental and Social Policy and Management System

At a corporate level, the company has developed a QHSE Policy which outlines their commitment to quality, the prevention of injury, ill-health, limiting pollution of the environment and to complying with applicable statutory and regulatory requirements at all times. At a Project level, the company, as a part of their ESHS management systems, will develop a project level ESHS policy building upon their corporate level policy, defining their ESHS objectives and principles aligned with applicable laws and regulations and consistent with the objectives of the IFC Performance Standards (IFC PSs). This policy will indicate who within the company will be responsible for its implementation. The company will communicate the policy to all project employees and will require their contractors to develop their own ESHS policy aligned to this policy.

At a corporate level, the company has developed a QHSE Management System (MS), detailed within a QHSE MS Manual, which is aligned with the general requirements of ISO14001, ISO 9001 and ISO 45001. The company is yet to establish mechanisms to align project level and corporate level management systems.

As per ESAP 2, the company will develop and implement an Environmental and Social Management System (ESMS) in accordance with the general requirements of PS1 and in line with the objectives of ISO14001 (certification is not required) specific for this project. The company's ESMS will detail processes to be implemented to provide adequate management & supervision of their contractors including the engagement of a Project Management Consultant (PMC).

The ESMS will outline process developed by the company to identify environmental and social risks and impacts and detail the specific measures to be implemented to manage these. Company will require its EPC and O&M contractors to develop an ESMS needed to identify, manage and control risks related to their activities and that of their sub-contractors.

Identification of Risks & Impacts

During the inception phase of the project i.e. Scaling Solar advisory Project, IFC commissioned a 'Site Suitability Report' and an 'Environmental and Social Scoping Report' with the aim to provide project bidders with a basic understanding of environmental and social conditions in the project area and ensure the general suitability of the site.

Following project award, the company developed a preliminary Environmental & Social Impact Assessment (ESIA) report in accordance with good international practice. The purpose of the preliminary ESIA was to conduct an initial assessment of impacts based on existing information, supplemented with additional surveys. The preliminary ESIA also identifies the type and extent of further studies required. As per ESAP 1, a full ESIA will be further developed, prior to construction and as a condition of disbursement, following the same structure but will also include an assessment of residual impacts. Further site surveys will be carried out when circumstances allow as part of the full ESIA. The full ESIA, mitigation protocols and Environmental & Social Management & Monitoring Plan' (ESMMP) will be prepared following the completion of additional studies.

In addition to the above, the project is required to develop an EIA in accordance with national legislation and seek regulatory approval prior to commencement of construction activities.

The company has engaged a local consultancy to assist in the development of the national level EIA documents. To date a Stage I – Concept Statement of Environmental Impact has been completed in accordance with local requirements which has been submitted to the regulators.

Management Programs

As mentioned above, the project's ESIA will include the development of an ESMMP, which will provide a summary of the E&S management framework, monitoring requirements and mitigation measures applicable to the construction and operation phases of the project. As per ESAP 3 and ESAP 4, the company will develop a Construction Environmental and Social Management Plan (CESMP) and an Operation Environmental and Social Management Plan (OESMP). The CESMP and the OESMP will be based upon the ESMMP and will be reviewed and approved by the Project Lenders prior to use.

The CESMP will consist of a suite of sub-plans, which will include but not be limited to: waste management; pollution prevention (including emissions, erosion, spill response etc.); water management (including supply, treatment, disposal etc.); hazardous materials; biodiversity management (including fauna / flora, topsoil, ground disturbance, invasive species etc.); emergency preparedness & response; community health, safety & security; road safety & traffic management; accommodation management; local recruitment & labor management; influx management; cultural heritage (including chance finds); environmental monitoring plan; stakeholder engagement (including grievance management) and contractor management plan.

The OESMP will consist of a suite of sub-plans, which will include but not be limited to: waste management; pollution prevention (including emissions, erosion, spill response etc.); water management; hazardous materials; emergency preparedness & response; community health, safety & security; biodiversity management; environmental monitoring plan and stakeholder engagement (including grievance management).

The company shall require their contractors to develop, implement and maintain their own ESMPs and associated procedures aligned with project requirements and their scope of work. These documents will be reviewed and approved by the LTA and / or Project Lenders prior to use.

Construction and operations phase E&S management and monitoring responsibilities will be shared between the company and its contractors. Both the EPC and O&M contractors will be contractually bound to adhere to the requirements to which they are assigned as the responsible party in the ESMPs.

As per ESAP 5, the company will develop, and shall require their EPC & O&M contractors to develop, an OHS Management System aligned (but not necessarily accredited) with OHSAS18001 / ISO 45001 and elements of an ESMS to identify, assess, manage and control risks.

As part of the OHS Management system, the company will develop an over-arching Project OHS Management Plan (ESAP 6) outlining the project's health & safety management framework and setting OHS minimum project requirements / standards, taking into the consideration potential COVID-19 related infection risk to the work force.

The company will require its EPC & O&M contractors to develop a series of plans, procedures and systems to adequately manage occupational health & safety risks associated with their scopes of work. The contractors shall establish a comprehensive risk identification and management process & permit to work system.

The EPC and O&M Contract is a key tool for ensuring compliance with the ESHS requirements of the company. As per ESAP 7, the company will develop and include ESHS and labor provisions (including complying with IFC PS) and compliance conditions in its EPC and O&M contracts which will provide contractors and third part service providers (including security agencies) with clear guidelines on performance requirements.

Organizational Capacity & Competency

The company has at a corporate level a QHSE and CSR Manager which will have oversight of EHS issues on the Project. The company has demonstrated capabilities to manage a range of environmental, social and occupational health and safety issues at other renewable energy projects in which the IFC has provided funding.

The company's project manager shall have overall responsibility for environmental, health, safety, social & security management for the project. The company will develop a project level board which will include ESHS representation and ESHS reporting requirements. The project board will provide a means for ESHS aspects to be raised and escalated as appropriate to senior management. A mechanism to link the project level board and the corporate level board should also be established.

The company will appoint qualified professionals to be responsible for the environment, health and safety and social aspects of the project. The company will engage a PMC to provide additional support and project supervision including ESHS oversight.

As per ESAP 8, the company will appoint, at a site level, a suitably qualified stakeholder liaison manager, and through the PMC, suitably qualified project E&S and OHS manager as well as human resource management support. At a corporate level, the client will appoint qualified E&S and OHS representative to be the lenders focal point throughout the duration of the construction & operational phases of the project.

The appointed individuals will have adequate qualifications & experience including the knowledge of international requirements & best practice. These individuals must have sufficient authority and resources to fulfil their responsibilities as required by the Project ESMS and the SEP, Lender requirements, the ESAP and local regulation.

As per ESAP 9, the company will require their PMC, EPC, and O&M contractors (including their sub-contractors) to appoint a suitably qualified environmental, labor and OHS team to manage their scope of work. These individuals must be aware of, and fully understand, the obligations and responsibilities placed upon them by the Project ESMS.

Emergency Preparedness & Response

The Company and their contractors will develop an Emergency Preparedness and Response Plan (EPRP) in accordance with IFC PS1 & PS4.

These plans will cover preparedness and responses to a range of potential emergency scenarios, including but not limited to medical emergencies (including pandemic type outbreaks), fire, earthquakes, extreme weather conditions, transport incidents & major hydrocarbon spills. Security related incidents, act of sabotage/vandalism, terrorism etc. will be addressed with a separate Security Management Plan (ESAP 21).

The response plans will include a communication protocol to alert local authorities and communities as appropriate and the management team in addition to specific responses and evacuation procedures.

Regular drills and emergency exercises will be conducted by the EPC & O&M Contractor covering the different emergency scenarios.

Monitoring & Review

The company will be responsible for reviewing and formally auditing their contractors with regards to their ESHS performance and compliance against project standards, national requirements and Lender guidelines.

As part of its management system, the company will establish procedures and allocate resources to monitor and measure the effectiveness of their and their contractor's management plans / programs and compliance with relevant Uzbek legal requirements.

E&S/OHS monitoring requirements of the EPC & O&M contractors for their own activities and that of their subcontractors will be defined within their management plans and their implementation will be closely followed by the company.

The EPC and O&M contractors will provide as a minimum, monthly E&S / OHS reports as part of the general reporting on the project. This report will include coverage of the contractor's E&S / OHS performance in accordance with reporting requirements outlined within the project ESIA & ESMPs. Clear key performance indicators (KPIs) will be developed as part of the reporting.

The company will appoint an independent auditor to undertake review of the effectiveness of CESMP and OESMP quarterly during construction phase, and annually in the first three years of power plant operation as noted in the ESAP item 10.

PS2 – Labor & Working Conditions

The project is expected to employ approximately 140 workers at the construction start, 900 workers during peak construction and up to 117 workers at the end of construction; during operation, there is expected to be 22 workers in site working in shifts. The EPC site management team is expected to be around 30 individuals across the construction period.

The number and gender of local & national workers that are predicted to be employed is yet to be fully established by the company although it is likely that approximately 400 technicians and low-skilled personnel will be required. Potentially these workers could be sourced either locally or nationally dependent on skill sets available.

Human Resources Policies and Procedures

At a corporate level the company has an existing Code of Conduct (Mubadala Code of Conduct) which sets principles related to core company values and ethics. These principles will be implemented throughout project execution.

The company will develop a Human Resources (HR) Policy and plans / procedures that are project specific and in line with IFC's PS2, International Labor Organization (ILO) and with national labor laws. The HR Policy will contain an enforceable code of conduct applicable to all workers. As per ESAP Action Item 11, the HR policy must include commitments to (i) Non-discrimination, equal rights and equal pay; (ii) Prevention of child labor and forced labor; (iii) Freedom of association and right to collective bargaining; (iv) Terms of employment including hours of work, overtime arrangements and overtime Compensation, rights to refuse overtime requests; (v) Commitment to apply zero tolerance for any proven case of gender based sexual or physical violence and workplace harassment.

This policy will be provided to all employees in their language(s). Induction training on the HR policy will be provided to all newly hired workers.

The company will develop an additional Code of Conduct for site security personnel which will be in line with the requirements of PS2, PS4 and the Voluntary Principles of Security & Human Rights. Further detail concerning security is provided within the section covering PS4.

As described within PS1, the company will develop and implement a contractor management plan which will outline mechanisms to monitor and enforce contractors', sub-contractors' and service providers (including private security agencies) compliance with labor policy & human resource requirements.

Non-Discrimination & Equal Opportunity

The company is committed to avoid all forms of discrimination against its employees, based on the age, gender, sexual orientation, health, race, nationality, political opinions or religious beliefs of its counterparties. The requirements of non-discrimination and equal opportunities will be extended to all contractors and subcontractors as part of contractual obligations.

Recruitment

As per ESAP 12, the company will supplement existing, publicly available, local workforce statistical data, by undertaking further stakeholder engagement to determine likely local & regional workforce availability, gender & skill levels to guide workforce planning.

As a consequence of local restrictions on face to face meetings, due to the current COVID-19 pandemic, it will not be possible to undertake a detailed, house by house social survey to determine likely local and regional workforce availability and skill levels. The company will engage with local communities leaders (including, but not limited to the Deputy Khokim of Navoi region, Deputy Head of Investment Department of Navoi Region Khokimiyat, a senior member of the local Women's Committee, and the Chairman of the mahalla committee Malik (Uzumzor is part of the Mahalla Malik) to establish an adequate workforce profile. The company will discuss the skills required and will provide draft job specifications during the engagement. All necessary measures to appropriately manage community expectations will be taken.

The engagement detailed above will assist the client to prepare a Local Recruitment & Employment Plan (LEP) which outlines their recruitment strategy and processes, including promotion of equal opportunities. The LEP will describe how women and Project Affected People (PAPs) will be preferentially selected, alongside other residents from the two most affected communities, for recruitment and training in advance of the start of construction activities. This LEP should include an analysis of local workforce skills against required worker profiles and numbers, engagement with regional vocational training centers that could be used (potentially with the support and technical assistance of the project) to provide vocational training, and employment targets for women. The company will commit to maximizing the inclusion of women in the workforce as much as reasonably practicable and will investigate different options, such as working with local NGOs etc. to assist in achieving this aim. Roles and responsibilities associated with local recruitment between the company and their appointed contractor(s) should be clearly defined.

The project's recruitment strategy will include a tiered approach in which recruitment campaigns will focus on recruiting suitably skilled employees/sub contactors from within project affected communities as a priority. Should suitable individuals not be available within this area, the recruitment campaign will expand to the local region and subsequently other regions of Uzbekistan should suitable employees / sub contactors not be available. The employment of international workers will be seen as the last option.

The company will ensure that their contractors develop LEPs aligned with the requirements outlined within their LEP.

Working Conditions and Terms of Employment

As per ESAP 13, the company will ensure that all employee contracts are consistent with local labor codes, ILO and IFC PS2 requirements.

All employees shall be provided a copy of their contracts (in a language they understand) and these shall stipulate the terms of employment, such as working conditions (including health & safety requirements) wages and benefits, hours of work, overtime arrangements and overtime compensation, annual and sick leave, maternity and paternity leave, vacation and holiday etc.

All construction phase worker contracts shall clearly describe the short-term nature of the project and provide an indication of likely employment duration.

The company will ensure that their contractors provide all workers, including sub-contractor workers, with written documentation concerning the terms and conditions of their employment as per the above. This requirement will extend to any personal engaged via labor hire companies.

The company will ensure all workers have contracts and background checks including references from most recent employers.

Workers Grievance Mechanism

As per ESAP 14, the company will develop a confidential grievance reporting, referral and support system for workers. This worker's grievance mechanism (WGM) shall be consistent with local labor codes and IFC PS2 requirements.

The WGM process shall involve an appropriate level of management (including designated staff and accountability, and the establishment of an appeals panel) to address concerns promptly and an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The WGM is to include specific considerations related to the harassment/gender-based violence grievances.

The company will provide specific training to grievance officers and general awareness to employees on harassment and bullying, engagement with women employees on their concerns regarding transportation and safety.

The company will ensure their WGM is available to their contractors, sub-contractors and service provider's etc. personal as required. The PMC will be given responsibility for the operation and management of the WGM during the construction phase of the project. It is anticipated that the PMC will identify a named individual who will take the lead, but this individual will be supported by a panel who will consider any appeals. Final arbitration will sit with the Company's Project Management. During operations, the O&M contractor will establish and operate a WGM aligned with company's WGM (including necessary training and awareness programs).

The existence and availability of the WGM shall be clearly communicated to all employees via. their employment contracts, HR plans and through the site induction process.

Workers Accommodation

The company is yet to decide the accommodation arrangements for project workers, with two options currently being considered: (i) Development of a workers' camp potentially located adjacent to the project area; or (ii) Accommodated in nearby hotels and / or guesthouses.

The ESIA currently under development will include an assessment of likely risks & impacts associated with worker accommodation and will propose necessary mitigation measures.

As per ESAP 15, the company and the EPC contractor will prepare an Accommodation Management Plan in line with "Worker's accommodation: Process and Standards" Guidance note by IFC and EBRD. The management plan will incorporate social risks & impacts posed to nearby communities by project workers, including required mitigation measures.

Consideration of the need for workers' accommodation must take account of the COVID-19 pandemic and the potential impact of the construction workforce on the local communities. The company & contractors management plans must assess the health risks to the workforce and put appropriate measures in place to protect the workforce and the local communities.

Safety audits shall be conducted to identify settings affected by the project that might increase the risk of gender-based violence and harassment (GBVH). For example, consideration whether adequate measures have been put in place to manage interaction points with communities such as truck stops.

Every effort shall be taken to provide safe, secure and separate living spaces for male and female construction workers, including adequate lighting and segregated wash facilities

Workers Organizations

It is unlikely that workers' unions will be involved in the project as the main concentration of workers will be on site during a short-lived construction period only; as noted above, the operations staff will be small. The company will not in any way prevent workers from seeking to join unions or other workers' organizations; this will be specified in the labor policy and procedures.

Child and Forced Labor

No child or forced labor will be used by the project at any time. Proof of identification and age will be required at the time of employment. The company will ensure appropriate contractual provisions are included with their contractors/suppliers to ensure this requirement is cascaded throughout the project.

Workers Occupational Health & Safety

Key occupational health and safety (OHS) risks for a PV project include slips and falls, potential hazards from on-site moving machinery, heavy load lifting, traffic accidents, exposure to electric shocks and burns, and safety issues related to PV module assembly.

As mentioned under PS1, the company will develop and shall require their EPC & O&M contractors to develop, an OHS MS aligned with OHSAS18001 / ISO 45001. The OHS MS will include project specific OHS plans / procedures for the construction and operations phases. These procedures will cover, but not be limited to, the following issues: hazard identification and assessment; the construction site safety (barricades, safety nets, control of the access, clear demarcation of areas and provision of safety information to visitors, etc.); specific procedures for hazardous works; worker's safety and training plan; personnel qualification, limitations and equipment needs (e.g. personal protective equipment); site supervision and audit procedures; incident reporting system and intervention measures (first aid etc.). The procedure will be designed to be specific to the PV solar sector (in terms of industry-specific hazards) and the project site. The OHS procedure will also link into the project-specific Emergency Preparedness and Response Procedures (EPRP) which will include fire risk assessment and control systems, fire

alarm systems and drills, emergency preparedness and planning, as part of OHS Procedures for both the construction and operation phases.

The company in coordination with its contractors, will develop and implement a training program for the project. As per ESAP 16, the EPC & O&M contractors shall develop and implement an 'Training Needs Analysis' and 'Training & Competency Plan' to ensure that all workers are appropriately trained, skilled, licensed / permitted & competent to undertake all tasks required of them within their role.

Supply Chain

As per ESAP 17, the company will develop a 'E&S Supplier & Vendor Management Plan' which outline processes to be implemented to identify, manage, and monitor environmental, social, health & safety, risks and track performance of project key suppliers and vendors.

The process will include initial screening & due diligence exercises of key potential suppliers & vendors with a focus on OHS performance, licensing / permitting, human resource risks (child labor and forced labor) and an assessment of gender and safety risks in bidding process for contractors.

PS3 – Resource Efficiency & Pollution Prevention

Resource Efficiency – Greenhouse Gases

Greenhouse gas emissions from the project during the construction are expected to be predominantly associated with the use of fuels such as in generators, transport, on-site equipment, and machinery. Although the quantities of emissions have not been calculated, these are expected to be low and significantly less than 25,000 tones CO_2 equivalent (tCO_2eq/year).

The project is expected to generate approximately 270 gigawatt hours (GWh) of electricity per year, resulting in a predicated annual GHG reduction of 156,000 tCO_2eq/year.

Resource Efficiency – Water Consumption & Availability

The company is yet to fully quantify water consumption requirements for the project.

Water required for construction has been estimated as 3,600m^3 excluding accommodation requirements and 10,658m^3 including accommodation requirements. The main water requirement during construction is likely to be water for dust suppression, concrete production and domestic use. It is yet to be determined whether concrete batching activities will be conducted on site or in Navoi, although initial calculations have assumed 0.2 m^3 of water for every 1 m^3 of concrete will be required. Construction phase water consumption requirements will be accurately quantified by the company when a decision is made concerning concrete batching arrangements & worker accommodation requirements.

Water requirements during operation and maintenance will be largely focused on panel cleaning. The company has stated that due to high levels of ambient dust the project design has considered wet cleaning of the PV modules as their base case. The company has estimated that this requirement would be approximately 4,620 m^3 per annum. The company will consider the contextual risk of water scarcity in the region as a guiding principle for selecting a water efficient cleaning technology option. The company will refine the cleaning regime during operations to avoid unnecessary cleaning and use of water.

The company is currently assessing different water supply options available to the project including groundwater abstraction, tapping into an existing water pipeline in close proximity to the project and trucking in water from Samarkand. It was noted during stakeholder engagement sessions held with local communities that water scarcity/availability is a primary concern of the local population. The company stated during the project virtual appraisal exercise that it is mostly likely that water will be sourced from Samarkand and trucked to site. If this is to occur, it is estimated that the water demand would be equivalent to one truck per every two days.

As per ESAP 18, the company will conduct an Alternatives Analysis for water use taking into account environmental, social and technical considerations and subsequently develop a Water Management Plan which will quantify water requirements for the construction (including non-potable water to be used for mixing concrete and dust control) and operational phases of the project and assess potential impact on availability of water resources to local communities (including farmers & herders).

If ground water is planned to be used, the company shall first undertake a hydrological study to determine the availability and suitability of groundwater for construction water and for panel washing during operation. Groundwater shall not be used for potable water unless subject to appropriate treatment.

The company will obtain all required permits / licenses / permissions related to water abstraction, consumption and treatment etc.

Pollution Prevention – Waste

The overall volumes of both solid and hazardous waste generated by the project during both construction and operation are expected to be low. The company is yet to develop a comprehensive estimation of their anticipated waste streams & volumes for the project or undertake an evaluation of waste treatment & disposal options.

It is anticipated that the project will produce both non-hazardous wastes, such as paper, wood, plastic, scrap metals and glass and a limited quantity of potentially hazardous materials such as transformer oils, paints, batteries, and other electronic waste.

As per ESAP 18, the company and its contractors will develop a Waste Management Plan for the project aligned with local legal requirements, IFC PS3 and WBG EHS general guidelines. The waste management plan will commit to the reduction of wastes to the extent possible whilst maximizing the re-use and recycling of materials and will outline process for appropriate waste storage, segregation, transportation and disposal/treatment.

The company will develop a waste inventory and will undertake an assessment of disposal and treatment facilities/options. Project waste will only be disposed of and treated at appropriately licensed facilities. The company will adhere to Principles of "duty-of-care" in waste management.

An assessment of the suitability of each licensed disposal facility will be undertaken prior to use to ensure project waste is disposed / treated in such a manner that is safe for human health and the environment.

Pollution Prevention – Hazardous Materials

Hazardous materials likely to be required during construction & operation phase of the project include hydrocarbons, oils, lubricants and paints. The company and its contractors will establish and implement a hazardous material management plan and spill prevention and response plan that are commensurate with the potential risk present. These management plans will address the protection of workforce and the prevention and control of the releases and accidents.

A limited number of waste PV modules are expected to require disposal during the construction phase, and they will be returned to the PV manufacturer for recycling.

Pollution Prevention

During construction, a minor and insignificant amount of pollution to air, noise, water and soil is anticipated that can be easily mitigated through standard pollution prevention and control measures which will be outlined in the respective environmental management plans. During the operational phase, no environmental pollution impacts are anticipated with the exception of wastewater, primarily from panel cleaning, and regular household waste generation. The company will require its EPC contractor/O&M operator to implement pollution prevention measures in accordance with national law, IFC's Performance Standards, the ESIA prepared for the project, and the ESAP for the project agreed between the company and the IFC.

PS4 – Community Health, Safety & Security

Before the start of construction, the company will assess risks and impacts to host communities of the project, such as the influx of workers. Based on the findings, the company and its contractors will develop a series of Community Health and Safety plans and procedures to protect public health, safety and security on issues that include: road safety and traffic management; potential emergencies and required responses; security measures to prevent unauthorized access during construction; measures to prevent sexual harassment, gender-based violence, and the sexual exploitation of children; and measures to prevent the spread of disease including COVID-19 and HIV/AIDS.

As per ESAP 20, the company will inform local stakeholders about the construction program and any potential associated hazards including expected increases in traffic around the site. The company must actively consult with local stakeholders and authorities regarding the numbers of workers that will be on site during the construction period, the potential for employment, worker accommodation, and worker welfare and health. The company must also listen and respond to any concerns raised by local stakeholders or authorities relating to COVID-19 and the potential impact on the health of the local community and the capacity of local medical services.

As described under PS 2, the company will maintain a 'Code of Conduct for employees', that will be applicable to all employees, contractors and subcontractors. It will include references to non-discrimination, sexual harassment and gender-based violence, and rules for interaction with the local population.

Road Safety & Traffic Management

The project is yet to fully quantify required traffic movements for the project. This information will be contained with the ESIA being developed.

The company has indicated that it is likely that solar panels required by the project will be transported by rail to the nearest rail head and trucked approximately 30 km to site.

As described within PS1, the company / contractor will develop and implement a project specific Road Safety & Traffic Management Plan (RSTMP) which will outline traffic management and accident prevention measures, including needed infrastructure, signage, training, to mitigate any impact on local communities. The RSTMP will define road transport routes to be used by the project, including routes to be used during equipment deliveries. The transport routes will be based on risk assessments undertaken to evaluate road conditions and to minimize impacts to local communities.

Community Exposure to Disease

As described within PS1, the company/contractor will develop a 'Community Health & Safety Management Plan' (CHSMP) which will include necessary mitigation measures to minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities. The CHSMP will avoid or minimize transmission of communicable diseases that may be associated with the influx of temporary project labor.

The company and its contractors will implement stringent measures to manage risks related to COVID-19 and will ensure that adequate plans & procedures are developed to minimize, as much reasonably possible, its transmission. The project's workers accommodation planning will be developed considering these risks.

Community Emergency Preparedness & Response

As described within PS1, the company and its contractors will develop an emergency preparedness & response plan (EPRP) for the construction & operational phase of the project.

The EPRP will outline the projects emergency preparedness and response activities, resources, and responsibilities, and will disclose appropriate information to affected communities, relevant government agencies, or other relevant parties as appropriate. The EPRP will define engagement processes and ensure that local communities are informed of any emergency situation which may impact them.

Security Personnel

The entire perimeter of the project site will be fenced and entry to the project site will be regulated. In case the project will benefit from public security support in ensuring safety of the workforce and construction sites the client will assess and document risks arising from the project's use of government security personnel. The client will seek to ensure that security personnel will act in a manner consistent with the PS4 and encourage the relevant public authorities to disclose the security arrangements for the client's facilities to the public, subject to overriding security concerns.

As per ESAP 21, if the project will additionally employ private security contractor, the company will develop an additional Code of Conduct for site security personnel which will be in line with the requirements of PS2, PS4 and the Voluntary Principles of Security & Human Rights and which will requests that public security adhere to the same standards when working with the company and supporting its security personnel. The company will ensure that their security contractors personal are appropriately screened, trained and competent for their scope of work. Security personal will be made aware that the use of force is explicitly forbidden, and the security guards must not carry arms of any kind (including batons).

Both the company and the Government security agency agree to notify each other immediately and in writing if they suspect the other has committed a breach of human rights or the laws of the Uzbekistan.

PS5 - Land Acquisition and Involuntary Resettlement

The PV Plant will occupy approximately 268 hectares (2.6 km2) of land, which is government land. The site of the PV Plant overlaps with land that was previously leased out to two tenants, using the land as grazing land. In 2018, the tenants were informed by the government of the planned change in land use, and subsequently surrendered their lease contracts and have no remaining claims under national law. One tenant has almost half the land area left in his lease contract, while the other tenant surrendered almost all the land of the lease contract. No physical displacement has occurred, and no complaints have been registered from the leaseholders. One person is still using the land for grazing of animals.

Following PS5, restoration of livelihood losses for the two tenants is the responsibility of the government and will be offered by the Regional Administration (Khokimiyiat) in the form of alternative land for lease to the previous leaseholders and current land user, prior to the fencing off of the site. While the actual current user of the land may not be a formal leaseholder, he should also be provided with alternative land for lease (in his own name), since he will likely be experiencing adverse livelihood impact due to the project.

As per ESAP 22, as the project site is pre-existing government land, and the change of lease contracts entails only economic resettlement (i.e. livelihood impact) of two land users, the client will identify and describe the measures that the responsible government agency plans to use to compensate affected persons. If these measures do not meet the relevant requirements of IFC's PS5, the client will develop an Environmental and Social Action Plan to complement government action. This may include additional compensation for lost assets, and additional efforts to restore lost livelihoods where applicable.

Other land impact of the project comprises the restrictions of access to a footpath crossing the project site once the fencing is installed. According to the ESIA report, cutting off this footpath will have no economic impact nor imply any legal aspects – but only impact on time spent on small-scale local mobility between the connected locations.

The final ESIA will include a section on resettlement that will act as an abbreviated Resettlement Plan Framework (RPF) to meet the World Bank requirements. This section should basically include a "Social Audit" of the site and surroundings as well as clear explanation of the land compensation and livelihood restoration undertaken for the Project.

PS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources

The PV Plant will occupy approximately 268 hectares (2.6 km2) of land and will be enclosed by a 2.5-meter-high fence. The land is currently used for rough grazing of livestock and is generally flat with few features of interest. Previous attempts to cultivate arable crops were noted but a combination of poor soil quality and lack of water made this unviable. The region is semi-arid, and the site is predominantly covered by scrub grassland. Although the site is grazed by domestic animals, it is largely Natural Habitat, although localized areas within the northern and eastern boundary of the site have been modified by historic cultivation. Therefore, Natural Habitat requirements of PS6 apply to the Project.

The Project site is located close to the eastern edge of the Central Asian Southern Desert Ecoregion, with the Alai-Western Tian Shan steppe Ecoregion beginning to the east of Navoi. Both ecoregions are characterized by desert vegetation, which varies according to soil type. The Project is not located within an internationally recognized areas or Protected Area. The nearest Key Biodiversity Area (KBA) is the Tudakul and Kumazar Reservoirs Important Bird Area (IBA) located 20 km to the southwest of the project site, which includes the Tudakul lake which is saline, and the Kuyu-Mazar freshwater reservoir.

Botanical surveys were completed in March 2020, which confirmed that the site largely supports wormwood steppe. This relatively sparse vegetation community is dominated by wormwood species (*Artemisia* spp.), frequent Isirik (*Peganum harmala*), frequent grasses (e.g. *Poa* spp.) and occasional thistles (*Asteraceae*). Although the site is grazed by domestic animals, it is largely Natural Habitat, although localized areas within the northern and eastern boundary of the site have been modified by historic cultivation. Therefore, Natural Habitat requirements of PS6 apply to the Project. During March 2020, a single IUCN Endangered bird species, Steppe Eagle (*Aquila nipalensis*) was observed migrating northwards over the site. The Emirate Centre for the Conservation of the Houbara (ECCH) at the Uzbekistan (ECCH) was consulted regarding Asian Houbara (*Chlamydotis macqueenii*), who confirmed that there is potential for this species to occur, although it was not observed during surveys completed during March and June 2020. There are no wetlands within the Project site that might attract congregations of water birds. The only other threatened species confirmed on-site is the IUCN Vulnerable Central Asian Tortoise (*Testudo horsfieldii*). As per ESAP 23, the company will complete additional flora and fauna surveys confirm the extent and condition of Natural Habitat and the presence of invasive alien species within the Project site (including construction camps, access roads and other areas impacted by the Project).

The Preliminary ESIA provides a short list of 'likely' biodiversity-related mitigation measures (e.g. pre-construction survey, relocation of fauna, prohibition of hunting), as well as operational phase monitoring of bird collisions with solar panels and overhead lines. As specified in ESAP 24, the company will develop a construction-phase Biodiversity Management Plan (BMP) that will be designed to achieve no net loss of Natural Habitat and associated threatened species (including the Central Asian Tortoise), with appropriate mitigation measures to preserve the integrity of topsoil and existing natural vegetation on-site and restoration natural vegetation in areas disturbed during construction.

As per ESAP 25 the company will develop an operational-phase BMP that includes long-term management of Natural Habitat on-site and control of invasive alien species. The BMP will also include a biodiversity monitoring plan for the operational phase, including monitoring of bird and tortoise fatalities and to demonstrate no net loss of Natural Habitats.

As per ESAP 26, if the company installs any new, or makes modifications to, existing overhead transmission lines, they will install and maintain bird flight deflectors for the life of the project.

Stakeholder Engagement

Stakeholder engagement activities undertaken for the project thus far have consisted of the official first round of stakeholder engagement activities (from an E&S perspective) which took place in Navoi (city) and in Uzumzor on the 5th and 6th of March 2019. This engagement was undertaken by a technical consultant retained by the IFC to provide advisory services during the IFC's

Uzbekistan Scaling Solar project including the development of an Environmental & Social Scoping Study.

Further stakeholder engagement took place between the 2nd of 7th of March 2020 as part of the Preliminary ESIA. This engagement was undertaken by the company's engaged ESIA consultant.

This engagement consisted of a series of face-to-face meetings with a range of stakeholders including:

- Affected stakeholders (including land users – Farm A & B)
- Institutional Based Stakeholders (public agencies concerned with any of the project activities)
- Interest Based Stakeholders (which included national and international non-governmental organizations (NGOs) and others civil society organizations).

It was reported by the consultants during both rounds of engagement that 'Farm B Land Users' are 'content with the development, but they are concerned about obtaining alternative land from the Administration'. During the visit in June, 22-25, Farmer A was contacted and met with Company consultants. He explained that he is currently not using the land, he has another business (cattle and meet reseller). He has 30 goats and Farmer B is currently taking care of his cattle. Further engagement activities with both Farmer are currently envisioned as part of the completion of the project ESIA and, as required during later phases of the project. Company understood that the Administration will be concluding the process of land compensation by August 2020.

A Stakeholder Engagement Plan (SEP) has been developed by the project. The SEP sets out the process for undertaking engagement and consultation with stakeholders including defining roles & responsibilities, outlining regulatory policy framework, establish processes for stakeholder identification and analysis, stakeholder engagement programs, information management and provides a grievance mechanism.

This SEP is a 'live' document, which will be periodically revised by the company in course of the project lifecycle, when required. The current version covers engagement activities to be undertaken during the development of the national Environmental Impact Assessment (EIA) and international Environmental and Social Impact Assessment (ESIA) processes.

As described under PS1, subsequent to the delivery of the ESIA, the company will update and further revise the SEP prior to commencement of the construction phase. The SEP will be fully aligned with the IFC requirements. Due to the COVID-19 restrictions on face to face meetings, the SEP should also be in compliance with the World Bank's Technical Note: Public Consultations and Stakeholder Engagement in World Bank-supported operations when there are constraints on conducting public meetings, dated March 20, 2020.

It should be noted that stakeholder engagement is to be understood as continuous process and it will be maintained by company through the entire life cycle of the project or until the company transfers the ownership of the project to a different party once the PPA expires. Stakeholder engagement responsibilities will not be transferred to contractors (EPC or O&M).

Community Grievance Mechanism (CGM)

An external grievance mechanism has been developed within the existing Stakeholder Engagement Plan. As per ESAP 20, the company will ensure that the existing grievance mechanism is updated as required and adequate tools & resources are allocated to ensure that it is fully implemented prior to commencing construction activities.

The CGM will be aligned with IFC PS1 and be robust, accessible, and anonymous for all nature of complaints that may come in from the community. The CGM will be able receive and address complaints of sexual harassment or gender-based violence between employees/contractors and members of the community. This will include a mechanism that ensures confidentiality and, where possible, effective referrals to support services or the provision of support services. The grievance mechanism must identify specific response methods for any complaints involving the sexual exploitation of or sexual violence against children.

ENVIRONMENTAL AND SOCIAL ACTION PLAN (ESAP)

Performance Standards	Due Dates	Indicators for completions
PS1: Assessment and Management of Social and Environmental Risks and Issues:		
1. The company will develop an ESIA aligned with IFC PS, which will include the development of a commitments register and an Environmental & Social Management and Monitoring Plan (ESMMP). The ESIA is to include any associated facilities.	Condition of Disbursement	ESIA & ESMMP submitted and acceptable to Lenders.
2. The company and its contractors will develop and implement an Environmental and Social Management System (ESMS) in accordance with the general requirements of PS1 and in line with the objectives of ISO14001 (certification is not required). The ESMS will identify, manage and control risks related to Project activities and its requirements will be applicable to any project sub-contractors.	Prior to Construction	Submit to Lenders the Project ESMS documentation and evidence of the existence of adequate policies, procedures, practices and management programs that are commensurate with the anticipated impacts and risks of the project.
3. The company will: (a) Develop a Construction Environmental & Social Management Plan (CESMP) consistent with the project ESIA, IFC PS and national requirements. The CESMP will consist of a suite of sub-plans, which will include but not be limited to: waste management; pollution prevention; water management; hazardous materials; biodiversity management; emergency response; community health, safety & security; road safety & traffic; worker accommodation; Influx management; cultural heritage (including chance finds); environmental monitoring; stakeholder engagement (including grievance management); contractor management.	Prior to Construction Prior to Construction	CESMP & associated sub-plans submitted and acceptable to Lenders EPC ESMPs & associated sub-plans submitted and acceptable to Lenders

(b) Require their EPC contractor to develop, implement and maintain their own ESMPs and associated procedures aligned with project requirements and their scope of work.		
4. The company will: (a) Develop an Operations Environment & Social Management Plan (OESMP) acceptable to IFC, which, consistent with the project ESIA, IFC PS and national requirements. The OSMP will consist of a suite of sub-plans, which will include but not be limited to: Waste; pollution prevention; water management; hazardous materials; emergency response; community health, safety & security; biodiversity management; environmental monitoring; stakeholder engagement (including grievance management). (b) Require their O&M contractor develop, implement and maintain their own ESHS MPs and associated procedures aligned with project requirements and their scope of work.	Prior to Commercial Operations Prior to Commercial Operations	OESMP & associated sub-plans submitted and acceptable to Lenders O&M Contractor ESHS MPs & associated sub-plans submitted and acceptable to Lenders
5. The company and its contractors shall develop an Occupational Health & Safety (OHS) MS aligned (but not necessarily accredited) with OHSAS18001 / ISO 45001 and of a scale appropriate to their scope of work. The OHS MS will identify, manage and control risks related to Project activities and its requirements will be applicable to any project sub-contractors.	Prior to Construction	Submit to Lenders the Project OHS MS documentation and evidence of the existence of adequate policies, procedures, practices and management programs that are commensurate with the anticipated impacts and risks of the project.
6. The company will: (a) Develop an over-arching Project OHS Management Plan, aligned with PS 2 and national requirements, which will outline minimum health & safety requirements for the project. (b) Ensure that their EPC & O&M contractor develop OHS Management Plans and set of sub-plans / procedures to ensure that all applicable health and safety legislation and relevant sections of IFC PS2 and the WBG General EHS Guidelines are met.	Prior to Construction Prior to Commercial Operations	OHS Management Plan submitted and acceptable to Lenders EPC OHS & associated sub-plans submitted and acceptable to Lenders
7. Develop and include EHS and labor provisions and compliance conditions in its EPC and O&M contracts which will provide contractors and third part service Project Management Consultant (PMC) providers	Prior to Construction	Company to provide contract provision to Lenders for review and approval

(including security agencies) with clear guidelines on labor performance.		
8. The company will (a) Establish an EHS&S Management Structure including an overall organizational chart detailing the Environmental, Social, Health and Safety teams, structure and relationship at the corporate and project site levels, including PMC, Contractors and sub-Contractors. At a corporate level, the client will appoint a qualified E&S and OHS representative to be the lenders focal point throughout the duration of the construction & operational phases of the project. (b) At a site level, appoint a suitably qualified stakeholder liaison manager. (c) Appoint through PMC suitably qualified project E&S and OHS manager, and human resource management support.	Prior to Construction	Provide an Overarching EHS&S Org Chart Provide Lenders with CVs & job descriptions for approval prior to hire
9. The company will require their PMC, EPC & O&M Contractor (including their sub-contractors) to appoint a suitably qualified environmental and OHS team to manage their scope of work. The team will have adequate qualifications & experience including the knowledge of international requirements & best practice.	Prior to Construction / Commercial Operations	Provide Lenders job descriptions and proof of hire.
10. The company will hire an independent environmental & social consultant (IESC) acceptable to all lenders involved in the project. The scope of the IESC shall include review and approval of key E&S and OHS company and contractor deliverables (CESMP, OESMP, ESMPs etc.), and monitor efficiency of E&S management plans implementation quarterly during construction phase and annually in the first three years of the operations.	Prior to Construction	Engage IESC acceptable to Lenders. Provide IESC Monitoring Reports acceptable to Lenders
PS2: Labor and Working Conditions		
11. The company will develop an HR Policy and associated plans / procedures, aligned with local labor codes, IFC PS2 and International Labor Organization (ILO) requirements, for the Project which will contain an enforceable code of conduct applicable to all workers. This policy must be made available to all employees in their language(s).	Prior to Construction	HR Policy and associated plans / procedures submitted and acceptable to Lenders.
12. The company will: (a) Supplement existing, publicly available, local workforce statistical data, by undertaking further stakeholder engagement to determine	Condition of	Evidence of the completion of stakeholder engagement related to

likely local & regional workforce availability, gender & skill levels to guide workforce planning. (b) The company will prepare a Local Recruitment & Employment Plan (LEP), aligned with local labor codes, IFC PS2 and ILO requirements which outlines the projects local recruitment strategy and processes. This LEP shall outline the project's commitment to encourage & maximize local workers, vulnerable persons and women in the workforce including retention and promotion. It will include a tiered recruitment strategy aiming to maximize local, regional & national employment and will include a focus on preventing and responding to gender-based violence/harassment for women construction workers, and in local communities affected by the project.	Disbursement Condition of Disbursement	local & regional workforce availability Local Recruitment & Employment Plan submitted and acceptable to Lenders.
13. The company will ensure that all employee contracts are consistent with local labor codes, ILO and IFC PS2 requirements. All employees shall be provided a copy of their contracts (in a language they understand). All construction phase worker contracts shall clearly describe the short-term nature of the project and provide an indication of likely employment duration. Ensure all workers have contracts and background checks including references from most recent employers.	Prior to Construction	Provide employee contract template for Lender review
14. The company will: (a) Define and implement a confidential grievance reporting, referral and support systems for workers - Worker Grievance Mechanism (WGM) - in accordance with IFC PS2. The WGM is to include specific considerations related to the harassment/gender-based violence grievances. This should include multiple entry points to raise and address allegations including options to report anonymously if preferred. The WGM should be extended to all third-party workers performing activities for the project as required. WGM to be operated and management by the PMC during construction. During operations, the O&M contractor will establish and operate a WGM aligned with company's (including training / awareness actions outlined below).	Prior to Construction Training will be provided during site induction	Workers Grievance Mechanism submitted and acceptable to Lenders Evidence of specific gender related WGM training to be provided to

(b) Provide specific training to key staff involved in the management of grievances (HR personal, grievance officers, senior management etc.) explaining the WGM and resolution process. Particular emphasis on identifying and appropriately managing harassment and bullying and GBVH (c) Provide general awareness to employees via. the site induction and ongoing toolbox talks on harassment and bullying, Engage with women employees on their concerns regarding transportation and safety. Deliver periodic mandatory training on GBVH to all workers, including contractors, subcontractors and core suppliers, as well as relevant consultants and clients. (d) Conduct mapping of local formal services (healthcare, counselling) and informal resources to support those who have experienced harassment.	Training will be provided during site induction Prior to Construction	Lenders Evidence of delivery of awareness training Summary of available local services
15. The EPC Contractor will develop a Workers Accommodation plan in line with "Worker's accommodation: Process and Standards" Guidance note by IFC and EBRD. Consideration of the need for workers accommodation must take account of the Covid-19 pandemic and the potential impact of the construction workforce on the local communities. Conduct safety audits to identify settings affected by the project that might increase the risk of GBVH. For example, consider whether adequate measures have been put in place to manage interaction points with communities such as truck stops. Provide safe, secure and separate living spaces for male and female construction workers; including adequate lighting and segregated wash facilities	Prior to Construction	Workers' Accommodation Plan aligned with guidelines and including specific Covid-19 provisions submitted and acceptable to Lenders.
16. The company will require its contractors to develop and implement an 'Training Needs Analysis' and 'Training & Competency Plan' to ensure that all workers are appropriately trained, licensed / permitted & competent to undertake all tasks required of them within their role.	Prior to Construction	'Training Needs Analysis' & 'Training & Competency Plan' submitted and acceptable to Lenders
17. The company will develop and implement an 'E&S Supplier & Vendor Management Plan' for primary suppliers. The client will undertake supplier/vendor E&S risk assessments for primary suppliers and review potential supplier/vendor labor issues and risks including child labor, forced labor, working conditions etc. Include assessment of gender and safety risks in bidding process for contractors.	Prior to Construction	E&S Supplier & Vendor Management Plan for primary suppliers submitted and acceptable to Lenders.

PS3: Resource Efficiency and Pollution Prevention		
18. The company will conduct an Alternatives Analysis for water use taking into account environmental, social and technical considerations and subsequently prepare a Water Management Plan that will provide the best option for water supply during construction and operational phases in ways to avoid or minimize significant negative impacts on water supply for local community, farmers and headers	Prior to Construction	Water Management Plan submitted and acceptable to Lenders
19. The company and its contractors will develop a Waste Management Plan aligned with local legal requirements, IFC PS3 and WBG EHS general guidelines. It will contain a waste inventory and will undertake an assessment of disposal & treatment facilities / options.	Prior to Construction	Waste Management Plan submitted and acceptable to Lenders
PS4: Community Health, Safety and Security		
20. The company will: (a) Revise their Stakeholder Engagement Plan (SEP) (including community grievance mechanism {CGM}) prior to commencement of the construction phase and periodically as required throughout the Project duration. The SEP will be fully aligned with the IFC PS requirements including safe, confidential and accessible grievance mechanisms for local communities. (b) Inform local stakeholders about the construction program, the major construction activities, and expected increase in traffic around the site. (c) Consult with local stakeholders and authorities regarding the numbers of workers that will be on site during the construction period, the potential for employment, worker accommodation, and worker welfare and health.	Prior to Construction	Stakeholder Engagement Plan submitted and acceptable to Lenders Evidence of engagement activities with local stakeholders provided to Lenders Evidence of engagement activities provided to Lenders
21. The company will develop a Security MP / Code of Conduct for site security personnel which will be in line with the requirements of PS2, PS4 and the Voluntary Principles of Security & Human Rights. The EPC's security forces management plan will mirror that of the company.	Prior to Construction	Security Management Plan submitted and acceptable to Lenders
PS5: Land Acquisition and Involuntary Resettlement		

22. As the land acquisition entails only economic resettlement of two farmers the client will identify and describe the measures that the responsible government agency plans to use to compensate affected persons. If these measures do not meet the relevant requirements of this Performance Standard, the client will develop an Environmental and Social Action Plan to complement government action. This may include additional compensation for lost assets, and additional efforts to restore lost livelihoods where applicable.	Prior to Construction	Provide Lenders with evidence that impacted land users have been provided with alternate land by the government. Develop additional ESAP items as required following completion of a Gap Analysis
PS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources		
23. The company will complete additional flora and fauna surveys to confirm the extent and condition of Natural Habitat and the presence of invasive alien species within the Project site (including construction camps, access roads and other areas impacted by the Project).	Prior to Construction	Provide evidence of completed Flora & Fauna Survey to Lenders
24. The company will develop a construction-phase Biodiversity Management Plan (BMP) that demonstrates no net loss of Natural Habitat and associated threatened species (including the Central Asian Tortoise), with appropriate mitigation measures to preserve the integrity of topsoil and existing natural vegetation on-site and restoration of natural vegetation in areas disturbed during construction.	Prior to Construction	Construction Phase Biodiversity Management Plan submitted and acceptable to Lenders.
25. The company will develop an operational-phase BMP that includes long-term management of Natural Habitat on-site and control of invasive alien species. The BMP should also include a monitoring plan for the operational phase, including monitoring of bird and tortoise fatalities and to determine no net loss of Natural Habitats.	Prior to Commercial Operations Date	Operations Phase Biodiversity Management Plan submitted and acceptable to Lenders.
26. If the company installs any new, or makes modifications to, existing overhead transmission lines, they will install and maintain bird flight deflectors for the life of the project	Prior to Operations	Provide evidence of the installation of bird flight deflectors to Lenders

Annex 5: Implementation Arrangements

Uzbekistan
Navoi Scaling Solar IPP Project

The MoF, MoE and MIFT, on behalf of the GoU, have conducted a competitive bidding process for selection of an investor to design, finance, construct, and operate the 100 MW Navoi Solar Plant. IFC Transaction Advisory Services advised the Government on structuring and tendering the Project. The Project was structured and tendered using the Scaling Solar Initiative approach — a WBG product consisting of a set of standardized documents which included RFQ, Request for Proposal, Project Agreements, IFC financing term sheet, World Bank Guarantees term sheet, and MIGA insurance term sheet.

The prequalification phase for the Project was initiated in February 2019, 23 applications were received, and the Government prequalified 11 investors. The prequalified applicants had to demonstrate that they do meet certain technical criteria, so as to meet the required experience and specific technical, financial, and legal requirements as was stipulated in the RFQ document. The Navoi Scaling Solar IPP was appraised before Board presentation. The amount of IBRD Guarantee is expected to be up to US$5.1 million. Other potential IPP projects will be appraised as and when they are identified and progressed.

The Navoi Scaling Solar IPP Project is anticipated to follow customary arrangements for such private sector projects and be implemented through special purpose companies (registered in Uzbekistan) that will have overall responsibility for the design, finance, supply, construction, testing, commissioning, and O&M of their respective power plant assets for the duration of the PPP contractual agreements (for example, PPAs and GSAs). Each such project company will set up appropriate management structures to undertake its respective project(s).

The mechanism under the Navoi Scaling Solar IPP will help the public off-taker, NES, meet its obligations under the PPA to procure and provide a payment security to the IPP company. It will provide the private IPP company with a facility to manage any temporary interruptions in monthly PPA payments from the public off-taker. In case the public off-taker is unable to pay a monthly PPA invoice(s) to the private IPP company, the latter will draw a corresponding amount under the L/C (step 1). The public off-taker and then the Government are required to repay and reinstate the L/C at its original value (step 2). For cases, where the public off-taker or the Government fails to reinstate the L/C at its original value within 12 months, then the L/C issuing bank will have recourse to the World Bank at the outstanding amount and any interests accrued. The Indemnity Agreement to be drawn between the World Bank and the GoU will oblige the GoU to recover such amount.

It is expected that the current arrangements for the Navoi Scaling Solar IPP will be replicated for other IPP projects under IFC Advisory support in the near term. As the power sector reform continues, the institutional and implementation arrangements for future projects may differ from those of the Navoi Scaling Solar IPP. Such changes (if any) will be assessed and included in the subsequent guarantees to be considered as separate projects.

IBRD will provide its payment guarantee to the private sector, Masdar, in the proposed Project. Should the guarantee for the Navoi Scaling Solar IPP, be called, the IBRD would disburse under the guarantee to the guarantee beneficiary, and the GoU would be obligated to repay IBRD in accordance with the terms of the Indemnity Agreements between the GoU and IBRD. The overall FM of the transactions will be undertaken by a private entity according to commercial practices acceptable to the lenders. Because the overall FM of the transactions will be undertaken by a private party, the provisions of paragraph 7 – Financial Management – of the World Bank Policy on Investment Project Financing (October 2018) do not apply.

The IPP companies, typically SPVs, will have the primary responsibility for managing the finance of the IPP projects. They will install and maintain adequate FM systems, including the system of accounting, reporting, auditing, and internal controls, and relevantly qualified staff. The annual financial statements will be prepared in accordance with IFRS/IAS. In addition, they will be audited in accordance with ISA. The copy of the authorized audit report and Management Letter shall be provided to the World Bank within six months after the end of the reporting period.

The IBRD Guarantee will offer investment options to private investors alongside IFC lending and MIGA insurance. All WBG instruments will be optional for investors and would be designed to help mitigate risk perceptions by potential long-term investors (foster higher participation in the bidding process and improve the quality of bids and enhance competition). This follows the market precedents and World Bank experience in mobilizing commercial capital under which long-term investors would seek the World Bank Guarantees and/or MIGA insurance to cover the government-related risks (for example, nonpayment risk by a public off-taker).

The World Bank Procurement Regulations for IPF Borrowers: Procurement in Investment Project Financing, Goods, Works, Non-Consulting and Consulting Services, dated July 2016, revised November 2017 and August 2018, do not apply for this Project where an IBRD Guarantee is provided by the World Bank, as stipulated in paragraph. 2.2, Section II: General Considerations. The current legal framework for public procurement has been adopted only recently and is mainly defined in the following legal acts: (a) Law on Public Procurement (PPL), (b) Public Procurement Resolution 3550, (c) Regulation No. 3016, and (d) Decree of the President No. PP-4544. Before adoption of the PPL, there was no comprehensive regulation providing for thorough governance of public procurement procedures, which resulted in many problems, uncertainties, and abuses. Presently, with an established public procurement policy, the Government aims to eliminate unfair competition and increase the efficiency and transparency of expenditures of public purchasers. The Procurement Law and Regulations regulate the procurement of goods, works, and services carried out by any government agency, parastatal body, or any other body or unit established and mandated by the Government to carry out procurement (such entities referred to under the PPL as 'procuring entities') using public funds.

The PPL introduces two general categories of public purchasers, as follows: (a) state budget-financed purchasers and (b) corporate purchasers, which include (i) SOEs; (ii) entities, in which more than 50 percent of the shares are held by the state; and (iii) entities, in which more than 50 percent of the shares are held by entities with more than 50 percent of the shares held by the state.

Among the above categories, the PPL determines a special category of public purchasers, the so-called 'strategic public purchasers', the list of which is approved by the Strategic Purchasers

Resolution 3487 and revised in the decree PP-4544. In accordance with Article 1 of the PPL, the law does not govern the procurement conducted by strategic public purchasers. Currently, the list of 'strategic public purchasers' includes the JSC 'Thermal Power Plants', JSC NES, and JSC 'Regional Electric Networks'.

Annex 6: Implementation Support and Corporate Monitoring Plan

Uzbekistan
Navoi Scaling Solar IPP Project

Strategy and Approach for Implementation Support and Corporate Monitoring

The Implementation Support Plan described in table 6.1 explains how the World Bank team will supervise and monitor the proposed Project, the Project risks, and the Project indicators. It is also linked to the results identified in the Results Framework. New supervision arrangements are being developed in line with the guidance of Corporate Review Guarantee Committee to ensure adequate monitoring, evaluation of risks and escalation mechanism to manage the risk of any call of guarantee. As the revision of the Bank's operational guidance is underway, this aspect will be further documented as part of the first Project Implementation Status and Results Report (ISR).

Implementation Support and Corporate Monitoring Plan and Resource Requirements

The level of technical support needed includes staff with energy sector knowledge and expertise, specialized partial risk guarantee project expertise including legal counsel and financial experts, environment and social specialists, power engineering as well as monitoring and evaluation expertise. The responsibility for this support lies with the Energy task team leaders and the Guarantee co-task team leader with support from other experts. The main focus in terms of support during implementation is summarized in table 6.1.

Table 6.1. Implementation Support and Corporate Monitoring Plan

Time	Focus	Skills	Resource Estimate	Partner Role
Months 0–12	Effectiveness, financial closure, selection of L/C bank, environment and social, construction progress, and political developments.	• Sector • Guarantee/commercial • Financial • Legal • Environment and Social • Engineering • Country team	US$100,000	n.a.
Months 12–24	• Review of progress in construction and generation by the IPPs • Review of sector technical and financial performance • Review of environment and social compliance • Review of progress of the	• Sector • Guarantee/commercial • Financial • Legal • Environment • Social • Monitoring and evaluation	US$50,000	n.a.

Time	Focus	Skills	Resource Estimate	Partner Role
	sector and the IPPs • Review of status of completion against indicators and PDO			
Through end of guarantee effectiveness period	Corporate monitoring of legal covenants and risks that could lead to a possible call on any of the signed IDA guarantees	• Sector • Guarantee/commercial • Financial • Legal	US$30,000 per year, including US$20,000 of staff cost and US$10,000 of travel (one trip of two staff per year).	

Table 6.2. Skills Mix Required

Skills Needed	Number of Staff Weeks (weeks per year)	Number of Trips	Comments
Team leader	3–5	Located in Uzbekistan	To be adjusted annually depending on available supervision budget
Energy specialist, co- task team leader	3–5	Located in Uzbekistan	
Guarantee specialist, co-task team leader	3–5	2–3 per year	
Legal specialist	2–3	Depending on needs	
Financial analyst	1–2	2 per year	
Power engineer	1–2	1 per year	
Social	1–2	2 per year	
Environmental	1–2	Local staff	
Monitoring	1–2	1 per year	
Procurement	1–2	Local staff	
FM	1–2	Local staff	

Annex 7: Statement of IFC's Committed and Outstanding Portfolio in Uzbekistan

International Finance Corporation

Statement of IFC's Committed and Outstanding Portfolio

Amounts in US$ Million

Accounting Date as of: 06/30/2020

Region: Europe and Central Asia
Country: Uzbekistan

Institution Short Name	CMTD Bal - IFC	LN		ET		QL		QE		GT		RM		TOTAL		TOTAL	
		Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Undisb Bal - IFC	Out Bal - IFC	Out Bal - Part
DAVR-BANK	5.0	-	5.0	-	-	-	-	-	-	-	-	-	-	-	5.0	-	-
Hamkorbank	18.3	-	-	2.6	-	-	-	-	-	0.2	-	6.6	8.8	9.5	8.8	-	-
Indorama Kokand Fertilizers	12.5	-	12.5	-	-	-	-	-	-	-	-	-	-	-	12.5	-	-
Indorama Kokand	23.3	23.3	-	-	-	-	-	-	-	-	-	-	-	23.3	-	-	-
Ipak Yuli Bank	13.3	12.1	-	-	-	-	-	-	-	-	-	-	1.2	12.1	1.2	-	-
IPOTEKA BANK	35.4	-	-	-	-	-	35.0	-	-	0.4	-	-	-	0.4	35.0	-	-
SEF Parvina	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-	0.0	-	-	-
UZBEK LEASING	1.7	1.7	-	-	-	-	-	-	-	-	-	-	-	1.7	-	-	-
Total Portfolio	**109.5**	**37.1**	**17.5**	**2.6**	**-**	**0.0**	**35.0**	**-**	**-**	**0.6**	**-**	**6.6**	**10.0**	**47.0**	**62.5**	**-**	**-**