

Uzbekistan Solar 3

Public Private Partnerships for DFBO
of 3 photovoltaic parks totaling 500MW
capacity and battery storage

Teaser



Ministry of Energy of the Republic of Uzbekistan
Ministry of Investments and Foreign Trade of the Republic of Uzbekistan
PPP Development Agency of the Republic of Uzbekistan



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About Uzbek Solar Round 3

IFC Transaction Advisory has been mandated by the Government of Uzbekistan (“GoU”) to structure public private partnerships and attract private partners to be selected under open and competitive processes, for the development of several solar photovoltaic (“PV”) parks with a total capacity of 1000 MW. Such mandate is implemented in several rounds of tenders.

This teaser relates to the Round 3, consisting of 3 competitive tenders to select private partners to design, build, finance and operate **3 solar PV parks for a total capacity of 500MW**. One of the tender will include a battery storage component. Each park will be developed on a separate site to be provided and leased by the GoU.

The private partners are to enter into Public Private Partnerships (“PPP”) with state entities of the Government of Uzbekistan.

The selected private partners will be compensated for their sale of electricity through a 25 years Power Purchase Agreement (“PPA”) to be signed with the state-owned electricity off-taker. The Government of Uzbekistan will also provide a Government Support Agreement (“GSA”) to the private partner.

One of the tenders (Bukhara region) will also pilot a battery component, whereas the revenues are to be complemented by a capacity payment for the use of the batteries at the discretion of the off-taker.

Details of the Projects

Projects Locations:

1. Bukhara region (~ 250 MWac PV + Battery Storage)
2. Namangan Region (~ 150 MWac PV only)
3. Khorazm Region - (~ 100 MWac PV only)

PPA duration: 25 years PPA with a fixed tariff to be paid by the state-owned off-taker

Battery storage: capacity payment to be paid by the state-owned off-taker for a duration (TBD). The batteries are to be installed on the Bukhara site, have a capacity of 50MW and a duration of up to 2-4 hours (TBD).

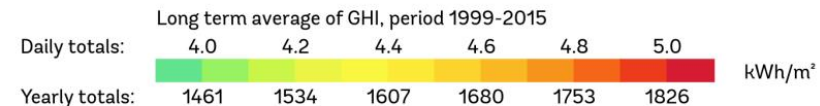
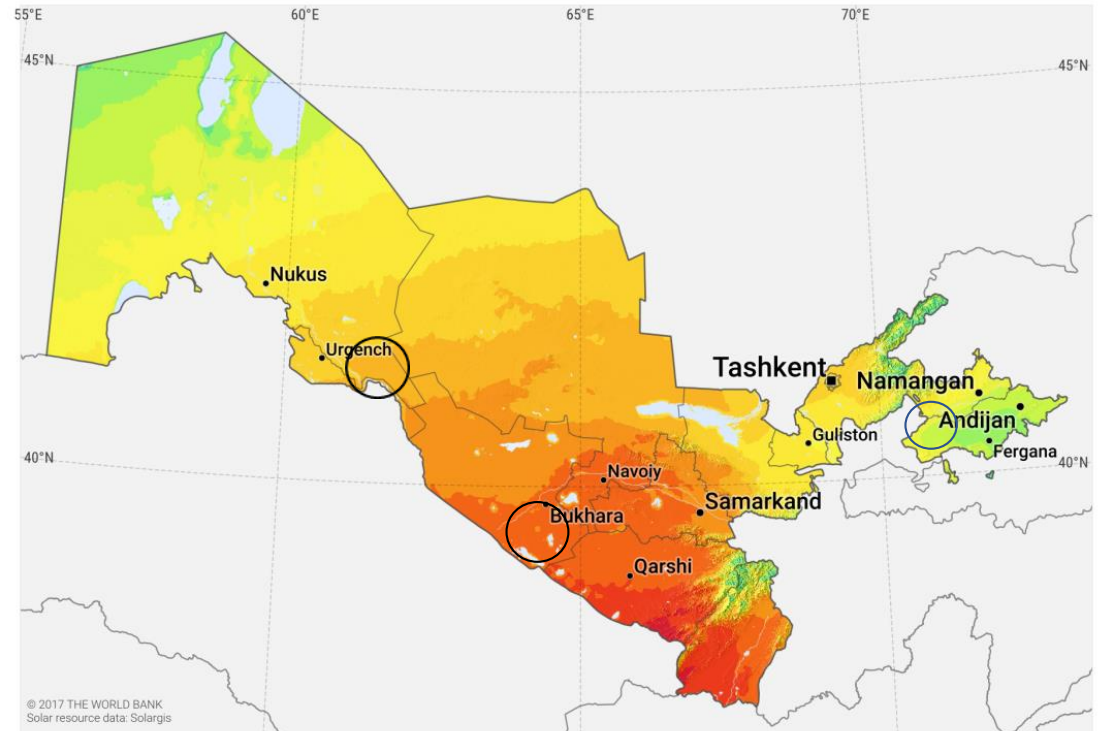
Transaction Team:

- Lead Transaction Advisor – IFC Transaction Advisory
- Legal Advisors – Hunton Andrews Kurt (USA) and Centil Law (Uzbekistan) and technical advisors (TBD)

The Projects will be structured and implemented on the basis of the successful Uzbek Solar Round 1 (100MW PV park in Navoi), closed in Dec 2020, and will also benefit from the same levels of government support.

SOLAR RESOURCE MAP

GLOBAL HORIZONTAL IRRADIATION UZBEKISTAN



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Indicative timeline of the tenders

2 stage tender process to be launched in Q1 2021



Stage 1 - RFQ

Applicants must pass all 3 criteria

1. Technical criteria

Applicants to prove experience of developing, financing and operating a power plant (options for technologies)



2. Financial criteria

Applicants to demonstrate financial capabilities through Net worth and Net worth to Total asset ratio



3. Legal compliance

Applicants to comply with the integrity due diligence requirements



Applicants that pass the RFQ criteria will be granted access to the Virtual Data Room and invited to submit proposals at the RFP stage

Stage 2 - RFP

Step 1

Bidders must comply with both criteria

1. Technical proposal



In line with the technical specifications set in the RFP

2. Commercial proposal



Including evidence of the ability to finance the project



Passing Bidders proceed to Step 2

Step 2

3. Financial Proposal

PV only Project: awarded based on Lowest Energy Charge in US cents/kWh.

PV + Storage Project: awarded based on the lowest overall lifetime cost for the operation of the Project based on (i) an assumed production of PV Energy at the bid price for PV Energy during the Term; and (ii) an assumed capacity payment based on full availability of the Storage Facility and the capacity payment bid by the Project Company during the Storage Term.

Namangan Site – PV only

- **Location** : in Pap District of Namangan Region
- **Size**: 700Ha available land.
- **GHI Potential**: 1591.1 kWh/m²/yr.
- **Yearly Average Air Temperature**: 13.3 °C (SolarGIS).
- **Indicative Specific Yield**: 1769 kWh/kWp.
- **Access to the site**: Reasonable access road. Accessible by a dirt road in reasonable good condition, of about 5 km, that connects the site with the asphalt road R-112.
- **Grid connection**: solar PV plant (~ 150 MW) shall be connected to the actual Obi-Hayet substation in 220 kV through a double circuit.



Namangan region



Site picture

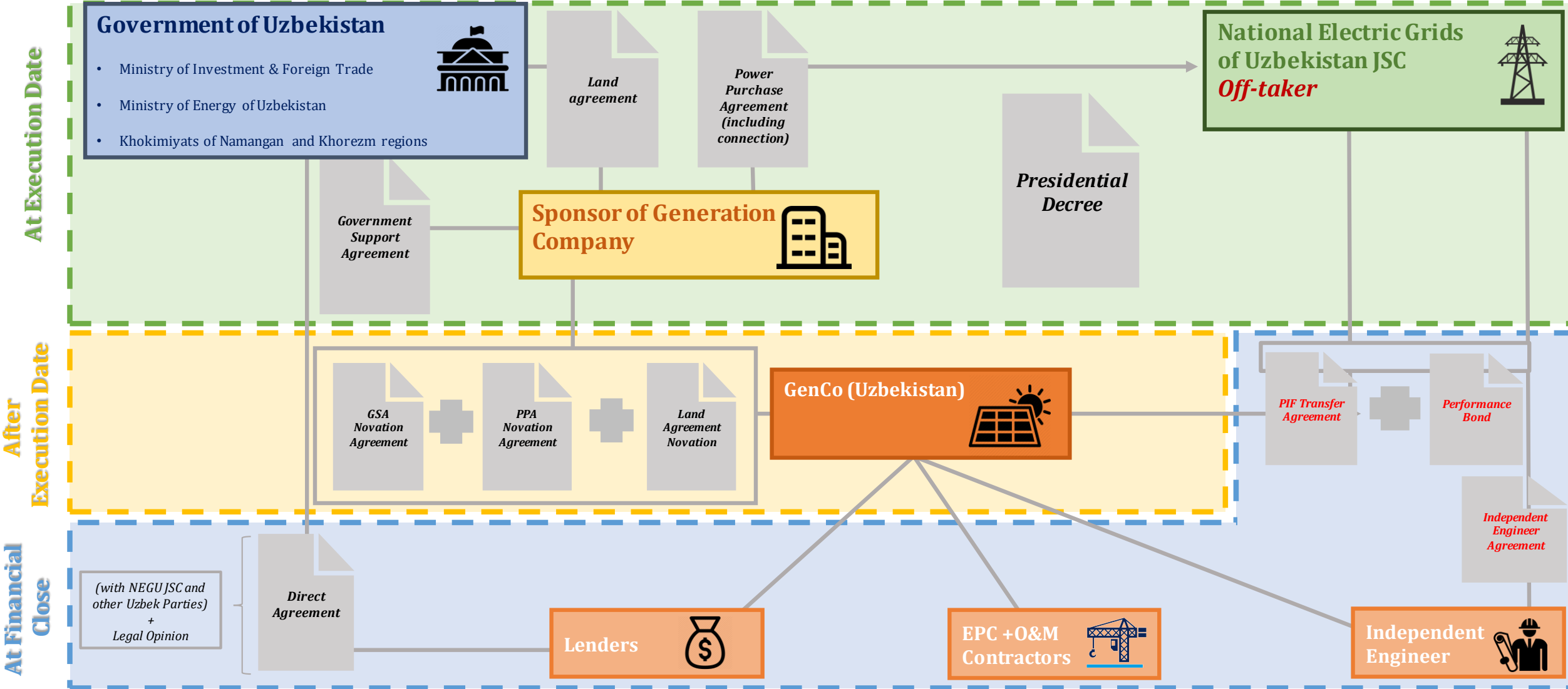
Khorazm Site – PV only

- **Location** : 3 options currently under evaluation, all to the south east of Urgench along the A380
- **GHI Potential**: 1710 kWh/m²/yr.
- **Access to the site**: Good. Major asphalt road close (< 5km) to site.
- **Grid connection**: Expected to consist of short (< 5km) 220 kV, double circuit line to existing substation.
- **Yearly Average Air Temperature**: 14.7 °C (SolarGIS).



Khorezm region

Indicative Transaction Structure for PV only



Bukhara Site – PV + Storage

- **Location:** 24 km east of Alat city, in the Bukhara region.
- **Size:** 1035Ha available land.
- **GHI Potential:** 1774.1 kWh/m²/yr.
- **Yearly Average Air Temperature:** 17.1 °C (SolarGIS).
- **Indicative Specific Yield :** 1989 kWh/kWp.
- **Access to the site:** reasonable access road, asphalt roads are in good condition.
- **Grid connection:** solar PV plant (~250 MW) shall be connected to the existing Hamza-3 substation, through a new 220 kV overhead line, approximate length 2 km, double circuit.

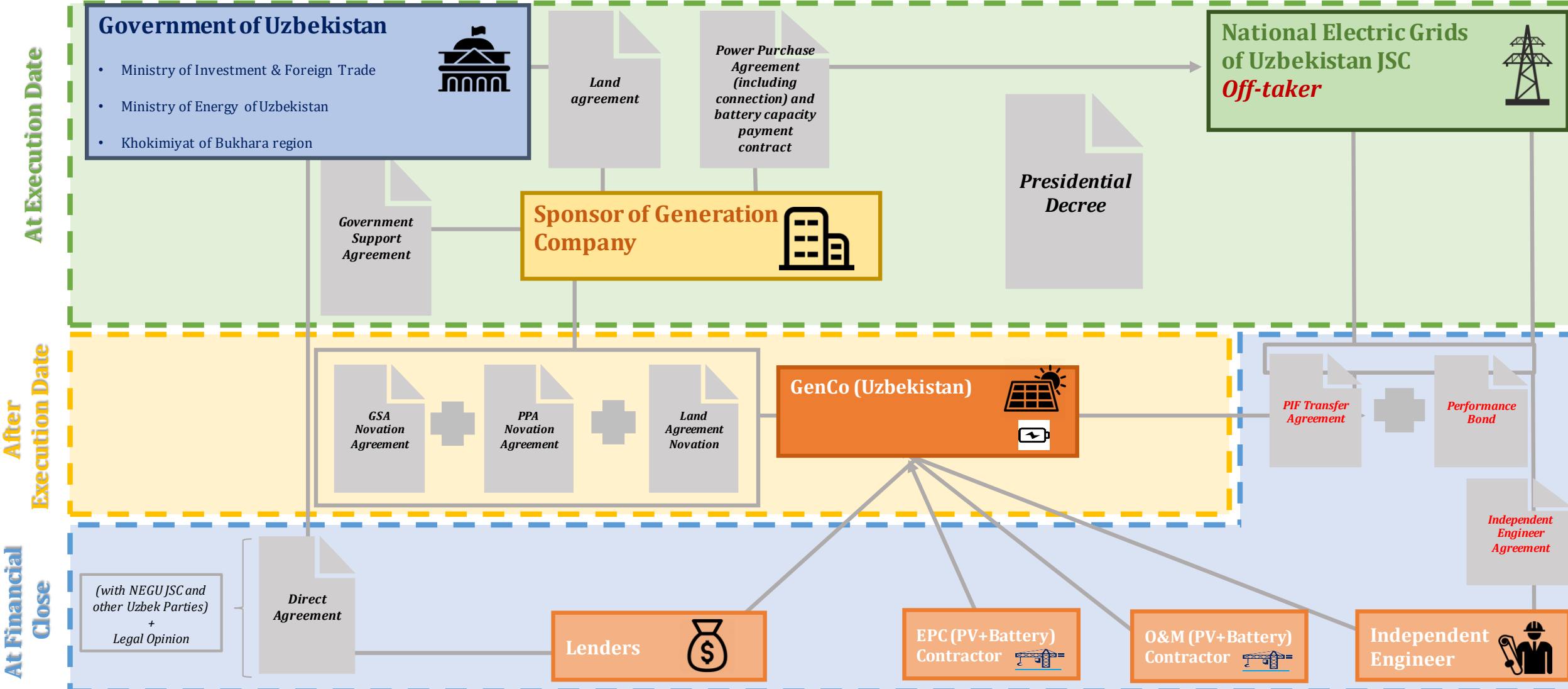


Bukhara region



Site picture

Indicative Transaction Structure for PV + Storage



PPAs - Main characteristics

Item	Solar PV only PPA	Solar PV PPA + Battery PPA
Contract type	Take-and-pay: Price per kWh – energy only	Take-and-Pay + Capacity Battery = ~ 50MW; ~ 2-4 hours duration (exact figures to be decided)
Term	~25 years	PV Term ~25 years; Storage Term – TBD (tentatively ~6-12 years), renewable if Parties agree
Tariff	An energy payment in a fixed US\$/kWh amount as bid by the prospective Bidder. The tariff may be adjusted upwards or downwards where the Seller incurs increased or decreased costs.	Same as for Solar PV only + For the duration of the Storage Term = a capacity payment in a fixed US\$ per MW-month amount bid by the prospective Bidder for Storage Capacity.
O&M	Performance Guarantees LDs payable if performance ratio <80% of estimated performance ratio	Performance Guarantees on both solar and battery LDs: As for Solar PV only + Storage LDs payable, if Monthly Storage Availability < Guaranteed Storage Availability
Seller Event of Default	Failure to achieve a PV Plant Performance Ratio above 70% of the Estimated PV Plant Performance Ratio for 2 consecutive Contract Years	As for Solar PV only + - if, the Storage Availability < 75% of the Guaranteed Storage Availability for 2 consecutive Contract Years; - if, the actual Storage Capacity of the Storage Facility < 90% of the initial Storage Contract Capacity for at least 2 consecutive Contract Years.
Other	N/A	No ancillary services (the usage of the batteries will be at the sole discretion of the off-taker, within the constraints of the contractual technical limits)

GSA – Main characteristics

Development rights and support undertakings

- Development Rights to develop the Project
- Protection from discriminatory action

Legal support

- Entering into Direct Agreement
- Legal opinion from Ministry of Justice

Liquidity support

- Letter of Credit to be made available, if required, to backstop the payment obligations of the off-taker

Treasury matters

- Bank account transactions:
 - Government permits payments to foreign contractors by deposits to accounts outside of Uzbekistan, maintenance of insurance proceeds in foreign accounts and maintenance by Seller of foreign bank accounts.
- Currency conversion:
 - Government to procure that:
 - permit the free transfer of funds (whether within Uzbekistan or cross border) of Uzbekistan Sum or US Dollars and permit the conversion of Uzbekistan Sum into US Dollars on market terms; and
 - make US Dollars available for conversion upon request.

Uzbekistan macroeconomic overview

- **Uzbekistan is Central Asia's most populous country, comprising nearly half the region's total.** It is one of only two double-landlocked countries in the world and has a land area of approximately 448,000 km². With a population of 33 million – of whom almost a third are under the age of 14 – the labor force is expected to continue growing until 2050.
- **Uzbekistan has the potential to become the largest economy in Central Asia** given its natural resources combined with the government's commitment to promoting private sector-led growth. Moreover, Uzbekistan's large foreign exchange reserves and low and affordable foreign debt provide a cushion against global market volatility. According to the WB, the economy has grown by 5.0% in 2019, and is expected to accelerate slowly to 6.0% by 2022. The average GDP growth rate for the last 10 years equaled to 6.84%.
- **Since 2017, Uzbekistan has been on the steady route of reforms under its development strategy:** Namely, reforms included liberalizing prices, cutting average customs tariffs and moving to a floating exchange-rate regime. The government also approved gradually moving to an inflation-targeting regime, restructuring state enterprises and reforming the tax system. Additionally, the government is working to develop Uzbekistan's domestic capital markets and improve the country's relations and cooperation with its neighbors. The government revived the previously stalled World Trade Organization accession process, and adopted new legislation to promote competition and public-private partnerships (PPPs). Institutional progress was rapidly acknowledged by international observers. The World Bank named Uzbekistan as one of the top improvers globally and the regional leader in terms of its total number of reforms in its 2018 "Doing Business" report. In 2019 Uzbekistan was ranked at 69th place of doing business, which is a significant leap forward from 141st place in 2015.

Snapshot of the Economy



PEOPLE

- Population: 34.0 MN (2020) Urban/Rural: 50.5%/49.5%
- Ethnic groups (2017e): Uzbek (83.8%), Tajik (4.8%), Kazakh (2.5%), Russian (2.3%), Karakalpak (2.2%), Tatar (1.5%), other (4.4%)
- GDP per capita (current US\$): 1,741 (2019)
- National poverty line¹: 11.4% (2018)
- Lower Middle Income Poverty (US\$3.50 in 2011 PPP): 9.6% (L2CU baseline survey)
- Unemployment (2018 national estimates): Total (9.3%); Female (12.9%)
- Labor Force Participation (ILO 2018e): Male (81.5%); Female (56.9%)
- Life Expectancy: 71.4 years



POLITICS

- Legal System: The Soviet Republic of Uzbekistan declared independence in 1991. A new constitution adopted in 1992, declared Uzbekistan a multiparty democracy and a presidential republic
- Head of State: Shavkat Mirziyoyev won presidential elections in December 2016.
- President Mirziyoyev has initiated reforms towards improving relations with neighboring countries in Central Asia, as well as with Russia, China and the United States



ASSETS

- Strategic location in Central Asia: the only country that borders every other Central Asian country
- The most populous country in Central Asia with a very young population: 34.1% of its people are younger than 14 years
- Rich in mineral resources: gold (world's 7th largest producer); uranium; copper; coal; silver; zinc and lead
- Hydrocarbon reserves are significant: total primary energy reserves (proved and projected) amount to 5.5 billion tons of oil equivalent (toe), including 1.5-1.6 billion toe of natural gas, 245 million toe of oil and up to 3.3 billion toe of coal
- High literacy rate (98%) and almost universal school enrollment rates: Primary (95%); Secondary (91%)
- Tourism potential: rich cultural and historical heritage, gastronomic tourism



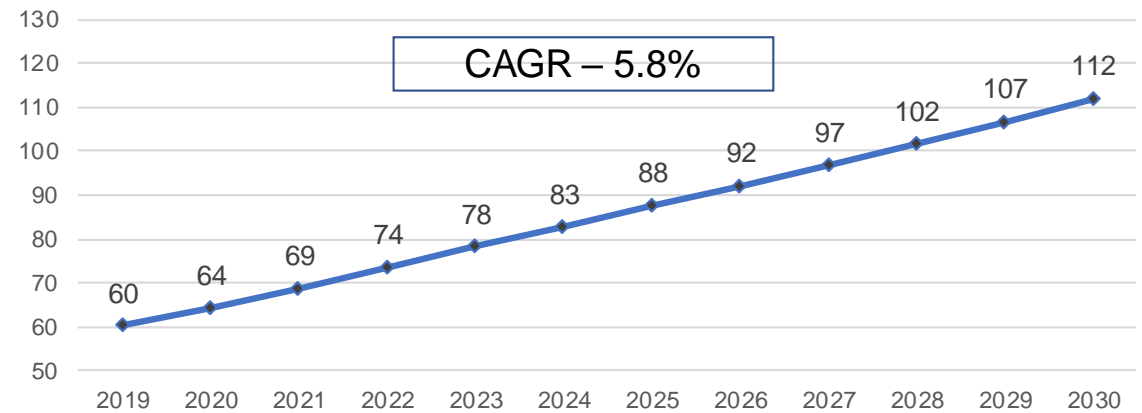
ECONOMY

- Sovereign ratings: Moody's: B1 (stable); Fitch: BB- (stable); S&P: BB- (stable)
- GDP, current US\$ BN: 58.3 (2019)
- GDP composition (2018): Services (35.6%); Agriculture (32.4%); Industry (32%)
- CPI Inflation (average): 17.5% (2018) and 15.2% (2019)
- DB 2019 Ranking: 69 out of 190
- Trade openness:
 - Member of the CIS Free Zone since 2014
 - Partnership and Cooperation Agreement (PCA) with the European Union
 - Planned negotiations for WTO accessions
- Currency: Uzbek sum (US\$ 1 = UZS10,295, as of September 2020)
- Exchange Rate Regime: Flexible exchange rate. On September 5th 2017 the Central Bank of Uzbekistan allowed the sum to float freely, marking a depreciation of almost 50%

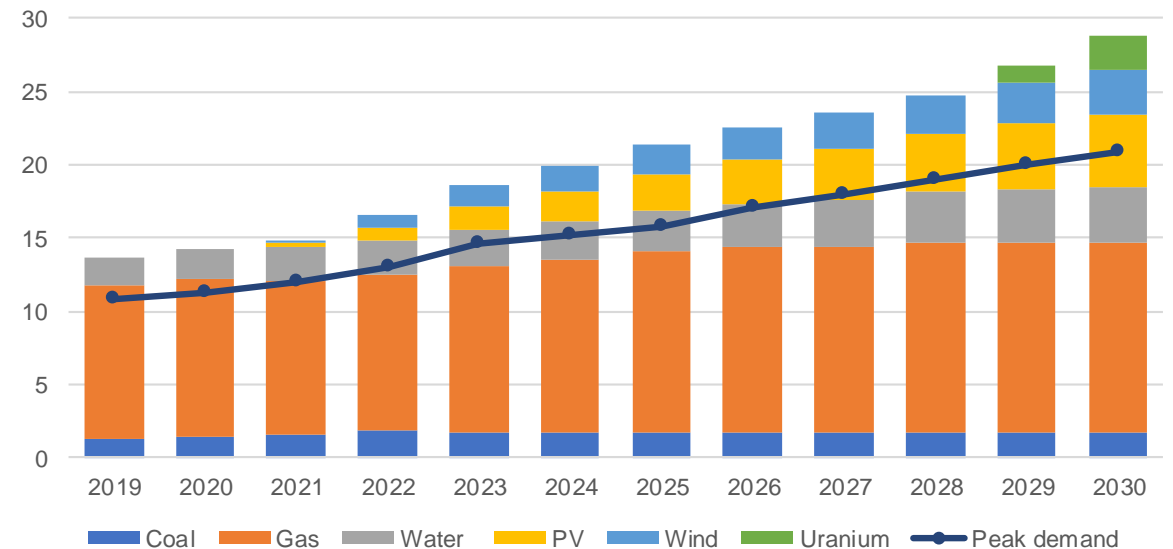
Power Sector of Uzbekistan (1/2)

- **Uzbekistan's economy has been developing rapidly in recent years, leading to a significant increase in energy consumption.** Over the next 10 years consumption is expected to almost double. With consumption forecast to surge over the coming years, as economic reforms spur a jump in industrial production, the need for change has become urgent.
- **Over the next five years, GoU estimates that more than \$2.8bn will be required to upgrade existing infrastructure,** while adding new power generation could cost as much as \$14.4bn. To reduce the burden on the state budget, as well as enhance the flow of technology and know-how into the country, the government is looking to attract foreign investors to a sector that until recently was largely off-limits to foreign investments.
- **The electricity generation in Uzbekistan is dominated by gas,** with gas run TPPs accounting for 76% of installed capacity (10.47GW out of total 13.72 GW installed) and 76% of total electricity consumption of ~65 TWh, with the remaining part covered by coal, hydro, limited imports and currently small but growing share of RES.
- **The first step to attract FDI in the power sector was completed with the open tender for a PPP related to a 100 MW PV park in Navoi. The deal was awarded to Masdar (UAE).** The government appointed IFC to structure the transaction.

Government Power Consumption Forecast (in TWh)



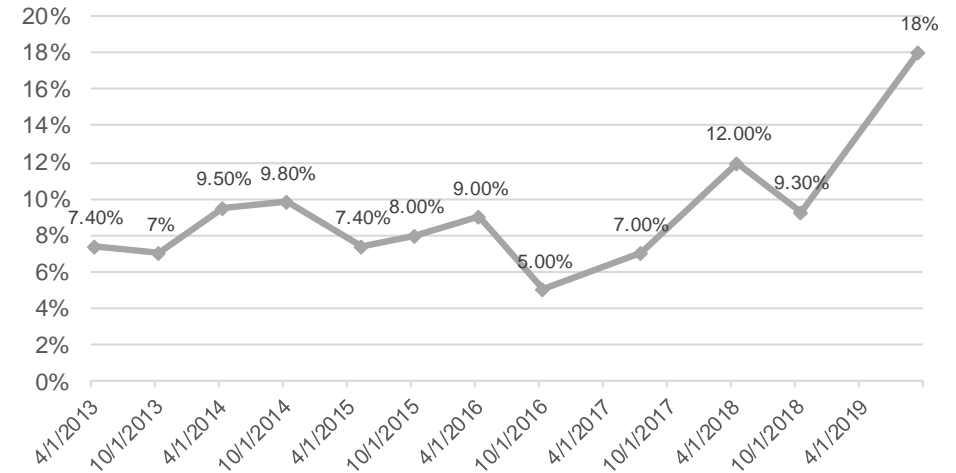
Preliminary Government Generation Mix Plan (in GW)



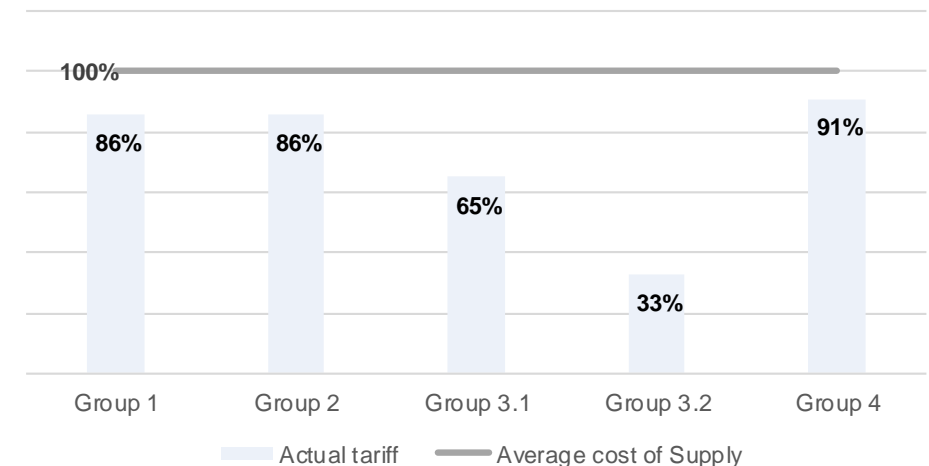
Power Sector of Uzbekistan (2/2)

- **Uzbekistan's power sector has historically been a vertically integrated system**, owned, developed and managed by the state, with tariffs regulated on their social impacts rather than based on cost reflection. During the last year the Government initiated an ambitious and broad scale reform plan which envisions unbundling of the vertically integrated system, tariff reform and attracting private sector investments in generation.
- **Part of the reforms has already been achieved by the newly established Ministry of Energy.** The key step in the opening up of the sector was initiated in March, with the unbundling of the vertically integrated state-owned electricity utility into separate generation, distribution and transmission entities. The new structure, was designed with the assistance of international financial institutions (IFIs) including the World Bank and Asian Development Bank (ADB).
- **Historically electricity prices have been heavily subsidized by the state**, but the government has undertaken to introduce market mechanisms. A rise in tariffs was already implemented in August 2019 and further increases are foreseen.

Historical tariff increase



Tariff cost reflectivness (2019)



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