Initial Environmental Examination

April 2021

Uzbekistan: Partial Credit Guarantee Facility for Uzbekistan Solar PPP Program

Appendix 1: Site Selection Report
Appendix 2: Transmission Line Walkover Survey

Prepared by the Ministry of Energy of the Republic of Uzbekistan for the Asian Development Bank.

1

Sherabad Solar IPP Project in Uzbekistan

Site Selection Report

Technical Advisory Services

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Subject: Summary report on the site suitability based on the 3 site-visits for Sherabad Solar IPP Project in Uzbekistan

Client: Asian Development Bank (ADB)

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Date of Report: 19 December 2019

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V1	**18/12/2019**	**MS/SD/DV/SM/TS**	**18/12/2019**	**TS**	**18/12/2019**	**MS**
	Prepared		**Checked**		**Approved**	

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Glossary

Term / Abbreviation	Definition
ADB	Asian Development Bank
FS	Feasibility Study
MOE	Ministry of Energy
NENU	National Electric Network of Uzbekistan
Consultant	Technical Advisor

Disclaimer

The Technical Advisor has elaborated this document in good faith and in order to provide a documentation of the assessed data at its current status, based on the information available at the time of writing. However, the Technical Advisor makes no warranty – implied or expressive – with respect to the accuracy, correctness, completeness or appropriateness of any information contained in this document. The information in this document is solely for the use of the Client identified above and may only be used for the agreed purpose. The Technical Advisor undertakes no duty to or accepts no responsibility to any third party who may rely on this document.

The Technical Advisor has worked in great details, used available information and employed proven methodologies. Utmost care has been taken to produce this report.

1 Introduction

Overall Context:

In accordance with Presidential Resolution PP-4300, the Ministry of Energy (MOE) jointly with the Ministry of Investments and Foreign Trade (MIFT), the Public-Private Partnership Development Agency (PPPDA) under the Ministry of Finance (MOF) of the Republic of Uzbekistan, has proposed the development of a program of solar power projects in Uzbekistan procured under a PPP modality. The Asian Development Bank (ADB) has been mandated on 16 August 2019 by Ministry of Energy (MOE) and the Ministry of Investments and Foreign Trade (MIFT) to act as a Transaction Advisor.

The ADB Uzbekistan Solar Program includes the proposed development, construction, financing, operations and maintenance of up to 1 GW of capacity through a number of solar PV-power plant projects to be tendered in suitable project locations in Uzbekistan.

Suntrace GmbH (hereafter referred to as the Consultant) have, inter alia, been mandated by the ADB, hereafter referred to as the Client, to review and finalize the feasibility study prepared in 2014 and to provide technical support to ADB during project tendering phase. For this purpose, the Consultant will conduct site surveys of the pre-selected site in order to assess the site's suitability for the project from a technical point of view including access to grid, and social and environmental aspects.

Subject of this report

For the project, a preliminary site near Sherabad City was analysed. The analysis was done in 2014, during the feasibility study. The site is suitable for developing a PV power plant in terms of land characteristics, environmental issues and social criteria. Nevertheless, the surrounding high voltage substations have no capacity to evacuate the energy produced in a PV power plant. Only two substations have apparently enough capacity, Sherabad Substation and Surkhan Substation.

The interconnection between the preliminary site and the substation must be done constructing an overhead transmission line (TL). The construction of the TL is under consideration because of the impact on the project in terms of investment, time delivery and legal as well as environmental and social impact considerations. For that reason, MOE wanted to explore any other potential site to be considered as alternative of the FS site.

This report summarizes the selection of the sites based on the main findings of three site visits. The first 2 site visits (of the preselected site) were conducted by the Consultant while the site visit report of the potential new site was provided to the Consultant from MRC, Santiago Mirabal, advisor to ADB and MOE.

General conclusion

ADB and Advisors advise MOE to select the original site for the first project of the ADB Uzbekistan Solar Program and to instruct Advisors to proceed with detailed feasibility confirmation studies.

Regarding the construction of the TL assets, it is advised that the project go ahead with TL scope given to bidders, with adequate Government support. Government can look at option of Lump-Sum payment at COD for TL assets to limit the tariff impact.

2 Analysis of the proposed sites

Three different sites have been visited and analysed for the Solar PV plant development. This chapter summarises different aspects of the site selection viz. general, environmental, social, technical and financial.

2.1 Original site (Sherabad Solar Site FS-2014)

- **General**

Main site features are:

1. Unused wasteland
2. No trees or plants apart from small bushes
3. Only small slope (according to FS-2014 < 1%)
4. Homogenous surface
5. No far shading
6. Minimal or no rocks
7. Existing road for logistics

The Sherabad Solar site, as shown in the Figure 1, was reached via an asphalt road from Sherabad, branching off M39. An asphalt branch road, that is passing through the site from North to South, allows direct access onto the site.

West of the access road, an artificial irrigation canal is dividing the farmland in the North of the canal from the proposed site in the South.

Figure 1: Original site (Sherabad Solar Site FS 2014)

- **Technical**

The site offers enough area for setting up 200MW plant. However, following the 1st site visit, the substations Muzrabad and Sherabad City are no longer considered to connect the Sherabad Solar Plant due to capacity limitations. The only option for grid connection is through constructing a new transmission line from the Sherabad solar site to Surkhan substation. The exact routing of the transmission line is to be confirmed by MOE/NENU. The length of transmission line is expected to be approximately 52km but may change after the routing is finalised.

- **Environmental**

No major concerns have been identified thus far. Adverse environment impacts associated with the project can be avoided or minimized through careful site selection for the solar plant and route selection of the transmission line.

- **Social**

No visible impact on site, even if cemetery remains untouched. The PV plant will not disturb area of the cemetery nor the agricultural land south of the plant location. Transmission line requires ground survey and the degree of impact depends on land ownership. The technical solutions to avoid or minimize the impact will be considered. At the time of publishing this report, it is estimated to be Category B (no major impact) as per Involuntary Resettlement category. This can be changed to Category C (DDR) once the TL route is confirmed.

- **Financial**

The cost of constructing new transmission line (52km of 220kV double circuit) from scratch is expected to be approximately 10 million USD including towers, conductors, all relevant accessories and excluding rights of way. This is subject to change once the TL route is confirmed.

In short, the site appears wasteland and very suitable for a solar PV plant. No major impact from social or environmental perspective. The only point to be carefully addressed is the grid connection. There is no substation in proximity of the site. Constructing a new TL will increase the CAPEX but the tariff impact can be limited due to the structuring options presented in Chapter 3.

2.2 Alternative site (Kumkurgan Solar site)

- **General**

The area marked in red in the Figure 2 shows the alternative site. Main site features are:

1. Unused land
2. No trees or plants apart from small bushes
3. Undulated topography, requiring scattered installation of PV arrays
4. Non-homogenous surface
5. Flat hilltop
6. Erosion/washout due to rainwater

Figure 2: Alternative Site (Kumkurgan Solar site)

Access to alternative proposed site was through a dirt road along the canal, and then through a farmer's private property, passing over a small and weak bridge to reach the hilltop, as shown in figure 3. This access was immediately commented by the social expert as not suitable.

An alternative access to the hills from the north shall be possible, but the alternative access was not visited during this site visit. West of the access road, an artificial irrigation canal is dividing the farmland in the North of the canal from the proposed site in the South.

Figure 3: Access way to the site

- **Technical**

The area covers only 11ha sufficient for 5-10MW. The site is in proximity (5km) of Sherabad substation. No problems with respect to the grid connection.

- **Environmental**

The reservoir located North of Kumkurgan is listed as an Important Bird Area (IBA). The IBA is approx. 8km distance to the alternative proposed site, and this would very likely require a detailed assessment of the migratory birds flypaths.

- **Social**

No major impact on site. The access road is not considered suitable from social safeguard perspective as it passes through a private property.

- **Financial**

A new access road needs to be built. Cost of the new road is not evaluated.

In short, although this site solves the grid connection problem, it offers substantial obstacles from environmental and social perspective. In addition, the topology is not conducive for PV plant.

2.3 Potential site (Near Surkhan substation)

- **General**

The area marked in red in the Figure 4 shows the Potential site visited on 02.12.2019.

Main site features are:

1. Unused land
2. No trees or plants apart from small bushes
3. Highly undulated topography
4. Non-homogenous sandy surface
5. Presence of Dunes
6. Weak consistency of sand

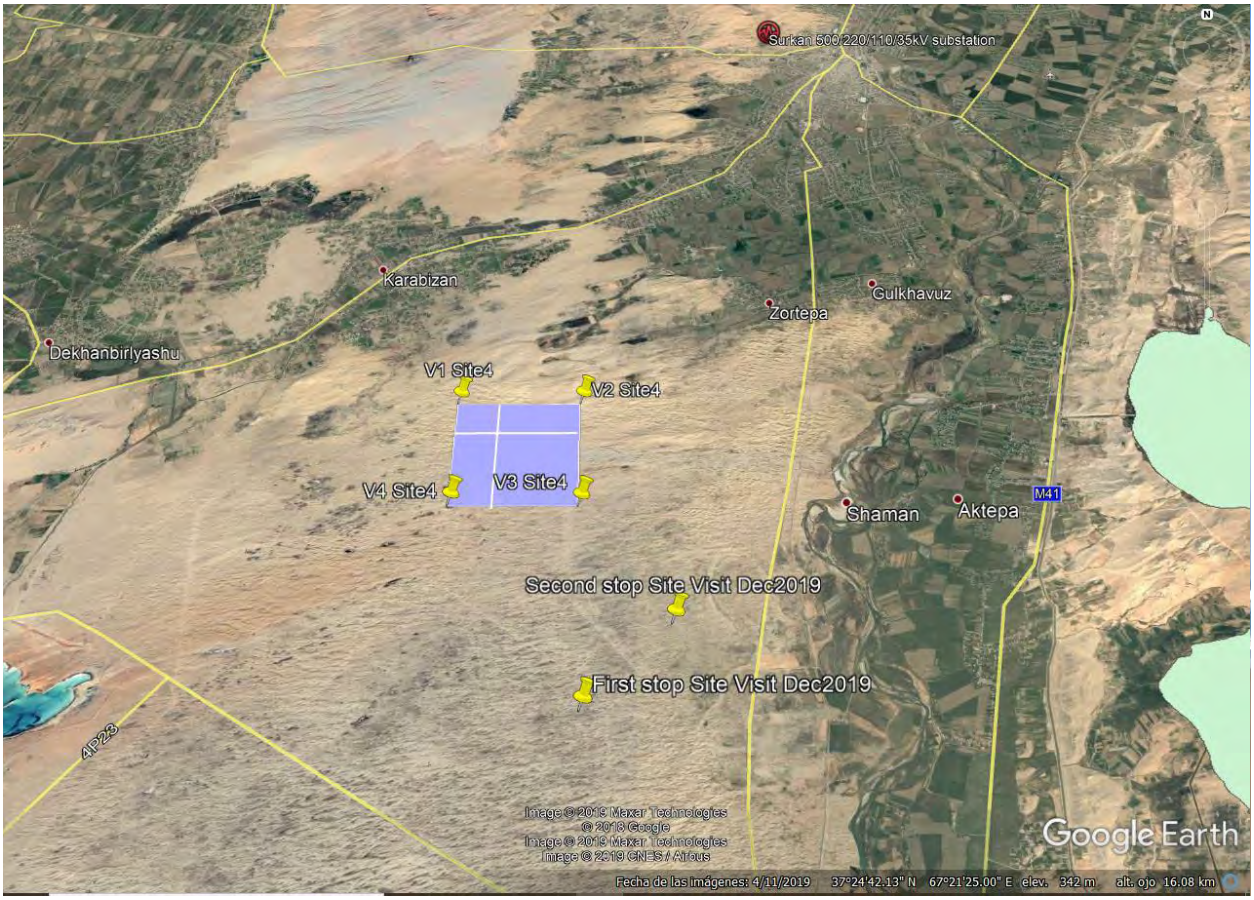


Figure 4: Potential Site (Near Surkhan substation)

There was no option of reaching the selected area by car for the site visit team. The dirt road did not access to the site and is not prepared for logistics. It means that it is necessary to construct a new access road to the site. The inability to get the site caused two stops in the site surroundings. One was 3.5km away and second was 2.7km away. First stop was close to the existing transmission lines and second was in a similar area. Water availability is not clear.

- **Technical**

The nearest substation is 14km away from the site. There are existing transmission lines visible from the site. The site looks big enough to accomodate 200MW.

- **Environmental**

Local or international expert were not accompanied for this visit. From the preliminary analysis, the bird protection area is close to the site and the area of influence passes almost over the site as shown in the figure 5.

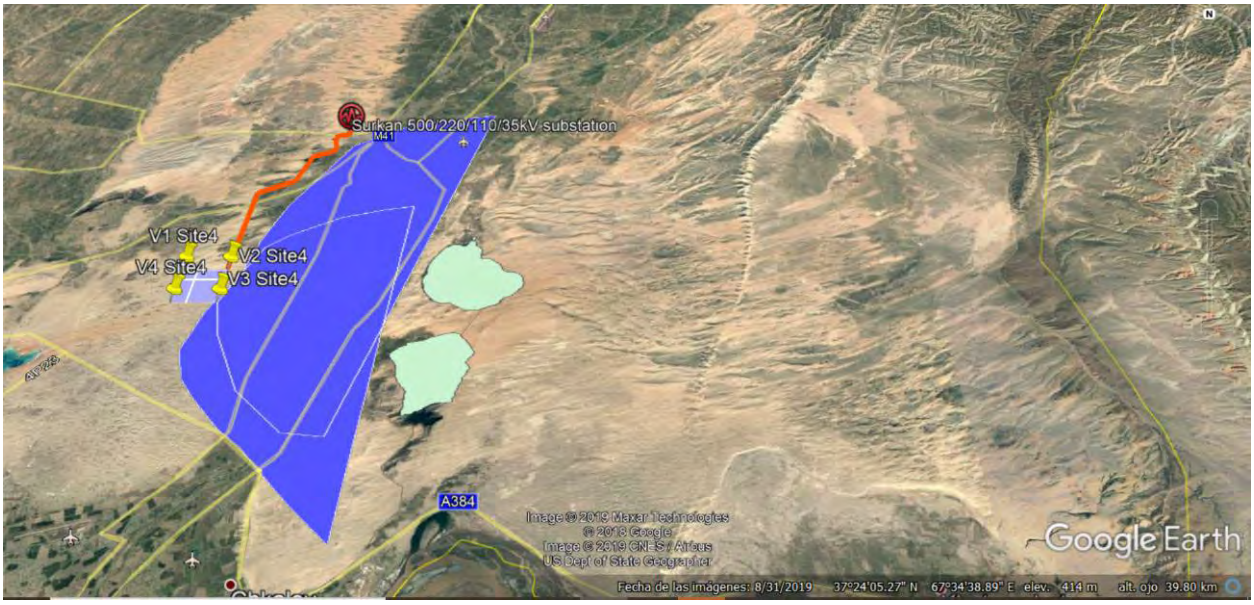


Figure 5: Bird protection area (light green) and area of influence (dark blue)

- **Social**

No data available.

- **Financial**

The construction of the PV power plant in the area analysed requires:

1. New overhead TL of 14km: Estimated cost of 3 million USD
2. New access road of 4km: Estimated cost of 10 million USD
3. Increase of sandstorm protection (windbreakers curtains). Cost is not evaluated but increase the investment price.
4. New water pump station and pipe from the water reservoir to the site. Cost is not evaluated but increase the investment price.
5. Increase of water consumption. Cost is not evaluated but increase the operation cost.

As final conclusion, the use of the analysed site would have significant impact on the final cost of the PV power plant.

2.4 Evaluation matrix for site selection

	Original site (Sherabad solar site FS 2014)	Alternative site (Kurkumgan Solar site)	Potential site (Near Surkhan substation)
Site Suitability	Perfect for PV, good water availability, proximity to main road, almost flat topology, 600ha sufficient for 200MW PV plant. The surrounding area is considered acceptable for potential new developments.	No large shape land area available, only scattered lots along hilltops, poor access road, hilly terrain with evidence of soil erosion. Impossible to locate 200MW in a connected area.	No infrastructure to the site, weak consistency of the sandy soil surface, presence of dunes, no water available for cleaning, prone to sand- or dust storms. Size of area sufficient for 200MW.
Infrastructure/ Interconnection	Need to construct approx. 52 km of Transmission line.	Need to construct 5-6 km of transmission line.	Need to construct 14km of transmission line. In addition, new access road and water pump station needs to be built (approximately 4km of new road).
Environmental Impact	No significant impact for the site itself. Adverse impact can be avoided/minimised by careful TL route selection. Bird flyway/migration to be checked towards river at Afghan border.	Important Bird Area (IBA) is located at Kumkurgan reservoir 8km from the site. Detailed assessment required to check bird migration flyways.	Less data available. A bird protection area is close to the site. Might require detailed assessment
Social Impact	No major impact regarding the site, need to exclude cemetery from PV plant area. Adverse impact can be avoided/minimised by careful TL route selection.	No major impact on site. The access used for the site visit is not suitable, an alternative access must be determined.	No info available
Financial	Construction of TL estimated approx. 10 mUSD (direct line between PV plant and Surkhan substation)	Access road from hillside required, scattered PV arrangement does not allow clear array arrangement. Cost impact not evaluated	Construction of TL, new access road, water supply from 10km distance (total cost estimated at 4mUSD for TL and 9mUSD for access road.
Conclusion	**This site is considered the most suitable.** **A careful selection of the TL route is required, and depending on the E&S findings, the safeguard category can be defined.** **TL cost and risk allocation can be resolved and does not impose a technical constraint.**	**The area is not deemed suitable for a 200MW size plant, and additionally the IBA in close distance will require a detailed bird igration survey.**	**The site could not be accessed during the site visit due to sandy soil conditions.** **A new access road would be required for at least 4km length. This is offsetting the savings in TL distance.** **Soil conditions are expected to be not suitable**

3 Scope of Grid connection

The grid connection of the original site west of Sherabad City to Surkhan Substation will require a HV-Transmission line with a length of approximately 52km depending on the final routing. It has been discussed between ADB, MOE and the team of Consultants how this grid connection could be implemented in the most suitable manner, enabling a competitive tariff, a risk-optimized approach and a quick implementation timeline. The following table shows the 2 different options under discussion for implementing the transmission line:

1. The winning bidder (SPV) will construct the line and then transfer it to NENU once operational
2. Government of Uzbekistan will construct the transmission line and provide the interconnection to the winning bidder

MOE/ADB should decide on the most suitable option.

TL/SS Responsibility	Pros and Cons for Government	Comments/Risk Mitigation
TL/SS built by Project Company and transferred to JSC NENU at COD	**Pros** • Responsibility and construction risks (delay and cost overruns) borne by private sector: no Project-on Project risk. • Integrated procurement process run by the private sector. • Financing for TL/SS to be raised by bidders.	• Power plant and TL/SS to be built by EPC contractor (or sub-contractor) under single Lump Sum Turn-Key (LSTK) contract. • Integrated projects: optimum time schedule for completion of overall plant. • Akin to a competitive procurement for construction of transmission line, which otherwise, would need to be separately conducted based on country's procurement laws. This would lead to additional time and cost for the government. • No impact on Government balance sheet apart from slightly larger amounts for termination amounts and liquidity LC.
	Cons • Cost and risk of building TL/SS to be reflected in power tariff by bidders. • Higher legal complexity for private sector - permitting & land ownership (safety zone for overhead transmission lines). • Additional support expected from Government for securing land and rights of way for TL/SS.	• Estimated impact will be fully evaluated in feasibility financial model (tariff breakdown between power plant and TL/SS) but expected to be low for costs given the large size of the project (200MW). However, depending on perception of risk, private sector (investor and EPC contractor) may also adjust their risk premium in equity IRR and EPC cost respectively. • Tariff impact can be further diluted if TL/SS are oversized to develop more projects in Sherabad area. Important to show split tariff components in bids for transparency and proper benchmarking for future projects. • Option for Government to build flexibility in PPA to allow lump sum repayment of TL/SS assets after completion and transfer to JSC NENU at COD to keep power tariff low. Government budget/financing options for lump sum payment to be confirmed.

		• Legal complexity of task for private sector to be evaluated carefully for feasibility and bankability of allocating risk to private sector. Some bidders may be discouraged to bid if perception of risk is too high. • Private sector will expect additional support from Government in GSA to mitigate risks outside its control (specifically for land rights/ rights of way / consents and permits). Mitigation of risks may take the form of risk allocation with the offtaker / government taking the risk of obtaining required permits, licenses and land rights.
TL/SS built by Government	**Pros** • No tariff impact. • Lower legal complexity for Government to build TL/SS than for private sector.	
	Cons • Procurement of EPC contractor to follow public procurement rules. • Introduce Project-on Project risk. • TL/SS assets to be funded by Government budget / DFI loans.	• Can be complicated, costly and lengthy process for Government in certain jurisdictions. • Will require Government to provide income protection to Project Company in case TL/SS are delayed when the power plant is completed on time, in the form of deemed capacity payment. Force Majeure and other contractual provisions will have to match back-to-back between PPA and TL/SS contract as much as possible. • Will also require building some adequate time buffer between scheduled completion of TL/SS and scheduled commissioning of power plant, can have an impact on overall project schedule. • Certain CPs for PPA effectiveness can be added to ensure certain key milestones are reached on the TL/SS EPC contract (Procurement completed / NTP issued, etc.) before engaging financial risk for Government. But this could have additional time impact on project. • Alternatively, 1st project could be built on different site and Sherabad TL/SS can be built for 2nd or 3d projects for full derisking. • ADB can provide assistance on financing.

The Consultant wants to note, that the connection of the site should consider the following technical and strategic aspects:

1. Direct Transmission line connecting the PV plant switchyard directly to Surkhan substation, for this a 220kV line would be most suitable from the PV plant perspective
2. Building an additional new substation near to the original site, which will be connected to Surkhan substation (either at 220 or 500kV level). The PV plant will connect to this new

substation at the respective voltage level. The new substation could facilitate a future connection of additional PV plants and load (industrial offtakers) in the area.

The second option would involve a higher cost but provide low cost options for implementing future projects in the region, which appears to have ample suitable spaces for additional large-scale PV plants.

4 Conclusion

From the Consultants' perspective following can be concluded:

1. **The original site (FS-14) is considered to be the best site**.

   The use of the new potential site is more expensive in terms of CAPEX that the original FS site considering the overhead transmission line. Hence it is advised to use the original site (FS 2014) for this project as it offers bearable efforts in terms of social and environmental parameters and will be less expensive as compared to other available options.
2. **Based on analysis of scope of the Grid connection, the Consultant believes that subject to confirmation that the legal complexity for the private sector to build the TL/SS can be satisfyingly overcome with adequate Government support, the project could go ahead with the TL/SS scope given to the winning bidder.**
   The Government can also look at the option of a lumpsum payment at COD for TL/SS assets to limit the tariff impact. This option also ensures that the timeline of TL and PV plant are properly synchronized.

5 Appendix: Details of Site visits

5.1 1st and 2nd site visits – original site of feasibility study 2014 and alternative site near Kumkurgan

Following the first site visit during inception mission on 24 October 2019, a second site visit has been conducted during November 12–13, 2019 to confirm findings.
In addition to visiting the substations, two proposed sites for solar power plant development were visited:

1. Original proposed site, called the Sherabad Solar site as pre-selected by the prefeasibility study 2014, located near Sherabad City; and
2. An alternative proposed site called Kurkumgan Solar site, located near Sherabad substation, south of Kumkurgan.

The figure below shows the visited locations, marked as points:

- November 12, 2019
  - Alternative proposed site called Kumkurgan Solar
  - Sherabad substation (near Kumkurgan)
- November 13, 2019
  - Original Sherabad Solar site (FS 2014)
  - Surkhan substation and Dzarkugan substation (near Dzharkugan)

Figure 6: Site Visit (12+13 Nov), visited locations (Source: Consultant)

Brief comparison of both visited sites:

a. Original site:
   i. Site is confirmed suitable for a large-scale PV installation of 200MW.
   ii. Grid access is required at 220kV. The nearest substation with such voltage levels is Surkhan Substation, located near Dzharkugan at aprox. 52km distance. It was explained to the Consultant during the site visit, that the substation has sufficient land available to expand and double the capacity. Confirmation pending.
   iii. The region along the river South of the original proposed site along the Uzbekistan-Afghanistan border is identified as an IBA. Location of bird areas and possible bird migration pathways need to be further analysed to identify an anticipated impact and mitigation measures.
   iv. The requirement to build a transmission line of 52km is to be studied in the environmental and social (E&S) impact assessment, particularly because the line is passing over farmland. A due diligence for the new line is required, but the presence of an existing 110kV line from the original site to the Shukhan substation should facilitate the legal and E&S issues. Avoidance policy should be applied as much as possible during design of the route to avoid impact to farmlands. The details can be analysed further once the routing of the line is provided to the Consultant.

b. Alternative site (near Kumkurgan)
    i. The vicinity to the IBA (important bird area) at Kumkurgan reservoir is a large concern and would need to be addressed in detail in a ground survey.
    ii. The undulant terrain is not allowing a fast-track PV installation.
    iii. It will be a challenge to find sufficient easily accessible area for placing 200MW.
    iv. The short distance to the substation is a benefit.

All the points were discussed in the meetings with MoE and ADB in Tashkent on November 14 and 15, 2019.

The outcome of site visit and meetings were:

1. The second site visit enabled to confirm the information from first visit related to grid connection and suitability of land.
2. An alternative site close to sherabad substation in Kumkurgan was visited but was deemed unsuitable for 200MW PV plant from site topology and environmental safeguard perspective.
3. **The original site was determined as the most feasible site for the this ADB/MOE tender.**
4. The grid connection is most likely to be through a new substation at Sherabad solar site and a HV transmission line to Surkhan substation. The exact routing of the transmission line needs to be clarified.
5. The cost of constructing new transmission line (220kV double circuit) from scratch is expected to be approximately 10 million USD including towers, conductors, all relevant accessories and excluding rights of way. Cost for a 500kV TL are expected in the 12-13 million USD range.
6. The decision whether the transmission line will be in bidders' scope or will be an associated infrastructure provided by MOE to the bidder was discussed and a subsequent paper was drafted to present options to the MOE and MIFT (see Chapter 4). The decision depends on likely cost, timetable and acceptability of risk allocation by Clients to mitigate project-on-project risk in case of Government responsibility to build.
7. The detailed requirements for environmental and social safeguards mainly depend on the transmission line routing, since the proposed site appears good from both perspectives.
8. Further optional sites, if required, could be assessed in parallel to the original site.

5.2 3rd site visit - to potential alternative site closer to Surkhan substation

It was clear from the 2nd site visit that the power evacuation of 200MW could only be done by interconnecting preliminary (original) site to either Sherabad substation or Surkhan substation. The interconnection between the preliminary site and the substation must be done constructing an overhead transmission line (TL).

MOE/ADB wanted to explore another potential site as alternative of the original FS site, located closer to Surkhan substation, to reduce the cost of transmission line. A 3rd site visit was organized by MOE/ADB without the participation of the Consultant to analyse the area located near Surkhan Substation as shown in the Figure below.

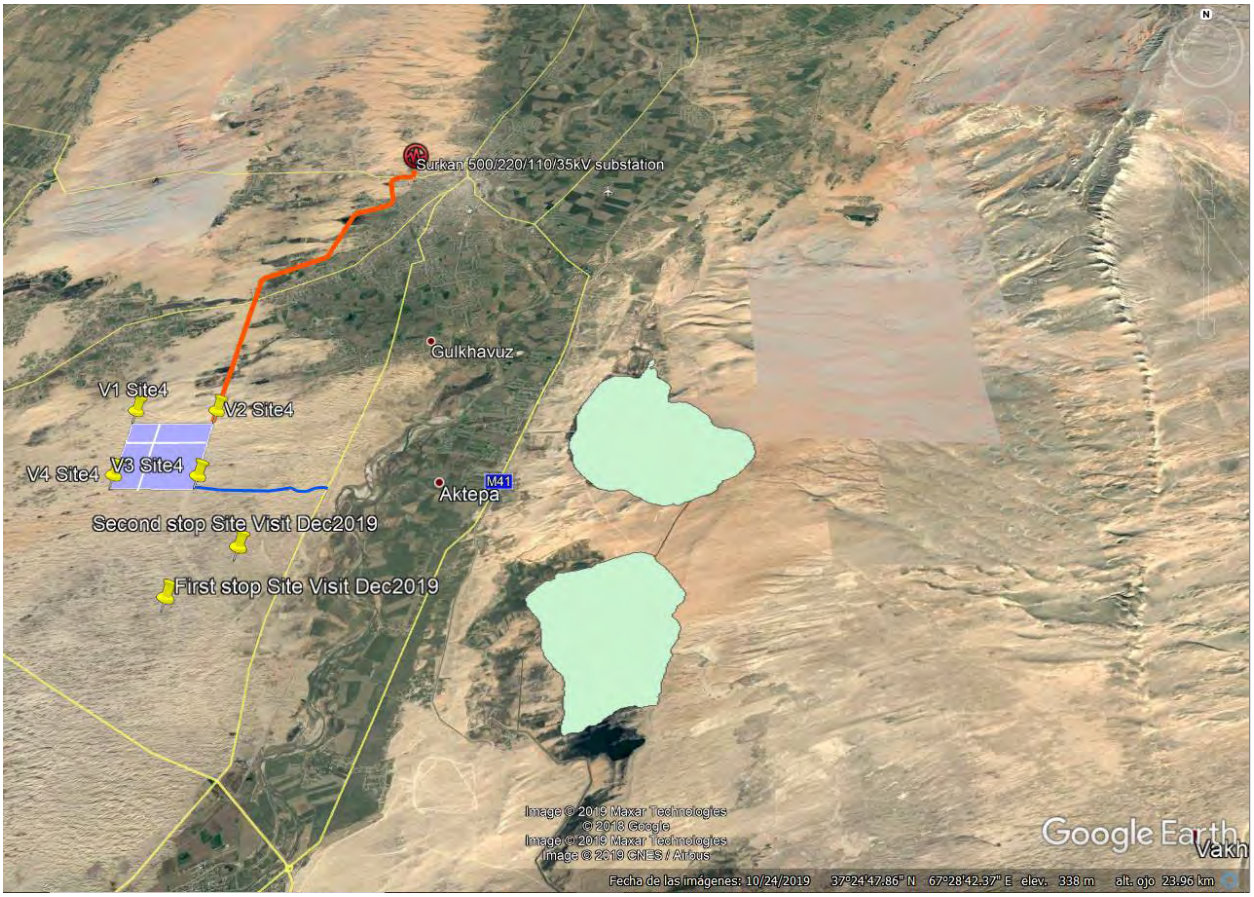


Figure 7: Area analysed in 3rd site visit (Blue coloured), Surkhan S/S (Red coloured) (Source: Site visit report)

The area analysed as potential alternative site presented the following characteristics:

1. Land available with no conflict of use.
2. Distance to bird protection area has been considered in order to avoid any kind of environmental interference.
3. Area selected shows a lightly slope to south. The main issue is the undulation West-East that requires some earth moving during the construction.
4. There is no access road to the site. Closest road is approximately 4km away and it is necessary to construct a new road.
5. Soil consistency is weak. The presence of dunes and sand is clear even when it was not possible to get the site. In addition, the wind speed average considered in the region is around 5m/s that implies the presence of sandstorms. Thus, the PV power plant shall be analyzed using windbreaks. It also implies the increase of water consumption during the operation of the plant for more frequent cleaning of the modules.
6. Water availability is not clear. Local people indicated the use of underground water, but it is recommended to use the water collected from the water reservoir 10km away. The use of underground water in desertic areas shall not be considered as an option.
7. The presence of existing overhead transmission lines implies the reduction of social and environmental safeguards during the construction of the new TL.

Distribution Matrix			
Company / Department	**Name**	**Distribution**	**Attendance 2 November 2020**
OOO PojectEnegySystems (PES)	Dmitry Sapozhnikov	**X**	**X**
Suntrace GmbH	Martin Schlecht		**X**
Suntrace GmbH	Tarun Soni		**X**
Dornier Consulting International	Serge Erbes	**X**	**X**

Brief Summary / Service für den Querleser:

1. Within the frame of the pre-engineering works on Sherabad PV-Solar Plant with the total output of 400MW, the pre-accepted transmission line (TL) with the total length of around 48km was partly inspected by the Suntrace Team. Objectives of the inspection were detection of the potential weak spots along the TL.

2. The inspection was performed together with energy transmission specialist from Project Energy Systems (PES), Mr. Dmitry Sapozhnikov.

3. According to the terrain and relief features (ploughed fields/inaccessibility) the inspection was damped to the in the run-up to the inspection.

4. The results of this inspection are resumed in this Walkdown Report.

5. As temporary result of this inspection and the discussions with the local experts we can confirm the feasibility of the TL.

TL is figured as light blue

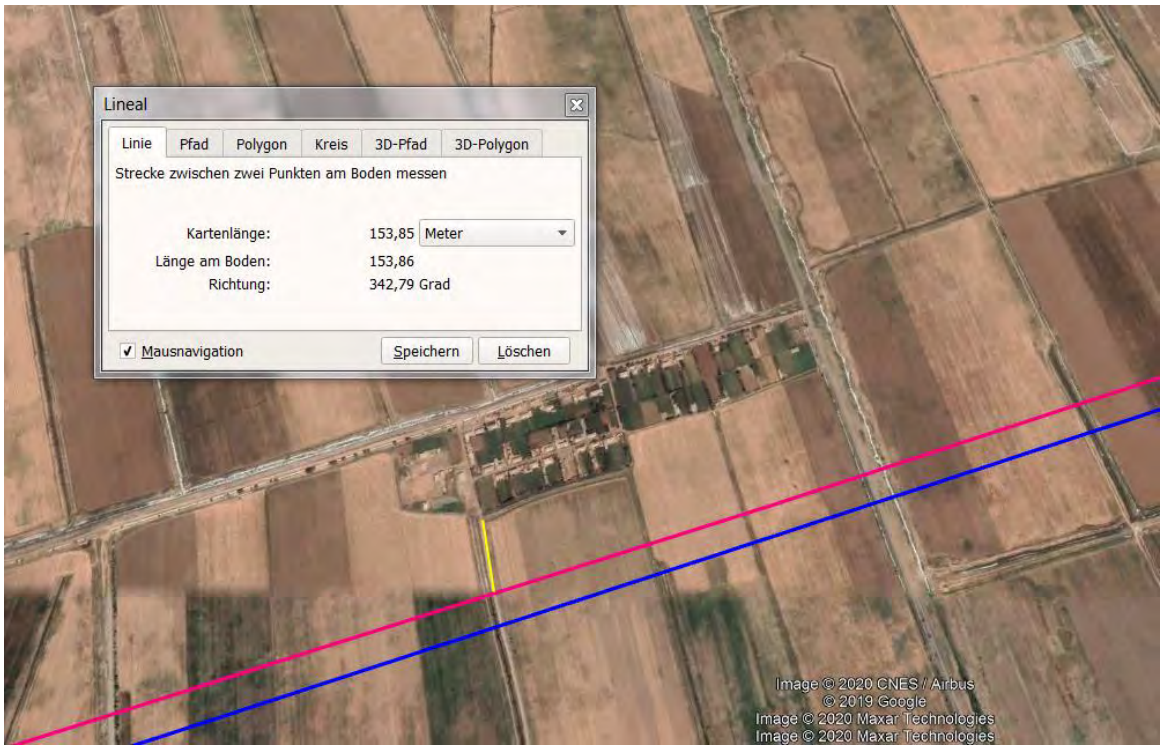
Begehungsverlauf:

The start of the walkdown took place at the position of the planned Sherabad Solar IPP on the tower with number 227 (Start), the existing transmission line built in 2017.

The existing 110kV transmission line is figured in light red
The new 220kV transmission line is figured in blue


2017
227

In the further course, the existing TL crosses some dirt roads and irrigation graves, which are not a problem. At a distance of approx. 4.0 km (Point of Interest (POI) Nr. 1) the TL runs past a village on the right. The lateral distance to the border of the village is about 150m from the existing line.



In the further course about 4.5 km further (kilometer 6.5 km / POI Nr. 2) TL is surrounded on both sides by towns. The lateral distance to the town to the left of the existing line is approx. 50m.

In the further course, approx. 6 km further along the TL (kilometer 12.5 /POI Nr. 3), TL runs right past a village. The distance of 300m is not critical.

approx. 6 km further (kilometer 18.5 km / POI Nr. 4) the TL crosses the M39.

The numbers of towers before the M39 are 144 and 143, after the M39.

Course of TL after crossing the M39

River crossing

About 4.5 km later (kilometer 23 / POI Nr. 5) when crossing the river, the TL meets the biggest challenge so far..

On the left bank of the river, a house was observed, which the locals called black building and illegal.

The line jumps with tower number 123 on the right bank to the modified construction

... and with tower number 119 back to the previous construction.

About 10 km behind the river bank (kilometer 33 / POI Nr. 6) the route of the TL runs across a village. This fact should be examined more closely.

Until the planned feed-in at the Surkhon transformer station (POI Nr. 7), the TL does not encounter any significant obstacles.

Serge Erbes, Samarkand, den 06.02.2020