

Semi-annual Social Monitoring Report

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Republic of Tajikistan: Wholesale Metering and Transmission Reinforcement Project

(Financed by Asian Development Bank)

Prepared by: “AF Mercados EMI” - Project Implementation Consultant

For: Executing Agency: Open Stock Holding Company “Barqi Tojik”

Implementing Agency: State Establishment «Project Management Unit for Electro-Energy Sector»

July 2019

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Abbreviations

ADB	Asian Development Bank
BT	Barqi Tojik
EHS	Environmental, Health & Safety
HPP	Hydropower plant
HSE	Health, Safety and Environment
FAT	Factory Acceptance Test
kV	Kilovolt
LARP	Land Acquisition and Resettlement Plan
MVA	Megavolt Ampere (unit used to measure apparent power)
OHTL	Overhead Transmission Line
PIC	Project Implementation Consultant
PMU	Project Management Unit
SS	Substation

1 INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Social Monitoring Review (SASMR) for the Wholesale Metering and Transmission Reinforcement Project on the implementation of the Land Acquisition and Resettlement Plan.
2. The health and safety aspects have been covered in the Semi - Annual Environmental Monitoring Review report.
3. This report is the 8th SMR for the project. The dates of the previous monitoring reports are November 2016, July 2017, September 2017, October 2017 (only for lot 2), February 2018 (joint monitoring of environmental and social safeguards), March 2018, September 2018 and February 2019.

1.2 HeadlineInformation

4. 3. In Lot 1 on Wholesale Metering System, the meters Factory Acceptance Test (FAT) was conducted successfully in July 2018 by the Contractor Huawei/ TBEA. The Contractor has selected the subcontractor Cuculus GmbH for the software part. The subcontractor has not started its work during the reporting period so far. A new project Master Plan which includes the detailed design of the software, the FAT, training schedule, Operational Acceptance and the new Project Completion Date has to be submitted. The construction of the foundations and erection of the Current and Voltage Transformers inside the substations is very advanced and it was completed by a 60% by the end of June. Meter deployment has not started so far. The works under lot 1 are expected to be completed by July 2019 in all the subject substations (SSs) located along the country.

Regarding the Amendment 2 of Lot 2's work, which is the renovation of 110 kV switchyard at Rudaki Substation, it started in April 2018. Every activity was developed inside the plot of the Substation and on a working installation. TBEA completed most of the works for the variation order on 13 September 2018.

5. Lot 3 on the feasibility study of the interconnection between Tajikistan and Uzbekistan to re-incorporate Tajikistan to the Central Asia Power System is completed. The implementation of the interconnection activities became part of an independent project.

6. This is the summary of the findings of the LARP audit undertaken in the current period:

Table 1. Summary of findings.

Main finding	Corrective actions applied or needed	Status
<u>Lot 2</u> -No grievance book available at Rudaki SS. TBEA brought it with them when finalizing most of the works. A complaints book must be made available until one year	TBEA shall place a newcomplaints book at Rudaki SS.	Completed

Main finding	Corrective actions applied or needed	Status
after the implementation is completed (around July 2020).		
<u>Lot 2</u> During a visit in May 2019 in the Aini labor substation, there were the concrete floors.	After agreement with the landowner and the local government, concrete floors will be used for other purposes, and for this reason concrete floors were not dismantled.	Completed

2 BACKGROUND OF THE PROJECT AND SCOPE

2.1 Project Description

7. The Republic of Tajikistan has received financing (grant) from the Asian Development Bank (ADB) towards the cost of the Wholesale Metering and Transmission Reinforcement Project. It is expected that the proposed project will improve electricity supply to households and industries in the country by reducing losses through metering entire high and medium voltage transmission grid and expand transmission capacity in Panjakent region presently suffered from load shedding.

8. Parts of this financing are being used for payments under the contract for: Lot 1) Installation of 1,682 wholesale meters and settlement system including 846 current transformers and 744 voltage transformers in most of the substations along the country, introduction of an advanced metering infrastructure, and introduction of a settlement system; Lot 2) Rehabilitation of Substation Rudaki, Extension of Substation Ayni and Construction of new 220 kV Over Head Transmission Line (OHTL) between Substation (SS) Ayni 220 kV and SS Rudaki 220 kV, approximately 95 km of new single circuit single conductor with rated capacity of 320 MVA; and Lot 3) feasibility study of the interconnection between Tajikistan and Uzbekistan to re-incorporate Tajikistan to the Central Asia Power System.

9. The location of the Project component Lot 2 is presented below in Figure 1 in the scale of the Country.

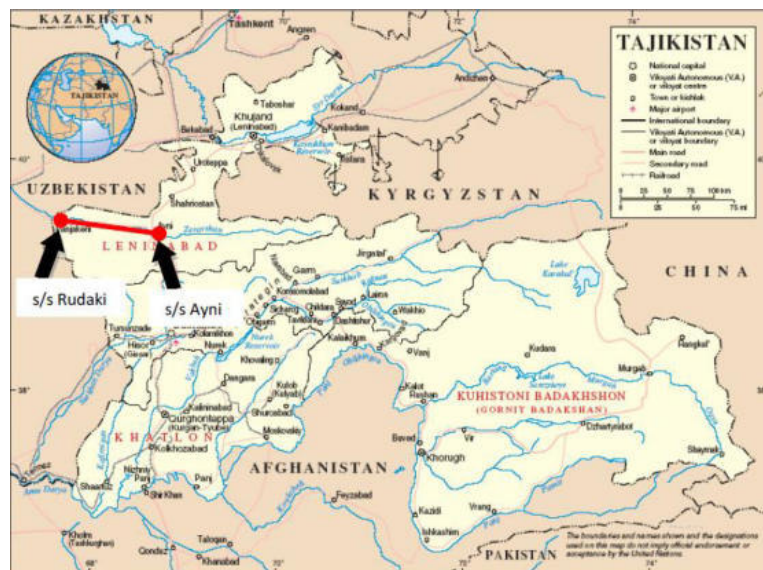


Figure 1. Location of the Project (Lot 2)

10. Ayni Substation 220/110/10 kV is located in these coordinates: latitude 39°25'58.79"; longitude 68°29'12.74". It is located 6km away from the closets village, beside the main road. The satellite image showing the location of Ayni SS of can be found below.



Figure 2. Satellite image of Ayni SS and surroundings.

11. Rudaki Substation 220/110/35/10 kV is located in these coordinates: latitude 39°29'45.5"; longitude 67°35'18.3", at Sughd SS, in the outskirts of Penjakent city. The satellite image showing the location of Rudaki SS can be found below.

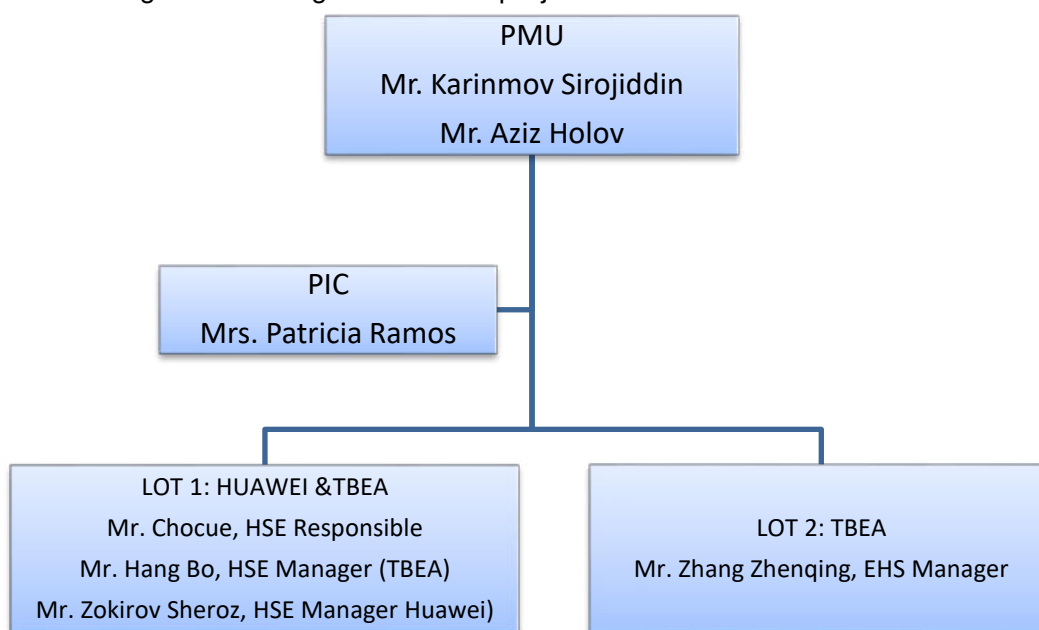


Figure 3. Satellite image of Rudaki SS and surroundings.

2.2 Institutional Arrangements and Management Capacity for Safeguards

12. The Executing Agency for the Project is the Open Stock Holding Company Barqi Tojik. The Executing Agency has set up a Project Management Unit (PMU) to manage daily coordination, implementation, monitoring and administration activities of the Project.
13. The PMU includes the Environmental Sector of the Projects Monitoring Department whose responsibilities include, among other things, the management of all social aspects of the project. The Head of the Environmental Sector of the Projects Monitoring Department is Mr. KarimovSirojiddin. The Chief EHS Specialist at the PMU is Mr. Aziz Holov. Both of them take also formally care of the LARP aspects.
14. The Project Implementation Consultant (AF Mercados) is providing technical assistance to the PMU in the management and reporting of the project. The PIC is responsible for supervising and reporting on the Contractor's performance in the implementation of the LARP. The contract with AF Mercados was signed on August 2015 and the current closing date is October 2019.
15. The PIC's international safeguards specialist was Mr. Pasi Vahanne and the national safeguards specialist was Ms. Muazama Burkhanova until July 2018. From that date, the international safeguards specialist is Mrs. Patricia Ramos Peinado.
16. The safeguards management of the project is as shown in Figure 4.

Figure 4. Safeguards management of the project.



17. The names of the main parties and focal points involved in the project can found in Annex I.

2.3 Project Activities During Current Reporting Period

18. Construction activities for the reporting period are described in the Table 2 below.

Table 2. Progress on the construction activities on Lot 2, Lot 2 Amendment and Lot 1.

N	Month 2019	Construction activities	Percentage of completion
1	January	Lot 2 Eliminating the remark of the working commission.	93%
2	February	Lot 2 Eliminating the remark of the working commission.	100%
3	March	Lot 1: Construction of the new foundations at the substations for the installation of CTs/VTs. Installation of the CTs/VTs.	29,64%
4	April	Lot 1: Construction of the new foundations at the substations for the installation of CTs/VTs. Installation of the CTs/VTs.	42,76%
5	May	Lot 1: Construction of the new foundations at the substations for the installation of CTs/VTs. Installation of the CTs/VTs.	54,07%
6	June	Lot 1: Construction of the new foundations at the substations for the installation of CTs/VTs. Installation of the CTs/VTs.	76,00%

18. In Lot 1 on Wholesale Metering System, the meters Factory Acceptance Test (FAT) was conducted successfully in July 2018 by the Contractor Huawei/ TBEA. The Contractor has selected the subcontractor Cuculus GmbH for the software part. The subcontractor has not started its work during the reporting period so far. A new project Master Plan which includes the detailed design of the software, the FAT, training schedule, Operational Acceptance and the new Project Completion Date has to be submitted. The construction of the foundations and erection of the Current Transformers (for commercial metering points in 110 kV, 35 kV, 10 kV and 6 kV systems) and Voltage Transformers (for commercial metering points in 110 kV, 35 kV, 10kV, 6kV and 0.4 kV) inside the substations is very advanced and it was completed by a 60% by the end of June. Meter deployment has not started so far. The works under lot 1 are expected to be completed by July 2019 in all the subject substations (SSs) located along the country. although the new expected date is March 2020. The list of the substations, the network they belong to and the implementation status can be found in Annex II of this document.



Figure 5. Picture taken at "Setora" SS (lot 1), Panjakent Province, May 2019.

19. The project activities of Lot 2 are the Reinforcement of the Transmission grid in the Panjakent area, through the construction of a 220 kV Over Head Transmission Line (OHTL) between Ainy and Rudaki Substations, the enhancement and renovation of Rudaki SS, and the construction of a newbay in Ainy SS. The Contractor TBEA completed the works on 25 January 2018 for the original scope. Completed.



Figure 6. New bay built at Ayni SS, Panjakent Province. Completed at a previous reporting period. May 2019.

20. Regarding the Amendment 2 of Lot 2's work, which is the renovation of 110 kV switchyard at Rudaki Substation, it started in April 2018. Every activity was developed inside the plot of the Substation and on a working installation. TBEA completed most of the works for the variation order on 13 September 2018.

21. Lot 3 on the feasibility study of the interconnection between Tajikistan and Uzbekistan to re-incorporate Tajikistan to the Central Asia Power System was completed during the previous reporting period. The implementation of the interconnection activities became part of an independent project.

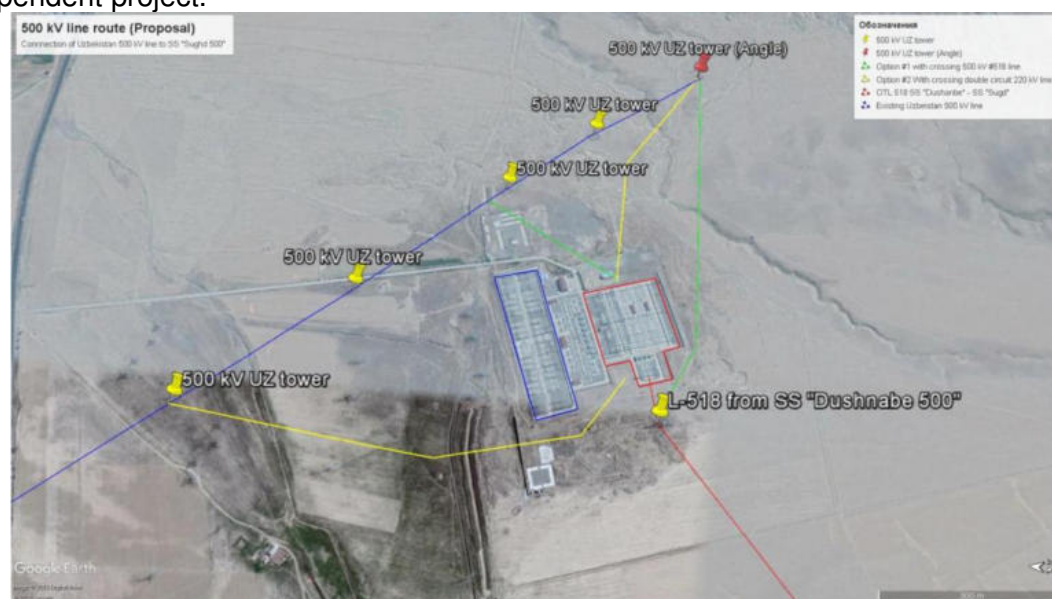


Figure 7. Possible line routes for the new OHTL sections which preliminary technical feasibility study and environmental and social due diligence was performed under Lot 3.

2.4 Description of Any Changes to Project Design

22. An Amendment number 2 to the contract with the Lot 2 contractor and the Project Implementation Consultant (PIC) were signed in order to include in the project scope the rehabilitation of the 110kV bays at Rudaki SS. The related public consultations were performed in 2017 and the social due-diligence is done as part of the overall Project. The implementation of this variation order started in 16 February 2018 and it got mostly completed by 13 September 2018. The completion certificate was signed on 27 September 2018.

3 LARP DOCUMENTS

23. The initial LARP (Land Acquisition and Resettlement Plan) was drafted in September 2014. An updated version of the LARP for Lot 2 was produced in September 2016. An addendum to the original LARP was produced in June 2017 taking into account the final design of the OHTL and updating of the inventory of losses, performed joint verification and meetings with stakeholders in the project area.

24. The Contractor and the PMU are able in general terms to implement the LARP. The reporting by the Contractor is not being done as frequently as set in the LARP.

25. The measures set out in the LARP are still appropriate and they are working as intended. No updates to the LARP were required during the reporting period.

4. PROJECT IMPACTS

26. There is no physical resettlement involved in the Project.

27. These are the land acquisition implications of each lot and their status,

- Lot 1: no land acquisition. All the installation of new equipment at the involved 233 substations occurs within the boundaries of the substations.
- Lot 2: acquisition of the land for the foundation of 88 transmission line towers (out of the total 244 new transmission towers) affected to 1888.5 m² of land which land use owners were a total number of 309 and a total of 205 crops were affected. The compensation for agricultural land was already provided to the land use rights owners for a total amount around EUR 18,000. The costs associated with temporary or permanent land acquisition were funded by Barki Tojik and the related taxes and duties were funded by the Government of Tajikistan. The implementation of the LARP was performed in 2017 after the consultations performed in 2016 and 2017 and the very initial Project consultations in 2004 and 2005. The installation of new equipment and other upgrades at Ayni and Rudaki Substations occurs within the boundaries of the substations and does not involve land acquisition.
- Lot 3: the funds under this lot were used for a project preparation technical assistance. A specific LARP for the activities related for the interconnection of Tajikistan to the Central Asia Power System was produced in October 2018 and now the project has been approved and it became an independent project.

28. The activities performed during the current period did not involve any temporary or permanent land acquisition.

5. RESULTS OF LARP MONITORING

5.1 General Description of Social Safeguard Activities

29. The PIC Environmental and Social Specialist was on mission in Tajikistan from 27 May to 8 June 2019, visiting several project sites to perform direct site observations and holding meetings with Barqi Tojik and the ADB and delivering a workshop. The findings of that mission have been incorporated in this report. On the days previous to the mission, a desk review of the initial LARP, the updated LARP, the Initial Poverty and Social Analysis and the previous social safeguards monitoring reports was performed.

31. A workshop was delivered on Health and Safety and Environmental and Social Best Practices. The contents on Health and Safety were taught by Mr. Jose Ignacio Alcon, Team Leader of the project and Power Engineering Specialist and the contents on environmental and social aspects were delivered by Mrs. Patricia Ramos, the International Environmental and Social Specialist of the project. A total of 14 people participated, mainly from the BT PMU, and from the teams of a 500kV OHTL project and the Interconnection Project to CAPS. The attendance list can be found on Annex VI.



Figure 8. Health and Safety and Environmental and Social Best Practices. PMU Building, Dushanbe. June 2019.

32. An effort was made to find out on the status of the Land Use Certificates of the main substations where the project performed its activities, which are Rudaki SS and Ayni SS. The Land Use Certificate for Rudaki SS that was issued in February 2015 can be found in Annex IV. It was issued for an unlimited period of time. In relation to Ayni SS, the topographical study

and the rest of the required documents were submitted to the Land Use Committee at the national level in May 2019.

5.2 Site Audits

32. These are the details of the formal audits undertaken by safeguards process staff during the current reporting period.

Table 3. Audits undertaken during the current period.

	Date of Visit	Auditors Name	Purpose of Audit	Significant Findings
PMU	14/03/2019 Visit of: Ayni SS, Rudaki SS	Karimov S.	Audit of the LARP aspects	There was no complaints log.
	21/06/2019 Visit of: Ayni SS, Rudaki SS	Karimov S.		There were no comments.
PIC	27/05/19-07/06/19. Visit of: Ayni SS, Rudaki SS, the OHTL (lot 2)., "Setora" SS, "Furdavsi" SS, "ShahriSS" and "Bustot" SS (lot 1).	Patricia Ramos	Audit of the LARP aspects of the project activities performed during the last 6 months	<u>Lot 2</u> - Ayni SS workers camp has to be brought back to previous condition. After agreement with the landowner and the local government, concrete floors will be used for other purposes, and for this reason concrete floors were not dismantled. -No grievance book available at Rudaki SS.

33. A detailed audit on the status of the access roads and RoW was performed by the Chief EHS Specialist at the PMU, Mr. Aziz Holov, the national consultant Mr. Timur Usmanov and the International Environmental and Social Specialist Mrs. Patricia Ramos. The Specialist of the Environmental Committee of Panjakent City, Mr. Pulodov Murod, and the ADB national environmental and social specialists were invited to join the site visits. Mr. Murod expressed that he had been informed on the good restoration status of the access roads and RoW so he did not find any longer needed for him to visit the sites. The ADB national environmental and social specialists were not available to join the site visits since they had to participate in other missions.

34. All the towers that were reported to have garbage and work leftovers or mistaken backfilling in previous reports were checked. No debris or garbage was found, and the backfilling was correct, so it looks like the needed correction measures were implemented in the past. The access roads have been naturally restored by nature by vegetation colonizing back the access roads. Many landslides have happened on the access roads, covering them

fully or partially by land or stones. No permanent structure or too high tree was detected in the RoW. In summary, the status of the access roads and RoW was found to be fully satisfactory. Pictures of the site visits can be found below. A full set of the pictures taken at the visited towers is placed in Annex V.



Figure 9 and 10. Tower 46 of the OHTL. May 2019.



Figure 11. Tower 48 of the OHTL. May 2019.

34. This is the summary of the findings of the audits undertaken in the current period:

Table 4. Summary of the findings in the current period.

Main finding	Corrective actions applied or needed	Status
Lot 2 -No grievance book available at Rudaki SS. A complaints book must be made available until end September 2019.		Completed

5.3 Issues Tracking (Based on Non-Conformance Notices)

32. There are no pending actions in relation to the non-conformities found during the previous reporting period.

Table5. Status of non-conformities found in the previous reporting period.

Non-conformity	Corrective actions applied or needed	Status
Lot 2		
Need to bring the workers camp near Ayni SS back to the previous condition.		After agreement with the landowner and the local government, concrete floors will be used for other purposes, and for this reason concrete floors were not dismantled.
No grievance book available at Rudaki SS. A complaints book must be made available until end September 2019.		Completed

33. The percentage of issues that get closed early is high. There is a recurrent trend for Contractor not submitting the Monthly Safeguards Monitoring Reports. They were received only during the first four months for Lot 2 and they have never been received in relation to Lot 1.

6. PUBLIC CONSULTATION AND DISCLOSURE

34. No public consultation or disclosure took place over the reported period. All the required public consultations were implemented in previous periods.

7. GRIEVANCE AND REDRESS MECHANISM

35. No complaint was filed during the reporting period, nor any redress happened.

8. INDIGENOUS PEOPLE

36. Non-applicable. There are no indigenous people affected by the Project. There are no indigenous people's groups in Tajikistan.

9. GENDER

37. This Project does not include any gender design features. Therefore, the Project was categorized as having "No Gender Elements".

38. On a secondary note, the built transmission line connecting Panjakent and Ayni regions will contribute to meet rising demand for power and the improvement in the metering at the substations will reduce losses, which will also have as a consequence more power will be available to meet the increasing demand. Saved time by women on the traditionally household chores assigned to them due to access to more reliable energy will mean higher availability of time that could be devoted by them to paid work, improving then their access to resources and opportunities, and therefore becoming more empowered. Reduced energy shortages will have a positive impact on businesses. The types of businesses that women typically engage in, such as tailoring and sewing, and baking and food production, are associated with high electricity consumption¹.

10. POVERTY AND SOCIAL

41. This project provides updated metering in existing substations which affects the overall grid as well as a new transmission line, therefore the benefits on improved power supply reliability are generalized and indirect, and do not target particular communities. The project has an effect on improving the quality of life of the 300,000 residential beneficiaries in Panjakent district but not on poverty alleviation. Before the project, from February 2010 to November 2017, they were suffering in winter from load shedding two hours per day since only a 110kV line with limited capacity was in place. Mining and other industries have also benefited from the improved power supply due to the project.

42. The interviewed heads of the jamoats expressed their appreciation for the increase of the reliability of the power supply due to the Project, that was especially key for keeping running the industry and therefore it reduced the risk of families falling into poverty. Pictures that showcase the socio-economic reality of the communities that work and live on the sides

¹ Source: ADB Tajikistan Gender Country Assessment, 2016

of the built OHTL can be found in Annex V. Since no economic and social baseline was drawn during the Project preparation, it is more difficult now to size the positive economic and social impact it had. A lesson learnt is appropriate to always build the economic and social baseline of the communities that will be affected by the Project, so we will be able to better tackle poverty when we understand better what influences it and how it evolves.

43. Another social aspect to look at is the short blackouts due to the project.

- Lot 1: no blackouts will happen since it is possible to supply power from other SSs when installing the new current transformers and voltage transformers.
- Lot 2: no blackouts were required at any point in relation to Rudaki SS. A 5 hours blackout was required in relation to Ayni SS for the connection of the protections since it was not possible to supplement the power from other SSs.

11. SUMMARY AND RECOMMENDATIONS

11.1 Summary

44. The implementation of the LARP during the reporting period and for the overall project construction period to date is being effective. Main weaknesses are suggested to be tackled through the recommendations below.

11.2 Recommendations

45. It is a lesson learnt of this Project that is appropriate to always build the economic and social baseline of the communities that will be affected during the project preparation which it allows to measure the impact of the project by comparing the final status and the initial status. We will be able to better tackle poverty when we understand better what influences it and how it evolves.

46. Another lesson learnt for future projects is to better keep the complaints book at the jamoat so it is more easily available for the citizens and the risk of being brought by the contractors when they return to their home countries is mitigated. This is in line with what the National Law of Tajikistan says about keeping the complaints book at the local administration bodies.

12. ANNEXES

12.1 Annex I: Main parties involved and their contact details

Party	Focal point	Contact details of the focal point
Implementing Agency: Barki Tojik	Head of the Project Management Unit, Mr. Nazar Rajab	pmu_tj@mail.ru
	Head of the Environmental Sector of the PMU, Mr. S. KarimovSirojiddin	pmu_tj@mail.ru
	Chief EHS Specialist at the PMU, Mr. Aziz Holov	pmu_tj@mail.ru
Funding institution: ADB	ADB Regional Environmental Safeguards Consultant. Mrs. Malika Babadzhanova	mbabadjanova1.consultant@adb.org
	ADB National Resettlement Specialist. Mr. FaizulloKudratov	fkudratov.consultant@adb.org +992918420944
Project Implementation Consultant	AF Mercados EMI Project Director and also directly responsible for lot 1 and 3. Mr. Jose Ignacio Alcon.	Joselgnacio.Alcon@afconsult.com
	AF Mercados EMI responsible for Lot 2. Mr. Stefan Rose	Stefan.Rose@afconsult.com
	AF Mercados EMI Environmental and Social Specialist, Mrs. Patricia Ramos	Patricia.Ramos@afconsult.com
Lot 1 Contractor: Huawei& TBEA	Mr. Chocue, HSE Responsible Mr. Hang Bo, HSE Manager (TBEA) Mr. ZokirovSheroz, HSE Manager Huawei) Mr. Jin Dean, EHS Site Manager (TBEA) Mr. Huseynov Ilhom, EHS Site Manager (Huawei) Mr. Guan Yonggang, EHS Site Manager (TBEA) Mr. Nazarhudoev, HSE Site Manager (Huawei) Mr. ZhurakulovDoshod, HSE Site Manager (Huawei)	
Lot 2 Contractor: TBEA	Mr. Zhang Zhenqing, EHS Manager Mr. GuangYonggang, EHS Ayni Site Manager Mr. Jin Dean, EHS OHL Site Manager Mr. Che Jinlu, EHS Rudaki Site Manager	
In relation to Lot 2	Specialist of the Environmental Committee of Panjakent District. Mr. PulodovMurod	92 760 13 20
Lot 3	Representative of the Land Committee at JamoatLolazor. Mr. Timur Rakhmonov	+992 928470448
	Head of Sughud Substation	+992 929803058

12.2 Annex II: Status of the implementation in Substations Covered by Lot 1

№	Name of Network	Name of Substation	Status in %	
			CT&VT installation	Meter installation
1	Baypaza HPP	Power generation	*	
2	Baypaza HPP	Switchyard- 220kV	*	
3	Central (Markazi) EN	SS «Regar-500» - 500/220/35 kV	*	
4	Central (Markazi) EN	SS «Orjonikidzeabad-2» - 220/110/10 kV	*	
5	Central (Markazi) EN	SS «Djanganl» - 220/110/10 kV	*	
6	Central (Markazi) EN	SS «Dushanbe-500» - 500/220/35 kV	*	
7	Central (Markazi) EN	SS «Novaya» - 220/110/10 kV	*	
8	Central (Markazi) EN	SS «Rogun» - 220/110/35/10 kV	*	
9	Central (Markazi) EN	SS «Zhukovo» - 110/35/10 kV	100	
10	Central (Markazi) EN	SS «Severnaya» - 110/35/10 kV	100	
11	Central (Markazi) EN	SS «Gisar» - 110/35/10 kV	100	
12	Central (Markazi) EN	SS «Chorokoron» - 110/35/10 kV	*	
13	Central (Markazi) EN	SS «Dzherzhinskaya» - 110/35/10 kV	100	
14	Central (Markazi) EN	SS «Lyar» - 110/35/6 kV	100	
15	Central (Markazi) EN	SS «Ptitsefabrika» - 110/35/10 kV	100	
16	Central (Markazi) EN	SS «Pugus» - 110/35/10 kV	*	
17	Central (Markazi) EN	SS «Orjonikidzeabad -1» - 110/35/10 kV	100	
18	Central (Markazi) EN	SS «Obi-Garm» - 110/35/10 kV	100	
19	Central (Markazi) EN	SS «Fayzabad» - 110/35/10 kV	100	
20	Central (Markazi) EN	SS «Mayhura» - 110/10 kV	*	
21	Central (Markazi) EN	SS «DSK» - 110/10 kV	100	
22	Central (Markazi) EN	SS «Simiganch» - 110/10 kV	100	
23	Central (Markazi) EN	SS «Prombasa» - 110/10 kV	100	
24	Central (Markazi) EN	SS «Sultonobod» - 110/6 kV	100	
25	Central (Markazi) EN	SS «Dashtibeg» - 110/6 kV	100	
26	Central (Markazi) EN	SS «Navruz» - 110/6 kV	100	
27	Central (Markazi) EN	SS «Khamza» - 110/10 kV	*	
28	Central (Markazi) EN	SS «Karamgul» - 110/10 kV	*	
29	Central (Markazi) EN	SS «Turgak» - 110/10 kV	*	
30	Central (Markazi) EN	SS «Bobotag» - 110/10 kV	100	
31	Central (Markazi) EN	SS «H.Bulbulon» - 110/6 kV	100	
32	Central (Markazi) EN	SS «Lakayon» - 110/6 kV	100	
33	Central (Markazi) EN	SS «Varzob» - 110/10 kV	100	
34	Central (Markazi) EN	SS «Shakhrinav-2» - 220/110/35/10 kV	*	
35	Central (Markazi) EN	SS «Loihavi» - 110/10 kV	*	
36	Central (Markazi) EN	SS «Chormazak» - 220/10 kV	*	
37	Chanubi EN	SS «Kolhozobod» - 220/110/10 kV	*	
38	Chanubi EN	SS «Rumi» - 220/110/10 kV	*	
39	Chanubi EN	SS «Praydelnaya» - 220/110/10 kV	*	
40	Chanubi EN	SS «Promvodhoz» - 110/35/10 kV	100	
41	Chanubi EN	SS «Chapaeva» - 110/35/10 kV	100	

№	Name of Network	Name of Substation	Status in %	
			CT&VT installation	Meter installation
42	Chanubi EN	SS «Kalinina» - 110/35/10 kV	100	
43	Chanubi EN	SS «Dusty» - 110/35/10 kV	100	
44	Chanubi EN	SS «Lomonosova» - 110/35/10 kV	*	
45	Chanubi EN	SS «Pogranichnik» - 110/6 kV	100	
46	Chanubi EN	SS «Karadum» - 110/35/6 kV	100	
47	Chanubi EN	SS «Iskra» - 110/35/6 kV	100	
48	Chanubi EN	SS «Kurgan-Tube» - 110/35/6 kV	100	
49	Chanubi EN	SS «Gidrouzel» - 110/35/10 kV	100	
50	Chanubi EN	SS «Guliston» - 110/35/10 kV	100	
51	Chanubi EN	SS «Beshkent» - 110/35/10 kV	*	
52	Chanubi EN	SS «Orositelnaya» - 110/35/6 kV	100	
53	Chanubi EN	SS «Garauty» - 110/35/6 kV	100	
54	Chanubi EN	SS «Oj-Kamar» - 110/35/6 kV	100	
55	Chanubi EN	SS «Kirovobad» - 110/10 kV	*	
56	Chanubi EN	SS «Toshraabad» - 110/6 kV	100	
57	Chanubi EN	SS «Beregovaya» - 110/35/6 kV	100	
58	Chanubi EN	SS «Djilikul» - 110/10 kV	*	
59	Chanubi EN	SS «Sverdlova» - 110/10 kV	100	
60	Chanubi EN	SS «Istiklol» - 110/35/10 kV	100	
61	Chanubi EN	SS «Pyandzh» - 110/10 kV	100	
62	Chanubi EN	SS «Geran-2» - 220/110/10 kV	*	
63	Chkalovsk city EN	SS «Ubilejnaya» - 110/35/10 kV	100	
64	Dangara City	SS «Lolazor» - 220/110/10 kV	*	
65	Dangara City	SS «Sebiston» - 220/35/6 kV	100	
66	Dangara City	SS «Korgar» - 110/35/10 kV	100	
67	Dushanbe City	SS «Glavnaya» - 110/35/6 kV	100	
68	Dushanbe City	SS «XBK» - 110/35/10 kV	25	
69	Dushanbe City	SS «TTM» - 110/10 kV	33.3	
70	Dushanbe City	SS «Kafer.vodozabor» - 110/35/6 kV	75	
71	Dushanbe City	SS «Vostochnaya» - 110/35/6 kV	81.81	
72	Dushanbe City	SS «Akademgorodok» - 110/35/10 kV	100	
73	Dushanbe City	SS «Shursay» - 110/10 kV	100	
74	Dushanbe City	SS «Vakhdat» - 110/6 kV	66.66	
75	Dushanbe City	SS «Karamova» - 110/35/10 kV	75	
76	Dushanbe City	SS «Bahor» - 110/10 kV	100	
77	Dushanbe City	SS «Bustion» - 110/10 kV	100	
78	Dushanbe City	SS «Botsad» - 110/10 kV	50	
79	Dushanbe City	SS «Zavodskaya» - 110/35/10 kV	85.71	
80	Dushanbe City	SS «O. Sooruzheniya» - 110/35/6 kV	100	
81	Dushanbe City	SS «Sovetskaya» - 110/10 kV	100	
82	Dushanbe City	SS «Sportivnaya» - 110/35/10 kV	100	
83	Dushanbe City	SS «Sohili» - 110/10 kV	100	
84	Dushanbe City	SS «Promishlenaya» - 110/35/10 kV	**	
85	Dushanbe City	SS «Kasri Milat» - 110/10 kV	*	

№	Name of Network	Name of Substation	Status in %	
			CT&VT installation	Meter installation
86	Dushanbe City	SS «Shahri» - 110/10 kV	100	
87	Dushanbe City	SS «Jugo-Zapadniy Vodozabor» - 110/6 kV	100	
88	Dushanbe City	SS «Firdavsy» - 110/10 kV	80	
89	Dushanbe City	SS «Navbahor» - 110/10 kV	66.66	
90	Dushanbe City	SS «Luchob» - 110/10 kV	100	
91	Dushanbe City	SS «Anzob» - 110/6 kV	50	
92	Dushanbe City	SS «Kaharova» - 110/10 kV	*	
93	Dushanbe City	SS «Aviator» - 110/6 kV	100	
94	Dushanbe TPP-2	TPP Power generation	*	
95	Dushanbe TPP-9	Substation own needs	*	
96	Dushanbe TPP-9	Switchyard 6 kV	*	
97	Dushanbe TPP-9	Switchyard- 220kV	*	
98	Isfara EN	SS "Isfara" 110/35/10 kV	100	
99	Isfara EN	SS "Kulkent" 110/35/10 kV	100	
100	Isfara EN	SS "Shurob" 110/35/6 kV	*	
101	Isfara EN	SS "October" 110/35/10 kV	*	
102	Isfara EN	SS "Zumrad" 110/10 kV	*	
103	Isfara EN	SS "Matpary" 110/6 kV	100	
104	Isfara EN	SS "Shorsu" 110/10 kV	*	
105	Istarafshan	SS «Uzlovaya» - 220/110/10 kV	100	
106	Istarafshan	SS «Nov» - 110/35/6kV	100	
107	Istarafshan	SS «Sugd-500» - 500/220/35 kV	*	
108	Istarafshan	SS «Shahriston» - 220/10 kV	*	
109	Istarafshan	SS "KNS-2" 220/110/10 kV	*	
110	Istarafshan	SS "KNS-1" 220/10 kV	*	
111	Istarafshan	"KNS-3" 110/10 kV	100	
112	Istarafshan	SS "KNS-4" 110/10 kV	*	
113	Istarafshan	SS "Mekhnat" 110/35/10 kV	*	
114	Istarafshan	SS "Digmay" 110/6 kV	100	
115	Istarafshan	SS "Partsed" 110/10 kV	*	
116	Istarafshan	SS "Gonji" 110/10 kV	100	
117	Istarafshan	SS "Kaftar" 110/10 kV	100	
118	Istarafshan	SS "Jomi" 110/35/10 kV	*	
119	Istarafshan	SS "Fabrichnaya" 110/10 kV	100	
120	Istarafshan	SS "Ura-Tube" 110/35/10 kV	*	
121	Istarafshan	SS "Chorbog" 110/35/10 kV	100	
122	Istarafshan	SS "Proletarsk" 110/35/10 kV	100	
123	Istarafshan	SS "Gulakandoz" 110/10 kV	100	
124	Kayrakkumskaya	Power generation	*	
125	Khujand city EN	SS «Zarechnaya» - 110/10 kV	100	
126	Khujand city EN	SS «Novaya» - 110/35/10 kV	100	
127	Khujand city EN	SS «Avichena» - 110/6 kV	100	
128	Khujand city EN	SS «Nagornaya» - 110/10 kV	*	

№	Name of Network	Name of Substation	Status in %	
			CT&VT installation	Meter installation
129	Kulyab City	SS «Bohtar» - 110/10 kV	*	
130	Kulyab City	SS «Somoni» - 110/6 kV	100	
131	Kulyab City	SS «Ismailova» - 110/35/6 kV	*	
132	Kulyab City	SS «Amirshoeva» - 110/10 kV	*	
133	Kulyab EN	SS «Hatlon» - 220/110/10 kV	*	
134	Kulyab EN	SS «Kulob» - 110/35/10 kV	*	
135	Kulyab EN	SS «Bose» - 110/35/10 kV	100	
136	Kulyab EN	SS «Kizil-su» - 110/35/6 kV	*	
137	Kulyab EN	SS «Farkhor» - 110/35/6 kV	*	
138	Kulyab EN	SS «Toakala» - 110/10 kV	100	
139	Kulyab EN	SS «Hovaling» - 110/10 kV	100	
140	Kulyab EN	SS «Sjarfak» - 110/10 kV	*	
141	Kulyab EN	SS «Kulob-Darje» - 110/35/6 kV	100	
142	Kulyab EN	SS «Shugnou» - 110/35/6 kV	*	
143	Kulyab EN	SS «Dahana» - 110/35/10 kV	100	
144	Nurek City EN	SS «Shar-Shar» - 220/35/10 kV	100	
145	Nurek City EN	SS «Nurek» - 220/35/6 kV	*	
146	Nurek HPP-7	Power generation	*	
147	Nurek HPP-7	Substation own needs	*	
148	Nurek HPP-7	Switchyard 220 kV	*	
149	Penjikent EN	SS "Ajni-220" 220/110/10 kV	*	
150	Penjikent EN	SS "Pudaki-220" 220/110/35/10 kV	*	
151	Penjikent EN	SS "Sitara" 110/10 kV	100	
152	Penjikent EN	SS "Istiglol" 110/6 kV	100	
153	Penjikent EN	SS "Dshishikrut" 110/6 kV	100	
154	Penjikent EN	SS "Sarvoda" 110/6 kV	100	
155	Penjikent EN	SS "Kolhozchien" 110/10 kV	100	
156	Penjikent EN	SS "Jery" 110/6 kV	100	
157	Penjikent EN	SS "Koshona" 110/10 kV	100	
158	Penjikent EN	SS "Zarafshon" 110/10 kV	100	
159	Penjikent EN	SS "Ainy" 110/35/10 kV	100	
160	Rasht EN	SS «Tegermi» - 110/10 kV	100	
161	Rasht EN	SS «Komsomolobod» - 110/10 kV	100	
162	Rasht EN	SS «Plemsovkhoz» - 110/10 kV	100	
163	Rasht EN	SS «Fedina» - 110/10 kV	100	
164	Rasht EN	SS «Dzhirgital» - 110/10 kV	100	
165	Rasht EN	SS «Tojikobod» - 110/35/10 kV	100	
166	Rasht EN	SS «Garm» - 110/35/10 kV	*	
167	Rasht EN	SS «Lyahsh» - 110/35/10 kV	100	
168	Rasht EN	SS «Hakimi» - 110/10 kV	*	
169	Sugd EN	SS «Hodjend» - 220/110/10 kV	*	
170	Sugd EN	SS «Leninabadskaya» - 220/110/10 kV	*	
171	Sugd EN	SS «H.Bakirgan» - 110/35/10 kV	*	
172	Sugd EN	SS «Kanibadam» - 220/110/35/10 kV	*	

№	Name of Network	Name of Substation	Status in %	
			CT&VT installation	Meter installation
173	Sugd EN	SS "Asht" 220/110/10 kV	*	
174	Sugd EN	SS "Buston" 220/110/10 kV	*	
175	Sugd EN	SS «Bulok-2» - 110/35/10 kV	100	
176	Sugd EN	SS «Zarya» - 110/35/6 kV	*	
177	Sugd EN	SS «Sovetobod» - 110/35/6 kV	100	
178	Sugd EN	SS «Dzharbulak» - 110/35/10 kV	100	
179	Sugd EN	SS «Sumchak» - 110/35/6 kV	100	
180	Sugd EN	SS «ANS-5» - 110/35/6 kV	100	
181	Sugd EN	SS «Vstrecha» - 110/35/10 kV	100	
182	Sugd EN	SS «Mahram» - 110/35/6 kV	100	
183	Sugd EN	SS «Hlopszavodskaya» - 110/35/6 kV	*	
184	Sugd EN	SS «Kovrovaya» - 110/35/6 kV	*	
185	Sugd EN	SS «Dargot» - 110/35/6 kV	100	
186	Sugd EN	SS «Yantak-1» - 110/35/10/6 kV	*	
187	Sugd EN	SS «DVZ-1» - 110/35/6 kV	*	
188	Sugd EN	SS «Gozien» - 110/6 kV	100	
189	Sugd EN	SS «Gafurov» - 110/10 kV	100	
190	Sugd EN	SS «ANS-1» - 110/10 kV	100	
191	Sugd EN	SS «Collectornaya» - 110/6 kV	*	
192	Sugd EN	SS «Eti-tepa» - 110/6 kV	*	
193	Sugd EN	SS «Navruz» - 110/10 kV	*	
194	Sugd EN	SS «Ak-dzhar» - 110/6 kV	100	
195	Sugd EN	SS «SFK» - 110/6 kV	100	
196	Sugd EN	SS «Adrasman» - 110/35/6 kV	100	
197	Sugd EN	SS «DVZ-2» - 110/6 kV	100	
198	Sugd EN	SS «DVZ-3» - 110/6 kV	100	
199	Sugd EN	SS «ANS-3» - 110/6 kV	*	
200	Sugd EN	SS «ANS-4» - 110/6 kV	100	
201	Tursunzoda EN	SS «Ravshan» - 220/35/10 kV	*	
202	Vaksh HPP	HPP - 5 Power generation	*	
203	Vaksh HPP	Switchyard 220 kV	*	
204	Vaksh HPP	Switchyard 110 kV	*	
205	Vaksh HPP	Switchyard 35 kV	*	
206	Vaksh HPP	Substation own needs	*	
207	Vaksh HPP	HPP - 4 Power generation	*	
208	Vaksh HPP	Switchyard 110 kV	*	
209	Vaksh HPP	Switchyard 35 kV	*	
210	Vaksh HPP	HPP - 6 Power generation	*	
211	Vaksh HPP	Switchyard 6 kV	*	
212	Vaksh HPP	Substation own needs	*	
213	Varzob HPP	Varzob HPP-1	*	
214	Varzob HPP	Varzob HPP-2	100	
215	Yavan TPP-10	Power Generation	*	
216	Yavan TPP-10	Substation own needs	*	

№	Name of Network	Name of Substation	Status in %	
			CT&VT installation	Meter installation
217	Yavan TPP-10	Switchyard 220 kV	*	
218	Yavan TPP-10	SS 110/6 kV «Nasosnaya stanchiya №1» (YTPP)	*	
219	Yavan TPP-10	SS 110/6 kV «Nasosnaya stanchiya №2» (YTPP)	*	
220	Yavan TPP-10	SS 110/6 kV «Nasosnaya stanchiya №3» (YTPP)	*	
221	Central (Markazi) EN	SS «ТМК» - 110/35/10 kV	*	
222	Central (Markazi) EN	SS «Парвоз» - 110/10 kV	*	
223	Central (Markazi) EN	«Ushniya Porta» - 110/35/10 kV	*	
224	Chanubi EN	SS «Vodii Zarrin» - 110/10kV	*	
225	Chanubi EN	SS «Navobod» - 110/10kV	*	
226	Dushanbe City	SS «Касри теннис» - 110/10 kV	*	
227	Istarafshan	SS "Zafarobod" 110/35/10 kV	*	
228	Istarafshan	SS "Stepnaya" 110/35/10 kV	*	
229	Istarafshan	SS "Ulduzkok" 110/35/6 kV	*	
230	Khujand city EN	SS «Radiy»- 110/10 kV	*	
231	Sugd EN	SS «Aprelevskaya» - 110/6 kV	*	
232	Sugd EN	SS «Metalzavod» - 110/6 kV	*	
233	Sugd EN	SS «Tajikskaya» - 110/35/6 kV	*	

Note: Work on the installation of current transformers and voltage transformers is almost completed, and the installation of electric meters has not been started.

* - substations where the installation of current transformers and voltage transformers are not provided.

** - at this substation, the reconstruction will be carried out as part of another project.

12.3 Annex III: Pictures taken at the RoW and towers of the built power transmission line



Figure 1. Tower 46 of the OHTL on agricultural land. May 2019.



Figure 2. Tower 46 of the OHTL on agricultural land. May 2019.



Figure 3. Tower 47 of the OHTL. May 2019.



Figure 4. Tower 48 of the OHTL placed on rock. May 2019.



Figures5 and 6. Tower 100 of the OHTL and access road. May 2019.



Figures7 and 8. Tower 100 of the OHTL and access road. May 2019.



Figure 9. Tower 112 of the OHTL. May 2019.



Figure 10. Access road for Tower 142 of the OHTL. May 2019.



Figure 11. Access road for Tower 142 of the OHTL that cannot be transited after the landslides. May 2019.



Figure 12. Unknown tower number of the OHTL. May 2019.



Figure 13. Tower 158 of the OHTL. May 2019.



Figure 14 and 15. Tower 164 of the OHTL. May 2019.



Figure 16. Tower 182 of the OHTL. May 2019.



Figure 17. Tower 183 of the OHTL. May 2019.



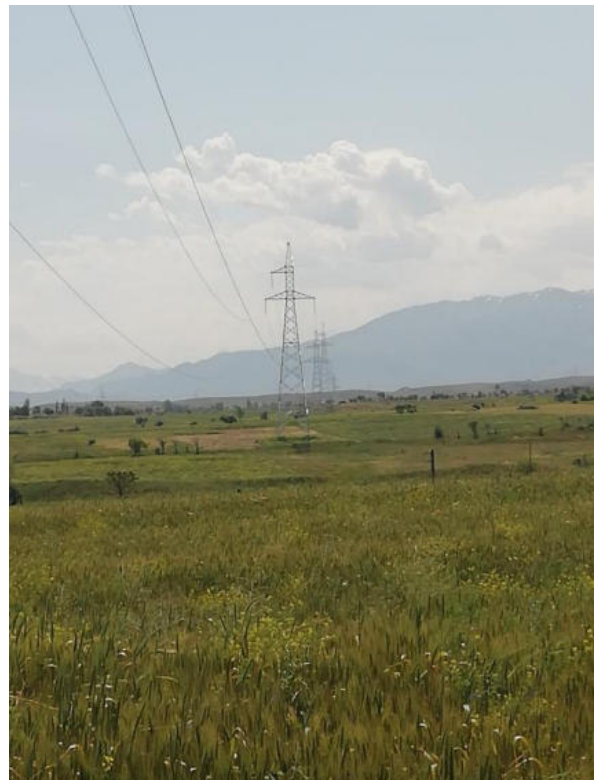
Figure 18. Tower 183 of the OHTL. May 2019.



Figures 19 and 20. Tower 190 of the OHTL on agricultural land. May 2019.



Figures 21 and 22. Tower 216 of the OHTL. May 2019.



Figures 23 and 24. Tower 216 of the OHTL. May 2019.



Figure 25. Tower 232 of the OHTL. May 2019.

12.4 Annex IV: Rudaki SS Land Use Certificate

Ҷумҳурии Тоҷикистон
Сертификати ҳукуки истифодаи замин

Заминистифодабаранда (субъекти ҳуқуқ) ҶСК "Шабакаҳои барқии
(насаб, ном, номи падар ё номи шахси ҳуқуқӣ)
Панҷакент"

Намуди ҳукуки истифодаи замин бемӯҳлат
(бемӯҳлат, яқумраи меросӣ, мӯҳлатнок)

Объекти ҳуқуқӣ Майдони умумӣ: 6,47 га аз он ҷумла:
(масоҳати қитъаи замин, намудҳои замин)

шаҳри Панҷакент
(мавқеи ҷойгиршавии қитъаи замин (шаҳр, ноҳия, ҷамоат))

Асоси ба вучуд омадани ҳуқуқ қарори Раиси шаҳри Панҷакент
аз 22.06.2015 сол таҳти № 352

Замин барои зеристгоҳи барқи "Рудаки" 220/110/35/10 кв ва идораи
(мақсад, таъинот)
маъмури дода шуд.

Рақами ягонаи кадастри қитъаи замин _____

Сертификати ҳукуки истифодаи замин аз тарафи
Кумитаи идораи замини шаҳри Панҷакент
(номи пурраи мақомоти ваколатдори давлатӣ) дода шуд.

Санаи додан « 15 » 12 соли 2015

Таҳти № 6865 ба қайд гирифта шуд.

Умаров Ҷ. А.
(насаб, ном, номи падари шахси ваколатдор)

Дарачаи А № 0529556



12.5 Annex V: Pictures that showcase the socio-economic reality of the communities that live and work around the built OHTL



Figure 1. Grape trees cultivation in Laik Sheralé Jamoat, Penjacent district. May 2019.



Figure 2. Collecting grass for feeding cattle during the winter months. May 2019.



Figure 3. Raising goats. May 2019.

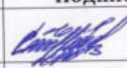





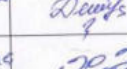

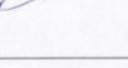
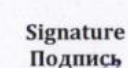


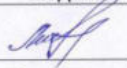
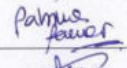

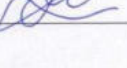
Figure 4. Settlement. May 2019.

12.6 Annex VI: Attendance sheet of the delivered seminar on ESHS best practices

Wholesale Metering and Transmission Reinforcement Project

Data: June 07, 2019
Time: 9:100
Place: PMU

#	Organization/Company Организация/Компания	Representative Имя и фамилия	Designation Должность	Signature Подпись
1.	ИСК "Шообахон Баркии ш. Аршанбе"	Сафаров Навруз	мухандиси нахбари ХР ба АФ	
2.	ИСК "Шообахон Баркии ш. Душанбе"	Талботов Тудомали	мухандис нахбари ХР ба АФ	
3.	ГУ "ЦУПЭС"	Холов Азиз	Гл. специалист отдела мониторинга эк. среды и социально-эколог. в. пр.	
4.	ГУ "ЦУПЭС"	Сатторов Э	Гл. специалист проекта "Душанбе-розни"	
5.	ГУ "ЦУПЭС"	Шаринов. Э.	Гл. специалист отдела мониторинга и эк. среды и соц. вопросов.	
6.	ГУ "ЦУПЭС"	Буриев Р	Вз. специалист проекта 0622	
7.	ГУ "ЦУПЭС"	Ягудилозова К.	в. у. специалист проекта 0622	
8.	ГУ "ЦУПЭС"	Джусайдов М.	главный специалист проекта 0622	
9.	ГУ "ЦУПЭС"	Токироев Ш	ведущий специалист отдела мониторинга	
10.	ГУ "ЦУПЭС"	Назирова С.	Нач. отдела МРЭСБ	

	Organization/Company Организация/Компания	Representative Имя и фамилия	Designation Должность	Signature Подпись
11.	ИСК "БТ"	Муродов Фархуз	мухандис-эколог БТ	
12.	AF MERCADOS	Paula RAMOS	Safeguards specialist	
13.	AF MERCADOS	JOSE IGNACIO ALON	SAFETY CONDUCTOR AND OTL	
14.	AF Mercados	Sharipovs Madara	translator, administ.	
15.				
16.				
17.				
18.				