NEPAL ELECTRICITY AUTHORITY

(GOVERNMENT OF NEPAL UNDERTAKING)

DISTRIBUTION AND CONSUMER SERVICES DIRECTORATE

GRID SOLAR AND ENERGY EFFICIENCY PROJECT

Nepal Electricity Authority
Nepal

Environmental and Social Screenings Report of 11kV Distribution System Expansion

in

Sindhuli District

Project: GSEEP/W/ICB-03 Design, Supply, Installation/Erection, Testing and Commissioning of 11/0.4 KV Distribution System.

Submitted by: Grid Solar Energy Efficiency Project (GSEEP/W/ICB-03)

August **2019**

Table of Contents

1. Background

This project involving Design, Supply, Installation/Erection, Testing and Commissioning of 11/0.4 Kilo Voltage (kV) Distribution System in Sindhuli is a subproject under the Grid Solar and Energy Efficiency Project (GSEEP) implemented through Nepal Electricity Authority (NEA). This project is extending new power supply lines in three districts, i.e. Dolakha, Ramechhap and Sindhuli. The Project covers 347 km high tension line (HT) and 928 KM low tension line (LT) in total. The scope also includes installing 220 distribution transformers. This project plans to electrify 9 wards of three rural municipality of Dolakha, 31 wards of two municipality of Ramechhap and 9 wards of two rural municipality and some parts of one municipality of Sindhuli. The project will use covered type conductor (All Aluminum Alloy Conductor (AAAC) and Aluminum conductor steel reinforced (ACSR) conductor for 11 kV lines and Arial Bundled Cable (ABC) will be used for 0.4 kV lines. Both conductors AAAC and ABC cable being covered type, the safety factor is high. In addition, these conductors help reduce the non-technical losses and enhance the efficiency and reliability of the power supply in the project area. There is no effect of conductor touching the branches of tree. Hence, these conductors can be used in forest areas and in a dense settlement where ROW (Right of Way) is less. This screening report is prepared based on the findings of environment and social screening carried out in 10 sections of Sindhuli district.

2. Objectives

Environmental and Social Screening and its objectives: The site screening report has been prepared following the ESMF of the GSEEP project that mentions the requirement of the Environment and Social screening for sub project with low impacts. The 11 kV and 0.4 kV distribution lines have no remarkable adverse impacts to human settlements, people and surrounding environments. Based on the screening findings, the environmental and social screening reports will help identify any adverse impacts caused by power supply lines as well as recommend appropriate mitigation measures. The major objective of environment and social screening is to assess the suitability of the subproject as per the applicable acts/policies and guidelines of the Government of Nepal and those of the World Bank.

The specific objectives of Screenings are:

- To identify potential environmental and social issues/risks caused by the 11 kV/ 0.4 kV lines in the subproject area and take appropriate mitigation measures for their management,
- To identify the need to obtain any regulatory clearances such as from Ministry of Forest and Environment-MoFE for specific site/s like clearing/felling of trees, from DDCs and VDCs for approved quarry sites etc., and
- To establish the need to carry out any further investigation/survey/ assessment for preparation of safeguard plans like Environment and Social Management Plans (ESMPs), Resettlement Action Plan (RAP), Vulnerable Community Development Plans (VCDP) etc.

3. Methodology

The environmental and social screening checklist (see Annex 3) was used for information collection. Contractor engineer, site in charge and NEA project engineer jointly filled the checklist for the sites identified and prepared the summary report.

4. Site Description

This subproject in Sindhuli district consists of Installation/Erection of 11kV and 0.4kV line across the different area of district. The subproject consists of 91.03 km, 11kV line and 220.3 km 400V line. The number of poles is 1886 and altogether 56 transformers will be installed in this subproject. The subproject consists of new line alignment only and almost all the lines are designed to pass through the existing right of way of the national/rural roads in order to avoid the forest and private lands. Nevertheless, some sections of the line pass through the forest area and private agricultural land. New transformers will be installed at new load centers. Brief description of line alignment is listed below.

Table 1: Description of line alignment in Sindhuli district

SN	Site Location	District	Length (km)	No. of Poles	Feeder	Municipality /Rural Municipality
1	Ambote – Tali Load Center	Sindhuli	20	400	Beni feeder	Golanjor Ga.Pa
2	Bakhur Lubu - Darke school	Sindhuli	6.55	131	From new [1]feeder	Tinpatan Ga.Pa
3	Bhimsthan – Pokhari danda	Sindhuli	7.5	150	From new feeder	Tinpatan Ga.Pa
4	Dobantar – Syanti darlami	Sindhuli	8.65	173	From new feeder	Tinpatan Ga.Pa
5	Forse – Bhyang Load Center	Sindhuli	3.33	66	Beni feeder	Golanjor Ga.Pa
6	Hyber – Jharpur	Sindhuli	3.33	66	Beni feeder	Golanjor Ga.Pa
7	Vijayapur – Mada gadalmy	Sindhuli	1.3	26	Beni feeder	Golanjor Ga.Pa
8	Sundarfat- Dovantar	Sindhuli	8.4	168	From new feeder	Tinpatan Ga.Pa
9	Thulitar – siru danda	Sindhuli	22	440	Bazar feeder	Kamala mai NP

[1] The feeder name will be given once the Substation are charged. The name of the feeder will then be placed here.

10	Aadha danda – Haldar pakha	Sindhuli	13.3	266	From new feeder	Tinpatan Ga.Pa
	Total		91.03	1886		

5. Findings

Separate screenings were carried out for each site of the subproject. Sindhuli district consists of 10 different stretches where distribution expansion works are being carried out. It was also observed that most of the pole errection sites are in accessible areas and road sides where construction works will be accomplished more easily. The environmental and social issues needing attention are briefly highlighted below.

5.1 Environmental Screening: Key Issues and Findings

There were no significant impacts in 7 stretches out of 10 stretches. The remaining 3 stretches have some issues identified which required some attention and due diligence during construction time.

During the preliminary alignment identification, it was found that two out of ten stretches pass through the community forest area. In order to avoid the lengthy process of tree felling, the project decided to use All Aluminum Alloy Conductor (AAAC) and Aluminum conductor steel reinforced (ACSR) conductor for 11 kV lines and Arial Bundled Cable (ABC) will be used for 0.4 kV lines. This type of conductor will have minimal impacts and no sparks occurs though it touches trees. The route will be adjusted as far as possible to avoid the need of tree felling adding additional poles and support system for bending the route.. Hence, there will be no tree feeling[2] along the 11kV alignment passing through forests. Trimming of branches of trees, if needed, will be done in consultations and coordination with the respective forest authority and community forests groups.

5.2 Social Screening: Key Issues and Findings

The installation of 11 kV and 0.4 kV poles and lines in the district do not cause any effect or no impacts to the households of the subproject sites. Hence, there is no need to prepare RAP, SMP and VCDP. However, it is crucial for the Project staff and contractors to make close supervision of the works during construction considering the followings,

- The site screening of the 11kV/ 0.4 kV lines revealed that limited sections of two stretches (Dobantar to Syanti darlami and sundarfat to chhanga tole) in Sindhuli district pass through private agricultural land. It is important for the Project staff and construction workers to take full precaution while installing the poles and stringing the lines to avoid the potential crop damages.

[2] Assurance letter for no tree felling from the project is in annex 4

- In Sindhuli District, most of the poles and distribution lines are designed to pass through the road sides. In case of poles falling in the private /agricultural land, the owners will be consulted, and the poles will be installed along the edges/ bonds and borders of the parcels to avoid the potential loss of land value.
- The Project team/contractors will work closely in consultation with respective Municipality staff and local people so that any issues/disputes raised in the sites will be resolved locally. In case of issues/disputes occurred during pole installation in private land or village and markets, the contractor will not work in the field until the resolution of issues through joint consensus.
- The Project staff/construction workers will pay due attention to shift/reroute lines to avoid the losses. The Project will also inform the local communities and other stakeholders about the GRC committee formed for the Project.
- Project will pay full attention to ensure that the lines do not pass through the cultural and religious sites (temples/gumbas and heritages).
- People are not expecting any kind of cash assistance and are fully willing to support the subproject. It was observed that the people will permit the contractors/ workers to erect the poles in their private land.
- The use of covered conductor is a major advantage of the project which provides high safety value to the consumers.
- The use of cover conductor and ABC cable reduce the non-technical losses like minimizing sparkle from wire, electricity loss by hooking etc.
- The use of cover conductor and ABC cable increase the reliability of the distribution system.
- Project team will ensure that the workers will be equipped with adequate safety gears viz safety belts, helmets, gloves etc. while working in the sites through contractors.
- Consultations with the beneficiaries revealed that they will be benefitted through reliable power supply after the completion of rural electrification works. Reliable power supply is expected to benefit not only the consumers but also to small and medium entrepreneurs in operating micro enterprises.

6. Conclusion

The screening results show that 11 kV poles and lines alignment may cause minimal or no environmental issues and impacts to the subproject sites. However, it is crucial for the route alignment passing in some part of the line which might be blocked by trees. Little deviation of the line is done to avoid these sorts of problem in the forest. Tree trimming is required to clear the right of way for the line. The Project needs to make sure that no tree will be cut down. Project needs to consult with the community and local forest officials for trimming the trees and make proper agreement with users group committee for periodic trimming and compensatory planation management if required in the sites.

The project will have no major social impacts as there lies no public/private land, the line route/poles are not proposed to close to any touristic viewpoints, wetlands, and sites of cultural / religious / archeological / historic significance and locations of poles falling in any landslide & erosion prone/ risk spot.

The screening results show no major safeguards issues resulting in major impacts to the people/communities. Due to the execution of project, All the people will be getting electricity for the first time from this project. With the construction of these lines, the beneficiaries will benefit from reliable power supply. There will be no adverse effect to the people and the environment.

7. Recommendations:

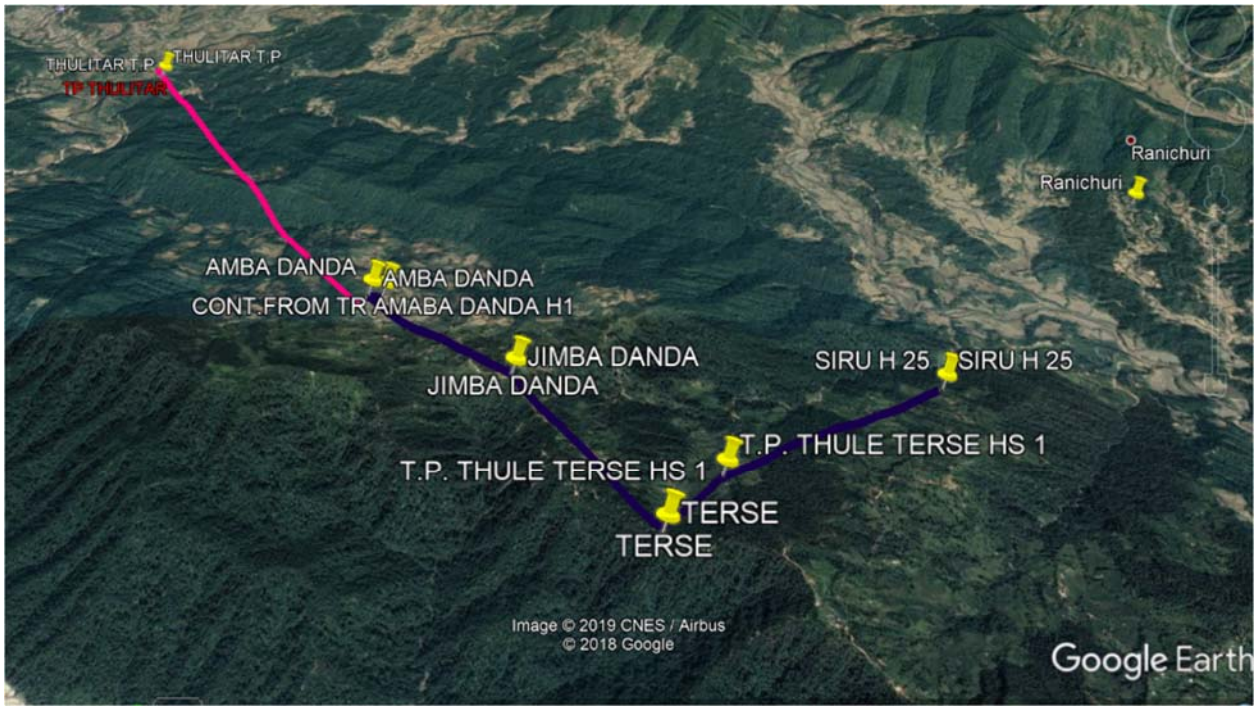
The ongoing construction of 11 kV/0.4 kV lines is an important rural electrification activity benefiting the local people directly. In order to carry out the erection of poles and stringing of cables smoothly, the Project needs to implement the works with proper planning and due diligence as follows.

- Proper Survey and high attention for the stretches passing through Community Forest which require tree trimming activities.
- Avoid stretches and pole erections in religious area/playgrounds/close to any touristic viewpoints, wetlands, and sites of cultural / religious / archeological / historic significance if any apply alternative route selection.
- Avoid locations of poles falling in any landslide & erosion prone/ risk spot.
- Maintain minimum GON/NEA clearance standards during the survey and design of distribution line
- Sub project activity should ensure that no damage to environment is done.
- All the workers will be provided personal safety equipment like boots, belts, helmets, gloves etc. to work in the sites. The workers will be facilitated with hygienic labor camps and sanitation.
- The Project is recommended to make joint planning in consultations with the local communities and leaders to avoid any potential adverse impacts during the erection of poles and cable stringing in private land.
- The contractors are required to work in close coordination with the local people/ beneficiaries and carry out the construction works as per agreed schedule/norms. Any kind of losses viz crop/tree/orchard etc. should be avoided to the extent possible. In case of such losses, the Project/contractors should provide due compensation.
- Any consultations/agreed actions with the locals should be documented properly.

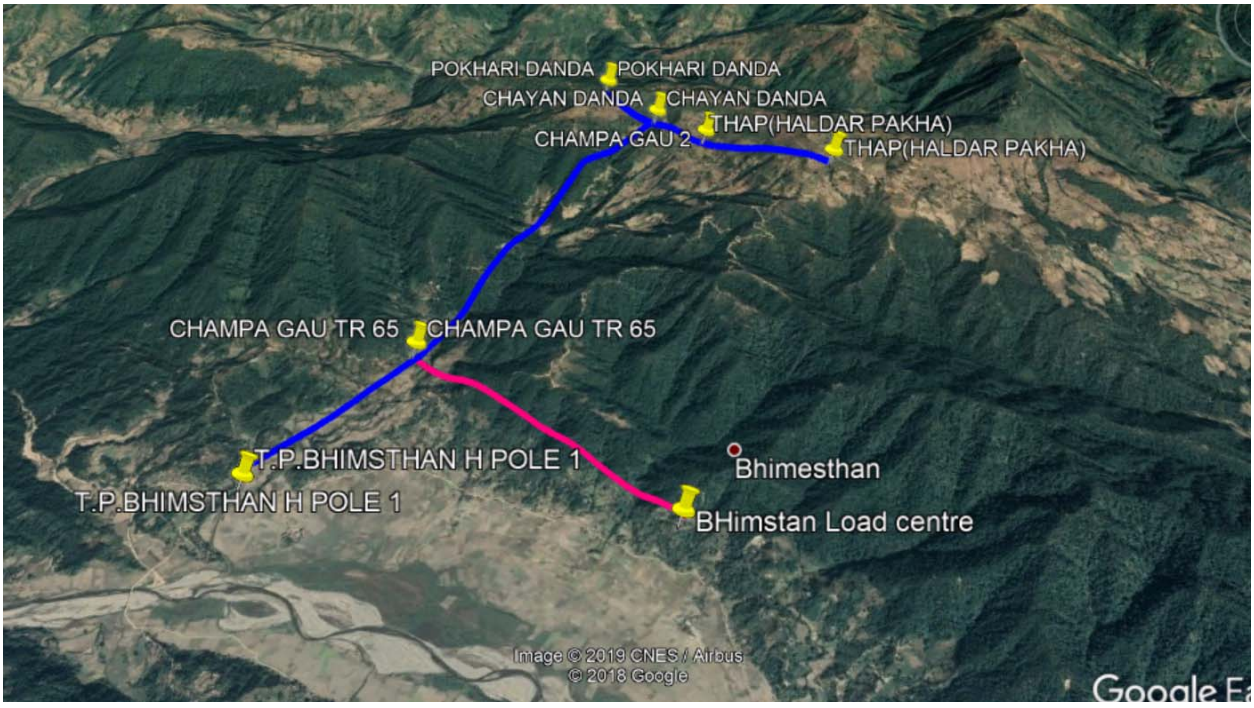
Annex 1: List of people consulted/key informants name/photographs

S. N	Name of Local Representatives (chairperson of different ward.)	Name of Municipality / Rural Municipality
1.	Ram Bahadur Thing	Kamalamai Manucipality- 11 Ranichuri
2.	Lal Bahadur Syangtyan	Tinpatan Rural Municipality-3, Bhimesthan
3.	Bir bahadur Pulami	Tinpatan Rural Municipality-6, Balajor
4.	Punyahari Bhujel	Tinpatan Rural Municipality-10, Lampantar

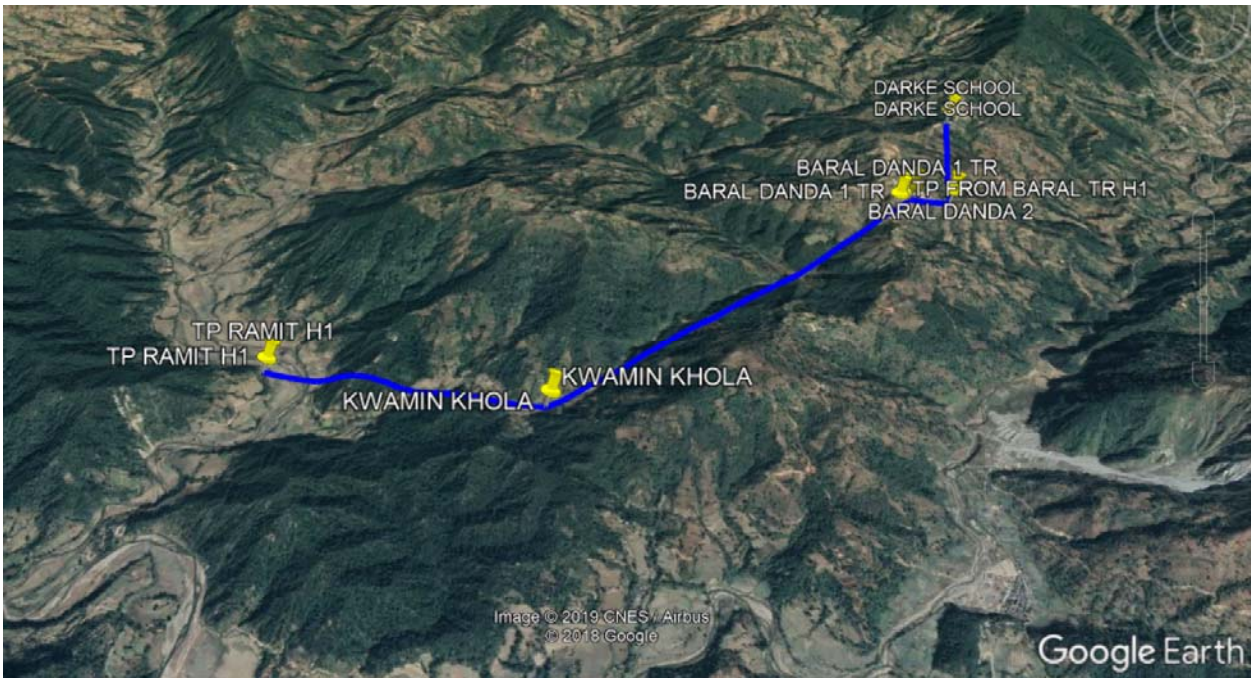
Annex 2: Google map showing the alignment



Thulitar to siru danda, Kamalamai municipality

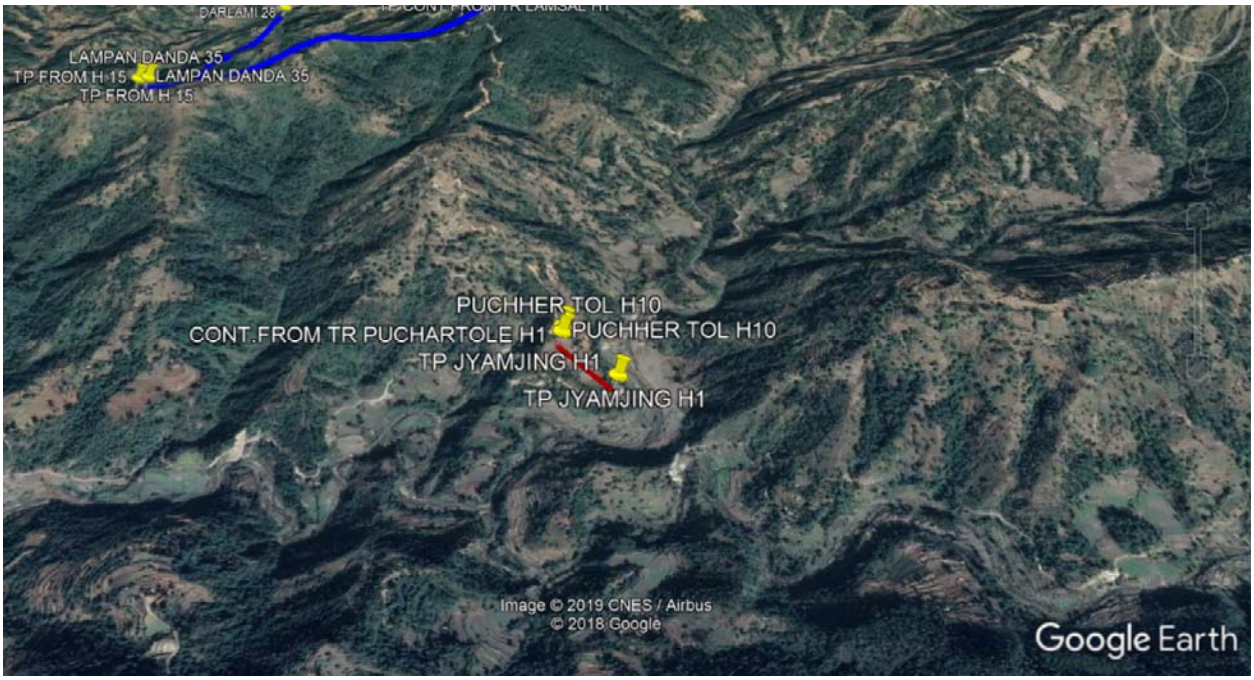


Bhimsethan to Pokhari danda, Tinpatan Rural municipality



Ramti to Darke school, Tinpatan Rural municipality,

Syangti, Tinpatan Rural municipality,



Puchare tol, Tinpatan Rural municipality.

Annex 3: Sample Checklist

Environmental Safeguard Checklist for substation distribution line 11kV

Project: Grid Solar and Energy efficiency Project (GSEEP) Comp-3 (Dolakha, Ramechhap and Sindhuli)

A. Distric : Sindhuli**, (Tinpatan Ga.Pa-3, Bhimsthan)**

B. Name of Sites : Bhimsthan to Pokhari Danda (8.65 HT 11kV)

C. Total number of poles to be erected :173 (11m and 10m)

D. General Information**:**

SN	Particulars	Yes/No	Total km and number of poles covering areas if response is "Yes"	Remarks (Please specify relevant information to supplement the response)
D1.	Does the distribution line passes through Forest area, protected area or area already proposed for protection.	NO	-	All the poles are along side of road. In some place Site consists of very few trees along side of road.
D2.	Does the distribution route as well as locations of poles (supports) and transformers cross diagonally playground/ common property.	NO	-	All poles are along side of roads and avoided to cross all type of property.
D3.	Does distribution line rout/poles are proposed to close to any touristic view points, wetlands, and sites of cultural / religious / archeological / historic significance.	NO	-	All poles are erected along the road side and there is no any such type of place in this roots.
D4.	Does the distribution line/ route and locations of poles are falling in any landslide & erosion prone/ risk spot where geological avoidance is not feasible.	NO	-	Area being fully hilly but solid land. No steep hills to cause landslide & erosion

D5.	Does the distribution line passing through areas specially known for herbs and non-forest timber products (NTPF) and/or known habitat or migration / movement route of protected rare and endangered species	NO	-	No any herbs are known.
D6.	Has the survey and design of distribution line maintained minimum Clearance (11KV) : (check as per government/NEA standard if applicable)			
D6.1	Normal ground and trails for pedestrian only	5.5 m		All the poles are erected according to the NEA standard.
D6.2	Residential area	5.8 m		
D6.3	Highway, Road and streets	5.8 m		
D6.4	Horizontal distance from building or structure upon which human may stand	1.25 m		
D6.5	Power lines or telephone lines (above or below)	1.2 m		
7.	Other if any			

E. **Mitigation measures:**

	Particulars	**Mitigation measures**	**Responsibility**	**Remarks**
E1.	If route passes through forest area and tree cutting is required.	NA		No any forest or trees falls under the line alignment because we avoid the tree to fall under the line alignment.
E2.	If the distribution line/ route and locations of poles are falling in any landslide & erosion prone/ risk spot where geological avoidance is not feasible.	NA		Line passes through roadside. No such problems seen.
E3.	To maintain minimum clearance as per government/NEA standard.	NA		All poles are within standard
E4.	If existing transformers are replaced with new one. How to manage to those replaced one	NA		There is no any scope to replace the existing transformer.

				All line is new.
E5.	Occupational health and safety measures of the works during the erection/installation of poles/cables	Helmets, gloves and Safety belts are used. Proper Shelter and sanitation facilities are also provided #	Contractor	Workers are facilitated with proper house within the site along with safety instruments.
E6.	Issues related to influx of labor/labor camp and sanitation	NA		No any such issues are encountered
E7.	Other if any			

Note: Kindly response mitigation measures with example if any alternative option has been selected/proposed during the survey and design of route. Mitigations measures stated shall be implemented during construction and operation phase.
Each package of the proposal (distribution line) will be subject to environmental screening and environmental compliance monitoring.

Conclusion and Recommendation:

This site does not consist of forest tree that need to be cut down. The work route is along with the road. This site is fully new line alignment so the community is very joyful to help the project if needed. Since this project is electrifying the villages, the community is helpful too. In any cases, branches cutting are needed, branches trimming can be done in the presence of local committee officers/representatives. Also this project is of covered conductor and Arial Bundled Cable (ABC) cable it has high value of safety to people benefitted by these lines.

Social Screening Checklist: 11 kV Transmission Line, Grid Solar Project

Subproject Screening Site : Thulitar to siru danda (22 km HT 11kV)

District: Sindhuli Palika: Kamalamai Municipality- 11 & 12, Ranichuri

S.No.	Particulars	Response (Yes/No)	Remarks (Please specify relevant information to supplement the response)
1	Does the transmission line involve physical/ construction works?	No	Only distribution poles (11m& 10m) are erected
2	Does the TL pass through private land and settlements? If yes, specify. Also prepare a sketch of the stretch in separate page where the TL passes.	No	Lines passes along the road
3	How many poles are installed in this subproject in total?	400	11 m & 10 m poles are erected
4	How many poles are installed in private land?	No	Lines passes along the roadside
5	Specify the type of private land where the TL passes (agri land, barren land, urban/rural)	Agri land	Very few poles passes through agri land.
6	Is the TL alignment free from encroachers/squatters?	Yes	No any Encroachers/squatters noticed
7	Does the TL affect the land value?	No	Poles are erected at end point of land
8	Does the TL damage any private house/structure? If yes, specify the details in separate page (owner, type of damage, value of land, house/structure)	No	No any private house or structure is affected.
8	Are people happy to contribute the land free of cost(donation) for TL construction in private land?	Yes	Usually poles are erected at edge of land, so people will let us erect pole at their land free of cost.
9	Or do they have any expectations in leu of their lands being used for poles installation and TL stringing? If yes, get more information.	No	People are delighted of being electrified community
10	Does the construction work damage standing crops/ fruit trees/ other trees? If yes, what is the value?	No	Usually erection is done at harvesting time.
11	Does the line damage public properties/	No	Poles are erected alongside road, so

	resources/utilities? If yes, get more information.		no any public properties damaged.
12	Does the TL affect private land temporarily during construction? If yes, get more information.	No	Lands are affect only while erecting the poles , which requires very less area land
13	Are the hhs going to get electricity from the TL?	Yes	
14	Are people ready to cooperate the construction of lines?	Yes	
16	What other benefits are locals getting from the TL (electricity, employment etc)?		Local people are getting electricity after finishing the TL construction and Get employment during construction.
16	Other issues, if any?		
	Indigenous People/Vulnerable Ethnic Group		
16	Are any vulnerable households including Janaatis/ dalits affected directly by TL?	No	No any households are affected
17	If yes, how many and where? Please get more information separately? Also specify the IP/ethnic groups affected.	NA	
18	What are the income and livelihood sources of the IPs/ ethnic groups and Dalits?	NA	
19	Are the IPs/Dalits informed about the TL construction?	Yes	Every people in community knows about the project.
20	Are they ready to contribute /donate the land for poles installation?	Yes	If needed they will allow are willing the project to erect the pole on their land
21	Are they involved in construction works?	Yes	Some are working as labors.
22	If yes, how much wage do they get on daily basis?	Yes	As per regulation of country
23	Are these people getting electricity from this TL?	Yes	Whole Community is getting electricity.
24	Are local women also involved as workers? If yes, how many? How much is their wage?	No	
25	Other information		

	Screening result While screening this stretch no any adverse effect on the society is seen. Since the villages are going to be electrified, the peoples are very optimistic about the project. They are willing to help the project. Very few poles might passes through the agri-land and the owners are supportive and letting the project to erect the poles. Poles are erected at the edge of the land so that its value does not decrease/affect. Community is ready to help as they can. **Recommended Social Plans** as revealed by Screening (Simple Social Management Plan, RAP, IPDP/VCDP, Cash assistance, No plan required etc)
	No any cash assistance is required. Also the conductor is covered type, it is safe for the local peoples. People are happy to be electrified so they are very supportive in nature. Poles are erected in harvesting time, so cash assistance for crops are not needed
	Prepared by: Hikmat Bahadur B.C. **Date: 26 June 2019**

Annex 4: Assurance letter for No tree felling

NEPAL ELECTRICITY AUTHORITY

(A Government of Nepal Undertaking)
Distribution & Consumer Service Directorate
Grid Solar And Energy Efficiency Project

Ref: 2076/077 -120 Date: September 9, 2019

To,
World Bank Office
Yak and Yeti Hotel, Kathmandu

Reference: GSEEP/W/ICB-03: Design, Supply, Installation/Erection, Testing and Commissioning of 11/0.4 kV Distribution System.

Subject: Avoiding tree felling along the 11 kV Line.

Dear Sir,
During the Environmental and Social Screening process, we have discussed environmental and social aspects of 11kV distribution lines. Planning and Design of the 11kV DLs have been revisited in recognition of the potential impacts on the forests and loss of trees. As a result, it has been decided that All Aluminum Alloy Conductor (AAAC) will be used in the 11kV DLs, and the poles of the DLs will be adjusted to avoid the need of tree felling. Trimming of branches of trees, if needed, will be done in consultations and coordination with the respective forest authority and community forests groups. This will be strictly enforced. The bimonthly compliance monitoring report will be shared with the World Bank.

Thanking you.

Sincerely yours,

(Prakash Raut)
Project Manager

CC:
The Project Coordinator, GSEEP

Durbar Marga, Kathmandu, Nepal, Phone: +977-1-4153153, Fax: +977-1-4153150