DRAFT ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

THABANG-PUNTIBAN ELECTRICITY DISTRIBUTION LINE SUBPROJECT

Rolpa District, Lumbini Province

NEPAL ELECTRICITY AUTHORITY

DISTRIBUTION AND CONSUMER SERVICE DIRECTORATE

DISTRIBUTION SYSTEM UPGRADE AND EXPANSION PROJECT (DSUEP)

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NEPAL

AUGUST 2022

DATE	REVISION	PREPARED	APPROVED

"This Environmental and Social management Plan is a document of the Proponent. The views expressed herein do not necessarily represent those of

EIB’s Board of Directors, Management, or Staff, and may be preliminary in nature.”

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ACRONYMS AND ABBREVIATIONS

AIS	Air Insulated Substation
CBOs	Community Based Organizations
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPA	Core Project Area
CSC	Construction Supervision Consultants
DCSD	Distribution and Consumer Service Directorate
DD	Data Deficient
DDR	Due Diligence Report
DHM	Department of Hydrology and Meteorology
DoS	Department of Survey
DSUEP	Distribution System Upgrade and Expansion Project
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EMF	Electromagnetic Fields
EPA	Environment Protection Act
EPR	Environment Protection Regulations
ESIA	Environmental and Social Impact Assessment
ESM	Environmental and Social Monitoring
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMU	Environment and Social Management Unit
ESP	Environment and Social Policy
ESS	Environmental and Social Standards
EU	European Union
GHG	Green House Gas
GoN	Government of Nepal
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IUCN	International Union for Conservation of Nature and Natural Resources
LC	Least Concern
LPG	Liquid Petroleum Gas
MoEWRI	Ministry of Energy, Water Resources and Irrigation
NEA	Nepal Electricity Authority
NEAEC	NEA Engineering Company
OHS	Occupational Health and Safety
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
SPA	Surrounding Project Area
SWM	Solid Waste Management

WEIGHT AND MEASURES

%	Percent/ Percentage
cum	Cubic Meter
dB	Decibel
g	Gram
ha	Hectare
Kg	Kilogram
Km	Kilometer
kV	Kilovolt
kWh	Kilo Watt Hour
ltr	Liter
LV	Low Voltage
m	Meter
amsl	Average Mean Sea Level
mm	Millimeter
MVA	Mega Volt Ampere
MW	Megawatt
NRs.	Nepalese Rupees
^{o}C	Degree Centigrade
sq.m.	Square Meter

EXECUTIVE SUMMARY

As required by the Environmental and Social Management Framework (ESMF) of DSUEP for "Category III" Subprojects, this Environmental and Social Management Plan (ESMP) has been prepared for Thabang-Puntiban Electricity Distribution Line Subproject. This ESMP documents existing baseline conditions, concerns of local stakeholders, and recommends environmental and social management measures, monitoring and reporting requirements for the Subproject components (i.e., construction of 33/11kV distribution line and 33/11kV substation of capacity 3MVA) during the preconstruction, construction and operational phases.

The primary environmental and social issues identified from the study are,

i. The proposed substation is in barren land owned and managed by Shree Bir Balbhadra Ma. Vi., Bibang.
ii. The proposed substation site is located in gentle hilly slope, while distribution line passes through RoW of access road, barren and cultivated lands.
iii. Additional volume of 16,812 cum of spoil will be required during the site preparation in the substation area.
iv. During construction, issues of dust, noise and solid waste will arise but their impact is expected to be minimal.
v. There are no significant biological issues within the Subproject footprint area.
vi. The crop might get damaged from the construction activity along the distribution line.

The primary mitigation measures proposed for this Subproject are,

i. Local people will be prioritized for employment and construction materials will be purchased from the local market as far as possible.
ii. Boundary wall, retaining wall will be constructed at substation boundary. Adequate drainage system, sediment control traps and ditches will be constructed and compaction of spoil material used for filling will be done to mitigate possible erosion/sliding issues.
iii. Distribution line poles will be installed at the edge of cultivated land in order to avoid loss of standing crops.
iv. Income restoration activities (skill development training) along with additional assistance will be provided to the users cultivating the land.
v. Advance notice of three month will be given to users to harvest their crops.
vi. Loss compensation of standing crops will be provided based on market rate.
vii. Avoidance of child labor, provision of equal wages for men and women, and priority to people from socially backward community for employment are advised.
viii. Preparation and execution of Environmental, health and safety plan by the contractor is recommended to address occupational hazard and safety related issues.
ix. Use of insulation, guarding, grounding, electrical protective devices, and industry-standard safe work practices are advised.

NRs. 26,31,344.00 is estimated to implement associated E&S mitigation measures and monitoring activities. This ESMP along with DDR is considered sufficient to meet the environmental and social requirements for the Subproject at present design conditions.

1. INTRODUCTION

1.1 Project Background

The proposed Distribution System Upgrade and Expansion Project (DSUEP) is expected to enhance and expand the electricity distribution system to improve the reliability (voltage level and reduction in power loss) and coverage of electricity supply in the Sudhurpaschim, Karnali and Lumbini Provinces. Upgradation of system efficiency and expansion of coverage area will improve quality of life in the region, enhance economic activities, and reduce dependency on petroleum and fuelwood. DSUEP will expand distribution lines of 33kV and 11kV in the three provinces as part of Government of Nepal (GoN)'s program "to achieve affordable electricity fulfilling the demands at the local levels for all the households by 2022".

There are various Subprojects within DSUEP. The European Investment Bank (EIB) has provided loan finance to 13 Subprojects under DSUEP. Of these 13 Subprojects, based on the geographical locations and implementation cost, NEA has clustered the Subprojects. Nine Subprojects lie in six districts of Lumbini Province, and five Subprojects lie in three districts of Sudhurpaschim Province. The project will construct 13 new 33/11kV substations, and 133 km long 33kV distribution lines along with the installation of transformers.

The Thabang-Puntiban Electricity Distribution Line Subproject (hereafter referred to as "the Subproject") is one among the 13 Subproject being constructed under DSUEP. The Subproject is located in Rolpa district approximately 465 Km west of Kathmandu through Prithvi Highway, Pokhara-Baglung Highway, Mid-Hill Highway at Kankri and then through village road from Bhume Bazar till Thabang.

1.2 Scope of ESMP

Within the framework of Environmental and Social Management Framework (ESMF) of DSUEP, the scope of ESMP is to identify environmental and social issues (including potential impact of the Subproject), recommend measures for environmental and social management, and recommend monitoring and reporting requirements for the Subproject.

Specifically, the construction of 33/11kV substation (including guard house, staff quarter, office building, control building inner service road & drainages facilities, storage yards) is within the scope of ESMP. The scope also includes construction of 33kV distribution line.

1.3 Objectives of ESMP

In accordance with the EIBs' safeguard standards and GoN's legislative requirements, the objective of the ESMP is to recommend a structured list of actions to maximize the positive impacts and avoid/minimize the negative impacts of the Subproject. The objectives of this ESMP are to;

- Document the indicators of existing physical, biological, and socio-economic environmental components of the Subproject impact area.
- Document the concern of local stakeholders and address them as appropriate.

- Identify, predict, and assess the potential adverse and beneficial environmental impacts of the Subproject during preconstruction, construction, operation and maintenance phases.
- Recommend environmental and social mitigation measures to enhance positive impacts and avoid/minimize negative impacts of the Subproject.
- Recommend monitoring plan, institutional arrangement, and suggest capacity building activities for effective implementation of ESMP.

1.4 Project Description

Brief of the general and technical features of the Subproject are given in the following table.

Table 1-1: Technical Description of the Proposed Project

Description	Features
Proponent	Nepal Electricity Authority
Project	Distribution System Upgrade and Expansion Project
Sub Project	Thabang-Puntiban Electricity Distribution Line Subproject
Funding Agency	EIB
Project Location	Thabang Rural Municipality, Bibang, Rolpa, Lumbini Province
Distribution Line	
33kV Line Starting Point	Tapped from Existing 33kV DL at Thabang - 1, Bibang, Rolpa
33kV Line End Point	Thabang Substation (Proposed) at Thabang - 1, Bibang, Rolpa
System Voltage	33kV
Max, Min System Voltage	36, 30kV
Climatic Condition	Wind Speed: As per IS 802-1-1 Maximum Ambient Temperature: 40 °C Altitude (Min, Max): 2115, 2200 amsl
Length of Line	0.5Km
Right of way	6m
Number of Circuit	2, Loop in Loop Out
Conductor	ACSR Dog
Line Capacity/Thermal Limit (approx.)	13.4MW (Dog) at 0.9 power factor
Type of Poles	Steel Tubular Pole, 13m
Number of Poles	13 Poles
Pole Configurations	Single Pole Structures, H-Pole Structures etc. (With and without Stay Sets)
Diameter of a Single Pole (approx.)	0.22m (As per IS 2713-3)
Planting Depth of Pole	2.2m
Insulators	Porcelain Disc and Pin Insulator
Substation	
Location	Thabang - 1, Bibang, Rolpa, Lumbini Province
Voltage Level	33/11kV
Substation Capacity	3MVA
Number and Capacity of	1 no., 3 MVA

Description	Features
Transformer	
Type of Transformer	3 Phase, ONAN, Mineral Oil
Type of Substation	AIS (33kV) and Indoor (11kV)
Number of 33kV Line Bays	3, Two Incoming, One Outgoing
Number of 33kV Transformer Bays	1
Number of 11kV Feeders (Indoor)	4
Approximate Area of Substation	7631.06m^2(0.76ha)

Source: Feasibility Study Report, 2021

1.4.1 Location of Subproject

The Subproject lies in Thabang Rural Municipality, Ward-1, of Rolpa District in Lumbini Province. The Subproject area is located at latitude 28°29'24.67"N, longitude 82°43'9.37"E.

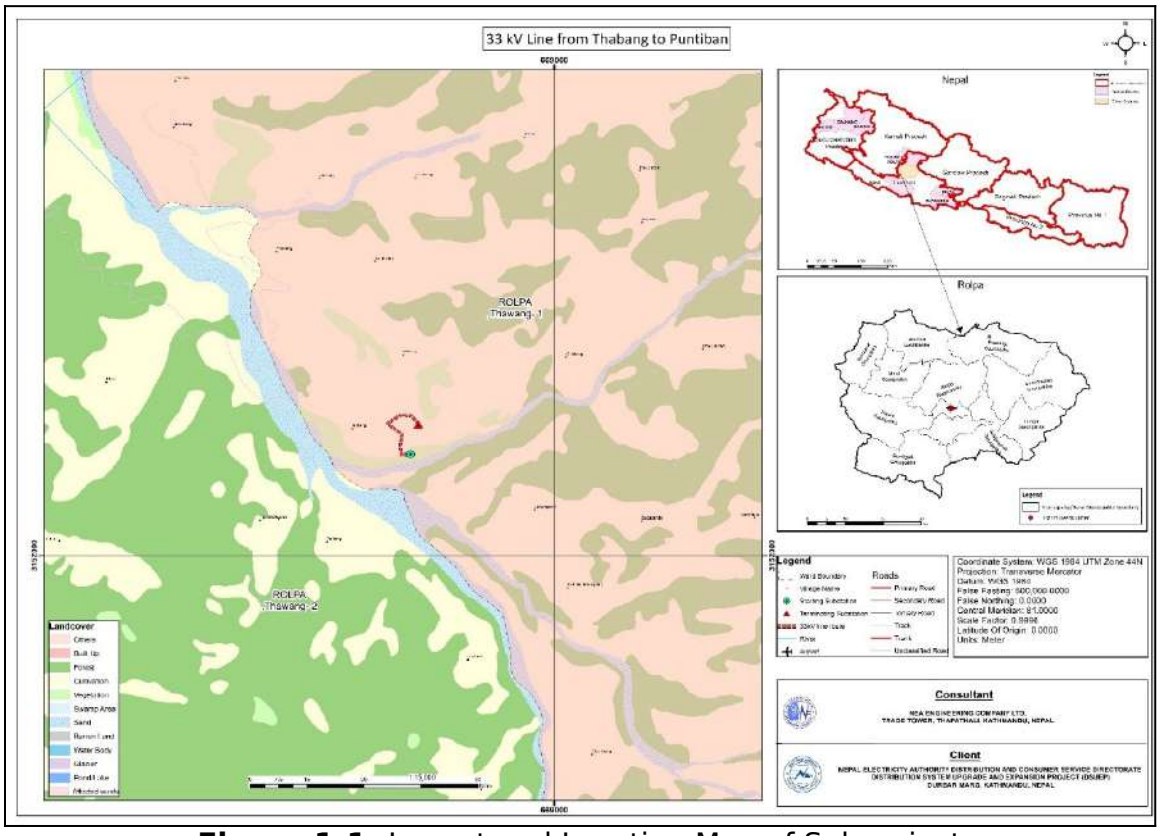


Figure 1-1: Layout and Location Map of Subproject

Source: Digital Data from Department of Survey, 2021 and Field Study, 2021

Figure 1-2: Bird-Eye View of Subproject
Source: Digital Data from Department of Survey, 2021 and Field Study, 2021

1.4.2 Accessibility to the Proposed Site

The Subproject is approximately 465 Km away in the west of Kathmandu and can be reached via Prithvi Highway, Pokhara-Baglung Highway, Mid-Hill Highway at Kankri and then through village road from the Bhume Bazar upto Thabang.

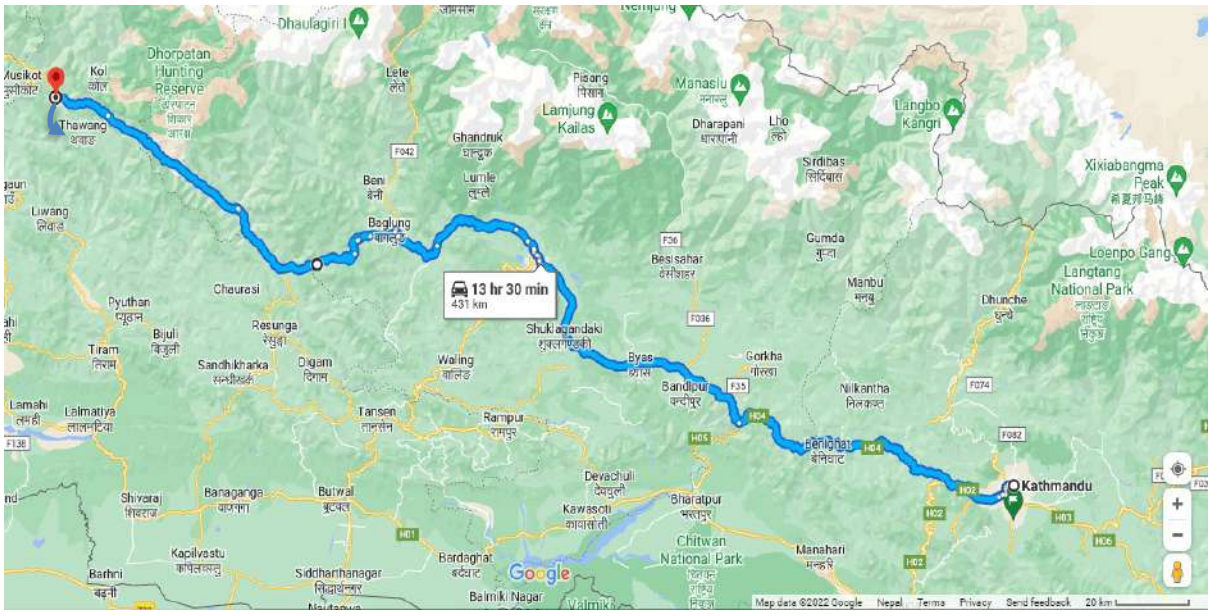


Figure 1-3: Accessibility to the Proposed Site
Source: https://maps.google.com/ on 2/16/2022

1.4.3 Subproject Components

Major components of the Subproject are 33/11 kV substation and 33kV distribution line. The structures of the Subproject are briefly described below.

A. Substation

The proposed substation 33/11 kV is of capacity 3 MVA. The major component of the substation is power transformer, which is supported by the switchgear components and Civil Structures. Map, layout, pictures of substation components and other facilities are shown in ANNEX 1.

Transformers: Power Transformers are used for the 33/11 kV substations. These transformers are mineral oil based with ONAN/ONAF (Oil Natural Air Natural/Oil Natural Air Forced) cooling mechanisms. In existing practice, the transformers used for 33/11 kV substation in Nepal are typically of 1 MVA, 3 MVA, 8 MVA and 16 MVA depending upon the load supplied by the substation. This Subproject comprises of power transformer of 3 MVA ONAN type.

Electrical Switchgear: Electrical Switchgear comprises of equipments including Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers installed in the substation. Electric Switchgear facilitates power conversion.

Civil Structures: A control building will be constructed for the operation of the substation. It houses the operating station, along with battery systems. Guard House and Staff Quarter will also be constructed for smooth operation of the substation.

Switchyard, Boundary, Roads, Drainage and Essentials: The outdoor civil structure in the proposed substation includes boundary wall, main entrance gates and Switchyard. The power transformer and components of power system are laid in the switchyard based on the prudent engineering practice. Steel structures are used to support the components as per requirements. Roads are paved within the boundary as essential for the transport of power transformer and other components. The substation location also serves as site store for storage of distribution system components.

B. 33 kV Distribution Line (DL)

The 33 kV DL serves as the pathway for feeding electricity to the proposed substation. Aluminum Conductor Steel Reinforced (ACSR) type conductors are stringed on Steel Tubular Pole from the starting point of the line. In general, the 33 kV lines comprises of the Steel Tubular Poles, Insulators, Conductors and Supporting Stays.

Steel Tubular Poles: Steel tubular poles will be installed in this subproject. 11 m and 13 m long poles shall be used depending upon the location of the poles and number of circuits used in the line. The poles to be erected, will be supported by stays wherever necessary. Insulators will be installed at cross arms to support the conductor from the poles.

Insulators: The insulators provide insulation to the poles from high voltage in the conductors. Pin type insulators will be employed for suspension whereas disc types will be employed for tension poles. Porcelain type insulators will be used owing to its dielectric strength, better compressive strength, higher resistance to

degradation, suitability for extreme climate, and environment friendly characteristics over its counterparts.

Conductor: ACSR Conductor – Aluminum Conductors Steel Reinforced, conductors with stranded layers of aluminum and steel will be used for 33 kV lines. Aluminum strands carry the current whereas the steel in between provides the mechanical strength for the conductor. Typically, 100 sq. mm conductors are used in 33 kV line for this subproject which is also known as ACSR DOG conductor.

Stay/Guy Sets: Stay Wires are used to support or provide the balancing tension to the poles. These are made up of steel materials and can be used in multiples for a single pole, depending upon the requirements.

1.4.4 Construction Work and Resource Requirement

- The substation land proposed (0.76ha) is owned and managed by Shree Bir Balbhadra School (ANNEX 2), while the distribution line passes through barren and cultivated lands, and the RoW of village road.
- During the implementation of Subproject, nearly 60 people will be deployed for construction works on daily basis.
- Major equipment to be used are: Excavator (1), Roller (1), Drilling Machine (1), and Crane (1).
- For construction power, 1 Grid Supply- 120kV A Distribution Transformer, and 2 Diesel Generators (50kVA each) as alternate supply will be required.
- The construction schedule is estimated to be 24 Months after award of the tender.

1.4.5 Major Construction Activities in the Subproject

i. **Preconstruction phase:** The activities to be carried out before the construction phase are:
- Demarcation of proposed substation land area
- Receive public opinion
- Permanent clearance of the substation land

ii. **Construction phase:** The activities to be carried out during the construction phase are:
- Transportation of construction materials
- Leveling of land area for the proposed substation
- Construction of substation structures
- Installation of equipments
- Pole erection work for 33 kV, 11 kV and low-tension distribution lines
- Stringing of 33 kV, 11 kV and low-tension distribution line

iii. **Operation phase:** The activities to be carried out during the operation phase are:
- Maintenance of the substation
- Pruning of trees and weeds from time to time

1.5 Legal Requirement for ESMP

Based on the Environmental Screening Criteria and Social Screening Criteria defined in ESMF of DSUEP, "Environmental and Social Screening Report of Thabang-Puntiban Electricity Distribution Line Subproject" concluded that this Subproject requires preparation of ESMP alongwith DDR.

1.6 Methodology and Approaches of ESMP Preparation

Following methodology and approaches were adopted to prepare this ESMP.

1. **Review of Literature:**
   The study started with the review of previous relevant reports, EIB's Environmental and Social Safeguard, ESMF for DSUEP and SES (NEA), feasibility study reports, and relevant environmental and social safeguard documents prepared by the NEA and consultant.
2. **Site Inspection and Field Visit:**
   After approval of inception and screening report, ESMP study team had visited the site (refer ANNEX 3 for site visit photographs) on 2078/05/13 to 2078/05/19 (29 August- 4 September 2021). The necessary baseline data/information of physical, biological, socio-economic, and cultural environment was collected through site observation, testing (air/noise/water[1]), walk-through survey, consultative meeting/discussion with concerned stakeholders within the Subproject footprint area.
3. **Stakeholder Identification:**
   Prior to stakeholder consultation, stakeholder identification and analysis were done. The identified stakeholders are categorized in three groups **(**
).

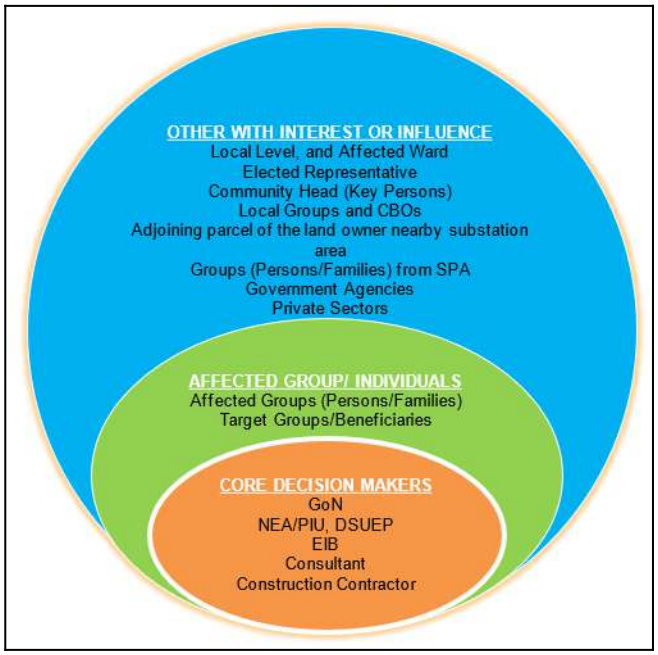


Figure 1-4: Identified Stakeholder from Identification Process[2]

[1] *The air quality data was monitored by Temtop Airing-1000 PM Detector, noise by UNI-T UT 353 Mini Sound Meter (dB) and water quality by EXTECH ExStik II DO600.*

[2] *Referenced Meaningful stakeholder engagement: a joint publication of the MFI working group on environmental and social standards / Reidar Kvam, PP-19, 2019. (Retrieved from https://publications.iadb.org/publications/english/document/Meaningful_Stakeholder_Engagement_A_Joint_Publication_of_the_MFI_Working_Group_on_Environmental_and_Social_Standards_en.pdf, January 2022) for stakeholder mapping process.*

4. Public Consultation:

Local level stakeholders including the land users along the distribution line route were notified through a notice from NEA (ANNEX 4) consisting of objectives of consultation, venue, and time requesting their presence in the consultation meeting. The notice was pasted in ward office, municipality office and proposed substation area. The proof of notice pasting is attached in ANNEX 5. The consultation meeting was conducted at the Thabang RM Meeting Hall, Thabang Rural Municipality-1 on 2078/05/18 (3 September 2021). Hard copies of Subproject features and activities in Nepali language were shared at the time of consultation. Each of the components, activities and possible enviro-social issues during Subproject implementation was briefed. The views/consent, concerns, recommendations/ suggestions, and demands of the participants were documented in the form of minutes. The summary of consultation meeting minutes is given in table below and the copy of minutes is attached in ANNEX 6.

Table 1-2: Summary of Issues, Comments and Suggestions Received

Date	Location	Participants	Issues, Comments and Suggestions Received
2078/05/18 (3rd September 2021)	**Thabang RM, Meeting Hall**	Stakeholders Female: 2 Male: 30 Study Team:2 Total: 34	The experts from NEA Engineering Company briefed us about the Subproject.
			Local people should be prioritized for employment opportunity based on qualification and skills
			Implementation of Subproject should be carried out as soon as possible in order to make electricity available in this area.
			Shree Bir Balbhadra Ma. Vi. owns the land and has agreed to provide the land for the Subproject implementation. There will be no issues while using land for the substation by the Subproject as proposed land is public and is not used for grazing or other purposes
			Subproject shall manage the waste generated during the project construction.
			Subproject will have to support Sports Club with Sport Kits and provision of Capacity Building Training should be arranged for the local people
			We express the assurance of full support from local stakeholders during Subproject Implementation phase
			Subproject will have to make MoU with Bir Balbhadra Ma.Vi. for support in the presence of Thabang RM

Source: Field Study, 2021

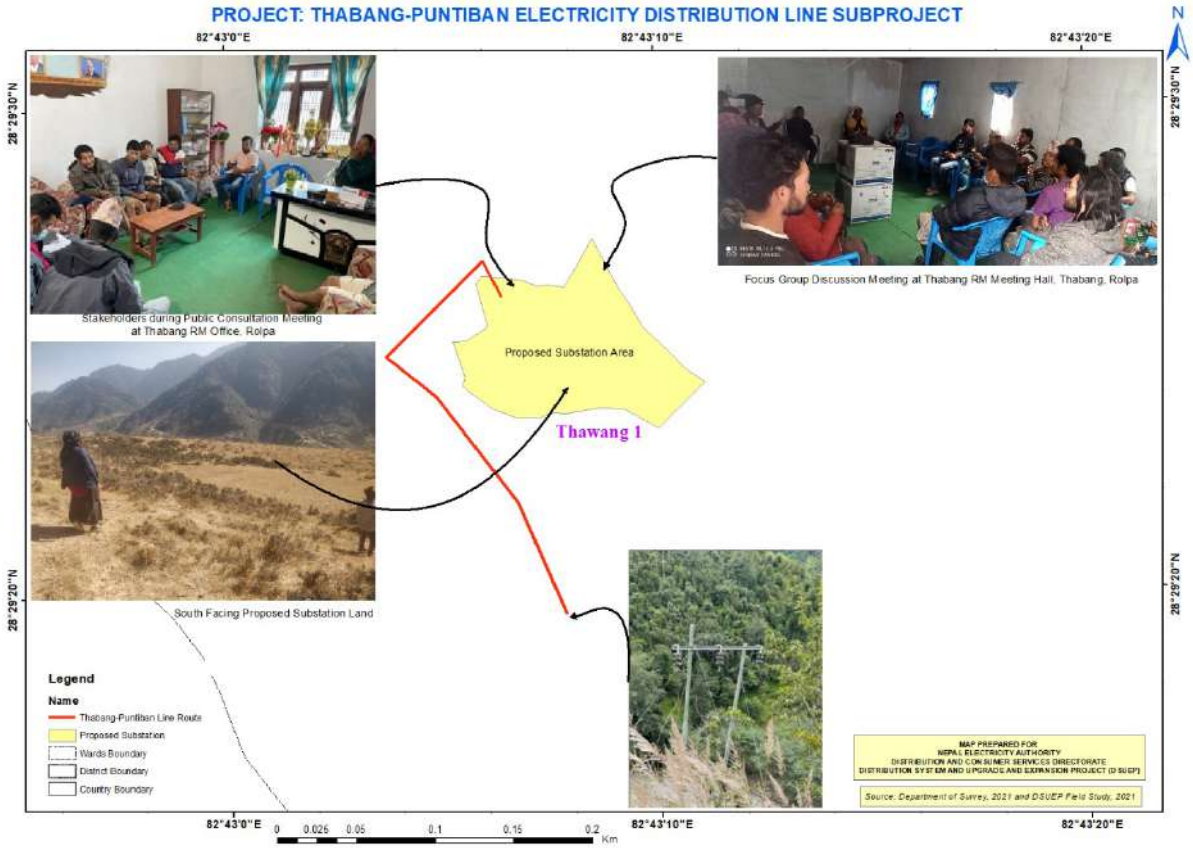


Figure 1-5: Consultation with Stakeholders and Communities in the Subproject Area

Source: Digital Data from Department of Survey, 2021, World Base Map, 2021 and Field Study, 2021

5. Third Party Verification:

The DSUEP Project had requested the ward offices of concerned local level for the verification of consultations undertaken by study team during the field visit. The ward chairperson[3] had made recommendations the DSUEP Project with letters that the needful and meaningful consultations have been undertaken during the project consultation and the views of local people are recorded as evident in the minutes annexed (**ANNEX 6**) in this report.

6. Data Analysis:

All potential subproject impacts on physical, biological, socio-economic and cultural resources were integrated and assessed using best practice of Multilateral Development Banks, as well as compliance with national requirements. The Geographic Information System and SW Maps were used for the field assessment and analysis of the Subproject area data and presentation of the maps in the ESMP report.

7. Impacts Identification, Prediction and Evaluation:

After field visit, the data, and feedback were put together to identify the associated impacts, their magnitude, extent and duration which was further

[3] *Ward is the bottom level unit under Government of Nepal. The Ward Chairman is an elected representative of ward responsible for planning and budgeting at ward level, collecting and maintaining data of households, maintaining records of public property, conducting child and environment-friendly programs, carrying out market monitoring and ensuring smooth supply of essential goods and services, issuing letter of recommendation and certifying various documents related to personal incidents, land, house, citizenship, etc.*

ranked based on matrix of National EIA Guidelines – 2050. Based on impact ranking, their respective mitigation measures were proposed.

Table 1-3: Impact Ranking Matrix as per National EIA Guidelines – 2050

Magnitude	**Score**	**Extent**	**Score**	**Duration**	**Score**	**Significance**	**Score**
High	60	Regional	60	Long Term	20	Insignificant Impact	<44
Moderate	20	Local	20	Medium Term	10	Significant Impact	45-74
Low	10	Site Specific	10	Short Term	05	Very Significant Impact	>75

8. Report Preparation:

The draft report was prepared after incorporating all the comments and suggestion obtained from local stakeholders based on field assessment, impact identification, prediction and evaluation.

9. Disclosure of ESMP Report:

The final ESMP report will be disclosed from NEA and EIB's web portal. At affected local level, ESMP reports will be shared with concerned local level (municipality) along with ward office for disclosure to the authorities and stakeholders.

1.7 Classification of Impact Area

The National Environment Impact Assessment Guidelines (GoN, 2050) has mentioned the "Core Project Area", and "Surrounding Project Area" based on proximity and magnitude of the impacts due to construction and operation of the proposed project. For the scope of this ESMP impact area has been classified as:

Core Project Area: Core Project Area (CPA) refers to the permanent and temporary land used for the proposed Subproject construction activities. CPA is considered the project footprint area and is highly impacted.

Surrounding Project Area: Immediate vicinity of the project footprint location of the proposed Subproject site is considered the Surrounding Project Area (SPA). SPA is considered a moderate and indirect impact area. For this Subproject, whole area of the concerned ward is defined as SPA.

2. EXISTING ENVIRONMENTAL CONDITIONS

2.1 Physical Environment

1. Topography, Geomorphology and Land Use

The Subproject area is located in the Mid-Land Group of Upper Pre-Cambrian-Late Paleozoic Region of Nepal in Rolpa district of Lumbini Province. Substation is situated at 28°29'24.67" N, 82°43'9.37"E, with an elevation of 2196 meters above mean sea level (amsl) while the tapping point is situated at 28°29'19.66"N, 82°43'7.81"E.

Geomorphologically, the substation area is located in a gently sloping area of mountain region. Water bodies are not present in the vicinity of the Subproject. The land in the proposed substation location is barren, while the distribution line route passes through the RoW of village access road, and along the edge of cultivated and barren lands (ANNEX 1).

2. Geology and Seismic Risks

The Subproject area is located in Surbang formation of Pre-Cambrian group along with Jaljhala sub-group. The area consists of silty clay cohesive soil with the boulders and cobble size limestone rock fragments.

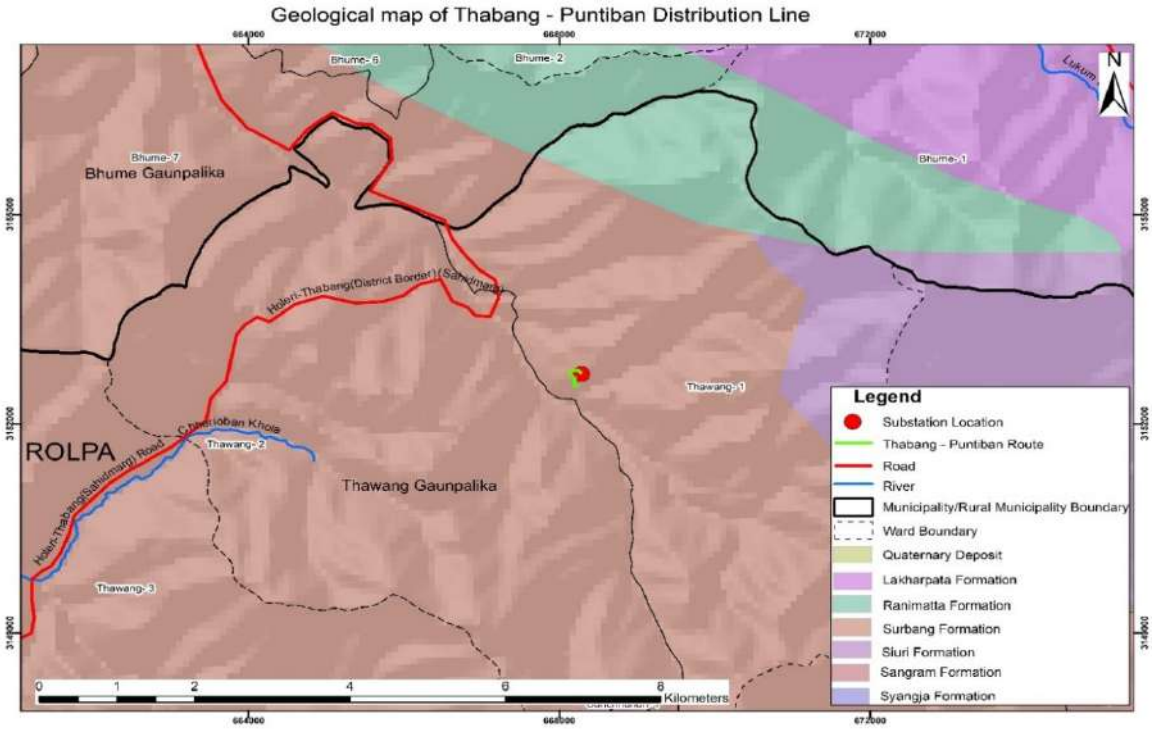


Figure 2-6: Geological Map of Proposed Project[4]

The seismic hazard map shows a horizontal seismicity coefficient 250 gal for the Subproject area, which is equal to 0.15 g. The site is quite susceptible to earthquake hazard.

[4] *Department of Survey (DoS) 2020 and Field Study 2021*

Figure 2-7: Seismic Hazard Map of Nepal Showing Proposed Subproject Site[5]

3. Climatic Condition

The proposed Subproject area falls in temperate bio-climatic zone. As no meteorological station is present in the Subproject area, data recorded at the nearest station i.e., Tulsipur Station (0508) was taken as a reference. The minimum temperature recorded is -3°C (in January), while the maximum temperature recorded is 40°C (in July) (DHM, 2021). The area receives the highest rainfall in July. The average rainfall in July is 320 mm.

4. Air and Noise Quality and Polluting Sources

The major air pollution sources observed in the project area are vehicular emission and dust emission from roads. Noise pollution sources noted at the time of field study include vehicular movement. The air quality of the CPA was found within the range of national ambient air quality standard while average noise level at substation exceeded noise quality standard. Following table shows the real-time air quality and noise level recorded during field study.

Table 2-4: Ambient Air and Noise Quality within the Proposed Subproject Site

SN	Location/ Chainage	**Air Quality**[6]-*Temtop Airing-1000 PM Detector (µg/m³)*					**Noise Level** -*UNI-T UT 353 Mini Sound Meter (dB)*		
		$PM_{2.5}$	***Level***	***PM_{10}***	***Level***	***Average Time of Measurement***	***Measured***	***Ref.***[7]	***Area***
1.	Tapping Point	10.3	100	14.8	200	1-hour	38	50	Residenti

[5] *Department of Mines and Geology, http://seismonepal.gov.np/publications, Retrieved on 2078/04/06(21/07/2021) and Field Study 2021*

[6] *National Indoor Air Quality Standard, 2009*

[7] *National Ambient Sound Quality Standard, 2012*

Source: Field Study, 2021

5. Solid Waste Management

The proposed Subproject lies in rural and semi-urban areas. Littering in front of houses, shops and business area near substation and Thabang Bazar areas was observed. The waste comprised of plastics (bottles, bags and packaging), textiles, and metal cans. Organic waste was observed littered in few areas. People near the Subproject area have been managing biodegradable waste in their households. They sell the recyclable waste to the scrap collector.

2.2 Biological Environment

The Subproject area lies in temperate bio-climatic zone (less than 2500 amsl). The proposed Subproject site does not fall in any protected areas and ecologically sensitive areas. The site is 10.27 Km far from the nearest conservation area, i.e., Dhorpatan Hunting Reserve.

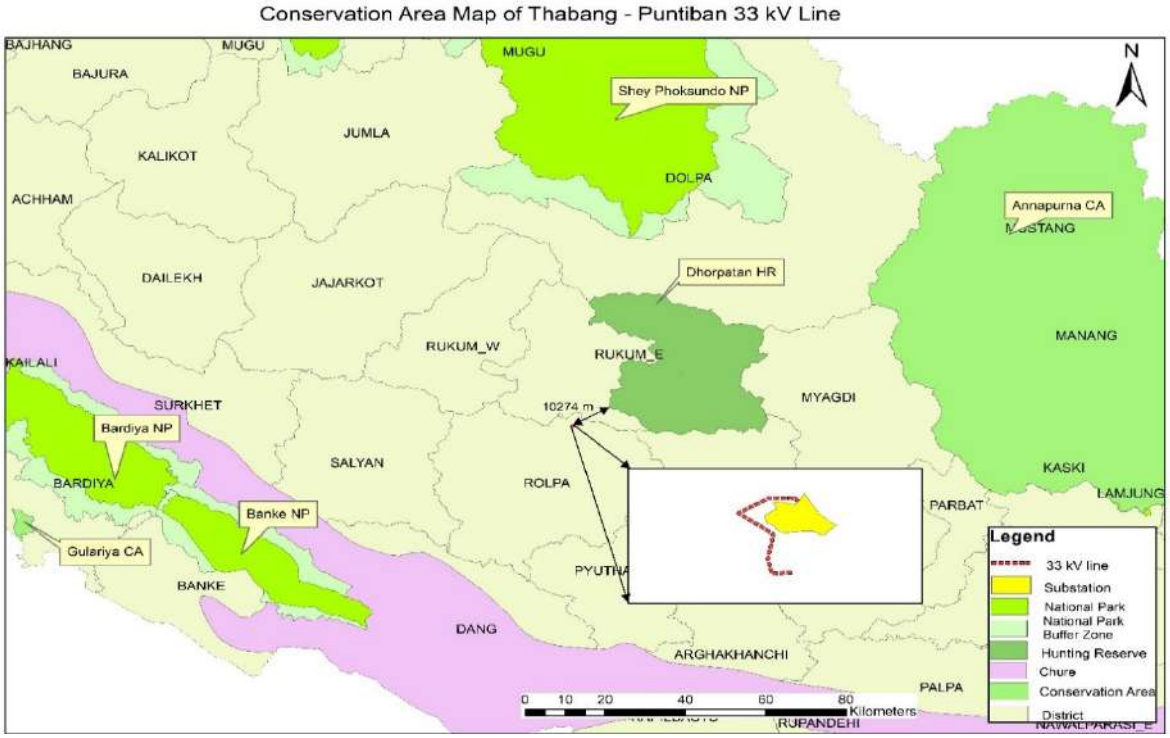


Figure 2-8: Location of Subproject area with respect to Nearby Protected Areas

During field visit, ten species of birds were recorded at project site, and its peripheral area.

Table 2-5: List of Bird Found within the Subproject Area

S.N.	Common/ Local Name	Scientific Name	GoN	IUCN	CITES
1.	Ghar Kaag (House Crow)	*Corvus splendens*	-	LC	-
2.	Maina (Jungle Myna)	*Acridotheres fuscus*	-	LC	-
3.	Gauthali (Swallow)	*Hirundo rustica*	-	LC	-
4.	Dhukur (Spotted Dove)	*Streptopelia chinensis*	-	LC	-
5.	Chil (Black Kite)	*Milvus migrans*	-	LC	II
6.	Bhangera (House	*Passer domesticus*	-	LC	-

S.N.	Common/ Local Name	Scientific Name	GoN	IUCN	CITES
	sparrow)				
7.	Jureli (Black Bulbul)	*Hypsipetes leucocephalus*	-	LC	-
8.	Suga (Rose-ringed parakeet)	*Psittacula krameri*	-	LC	-
9.	Fisto (Common tailorbird)	*Orthotomus sutorius*		LC	
10.	Parewa (Piegon)	*Columba livia*		LC	

Source: Field Study, 2021

Note: Least Concern (LC), and Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled.

A total of three species of herpetofauna: Asian Common Toad (*Bufo melanostictus*), Common Garden Lizard (*Callotes versicolor*) and Frog (*Rana tigrina*), were recorded during the field visit.

Table 2-6: List of Herpetofauna Found in the Project Area

S.N.	Common/ Local Name	Scientific Name	GoN	IUCN	CITES
1.	Chheparo (Oriental Garden Lizard)	*Calotes versicolor*	-	LC	-
2.	Bhyaguta (Asian Common Toad)	*Duttaphrynus melanostictus*	-	LC	-
3.	Bhyaguta (Indian Bullfrog)	*Hoplobatrachus tigerinus*	-	LC	II

Source: Field Visit, 2021

Note: Least Concern (LC), and Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled.

2.3 Socio-Economic and Cultural Environment

The Subproject site lies in ward 1 of Thabang Rural Municipality. According to municipal profile of Thabang Rural Municipality[8], total population of this municipality is 10,881 living in 2,172 households. Total male population is 5,035 and female population is 5,846. The total population of ward 1 is 1,912 among which 892 are male, and 1,020 are female living in 417 households. Most of the people in this area follow Hinduism. Thabang Rural Municipality was inhabitted by mostly the people of Magar caste with total population of 9,032. Agriculture is the mainstay of the people of the Subproject area (about 85% population is engaged in agriculture). Other occupations include small trade and business/enterprises and services. From the Subproject construction, 0.0756ha of cultivated land will be affected at the time of stringing the conductor.

The major health issues reported are headache, Backache, Upper Respiratory Tract Infection (URTI), Presumed Non-Infectious Diarrhea, Fungal Infection, Gastritis, ARI/Lower Respiratory Tract Infection (LRTI), Refractive Error, Conjunctivitis, and cataract. The nearest and easily accessible health facility is located at Thabang, at 25–30 minutes driving distance.

[8] *https://thabanglmun.gov.np/en/node/40, Retrieved on 2078/04/06 (21/07/2021).*

The proposed substation 0.76ha land area is barren. This land is Shree Bir Balbhadra Ma. Vi., Bibang owned and managed. Thus, the substation will not require the relocation of any private or public property. However, nearly 0.0756ha cultivated land along the distribution line will be affected at the time of stringing the 33kV line. For which, there will be chance of loss of income source from agricultural crops. The implementation of the Subproject will not require land acquisition and resettlement of private/public properties.

3. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

This chapter identifies the possible environmental, and social impacts in the Subproject site that may arise during the construction and operation phase. All the relevant environmental and social impacts associated with this Subproject are sequentially illustrated in subsequent sub-headings along with their mitigation measures.

3.1 Beneficial Impacts

A. Construction Phase

1. Increased Economic Opportunities for Local People

Impacts

Altogether about 60 people (3 Engineers, 6 Supervisors, 8 Foreman, 18 Skilled Lineman/Electricians, 20 Laborers and 5 Helpers) will be deployed on a daily basis during construction phase for construction of 33/11kV substation over the implementation period of 24 months. Working together with technical experts, local people will be able to enhance their technical skills in construction work. The construction activities require different construction materials like aggregate, sand, cement, steel, etc. which can be supplied from local market.

Impact Rating: Very Significant (Table 3-1)

Augmentation Measures

- While employing manpower, local people within the Subproject area will be given priority based on qualification and skills.
- The construction material, if available, shall be brought from the locally available legally operating market near Thabang.

B. Operation Phase

1. Enhancement in Rural Electrification

Impacts

Intermittent tripping and voltage drop problem nearby the area will be reduced. The local economy will benefit through improved reliability of electricity supply, which is a necessary condition for economic growth. Different industries within/nearby the proposed subproject area will be established. It will promote the use of new types of home appliances, use of electric motors for irrigation, and establishment of small and large industries.

Impact Rating: Very Significant (Table 3-1)

Augmentation Measures

- Proper and timely maintenance of the Substation will be done to maintain reliable power supply.

2. Reduction in Green House Gas (GHG) emissions

Impacts

Net Green House Gas (GHG) emissions resulting from the subproject area are expected to decrease as the distribution lines will improve and expand electricity supply which will trigger change in energy use pattern to electricity from GHG emitting traditional sources like Guitha (made from cow dung), firewood and timber along with Kerosene for cooking/lighting, heating and diesel for water pumping.

Impact Rating: Very Significant (Table 3-1)

Augmentation Measures

- Proper and timely maintenance of the Substation will be done to maintain reliable power supply so that people will keep continuing the use of electricity.

3.2 Potential Adverse Impacts

3.2.1 Physical Environment

A. Construction Phase

1. Impact Associated with Change in Land Use

Impacts

The Subproject will require about 0.76ha. land for the substation. The proposed substation land belongs to Shree Balbhadra School i.e., Government Land. Distribution line passes through edge of barren and cultivated lands and the RoW of access road. The construction of the substation will bring change in land use permanently. Potential impacts caused by distribution lines will be limited to approximately 0.22 m width of land for each pole, at the edge of barren and cultivated lands and along the RoW of road.

Impact Rating: Significant (Table 3-1)

Mitigation/Enhancement Measures

- Steel Tubular Pole for distribution lines will be erected at the right way of existing road without hampering traffic movement. In case of cultivated land, minimal land will be used at the edge for erecting the poles of diameter 0.22m.
- Cropping calendar will be considered while erecting poles and stringing of conductors to minimize the damage to standing crops.

2. Impact Associated with Spoil and Stability Concerns

Impacts

The proposed substation site lies at the ridge of the hill on a gently sloping land where ground leveling is necessary. After using the cut volume for filling, a surplus of about 16812 cu.m spoil will be necessary for filing. Issues of spoil and instability during excavation work may raise concerns to the nearest private structures and cultivated land located immediately below the downward side of site in Southeast direction. For distribution lines, the excavation activity will be insignificant.

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- Spoil required for filling will be purchased from the nearby authorized market.

- Appropriate civil engineering measures such as retaining wall will be constructed to avoid spills of spoil towards cultivated land towards Northeastern and Southeastern parts of substation area.
- Simultaneous water sprinkling and compaction of spoil will be done using the roller.
- Spoil will be covered with tarpaulin while transporting it from earth-borrowing areas to the substation site.
- Adequate site drainage system will be provided around stockpiled materials, campsites, and the foundation work area.
- Bioengineering measures will be adopted to bind the top soil of spoil and excavated area.
- In order to eliminate the possibility of accidents, pit holes dug for the installation of steel tubular poles shall not be left open.

3. Impact due to Air and Noise Pollution

Impacts

The impact on air quality during the construction period is expected to be insignificant, as site clearance, excavation, stockpiling of construction materials, waste burning at camp sites and equipment installation are localized and short term. Transportation of the materials and movement of construction crews and equipment will cause minor impact on air quality. Construction-related noise will be limited to vehicular movement and inside-the-fence construction activities at substation site; construction related noise is not expected to exceed acceptable levels.

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- Contractors' vehicles and equipment should meet Nepal's vehicle emissions standards.
- Dust emissions will be controlled with water sprays on earthen roads nearby settlements in substation area.
- Open burning of wastes should be strictly prohibited.
- Construction workers should use face masks at all times.
- All dust generating loads carried in open trucks should be covered.
- Contractors shall monitor noise during the construction as well as use the standard construction equipment.
- Personal Protective Equipment (PPE) such as earplugs, earmuffs, etc. will be provided to the workers in high noise areas.

4. Impact Associated with Solid Waste Management

Impacts

The waste generated during construction within the subproject area are cement bags, iron bars, and other leftover construction materials, and waste generated in the labor camp. Biodegradable wastes generated from labor camp may give foul smell, and attract rodents. It will cause adverse impact, if not properly managed. Inorganic wastes generated during implementation shall be managed through source segregation.

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- Segregation of organic, and inorganic wastes in different storage areas or facilities in the designated location will be done.

- The biodegradable waste generated from the campsite shall be managed through constructing a ground pit, and covered by the sufficient thick layer of soil on daily basis.
- Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix will be used as refills for making ground leveling.
- The packing materials used for casing components should be recyclable, and non-hazardous.
- The construction contractor shall ensure proper management of ground drainage from camps as a preventive measure against breeding places of mosquitoes, and other pests.
- Recyclable wastes like left out/non-usable reinforcement bars and packing materials shall be sent or sold to scrap vendors.
- Chemical waste generated from transformer shall be collected in leakage proof, corrosion free, and specially designed container and sealed carefully.
- Effective coordination shall be done with local level government for proper waste management during construction period.

B. Operation Phase

1. Issues Related to Electric and Fire Hazard

Impacts

Employees performing servicing or maintenance of substations may be exposed to electric shock, burns and injuries from the unexpected energization or release of energy stored in the equipment.

Impact Rating: Significant (Table 3-1)

Mitigation/Enhancement Measures

- Shutdown shall be taken during maintenance work.
- Use of insulation, guarding, grounding, electrical protective devices, and safe work practices is advised.
- Boundary walls and security fences around substation are necessary to prevent unauthorized access.
- Only trained and authorized personnel shall be allowed for electrical works.
- Warning signs shall be installed.

3.2.2 Biological Environment

The proposed Subproject avoids forestland and other sensitive biodiversity areas. Hence, the construction of the Subproject is not likely to pose significant impact to biological environment of the Subproject area.

A. Construction Phase

1. Loss of Habitat

Impacts

As the substation site and DL alignment are not located in the immediate vicinity of any forestland or sensitive biodiversity area, the potential for adverse impact on biological habitat is insignificant.

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- No specific measures will be required.

B. Operation Phase

1. Bird Electrocution and Collision

The Subproject area is located in rural and semi-urban areas and important habitat of avian fauna were not observed in the subproject area. However, there is a potential for electrocution risks to bird species which perch on power line infrastructures (Substation especially).

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- Provision of bird guards above the poles and white spirals in the conductors to improve visibility (refer to ANNEX 1 for representative photograph).
- Connector part mechanisms must be burr-free.

3.2.3 Socio-Economic and Cultural Environment

The anticipated impacts regarding the socio-economic and cultural environment associated with Subproject are discussed below:

A. Construction Phase

1. Impact Associated with Transformation of Land

Impacts

The Subproject requires about 0.76ha of land for the substation. The land is owned and managed by Shree Bir Balbhadra Ma. Vi., Bibang. The construction activities of the Subproject will not affect any private land however could loss the standing crops cultivated by the users during construction phase. The Subproject will not require land acquisition and resettlement.

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- Proper demarcation of the Substation area shall be done.
- Coordination with local level authorities and local people will be done during the implementation of the Subproject.
- Distribution pole of diameter 0.22 m are to be installed at the edge of cultivated land to avoid the loss of standing crops.
- Advance notice of three month will be provided to users' to harvest their crops.
- Loss compensation of standing crops will be provided based on market rate.
- Special assistance for income restoration activities will be conducted.

2. Issues Related to Child Labor and Gender

Impacts

During the Subproject construction, people will be employed on daily/monthly wages for excavation, transportation of construction materials and other construction related works. There might be discrimination on women and vulnerable groups while hiring the worker and they might be provided less wage than men. Contractors might use child labor for the shake of economic benefits. This is harmful to the child's health or physical, mental, moral or social development. There is a chance that children, woman and socially backward communities are exploited.

Impact Rating: Very significant (Table 3-1)

Mitigation/Enhancement Measures

- Provide equal wage to male and female for similar nature of work
- People from socially backward community should be given priority
- Restrict use of children below 16 years of age in labor work (or as per government and ILO guidelines).
- Provide gender friendly construction environment with separate cabins and toilet for women in the camp.
- Suitable work assignment for women.

3. Socially Undesirable Activities

The workers may use alcohol and other forms of intoxication, gambling, quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area.

Impact Rating: Insignificant (Table 3-1)

Mitigation/Enhancement Measures

- Organization of awareness programs on gender based violence risks for the Subproject workers.
- Restrict movement of workers out of camp after certain hours in the night time.
- Restrict use of alcohol and gambling in the camp.
- Supply water supply, daily consumable items, communication facility in the camp so as not to create additional pressure on the local services
- Orient workers to show respect to local tradition and culture;
- Prepare a code of conduct for all project staff, orient them and monitor that these are effectively followed by all;
- Assign a Community Liaison Officer (CLO) by the project to keep close and regular consultation and coordination with local communities;
- Regular monitoring of worker's behavior and take appropriate actions against rule violators.

4. Occupational Hazards and Safety

Impacts

Occupational health hazard and safety of staff is a major issue during the construction period. Primary victims are the construction workers. In addition, the pedestrian might also be injured.

Impact Rating: Very significant (Table 3-1)

Mitigation/Enhancement Measures

- Contractor shall prepare the Environmental, Health and Safety plan (ANNEX 7) and take approval from the Client before implementation. Safety officer should be employed during construction period
- All employees shall be provided with the necessary training, and safety equipment as required for their responsibilities and duties. The Contractor will adhere to labor Act 2074 and Labor Rules 2075.
- The basic facilities of drinking water, sanitation & clean resting place, canteen, and first aid are required for the campsite.
- All the workers shall have health insurance over the period of construction.
- Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs) as shown in ANNEX 8.
- NEA will be responsible to supervise the EHS performance of the construction Contractor, and workers health and safety.

B. Operation Phase

1. Hazards and Safety

Impacts

Employees working in the operation and maintenance of the electric components might get exposed to electric shock, electrocution, fires, and explosions.

Impact Rating: Significant (Table 3-1)

Mitigation/Enhancement Measures

- There will be the use of insulation, guarding, grounding, electrical protective devices, and industry-standard safe work practices.
- Boundary walls and / or security fences around substations to prevent unauthorized access.
- Only trained and authorized personnel will be allowed for the electrical works.
- No electric wire shall be stringed above the house.
- Security fences around the substation.
- Establishment of warning signs.
- Shutdown shall be taken during work on DL route.

2. Electric and Magnetic Field Effect

Electric power distribution lines create electric and magnetic field together, referred to as electromagnetic fields (EMF). Electrical flux density declines in inverse proportion to the square of the distance and magnetic fields decline in inverse proportion to the cube of the distance; there will be no impact outside of the substation boundaries[9]. Research on the long-term effects of EMF associated with distribution lines is inconclusive with respect to health risks. As noted in the World Bank EHS guidelines for transmission and distribution systems, there is no

[9] *E.g., at a distance of 10 meters from a single distribution line or conductor, electrical flux density drops to 1% of the field strength at a distance of 1 meter from the conductor: 1/ (10*10) = 1%. Likewise, the magnetic field drops to 0.1% of the field strength at the conductor: 1/ (10*10*10) = 0.1%.*

empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment.

Impact Rating: Insignificant (Table 3-1)

Table 3-7: Impact Identification and Evaluation Matrix

S.N.	Issues	Impacts	Impact Rating				
			Nature	Magnitude	Extent	Duration	Rating
3.1	**Beneficial Impacts**						
A	**Construction Phase**						
1	Increased Economic Opportunities for Local People	60 people (3 Engineer, 6 Supervisor, 8 Foreman, 18 Skilled Lineman/Electrician, 20 Labor and 5 Helper) will be deployed in the normal day basis during construction phase for construction of 33/11kV substation over the implementation period of 24 months. The construction activities require different construction materials like aggregate, sand, cement, steel, etc. which can be supplied from local market.	D	H (60)	L (20)	ST (05)	VSI (85)
B	**Operation Phase**						
1	Enhancement in Rural Electrification	The local economy will benefit through improved reliability of electricity supply, which is a necessary condition for economic growth.	I	H (60)	L (20)	ST (05)	VSI (85)
2	Reduction in Green House Gas (GHG) emissions	Net Green House Gas (GHG) emissions resulting from the subproject area are expected to decrease as the distribution lines will improve and expand electricity supply which will trigger change in energy use pattern to electricity	I	H (60)	L (20)	LT (20)	VSI (100)
3.2	**Adverse Impacts**						
1	**Physical Environment**						
A	**Construction Phase**						
1	Impact Associated with Change in Land Use	Landuse of 1.04 ha land for substation construction will change permanently into built-up area while 22 cm diameter steel tubular pole installation will require negligible area of land at the RoW of access road, edge of barren or cultivated (if needed). The crop will be damaged from Subproject construction.	D	M (20)	SS (10)	LT (20)	SI (50)
2	Impact Associated with Spoil and Stability Concerns	Site preparation for substation requires 16812cum of spoil filling. Issues of spoil and instability during excavation work may raise concerns to the nearest private structures and cultivated land located immediately below the downward side of site in Southeast direction.	D	L (10)	SS (10)	ST (05)	II (25)
4	Impact due to	Construction activities such as site clearance, ground leveling,	D	L (10)	SS	ST (05)	II (25)

S.N.	Issues	Impacts	Impact Rating				
			Nature	Magnitude	Extent	Duration	Rating
	Air, and Noise Pollution	excavation of the building foundation, spoil management work, waste burning, haphazard stockpiling of construction materials, vehicular movement will generate dust, emission and noise.			(10)		
5	Impact associated with Solid Waste	The waste generated during construction within the subproject area are cement bags, iron bars, and other leftover construction materials, and waste generated in the labor camp. Biodegradable wastes generated from labor camp may give foul smell, and attract rodents.	D	L (10)	SS (10)	ST (05)	II (25)
B	**Operation Phase**						
1	Issues Related to Electric and Fire Hazard	Employees performing servicing or maintenance of substations may be exposed to electric shock, burns and injuries from unexpected energization or release of energy stored in the equipment.	I	M (20)	SS (10)	LT (20)	SI (50)
1	**Biological Environment**						
A	**Construction Phase**						
1	Loss of Habitat	No significant impacts	D	L (10)	SS (10)	MT (10)	II (30)
B	**Operation Phase**						
1	Bird Electrocution and Collision	The Subproject area is located in semi-urban area and there is no presence of important habitat of avian fauna. Although the electrocution can cause a risk to bird species which perch on power line infrastructures (Substation and distribution line).	I	L (10)	SS (10)	LT (10)	II (30)
1	**Socio-Economic and Cultural Environment**						
A	**Construction Phase**						
1	Impacts Associated with Transformation of Land	The substation is proposed in barren Government land while DL route will pass through RoW of access road, cultivated, and barren land.	D	M (20)	SS (10)	ST (05)	II (35)
2	Issues Related to Child Labor and Gender	Discrimination on women and vulnerable groups while hiring the worker, minimum wages and use of child labor	D	H (60)	SS (10)	ST (05)	VSI (75)

S.N.	Issues	Impacts	Impact Rating				
			Nature	Magnitude	Extent	Duration	Rating
3	Socially Undesirable Activities	The workers may use alcohol and other forms of intoxication, gambling, quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area.	I	L (10)	SS (10)	ST (05)	II (25)
4	Occupational Hazards, and Safety	Occupational health hazard and safety of workers is the major issues during the construction period.	D	H (60)	SS (10)	ST (05)	VSI (75)
B	**Operation Phase**						
1	Hazards and Safety	Employees working in the operation, and maintenance of the electric components are exposed to electric shock, electrocution, fires, and explosions.	D	M (20)	SS (10)	LT (20)	SI (50)
2	Electric and Magnetic Field Effect	Electric power distribution lines create electric and magnetic field together, referred to as electromagnetic fields (EMF).	I	L (10)	SS (10)	LT (20)	II (40)

Note:Direct (D), Indirect (I), High (H), Moderate (M), Low (L), Regional (R), Local (L), Site Specific (SS), Long Term (LT), Medium Term (MT), Short Term (ST), Insignificant Impact (II), Significant Impact (SI), Very Significant Impact (VSI)

3.3 Management Specifications for the Construction and Operational Phases

The overall Environmental and Social Management Plan of the subproject along with mitigation and management measures is presented in table below. The ESMP will be implemented in three stages: (i) pre-construction (ii) construction, and (iii) operations and maintenance. This ESMP is living document and will be updated and modified under the supervision of Environmental and Social Management Unit (ESMU) of the Project Implementation Unit (PIU) as necessary based on field conditions, construction Contractor's performance, and stakeholders' feedback.

Table 3-8: Construction and Operational Management Specifications

Environmental Issues	Mitigation and Management Measures	Mitigation Costs (NRs.)	Institutional Responsibility	
			Implementation	Supervision
1. Beneficial Augmentation Measures				
A. Construction Phase				
1. *Increased Economic Opportunities for Local People*	• Local people within the Subproject area will be prioritized based on qualification and skills. • The construction material, if available, shall be brought from the locally available legally operating market near Thabang.	Embedded within Contract Document	Construction Contractor	NEA/PIU (DSUEP)
B. Operation Phase				
1. *Enhancement in Rural Electrification*	• Proper and timely maintenance of the Substation will be done to maintain reliable power supply.	-	NEA Transmission Operations units and Distribution Service Center(s)	NEA
2. *Reduction in Green House Gas (GHG) emissions*	• Proper and timely maintenance of the Substation will be done to maintain reliable power supply so that people will keep continuing the use of electricity.	-	-	GoN/ MoEWRI
2. Adverse Mitigation/ Enhancement Measures				
1. Physical Environment				
A. Construction Phase				

Environmental Issues	Mitigation and Management Measures	Mitigation Costs (NRs.)	Institutional Responsibility	
			Implementation	Supervision
1. *Impact Associated with Change in Land Use*	• Steel Tubular Pole for distribution lines will be erected at the right way of existing road without hampering traffic movement. In case of cultivated land, minimal land will be used at the edge for erecting the poles of diameter 0.22m. • Cropping calendar will be considered while erecting poles and stringing of conductors to minimize the damage to standing crops.	Embedded within the Contract Document	Construction Contractor	NEA/PIU (DSUEP) and Thabang RM
2. *Impact Associated with Spoil and Stability Concerns*	• Spoil required for filling will be purchased from the nearby authorized market. • Appropriate civil engineering measures such as retaining wall will be constructed to avoid spills of spoil towards cultivated land towards Northeastern and Southeastern parts of substation area. • Simultaneous water sprinkling and compaction of spoil will be done using the roller. • Spoil will be covered with tarpaulin while transporting it from earth-borrowing areas to the substation site. • Adequate site drainage system will be provided around stockpiled materials, campsites, and the foundation work area. • Bioengineering measures will be adopted to bind the top soil of spoil and excavated area. • In order to eliminate the possibility of accidents, pit holes dug for the installation of steel tubular poles shall not be left open.	Embedded within the Contract Document	Construction Contractor	NEA/PIU (DSUEP)
3. *Impact due to Air and Noise Pollution*	• Contractors' vehicles and equipment should meet Nepal's vehicle emissions standards. • Dust emissions will be controlled with water sprays on earthen roads nearby settlements in substation area. • Open burning of wastes should be strictly prohibited. • Construction workers should use face masks at all times. • All dust generating loads carried in open trucks should be covered. • Contractors shall monitor noise during the construction as well as use the standard construction equipment. • Personal Protective Equipment (PPE) such as earplugs, earmuffs, etc.	* Air Quality Monitoring- 1,50,000.00 * Sprinkling Water (Dust Management) 3,00,000.00 * Noise Level	Construction Contractor	NEA/PIU (DSUEP)

Environmental Issues	Mitigation and Management Measures	Mitigation Costs (NRs.)	Institutional Responsibility	
			Implementation	Supervision
	will be provided to the workers in high noise areas.	Monitoring: 50,000.00 * Provision of PPE and other cost will be embedded within Contract Document		
4. *Impact Associated with Solid Waste Management*	• Segregation of organic, and inorganic wastes in different storage areas or facilities in the designated location will be done. • The biodegradable waste generated from the campsite shall be managed through constructing a ground pit, and covered by the sufficient thick layer of soil on daily basis. • Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix will be used as refills for making ground leveling. • The packing materials used for casing components should be recyclable, and non-hazardous. • The construction contractor shall ensure proper management of ground drainage from camps as a preventive measure against breeding places of mosquitoes, and other pests. • Recyclable wastes like left out/non-usable reinforcement bars and packing materials shall be sent or sold to scrap vendors. • Chemical waste generated from transformer shall be collected in leakage proof, corrosion free, specially designed container and sealed carefully. • Effective coordination shall be done with local level government for proper waste management during construction period.	Solid Wastes Management: 1,00,000.00 and other cost will be embedded within Contract Document	Construction Contractor	NEA/PIU (DSUEP) and Thabang RM

Environmental Issues	Mitigation and Management Measures	Mitigation Costs (NRs.)	Institutional Responsibility	
			Implementation	Supervision
B. Operation Phase				
1. *Issues Related to Electric and Fire Hazard*	• Shutdown shall be taken during maintenance work. • Use of insulation, guarding, grounding, electrical protective devices, and safe work practices is advised. • Boundary walls and security fences around substation are recommended to prevent unauthorized access. • Only trained and authorized personnel shall be allowed for electrical works. • Warning signs shall be installed.	-	NEA Transmission Operations units and Distribution Service Center(s)	NEA
2. Biological Environment				
A. Construction Phase				
1. *Loss of Habitat*	• No specific measures will be required.	-	Construction Contractor	NEA/PIU (DSUEP)
B. Operation Phase				
1. *Bird Electrocution and Collision*	• Provision of bird guards above the poles and white spirals in the conductors to improve visibility (refer to ANNEX 1 for representative photograph). • Connector part mechanisms must be burr-free.	Embedded within Contract Document	NEA Transmission Operations units and Distribution Service Center(s)	NEA
3. Socio-Economic, and Cultural Environment				
A. Construction Phase				
1. Impact Associated with Transformation of Land	• Proper demarcation of the Substation area shall be done. • Coordination with local level authorities and local people will be done during the implementation of the Subproject. • Distribution pole of diameter 0.22 m are to be installed at the edge of cultivated land to avoid the loss of standing crops. • Advance notice of three month will be provided to users' to harvest	Embedded within Contract Document	Construction Contractor	NEA/PIU (DSUEP) and Thabang RM

Environmental Issues	Mitigation and Management Measures	Mitigation Costs (NRs.)	Institutional Responsibility	
			Implementation	Supervision
	their crops.			
2. *Issues Related to Child Labor and Gender*	• Provide equal wage to male and female for similar nature of work • People from socially backward community should be given priority • Restrict use of children below 16 years of age in labor work (or as per government and ILO guidelines). • Provide gender friendly construction environment with separate cabins and toilet for women in the camp. • Suitable work assignment for women.	Embedded within Contract Document	Construction Contractor	NEA/PIU (DSUEP) and Thabang RM
3. *Socially Undesirable Activities*	• Organization of awareness programs on gender based violence risks for the Subproject workers. • Restrict movement of workers out of camp after certain hours in the night time. • Restrict use of alcohol and gambling in the camp. • Supply water supply, daily consumable items, communication facility in the camp so as not to create additional pressure on the local services • Orient workers to show respect to local tradition and culture; • Prepare a code of conduct for all project staff, orient them and monitor that these are effectively followed by all; • Assign a Community Liaison Officer (CLO) by the project to keep close and regular consultation and coordination with local communities; • Regular monitoring of worker's behavior and take appropriate actions against rule violators.	Embedded within Contract Document	Construction Contractor	NEA/PIU (DSUEP)
4. *Occupational Hazards and Safety*	• Contractor shall prepare the Environmental, Health and Safety plan (ANNEX 7) and take approval from the Client before implementation. Safety officer should be employed during construction period • All employees shall be provided with the necessary training, and safety equipment as required for their responsibilities and duties. The Contractor will adhere to labor Act 2074 and Labor Rules 2075. • The basic facilities of drinking water, sanitation & clean resting place, canteen, and first aid are required for the campsite.	* EHS Awareness Trainings: 1,50,000.00 and other cost will be embedded	Construction Contractor	NEA/PIU (DSUEP)

Environmental Issues	Mitigation and Management Measures	Mitigation Costs (NRs.)	Institutional Responsibility	
			Implementation	Supervision
	• All the workers shall have health insurance over the period of construction. • Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs) as shown in ANNEX 8. • NEA will be responsible to supervise the EHS performance of the construction Contractor, and workers health and safety.	within Contract Document		
B. Operation Phase				
1. *Hazards and Safety*	• There will be the use of insulation, guarding, grounding, electrical protective devices, and industry-standard safe work practices. • Boundary walls and / or security fences around substations to prevent unauthorized access. • Only trained and authorized personnel will be allowed for the electrical works. • No electric wire shall be stringed above the house. • Security fences around the substation. • Establishment of warning signs. • Shutdown shall be taken during work on DL route.	-	NEA Transmission Operations units and Distribution Service Center(s)	NEA

Note: The provision of environment and social management cost should be included in the project cost making each item visible in BOQ of bidding document for the safeguard compliance by the construction contractor.

3.4 Livelihood Support Activities

The majority of community people living outside of footprint area (SPA) are from Tamang community. However, nearly 0.0756ha cultivated land will be affected at the time of stringing the 33kV line. There will be chance of loss of income source from agricultural crops along the distribution line. Following table shows the livelihood support activities for the users affected by the Subproject.

Table 3-9: Livelihood Support Activities

Type of Loss	Scope	Who is Entitled	Entitlement	Responsible for the Delivery of the Entitlement	Remarks
A. Income Restoration Activities	Special assistance for income restoration activities	Support for land users (households) along the distribution line losing income sources based on agriculture at Subproject footprint area and other people from SPA area	At least one-person from each affected user (households) along distribution line if interested) will be considered for income generating vocational training and skill improvement options as per their choice expressed during consultation *(such as, building electricians and tailoring training)* and the people from SPA area	Training cost will be addressed by NEA	The NEA/PIU and PSC will facilitate to this support for organizing skill development training.
B. Loss of Standing Agricultural Crops	Crop affected from Subproject construction activity	Land Owner/ Users	Advance notice of three month to be provided to users' along the distribution line to harvest their crops. Cash compensation for loss of agricultural crops at current market value of crops (if destroyed)	Cash compensation based on the crops loss types and market rates NEA will address all the cost.	The NEA/PIU will ensure that the payment of compensation is made prior to construction of Subproject. PSC will facilitate for this loss estimation and procedural works

Source: Field Visit, 2022

Table 3-*10*: Crop Loss Estimation from Area Affected for Cultivation and Estimated Production

Municipality	Area in Sq.m.	Area in Hectare (ha)	Productivity Per Ropani (Kg.)	Productivity Per Hectare (Kg.)	Two Seasons Production (Kg.)	Rate/ Kg (NRs.)	Amount (NRs.)
Thabang Rural	**756.000**	**0.076**	**65.000**	**1,919.450**	**290.221**	**108.00**	**31,344.00**

Municipality							
Total	**756.000**	**0.076**	**65.000**	**1,919.450**	**290.221**	**108.00**	**31,344.00**

Source: Field Visit, 2022

3.5 Institutional Arrangement

The Ministry of Energy, Water Resources and Irrigation (MoEWRI) is responsible for planning and execution of the plans for the overall development of water and energy sector in Nepal. Nepal Electricity Authority (NEA) under MoEWRI is the responsible agency for the implementation of the DSUEP. The project comes under Distribution and Consumer Services Directorate (DCSD) of NEA. Project Implementation Unit (PIU) under DSUEP is the implementing unit of the project. Environment and Social Management Unit will be within PIU. All the resources needed for the EMP implementation for the construction and operation phase will be provided by the PIU. The site offices under PIU will have the supervision consultant with environmental and social safeguard specialist, who will be responsible for compliance monitoring during the construction phase. S/he will also provide technical support in preparing the monitoring report.

Contractor shall have the main responsibility to ensure the compliance. The Contractor shall prepare an Environment, Health and Safety (EHS) report that would be approved by DSUEP before field mobilization. They need to strictly follow the EHS plan requirements. Contractor shall urgently comply with corrective actions for any noncompliance as instructed by PIU. The ESMU of PIU will provide safeguard and ESMP compliance orientation to all environment monitors and safeguard team of the Contractor.

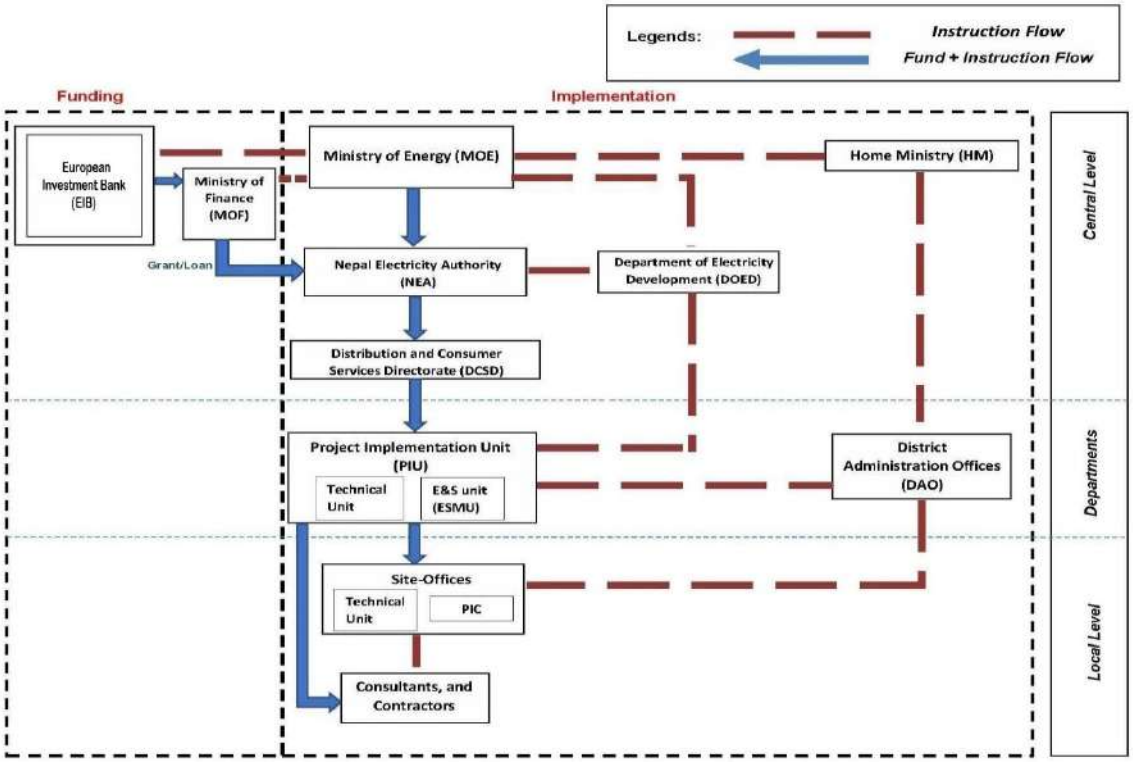


Figure 3-9: Institutional Arrangement for Environmental and Social Management

Source: ESMF-DSUEP

3.6 Grievance Redress Mechanism

The Grievance Redress Mechanism (GRM) has been established to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental related issues at the subproject level. The GRM is designed to be simple, transparent and responsive. GRM shall address only the concerns arising due to the project implementation activities, mainly during construction stage.

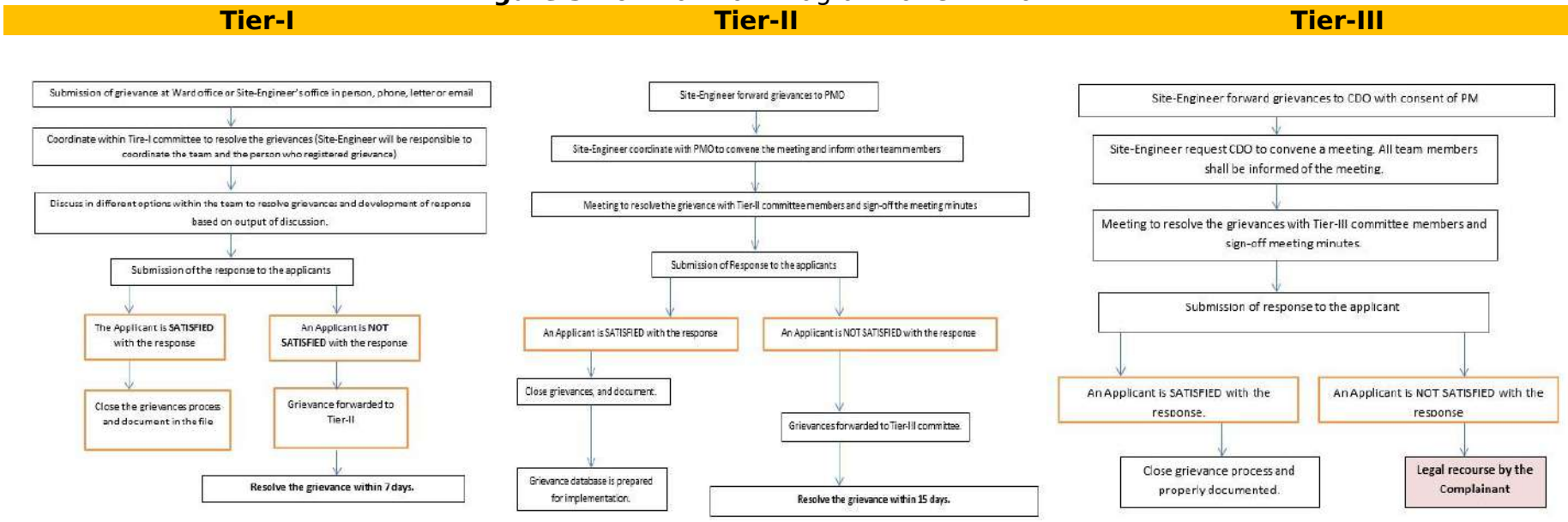
This process entails the concerned party submitting a grievance either in-person, or via phone, letter, or email to the Site-Engineer or the concerned Municipality Chief or the concerned Ward Chair. The Site-Engineer will record such complaint. In cases where Ward Chair has received such grievance, s/he should forward the grievance to the Site-Engineer. The Site-Engineer shall notify the committee members of Tier-I and arrange meeting to resolve the received grievances. If not resolved such grievances will be forwarded to Tier II and Tier III. The three level of GRM will work on time-bound schedules as mentioned in Table 3-11. The Subproject will hold regular meetings for Tier-I, to follow up if any grievances are received or not and to resolve the grievances received and update its status to PIU. Figure 3-10 describes the Workflow Diagram of GRM for the Subprojects.

Table 3-11: Levels of Grievance Redress Mechanism

Provisions	**Levels of Grievance Redress Mechanism**					
	First Level (Tier-I)		**Second Level (Tier-II)**		**Third Level (Tier-III)**	
Level	Local Level		Project Manager Office (PMO) headed by the Project Manager (PM) at Project Implementation Unit (PIU)		District Level	
Supervisory	NEA Site-Engineer		PMO		Chief District Officer (CDO)	
Assistance	Chief/Mayor of Concerned Local Level and Chairperson/ Representative of Ward, Construction Contractor's (CC) Representative and Project Supervision Consultant's (PSC) Safeguards Officer		NEA Site-Engineer and PSC's Social Expert, and Construction Contractor		PMO, affected persons, representative from Rural Municipality/Municipality, Site-Engineer, PSC's Social Expert. *If deemed necessary, representative from Forest Office, representative from Land Revenue Office, and representative from Land Survey Office are invited.*	
Days for Resolving Complain	7 days of receipt of a complaints/ grievance		15 days of complaints forwarded by Site-Engineer		15 days	
Committee Members	**Committee Member**	**Designation**	**Committee Member**	**Designation**	**Committee Member**	**Designation**
	Ward Chair	Coordinator	Project Manager	Coordinator	Chief District Officer (CDO)	Chair
	Site-Engineer-NEA	Member secretary	Site-Engineer	Member Secretary	Project Manager	Coordinator
	Community Liaison Officer from PSC	Member	Mayor/ Chair of municipality	Member	Site-Engineer	Member Secretary
	Contractor engineer	Member	Community Relations Manager from PSC	Member	Municipality Chief/Ward Chair	Member
	Affected person (one male and one female)	Member	Contractor Engineer	Member	Community Relations Manager from PSC	Member
	Women Member of ward committee	Member	Representative from affected people (at least 2, one male and one female)	Members	Contractor Engineer	Member
	One IP member	Member	Women Member of	Member	Representatives from	Members

Provisions	Levels of Grievance Redress Mechanism					
	First Level (Tier-I)		Second Level (Tier-II)		Third Level (Tier-III)	
	(if IPs are affected)		Municipality committee		affected people (at least 2, one male and one female)	
			One IP member (if IPs are affected)	Member	Women Member of Municipality committee	Member
					One IP member (if IPs are affected)	Member

Figure 3-10: Workflow Diagram for GRM from NEA[10]



* Affected People (AP) have the right to refer the grievances to appropriate courts of law if not satisfied with the redress at any stage of the process i.e., the AP will have the choice to approach country's judicial system.

[10] *Grievance Redress Mechanism (GRM) Prepared for the sub-projects financed by European Investment Bank (EIB) under Distribution System Upgrade and Expansion Project (DSUEP), Nepal Electricity Authority (NEA), August 2021.*

3.7 Compliance with Environmental Laws and Regulations

During the ESMP report preparatory phase, different legal instruments (constitution, acts, policy, plan, rules and international conventions/agreements) have been reviewed. Key provisions of those legal documents that might be relevant to this project have been summarized in tabulated form and given in ANNEX 9, which will guide the NEA, EIB, consultant and the construction contractor to effectively and efficiently implement ESMP maintaining the international and national standard.

4. MONITORING AND REPORTING MECHANISM

4.1 Environmental and Social Monitoring

Environmental and Social Monitoring (ESM) is undertaken to collect data/information of the Subproject environment and social aspect to assess the compliance concerning regularity standards, planning documents, and effectiveness of the implementation of Environmental and Social Protection Measures recommended in ESMP. It involves the assessment of physical, biological, and socioeconomic, and cultural variables associated with activities, and stages. To ensure effective implementation of ESMP, PIU/NEA (DSUEP) and Project Supervision Consultant (PSC) will be responsible for undertaking monitoring the Subproject.

The main objectives of the environmental monitoring plan are listed below,

- To ensure that the Subproject baseline conditions were adequately documented such that a comparative evaluation of the Subproject baseline before, and after commencement of the Subproject could be made precisely for impact evaluation.
- To ensure that the mitigation commitments by the NEA for the minimization of adverse impacts, and enhance the beneficial impacts, and the mitigation measures, and enhancement program are complied, and implemented in time, and with sincerity.
- To confirm that the Subproject impacts are within the limits of the impact prediction or not, and to minimize unpredicted impacts that occurred during Subproject construction and operation.

Table 4-12: Environmental Monitoring Plan[11]

SN	Environmental Component	Indicators	Monitoring Methods	Location	Schedule	Responsibility
1.	Budget allocation for implementation of mitigation measures	Budget heading and amount in figures in contract documents	Review of Subproject documents, and records, and inquires with Subproject staff	-	Once pre-construction	NEA/PIU (DSUEP)
2.	Employment for Locals	Job placement ToR, notice of vacancies published in local media/notice board	Appointment document, and job announcement	Project area	Once, after vacancy announcement	Construction Contractor/ NEA/PIU (DSUEP)
Physical Environment						
1.	Alteration of Land	Demarcation of land for substation	Field observation, Meeting minutes with stakeholders	Substation area	Early Subproject Implementation Phase	Construction Contractor under the supervision of PIU Safeguard Officers/Local Level
2.	Stability and Erosion Issues	Backfilling in excavated part after construction, subsidence/sliding and erosional evidence, damages to adjoining entities, pit hole and its foundation materials compaction, design and working framework	Direct Site Inspection and records	Project area	Early Subproject Implementation Phase and Monthly	Construction Contractor under the supervision of PIU Technical Team
3.	Spoil Management	Excavation and filling as per design, compaction and watering facility	Observation, records and contract documents	Construction site	Early Subproject Implementation Phase and Monthly	Construction Contractor under the supervision of PIU Safeguard Officers
4.	Air quality	Emission and Dust around Subproject area, Foul smell, suspended particulate matter, State of vehicles used	Observation, and taking records for spraying water and vehicle log book of maintenance work	Construction site	Quarterly	Construction Contractor under the supervision of PIU Safeguard

[11] *Nepal Electricity Authority 2019: Environment and Social Management Framework (ESMF) for Distribution System Upgrade & Expansion Project (DSUEP), Kathmandu.*

SN	Environmental Component	Indicators	Monitoring Methods	Location	Schedule	Responsibility
						Officers
5.	Noise pollution	Noise level dB(A) of Construction vehicles and construction schedule	Observation, and measurement using digital sound meter	Construction site	Quarterly	Construction Contractor under the supervision of PIU Safeguard Officers
6.	Solid Waste Management	Solid waste segregation, collection and management mechanism, adherence to waste management practices	Direct Site Observation and practices	Construction site	Quarterly	Construction Contractor under the supervision of PIU Safeguard Officers
7.	Electric, and Fire Hazard	Evidence of workforce skill development training, installation of warning signs, electrical, mechanical insulation, and guarding system	Incident Record, and Direct Site Inspection	Construction site	Daily	NEA
Biological Environment						
1.	Habitat Loss	Not Applicable				Construction Contractor
2.	Bird Collision	Preventive measures included Subproject infrastructure, incidence of an accident, and causes	Carcasses count to test the efficacy of preventative measures	Project area	Every 3 Month[12]	NEA
Social, and Cultural Environment						
1.	Subproject's Assistance	Number of owners/users received assistance from NEA and people's active participation during training program	Notice from NEA/PIU for a call to users to receive assistance (crop loss and additional assistance) and associated documents, training proposal, training minutes/attendances, receipts, photographs, visual evidences	Subproject Area	Before and during construction phase	NEA/PIU and PSC

[12] *Bennun, L., van Bochove, J., Ng, C., Fletcher, C., Wilson, D., Phair, N., Carbone, G. (2021). Mitigating biodiversity impacts associated with solar, and wind energy development. Guidelines for project developers. Gland, Switzerland: IUCN, and Cambridge, UK: The Biodiversity Consultancy. (https://portals.iucn.org/library/sites/library/files/documents/2021-004-En.pdf)*

SN	Environmental Component	Indicators	Monitoring Methods	Location	Schedule	Responsibility
2.	Workers, Labor Camp Location, and Management	Number of workers from Subproject area, and its surrounding settlement, Basic facilities within the camps as suggested in ESMP, and Inclusiveness of marginalized, and indigenous groups people as workers	FGD with local people, Direct Site Inspection and verification	Project area	Weekly during construction; Monthly during operation	Construction Contractor
3.	Child, and Gender issues	Engagement of child in any form (direct/indirect or on/off-site), wage discrimination among male, and female workers, basic facilities for females as per recommended in ESMP, psychological, and physical assault evidence (recorded/verbal complain)	Direct Site Observation, Direct Consultation with the (Female) workers, Consultation with local people nearby the Subproject area,	Construction site	Weekly/Daily as per nature of indicator	Construction Contractor under the supervision of PIU Safeguard Officers
4.	Occupational Hazard and Safety	No. of toolbox talk/ safety orientation to workers, No. of accidents registered, use of the personal protective instrument by the workers	Direct Site Observation, Official records	Construction site	Daily during construction, Monthly during operation	Construction Contractor under the supervision of PIU Safeguard Officers
5.	Grievance Redressing Mechanisms	Committee formation records, GRC Meeting minutes, issue settlement records on the campsite, Gender, social, and others associated with Project.	Review of official records of GRC	Project area	Monthly	Construction Contractor under the supervision of PIU/PSC

4.2 ESMP Implementation and Monitoring Cost

The cost estimates for the ESMP are shown in Table 4-13. These estimates cover the basic monitoring activities and the mitigation measures to be complied from the contractor's side. The ESMP cost estimated for this Subproject is NRs 26,31,344.00.

Table 4-13: ESMP Implementation and Monitoring Cost

SN	Budget Items	Estimated Lump Sum Amount for Monitoring (NRs)
1	**Compliance with Environment Plan**	**2,00,000.00**
1.1	Air Pollution Monitoring *(at Substation)*	1,50,000.00
1.2	Noise Pollution Monitoring *(at Substation)*	50,000.00
2	**Mitigation Measures and Compliance to EHS Plan**	**5,50,000.00**
2.1	Sprinkling of water, covering during transportation and proper storage of construction material	3,00,000.00
2.2	Segregation and management of Solid Waste	1,00,000.00
2.3	EHS Awareness raising trainings to the labors	1,50,000.00
3	**Meeting of Safeguard Desk and Grievance Redress Committee at Field Level**	**3,50,000.00**
4	**Income Restoration Activities** *(Skill Development Training)*	**15,00,000.00**
5	**Crop Loss Compensation along Distribution Line**	**31,344.00**
Total		**26,31,344.00**

5. CONCLUSION

Potential environmental impacts of the Subproject are not diverse, mainly relating to construction, and are all site-specific being confined to the Core Project Area i.e., within the substation area. Civil works will cause temporary impacts on air, noise, crop losses along distribution line, and occupational and community health and safety. Key impacts during operation and maintenance include safety risks related to the presence of electricity infrastructure and associated risks at the substation. The potential environmental impacts of the Subproject are identified and are mitigated through adherence to national requirements and international good practice measures and standards as specifically recommended in ESMP and DDR. The implementation of ESMP and DDR is to be supervised and monitored by PIU, supported by Project Supervision Consultant. The total ESMP and DDR cost estimated for this Subproject is NRs. 26,31,344.00. This ESMP along with DDR is considered sufficient to meet the environmental and social requirements for the Subproject at present design conditions.

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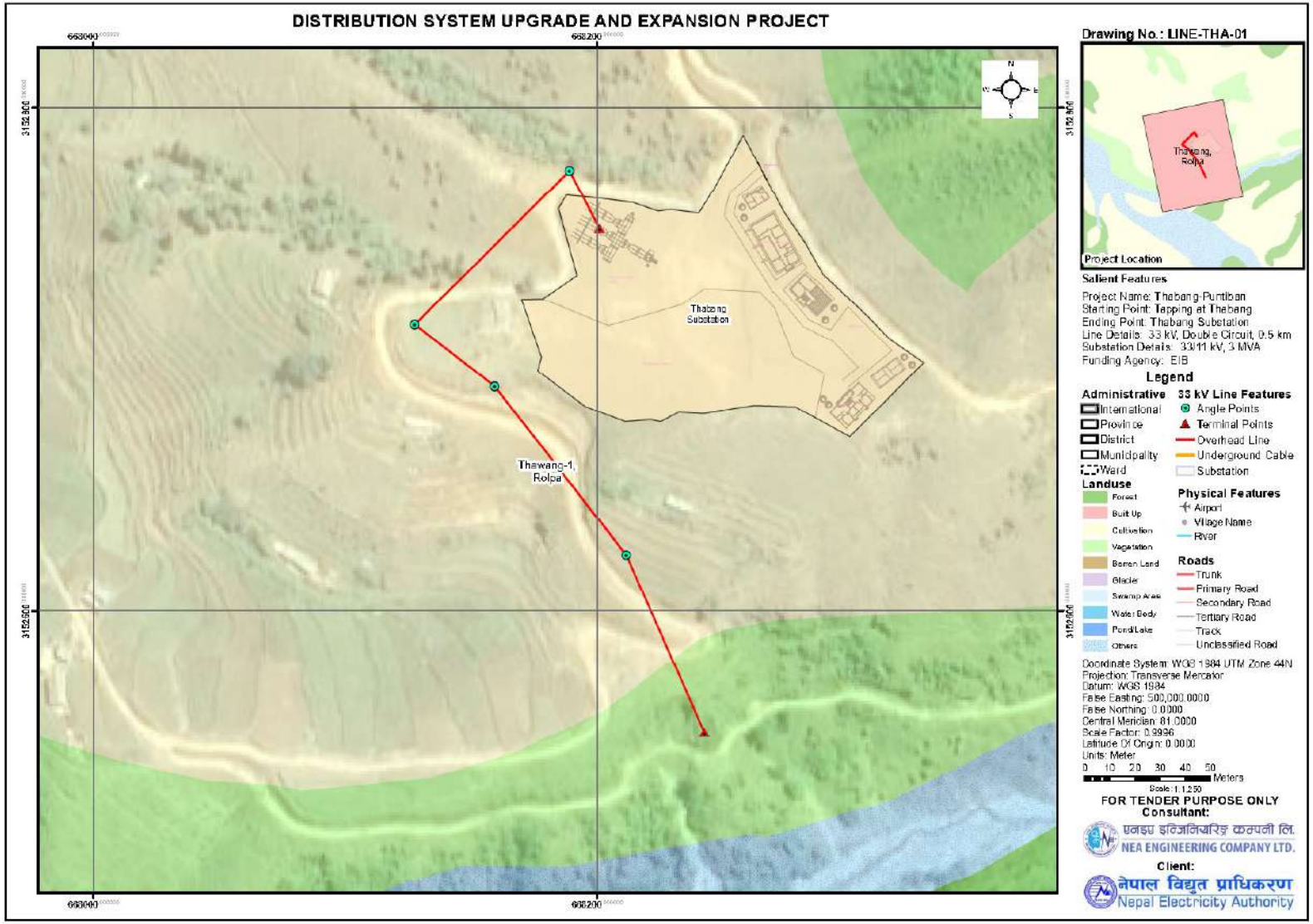
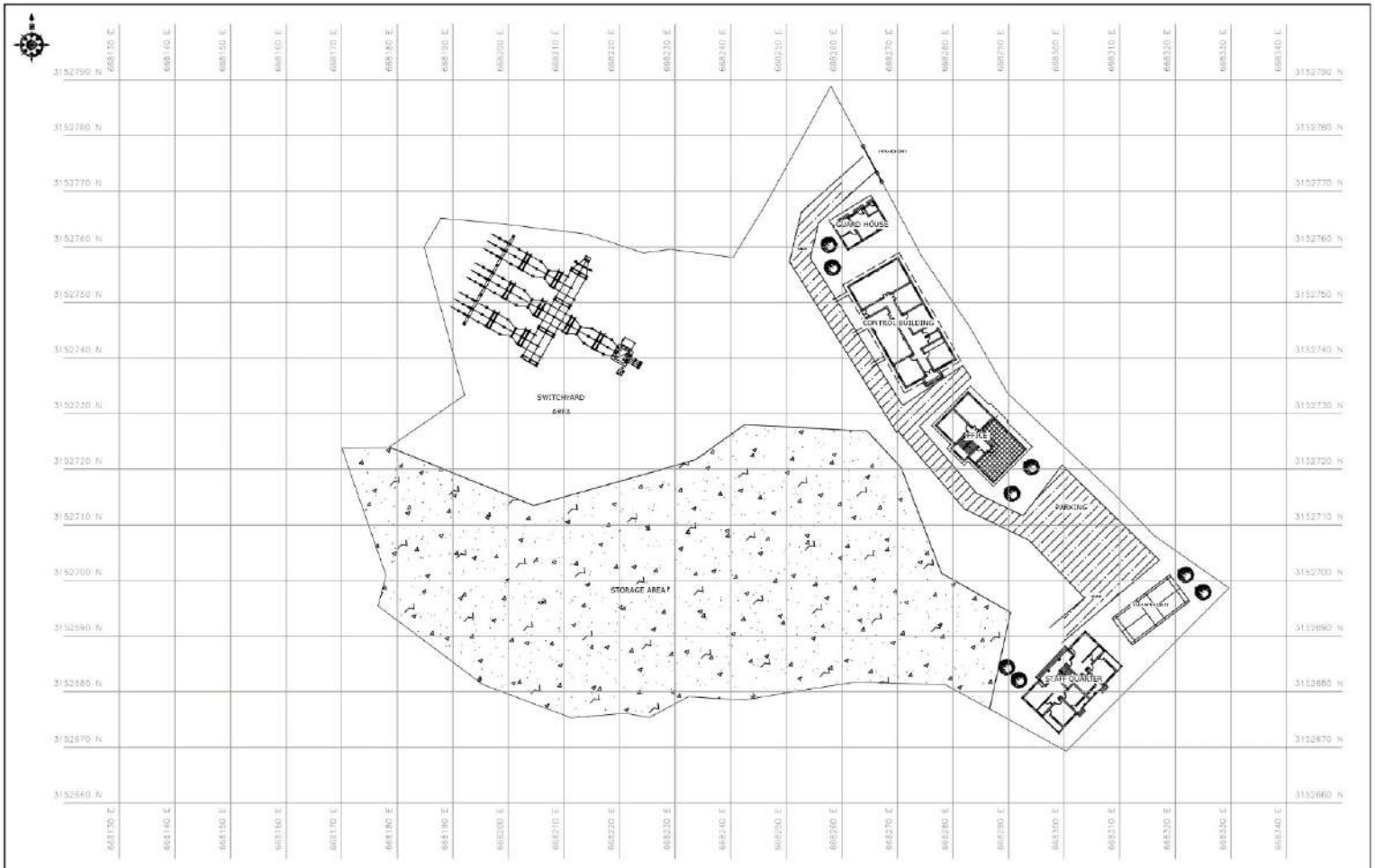
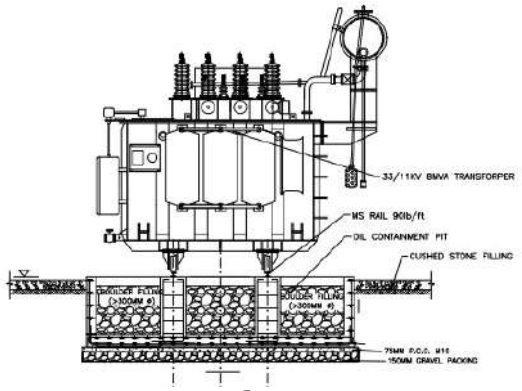
ANNEXES

ANNEX 1: MAP, LAYOUT, SUBSTATION COMPONENTS AND PHOTOGRAPHS OF ANCILLIARY FACILITIES

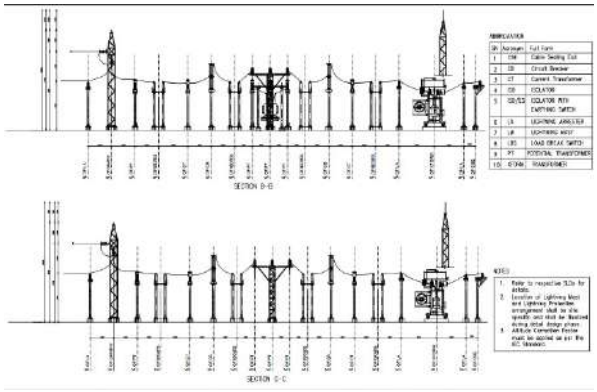




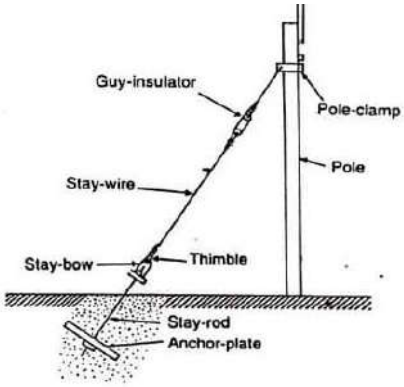
CLIENT NEPAL ELECTRICITY AUTHORITY DISTRIBUTION AND CONSUMER SERVICES DIRECTORATE DISTRIBUTION SYSTEM UPGRADE AND EXPANSION PROJECT DURBARMARGA, KATHMANDU, NEPAL	CONSULTANT N.E.A. ENGINEERING COMPANY LTD. TRADE TOWER,THAPATHALI KATHMANDU, NEPAL	PROJECT DISTRIBUTION SYSTEM UPGRADE AND EXPANSION PROJECT FOR TENDER PURPOSE ONLY NOT IN SCALE	DRAWN DRAFTING CHECK APPROVED	DESIGNED DESIGN CHECK DRAWING NO. SS-THA-01	TITLE 33/11 kV SUBSTATION LAYOUT FOR SUBSTATION



Transformer

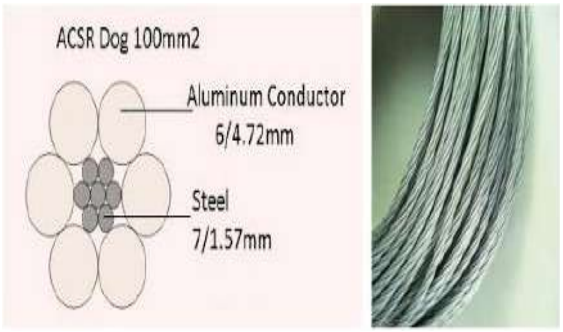


Switch Yard



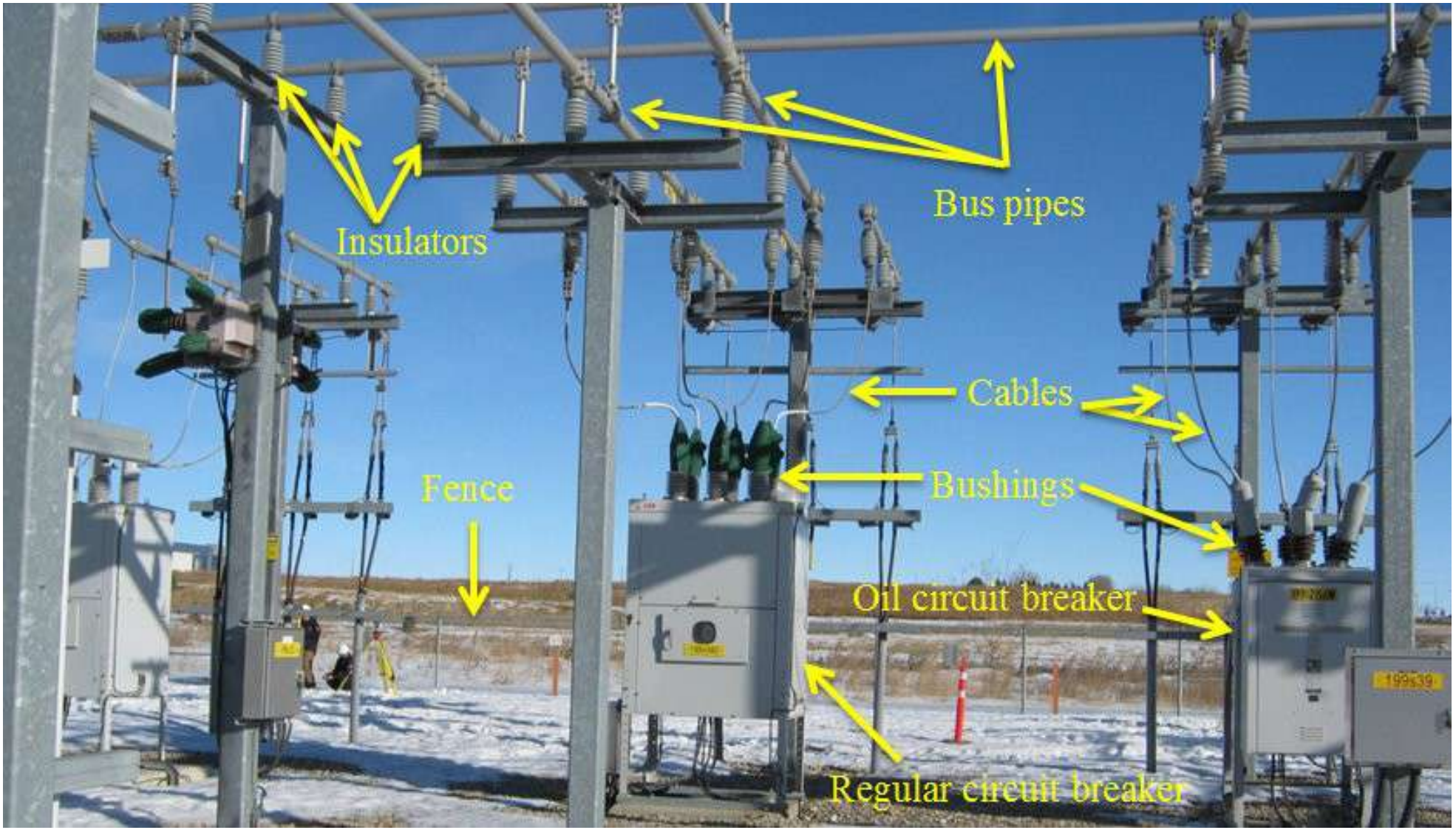
Stay/Guy Sets

Pin Insulator



ACSR DOG Conductor

Typical Diagram of Control Building, Office Building, Staff Quarter and Guard House



Component Location within 33kV Substation

Bird Diverting Reflector

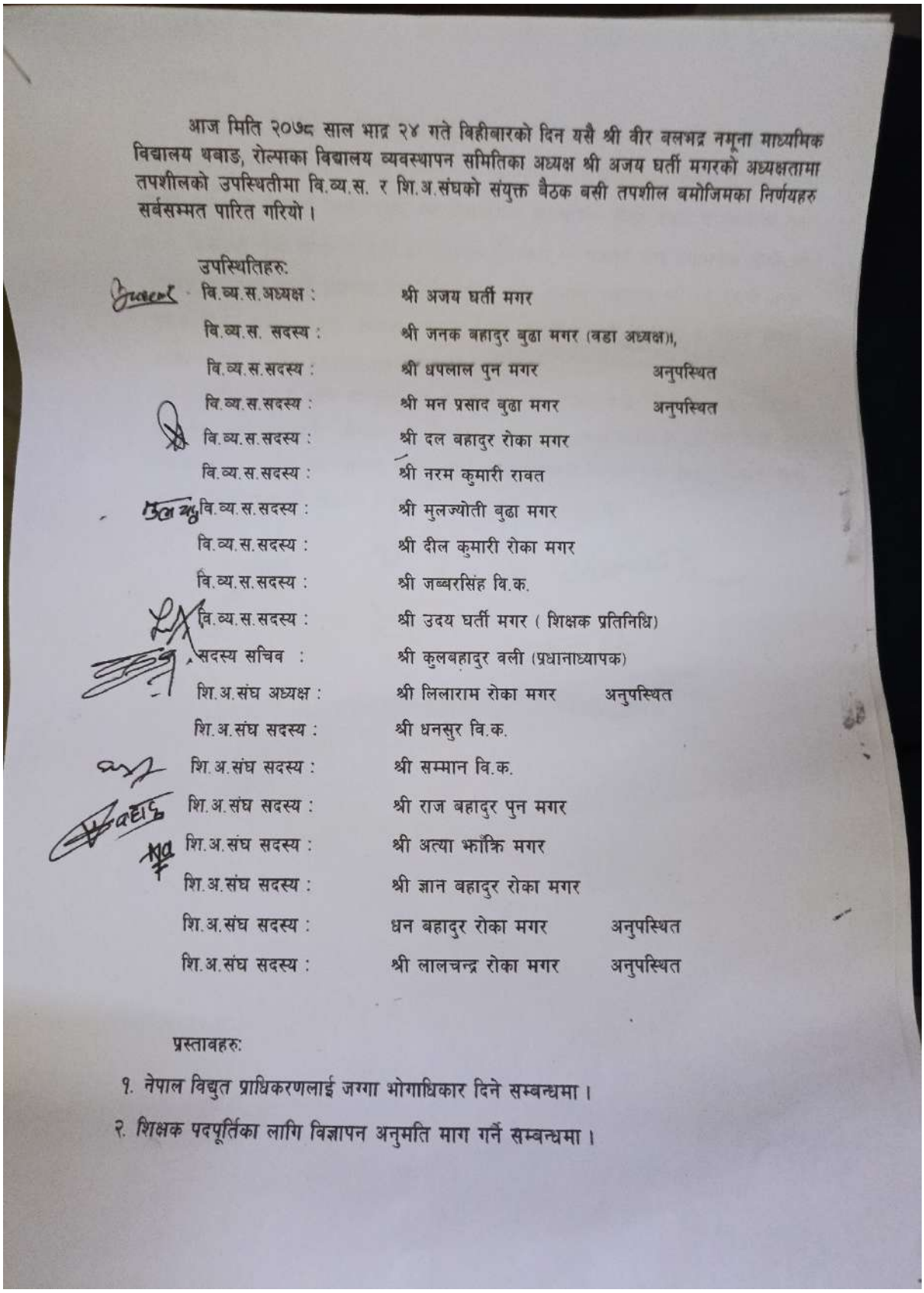
Wishbone Prevents Birds Landing on Wire

White Spiral in Wire Improves Visibility of Wire

Construction of Nest at Poles also divert Brid not sitting at Wires

Components Used for Preventing Birds from Collision in Distribution Line

ANNEX 2: CERTIFICATE OF LAND OWNERSHIP



आज मिति २०७८ साल भाद्र २४ गते विहीबारको दिन यसै श्री वीर बलभद्र नमूना माध्यमिक विद्यालय थवाङ, रोल्पाका विद्यालय व्यवस्थापन समितिका अध्यक्ष श्री अजय घर्ती मगरको अध्यक्षतामा तपशीलको उपस्थितीमा वि.व्य.स. र शि.अ.संघको संयुक्त बैठक बसी तपशील बमोजिमका निर्णयहरु सर्वसम्मत पारित गरियो।

उपस्थितिहरु:

वि.व्य.स.अध्यक्ष :	श्री अजय घर्ती मगर	
वि.व्य.स. सदस्य :	श्री जनक बहादुर बुढा मगर (बडा अध्यक्ष)।	
वि.व्य.स.सदस्य :	श्री धपलाल पुन मगर	अनुपस्थित
वि.व्य.स.सदस्य :	श्री मन प्रसाद बुढा मगर	अनुपस्थित
वि.व्य.स.सदस्य :	श्री दल बहादुर रोका मगर	
वि.व्य.स.सदस्य :	श्री नरम कुमारी रावत	
वि.व्य.स.सदस्य :	श्री मुलज्योती बुढा मगर	
वि.व्य.स.सदस्य :	श्री दील कुमारी रोका मगर	
वि.व्य.स.सदस्य :	श्री जब्बरसिंह वि.क.	
वि.व्य.स.सदस्य :	श्री उदय घर्ती मगर (शिक्षक प्रतिनिधि)	
सदस्य सचिव :	श्री कुलबहादुर वली (प्रधानाध्यापक)	
शि.अ.संघ अध्यक्ष :	श्री लिलाराम रोका मगर	अनुपस्थित
शि.अ.संघ सदस्य :	श्री धनसुर वि.क.	
शि.अ.संघ सदस्य :	श्री सम्मान वि.क.	
शि.अ.संघ सदस्य :	श्री राज बहादुर पुन मगर	
शि.अ.संघ सदस्य :	श्री अत्या झाँक्रि मगर	
शि.अ.संघ सदस्य :	श्री ज्ञान बहादुर रोका मगर	
शि.अ.संघ सदस्य :	धन बहादुर रोका मगर	अनुपस्थित
शि.अ.संघ सदस्य :	श्री लालचन्द्र रोका मगर	अनुपस्थित

प्रस्तावहरु:

१. नेपाल विद्युत प्राधिकरणलाई जग्गा भोगाधिकार दिने सम्बन्धमा।

२. शिक्षक पदपूर्तिका लागि विज्ञापन अनुमति माग गर्ने सम्बन्धमा।

निर्णयहरु :

प्रस्ताव नं. १ माथि छलफल गर्दा, नेपाल विद्युत प्राधिकरणले यो क्षेत्रमा केन्द्रिय लाईन विस्तार गर्न सवस्टेशन निर्माणका लागि मिति २०७८ भदौ १८ गतेका दिन थबाङ गाउँपालिकाको कार्यालयमा भएको सर्वपक्षिय बैठकको निर्णयानुसार यस विद्यालयको स्वामित्वमा रहेको थबाङ गाउँपालिका वडा नं. १, बिबाङमा रहेको कित्ता नं. २१४ को ४७०२० वर्ग मिटर क्षेत्रफलबाट हाल संचालनमा रहेको श्री जनचक्षु प्रा.वि.को पुरानो भवनको उत्तरपूर्वमा रहेको सम्म भागको आवश्यक पर्ने १५ रोपनी जग्गा नेपाल विद्युत प्राधिकरणलाई उपलब्ध गराउने निर्णय गरियो । साथै विद्यालय र नेपाल विद्युत प्राधिकरणवीच द्विपक्षीय सम्झौता गर्ने निर्णय समेत गरियो ।

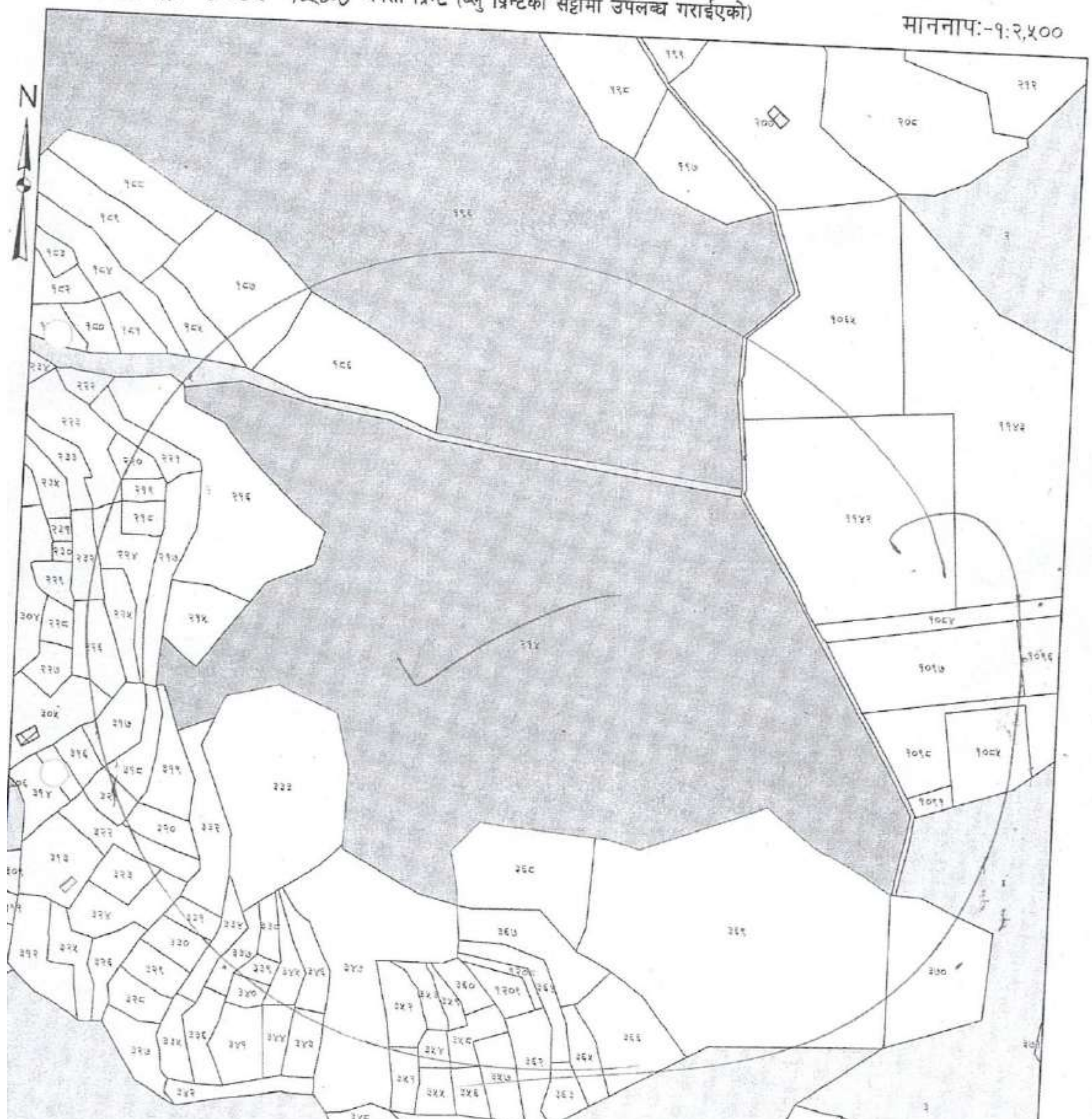
प्रस्ताव नं. २ माथि छलफल गर्दा, माध्यामिक तह, तृतीय श्रेणी अँग्रेजी विषयको स्विकृत दरबन्दीमा कार्यरत स्थायी शिक्षक श्री मोहनलाल नेपालीको सरुवा भएकोमा सो पद रिक्त हुन गएकोले करार शिक्षक पद पुर्तीका लागि थबाङ गाउँपालिकाको सिफारिसमा शिक्षा विकास तथा समन्वय ईकाई रोल्पाबाट विज्ञापन अनुमति माग गर्ने भनी निर्णय गरियो ।

नापी विभाग

नापी कार्यालय घर्तीगाउँ

जिल्ला:-रोल्पा गा.वि.स.:- थवाङ वार्ड नं.:- ०२ फा.न. नं.:- —

सिट नं.:- ०८४-१५०० नक्सा प्रिन्ट (ब्लु प्रिन्टको सट्टामा उपलब्ध गराईएको) माननाप:-१:२,५००



नेपाल विद्युत प्राधिकरणको मिति २०६८/०६/१५को पत्रानुसार वाट राजश्व लिई कम्प्युटर प्रिन्ट तयार गरिएको ।

जिल्ला- रोल्पा
गा० वि०स० - थवाङ
वा नं. - २
वे.नं. - २१४

श्री नेपाल विद्युत प्राधिकरण विद्युत प्रणाली स्तरोन्नति तथा विस्तार आयोजना दरबार मार्ग काठमाण्डौको च.नं. ४६ मिति २०६८।३।१९ को प्राप्त पत्रअनुसार उल्लेखित कि.नं. २१४ को हुबहु प्रतिलिपि उपलब्ध गराएको व्यहोरा अनुरोध छ।

२१६				श्री विर बल गड्ड मा० वि० वडा नं-४ थवाङ रोल्पा थवाङ	४	२१६	x	३६८	३.६०.२०

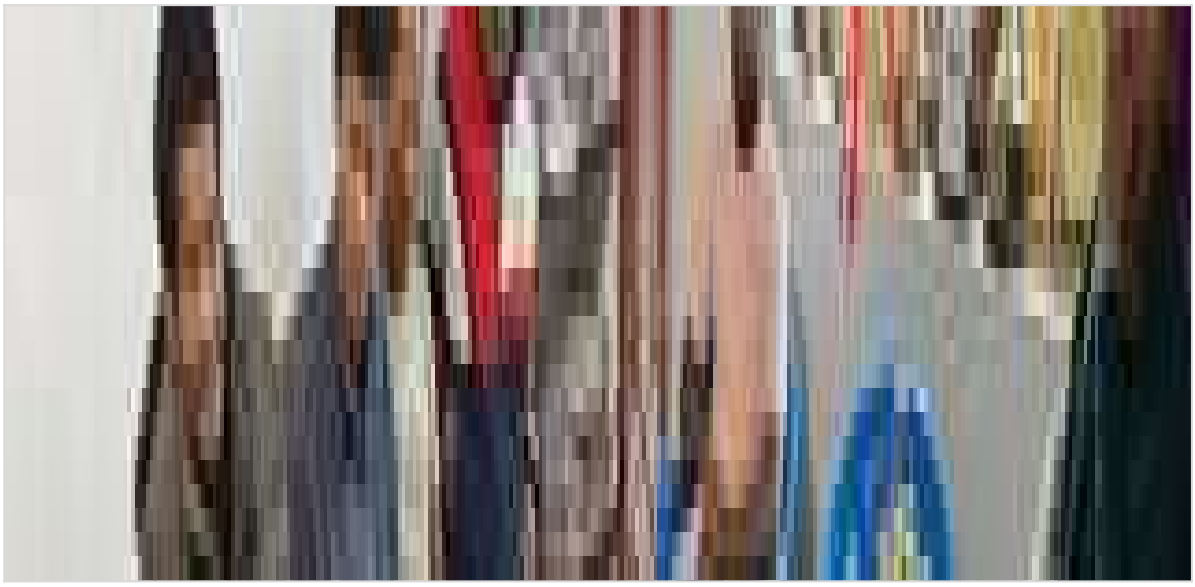
उतार गर्ने

प्रमाणित गर्ने
नि.कार्यालय प्रमुख

ANNEX 3: FIELD VISIT PHOTOGRAPHS

South Facing Substation at Bibang, Thabang RM-1

Notice Pasting at Thabang Rural Municipality Office and Tapping Point



Stakeholders during Public Consultation Meeting at Thabang RM Office, Rolpa

Focus Group Discussion Meeting at Thabang RM Meeting Hall, Thabang, Rolpa

ANNEX 4: NOTICE FOR PUBLIC CONSULTATION

नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

फ्याक्स: ०१-४१५३१४४
फोन नं: ०१-४१५३१४५
दरबारमार्ग, काठमाण्डौं।

नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजनाको वातावरणीय तथा सामाजिक अध्ययन प्रतिवेदन तयारी सम्बन्धि सूचना

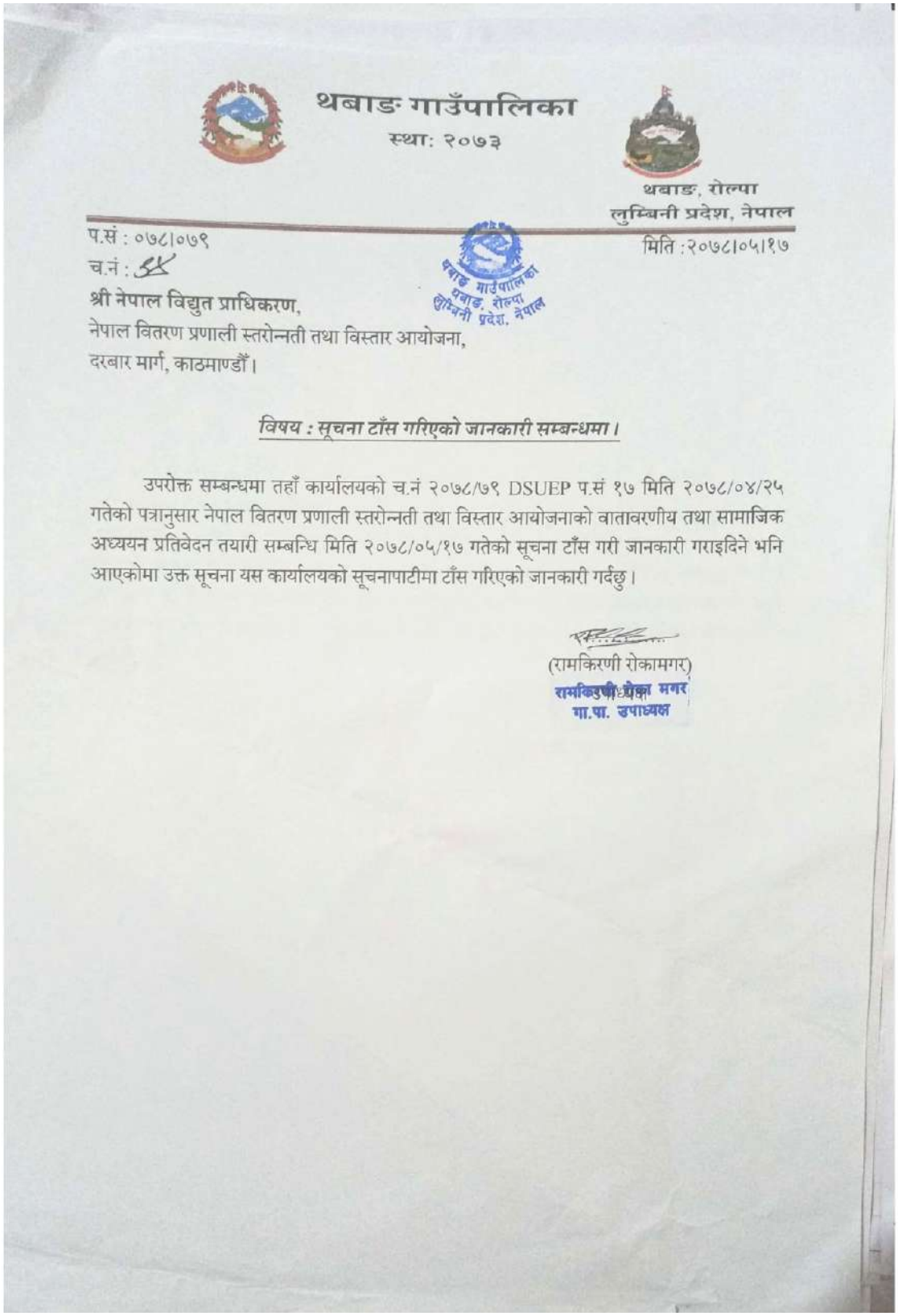
सूचना प्रकाशन मिति: २०८१।०५।१७

सुर्खेत प्रदेश रोल्पा जिल्ला
भवाङ (नगरपालिका/गाउँपालिका/महानगरपालिका/उपमहानगरपालिका)
मा यूरोपियन इन्भेस्टमेन्ट बैंकको ऋण सहयोग भएको नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना प्रस्तावक रही कार्यान्वयन गर्न लागिएको भवाङ-पुर्तिखर विद्युत वितरण लाईन आयोजना कार्यान्वायन हुनुभन्दा अघि सो आयोजनाले त्यस क्षेत्रको वातावरण तथा सामाजिक पक्षहरुमा के-कस्तो प्रभाव पार्दछ भनि स्थानीय सरोकारवालाहरु सँग छलफल गर्न आयोजना क्षेत्रका सम्पूर्ण सबै सरोकारवालाहरुको निम्न स्थान तथा समय उपस्थितिका लागि यो सूचना प्रकाशित गरिएको छ।

सार्वजनिक छलफल हुने स्थान, मिति र समय:

स्थान: भवाङ गाउँपालिका, कार्यालय, भवाङ
मिति: २०८१।०५।१८
समय: दिउँसो १:०० बजे

ANNEX 5: PROOF OF PUBLIC NOTICE PASTING



थबाङ गाउँपालिका
स्था: २०७३

थबाङ, रोल्पा
लुम्बिनी प्रदेश, नेपाल

प.सं : ०७८।०७९
च.नं : ४४

मिति :२०७८।०५।१७

श्री नेपाल विद्युत प्राधिकरण,
नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना,
दरबार मार्ग, काठमाण्डौं।

विषय : सूचना टाँस गरिएको जानकारी सम्बन्धमा।

उपरोक्त सम्बन्धमा तहाँ कार्यालयको च.नं २०७८/७९ DSUEP प.सं १७ मिति २०७८/०४/२५ गतेको पत्रानुसार नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजनाको वातावरणीय तथा सामाजिक अध्ययन प्रतिवेदन तयारी सम्बन्धि मिति २०७८/०५/१७ गतेको सूचना टाँस गरी जानकारी गराइदिने भनि आएकोमा उक्त सूचना यस कार्यालयको सूचनापाटीमा टाँस गरिएको जानकारी गर्दछु।

(रामकिरणी रोकामगर)
गा.पा. उपाध्यक्ष

थबाङ गाउँपालिका
१ न वडा कार्यालय

थबाङ, रोल्पा
लुम्बिनी प्रदेश, नेपाल

पसं ०७८/०७९
चनं 69

मिति २०७८/०५/१७

श्री नेपाल विधुत प्राधिकरण,
नेपाल वितरण प्रणालि स्तरोन्नती तथा विस्तार आयोजना,
दरवारमार्ग, काठमाण्डौं।

विषय : सुचना टाँस गरिएको सम्बन्धमा।

प्रस्तुत विषयमा तहाँ कार्यलयको च.न. २०७८/७९ DSUEP प.स.१७ मिति २०७८/०४/२५ गतेको पत्रानुसार नेपाल वितरण प्रणालि स्तरोन्नती तथा विस्तार आयोजनको वातावरणिय तथा सामाजिक अध्ययन प्रतिवेदन तयारी सम्बन्धी मिति २०७८/५/१७ गतेको सुचना टाँस गरी जानकारी गरिदिने भनि आयकोमा उक्त सूचना यस कार्यलयमा टाँस गरिएको जानकारी गर्दछु।

.....
निरज लामीछाने
वडा सचिव
वडा सचिव

ANNEX 6: CONSULTATION MEETING MINUTES AND LETTERS

दर्ता नं. १०४५

अथार मगरात मगर खाम तथा संस्कृति संरक्षण विकास मञ्च

शाखा कार्यालय थबाङ, रोल्पा

स्था. २०७२

प.सं. २०७८/७९ मिति :- २०७८/०९/११

च.नं. ६

श्री नेपाल विद्युत प्राधिकरण, वितरण प्रणाली सुदृढीकरण तथा विस्तार आयोजना
दरबार मार्ग, काठमाडौं ।

विषय :- जानकारी सम्बन्धमा ।

उल्लेखित विषयमा तहाँ कार्यालयबाट थबाङ गाप्रा-वडा नं. १ मा निर्माण हुन गईरहेको ३३/११ को सवस्टेशन तथा ३३ केभि. लाईन विस्तार गर्दा, स्थानिय* मगर खामभाषी समुदायको customary land, भाषा, संस्कृति तथा रितिरिवाजमा कुनै प्रकारका नकारात्मक प्रभाव नपर्ने व्यहोरा जानकारी गर्दछौं । साथै यस आयोजनामार्फत यस क्षेत्रमा विद्युत सेवा प्राप्त हुने हुँदा आयोजनाको शिघ्र निर्माणको अपेक्षा गर्दै स्थानीय समुदायको साथ सहयोग रहने प्रतिवद्धता व्यक्त गर्दछौं ।

* हामी जनजाति तथा अन्य सरोकारवालाहरुबीच दलदल हुँदा ?

दलबहादुर रोका मगर
अध्यक्ष

थबाङ गाउँपालिका

स्था: २०७३

थबाङ, रोल्पा
लुम्बिनी प्रदेश, नेपाल

प.सं : ०७८।०७९
मिति :२०७८।०५।१७
च.नं : ५५

श्री नेपाल विद्युत प्राधिकरण,
नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना,
दरबार मार्ग, काठमाण्डौँ।

विषय : जानकारी गराइएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा तहाँ कार्यालयको च.नं २०७८/७९ DSUEP प.सं २० मिति २०७८/०४/२९ गतेको पत्रबाट यस थबाङ गाउँपालिका वडा नं १ विवाङमा निर्माण हुने थबाङ-फुन्टिबाङ विद्युत वितरण आयोजनामा आदिवासी जनजाति तथा जोखिमयुक्त परिवारहरु भए नभएको भनि पत्रबाट माग भएको हुदाँ विवाङ क्षेत्रमा विद्युतको सव-स्टेशन निर्माण हुने सहायक आयोजनामा आदिवासी जनजाति तथा जोखिमयुक्त परिवारहरु नभएको, निर्माणाधिन आयोजनाबाट प्रभावित हुने परिवारहरुको बस्ती नभएको साथै उक्त निर्माण गरिने आयोजनामा जग्गामा विवाद रहित एवं हाल प्रयोग विहिन रहेको व्यहोरा जानकारीका लागि अनुरोध छ ।

(रामकिरणी रोकामगर)
गा.पा. उपाध्यक्ष

आज मिति २०८०/५/२४ गते नेपाल विद्युत प्राधिकरण वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजनाले रोल्पाको थवाङमा निर्माण गर्ने ३३/११ के.भी. सबस्टेशनको लागि आवश्यक हुने जग्गा उपलब्ध गराइने यस पूर्व सहमति भएको र यसै सम्बन्धमा थप छलफल गर्न श्री विरबल भट्ट नमुना मा.वि. थवाङ-को नाममा ~~[illegible]~~ रहेको जग्गा मध्ये सबस्टेशनलाई आवश्यक हुने जग्गा उपलब्ध गराइने विद्यालय व्यवस्थापन समिति र ने.वि.प्रा. को प्रतिनिधिहरु बिच तपसिल बमोजिमको उपस्थिति मा छलफल भई निम्नानुसार गर्ने निर्णय गरियो।

उपस्थिति

1) वि.व्य.स. अध्यक्ष श्री अजय घर्ती मगर
2) प्रधानाध्यापक श्री कुल बहादुर ओली
3) इन्जिनियर ने.वि.प्रा. श्री सुरज कुमार ढुङ्गेल
4) सं. प्रशासकीय अधिकृत श्री भुवन राज भट्ट
5) स. प्रधानाध्यापक श्री उदय घर्ती मगर
6) शि.अ. संघ अध्यक्ष श्री राज बहादुर बुढा

क्रमशः

६- श्री फूल ज्योती बुढा वि.व्य.स. सदस्य फुलज्योती

८. श्री धनपुर नि.की.लि.अ. डि.र्घ सदस्य [signature]

९. श्री सम्पूर्ण वि.ड. " [signature]

१०. श्री अत्या माक्की मगर " [signature]

११. श्री तेज माक्की स्थानीय बुद्धिजीवी तथा अभिभावक [signature]

१२. श्री दल की रोका वि.व्य.स. सदस्य [signature]

निर्णय नं. १

१) नेपाल विद्युत प्राधिकरणले निर्माण गर्ने थवाङ सबस्टेशन निर्माण गर्न श्री विरबल भट्ट नामना मी.वि. को नाममा रहेको कि.नं. २९४ साबिक थवाङ गा.वि.स. ८६०२० नं. २ हाल थवाङ गा.पा. वी.नं. १ मा रहेको (पक्का) मि प्रहरी ने.वि.प्रा. लाई आवश्यक १५ रोपनी जग्गा चलन भोग गर्न ने.वि.प्रा. लाई उपलब्ध गराइने।

निर्णय नं. 2

सामाजिक उत्तरदायीत्व अन्तर्गत नेपाल विद्युत [signature]

[signatures] क्रमशः [signatures]

प्राधिकरणले विद्यालय हाता भित्र रहेको खेल मैदान निर्माण गर्न माटो कटिङ, तथा आवश्यक पर्खाल निर्माण र फिलिङ, कार्य गरि दिने र सो को लागत अनुमान ५ (पाँच) लाखको हाराहारीमा हुने गरी निर्माण कार्य गर्न सहमति भयो।

निर्णय नं: ३

निर्माण कार्यका लागि छनोट हुने ठेकेदारले स्थानीय स्तरमा उपलब्ध हुने जनशक्तिलाई काममा लगाउन प्राथमिकता दिनु पर्ने सम्बन्धमा ने.वि.प्रा. ले ठेकेदार संग गर्ने सम्झौतामा उल्लेख गर्ने र ठेकेदारसंग समन्वय गरी स्थानीयस्तरमा उपलब्ध हुने जनशक्ति ठेकेदारलाई आवश्यकता भए अनुसार स्थानीय स्तरदै जनशक्ति लाई परिचालन गर्ने।

निर्णय नं. ४

निर्माण कार्यमा स्थानीयस्तरको भरपुर सहयोग रहने। कुनै किसिमको विवाद आएमा आपसी छलफल गरी निर्माण कार्य प्रभावित नहुने गरी समाधान खोज्ने।

आज मिति २०७८ भदौ १८ गते शुक्रवार रोल्पा जिल्ला थवाङ गाँउपालिकाको सभा हलमा नेपाल विद्युत प्राधिकरण वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत थवाङ - फुटिबाङ विद्युत वितरण लाईन आयोजना निर्माण पूर्व वातावरणीय तथा सामाजिक अध्ययन प्रतिवेदन तयारीका लागी NEA Engineering Company बाट खटिई आउनुभएका विज्ञ तथा हामी स्थानीय सरोकारवाला व्यक्तिको उपस्थितीमा देहाय विषयमा छलफल भयो।

उपस्थिती

क्र.सं	नाम	ठेगाना	फोन नं.	हस्ताक्षर
१.	रामकिरण रोका मगर	थवाङ गाँउपालिका, रोल्पा उपाध्यक्ष	९८१२८६२३३३	[signature]
२.	निरज लामिछाने	वडा सचिव, थवाङ गा.पा - १		[signature]
३.	अजय घर्ती	विद्यालय व्यवस्थापन समिति अध्यक्ष	९८४९८८४४९६	[signature]
४.	हित बहादुर रोका मगर	स्थानिय वडा-2	९८०९६०४४८३	[signature]
५.	अर्टे झाकरी	स्थानिय वडा-२	9847846868	[signature]
६.	नेत्र झाकरी	स्थानिय वडा-२	९८४६९५२८७६	[signature]
७.	अभिलाषा रोका मगर	स्थानिय वडा-२	का.व अध्यक्ष ९८६०२८०६४६	[signature]
८.	धनसुर वि क	स्थानिय वडा - १	९८०३३६६६९२	[signature]
९.	पञ्चे घर्ती	स्थानिय वडा - १		सम्भव घर्ति
१०.	औशील घर्ती	स्थानिय वडा - १	९८४८०६६८०६८	[signature]
११.	शुरे रोका	स्थानिय वडा - २		[signature]
१२	पुरनसु रोका	स्थानिय वडा-१	९८६३११९४३२	[signature]
१३.	सम्पूर्ण वि क	स्थानिय वडा- १	९८४४८३०६६६	[signature]
१४	उदय घर्ती मगर	नमुना मा. वि, शहायक प्र.अ वडा-४	९८४६८४४६२६	[signature]
१५	कुल बहादुर ओली	नमूना मा. वि. थवाङ प्र.अ.	९८६३०४४२६५०	[signature]
१६	रामकली वि.क	स्थानिय वडा - १		रामकलि
१७	जितु वि. क	स्थानिय वडा-१		जितु
१८	रामधन वि. क	स्थानिय वडा-१		[signature]
१९	राजन रोका	स्थानिय वडा-१		राजन रोका
२०	कारना सेकाबुढा	स्थानिय वडा-१	९८४३२००३४६	[signature]
२१	भागीरथ बुढा रोका	स्थानिय वडा-१		[signature]
२२	कमर रोका	स्थानिय वडा-१		[signature]

हिमाल्शु विश्वकर्मा — थलाङ गा.पा -१

२३ हित कुमार रोका — थलाङ गा.पा -१

२४ किरमुद बुढा — थलाङ गा.पा -१ — ९८० ९८० 85312

२५ मनप्रसाद बुढा — थलाङ गा.पा -१ — 9845283084

२६ सिद्ध बुढा — थलाङ गा.पा -१

२७ बिक्रम रोका — थलाङ गा.पा -१ — ८८४६८८४९४४

२८ धन कुमारी रोका — थलाङ गा.पा -२

२९ प्रेपन बघती — थलाङ गा.पा -१

३० जित कुमारी वि.क — थलाङ गा.पा -१ वडा सदस्य

३१ सुरेन्द्र — थलाङ गा.पा .१ — ८८४६३२८५९०

३२ दिवस अधिकारी — वातावरण विद्

३३ कृष्ण कार्की — समाजशास्त्री

३४

१) प्रस्तावित आयोजनाको बारेमा NEA Engineering company बाट आएका टोलीले सामाजिक, वातावरण विज्ञ द्वारा थलाङ -फुन्टिवाङ विद्युत वितरण लाईन आयोजनाको बारेमा जानकारी प्राप्त भयो।

२) शिपको आधारमा स्थानीय जनशक्तिलाई योजनाले प्राथमिकता दिनुपर्छ। यस क्षेत्रमा विद्युत आपूर्तिमा समस्या विद्युतीय सेवा नभएकोले यस

३) आयोजना यथासक्य छिटै पुऱ्याई छिट्टै विद्युतीय सेवा संचालन गर्नुपर्दछ।

४) प्रस्तावित सब स्टेसन क्षेत्र थलाङ गाउँपालिका वडा नं. १ अवस्थित श्री [illegible] नमुना मा.वि को स्वामित्वमा रहेको जग्गा विद्यालयले नेपाल विद्युत प्राधिकरण, थलाङ - फुन्टिवाङ विद्युत लाईन आयोजनालाई भोग अधिकार दिन सहमत छौं साथै सो जग्गा खुल्ला स्थान तथा अन्य उपयोगमा प्रयोग नभएकाले आयोजनले उपयोग गर्दा कुनै समस्या नपर्ने व्यहोरा जानकारी गराउछौं।

५) आयोजना निर्माण गर्दा उत्सर्जन हुने फोहोर मैलाको व्यवस्थापन स्वयं आयोजनाले गर्नु पर्ने छ।

६) आयोजना निर्माण स्थल नजिकका खेलकुद क्लबलाई खेलकुद सामाग्रीको वितरणका साथै स्थानीयलाई शिपमुलक तालीमको व्यवस्था आयोजनाले मिलाउनु पर्ने छ।

७) थलाङ - फुन्टिवाङ विद्युत लाईन निर्माण गर्दा हामी स्थानियवासीको पूर्ण सहयोग समर्थन रहने प्रतिवद्धता गर्दछौं।

6. आयोजनाको तर्फबाट आर्थिक/सामाजिक उत्तरदायित्व शीर्षक अन्तर्गत विद्यालयलाई गरिने सहयोग पनि गाउँपालिकाको रोहबरमा द्विपक्षीय सम्झौतामा उल्लेख गर्ने निर्णय गरियो ।

DATE:

आज मिती २०७८ पौष १०गते नेपाल विद्युत प्राधिकरण "वितरण प्रणाली सुदृढीकरण तथा विस्तार आयोजना (DSUEP) अन्तरगत थवाङ गाउँपालिका वडा नं. १ मा निर्माण हुने सबस्टेसन तथा ३३ के.भि. लाइन विस्तार का क्रममा आयोजना निर्माण तथा सञ्चालन का क्रममा आयोजनाबाट स्थानिय जनजाती समुदायमा पर्न सक्ने प्रभाव खासगरी मगर खामभाषी समुदाय को Customary System, Rituals Language तथा अन्य प्रथा संस्कृति का विषयमा सम्बन्धीत समुदाय का व्यक्ति हरु को उपस्थितीमा छलफल तथा (आयोजनाको विषयमा) सुझाव प्राप्त गरियो।

उपस्थिती

१- श्री अजय घर्ति मगर - वि.व्या.स.अध्यक्ष श्री कालभद्र नमुना मा.वि. थवाङ - १
२- श्री धनेश्वर वि.क. - सदस्य " " थवाङ -१
३- श्री दल बहादुर रोका - मगर कला संरक्षण भवन थवाङ (संयोजक) - थवाङ -१
४- श्री व्यापक बुढा मगर - मगर समुदाय का प्रतिनीधि स्थानिय सरोकारवाला थवाङ -२
५- श्री अमित घर्ति मगर - " तथा पूर्व वि.व्या.स.सदस्य थवाङ -१
६- श्री त्रिभुवन बुढा मगर - " थवाङ १
७- श्री - उदय घर्ति मगर - "
८- श्री हिमाम्शु वि.क. - स्थानिय सरोकारवाला थवाङ -१
९- श्री चन्द्र बहादुर रोका - मगर समुदाय स्थानिय सरोकारवाला "
१० श्री लोक बहादुर बुढा - " " "
११- श्री सुरज ढुंगेल - इन्जिनियर NEA
१२- सुवास चन्द्र घिमिरे - समाजशास्त्री NEA-EG.
१३- श्रीमती जित कुमारी वि.के - स्थानिय सरोकारवाला वडासदस्य थवाङ -१

छलफल मा उठेका विषयवस्तुहरु

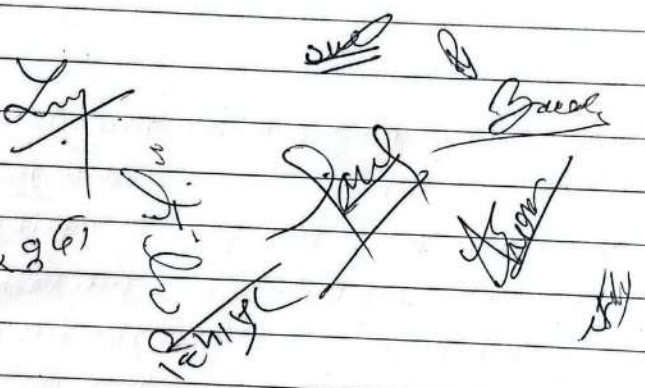
उल्लेखित उपस्थितीमा देहाय बमोजीमका विषयमा छलफल भई सुझाव तथा सहमति प्राप्त भयो -

१- आयोजनाको बारेमा आयोजनाका प्रतिनिधी बाट आयोजनाबारेमा मौखिक तथा लिखित Document मार्फत पुर्ण रुपमा जानकारी प्राप्त भयो।
२- यस आयोजना को सबस्टेसन श्री कालभद्र नमुना मा.वि थवाङ को नाममा दर्ता श्रेस्ता रहेको जग्गा मा स्कूलबाट भोगचलन गर्न सहमति भएको व्यहोरा जानकारी गराउँछौं।

DATE:

३- आयोजनाबाट ~~कसै~~ स्थानिय जनजा त्रिलाई पर्न सक्ने असरको बारेमा छलफल गर्दा आयोजना निर्माण तथा संचालन गर्दा स्थानिय मगरआदि समुदायको customary land/ culture/ religion तथा rituals मा कुन प्रकारको नकारात्मक प्रभाव नपर्ने भएको जानकारी गराउने।

४- आयोजना निर्माणमा स्थानिय मगरआदि समुदायको पूर्ण समर्थन र सहयोग रहने कुरा जानकारी गराउने।



ANNEX 7: OUTLINE OF ENVIRONMENTAL, HEALTH AND SAFETY PLAN

Chapter 1: Project Overview
- 1.1 Scope of the document
- 2.2 Overview of health and safety features
- 2.3 Project Health, Safety, and Environmental Goals & Objectives

Chapter 2: Safety policy of the Project
- 2.1 Safety policy statement
- 2.2 Contractor's overall safety responsibilities
- 2.3 Contractor's safety Specialist responsibilities
- 2.4 Contractor's Supervisor responsibilities
- 2.5 Worker's responsibilities
- 2.6 Disciplinary policy procedures
- 2.7 Involvement of the public
- 2.8 Color coding for PPE

Chapter 3: Health policy, and amenities
- 3.1 Camp establishment, and operation
  - 3.1.1 Accommodation (Washing, cooking, bedding facilities with locking)
  - 3.1.2 Toilets
  - 3.1.3 Drinking water
  - 3.1.4 Waste collection bin
  - 3.1.5 Lighting
  - 3.1.6 Ventilation
  - 3.1.7 Maintenance of facilities
  - 3.1.8 Menstrual Kit Accessibility
- 3.2 First-aid facilities
- 3.3 Insurance of construction workers
- 3.5 Site facilities for works of short duration
- 3.6 Avoiding fire hazards

Chapter 4: Employee training
- 4.1 Competent person designation
- 4.2 Safety induction for new employees
- 4.3 Toolbox meetings

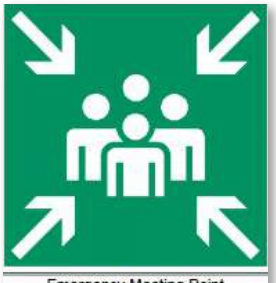
Chapter 5: Accidents, and emergency
- 5.1 First aid requirements
- 5.2 Assisting coworkers in medical emergencies
- 5.3 Emergency evacuation plan
- 5.4 Standby emergency vehicle
- 5.5 Accident investigations

Chapter 6: Toolbox safety talks
- 6.1 Overview of toolbox meetings
- 6.2 Recognize the warning signs
- 6.3 Good housekeeping
- 6.4 Trenching and excavation
  - 6.4.1 Trenching
  - 6.4.2 Competent person
  - 6.4.3 Protective systems to prevent subsidence
  - 6.4.4 Other safety requirements
- 6.5 Access to scaffolds
- 6.7 Falling object protection
  - 6.7.1 Falling object protection alternatives
  - 6.7.2 Falling object protection methods
- 6.8 Slips, trips, and falls

ANNEX 8: OCCUPATIONAL HEALTH AND SAFETY RELATED SIGNS

SIGNAL NOTICE

First Aid
प्राथमिक उपचार



Emergency Meeting Point
आकस्मिक भेला हुने ठाउँ

Fire Extinguisher
अग्नी नियन्त्रण उपकरण

Fire hose
अग्नी नियन्त्रण पाइप

DANGER SIGNS

Keep Out
निर्माण क्षेत्र- टाढै रहनुहोस्

Danger
खतरा - खुल्ला खाल्डो

Danger of open trench
खतरा - खुल्ला ट्रेन्च

No operation without safety guards
सुरक्षाका साधनबिना यो उपकरण संचालन गर्न निषेध

INSTRUCTION SIGNS

Do Not Touch
छुनु मनाही

Food and Drinks Prohibited
खाना तथा मद्यपान निषेध

Slow Sign for Traffic Control
यातायात नानुहोस्

Directional Exit Sign
बाहिर जाने दिशा

SAFETY AND SAFETY INSTRUCTION SIGNS

Safety Gloves Required
सेफ्टी पन्जाको आवश्यक

Safety Vests Required
सेफ्टी भेस्टको आवश्यक

Safety Glasses Required
सेफ्टी चश्मा आवश्यक

Safety Shoes Required
सेफ्टी जुता आवश्यक

Wear safety harness
सेफ्टी हार्नेस लगाउनुहोस्

ANNEX 9: REVIEW OF LEGISLATIVE PROVISIONS

SN	Legislation	Provisions	Relevancy with respect to Project
1.	**Constitution of Nepal**	• Constitution of Nepal is the main legal document, which emphasizes on right of clean environment of the people, natural resources protection, preservation and its prudent use. Rights regarding clean environment, under article 30: • It includes to make multi-purpose development of water resources, while according priority to domestic investment based on public participation to ensure reliable supply of energy in an affordable and easy manner, and make proper use of energy for the fulfillment of the basic needs of citizens, by generating and developing renewable energy in article 51 (g).	DSUEP helps to fulfil the rights of people to live in clean environment along with to fulfil the basic needs by providing access of sufficient energy.
2.	**Environment Protection Act 2076 (2019 AD)**	• Section 3 of the Act requires the proponent to conduct environmental studies in relation to the prescribed proposals of any developmental works. Subsection 2 of this act provides the framework about the environmental study report prepared pursuant to sub-section (1) shall, in fulfillment of the process as prescribed, be submitted to the relevant bodies of Government of Nepal for approval.	Environmental Studies and approved of report from authorized body before construction of any project is mandatory to minimize the negative impacts in Nepal which is addressed in EPA, 2076.
3.	**Environmental Protection Rule, 2077 (2020 AD) [First Amendment on 2078 (2021)]**	• Under the Environmental Protection Rules (2077) first amendment (2078), rule (3) as mentioned in annex (1), Section (F) (Energy, Water Resources and Irrigation Sector) sub-section (1), a proponent shall be required to carry out the Brief Environmental Studies for construction of transmission line project less than 66 kV in forest land for another purpose.	This rule provides the overall guidance to what type of environmental studies is required according to project by Government of Nepal.

SN	Legislation	Provisions	Relevancy with respect to Project
4.	**Nepal Environmental Policy and Action Plan, 2050(1993)**	The aims of NEPAP are: • To manage natural and physical resources efficiently and sustainably • To balance the development efforts and environmental conservation for sustainable fulfilment of basic needs • To preserve endemic and endangered species and their habitats; the promotion of private and public institutions for biological resources inventory and conservation • To safeguard national heritage • To mitigate adverse environmental impact of development protects and human actions • To integrate environment and development through appropriate institutions, adequate legislation and economic incentives and sufficient public resources	DSUEP should follow the aims of NEPAP to protect and conserve the physical, biological and social environment during construction of 33kV distribution line along with substation.
5.	**CITES Act, 2017**	Prohibits for the treat and business of protected species is explained in Section 1, Rule 3 of this act. However, Sub-Rule 2 of the Rule 3 has allowed for the export and import of protected species for certain circumstances mention under sub-rule after taking approval. The Section 5 of the acts state the provision of punishment for the unauthorized import, export and provision mentioned in Section 3.	This act binds the workers along with the people not to collect, treat and business of the protected plants and animals listed in appendices of CITES.
6.	**Electricity Act 1992**	• No person shall be entitled to conduct survey, generation, transmission or distribution of electricity without obtaining license under this act. • The Electricity Act of 1992 has provision of land procurement for the development of projects that involve electricity generation, transmission or distribution. The Act states that the licensee may submit an application to GoN to purchase the land or house of any person if it is required for the generation, transmission or distribution of electricity. Upon the receipt of such an application, GoN may make the land or house, so requisitioned, available to any corporate body under the prevailing laws.	The main goal of this project is to distribute the sufficient amount of electricity by constructing 33kV line and substation by conducting the survey to minimize the impacts.

SN	Legislation	Provisions	Relevancy with respect to Project
7.	**Soil and Watershed Conservation Act, 2039 (1982 AD)**	Soil and watershed conservation Act, 1982 expedient to make legal provisions on the land and watershed conservation by controlling natural calamities such as flood, landslide and soil erosion and maintain convenience and economic interests of the general public.	To do the works, which can act, as causative factor of flood, landslide and soil erosion should strictly be prohibited during the construction of this project.
8.	**Rural Energy Policy, 2006**	Rationale of formulating and implementing this policy is to create conducive environment that will self-motivate and mobilize local institutions, rural energy user groups, non-government organizations, cooperatives and private sector organization for the development and expansion of rural energy resources. The government will facilitate and promote to involve private development and expansion of new technologies. It has also envisioned subsidy provision for promotion of such renewable energy technologies.	This project helps to improve the distribution and motivate to use the electricity in rural areas of western Nepal.
9.	**Labor Act, 2074 (2017 AD)**	This labor Act was made under the management of parliament under sub-clause 1 of clause 296 of Constitution of Nepal. Sub-section 3 of Section 2 states that the employees should not be compelled to other work other than they are assigned for. In addition, Sub-section 5 of Section 2 states about prohibition of child labor in any organization and sub-section 6 of Section 2 states that there should not be any kind of discrimination among the employee's regard of religion, ethnicity, gender, origin, language or intelligence or other kind of characters.	Construction of project is only possible when the rights of labor is secure. In this project, the contractor should follow this act strictly.
10.	**Child Labor (Prohibition and Regulation) Act, 2056**	As per section 3 of this act, no child having not attained the age of 14 years shall be engaged in works as a laborer.	Child labor is strictly prohibited in this project and contractor should follow this act.

SN	Legislation	Provisions	Relevancy with respect to Project
	(2000 AD)		
11.	**Solid Waste Management Act, 2068 (2011 AD)**	This act has been formulated with a goal of minimizing solid waste production from the target area by setting rules and regulation on solid waste management (SWM) in the country in order to develop better environment for the systematic and effective management of solid waste and to involve all the concern stakeholders in SWM practice. The main features of this act are discussion of 3R principle (Reduce, Reuse and Recycle). 3R principle seems to be very beneficial as it not only increases the life of landfill site but also save the money, which could be used for other infrastructure development. Section 4 of the act assign the local body to manage or use the solid waste discharged or dumped in collection center, transfer station or treatment plant or collected during cleaning.	This act provides the overall framework to manage the solid waste generated from households to project level. In addition, the proponent should manage the waste generated during construction.
12.	**Solid Waste Management Rules, 2070 (2013 AD)**	The solid waste management rule was formulated as per provision made in article 50 of Solid Waste Management Act, 2068. This regulation has emphasized the segregation of waste at source and mentioned that the responsibility of proper disposal and management of source belongs to the producers themselves. Section 3 of the rule describes about the segregation and management of solid waste. It has mentioned that it is essential to segregate degradable and non-degradable solid waste at source.	These rules provide the overall framework about how to reduce the volume of waste to dispose from the source during construction of substation.
13.	**Fifteenth Plan**	Vision of 15th plan is in contribution to the prosperity of the nation through sustainable and reliable development of hydropower by setting the goal which is ensure energy security through intensifying hydropower generation. In addition, one of the strategies of government of Nepal in 15th plan is to make the distribution system effective and reliable to increase energy efficiency and increase power consumption by expanding access to electricity by formulating the required policies.	This 5-year interim plan sets the goal about generation and distribution of hydroelectricity in Nepal, which is directly related to this project.
14.	**United Nations**	UNFCCC, Signatories: 165. Parties: 195. (1), Article (4), commitment (f)	Goal of this project is

SN	Legislation	Provisions	Relevancy with respect to Project
	Framework Convention on Climate Change (UNFCCC), 1992	states climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change. After it entered into force on 21 March 1994, in accordance with, it mandates the individual state for prioritization of resource conservation with development.	to replace the traditional form of energy by clean energy i.e., electricity which ultimately reduces the air pollution and smoke.
15.	**Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 and its Amendment 2014/52/EU**	This Directives in Annex II 3(b) speaks for Projects Referred to in Article 4 (2) for only on "Industrial installations for carrying gas, steam and hot water; transmission of electrical energy by overhead cables (Projects not included in Annex I)" should follow EIA study.	As per the nature and scope of the details, the proposed Subproject is of electricity distribution system instead of overhead electricity transmission lines for which no EIA level study is required.
16.	**ILO 169**	The main objective of this convention is to secure the rights of indigenous and tribal people along with the gender equality and non-discrimination of workers during work. The Article 1 on First Part of this convention mainly focused on following points: (a) the social, cultural and economic conditions of tribal peoples in independent countries differentiate from other parts of the national community and their status is managed fully or partially by their own customs or traditions or by special laws or regulations; (b) peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or	Nepal is the part of ILO convention that's why ILO 169 should strictly followed during construction and implementation of any types

SN	Legislation	Provisions	Relevancy with respect to Project
		all of their own social, economic, cultural and political institutions. • Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this Convention apply. • The use of the term peoples in this Convention shall not be construed as having any implications as regards the rights, which may attach to the term under international law.	
17.	**Environment and Social Management Framework**	• ESMF is to guide DSUEP sub-projects in the area of E&S management using appropriate instruments, methodologies, procedure and responsibilities during the project cycle. NEA and the project partners shall apply during design and development of the sub-projects in order to comply with the Government of Nepal E&S regulations and the EIBs' standards on E&S assessment and management, Involuntary Resettlement, Indigenous People, Gender, etc.).	Main guiding document for E&S study to identify issues and recommending appropriate practical augmentation/ mitigation measures
18.	**Environmental and Social Policy (ESP)**	• This policy speaks for the mandatory E&S requirements for each Project like, screening, DDR, E&S Assessment, ESMP, ESMF, Information Disclosure, Consultation and Monitoring and Evaluation.	Mandatory requirement for ESMP study
19.	**EIB E&S Standards**	• This Standard recognizes the importance of the promoters' commitment to effective and sustained environmental and social performance through the establishment of an environmental and social management system commensurate with the identified impacts and risks.	Mandatory requirement for ESMP study

ANNEX *10*: DUE DILIGENCE REPORT

I. PROJECT DESCRIPTION

A. Background

Distribution System Upgrade and Expansion Project (DSUEP), hereinafter referred as *"Project"*) is expected to enhance and expand the electricity distribution system to improve the reliability (voltage level and reduction in power loss) and coverage of electricity supply in the Sudhurpaschim, Karnali and Lumbini Provinces. The Government of Nepal (GoN) and Nepal Electricity Authority (NEA) have agreed to receive loan financing from European Investment Bank (EIB) to 13 Subprojects under DSUEP. The Environmental and Social Management Framework (ESMF) has provisioned that the Subprojects that are likely to have environmental and social risks/impacts easily addressed through ESMP are categorized as Category III Subprojects requiring Due Diligence Report (DDR) along with ESMP report. The main objective of the E&S due diligence process is to review any potential social issues and risks associated with the activities related to the sub-projects. The Thabang-Puntiban Electricity Distribution Line Subproject (hereafter referred to as "Subproject") is one of the 13 Subprojects being constructed under DSUEP.

B. Subproject Components

This DDR is focused on the impacts of the following components;

a) **33kV Substation:** The substation 33/11 kV of capacity 3MVA has been proposed. The major component of the substation is Power Transformer of ONAN/ONAF (Oil Natural Air Natural/Oil Natural Air Forced) cooling mechanisms; which is supported by the switchgear (Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers) components and Civil Structures like control building, guard house, staff quarter, switchyard, boundary walls, internal access road, drainage and essentials.

b) **33kV Distribution Line:** The 33 kV DL of 0.5km length serves as the pathway for feeding electricity to the proposed substation. In general, the 33 kV lines comprises of the Steel Tubular Poles, Insulators, Conductors and Supporting Stays.

II. SUBPROJECT DESCRIPTION

The Subproject is located at Thabang Rural Municipality-1 of Rolpa District of Lumbini Province. The site is approximately 465 Km west of Kathmandu through Prithvi Highway, Pokhara-Baglung Highway, Mid-Hill Highway at Kankri and then through village road from Bhume Bazar till Thabang. It constitutes of 33/11kV substation of capacity 3MVA and 33kV distribution line of 0.5Km length in 0.76ha land. The substation land is owned and managed by Shree Bir Balbhadra Ma. Vi., Bibang.

III. FIELD WORK: ASSESSMENT AND PUBLIC CONSULTATION

Literature review comprised the review of previous relevant reports, EIB's Environmental and Social Safeguard documents, ESMF for DSUEP and feasibility

study reports, and relevant social safeguard documents prepared by the NEA. The study team had conducted field visit from 2078/05/13 to 2078/05/19 (29 August-4 September 2021). Local level stakeholders including the users, local people and teachers were notified through a notice from NEA which included the objectives, venue, and time of consultation requesting their presence in the consultation meeting. The meeting was conducted at the Thabang RM Meeting Hall, Thabang Rural Municipality-1 on 2078/05/18 (3 September 2021) and 2078/09/10 (25 December 2021). Hard copies of Subproject features and activities were shared in Nepali language during the consultation. Construction activities and possible environmental and social issues during Subproject implementation was briefed. In total 32 participants (2 female and 30 male) participated in the meeting. The views/consent, concerns, recommendations/suggestions, and demands of the participants were documented in the form of minutes (ANNEX 6).

IV. SOCIO-ECONOMIC PROFILE

In Thabang Rural Municipality, the male population is 5,035, and female population is 5,846 aggregating the total population to 10,881. Ward No. 1 has total population of 1,912 among which 892 are male, and 1,020 are female living in 417 households. The majority ethnic composition nearby the Subproject area is of magar. Nearly 85% population rely on agriculture-based earning source followed by daily wage labor, small trade and business/enterprises and services. During consultation, it was known that the distribution line will pass through 0.0756ha agricultural cropland.

V. SOCIAL AND ENVIRONMENTAL IMPACTS

i. The substation land of 0.76ha is barren and owned by Shree Bir Balbhadra Ma. Vi., Bibang. School has decided to provide 0.76ha land for substation construction on 2078/05/24 (ANNEX 2). None of public infrastructure will get affected from Subproject implementation. However, 0.0756ha cultivated agriculture cropland will be affected.
ii. No relocation impacts or impacts on structures and private land acquisition are anticipated at any of the identified proposed Subproject footprint area.
iii. No negative impact on the culture and livelihood of Magar, and other community at the time of Subproject construction.

VI. ENTITLEMENT MATRIX

Components	Capacity/ Length with No.	Area (Sq.m)	Land Ownership	IR Impacts	IP Impacts	Proposed Mitigation Measures
A. Construction of New Substation	3 MVA/ 1	Required: 0.76ha	Shree Bir Balbhadra Ma. Vi., Bibang	School Management Committee has allocated land for substation construction by NEA (**ANNEX 2**). The substation land is barren. Of total land, only few areas will be used for 33kV substation construction. No any structures are present on the proposed site. No IR impacts are anticipated.	None	None

VII. INFORMATION DESSIMINATION

The DDR is publicly available in Nepal Electricity Authority Office and Project Implementation Unit.

VIII. GRIEVANCE REDRESS

The Subproject will entail the concerned party submitting a grievance either in-person, or via phone, letter, or email to the Site-Engineer or the concerned Municipality Chief or the concerned Ward Chair. The Site-Engineer will record such complaint. In cases where Ward Chair has received such grievance, s/he should forward the grievance to the Site-Engineer. The Site-Engineer shall notify the committee members of Tier-I and arrange meeting to resolve the received grievances. The Subproject level GRM committee will ensure the grievances are addressed. If not resolved, such grievances will be forwarded to Tier-II and then to Tier-III as described in **Section Error: Reference source not found**.

IX. CONCLUSION

The due diligence study findings suggests that there are minimal social impacts associated with the Subproject which will be addressed with minimal mitigation measures. No relocation impacts or impacts on structures and private land acquisition are anticipated at any of the identified proposed Subproject footprint area. NEA will address the total implementation cost as estimated in Table 4-13.