

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
KOHALPUR–MACHHAGADH DISTRIBUTION LINE SUBPROJECT
SUBSTATION (33/11 kV) AND DISTRIBUTION LINE (33 kV)
BANKE & BARDIYA DISTRICT, LUMBINI PROVINCE

NEPAL ELECTRICITY AUTHORITY

**DISTRIBUTION AND CONSUMER
SERVICE DIRECTORATE**

**DISTRIBUTION SYSTEM UPGRADE AND
EXPANSION PROJECT (DSUEP)**

DURBARG MARG KATHMANDU NEPAL

CONSULTANT:

**NEA ENGINEERING COMPANY
LIMITED, TRADE TOWER**

THAPATHALI, KATHMANDU, NEPAL

JUNE 2022



TABLE OF CONTENT

LIST OF TABLES	II
LIST OF FIGURES	II
LIST OF ANNEXES	III
ABBREVIATIONS	IV
EXECUTIVE SUMMARY	VII
1. INTRODUCTION.....	1
1.1 PROJECT BACKGROUND.....	1
1.2 SCOPE OF STUDY	1
1.3 OBJECTIVE OF ESMP	1
1.4 LEGAL PROVISION FOR THE ESMP.....	2
1.5 METHODOLOGY FOR THE ESMP.....	2
1.6 CLASSIFICATION OF IMPACT AREA.....	3
2. DESCRIPTION OF THE SUBPROJECT.....	6
2.1 SUBPROJECT LOCATION AND ACCESSIBILITY.....	6
2.2 SUBPROJECT COMPONENTS	8
2.2.1 33 kV DISTRIBUTION LINE (DL).....	8
2.2.2 SUBSTATION	8
2.2.3 11 kV LINES AND LT LINES	9
2.3 MAJOR CONSTRUCTION ACTIVITIES IN THE SUBPROJECT	10
2.4 ENERGY TO BE USED	10
2.5 LAND REQUIRED.....	10
2.6 MATERIAL REQUIREMENT AND SOURCES	11
2.7 MAJOR EQUIPMENT AND POWER REQUIREMENTS	11
2.8 WORKFORCE REQUIREMENT	11
2.9 CONSTRUCTION AND IMPLEMENTATION SCHEDULE.....	12
3. DESCRIPTION OF THE ENVIRONMENT.....	13
3.1 PHYSICAL ENVIRONMENT.....	13
3.1.1 TOPOGRAPHY AND LAND USE	13
3.1.2 GEOLOGY	14
3.1.3 SEISMOLOGY	15
3.1.4 CLIMATE	15
3.1.5 AIR, NOISE, WATER QUALITY AND POLLUTING SOURCES.....	15
3.1.6 SOLID WASTE MANAGEMENT	16
3.2 BIOLOGICAL ENVIRONMENT	17
3.3 SOCIO-ECONOMIC ENVIRONMENT	17
4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES	20
4.1 ANTICIPATED BENEFICIAL IMPACTS	20

4.2	ANTICIPATED ADVERSE IMPACTS.....	21
5.	INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION.....	28
6.	INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM.....	31
7.	ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....	35
8.	CONCLUSION	44
	REFERENCES	45

LIST OF TABLES

Table 2-1:	Technical Description of the proposed Subproject	7
Table 2-2:	Approximate Quantity of Material for 33 kV line	11
Table 2-3:	Approximate Quantity of Material for 33/11 kV Substation	11
Table 2-4:	Human Resource Required for construction of 33 kV line and substation in a day of Construction.....	12
Table 2-5:	Construction Schedule of Project Implementation	12
Table 3-1:	Ambient Air and Noise Quality within the Proposed Subproject Site	16
Table 3-2:	Estimated Daily Solid Waste Generation from Campsite	16
Table 3-3:	The community forest along the proposed 33 kV distribution line.....	17
Table 3-4:	General Demographic Characteristic of Subproject Municipality	18
Table 4-1:	Detail of impacted forest area and trees loss	24
Table 5-1:	Summary of issues, comments and suggestions received in Consultations	30
Table 6-1:	Levels of Grievance Redress Mechanism Based on Time Bound	33
Table 7-1:	Environmental and Social Management Plan (ESMP)	36
Table 7-2:	Minimum Provisions for Environmental Monitoring.....	41
Table 7-3:	Mitigation Measures and Monitoring Activities Cost Estimates	43

LIST OF FIGURES

Figure 1-1:	Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Kohalpur–Machhagadh DL Subproject.....	5
Figure 2-1:	Location and Accessibility Map of Kohalpur–Machhagadh Subproject	6
Figure 3-1:	Location map and Land use details of the Subproject	13
Figure 3-2:	Kohalpur Substation, Kohalpur Municipality Ward No. 10, Banke.....	14
Figure 3-3:	Kohalpur–Machhagadh Proposed Substation Area View	14
Figure 3-4:	Geological Map of proposed Subproject Area	14
Figure 3-5:	Seismicity map of Nepal from 1964 -2019.....	15
Figure 5-1:	Identified Stakeholder in the Subproject	28
Figure 5-2:	Consultation with the stakeholders and communities in the Subproject Area....	29
Figure 6-1:	Institutional Arrangement for Environmental and Social Management	31
Figure 6-2:	Workflow Diagram for GRM from NEA	34




LIST OF ANNEXES

Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION LETTER TO STAKEHOLDERS	ii
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT	iv
Annex 3: FACILITY AND COMPONENTS	viii
Annex 4: LEGISLATIVE PROVISIONS	xi
Annex 5: CONSULATATION MEETING MINUTES.....	xvii
Annex 6: DEED OF ENQUIRY (MUCHULKAS)	xxi
Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES.....	lv
Annex 8: PHOTOGRAPHS	lviii




ABBREVIATIONS

ACSR	Aluminum Conductor Steel Reinforced
AIIB	Asian Infrastructure and Investment Bank
BES	Brief Environment Study
COVID-19	Corona Virus Disease
CDP	Community Development Program
CPA	Core Project Area
DCSD	Distribution and Consumer Services Directorate
DHM	Department of Hydrology and Meteorology
DL	Distribution Line
DSUEP	Distribution System Upgrade and Expansion Project
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPA	Environment Protection Act
EPR	Environment Protection Regulation
EMF	Electromagnetic Field
ESP	Environmental and Social Policy
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policy
ESSs	Environmental and Social Standards
GHG	Green House Gas
GIS	Geographic Information System
GoN	Government of Nepal
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IP	Indigenous People
IUCN	International Union for Conservation of Nature
IUSGS	International Union of Geological Sciences
LPG	Liquid Petroleum Gas
MDB	Multilateral Development Bank
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MHT	Main Himalayan Thrust




NEA	Nepal Electricity Authority
PPE	Personal protective equipment
RM	Rural Municipality
RoW	Right of Way
SPA	Surrounding Project Area
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
US EPA	United States, Environment Protection Agency
USGS	United States Geological Survey
VC	vulnerable community



Unit

%	Percent/ Percentage
CO ₂	Carbon dioxide
dB	Decibel
g	Gram
ha	Hectare
HHs	Households
Kg	Kilogram
Km	Kilometer
kV	Kilovolt
kWh	Kilo Watt Hour
ltr	Liter
LV	Low Voltage
m	Meter
masl	Meter Above Sea Level
mm	Millimeter
MVA	Mega Volt Ampere
MW	Megawatt
NRs.	Nepalese Rupees
°C	Degree Centigrade
sq.m.	Square Meter



EXECUTIVE SUMMARY

Description of Project: Nepal Electricity Authority (NEA) under Ministry of Energy, Water Resources and Irrigation is responsible for the implementation of the Distribution System Upgrade and Expansion Project (DSUEP). DSUEP will enhance the distribution system to improve reliability and quality of electric supply in the Karnali Province and Lumbini Province. The proposed **Kohalpur–Machhagadh Distribution Line Subproject** is located within Kohalpur Municipality, Ward No. 3, 4, 5, 6, 8, 10 and 15, Baijanath Rural Municipality, Ward No. 5, 6 and 8 and Badhaiyatal Rural Municipality, Ward No. 4 of Banke District and Banskadhi Municipality, Ward No. 3, 5, 6 and 8 of Bardiya District in Lumbini Province. The Subproject requires 1.03 ha of land (Private Land) for the construction of substation. The 33 kV distribution line of 25.57 km passes along the right of way of the road and private land with installation of poles at the edge of the farm land. The proposed subproject is financed with loan by Asian Infrastructure Investment Bank (AIIB).

Description of Environment

Physical Environment: The proposed Subproject (substation and distribution line) area lies in Terai region of Banke and Bardiya Districts. The proposed substation lies at Latitude 28°15'27.35" N, Longitude 81°28'59.68"E and elevation of 165 masl. The climate of the Subproject area is sub-tropical. The temperature at the project area varied from 2.5°C to 41.2°C. The average annual rainfall is estimated at approximately 1667 mm per year. The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively. There are no any water sources recorded within distribution line (33kV) and nearby the substation area.

Biological Environment: The proposed Subproject (substation and distribution line alignment) does not lie in any protected area, although it is located within the Chure region without any induced impact to the biological environment. The proposed Subproject distribution line passes from the edge of Sati Community Forest (CF) and Rampur CF. The surrounding environment of the Subproject area contains sparse vegetation with species common to the area. The vegetation species recorded during the screening field visit are Sal (*Shorea robusta*), Sajh (*Terminalia elliptica*), Sisoo (*Dalbergia sissoo*), Teak (*Tectona grandis*), Jamun (*Syzygium cumini*), and Rohini (*Mallotus philippensis*). Similarly, wild animal recorded during the public consultation are Common Monkey (*Macaca mulatta*), Jackel (*Canis aureus*), and Marsh Rabbit (*Sylvilagus palustris*). Altogether five species of birds were noted around the surrounding project area are House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), Jureli (*Hypsipetes leucocephalus*), Rock Pigeon (*Columbia lebia*), Asian Koel (*Eudynamys scolopaceus*). All these bird species are of least concern under IUCN categorization.

The proposed Kohalpur–Machhagadh 33 kV distribution line passes through the 2 different community forests as shown in **Table 3-3**. A total of 0.72 ha of the forest area will be occupied by RoW of proposed 33 kV distribution line. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 189.

Socio-Economic Environment: The major ethnic compositions within the surrounding project area i.e., Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality, Ward No.4 of Badhaiyatal Rural Municipality, and Tharu

(38.6%), Chhetri (19.9%), Brahman (10.1%), Kami (8.9%), Magar (5.9%), and Thakuri (4.4%) of total population of 92,293. The implementation of the Subproject will increase the electricity beneficiaries to 30,675 HHs, 119 commercial purposes and 11 industries. Kohalpur is the nearest business market nearby the Subproject area. The transportation facilities in this local level seems to be satisfactory. Tube-well and tap/piped water is the main source of drinking water in the surrounding Subproject area. People of the Subproject have access with communication facilities mainly through mobile telephone services. The nearest and easily accessible health facility nearby the proposed Subproject area is Nepalgunj Hospital in Kohalpur located at 2 km distance from tapping point and Janasewa Medical Hall is at distance of 1.5 km from the proposed substation site. The main occupation of people in the area is agro base with nearly 70% contribution followed by small trade and business/enterprises and services.

Potential Impacts and Mitigation Measures: Civil works will be involved with temporary impacts on air, noise and water quality and occupational and community health and safety; particularly related to working with electricity and in the context of the COVID-19 pandemic. Long-term impacts, although insubstantial, during operation and maintenance include occupational and community health and safety risks related to the presence of electricity infrastructure. The potential environmental issues and mitigation measures identified in screening and the preparation of ESMP report will be addressed during the compliance monitoring carried out by the safeguard team. There will be no issues of land requirements for the pole erection and for the distribution line people have suggested to install poles at the edge of farm-lands, without affecting any private structures along the distribution line. But the proposed substation land is private land, so there is necessity of land acquisition which issues will be fulfilled by Resettlement Plan. The implementation of the proposed Subproject needs 0.72 ha of forest area with estimated loss of 189 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. The compensatory plantation will be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019) in the ration of 1:10. The ESMP cost estimated for the Subproject is NRs 13,00,000.00 associated to mitigation measures and monitoring activities. NEA Project Implementation Unit has agreed on the estimated cost for the mitigation measures and monitoring activities.

Environmental and Social Management Plan: The ESMP serves as a guide to implement environmental and social mitigation measures and responsibility of the concerned agencies during the construction and operations of the Subprojects. Monitoring and inspection of the environmental and social activities will be carried out by Environment and Social Management Unit and Project Supervision Consultant of PIU. ESMP will be an integral part of the contractor's Bidding document which will be updated by the contractor during the sub-project construction period.

Institutional Arrangements: To ensure the full compliance to the ESMP, institutional arrangement for monitoring and reporting has been proposed. All the resources needed for the implementation of ESMP for the construction and operation phase will be provided by the PIU. Project Supervision Consultant's with Environmental and Social Safeguard Specialist will be responsible for compliance monitoring activities during the construction phase. Environment and Social Management Unit of NEA will provide regular updates to the site offices regarding the implementation of ESMP. Contractor shall prepare



Health and Safety (EHS) plan approved by the PIU before field mobilization. Contractor should mobilize a safety officer at each work site during the construction period.

Public consultation: Public consultations have been conducted in the Subproject area. People in the Subproject area noted that electricity service is poor with frequent interruptions. People have suggested to install poles at the edge of farm-lands, and project components should not affect any house and structures along the line. The impacts on the crops while stringing of lines should be minimized. Prospective electricity consumers and people to be affected are supportive and have recommended for quick implementation of the project.

Grievance Redress Mechanism (GRM): A three-tier 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 issues at Subproject level. In each Subproject, two levels i.e., Tier-I and Tier-II of Grievance Redress Mechanism have been established. During the ESMP study period, NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the Subproject level.

Conclusion: The environmental impacts envisaged from the implementation of proposed Subproject are site specific, short term, temporary and reversible in nature. The Subproject will provide significant benefits to people and economy by providing the reliable and improve electricity supply. The implementation of the proposed Subproject needs 0.72 ha of forest area with estimated loss of 189 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. This ESMP is considered sufficient to mitigate the environmental and social issues identified for the Subproject and will be updated during the Subproject construction stage.



1. INTRODUCTION

1.1 Project Background

The proposed Distribution System Upgrade and Expansion Project (DSUEP) will enhance the distribution system to improve reliability and quality of electric supply in the Lumbini Province. The project aims improvement in voltage level and reduction in power loss which in turn will improve Nepal Electricity Authority's (NEA) financial health, improve electricity supply reliability, and reduce dependence on petroleum-fueled accessories. Government of Nepal (GoN) has envisaged DSUEP to extend the reach of 33 kV and 11 kV distribution lines "to achieve affordable electricity fulfilling the demands at the local levels for all the households by 2022". Asian Infrastructure Investment Bank (AIIB) is financing a loan to upgrade existing and build new distribution systems in Lumbini Province and Karnali Province of Nepal. This ESMP is prepared for Kohalpur–Machhagadh distribution line Subproject of DSUEP.

This Subproject has three major components:

Component 1: construction, extension and augmentation of distribution lines and substations, especially 33 kV lines and 33/11 kV substations.

Component 2: construction of 11 kV lines, distribution transformers, and Low Voltage (LV) lines for new power distribution facilities.

Component 3: Capacity Building, Project Implementation Support, and Technical Assistance.

1.2 Scope of Study

This study ensures that the project meets the requirements of Nepal Government's Environmental Regulations and Environmental and Social Policy (ESP) & Environmental and Social Standards (ESSs) of AIIB. This report provides the measures for environmental and social management, monitoring and reporting of the project.

1.3 Objective of ESMP

The Environment and Social Management Plan aims to sets out the measures required to maximize the benefits of the project; and to avoid, minimize and mitigate any adverse environmental and social impacts caused by the project. The objectives of this ESMP are to:

- Describe the existing natural and socio-economical resources in and surrounding Subproject area;
- Based on existing environmental conditions, identify and assess potential significant impacts during project preconstruction, construction, and operation & maintenance stages;
- Identify and recommend mitigation measures to minimize any potential impacts caused by Subproject activities;
- Identify the local concerns on environmental and social issues and address them;
- Develop environmental management plan and monitoring plan including cost.



- Recommend institutional arrangement, including capacity building to ensure proper environmental and social safeguards implementation during construction and operation phases.

1.4 Legal Provision for the ESMP

According to the E & S safeguard Screening report, safeguard risks/issues identified for this Subproject fall under Category III (ESMF), which triggers the preparation of ESMP to execute the Subproject. This Subproject has minimal or no adverse environmental and social impact; does not physically displace any family; and does not result in economic displacement of more than 10% of productive assets for any family.

Pertaining to Rule 3 (1), Environment Protection Act (EPA), 2019 describes completing Environmental Studies as per Schedule 1 or 2 or 3 under Environment Protection Regulation (EPR) 2020 (First Amendment in 2021/05/24 on Nepal Gazette), detailed environmental studies Brief Environmental Study (BES) or Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is required. For this Subproject, pertaining to Rule 3(1), EPA (2019) describes to complete Environmental Studies as per Schedule 1(Cha) Energy, Water Resources and Irrigation Sector (1) under EPR (2020) state “use of forest area for the electricity distribution line project up to 66 KV”. The proposed Subproject will intercept the Subproject will use the of Sati Community Forest (CF), and Rampur CF land area for the purpose of 33 kV distribution line extension and substation construction. Thus, as per EPR (2020), a BES is mandatory for the proposed Subproject.

1.5 Methodology for the ESMP

The methodology that was followed while conducting the ESMP study is as follows:

- Literature Review:** Review of published literature were conducted, with priority given to publications of government institutions as well as international organizations, to collect information on project surroundings. The Municipality/Rural Municipality and its Ward profiles are used to collect the socio-economic baseline information of the Subproject. National policies, legislative frameworks and Multilateral Development Bank (MDB) policies were reviewed to understand the priorities and any legally binding requirements were studied that should be complied with while implementing the project. The Legislative provisions relevant to the project are listed in **Annex 4**.
- Field Survey and Investigation:** Field surveys were conducted to generate information on the physical, biological and socio-economic environment of the project area. The physical environment; air quality data was monitored by Temtop Airing-1000 PM Detector, noise level by UNI-T UT 353 Mini Sound Meter (dB) and water quality by EXTECH ExStik II DO600. Field observation of the core project area and the surrounding vicinity (500m) of project footprint area was applicable for the biological assessment. A circular quadrat of radius 12.5m was used for the estimation of the number of trees presence within the RoW of the proposed distribution line. A total of 3 different sample quadrat were used and trees numbers were estimated by extrapolation within RoW. The total enumeration of the trees to be cleared for the implementation of the Subproject will be estimated during the BES study. The tree




clearance approval is made once the Brief Environment Study (BES) is approved from the Ministry of Energy, Water Resources and Irrigation. Priority was given to the consultation with local communities at substation sites and the settlement areas that benefit from the project. Pertaining to Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019), BES report will be prepared. NEA/PIU must take approval from Government of Nepal, for the use of forest on the implementation phase. As per section 17 (3), the compensatory ratio for the loss of trees should be made in the ratio of 1:10 and require care, maintenance and upkeep of the planted trees before handover to concerned forest office after 5 years.

- iii. 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 CPA and SPS data and presentation of the maps in the ESMP report. The project foot print Ward and Municipality/Rural municipality are considered for the collection of socio-economic and baseline information.
- iv. Impact Evaluation: Significance of impacts are evaluated on the basis of reversibility, nature, magnitude, extent and duration of the impact. Identification of magnitude, extent and duration is as provided in the National EIA Guidelines, 1993 of Nepal. While evaluating the impacts and prescribing mitigation, maximum efforts were made to get expert opinion and input from the DSUEP's technical and safeguard consultant team.
- v. Public Consultation: As per the Government of Nepal EPA and the AIB Environmental and Social Policy (ESP), pre-notifications with subject of consultation, venue, and time were given at Subproject foot-print area, local level and affected Ward office in presence of concerned local stakeholders. Consultations were conducted in the Subproject area, at substations and the distribution line system settlement areas with local stakeholders.
- vi. Report Format: The ESMP report is prepared as per the Environmental and Social Policy (ESP) of the AIB, which contains an executive summary, a main report, and annexes as appropriate, including one on the nature and findings of consultations undertaken. All the comments and suggestions from the field consultation are mentioned in the ESMP report.

1.6 Classification of Impact Area

The National EIA Guidelines (GoN, 2050) has mentioned on 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.

Core Project Area (CPA) refers to the temporary and permanent area for the proposed project construction and associated activities. It is the area where direct impacts can be seen. For **Kohalpur–Machhagadh Distribution Line Subproject**, proposed substation area with 1.03 ha and the 33 kV distribution line with 25.57 km length is considered as CPA. The Subproject components are located within the Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur

Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality, Ward No.4 of Badhaiyatal Rural Municipality of Banke District, Ward No. 3, 5, 6 and 8 of Bansgadhi Municipality of Bardiya. The major settlements in the Subproject area are Channawa, Samjhana Bazar, Uttarbhakari, and Matyariya. The distribution line stringing route passes and along the right of way of the road alignment (0+000 to 14+250, along the forest area (14+250 to 14+700), and along the Sikta Canal (2+400 to 10+600, 15+250 to 25+600).

Surrounding Project Area (SPA) is the immediate vicinity of the footprint location of the proposed Subproject site. SPA is the moderate and indirect impact area. For this Subproject the 33 kV distribution line will be located within the Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality, Ward No.4 of Badhaiyatal Rural Municipality of Banke District, Ward No. 3, 5, 6 and 8 of Bansgadhi Municipality of Bardiya and along with these Wards, the adjoining Wards; Ward No. 4 of Bansgadhi Municipality and Ward No.7 and 9 of Kohalpur Municipality of Banke district is considered as SPA. The impact area showing the CPA and SPA area is presented in the google map **Figure 1-1**.





Figure 1-1: Core Project Area (CPA) and the Surrounding Project Area (SPA) of the Kohalpur–Machhagadh DL Subproject

2. DESCRIPTION OF THE SUBPROJECT

2.1 Subproject Location and Accessibility

The proposed **Kohalpur–Machhagadh Distribution Line Subproject** is located within Kohalpur Municipality, Ward No. 3, 4, 5, 6, 8, 10 and 15, Baijanath Rural Municipality Ward No. 5, 6 and 8 and Badhaiyatal Rural Municipality, Ward No. 4 of Banke District and Bansgadhi Municipality Ward No. 3, 5, 6 and 8 of Bardiya District in Lumbini Province. The tapping point of Subproject lies in existing line 33 kV Kohalpur Substation, Kohalpur Municipality Ward No. 10, Banke. The proposed distribution line (33 kV) is of 25.57 km length and runs by the RoW of access road. There is access to road transport within the proposed Subproject Ward area. The Subproject location and the accessibility are presented in the map below Error! Reference source not found.. The main features of the Subproject are presented in **Table 2-1**.

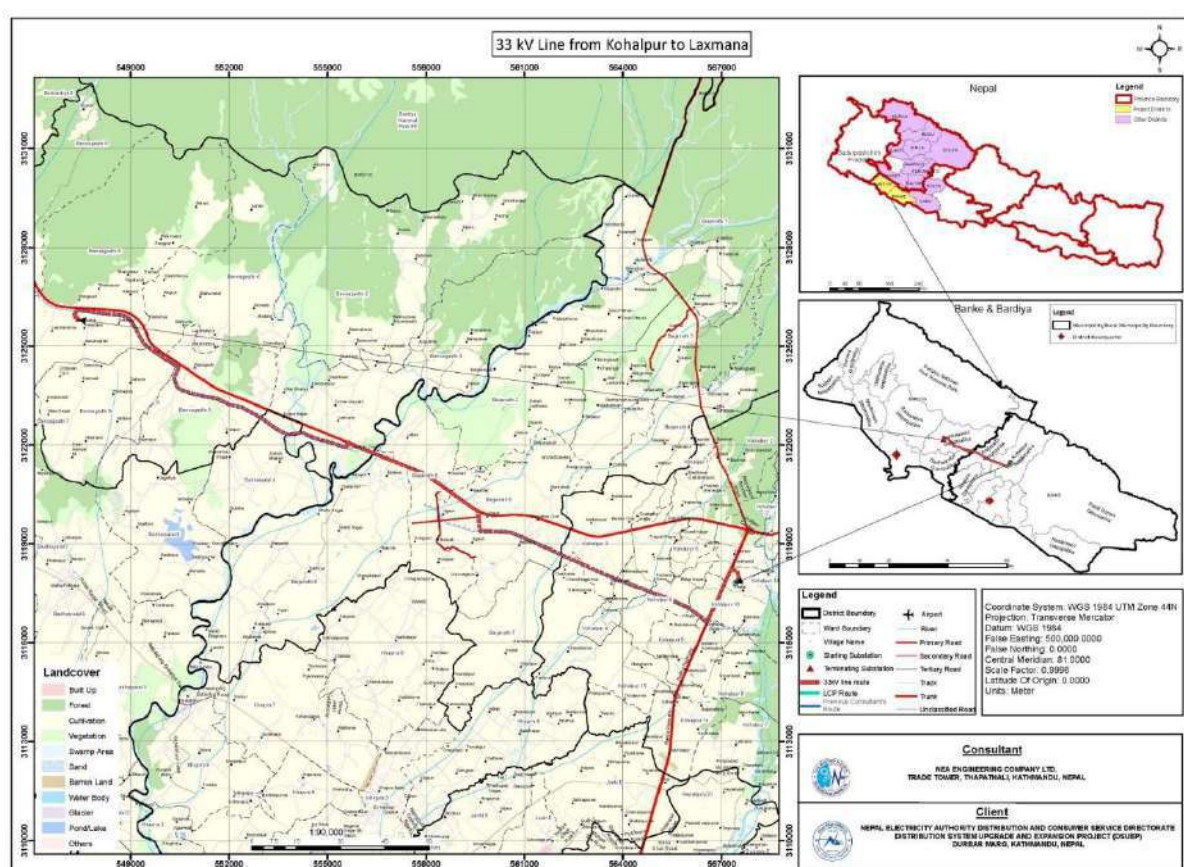


Figure 2-1: Location and Accessibility Map of Kohalpur–Machhagadh Subproject¹

¹ Source: Department of Survey, 1995 and Field Study 2022

Table 2-1: Technical Description of the proposed Subproject

Description	Features
Proponent	Nepal Electricity Authority
Project	Distribution System Upgrade and Expansion Project (DSUEP)
Subproject	Kohalpur–Machhagadh Distribution Line Project
Funding Agency	AIIB
Project Location	Kohalpur Municipality, Ward No. 3, 4, 5, 6, 8, 10 and 15, Baijanath Rural Municipality Ward No. 5, 6 and 8 and Badhaiyatal Rural Municipality, Ward No. 4 of Banke District and Bansgadhi Municipality Ward No. 3, 5, 6 and 8 of Bardiya District in Lumbini Province
Distribution Line	
33kV Line Starting Point	Tapped from Existing 33 kV Kohalpur Substation, Kohalpur Municipality Ward No. 10, Banke. Co-ordinate: Lat 28°47'30.42"N and Long 81°22'52.84"E
33kV Line End Point	Laxmana Substation (Proposed) at Laxmana, Bansgadhi Ward No. 8 Bardiya, Co-ordinate: Lat 28°15'27.35"N, Long 81°28'59.68"E
Land type	Government/Private
System Voltage	33 kV
Max, Min System Voltage	36, 30 kV
Climatic Condition	Wind Speed: As per IS 802-1-1 Maximum Ambient Temperature: 41.2 °C Altitude (Min, Max): 154, 170 masl
Length of Line/ No. of Pole	25.57 km/ 550 Poles
Right of way	6 m
Number of Circuit	1
Conductor	ACSR Dog
Line Capacity/Thermal Limit (approx.)	13.4 MW at 0.9 power factor
Type	Steel Tubular Pole with 11m/13m Height
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	Budhebapar Substation (Proposed) at Chaulkune-4, Budhebapar, Surkhet Co-ordinate: Lat 28°51'13.47"N, Long 81°12'47.96"E Elevation: 165 masl
Land type	Private
Voltage Level	33/11 kV
Substation Capacity	8 MVA
Number and Capacity of Transformer	1 no., 6/8 MVA
Type of Transformer	3 Phase, ONAN, Mineral Oil
Type of Substation	AIS (33kV) and Indoor (11kV)
Number of 33kV Line Bays	1
Number of 33kV Transformer Bays	1
Number of 11kV Feeders	4
Substation Area	1.03 ha

2.2 Subproject Components

The major components of the Subproject are the 33/11 kV substation and 33 kV distribution line (DL). The 33 kV DL is tapped from an existing 33 kV network line and acts as a source feeding to the proposed 33/11 kV substation. 11 kV distribution feeders emerge from the substation, eventually supplying the electricity to the consumers. The structures of the Subprojects are briefly described below.

2.2.1 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 strung 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. Length of 33 kV distribution line is 25.57 km and the total number of steel tubular poles to be erected are estimated as 550.

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 poles 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.

2.2.2 Substation

The proposed substation 33/11 kV is of capacity 6/8 MVA. The substation plays the role of lowering the 33 kV voltage level to 11 kV, which will then be strung as distribution feeder to supply the consumers. The major component of the substation is power transformer, which is supported by the switchgear components and Civil Structures. The facility and components sample pictures are shown in **Annex 3**.

Transformers: Transformer is the major component of the distribution substation. It transforms power from higher voltage to lower voltage for distribution purpose. 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 6/8 MVA ONAF type.

Electrical Switchgear: Electrical Equipment comprising of Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers, etc. installed in the substation are called Electric Switchgear. They facilitate the objective of power conversion.

Civil Structures: A control building is essential for the operation of the substation. It houses the operating station, along with battery systems. Guard House and Staff Quarter are other essential buildings for smooth operation of the substation.

Switchyard, Boundary, Roads, Drainage and Essentials: The outdoor civil structure in the proposed substation includes the 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 component wise 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.

2.2.3 11 kV Lines and LT Lines

11 kV lines and LT lines take the access of electricity to the consumer households. It is why the construction of those lines are always encouraged by the local people. The line route, thus the installation of poles and lines, are envisaged to go through the edge of local roads. If any line route pass through any private lands, permission from the corresponding land owner will be taken before starting the construction of those lines.

The detailed line route survey for 11 kV and LT lines have not been done yet. The scope of detailed survey is in the scope of the construction Contractor. The construction Contractor will conduct Pre-Construction Survey (PCS) to finalize the line route of 11 kV lines and LT lines for the construction. PCS will prepare the detailed line route of those lines and submit to PIU for approval. After the detailed line route is submitted by the Contractor and approved by PIU, E&S team of Project Supervision Consultant (PSC) will conduct an E&S study and submit the findings that

- Do the lines pose any adverse Environmental or Social issues?
- If there are any Environmental or Social issue, how can they be resolved? If the lines do not pose any adverse Environmental or Social issue, the lines will be cleared by PIU after seeking concurrence from AIIB.
- If the solution measures are not implementable in the field, PCS will suggest for any other way to divert or reroute the lines? If yes, PCS will propose alternative line route. The lines will be cleared by PIU after seeking concurrence from AIIB, given that the lines do not pose any adverse Environmental or Social issue.



2.3 Major Construction Activities in the Subproject

Activities in the Subproject area can be sub-divided into three categories viz, Pre-Construction Phase, Construction Phase and Operation Phase. For the proposed Subproject, trees and bushes in the Right of Way of 33 kV lines have to be cleared whereas, no trees and bushes within the proposed substation boundary have to be cleared for the construction work. The proposed Kohalpur–Machhagadh Line Subproject intercept forest area of 0.72 ha. The estimated loss of trees species in the Right of Way of 33 kV lines are 189.

- I. **Preconstruction phase:** The activities to be carried out before the construction phase are:
 - Demarcation of land area for the proposed substation
 - Receive public opinion
 - Make clearance of the substation land area permanently
 - Distribution line route selection
 - Approval to cut down trees from the concerned government authorities
- II. **Construction phase:** The activities to be carried out during the construction phase are:
 - Assign the land area for temporary storage of construction materials
 - Transportation of construction materials
 - Leveling of land area for the proposed substation
 - Cutting down of trees in Right of Way of 33 kV lines
 - Construction of substation structures
 - 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 and 33 kV distribution line route

2.4 Energy to be used

During the construction period diesel fuel will be used to power construction equipment and transport vehicles, which emits air pollutants and greenhouse gases in insignificant quantity. Use of firewood shall be restricted in the labor camp, whereas the workers shall be provided LPG for cooking.

2.5 Land Required

The **Kohalpur–Machhagadh Subproject** will require about 1.03 ha land for building the substation. The land is private land and will be managed by NEA to construct the substation in the designated area. The 33 kV distribution line is 25.57 km length of which pass by RoW of Ratna Rajmarga Road and follow the edge of Sikta Irrigation Canal till to Bankatawa and passes through RoW of Mahendra Highway (East-West Highway), private farm lands and community forest till to the proposed substation. Poles shall be installed at the edge of farm lands, which will not affect the usability and valuation of the lands.

2.6 Material Requirement and Sources

A 33/11 kV substation, 33 kV, 11 kV and low-tension distribution lines will be constructed for this Subproject. Minimal excavation at the pole locations will be done to erect steel tubular poles of 11 m and 13 m. The depth of burial for 11 m (approximately 256 kg) and 13 m (approximately 343 kg) poles are 1.8 m and 2.17 m respectively. The construction works for substation will not produce significant amount of spoils and thus it will not require spoil-dumping site. Similarly, excavation works carried out for digging pit holes for poles produces insignificant spoils which does not require management of earthworks.

Civil construction works will involve excavation for foundation of substation, steel reinforcement, cement, coarse aggregates and fine aggregates (sand). Materials will be procured from legally operating markets. The design team has provided the following estimate of construction materials required for 33 kV distribution line and the substation.

Table 2-2: Approximate Quantity of Material for 33 kV line

SN	Particular	Unit	Requirement
1	Amount of Steel	Ton/Km	5800
2	M15 concrete for Pole base	Cum/Km	12.5

Source: Design Report, DSUEP

Table 2-3: Approximate Quantity of Material for 33/11 kV Substation

SN	Particular	Unit	Support Structures, Road, Drainage	Control Building	Staff Quarter	Office Building	Guard House
1	M15 Concrete	cum	100	25	224	120	5
2	M25 Concrete	Cum	300	170	125	75	27
3	Reinforcement bar	Ton	7	27	20	12	4

Source: Design Report, DSUEP

2.7 Major Equipment and Power Requirements

Major equipments used during the Project implementation are:

One Excavator, One Roller, One Drilling Machine, One Crane, one Grid Supply of 100 kVA Distribution Transformer, and two 50 kVA capacity diesel generators.

2.8 Workforce Requirement

Local people in the surrounding Subproject area will be encouraged for the employment. Based on the skills (skilled, semi-skilled and unskilled labor), local people will be used for the construction and both male and female will get equal opportunity during construction. The number of human resources required depends upon the complexity of the project as well as the geographical location of the project. In case, of construction of 33 kV lines and 33/11 kV substations, the workforce typically varies from terai to hilly to mountain region. Expected number of manpower employed is enlisted hereunder.

Table 2-4: Human Resource Required for construction of 33 kV line and substation in a day of Construction

SN	Human Resource/Day	For Distribution Line	For Substation
1	Engineer (No.)	1	2
2	Supervisor (No.)	2	4
3	Foreman (No.)	3	5
4	Skilled (Lineman/Electrician) (No.)	5	5
5	Helper (No.)	2	10
6	Labour (No.)	12	15

Source: Design Report, DSUEP

2.9 Construction and Implementation Schedule

Implementation of the proposed Subproject comprises construction of a new 33/11 kV substation, 33 kV lines, 11 kV lines, low tension lines, and installation of distribution transformers. It includes construction and installation of components as mentioned in subsection 2.2. The estimated completion period is 24 Months.

Table 2-5: Construction Schedule of Project Implementation

SN	Activities/ Months	Months (After the completion of Detailed Survey Study)					
		1-3	4-6	7-10	11-15	16-20	20-24
1.	Invitation for tender, evaluation, and award						
2.	Implementation of Environmental and Social Safeguards						
3.	Erection of Poles						
4.	Stringing of conductor						
5.	Construction of substation						
6.	Charging and Testing						

Source: Design Report, DSUEP

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Physical Environment

3.1.1 Topography and Land Use

The Subproject area lies in Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality and Ward No. 4 of Badhaiyatal Rural Municipality of Banke District and Ward No. 3, 5, 6 and 8 of Bansgadhi Municipality of Bardiya District in Lumbini Province. The Subproject components are located within the Chure Range of Nepal. The tapping point is situated at Latitude 28°11'3.39"N and Longitude 81°41'13.18"E with an elevation of 158 masl (). The proposed distribution line (33 kV) of 25.57 km passes through the RoW of Ratna Rajmarga Road and follow the edge of Sikta Irrigation Canal till to Bankatawa and passes through RoW of Mahendra Highway (East-West Highway), private farm lands and community forest.

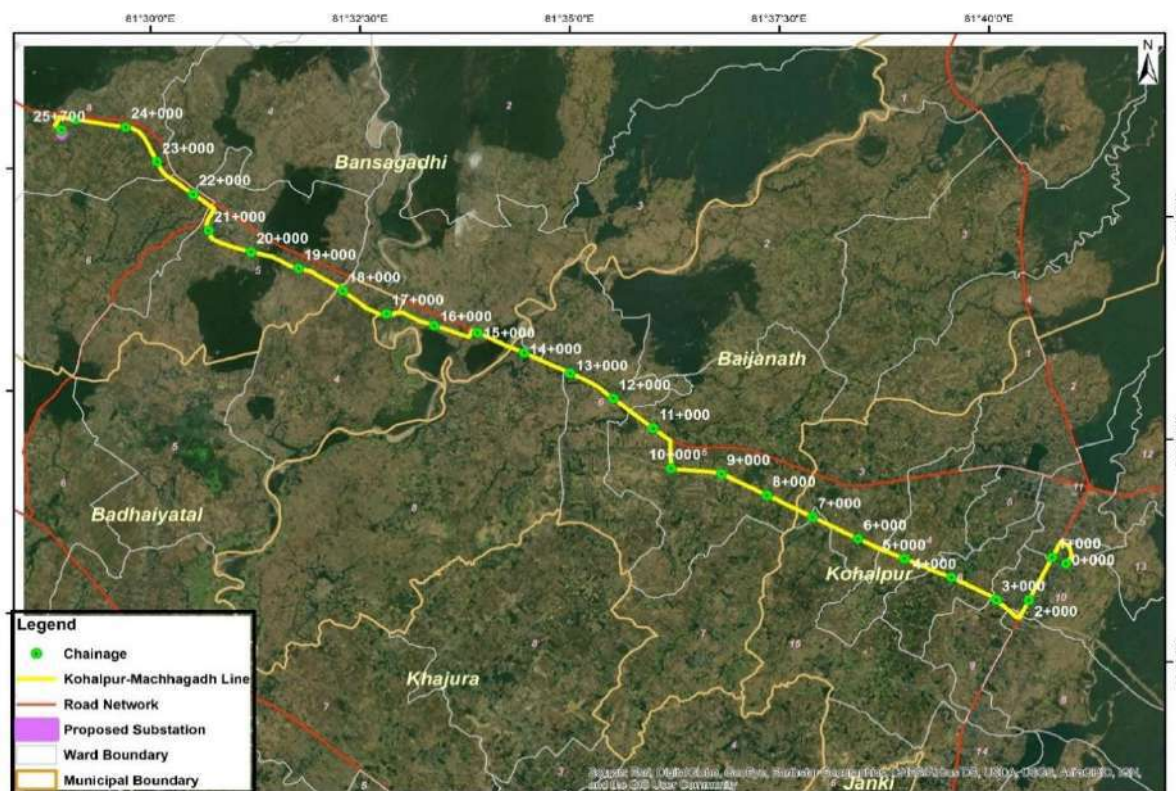


Figure 3-1: Location map and Land use details of the Subproject²

The substation lies at Latitude 28°15'27.35" N, Longitude 81°28'59.68"E and elevation of 165 masl (). The site lies in depressed flat land. It is barren land. The proposed substation boundary lies within 1.03 ha area. None of the private and public entities will be affected due to the implementation of the proposed Subproject, as it will be installed within the RoW of existing road, barren land and the edges of the cultivated land. The land use map details with the components of the Subprojects are presented in **Annex 2**.

² Source: Topographic Map, Department of Survey, 1995 and Field Study 2022



Figure 3-2: Kohalpur Substation, Kohalpur Municipality Ward No. 10, Banke



Figure 3-3: Kohalpur–Machhagadh Proposed Substation Area View

3.1.2 Geology

The Subproject area is situated on upper terai region of the Indo-Gangetic plains with the Siwalik hills to the north. The types of deposits are of quaternary type. The line will then run from the soil is silty clay and the land is slanted, necessitate the use of a concrete foundation to prevent pole tilting, whereas the rest of the area is composed of silty loamy soil, which is highly fertile. Sometimes, the high rainfall causes the flood in nearby stream and can risk to the nearby settlement and the landform. So, necessary care should be taken during the formation of structure in the distribution line.

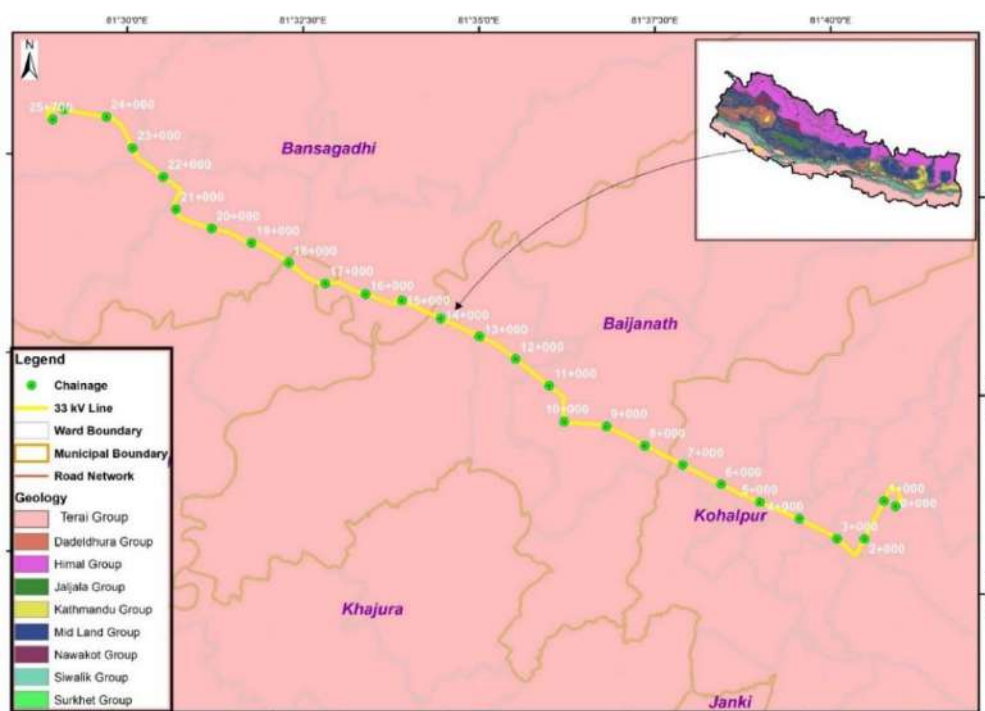


Figure 3-4: Geological Map of proposed Subproject Area³

³ Source: Department of Mines and Geology (DMG), 2020

3.1.3 Seismology

The entire country of Nepal is in a seismically active zone caused by subduction of Indian tectonic plate under the Tibetan Plate. According to National Seismological Center of Nepal several big earthquakes have been felt in Nepal, the earthquakes of magnitude 6 to 7 are mostly confined to the Main Himalayan Thrust (MHT) between the foot hills and the Higher Himalaya. Moreover, earthquake generation is confined to the crustal depth of 20 km. However, shallow earthquakes at depths down to 6 km are generated as a result of strike slip faults. Therefore, the substations and distribution lines of this Subproject will be designed and operated in accordance with seismic design requirements and best engineering practice. The seismic activity in Nepal between 1964 and 2019 as in IUSGS portal is shown in .

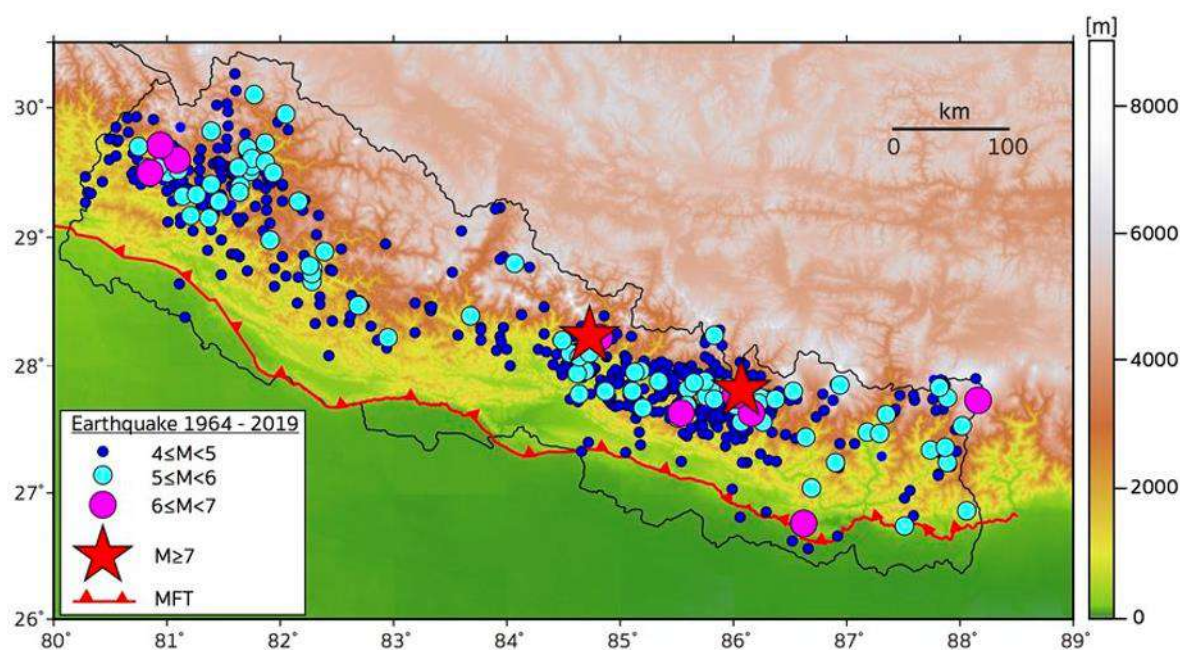


Figure 3-5: Seismicity map of Nepal from 1964 -2019⁴

3.1.4 Climate

The climate of the Subproject area is sub-tropical type. According to DHM 2021, the temperature at the project area varied from 2.5°C to 41.2°C. The average annual rainfall is estimated at approximately 1667 mm per year. Almost 80% of rainfall occurs during monsoon (June to September).

3.1.5 Air, Noise, Water Quality and Polluting Sources

The major air polluting sources recorded are only from vehicular emission and dust problem from plying of vehicles and high wind velocity. Noise polluting sources noted at the time of field study are similar to the air polluting sources. Unnecessary honking along the access road of site is the source of noise generation. Following table shows the real-time quality of air and noise during field study.

⁴ Source: USGS catalogue, 2019

Table 3-1: Ambient Air and Noise Quality within the Proposed Subproject Site

SN	Location/ Chainage	Air Quality ⁵ -Temtop Airing-1000 PM Detector ($\mu\text{g}/\text{m}^3$)					Noise Level -UNI-T UT 353 Mini Sound Meter (dB)		
		PM _{2.5}	Level	PM ₁₀	Level	Average Time of Measurement	Measured	Ref. ⁶	Area
1.	Tapping Point	30.3	100	35.9	200	1-hour	48.3	50	Residential Area
2.	Substation	29.6		31.8			30.6		

Source: Field Visit, 2022

The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively.

Kiran Nala, Man Khola, Dundawa Khola and Sikta Irrigation Canal are the water bodies near proposed distribution line. There are not any water bodies lie near bay extension substation point 33kV distribution line. Distribution line crosses Kiran Nala, Man Khola, Dundawa Khola and Sikta Irrigation Canal, which are connected by natural water sources. The construction activities of the Subproject components will not have impact to the local stream.

3.1.6 Solid Waste Management

Wastes were found littered in front of HHs and along the side of the access road near Subproject areas. People of the nearby area were found managing organic wastes within the household premises. Recyclable waste (large quantity) was sold to scrap collector occasionally. The estimated quantity of solid waste generation from the labor camp is shown in **Error! Reference source not found..**

Table 3-2: Estimated Daily Solid Waste Generation from Campsite

SN	Description	Calculation	Remarks
1.	Total Labors within the Campsite	= 20 Labors	
2.	Total Waste Generation to be Expected	= 20 * 123.62 g/capita/day = 2472.4 g/capita/day = 2.4724 kg/day	
3.	Organic Waste Composition Responsible for Foul Smell, and Rodents	= 1.26 kg/day	Assuming 51% organic waste

Rest other waste is recyclable, and non-decomposable which could be stored for long period and have less impact on the environment if properly managed. The amount of organic waste is manageable within the Subproject site as organic waste per day will be expected to be only 1.26 kg/day.

⁵ National Indoor Air Quality Standard, 2009

⁶ National Ambient Sound Quality Standard, 2012

3.2 Biological Environment

The proposed substation area land is private land. The land is barren and no issues of tree loss in substation area. The proposed Subproject 33 kV distribution line passes from the edge of Sati Community Forest (CF) and Rampur CF. The proposed Subproject lies at an elevation below 1000 (305-470) masl in tropical bioclimatic zone. The proposed Subproject development site does not lie within any protected area and conservation area, although it is located within the Chure region without any induced impact to the biological environment.

The vegetation species recorded during the screening field visit are Sal (*Shorea robusta*), Sajh (*Terminalia elliptica*), Sisoo (*Dalbergia sissoo*), Teak (*Tectona grandis*), Jamun (*Syzygium cumini*), and Rohini (*Mallotus philippensis*). Similarly, wild animal recorded during the public consultation are Common Monkey (*Macaca mulatta*), Jackel (*Canis aureus*), and Marsh Rabbit (*Sylvilagus palustris*). Altogether five species of birds were noted around the surrounding project area are House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), Jureli (*Hypsipetes leucocephalus*), Rock Pigeon (*Columbia lebia*), Asian Koel (*Eudynamis scolopaceus*). All these bird species are of least concern under IUCN categorization.

The proposed Kohalpur–Machhagadh 33 kV distribution line passes through the 2 different community forests as shown in **Table 3-3**. A total of 0.72 ha of the forest area will be occupied by RoW of proposed 33 distribution line. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 189.

Table 3-3: The community forest along the proposed 33 kV distribution line

SN	Name of Forest	Chainage from	Chainage to	District	Municipality/RM	Ward No.
1	Sati CF	14+400	14+800	Bardiya	Bansgadhi Municipality	3
2	Rampur CF	19+400	19+800	Bardiya	Bansgadhi Municipality	5

3.3 Socio-economic Environment

Demography and Ethnic Compositions: The proposed Subproject area lies in Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality, Ward No.4 of Badhaiyatal Rural Municipality of Banke District, Ward No. 3, 5, 6 and 8 of Bansgadhi Municipality of Bardiya District. Kohalpur is the nearest business market nearby the Subproject area. The general demographic information of the affected Municipality and RM is presented in Table 3-4. The major ethnic compositions within the surrounding project area i.e., Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality, Ward No.4 of Badhaiyatal Rural Municipality are Tharu (38.6%), Chhetri (19.9%), Brahman (10.1%), Kami (8.9%), Magar (5.9%), and Thakuri (4.4%) of total population of 92,293. Majority of people follow the Hindu religion and rest follow Buddhism and Christian religions. The Core Project Area (CPA) of the Subproject will not affect any indigenous people.

Table 3-4: General Demographic Characteristic of Subproject Municipality

S.N.	Local Level	Ward No	HH	Population		
				Male	Female	Total
1	Kohalpur Municipality	3	1100	3570	3196	6766
2		4	518	1556	1604	3160
		5	1264	2725	2665	5390
		6	627	1478	1490	2968
		8	917	2288	2135	4423
3		10	1440	3699	3678	7377
		15	945	2396	2352	4748
4	Baijanath RM	5	1727	4058	4474	8532
		6	1587	3394	4046	7440
		8	1826	4301	4934	9235
5	Bansghadi Municipality	3	1806	3577	3789	7366
		5	1765	2903	3280	6183
		6	1538	3291	3674	6965
		8	1821	2341	4517	6858
6	Badhaiyatal RM	4	1006	2343	2539	4882
Total			19887	43920	48373	92293

Source: (CBS, Rural Municipality-Municipality Profile of Banke and Bardiya District, 2018)

Road Accessibility: Subproject-Ward No. 3, 4, 5, 6, 8, 10 and 15 of Kohalpur Municipality, Ward No. 5, 6 and 8 of Baijanath Rural Municipality, Ward No. 4 of Badhaiyatal Rural Municipality, Ward No. 3, 5, 6 and 8 of Bansgadhi Municipality are connected to Mahendra Highway (East-West Highway) and Ratna Rajmarga Road Section. The transportation facilities in this locality are good. It is 20-25 minutes to reach affected Municipality and RM office from the Subproject area.

Electricity Beneficiaries: The implementation of the Subproject will increase the electricity beneficiaries to 30,675 HHs, 119 commercial purposes and 11 industries. This will expand the electricity supply in the Subproject area with clean energy sources.

Water and Sanitation: Tube-well and tap/piped water is the main source of drinking water in the surrounding Subproject area. The people living in the plain area have tube-well and the side area is facilitated by the tap water system. Almost all the houses in the area have some sort of toilet facility.

Health Facility: The nearest and easily accessible health facility nearby the proposed Subproject area is Nepalgunj Hospital in Kohalpur located at a distance of 2 km from tapping point and Janasewa Medical Hall is about 1.5 km from the proposed substation site.

Communication: People of the Subproject have access to communication facilities mainly through mobile telephone services. In the Subproject area, people have access to local and national FM Radio networks and local newspaper facilities.

Occupation: Agriculture is the main occupation of people in the Subproject area with nearly 70% contribution; small trade and business/enterprises and services are other occupation of people in the Subproject area. Intermittent tripping and voltage drop of electricity was adversely affecting irrigation of crops and daily household chores activities.

COVID-19: The coronavirus (COVID-19) pandemic has been defined as global health crisis; the virus has spread in almost all parts of Nepal. Heedful of its vulnerabilities, the Government of Nepal had enforced a nationwide lockdown in 2020/2021 and activated its federal, provincial and local level mechanisms to respond to the crisis. In case of any sudden surge or outbreak of COVID-19, quarantine facilities and immediate health support should be provided to the workers and personnel involved in construction.

Other seasonal and minor diseases like dengue, fever, sneezing, cough, gastritis, diabetes and mental disorder have been reported within the Subproject area.



4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

The environmental and social impacts predicted during the construction of proposed Subproject are discussed in this chapter. National Environmental Impact Assessment Guidelines (GoN, 2050) has been referred for the predicting magnitude, extent, and duration of the project-induced environmental impacts in Subproject area. This chapter identifies the basic environmental and social impacts in the Subproject area that will arise during the construction. The detailed impacts of each domain of environmental and social safeguards have been addressed in this chapter.

4.1 Anticipated Beneficial Impacts

Construction Phase

4.1.1 Local Employment

Local employment will be created during the construction phase. As mentioned in section 2.8 Workforce Requirement, the typical construction team will have 19 skilled manpower and 47 unskilled manpower for the period 10-12 months for the erection of poles and stringing the distribution lines and 16-18 months of time for building the substation. Local people within the SPA and OPA will be encouraged for employment during construction phase. Both male and female will get equal opportunity during construction. Based on the skill levels (skilled, semi-skilled and unskilled labor) local people will be used for the construction as far as possible. *The magnitude of impact is considered moderate, the extent is local, and the duration is short-term.*

Operation Phase

4.1.2 Local Economy and Enhancement in Rural Electrification

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. Intermittent tripping and voltage drop problem nearby the settlement areas will be reduced. Upgrading and expansion of electricity distribution helps to way-out many electricity related issues and promotes the use of new types of home appliances, use of electric motors for irrigation, and establishment of small and large industries. *The magnitude of impact is considered high, the extent is local, and the duration is long-term.*

4.1.3 Greenhouse Gas Emission Balance

Net Green House Gas (GHG) emissions resulting from the Subproject area are expected to be low as the distribution lines will improve and expand electricity supply from clean energy sources. It will reduce the emission of GHG from the traditional source like Guitha (made from cow dung), firewood and timber along with commercial fuel Kerosene for cooking/lighting, heating and diesel for water pumping. *The magnitude of impact is high, the extent is local, and the duration is long term.*




4.2 Anticipated Adverse Impacts

A. Physical Environment

Construction Phase

4.2.1 Change in Land Use

The Subproject requires about 1.03 ha land for the substation. The proposed substation land area is private land. The land will be converted to the substation area surrounded by proper boundary wall. Distribution Line passes through the RoW of Ratna Rajmarga Road and follow the edge of Sikta Irrigation Canal till to Bankatawa and passes through RoW of Mahendra Highway (East-West Highway), private land and community forest till to the proposed substation. The construction of the Subproject will bring change in land use permanently. Potential impacts caused by distribution lines will be limited to approximately 0.22 m of land for each pole, at the edge of roads and cultivated lands. *The impacts due to use of land will be moderate in magnitude, site specific and long term in duration.*

Mitigation Measures

- Steel Tubular Pole for distribution lines will be planted 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 planting the poles.
- Cropping calendar will be followed while planting poles and stringing of conductors so that standing crops will not be damaged.
- In case of loss of standing crops, compensation will be made to the respective land owner as per the prevailing market rate.

4.2.2 Air Quality

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 of short term. Transportation of the materials and movement of construction crew and equipment will have minor impact on air quality. *The impact on air quality will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors' vehicles and equipment should meet Nepali vehicle emissions standards.
- Dust emissions shall be controlled with using 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.

4.2.3 Noise

Noise is inevitable during construction. As noted in section 3.1.5, noise is less around the substation area as the area is rural and settlement is sparse. Construction-related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites; construction related noise is not expected to exceed acceptable levels. *The impact on noise level will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors will be required to monitor noise during the construction.
- For substation site, boundary walls serve as noise barrier, and it should be constructed as early as possible.

4.2.4 Drainage and Water Quality

Substation sites of 1.03 ha will result in slight alteration of drainage patterns, although the alterations in drainage will not be quantifiable. Interference with drainage patterns will be temporary during construction phase only. The impact on water quality during the construction period is expected to be insignificant. Water will be used primarily as a cement additive for construction of substation foundations and boundary walls, and to control dust. *The magnitude of impact is considered low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Storm water run-off from substation sites will be minimized and controlled with bunding temporary dikes (constructed boundary walls will also help contain run-off water).
- Proper management of ground drainage from camps as a preventive measure against breeding places of mosquitoes, and other pests.

4.2.5 Soil and Muck

As the proposed substation land's ground level is low, filling of soil is necessary. The required filling materials shall be purchased from nearby authorized crusher plant approved by local government. For distribution lines the excavation activity will be insignificant. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Soil required for filling shall be purchased from the nearby authorized crusher plant under local government.
- Soil shall be covered with tarpaulin while transporting it from earth-borrowing areas.
- Simultaneous water sprinkling and compaction of spoil shall be done using the roller.

4.2.6 Solid Wastes

The wastes generated during construction within the Subproject area are cement bags, iron bars, and other leftover construction materials, and waste generated by the labor camp. It might cause adverse impact if not properly managed. Organic wastes generated from labor camp may give foul smell and attract rodents if not manage properly. Inorganic wastes generated during implementation shall be managed through source segregation. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Source segregation of organic and inorganic wastes in different storage areas or facilities in the designated location.
- The organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit and covered by thick layer of soil on daily basis.



- Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix shall be used as refills for ground leveling.
- Packing materials used for casing components should be recyclable.
- 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.

Operation Phase

4.2.7 Electric and Fire Hazard

Employees performing servicing or maintenance of substations may be exposed to electric shock, burns and injuries from the unexpected energization or release of stored energy in the equipment. *The magnitude of impact is considered moderate, the extent is site-specific, and the duration is long term.*

Mitigation Measures

For this, the following mitigation measures will be practiced:

- 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.

B. Biological Environment

The proposed Subproject avoids forest area and other sensitive biodiversity area. Hence, there will be no significant impact to biological environment because of construction of substation and distribution lines.

Construction Phase

4.2.8 Loss of Habitat

As the proposed substation area is a barren land, whereas the 33 kV distribution line passes through the edges of road alignments, farm lands and forest areas. The total area of the forest area that will be occupied within RoW of the proposed 33 kV distribution line is 0.72 ha. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 189. The possible use of firewood should be restricted during the construction activities. *The magnitude of impact is moderate, the extent is site-specific, and the duration is long term.*

Table 4-1: Detail of impacted forest area and trees loss

Area (ha)			Name of species	No. of trees	
33kV line	Substation	Total		33kV line	Substation
0.72	-	0.72	<i>Dalbergia sissoo</i>	68	-
			<i>Terminalia elliptica</i>	10	-
			<i>Mallotus philippensis</i>	10	-
			<i>Tectona grandis</i>	38	-
			<i>Syzygium cumini</i>	17	-
			<i>Vachellia nilotica</i>	11	-
			<i>Baspatay</i>	17	-
			<i>Cinnamomum tamala</i>	7	-
			<i>Shorea robusta</i>	10	-
			Total	189	-

Mitigation Measures

- Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019).
- Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years.
- Workers and staffs should be restricted to use firewood for cooking.
- Providing LPG based stoves in Labor camp.
- Labors and staff shall be made aware to avoid illegal activities in adjoining forest.

Operation Phase**4.2.9 Bird electrocution and collision**

The Subproject area is located in a semi-urban area and there is no presence of critical habitat of avian fauna. Electrocution is a risk to bird species that perch on power line infrastructures (substations and distribution lines). List of birds presented in section 3.2, may collide to distribution lines and substation. Minimizing bird collision and electrocution risk is therefore a win-win for biodiversity and the power sector. *The magnitude of impact is low, the extent is site-specific, and the duration is long term.*

Mitigation Measures

- Bird guards should be installed above the poles and white spirals in the conductors to improve visibility electrical structures.

C. Socio-Economic and Cultural Environment

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

Construction Phase

4.2.10 Land Requirement

The land required for the proposed substation area is 1.03 ha, is the private land, that will be managed by NEA later. This has been confirmed officially through Ward Office, Bansgadhi Municipality. NEA is given the right to use the land to build and operate a substation. There will be no issues of land requirements for the pole erection and for the distribution line people have suggested to install poles at the edge of farm-lands, without affecting any private structures along the distribution line. But the proposed substation land is private land, so there is necessity of land acquisition which issues will be fulfilled by Resettlement Plan. For the construction of distribution lines, owners of private land along the route have assured and committed for necessary help and support during implementation. They have agreed on NEA's proposal that poles shall be installed on the edge of cultivated lands and appropriate compensation for the loss of crops shall be given (**Annex 5**). Compensation shall be made on the basis of crops types and quantity of loss equivalent to the market price. *The impacts will be low in magnitude, site specific, and long term in duration.*

Mitigation Measures

- Distribution pole of diameter 0.22 m should be installed on the edge of cultivated land making no loss of standing crops.
- If there is loss of crops, appropriate compensation shall be made.

4.2.11 Public Health

Construction activities will be of small scale, causing no significant adverse impact to existing quality of air, water and sound. Local people except the workers do not involve in construction activities. Considering COVID-19 pandemic as an example, workers will be advised to avoid unnecessary contact with local people. *The magnitude of impact is low, the extent is site-specific, and the duration is short term.*

Mitigation Measures

- Contractors shall implement health and safety plans.
- Awareness on HIV/AIDS and other sexually transmitted disease should be provided to the labors.
- Awareness on basic sanitation and waste management should be provided to the labors.

4.2.12 Occupational Hazards and Safety of workers

Occupational health hazard and safety of workers is the major issue during the construction period. Working without adopting safety measures during excavation work, spoil management work, mechanical and electrical equipment handling activities, chemical handling, etc. during construction may call the risk of accident. Primary victims are the workers involved in the construction. *So, the envisaged direct impact is high in magnitude, site specific in extent, short term in duration.*

Mitigation Measures

- Contractor shall prepare the Environmental, Health and Safety plan and take approval from the Client (NEA/PIU). Contractor shall employ Safety officer 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 7**.
- NEA will be responsible to supervise the EHS performance of the construction Contractor, and worker's health and safety.

4.2.13 Child Labor, and Gender Issues

During the construction period, people employed on daily wages for excavation, transportation of construction materials, and other construction-related works should avoid the involvement children and should avoid gender discrimination. Gender discrimination may occur as the Contractor may not be sensitive towards gender equity. Contractors should equally pay men and women workers. Construction area should be gender friendly with required facilities. *The envisaged impact is high in magnitude, site-specific in extent, and short-term in duration.*

Mitigation Measures

The Subproject will ensure to:

- Provide equal wage to male and female for similar nature of work.
- Restrict use of child labor i.e., below 16 years of age (which is as per government and ILO guidelines).
- Provide female friendly construction environment with separate cabins and toilet for women in the camp.
- Prepare suitable work categorization for women.

4.2.14 Socially Undesirable Activities

The workers may use alcohol and other forms of intoxication, gamble and quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area. *So, the envisaged impact is low in magnitude, local in extent, and short-term in duration.*

Mitigation Measures.

- Restrict movement of workers out of camp after dinner time in the night.
- Prohibit the 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 public relation officer to keep close and regular consultation and coordination with local communities.
- Regular monitoring of workers' behavior and take appropriate measure on rule violators.

Operation Phase

4.2.1 Hazards and Safety

Occupational health hazard and safety of staffs is the major issues during the operation phase of the substation. The possible electric shock and fire hazard might cause injury or death to working staffs thus the protection measures should be taken all the time. *The envisaged direct impact is high in magnitude, site specific in extent, long term in duration.*

Mitigation Measures

- There will be the use of insulation, guarding, grounding, electrical protective devices, and 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 strung above the house.
- Security fences around the substation.
- Establishment of warning signs
- Shutdown shall be taken during work on DL route

4.2.2 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; so, there will be no impact outside of the substation boundaries.⁷ 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 empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment.

⁷ 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: $1/(10 \times 10) = 1\%$. Likewise, the magnetic field drops to 0.1% of the field strength at the conductor: $1/(10 \times 10 \times 10) = 0.1\%$.

5. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

5.1 Methodology in Information Disclosure, Consultation and Participation

The following methodologies were followed for information disclosure, consultation and participation:

- i. Identification of the stakeholder is important to understand how the Subproject activities will engage with different institution/groups/individuals. The stakeholders are the groups that might be affected by the Subproject or might influence Subproject outcomes. The identified stakeholders are considered in three groups (**Figure 5-1**).

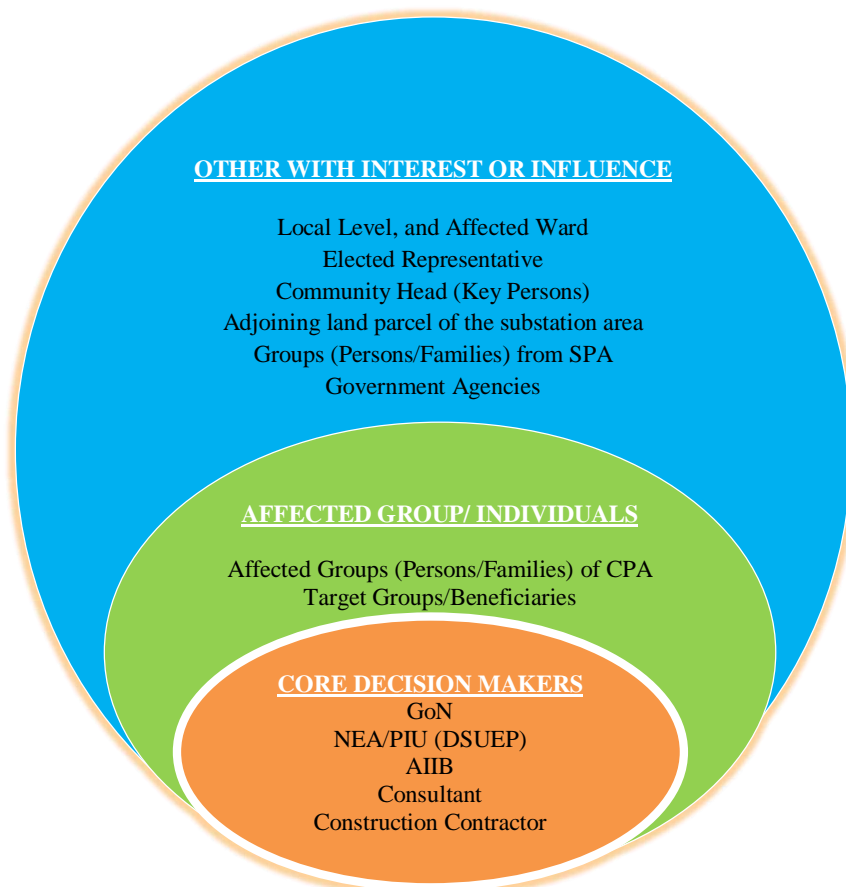


Figure 5-1: Identified Stakeholder in the Subproject⁸

- ii. The notice with subject of consultation, venue, and time was pasted at Subproject footprint area, local level and affected Ward office in presence of concerned local stakeholders (**Annex 1**). People were explained about the notices and their views were noted and agreed as Minute
- iii. Study team members visited all the local government offices within the Subproject influence area. Representatives from each local body were also consulted. All local governments were given request letters for their active support in project implementation. Municipalities were requested to provide written suggestions. The deed

⁸ Referenced Meaningful stakeholder engagement: a joint publication of the MFI working group on environmental and social standards / Reidar Kvam, PP-19, 2019.

of enquiry (Muchulkas) and Letter of Declaration from the stakeholders are presented in **Annex 6 and Error! Reference source not found..**

- iv. Local communities nearby substation area and along the distribution line routes were consulted, and were briefed about the Subproject activities and likely benefits with their suggestions (included in the Minutes).
- v. During the Subproject construction phase, booklets informing about the Subproject activities, likely impacts and mitigation measures together with the complaints handling mechanisms will be developed and distributed in the Subproject area.

5.2 Consultation and Information Disclosure

Consultation aims to encourage participation of stakeholders and communities of the Subproject area in identification of issues, comments and suggestions. The Subproject affected groups (persons/families) were given more emphasis during the field consultations. Public consultations were conducted at Kohalpur Municipality, Ward No. 15, Channawa on 18th February, 2022, Baijanath RM, Ward No. 6, Samjhana Bazar on 18th February, 2022, Basgadhi Municipality, Ward No. 3, Uttarbhakari on 18th February, 2022, Basgadhi Municipality, Ward No. 4, Matyariya on 19th February, 2022 (**Figure 5-2**). The concerns expressed and issues/ raised during the consultation were documented as in the form of minutes (**Annex 5**).

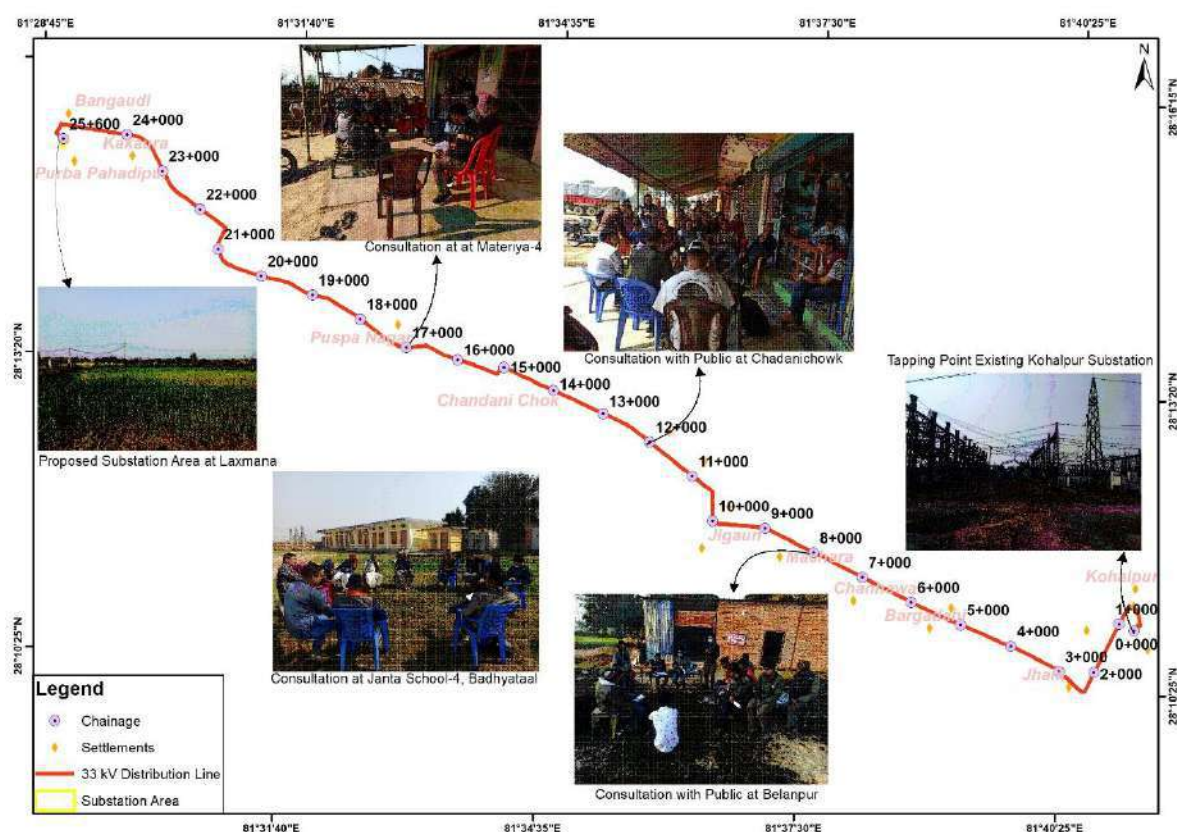


Figure 5-2: Consultation with the stakeholders and communities in the Subproject Area.⁹

⁹ Field Study, 2021. Used SW Map and GIS

Major benefits expected from the implementation of Subproject through the perspective of local people were identified from public interaction, and that included improvement in the rural electrification facilities ensuring the uninterrupted electricity in the households and better functioning of industries in the locality. The issues, comments and suggestions received in the consultation are presented in **Table 5-1**.

5.3 Comments and Suggestion Received

Table 5-1: Summary of issues, comments and suggestions received in Consultations

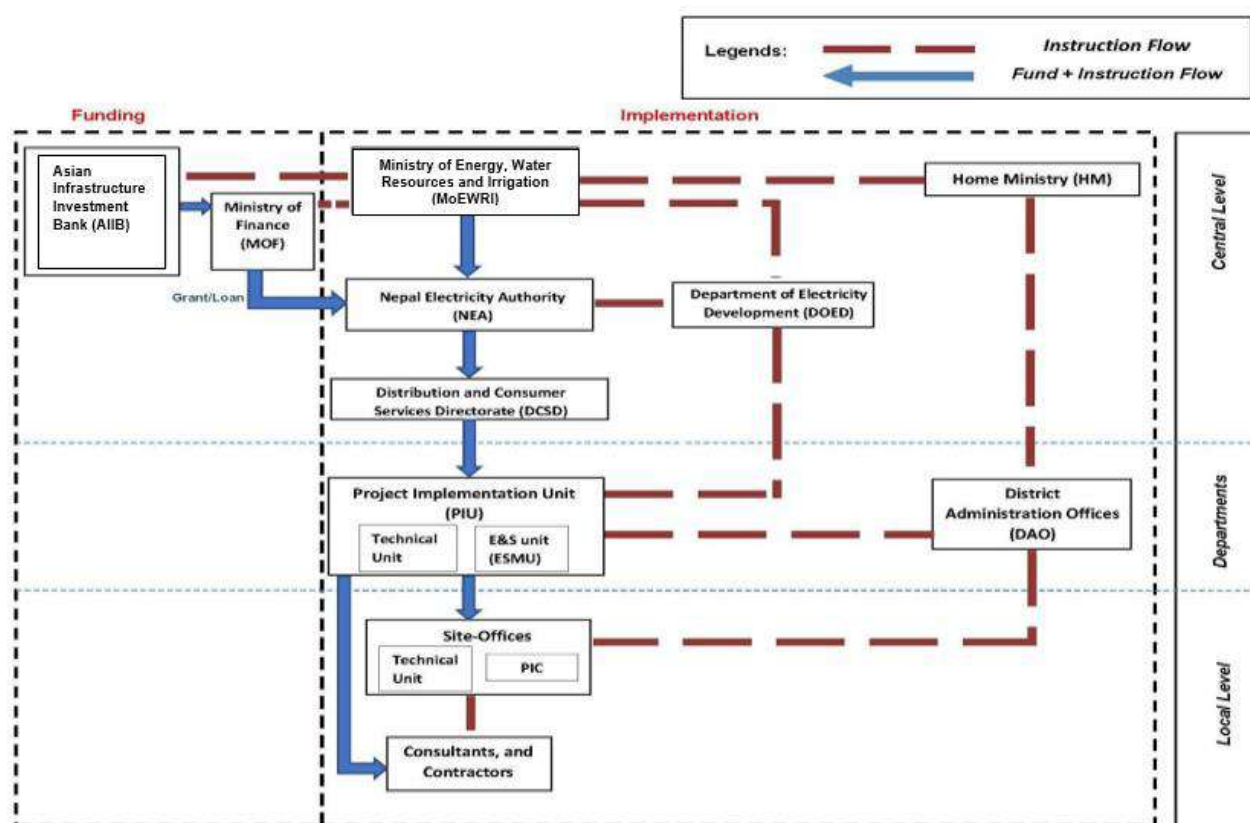
Source: Field Visit, 2022

Date	Location	Issues, comments and suggestions received	Participants
18 th February, 2022	Kohalpur Municipality, Ward No. 15, Channawa	<ul style="list-style-type: none"> The local people should be given priority for the employment based on the knowledge and skill in the construction of the project. This project does not directly affect their professions, customary rights, religion, values, etc. If it affects project should take measures to manage the issues. There is no electricity supply in most of the house in this area. It is requested that the project should start its construction immediately to ensure reliable electricity service to the local people. It is informed that there are no any places of ritual and cultural importance in the project area. The construction of this proposed sub-project will have the support and cooperation of stakeholder. 	16,0F-16M
18 th February, 2022	Baijanath RM, Ward No. 06, Samjhana Bazar		20,3F-17M
18 th February, 2022	Basgadhi Municipality, Ward No. 03, Uttarbhakari		19,2F-17M
19 th February, 2022	Basgadhi Municipality, Ward No. 04, Matyariya		19,4F-15M

6. INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM

6.1 Institutional Arrangement

The Ministry of Energy, Water Resources and Irrigation (MEWRI) is responsible for overall planning and execution of the plans for the overall development of water and energy sector in Nepal. Nepal Electricity Authority (NEA) under MEWRI 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 activities during the construction phase. He will also provide technical support in preparing the monitoring report.



Source: ESMF-DSUEP

Figure 6-1: Institutional Arrangement for Environmental and Social Management

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/PIU 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 shall provide safeguard compliance orientation to all environment monitors and safeguard team of the contractor, one month before the construction works start.

6.2 Grievance Redress Mechanism

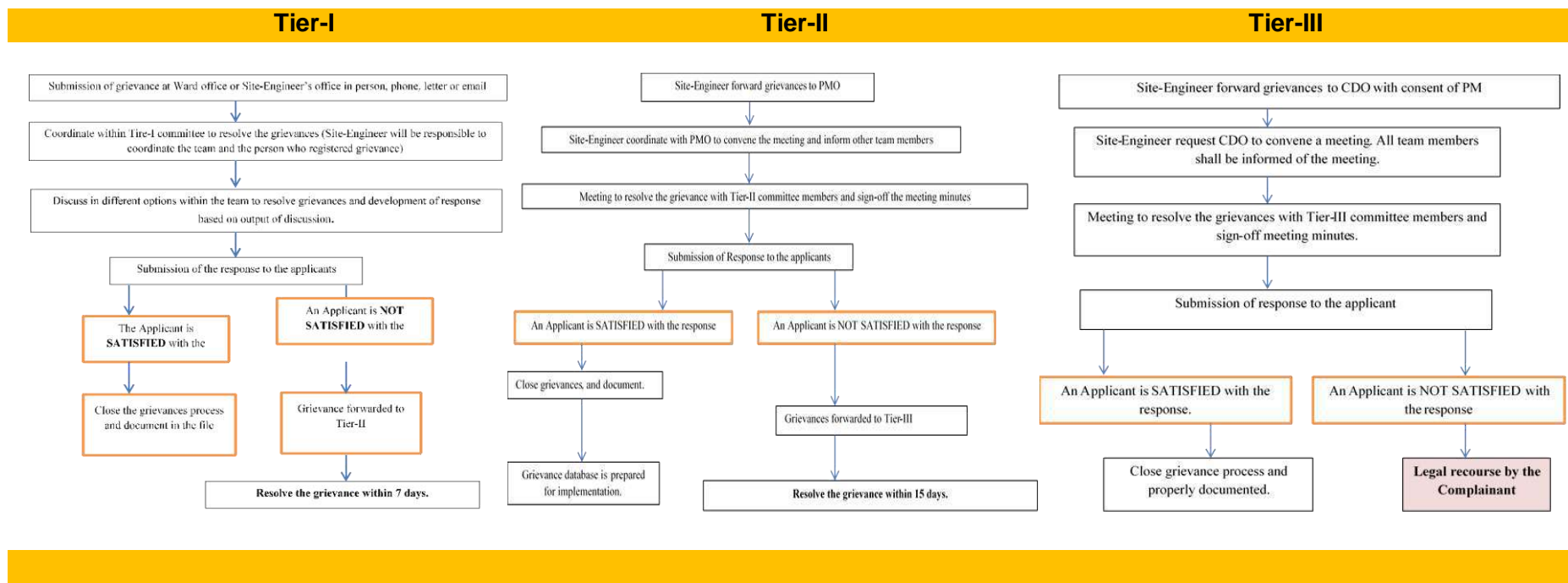
The Grievance Redress Mechanism (GRM) has been established to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental related issues at the subproject level. The GRM is designed to be simple, transparent and responsive. GRM shall address only the concerns arising due to the project implementation activities, mainly during construction stage. Social Comment Addressed -In each subproject, three levels Grievance Redress Mechanism will be established. During the ESMP study period NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the subproject level. Till date NEA has established Tier-I and Tier-II GRM has been established at local wards level and Municipality/RM level. Tier-II will be established before construction work start.

GRM 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, he/she should forward the grievance to the field office 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 carried to Tier II and Tier III. The three levels of GRM will be based on time-bound schedules as mentioned in **Table 6-1**. The subproject will carry the regular meeting for Tier-I, once a month to follow up if any grievances are received or not and to resolve the grievances received and update its status to PIU. **Figure 6-2** describes the Workflow Diagram of GRM for the Subprojects.



Table 6-1: Levels of Grievance Redress Mechanism Based on Time Bound

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. <i>If deemed necessary, representative from Forest Office, representative from Land Revenue Office, and representative from Land Survey Office are invited.</i>	
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
	Municipality Chief	Coordinator	Project Manager	Coordinator	Chief District Officer (CDO)	Chair
	Site-Engineer-NEA	Member secretary	Site-Engineer	Member Secretary	Project Manager	Coordinator
	Safeguards Expert from Consultant	Member	Municipality Chief	Member	Site-Engineer	Member Secretary
	Contractor Engineer	Member	Safeguards Expert from Consultant	Member	Municipality Chief/Ward Chair	Member
	Ward Chair	Member	Contractor Engineer	Member	Safeguards expert from consultant	Member
					Contractor Engineer	Member
					Representative from affected people	Member

Figure 6-2: Workflow Diagram for GRM from NEA¹⁰

* 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 Asian Infrastructure Investment Bank (AIIB) under Distribution System Upgrade and Expansion Project (DSUEP), Nepal Electricity Authority (NEA), May 2021.

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

7.1 Environmental and Social Management Plan and Mitigation Measures

The overall Environmental and Social Management Plan of the Subproject is presented in **Table 7-1**. 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 ESMU of PIU.



Table 7-1: Environmental and Social Management Plan (ESMP)

Project Activity	Environmental and Social Issues	Management/Mitigation Measures	Mitigation Cost	Responsibility	
				Planning and Implementation	Supervision and Monitoring
Pre-construction Phase					
Approvals, permits and clearances	<ul style="list-style-type: none">Installation of poles along the edge of private farm lands	<ul style="list-style-type: none">Site office and the contractor must inform the community prior to the installation of poles and stringing of the line along DL route	Cost will be included in the Resettlement plan	Site Office/ Contractor/	DSUEP (PIU)/NEA
Construction Phase					
Construction work in substation area and distribution line alignment	<ul style="list-style-type: none">Inadequate/unsafe working conditions	<ul style="list-style-type: none">Appropriate contract clauses to ensure satisfactory implementation of contractual environmental, health, and safety measures.		Site Office/Contractor	PIU/NEA
	<ul style="list-style-type: none">Accident may arise if the pit hole (depth-2m and diameter-0.22 m) prepared for steel tubular poles remains open for long time	<ul style="list-style-type: none">Pit holes for the steel tubular pole shall not be left open and should be filled instantly by erecting poles and concrete-cement around the base, should be used to strengthen the pole erectionContractors should follow the guideline provided by the PIU	Project Cost	Contractor/ Site Office	PIU/ESMU/ PIU
	<ul style="list-style-type: none">Dust emission - transportation of materials and	<ul style="list-style-type: none">Water sprays to be used for dust control as necessary in the earthen roads of the settlements nearby the substation area and	Air Quality Monitoring- 1,50,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

	movement of construction crews and equipment will cause minor impact	proper storage of the construction materials (sand, cements, aggregates and spoil) to be stored in substation area. • Steel poles firstly stocked in the substation area and secondly in the open barren area in coordination with Municipalities and Rural Municipalities. No social and environmental issues for the stockpiling of the steel poles and stringing wires	Sprinkling water (Dust Management) 2,00,000.00 (NRs.)		
	• Noise emission-Construction related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites	• Boundary walls serves as a noise barrier, and these shall be constructed as early as possible. • Construction equipment to meet national emissions and noise control standards.	Noise Level Monitoring-50,000.00 (NRs.) Provision of PPE in Project Cost	Contractor/ Site Office	PIU/ESMU
	• Interference with drainage patterns will be temporary at substation during construction phase	• A proper drainage system should be managed within the substation area. • Storm water run-off need to be minimized and controlled with bunding temporary dikes • Drainage management as a preventive measure against breeding of mosquitoes and other pests	Project Cost	Contractor/ Site Office	PIU/ESMU
	• Construction associated wastes generated within substation area and campsite location	• Organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered, by a thick layer of soil	Solid wastes management – 1,00,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

		<ul style="list-style-type: none"> Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix should be used as refills for ground leveling. Recyclable wastes like left out/non-usable reinforcement bars and packing materials to be sent or sold to scrap vendors. Effective coordination with local level government for the proper waste management 			
	<ul style="list-style-type: none"> Illegal fishing and bird hunting by the labors 	<ul style="list-style-type: none"> Discouraged by supplying adequate food items (poultry and fish) requirement within the camp. Awareness on legal provisions upon illegal hunting of biodiversity need to be disseminated 	Project Cost	Contractor/ Office	Site PIU/ESMU
	<ul style="list-style-type: none"> About 0.72 ha of forest area occurs within RoW of the proposed distribution line Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 189 	<ul style="list-style-type: none"> Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019). Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years. 	The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report	Contractor/ Office	Site PIU/ESMU
	<ul style="list-style-type: none"> Use of firewood from nearby forests 	<ul style="list-style-type: none"> Workers and staffs should be restricted to use firewood for cooking. Providing LPG based stoves in Labor camp. 	Project Cost	Contractor/ Office	Site PIU/ESMU
	<ul style="list-style-type: none"> Loss of standing crops at pole 	<ul style="list-style-type: none"> Pole to be installed at the edge of cultivated land making no loss of standing crops 	Project Cost	Contractor/Site Office	PIU/ESMU

	installation locations (depth-2m and diameter-0.22 m)	<ul style="list-style-type: none"> • Need to make prior consultation with landowner during installation of the pole and stringing of distribution lines • If there is loss of crops, appropriate compensation will be made by the project 			
Environment, Health and Safety	<ul style="list-style-type: none"> • Injury and sicknesses workers and members of the public • Potential fecal coliform contamination in drinking water 	<ul style="list-style-type: none"> • Contractor shall prepare the Environmental, Health and Safety plan and take approval from the client. Provision of safety officer in the work team shall be made during construction period. • All employees shall be provided with the necessary training, and safety equipment as required for their responsibilities and duties. • Basic facilities of drinking water, sanitation & clean resting place, canteen, and first aid shall be made available for the campsite. • Provision of health insurance to employees. • Security fences around the substation. • Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs). • Awareness on HIV/AIDS and other sexually transmitted disease. • Awareness on providing basic sanitation facilities and waste management control to the labors. • For coronavirus (COVID-19) pandemic situation, Contractors should arrange for quarantine and health services for infected workers. 	<p>Establishment of Labor Camp with basic facilities – In Project Cost</p> <p>EHS Awareness Trainings - 1,50,000.00 (NRs.)</p> <p>COVID-19 measures 2,00,000.00 (NRs.)</p>	Contractor/Site Office	PIU/ESMU
Management of electric equipment's, toxic materials of chemical wastes	<ul style="list-style-type: none"> • Possible spills resulting in contamination of soil, water, and air 	<ul style="list-style-type: none"> • Chemical waste generated from transformer shall be collected in leakage proof, corrosion free, specially designed container, and sealed carefully 	1,00,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

Operation and Maintenance Phase					
Electric shock and fire hazard	<ul style="list-style-type: none"> Injury or death to the workers and public 	<ul style="list-style-type: none"> Use of insulation, guarding, grounding, electrical protective devices, and safe work practices. Boundary walls and / or security fences around substations to prevent unauthorized access. Only trained and authorized personnel shall be allowed for the electrical works. No electric wire to be strung above the house. Installation of warning signs. 	Project Cost	NEA	NEA
Routine operations and maintenance	<ul style="list-style-type: none"> Potential disturbance to other utility functions and vehicular traffic. 	<ul style="list-style-type: none"> Maintain warning / advisory signs in good and visible condition Visual and technical inspection 	Project Cost	NEA	NEA
Oil spillage	<ul style="list-style-type: none"> Contamination of land/nearby water bodies 	<ul style="list-style-type: none"> Substation transformers should be stored within secure and impervious bundled areas with a storage capacity of at least 110% of the capacity of oil in transformers and associated reserve tanks. 	Project Cost	NEA	NEA
Bird electrocution and collision	Electrocution can cause a risk to bird species which perch on power line infrastructures	Provision of bird guards above the poles and white spirals on the conductors to improve visibility	Project Cost	NEA	NEA

(The provision of environment and social management cost should be included in the project cost making each items visible in BOQ of bidding document for the safeguard compliance by the construction contractor)

7.2 Proposed Monitoring Plan

The monitoring proposed in **Table 7-2** will be of value primarily for establishing baseline conditions in the Subproject area, and then for ambient quality monitoring.

Table 7-2: Minimum Provisions for Environmental Monitoring

Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Clearing of construction site	Substation boundaries	<ul style="list-style-type: none"> Field inspection of Subproject Sites and ensure that appropriate safety measures are implemented 	Clearing and restoration: weekly	Contractors to implement corporate EHS plan, drainage management and solid waste control in substation area.
Use of forest area and loss of trees	33 kV DL alignment	<ul style="list-style-type: none"> Field inspection of Subproject sites and ensure the compensatory plantation of 1:10 Related approval document for tree clearance 	Prior to the construction work	Contractor responsibility under the supervision of PIU/DFO
Air: SPM, Noise: dB	Substation boundaries and nearest receptor to substation	<ul style="list-style-type: none"> Spot check for noise and dust using portable monitoring device 	Air, and noise: quarterly during construction period	Contractors need to conduct the air and noise monitoring during the construction period at the substation location

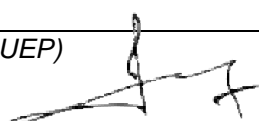
Construction wastes: on-site inspection	Visual inspection of active construction areas, including equipment staging areas and camps	<ul style="list-style-type: none"> Spot check / visual inspection of solid waste (spoil, muck etc.) generation and disposal. Analysis of transformer oils to determine if polychlorinated biphenyls are present. 	Monthly spot checks for construction waste management	PIU safeguard officers to provide oversight via regular field inspections, and submit monitoring reports to the Bank
Occupational health and safety	Substation boundaries	<ul style="list-style-type: none"> No. of Toolbox talk and safety orientation to the workers No. of workplace accidents Use of PPE by workers 	Daily Inspection during construction Monthly Inspection during operation phase	Inspection of the construction site by safety officer and PIU safeguard officer
Child involvement in construction work (need to be prohibited)	Substation work	<ul style="list-style-type: none"> Spot inspection at construction sites 	Monthly Inspection during construction	Site Office

7.3 Environmental and Mitigation and Monitoring Cost

Preliminary cost estimates for the ESMP implementation are shown in **Table 7-3**. **Error! Reference source not found..** These estimates cover the basic monitoring activities and the mitigation measures to be complied from the contractor's side. The ESMP cost estimated for the **Kohalpur–Machhagadh Distribution Line** is NRs 13,00,000.00. The community support activities and the costs will be presented in the Community Development Plan (CDP). NEA has agreed for the effective implementation of the mitigation and monitoring cost items as mentioned in table below.

Table 7-3: Mitigation Measures and Monitoring Activities Cost Estimates

SN	Budget Items	Unit	Rate (NRs.)	Estimated Amount for Monitoring (NRs)-Lump Sum
1	Air Quality Monitoring (at substation)	6 (Times)	25,000.00	150,000.00
2	Noise Level Monitoring (at substation)	6 (Times)	8,334.00	50,000.00
3	Sprinkling of water to be used for dust control necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials (sand, cements, aggregates and spoil)	200 (Times) During Excavation and Civil works	1000.00	2,00,000.00
4	Management of electric equipment's, toxic materials of chemical wastes	-	L.S.	1,00,000.00
5	Segregation and management of solid wastes	-	L.S.	1,00,000.00
6	COVID-19 measures (considering pandemic situation) standardize the quarantine facilities with health aid to the labors	-	L.S.	200,000.00
7	EHS Awareness raising trainings to the labors	10 (Events)	15,000.00	1,50,000.00
8	Meeting of Safeguard Desk and Grievance Redress Committee at Field Level	24 (Months)	14,583.00	3,50,000.00
Total				13,00,000.00




8. CONCLUSION

Potential environmental impacts of this Subproject are not diverse and are all site-specific i.e., confined to the Core Project Area. Civil works will have minimal temporary impacts on air, noise and water quality. Erection of poles during construction shall follow right of way of existing roads and the edge of farmlands. The PIU should give prior information before installation of the poles. In the ESMP consultations conducted in the settlement area, people have agreed for the implementation of the Subproject and have suggested to install poles on the edge of farm-lands, without affecting any private structures along the distribution line. If there is loss of crops, appropriate compensation shall be provided. The implementation of the proposed Subproject needs 0.72 ha of forest area with estimated loss of 189 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. Mitigation measures are suggested in this ESMP to avoid any possible environmental and social impacts. The total ESMP cost for this Subproject is NRs. 13,00,000.00. NEA Project Implementation Unit has agreed to implement the estimated cost for the mitigation measures and monitoring activities.

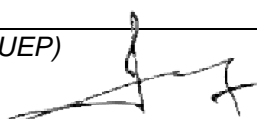


REFERENCES

- CBS. (2019). Environmental Statistics of Nepal. Kathmandu: Central Bureau of Statistics.
- CBS. (2018). Rural Municipality-Municipality Profile of Banke District. Banke: Office of Statistics.
- CBS. (2018). Rural Municipality-Municipality Profile of Bardiya District. Bardiya: Office of Statistics.
- DHM. (2021). Retrieved from <http://mfd.gov.np/city?id=26>
- DoS. (2020). Data & Metadata. Retrieved from National Spatial Data Center: Geoportal: <http://nationalgeoportal.gov.np>
- Environmental and Social Framework (ESF) Asian infrastructure investment Bank, Feb 2016 (Amended February 2019).
- Environmental and Social Management Framework (DSUEP) NEA- November 2021
- GoN (2019): Environmental Protection Act (EPA), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN (2020): Environmental Protection Rules (EPR), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN. (2050). National Environmental Impact Assessment Guidelines. National Planning Commission Secretariat.
- GoN. (2019). Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, Ministry of Forests and Environment, Singhadurbar, Kathmandu.
- Shahi, D. K., Rijal, H. B., & Shukuya, M. (2019). Study on Household Energy Usage Patterns in Urban and Rural Areas. Journal of the Institute of Engineering, 15 (No. 3), 402-410. doi:<https://doi.org/10.3126/jie.v15i3.32761>
- Stakeholder Engagement Strategy, DSUEP, NEA 2019.
- The White Paper. (2018). Energy, Water Resources and Irrigation Sector's Status and Roadmap for the Future. Kathmandu: Government of Nepal.
- WBG. (2018). <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2018&locations=NP&start=1996&view=chart>. Retrieved from <https://www.worldbank.org>.
- WECS. (2014). Energy Data Sheet. Water and Energy Commission Secretariat. www.energyefficiency.gov.np/downloadthis/final_data_book__11_june_2014.pdf




ANNEXES



**Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION
LETTER TO STAKEHOLDERS**



नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

फ्याक्स: ०१-४१५३१४४

फोन नं: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।



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

सूचना प्रकाशन मिति:

..... प्रदेश जिल्ला
.....(नगरपालिका/गाउँपालिका/महानगरपालिका/उपमहानगरपालिका)
मा एसियन इन्फ्रास्ट्रक्चर इन्भेस्टमेन्ट बैंकको ऋण सहयोग भएको नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना प्रस्तावक रही कार्यान्वयन गर्न लागिएको आयोजना कार्यान्वायन हुनुभन्दा अघि सो आयोजनाले त्यस क्षेत्रको वातावरण तथा सामाजिक पक्षहरूमा 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:

मिति:

समय:





नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

(ए.आई.आई.बि.)

फ्याक्स: ०१-४१५३१४४

फोन नं.: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।

प.सं. ०७८/७९: ५३८.

मिति: २०७८/१०/०७

श्री

विषय: गुनासो समाधान संयन्त्र गठन भएको सम्बन्धमा।

उपरोक्त विषयमा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंक (ए.आई.आई.बि.) को ऋण-सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (ए.आई.आई.बि.) प्रस्तावक रही कार्यान्वयन गर्न लागिएको
आयोजना अन्तर्गत नेपाल सरकारको पूर्ण-विद्युतीकरण गर्ने लक्ष्य बमोजिम तहोत वडा/गाउँपालिका/नगरपालिका/उप-महानगरपालिकामा ३३/११ के.भी. सब-स्टेशन, ३३ के.भी. लाईन, ११ के.भी. लाईन, ४०० भी. लाईन, आदि निर्माण कार्यहरु हुने भएकोले सो कार्यहरु गर्दा स्थानीय सरोकारवालाहरुको कुनै गुनासो भए सो गुनासोको समाधान गर्न गुनासो समाधान संयन्त्र निर्माण गरिएको छ। अतः संलग्न गुनासो समाधान संयन्त्र दस्तावेज बमोजिम आफ्ना गुनासोहरु दर्ता गर्न र सोही दस्तावेजमा भनिए बमोजिम गुनासोको समाधान हुने व्यहोरा सम्पूर्ण सरोकारवालाहरुलाई जानकारी गराइन्छ।

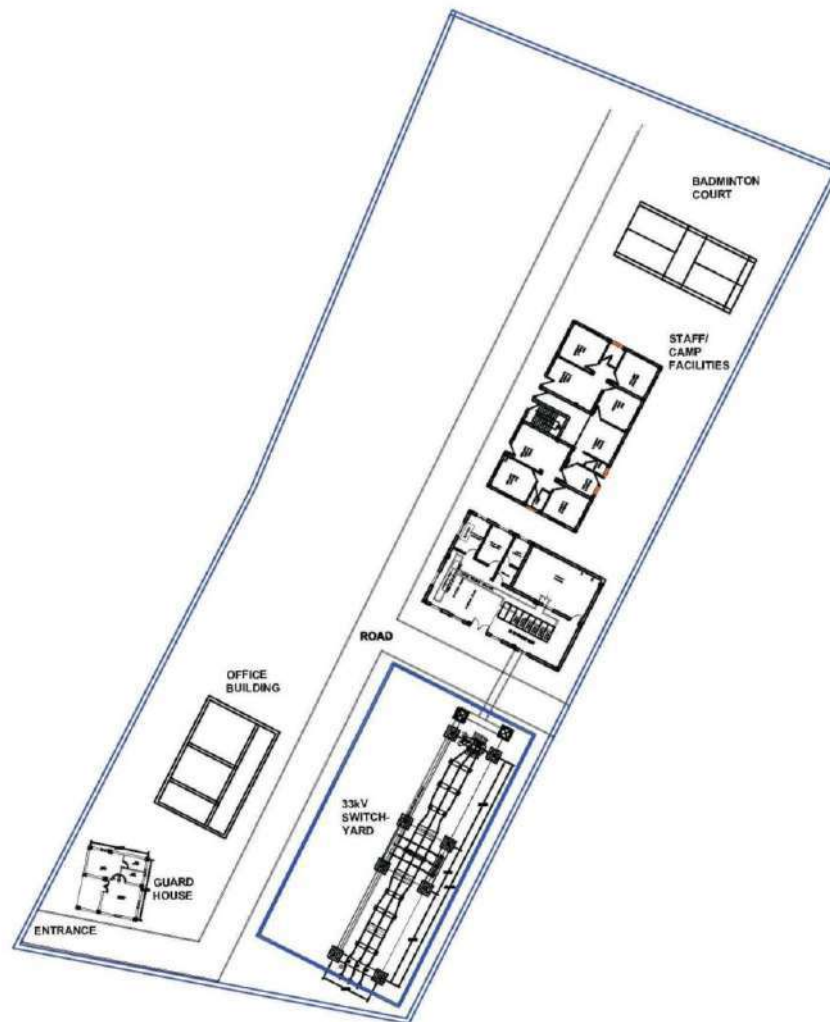
भवदीय,

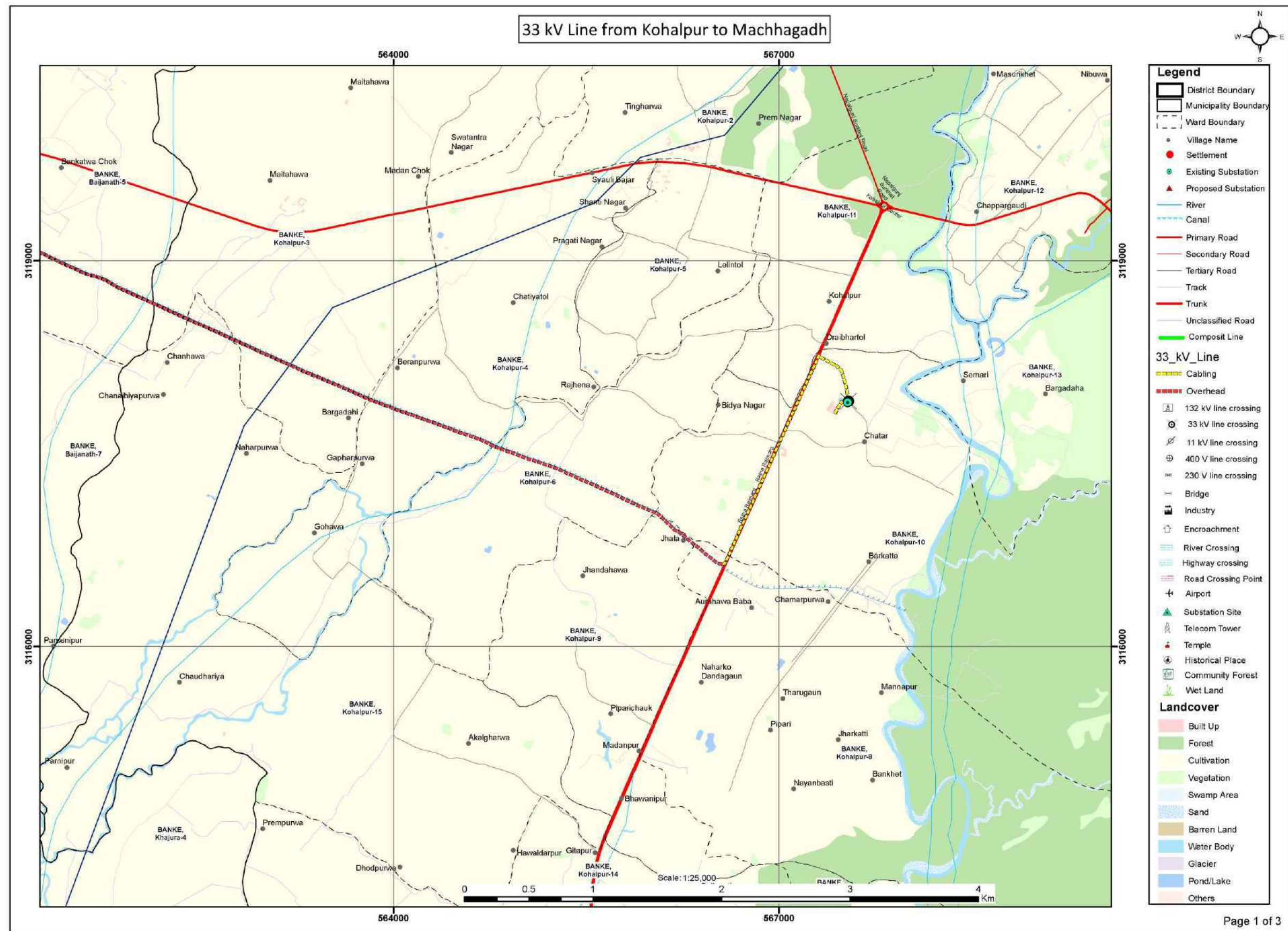
(केशव श्रेष्ठ)

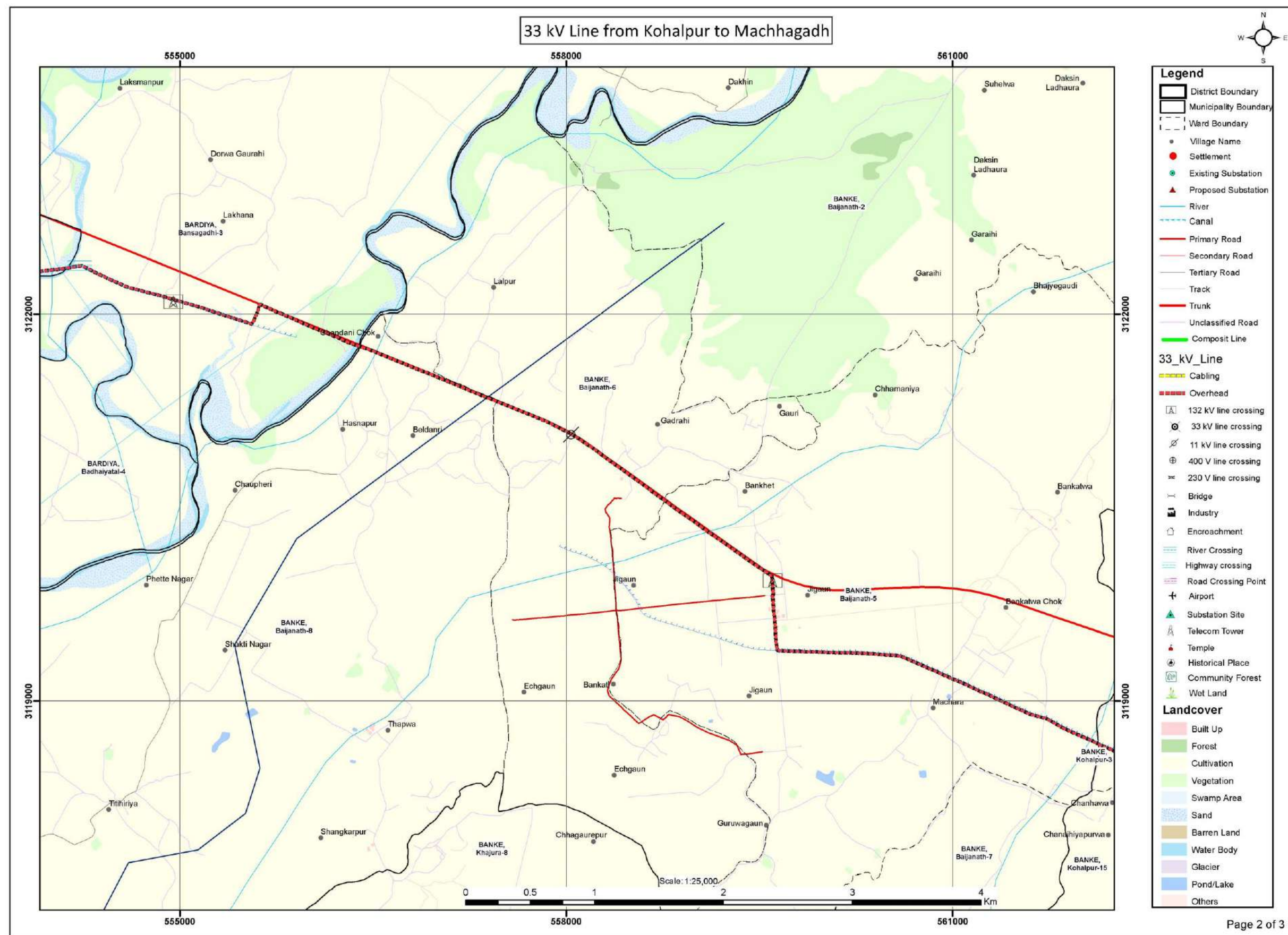
आयोजना प्रमुख

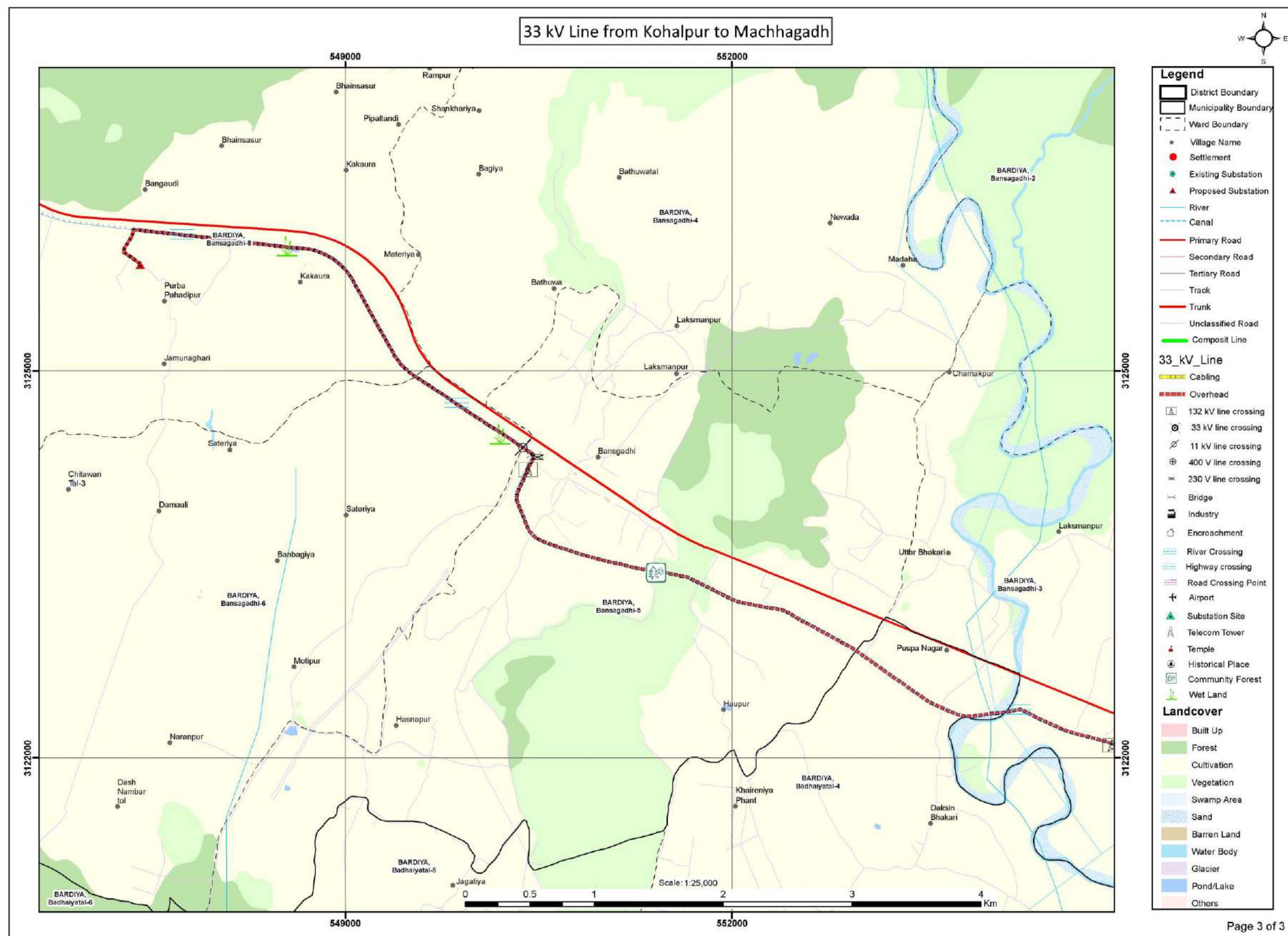


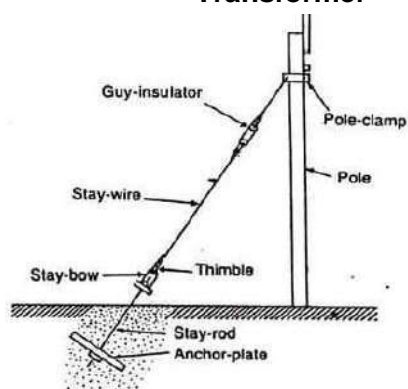
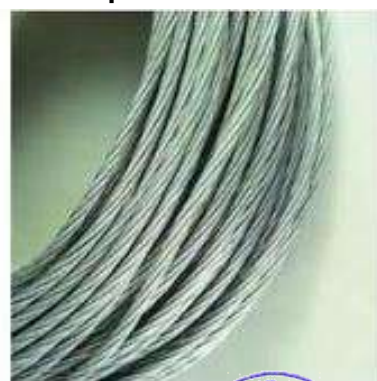
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT

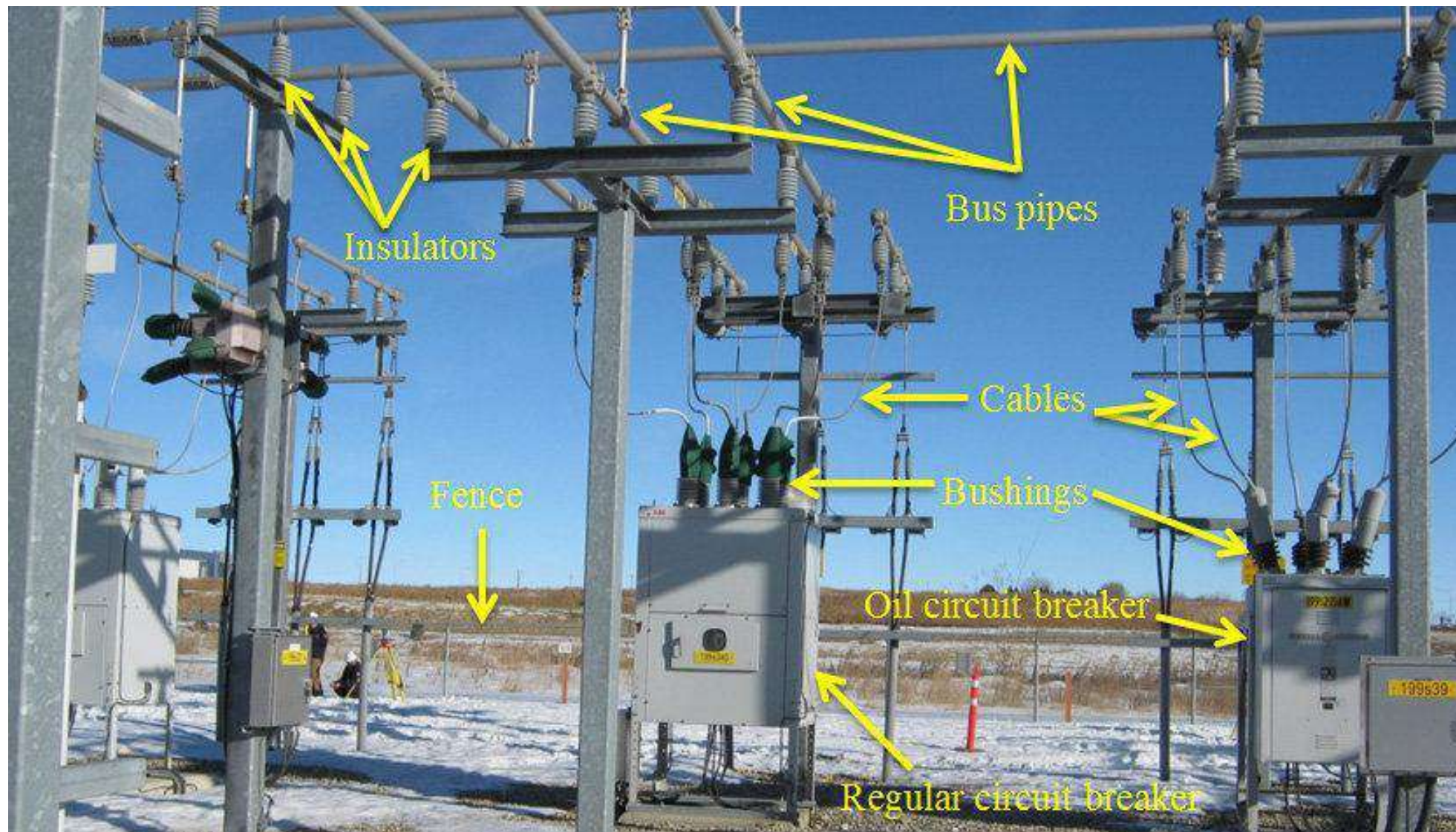








Annex 3: FACILITY AND COMPONENTS**Transformer****Switch Yard****Stay/Guy Sets****Steel Tubular Pole****Insulator****Civil-Structures Supporting Electrical Components****Conductor**



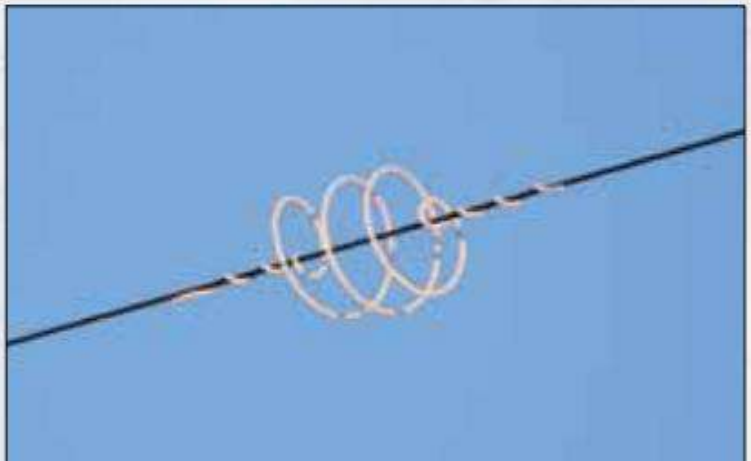
Possible components within 33 kV Substation



Bird Diverting Reflector



Wishbone Prevents Bird Landing on Wire



White Spiral in Wire Improves Visibility of Wire



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

Annex 4: LEGISLATIVE PROVISIONS

S N	Legal Provisions	Description	Relevancy concerning Project
1.	Constitution of Nepal	<ul style="list-style-type: none"> • The Constitution of Nepal is the main legal document, which emphasizes the right to a clean environment of the people, natural resources protection, preservation, and its prudent use. Rights regarding the clean environment, under article 30: • It includes making multi-purpose development of water resources, while according priority to domestic investment based on public participation to ensure a reliable supply of energy affordably, and easily, 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 fulfill the rights of people to live in a clean environment along with fulfilling the basic needs by providing access to sufficient energy.
2.	Environment Protection Act 2076 (2019 AD)	<ul style="list-style-type: none"> • Section 3 of the Act requires the proponent to conduct environmental studies concerning the prescribed proposals of any developmental works. Subsection 2 of this act provides the framework for the environmental study report prepared according to sub-section (1) shall, in fulfillment of the process as prescribed, be submitted to the relevant bodies of the Government of Nepal for approval. 	Environmental Studies, and approval of the report from the 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)	<ul style="list-style-type: none"> • Under the Environmental Protection Rules (2020) first amendment (2021), 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 the project by the Government of Nepal.
	[First Amendment on 2078 (2021)]	<ul style="list-style-type: none"> • Pertaining to Rule 3(1), Environment Protection Act (EPA), 2019 describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water resources and irrigation sector (1) under Environment Protection Regulation 2020 (First Amendment in 2021/05/24 on Nepal Gazette) state “use of forest area for the electricity distribution line project up to 66 KV” 	The proposed Subproject will use the of Sati Community Forest, and Rampur Community Forest land for the purpose of 33 kV distribution line extension and substation




			construction. For which, BES is mandatory.
4.	Nepal Environmental Policy, and Action Plan, 2050(1993)	<p>The aims of NEPAP are:</p> <ul style="list-style-type: none"> • To manage natural, and physical resources efficiently, and sustainably • To balance the development efforts, and environmental conservation for sustainable fulfillment 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 the adverse environmental impact of development projects, 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 the construction of a 33 kV distribution line along with a substation.
5.	Forest Act 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to the chapter 12, Section 42(1), if there is no other alternative to the using of forest area for the operation of a national priority project, plan of which investment is approved by the Investment Board, project of national pride and it appears from the environment examination referred to in the prevailing law that the operation of such plan does not result in significant adverse effects on the environment, the Government of Nepal may give approval, as prescribed, to use any part of the national forest for the purpose of operating such plan, • Similarly, In providing the forest area for the operation of a plan pursuant to sub-section (1), to the extent possible, a land that is adjoining to the national forest area near the project site and situated in the same geographical and ecological belt and has such landscape where forest can be developed shall be provided for the purpose of planting trees at least in the area equal to the forest area that has to be used. 	<ul style="list-style-type: none"> • About 0.72 ha of forest area occurs within RoW of the proposed 33 kV distribution line • Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 189
6.	Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to Section 4 (1), environmental study report should be prepared if the project needs the use of national forest area, • Section 7 require the approval of Government of Nepal, for the use of forest on the implementation of project • Section 17 (3) require plantation of trees in the ratio of 1:10 in the area given by the concerned 	<ul style="list-style-type: none"> • About 0.72 ha of forest area occurs within RoW of the proposed 33 kV distribution line • Estimated number of trees that need to be cleared from the Core




		forest office as a compensation for the removal trees during the project implementation Section 17 (4) require care, maintenance and upkeep of the planted trees and handover to concerned forest office after 5 years.	Project Area of the proposed DL alignment are 189
7.	Electricity Act 1992	<ul style="list-style-type: none"> • No person shall be entitled to conduct survey, generation, transmission, or distribution of electricity without obtaining a license under this act. • The Electricity Act of 1992 has the provision of land procurement for the development of Subprojects that involve electricity generation, transmission, or distribution. The Act states that the licensee may apply 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 a sufficient amount of electricity by constructing a 33 kV line, and substation by surveying to minimize the impacts.
8.	Rural Energy Policy, 2006	The rationale of formulating, and implementing this policy is to create a conducive environment that will self-motivate, and mobilize local institutions, rural energy user groups, non-government organizations, cooperatives, and private sector organizations 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 the promotion of such renewable energy technologies.	This project helps to improve the distribution and motivate use the of 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 the 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 the 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 kinds of characters.	The construction of a project is only possible when the rights of labor are secure. In this project, the Contractor should follow this act strictly.




10.	Child Labor (Prohibition, and Regulation) Act, 2056 (2000 AD)	As per section 3 of this act, no child has not attained the age of 14 years shall be engaged in works as a laborer.	Child labor is strictly prohibited in this project, and Contractors should follow this act.
11.	Solid Waste Management Act, 2068 (2011 AD)	This act has been formulated to minimize solid waste products from the target area by setting rules, and regulations on solid waste management (SWM) in the country to develop a better environment for the systematic, and effective management of solid waste, and to involve all the concerned stakeholders in SWM practice. The main features of this act are the discussion of the 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 saves the money which could be used for other infrastructure development. Section 4 of the act assigns the local body to manage or use the solid waste discharged or dumped in the collection center, transfer station, or treatment plant or collected during cleaning.	These acts provide the overall framework to manage the solid waste generated from households to the project level. Also, 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 the provision made in article 50 of the 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 the segregation, and management of solid waste. It has been mentioned that it is essential to segregate degradable, and non-degradable solid waste at the source.	These rules provide the overall framework for how to reduce the volume of waste disposed of at the source during the construction of the substation.
13.	Fifteenth Plan	The vision of the 15th plan is to contribute to the prosperity of the nation through sustainable, and reliable development of hydropower by setting the goal which is to ensure energy security through intensifying hydropower generation. In addition, one of the strategies of the government of Nepal in the 15th plan is to make the distribution system effective, and reliable to increase energy efficiency, and increase power consumption by expanding	This 5-year interim plan sets the goal about the generation, and distribution of hydroelectricity in Nepal which is directly related to this project.




		access to electricity by formulating the required policies:	
14.	United Nations Framework Convention on Climate Change (UNFCCC), 1992	UNFCCC, Signatories: 165. Parties: 195. (1), Article (4), commitment (f) 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, to minimize adverse effects on the economy, on public health, and the quality of the environment, of Subprojects or measures undertaken by them to mitigate or adapt to climate change. After it entered into force on 21 March 1994, it mandates the individual state for prioritization of resource conservation with development.	The goal of this project is to replace the traditional form of energy with clean energy i.e. electricity which ultimately reduces air pollution, and smoke.
15.	ILO 169	<p>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. Article 1 on the First Part of this convention mainly focused on the following points:</p> <p>(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 customs or traditions or by special laws or regulations;</p> <p>(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 all of their own social, economic, cultural, and political institutions.</p> <ul style="list-style-type: none"> • 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 people in this Convention shall not be construed as having any 	Nepal is the part of ILO convention that's why ILO 169 should strictly follow during construction, and implementation of any types




		implications as regards the rights which may attach to the term under international law.	
16.	Environment and Social Management Framework	<ul style="list-style-type: none"> 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 Financiers' 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
17.	Environmental and Social Policy (ESP)	<ul style="list-style-type: none"> 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
18.	Environmental and Social Standards of AIIB	<ul style="list-style-type: none"> Three associated mandatory environmental and social standards (ESSs) set out more detailed environmental and social requirements relating to the ESMP 	ESMP requirement

¹¹ <https://www.aiib.org/en/policiesstrategies/download/environmentframework/2016022604?c=3542.pdf>

Annex 5: CONSULATATION MEETING MINUTES

आज मिति २०७८/११/०६ ग्रा दिन कोठे जिल्ला कोरनपुर गा. पातिका वडा नं. १५ श्री खल्लुवासा नेपाल विद्युत प्राधिकरण वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुन गइरहेको कोरनपुर-माछागढ वितरण लाइन अप-आयोजना निर्माणको स्थलस्थलमा पर्ने सुक्ने कातावाणिय स्वास्थ्यिक प्रभावहरूको बारेमा स्थानीय सरोकारवालाहरूको उपस्थितिमा वडाको मैलामा देहाय बमोजिमका छलफल तथा निर्णय गरियो।

उपस्थिति

क्र.सं.	नाम	दैवाना	पद/पेशा	फोटो	हस्ताक्षर
१.	सुन्दरकुमार थापा	कोरनपुर-१५	वडा सदस्य		
२.	ध्यातशमश	"	"		
३.	धिराराम	"	समजसुत्री		
४.	सुन्दरकुमार	"	"		
५.	सुन्दर	"	"		
६.	सुन्दर	"	"		
७.	सिपुहा	"	"		
८.	लाहुरीराम	"	"		
९.	राम सिङ्ग	"	"		
१०.	कलियाम	"	"		
११.	लाल बहादुर	"	"		
१२.	ध्यातशमश	"	"		
१३.	भलोज	"	"		
१४.	अनिल	"	"		
१५.	लेक बहादुर ओली	"	"		
१६.	सिद्धार्थ शर्मा	"	"		
१७.	कृष्ण बान्त	NEAEC	"		
१८.	हेरम अधिकारी	"	"		
१९.	समजाल रबारी	"	"		

निर्णयहरू

१. आयोजनाबाट रकम भुक्तान विवरणको आयोजनाको कोषमा जानकारी प्राप्त भयो।
२. यत्त आयोजना निर्माण गर्दा स्थानीयवासीलाई बिपत्तिबाट बाधित नगर्ने रोजगारीको प्राथमिकता दिनु पर्नेछ।
३. यत्त आयोजना निर्माण गर्दा कालीनाली क्षेत्रमा नुनने गरी गर्नु पर्नेछ साथै क्षेत्रमा हुने अवस्था आएमा आयोजनाले उचित क्षतिपूर्ति दिनु पर्नेछ।
४. यत्त आयोजना निर्माणको क्रममा राख्न सज्जमा बसोबास गर्ने अतिरिक्त जनजातिहरूको स्वास्थ्यिक तथा धार्मिक संस्कारहरूमा नुनने प्रभावको नकारात्मक असर नपर्ने गरी गर्नु पर्नेछ साथै नकारात्मक असर पर्ने अवस्था आएमा आयोजनाले उचित क्षतिपूर्ति गर्नु पर्नेछ।
५. यत्त आयोजना निर्माणमा हावा सरोकारवालाहरूको पूर्ण सहयोग र समर्थन रहनेछ।
६. आयोजना प्रभावित क्षेत्र, बस्ती, स्वास्थ्यिक सम्पदा तथा संस्कारस्थल जस्ता जग्गाको जानकारी गराइन्छ।



Page No. _____
Date: / /

निर्णयहरू

१. आयोगनाकार रबहु भएका विज्ञहरूका आयोगनाको बारेमा जानकारी प्राप्त भयो ।
२. यस आयोगमा निर्माण गर्दा बालिनाली क्षति हुने गरि गर्नु पर्नेद्वारा साथै बालिनाली क्षति हुने अवस्था आएमा आयोगनाले उचित क्षतिपति दिनु पर्नेद्वारा ।
३. यस आयोगमा निर्माण गर्दा सिप र दस्ताको क्रोधमा स्फुरिनालीलाई रोक्नपर्नेमा प्राथमिकता दिनु पर्नेद्वारा ।
४. यस आयोगमा निर्माण गर्दा यस क्षेत्रका बसोबास गर्ने आदिवासी जनजातीहरूको धार्मिक तथा संस्कृतिक संस्कारहरूमा कुनै प्रकारको नकारात्मक क्षति नपर्ने गरि गर्नु पर्नेद्वारा साथै नकारात्मक असर पर्ने अवस्था आएमा आयोगनाले उचित व्यवस्थापन गर्नेद्वारा ।
५. यस आयोगमा निर्माणको क्रममा स्थानीय कृषक विवरण गरिएका खेतपानी लगायतका संस्कारहरूमा कुनै प्रकारको नकारात्मक क्षति नपर्ने गरि गर्नु पर्नेद्वारा साथै नकारात्मक क्षति हुने अवस्था आएमा आयोगनाले व्यवस्थापन गर्नु पर्नेद्वारा ।
६. यस आयोगमा निर्माणमा हामी सरकारबल्लभको पूर्ण सहयोग रहनेद्वारा ।

सहसचिव
सचिव
सचिव

Page No. _____
Date: / /

आज मिति २०७८/११/०६ का दिन वरिमा जिल्ला बौलगाँउ नगरपालिका वडा नं. ३ अन्तर्गत विद्युत प्राधिकरण वितरण प्रणाली स्तर उन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुन गर्दैरहेको कोहलपुर-मछगढ विद्युत वितरण लाइन उप-आयोजना निर्माणको क्रममा पर्ने एकरी नोताबारीगंज, लामाजि तथा सांस्कृतिक प्रभावहरूको बारेमा भएर वडाका वडाअध्यक्ष श्री प्रेमराज पौडेल ज्यू र श्री अमरकुमार तथा वडाका श्री समसुन्दरीदेवीलाई ३०७६ को विशेष उपस्थितिमा स्थानिय सरौडावालाहरूको उपस्थितिमा वरिडो भैतामा दैराध्य नमोजिमको छलफल तथा निर्णय गरियो।

उपस्थिति

क्र.सं.	नाम	हेगाना	पद/पेशा	जैन	हस्ताक्षर
१. श्री	प्रेमराज पौडेल	बौलगाँउ न.प.३ वडा अध्यक्ष	DSUEP	अध्यक्ष	
२. श्री	समसुन्दरी देवी	"	"	वडाध्यक्ष	
३. श्री	रामराज शाह	"	"	समसुन्दरी देवी, वडा सदस्य	
४. श्री	विष्णुनाथ शाह	"	"	"	
५. श्री	ठाकुर प्रसाद शाह	"	"	मेल विष्णुनाथ शाह, अध्यक्ष	
६. श्री	मनुनाथ शाह	"	"	"	
७. श्री	हरिप्रसाद अधिकारी	"	"	समसुन्दरी देवी	
८. श्री	विष्णुनाथ शाह	"	"	विष्णुनाथ शाह, अध्यक्ष	
९. श्री	विष्णुनाथ शाह	"	"	समसुन्दरी देवी	
१०. श्री	नारायण शाह	"	"	"	
११. श्री	गोरेराज शाह	"	"	विधानमन्त्री/समाजसेवी, अध्यक्ष	
१२. श्री	राम लाल शाह	"	"	समसुन्दरी देवी र १० वटा वडा	
१३. श्री	कृष्ण शाह	"	"	मेल विष्णुनाथ शाह, अध्यक्ष	
१४. श्री	हरिप्रसाद शाह	"	"	समसुन्दरी देवी	
१५. श्री	नारायण शाह	"	"	"	
१६. श्री	मनुनाथ शाह	"	"	"	
१७. श्री	राम लाल शाह	"	"	"	
१८. श्री	विष्णु शाह	"	"	"	
१९. श्री	लाली पन्ड	"	"	विष्णु	
२०. श्री	कृष्ण शाह	NEA	"	"	
२१. श्री	समसुन्दरी देवी	"	"	"	
२२. श्री	हरिप्रसाद अधिकारी	"	"	"	
२३. श्री	सुरज चौधरी	"	"	"	

Page No. _____
Date: / /

निर्णयहरू

१. आयोजनालाई स्वीकृतिका विस्तृतबाट आयोजनाको बारेमा जानकारी प्राप्त भयो।
२. यस आयोजना निर्माण गर्दा बालीनाली क्षेत्री नहुने गरि गर्नु पर्नेछ साथै क्षेत्री हुने अवस्था आएमा आयोजनाले उचित क्षतिपारि दिनु पर्नेछ।
३. यस आयोजना निर्माण गर्दा सिप र कृषकको आधारमा क्षतिप्रभासीलाई रोजगारीमा प्राथमिकता दिनुपर्नेछ।
४. यस आयोजना निर्माण गर्दा आदिवासी/अल्पसंख्यकको क्षति तथा सांस्कृतिक सम्पदाहरूमा कुनै प्रकारको नकारात्मक असर नपर्ने गरि गर्नुपर्नेछ साथै नकारात्मक असर पर्ने अवस्था आएमा आयोजनाले क्षतिपारि गर्नुपर्नेछ।
५. यस क्षेत्रको भोल्टेजको समस्या समाधानका लागि यथासंभव काम हुनु पर्ने आयोजनाले सहज अनुरोध साथ निर्णय गरियो।
६. यस आयोजना निर्माणमा हावा सरोकारालाई हुने पूर्ण सहयोग र समर्थन रहनेछ।

समसुन्दरी देवी

रामराज शाह

Page No. _____
Date: / /

आज मिति २०७८/११/०५ का दिन काठमाडौं जिल्ला बाँसगढी नगरपालिका वडा नं. ४ अटैरिमाथा नेपाल विद्युत प्राधिकरण वितरण प्रणाली स्तर उन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुन गइरहेको काठमाडौं-माछागढी विद्युत वितरण लाइन उप-आयोजना निर्माणको क्रममा पर्ने सक्ने वातावरणीय सामाजिक तथा सांस्कृतिक प्रभावहरूको बारेमा स्थानीय सरंजालालाई उपस्थितिमा लैजाँदा हेराय बमोजिमको छलफल तथा निर्णय गरियो।

उपस्थिति

क्र.सं.	नाम	हेराय	पद/पेशा	फोन	हस्ताक्षर
१.	अमेरिका-अमेरिका, काठमाडौं	काठमाडौं	काठमाडौं	१२-९-९९९९	
२.	काठमाडौं	"	"	९८५८०२०३९९	
३.	काठमाडौं	"	"	९८५८०२०३९९	
४.	काठमाडौं	"	"	९८५८०२०३९९	
५.	काठमाडौं	"	"	९८५८०२०३९९	
६.	काठमाडौं	"	"	९८५८०२०३९९	
७.	काठमाडौं	"	"	९८५८०२०३९९	
८.	काठमाडौं	"	"	९८५८०२०३९९	
९.	काठमाडौं	"	"	९८५८०२०३९९	
१०.	काठमाडौं	"	"	९८५८०२०३९९	
११.	काठमाडौं	"	"	९८५८०२०३९९	
१२.	काठमाडौं	"	"	९८५८०२०३९९	
१३.	काठमाडौं	"	"	९८५८०२०३९९	
१४.	काठमाडौं	"	"	९८५८०२०३९९	
१५.	काठमाडौं	"	"	९८५८०२०३९९	
१६.	काठमाडौं	"	"	९८५८०२०३९९	

Page No. _____
Date: / /

निर्णयहरू

१. आयोजनाबाट खटिने भएका विदाहरूलाई आयोजनाको करिमा जानकारी गराइयो।
२. आयोजना निर्माण गर्दा कालीनली क्षति नहुने गरी गर्नु पर्नेछ र सबै कालीनली क्षति हुने अवस्था आएमा आयोजनाले उचित क्षतिपूर्ति प्रदान गर्नुपर्नेछ।
३. यस आयोजना निर्माण गर्दा रिप र प्लानको आधारमा स्थानीयलाई रोजगारीका प्रशिक्षणको प्रदान गर्नु पर्नेछ।
४. यस आयोजना निर्माण गर्दा आदिवासी जनजातीहरूको क्षति तथा सांस्कृतिक सम्पदाहरूमा हुने प्रभाव नकारात्मक अझ नपरेको गरी गर्नु पर्नेछ साथै नकारात्मक अझ नपरेको अवस्था आएमा आयोजनाले उचित व्यवस्थापन गर्नु पर्नेछ।
५. यस क्षेत्रको भौतिक अवस्था समुदायका लागि निर्माण कार्यका लागि हुनु पर्ने आयोजना समुदाय अनुरोधका साथ निर्णय गरियो।
६. यस आयोजना निर्माणमा हामी सरंजालालाई पूर्ण सहयोग र समर्थन रहनेछ।

अमेरिका-अमेरिका
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं
काठमाडौं



Annex 6: DEED OF ENQUIRY (MUCHULKAS)



बैजनाथ गाउँपालिका

५ नं. वडा कार्यालय

बनकटभा, बाँके
लुम्बिनी प्रदेश, नेपाल
बनकटभा, बाँके
लुम्बिनी प्रदेश, नेपाल

प.सं. :- २०७८/०७९

स.सं. :- ४८३५

मिति :- २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण

नेपाल वितरण प्रणाली स्तरोन्नती तथा वितरण आयोजना

दरवामार्ग, काठमाडौं

विषय :- आयोजनाले आदिवासी जनजातीलाई असर गर्ने नगर्ने सम्बन्धमा ।

उपरोक्त विषयमा नेपाल विद्युत प्राधिकरण वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नती आयोजनाद्वारा कार्यन्वयन गर्न कोहलपुर- माछागढ विद्युत वितरण लाईन आयोजना अर्न्तगत यस बैजनाथ गाउँपालिका वडा नं. ५ हुदै वितरण लाईन जाने प्रत्यक्ष प्रभावित क्षेत्रमा आदिवासी जनजातीको बसोबास नभएता पनि नजिकको वस्तीमा आदिवासी जनजातीहरुको बसोबास रहेको तर आयोजना कार्यन्वयन गर्दा उनीहरुको सामाजिक, धार्मिक तथा संस्कृतीमा कुनै असर नपर्ने व्यहोरा जानकारीको लागि अनुरोध गरिन्छ ।

५/११/१०८
१०८/११/०८
मन्त्र बहादुर खत्री
मन्त्र बहादुर खत्री
वडा अध्यक्ष

website : www.baijanathmun.gov.np

email : ward5.baijanathmun@gmail.com





बैजनाथ गाउँपालिका

५ नं. वडा कार्यालय

बनकटवी, बाँके,
लुम्बिनी प्रदेश, नेपाल
५ नं वडा कार्यालय, नेपाल
बनकटवी, बाँके, नेपाल
लुम्बिनी प्रदेश

प.सं. :- २०७८/०७९

स.सं. :- २८९६

मिति :- २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण

नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना

दरबारमार्ग, काठमाडौं

विषय :- गुनासो समाधान संयन्त्र गठन भएको जानकारी सम्बन्धमा ।

प्रस्तुत विषयमा तहाँ कार्यालयको च.नं. १३२ मिति २०७८/१०/०६ गतेको प्राप्तपत्रानुसार कोहलपुर-
माछागढ विद्युत वितरण लाईन आयोजनाको गुनासो समाधान संयन्त्र गठन भएको व्यहोरा प्राप्त भएको
जानकारी गराइन्छ ।

११/११/०८
मन बहादुर खत्री
मन बहादुर खत्री
वडा अध्यक्ष

website : www.baijanathmun.gov.np

email : ward5.baijanathmun@gmail.com





बैजनाथ गाउँपालिका

५ नं. वडा कार्यालय

बसकटघा, बौक्रे,
लुम्बिनी प्रदेश, नेपाल

प.सं. :- २०७८/०७९

च.नं. :- २८९६

मिति :- २०७८/११/०५

श्री नेपाल विद्युत प्राधिकरण

नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना

दरवारमार्ग, काठमाडौं

विषय :- सुचना टाँसको जानकारी सम्बन्धमा ।

उपरोक्त विषयमा तहाँ कार्यालयको च.नं.१३२ मिति २०७८/१०/०६ गतेको प्राप्त पत्रानुसार कोहलपुर-माछागढ विद्युत वितरण लाईन जाने यस वडा कार्यालयको बस्तीहरुमा वातावरणीय तथा सामाजिक योजना प्रतिवेदन तयारी सम्बन्धि छलफलको सुचना यस कार्यालयको सुचना पाटीमा मिति २०७८/११/०५ गते टाँस गरिएको व्यहोरा जानकारीको लागि अनुरोध छ ।

५१०५११
००२५११/८
मन बहादुर खत्री
वडा अध्यक्ष
मन बहादुर खत्री
वडा अध्यक्ष

website : www.baijanathmun.gov.np

email : ward5.baijanathmun@gmail.com





बैजनाथ गाँउपालिका
Baijanath Rural Municipality
८ नं. वडा कार्यालय
8 no. Ward Office

टिटिहिरिया बाँके
Tithiriya Banke
लुम्बिनी प्रदेश नेपाल
Lumbini Province Nepal

पत्र संख्या/fiscal year :- २०७८/७९ (2078/79)

चलानि नं. Ref. No. : 2390



मिति: २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण

नेपाल वितरण प्रणालि स्तरोन्नती तथा विस्तार आयोजना दरबारमार्ग काठमान्डौ

विषय: गुनासो समाधान संयन्त्र गठन भएको जानकारी सम्बन्धमा ।

प्रस्तुत विषयमा तहाँ स्थित कार्यालयको मिति २०७८/१०/०७ च.नं. १३८ को पत्र बाट कोहलपुर-माछागढ विद्युत वितरण लाइन आयोजनाको गुनासो समाधान संयन्त्र गठन भएको जानकारी पत्र प्राप्त भएको जानकारी गराइन्छ ।

Signature
११/८

धन थाक
वडा अध्यक्ष

Signature





बैजनाथ गाँउपालिका
Baijanath Rural Municipality
८ नं. वडा कार्यालय
8 no. Ward Office

पत्र संख्या/fiscal year :- २०७८/७९ (2078/79)

चलानि नं. Ref. No. : २३०९



टिटिहिरिया बंके
Tithiriya Banke
लुम्बिनी प्रदेश नेपाल
Lumbini Province Nepal

मिति: २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण

नेपाल वितरण प्रणालि स्तरोन्नती तथा विस्तार आयोजना दरबारमार्ग काठमान्डौ

विषय: आयोजनाले आदिवासी जनजातिलाई असर गर्ने नगर्ने सम्बन्धमा ।

प्रस्तुत विषयमा नेपाल विद्युत प्राधिकरण वितरण तथा ग्राहक सेवा निर्देशनालय वितरण प्रणालि स्तरोन्नती तथा विस्तार आयोजना द्वारा कार्यन्वयन गर्न लागिएको कोहलपुर-माछागढ विद्युत वितरण लाइन आयोजना अन्तर्गत यस बैजनाथ गाँउपालिका वडा नं. ८ हुदै वितरण लाइन जाने बस्तिहरुमा आदिवासी जनजातिहरुको वसोबास नरहेको तर नजिकको बस्तिहरुमा आदिवासी जनजातिहरुको वसोबास रहेको भएतापनि आयोजना कार्यन्वयन गर्दा उनिहरुको सामाजिक धार्मिक संस्कृतिमा कुनै पनि प्रकारको असर नगर्ने व्यहोरा सिफारिस साथ अनुरोध छ ।

Signature
७९/८
भगन थारु
वडा अध्यक्ष

Signature





बैजनाथ गाँउपालिका
Baijanath Rural Municipality
८ नं. वडा कार्यालय
8 no. Ward Office

पत्र संख्या/fiscal year :- २०७८/७९ (2078/79)

चलानि नं. Ref. No. : २३९९



टिठिहिरिया बाँके
Tithiriya Banke
लुम्बिनी प्रदेश नेपाल
Lumbini Province Nepal

मिति: २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण

नेपाल बितरण प्रणालि स्तरोन्नती तथा विस्तार आयोजना दरवारमार्ग काठमान्डौ

विषय: सुचना टाँस सम्बन्धमा ।

प्रस्तुत विषयमा तहाँ स्थित कार्यालयको मिति २०७८/१०/०६ को प्रत्र अनुसार बैजनाथ गाँउपालिका वडा नं. ८ मा वातावरणीय तथा सामाजिक प्रतिवेदन तयारीका लागि हुने छलफल कार्यक्रमको सुचना टाँस मिति २०७८/१०/०६ मा गरीएको व्यहोरा सिफारिस साथ अनुरोध छ ।

सुमन
११/८
भगन थारु
वडा अध्यक्ष



बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

लुम्बिनी प्रदेश, कर्दिघा जिल्ला, काँसगढी गापा/नपा
वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कर्दिघा जिल्ला
काँसगढी गाउँ/नगर पालिका वार्ड नं ८, लक्ष्मणमा मा
आज २०७८/११/०५ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिदियो।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१.	तुल्यप्रसाद गौतम	काँसगढी न.पा. ८-लक्ष्मणमा	वार्ड.असफ	९८५८०८१५०८	
२.	रंजनाथ अंबी	"	"	स्थायी	
३.	अजय रायथोकी	"	"	९८५८०९९६३६	



बाँसगढी नगरपालिका
(Bansgadhi Municipality)
द.नं. वडा कार्यालय
(8 No. Ward Office)



ककौरा, बर्दिया (Kakaura, Bardiya)
लुम्बिनी प्रदेश नेपाल (Lumbini Province, Nepal)

प.स. २०७८/०७९

च.नं. (Issue No)

१३३४

7F4X+V3 BANSGADHI

मिति २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण

वितरण प्रमाणित स्तारउन्नती तथा विस्तार आयोजना बर्दिया
दरबारमार्ग, काठमाण्डौ

विषय : सिफारिस सम्बन्धमा ।

प्रस्तुत विषयमा तहाँ कार्यालयको च.नं १३७ मिति :२०७८-१०-०७ गतेको पत्रअनुसार व्यहोरा अवगत भयो सो सम्बन्धमा यस बाँसगढी नगरपालिका वडा नं ८ मा रहेका स्थानिय आदिबासि जनजातिलाई सो आयोजना कार्यन्वयन गर्दा कुनै पनि नकारात्मक असर नपर्ने हुदाँ तहाँ कार्यालयले नियमानुसार कार्य गर्नु हुन सिफारिस साथ अनुरोध छ ।

2065/199/05
तुल प्रसाद शर्मा
वडा अध्यक्ष



९८५८०८१३०८, वेबसाईट:- www.Bansgadhimun.gov.np ईमेल: bansgadhimun8@gmail.com,

फेसबुक :- facebook.com/bansgadhimunward8



श्री नेपाल विद्युत प्राधिकरण,
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
.....बुद्धिनी..... प्रदेश, ताप्लेजुङ जिल्ला, खैरबाग गापा/नपा
.....६६..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यसबुद्धिनी..... प्रदेश,
.....ताप्लेजुङ..... जिल्ला, गाउँनगर पालिका वार्ड नं. ६६..... मा अवस्थित
यस.....काभ्रेलखो..... को सूचना पाटिमा २०७८.१०.०२ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम:

पद:

अ.प्र. वडा अध्यक्ष
वडा अध्यक्ष



कार्यालय/संस्थाको छाप



बढैयाताल गाँउपालिका

४ नं. वडा कार्यालय

खैरेनी, बर्दिया

प.सं. :- ०७८/०७९

चलानी नम्बर : १२२०

मिति २०७८/११/०८

विषय : सुचना टाँस गरिएको सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण

वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना

दरबारमार्ग काठमाण्डौ ।

प्रस्तुत विषयमा तँहा कार्यालयको मिति २०७८/१/६ को गतेको पत्रानुसार कोहलपुर माछागढ विद्युत वितरण लाईन आयोजनाको बातावरण तथा सामाजिक व्यवस्थापन योजना प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सुचना यस वडा कार्यालयको सुचना पाटीमा मिति २०७८/ ११ /०५ गते टाँस गरिएको न्यहोरा जानकारीका लागि अनुरोध छ ।

का.बा.अ.अ.अ.
कमला शर्मा,



बैजनाथ गाउँपालिका

Baijanath Rural Municipality

६ नं. वडा कार्यालय

6 no. Ward Office

पत्र संख्या / fiscal year : ०७८/०७९

चलानी नं. / Ref. No. : २६२२



सम्झना, बाँके Samjhana, Banke

लुम्बिनी प्रदेश, नेपाल Lumbini Province, Nepal

मिति / Date : २०७८/११/०६

विषय :- सिफारिस सम्बन्धमा ।

श्री / Shree : नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
दरबारमार्ग, काठमाण्डौ

प्रस्तुत विषयमा तहाँ कार्यालयको चलानी नं. १३७ मिति २०७८/१०/०७ को पत्रानुसारको व्यहोरा प्राप्त भयो सो सम्बन्धमा यस बैजनाथ गाउँपालिका वडा नं. ६ मा रहेका स्थानीय आदिवासी जनजातीहरुलाई सो आयोजना कार्यान्वयन गर्दा कुनै पनि प्रकारको नकारात्मक प्रभाव नपर्ने भएको हुँदा तहाँ कार्यालयको नियमानुसार सो कार्य संचालन गर्नहुन सिफारिस साथ अनुरोध छ ।

(Signature)
भद्र बस्नेत
वडा अध्यक्ष

Website: www.baijanathmun.gov.np email: info@baijanathmun.gov.np, wards.baijanathmun@gmail.com

(Signature)





प.स. ०६८/०६९
च.न. १४२१



बढैयाताल गाँउपालिका
गाँउ कार्यपालिकाको कार्यालय
मैनापोखर, बर्दिया
लुम्बिनी प्रदेश, नेपाल

मिति : २०७८/१०/१२

विषय: सुचना टाँस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण
दरबारमार्ग, काठमाण्डौ

उपरोक्त सम्बन्धमा ताहाँ कार्यालयको च.नं.१३२ मिति २०७८/१०/०६ गतेको पत्रसाथ प्राप्त सुचनालाई यस कार्यालयको सुचना पाटिमा मिति २०७८/११/०५ गते टाँस गरिएको व्यहोरा अनुरोध गरिन्छ ।


धर्मराज न्यौपाने
प्रमुख प्रशासकीय अधिकृत



बढैयाताल गाँउपालिका
४ नं. वडा कार्यालय
खैरनी, बर्दिया

प.सं. :- ०७८/०७९
चलानी नम्बर : १२१८

मिति २०७८/११/०८

विषय : सिफारिस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना
दरबारमार्ग काठमाण्डौ ।

प्रस्तुत विषयमा तँहा कार्यालयको च.नं. १३७ मिति २०७८/१०/०७ गतेको पत्रानुसार ब्यहोरा अवगत भयो सो सम्बन्धमा यस बढैयाताल गाँउपालिका वडा न.४ मा रहेका स्थानिय आदिवासी जनजातीलाई सो आयोजना कार्यन्वयन गर्दा कुनै पनि नकारात्मक असर नपर्ने हुदा तँहा कार्यालयको नियमानुसार सो कार्य गर्नु हुन सिफारिस साथ अनुरोध छ।


का.बा.अध्यक्ष







पत्र संख्या (L.No.): २०७८/१०७९

चलानी नं. (Ref.No.): १४१८

बाँसगढी नगरपालिका
Bansgadhi Municipality
३ नं. वडा कार्यालय
Office Of ward No.3
गौडी, बर्दिया Gaudi Bardiya
लुम्बिनी प्रदेश नेपाल
Lumbini Province



मिति : २०७८/११/१०

विषय :- सिफारिस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति
दरबारमार्ग काठमाण्डौ ।

प्रस्तुत विषयमा तँहा कार्यालयको २०७८/१०१/१०६ गतेको पत्रानुसार कोहलपुर माछागाढ विद्युत वितरण लाईन आयोजनाको वातावरण तथा सामाजिक ब्यबस्थापन योजना प्रतिवेदन तयारी सम्बन्ध सार्वजनिक सुचना यस वडा कार्यालयको सुचना पाटीमा मिति २०७८/११/१०६ गते टास गरिएको ब्यहोरा जानकारीका लागि अनुरोध छ ।

११/१०/७८
प्रेमराज पौडेल
वडा अध्यक्ष

९८५८०८१३०३, वेबसाईट:- www.Bansgadhimun.gov.np ईमेल: bansgadhimun3@gmail.comफेसबुक :- [facebook.com/bansgadhimunward3](https://www.facebook.com/bansgadhimunward3)



बाँसगढी नगरपालिका
Bansgadhi Municipality
३ नं. वडा कार्यालय
Office Of ward No.3
गौडी, बर्दिया Gaudi Bardiya
लुम्बिनी प्रदेश नेपाल
Lumbini Province



पत्र संख्या (L.No.): २०७८/१०७९

चलानी नं. (Ref No.): १५१९

Lumbini Province



मिति : २०७८/११/१०

विषय :- सिफारिस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति
दरबारमार्ग काठमाण्डौ ।

प्रस्तुत विषयमा तँहा कार्यालयको च.न. १३७ मिति २०७८/१०/१० गतेको पत्रानुसार व्यहोरा अबगत भयो सो सम्बन्धमा यस बाँसगढी नगरपालिका वडा नं. ३ मा रहेका स्थानिय आदिबासी जनजातीलाई सो आयोजना कार्यन्वयन गर्दा कुनै पनि नकारात्मक असर नपर्ने हुदाँ तँहा कार्यालयको नियमानुसार सो कार्य गर्नु हुन सिफारिस साथ सादर अनुरोध छ ।

११/१०/७८
प्रेमराज पौडेल
वडा अध्यक्ष

९८५८०८१३०३, वेबसाईट:- www.Bansgadhimun.gov.npईमेल: bansgadhimun3@gmail.com,फेसबुक :- facebook.com/bansgadhimunward3

बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

जिल्ला, ... जिल्ला, ... जिल्ला, ... गापा/नपा
... वडा नं. ... नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस ... जिल्ला
... गाउँ/नगर पालिका वार्ड नं. ... , ... मा
आज २०७८.१२.१० गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिदियौं।

तपसिल

क्र.सं.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
---------	-----	--------	------	---------------	-----------

- १) प्रेम राज पौडेल वासगढी न.पा-३ वडा अध्यक्ष ९८५००८४०२
- २) राजा राम थापा वासगढी न.पा-३ वडा अध्यक्ष ९८५००८४०३ राजा राम
- ३) बुद्धि राम थापा वासगढी न.पा-३ वडा अध्यक्ष बुद्धि



बाँसगढी नगरपालिका
Bansgadhi Municipality
०५ नं वडा कार्यालय
Office of Ward No. 05

बाँसगढी (Bansgadhi)
लुम्बिनी प्रदेश, नेपाल (Lumbini Province, Nepal)



प.स. (I.No.)- ०७८/०७९

चलानी नं. (Ref.No) १४९८

मिति: २०७८/११/०८



श्री नेपाल विद्युत प्राधिकरण,
वितरण तथा ग्राहक सेवा निर्देशनालय
दरवारमार्ग, काठमाण्डौ

विषय : जानकारी सम्बन्धमा ।

उपरोक्त सम्बन्धमा ताहा कार्यालयको च०न० १३२ मिति २०७८-१०-०६ गते पत्रानुसारको सुचना टाँस गरिएको ब्यहोरा जानकारीका लागि अनुरोध गरिन्छ ।


नरेन्द्र गिरी
वडा अध्यक्ष
नरेन्द्र गिरी
वडा अध्यक्ष

078079-11-08-10-89-60

ईमेल: bansgadhimun5@gmail.com

वडा सचिव: ९८५८०८१४०५

वडा अध्यक्ष: ९८५८०८१३०५







बाँसगढी नगरपालिका
Bansgadhi Municipality
०५ नं वडा कार्यालय
Office of Ward No. 05
बाँसगढी (Bansgadhi)
लुम्बिनी प्रदेश, नेपाल (Lumbini Province, Nepal)



प.स. (I.No.)- ०७८/०७९

चलानी नं. (Ref.No) १४९६

मिति: २०७८/११/०८

श्री नेपाल विद्युत प्राधिकरण,
वितरण तथा ग्राहक सेवा निर्देशनालय
दरबारमार्ग, काठमाण्डौ

विषय : सिफारिस सम्बन्धमा ।

उपरोक्त सम्बन्धमा ताहा कार्यालयको च०न० १३७ मिति २०७८-१०-०७ पत्रानुसारको ब्यहोरा अवगत भयो, सो सम्बन्धमा यस बाँसगढी नगरपालिका वडा नं० ५ मा रहेको स्थानीय आदिवासी जनजातीलाई सो आयोजना कार्यन्वयन गर्दा कुनै पनि नकरात्मक असर नपर्ने हुँदा तैहा कार्यालयको नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध गरिन्छ ।

नरेन्द्र गिरी
वडा अध्यक्ष
वडा अध्यक्ष

इमेल: bansgadhimun5@gmail.com

वडा सचिव: ९८५८०८१४०५

वडा अध्यक्ष: ९८५८०८१३०५





पत्र संख्या (L.No.): २०७८/१०७९
चलानी नं. (Ref No.): ९५४६



बाँसगढी नगरपालिका
Bansgadhi Municipality
४ नं. वडा कार्यालय
Office Of ward No.4
बठुवा, बर्दिया Bathuwa Bardiya



लुम्बिनी प्रदेश नेपाल
Lumbini Province

मिति- २०७८-११-०८

विषय- सिफारीस सम्बन्धमा

श्री नेपाल विद्युत प्राधिकरण

वितरण प्रमाणि स्तरउन्नती तथा विस्तार आयोजना

दरबारमार्ग, काठमाण्डौ

उपरोक्त सम्बन्धमा तह कार्यालयको च.न. १३७ मिति-२०७८-१०-०७ गतेको पत्रानुसार व्यहोरा अवगत भयो सो सम्बन्धमा यस बाँसगढी नगरपालिका वडा नं. ४ मा रहेका स्थानिय आदिबासि जनजातिलाई सो आयोजना कार्यान्वयन गर्दा कुनै पनि नकारात्मक असर नपर्ने हुदा तहाँ कार्यालयले नियमानुसार सो कार्य गर्नुहुन सिफारीस साथ सादर अनुरोध गरिन्छ ।

(Signature)
रजश्री चौधरी
वडा अध्यक्ष



9858081304 वेबसाईट:- www.Bansgadhimun.gov.np ईमेल: bansgadhimun4@gmail.com,

फेसबुक :- facebook.com/bansgadhimunward4





कोहलपुर नगरपालिका द नं. बडा कार्यालय

कोहलपुर बाँके
स्था २०७४
लुम्बिनी प्रदेश
स्थापना : २०७४

प.सं. : ०७८/०७९

च.नं. : १४४४

लुम्बिनी प्रदेश

मिति : २०७८/११/०५

श्री नेपाल विद्युत प्राधिकरण

वितरण तथा ग्राहकसेवा निर्देशनाल

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

दरबारमार्ग, काठमाण्डौ

विषय:-जानकारी सम्बन्धमा ।

प्रस्तुत विषयमा तहाँको प.सं.०७८/०७९ च.नं.१३७ मिति २०७८/१०/०७ को प्राप्त पत्रानुसार यस क्षेत्रमा कार्यान्वयन गर्न लागिएको कोहलपुर-माछागढ विद्युत वितरण लाइनबाट यस वडा अन्तर्गत रहेका स्थानीय आदिवासी जनजातिहरुको परम्परागत रहनसहन ,धर्म ,भाषा ,संस्कृति आदिमा कुनै असर नपर्ने ब्यहोरा जानकारीका लागि अनुरोध छ ।

Signature
2062/11/12
कार्यवाहक अध्यक्ष

Signature





कोहलपुर नगरपालिका
१० नं. वडा कार्यालय

कोहलपुर, बाँके
लुम्बिनी प्रदेश, नेपाल



प.सं. : ०७८/०७९

च.नं. १६८१

फोन नं. : ०८१-५४१६०६

श्री नेपाल बिद्युत प्राधिकरण,
नेपाल बितरण प्रणालीस्तरोन्नती तथा बिस्तार आयोजना,
दरबारमार्ग काठमाण्डौ ।

मिति:-२०७८/११/१२

बिषय:- जानकारी ।

उपरोक्त बिषयमा तहाँको प.सं.०७८/०७९च.नं.१३२ मिति २०७८/१०/०६ को प्राप्त पत्र साथ प्राप्त हुन आएको यस वडाको क्षेत्रमा कार्यन्वयन गर्न लागीएको कोहलपुर माछागढ बिद्युत बितरण लाईन कार्य बाट यस वडा अन्तरगत रहेका स्थानिय आदीवासी जनजातीहरुको परम्परा गत रहनसहन,धर्म,भाषा,संस्कृति आदीमा असर पर्ने नपर्ने बारेको सूचना यस कार्यालयको सूचना पाटीमा टाँस गरीएको व्यहोरा जानकारीको लागी अनुरोध गरीन्छ ।

हरि प्रसाद थारु
का.वा. वडा अध्यक्ष

“सक्षम निजामति प्रशासन : विकास सम्बृद्धि र सुशासन ।”





कोहलपुर नगरपालिका
१० नं. वडा कार्यालय

कोहलपुर, बाँके
लुम्बिनी प्रदेश, नेपाल

स्था. २०७३



प.सं. : ०७८/०७९

च.नं. १७८०

फोन नं. : ०८१-४४९६०६

श्री नेपाल बिद्युत प्राधिकरण,
नेपाल बितरण प्रणालीस्तरोन्नती तथा बिस्तार आयोजना,
दरबारमार्ग काठमाण्डौ ।

मिति:-२०७८/११/१५

बिषय:- जानकारी ।

उपरोक्त बिषयमा तहांको प.सं.०७८/०७९च.नं.१३२ मिति २०७८/१०/०७ को प्रप्त पत्रानुसार यस वडाको क्षेत्रमा कार्यन्वयन गर्न लागीएको कोहलपुर माछागढ बिद्युत बितरण लाईन कार्य बाट यस वडा अन्तरगत रहेका स्थानिय आदीबासी जनजातीहरुको परम्परा गत रहनसहन,धर्म,भाषा,संस्कृति आदीमा कुनै असर नपर्ने व्यहोरा जानकारीको लागी अनुरोध गरीन्छ ।

हरि प्रसाद थारु
का.बा. वडा अध्यक्ष

“सक्षम निजामति प्रशासन : विकास सम्बृद्धि र सुशासन ।”





कोहलपुर नगरपालिका
द नं. बडा कार्यालय

कोहलपुर बाँके
स्था. २०७४
आपना : २०७४

प.सं. : ०७८/०७९

लुम्बिनी प्रदेश

च.नं. : १५०८

मिति : २०७८/११/०२

श्री नेपाल विद्युत प्राधिकरण

वितरण तथा ग्राहकसेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

दरबारमार्ग, काठमाण्डौ

विषय:-सूचना टाँसको जानकारी पठाएको बारे ।

प्रस्तुत विषयमा तँहाको च.नं.१३२ मिति २०७८/१०/०६ को मिति २०७८/११/०२ मा यस कार्यालयमा प्राप्त पत्रसाथ संलग्न सूचना थान -१ यस कार्यालयको सूचना पाटीमा आजैका दिन टाँस गरिएको ब्यहोरा जानकारीका लागि अनुरोध छ ।

(Signature)
०६/११/०२
कार्यवाहक अध्यक्ष

(Signature)





कोहलपुर नगरपालिका ४ नं. वडा कार्यालय

पत्र संख्या :- ०६८/०६९

चलानी नं. :- ८९५

कोहलपुर नगरपालिका
लुम्बिनी प्रदेश, नेपाल
स्था. २०७३

मिति : २०६८/११/०५

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
हरिवर मार्ग, काठमाडौं

विषय :- सिफारिस सम्बन्धमा ।

प्रस्तुत विषयमा तंहा कार्यालयको च.नं. १३६ मिति : २०६८/१०/०६
गतेको पत्रानुसारको ज्ञाहोरा अवगत भयो, सो सम्बन्धमा अह
कोहलपुर नगरपालिका वडा नं. ४ मा रहेको स्थानिय आदिवासी
जनजातीलाई सो आश्रयोजना कार्यस्थल जाँदा कुनै पनि तक्रालक
भएर तपने हुँदा तंहा कार्यालयको निशानानुसार सो कार्य गर्नुहुन
सिफारिस साथ अनुरोध छ ।

तिरथराम थारु
०६/११/०५

वडा अध्यक्ष

तिरथराम थारु

तिरथराम थारु
वडा अध्यक्ष

श्री नेपाल विद्युत प्राधिकरण .
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाडौं, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
लुम्बिनी प्रदेश, बाँके जिल्ला, चौ.हलपुर गा.पा.नपा
४ नं. वडा नं. ४ मा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यस लुम्बिनी प्रदेश,
बाँके जिल्ला, गाउँनगर पालिका वार्ड नं. ४ मा अवस्थित
यस वडा अध्यक्षको को सूचना पाटिभा २०७८/११/०२ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम: तिरथराम थारु

पद: वडा अध्यक्ष

तिरथराम थारु
वडा अध्यक्ष

कार्यालय/संस्थाको छाप



श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
.....सुनसरी..... प्रदेश,कोशी..... जिल्ला,कोशी..... गापा/नगर
.....कोशी..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यससुनसरी..... प्रदेश,
.....कोशी..... जिल्ला, गाउँ/नगर पालिका वार्ड नंकोशी..... मा अवस्थित
यसकोशी..... को सूचना पाटिमा २०७८.१०.०६ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर: सुनिता
नाम: सुनिता थापु
पद: ज.वा. अध्यक्ष

कार्यालय/संस्थाको छाप



(Handwritten signature)





कोहलपुर नगरपालिका
३ नं. वडा कार्यालय
मदनचोक कोहलपुर, बाँके
लुम्बिनी प्रदेश, नेपाल
स्था. २०७३

पसं. ०७८/०७९

च.न. १९९२

मिति: २०७८/११/०५

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
दरबारमार्ग काठमाण्डौ ।

विषय:- सिफारिस सम्बन्धमा ।

प्रस्तुत विषयमा तहाँ कार्यालयको च.नं. १३७ मिति २०७८/१०/०७ गतेको पत्र प्राप्त भए अनुसार यस कोहलपुर नगरपालिका वडा नं. ०३ मा रहेको स्थानिय आदिवासी जनजातिलाई सो आयोजना कार्यान्वयन गर्दा कुनै पनि नकरात्मक असर नपर्ने भएको हुदाँ तहाँ कार्यालयको नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध छ ।

सुनिता
२०७८/११/०५
का.बा. वडा अध्यक्ष
वडा नं. ३





कोहलपुर नगरपालिका

१५ नं.वडा कार्यालय

अकलघरवा बाँके
लुम्बिनी प्रदेश, नेपाल

स्था. २०७३



पत्र संख्या: २०७८/७९

चलानी नं. १२९८

मिति: २०७८/११/०६

बिषय - सिफारीस गरिएको बारे ।

श्री - श्री नेपाल बिधुत प्राधिकरण ।

बितरण तथा ग्राहक सेवा निर्देशनालय

दरबारमार्ग कठमाडौं

प्रस्तुत बिषयमा तहा कार्यालयको च न १३७ मिति २०७८/१०/०७ गतेको पत्रानुसार ब्यहोरा अवगत भयो सो सम्बन्धमा यस ~~क्षेत्र~~ कोहलपुर न पा १५ न वडा मा रहेका स्थानिय आदिबासी जनजातिलाई सो आयोजना कार्यनवयन गर्दा कुनै पनि नकरात्मक असर नपर्ने हुदा तहा कार्यालयको नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध गरिन्छ

पारी ०६०८१११६
पतिराम थारु
वडा नं. १५ वडा अध्यक्ष





कोहलपुर नगरपालिका
१५ नं.वडा कार्यालय

अकलघरवा बाँके
लुम्बिनी प्रदेश, नेपाल
स्था. २०७३



पत्र संख्या: २०७८/७९

चलानी नं. १२९८

मिति: २०७८/११/०५

बिषय - सिफारीस गरिएको बारे ।

श्री - श्री नेपाल बिधुत प्राधिकरण ।

बितरण तथा ग्राहक सेवा निर्देशनालय

दरबारमार्ग कठमांडौ

प्रस्तुत बिषयमा तहा कार्यालयको च.न.१३७ मिति २०७८/१०/०६ गतेको प्राप्त पत्रानुसार नेपाल बिधुत प्राधिकरण, बितरण तथा ग्राहक सेवा निर्देशनालय, बितरण प्राणाली स्तरोन्नती तथा विस्तार आयोजना यस वडाको क्षेत्रको वातावरण तथा सामाजिक पक्षहरुमा के कस्तो प्रभाव पारदछ भनि स्थानिय सरोकारवाला हरु संग छलफल गर्ने सम्बन्धि सूचना यस वडाको सूचना पाटीमा टाँस गरको हो भनि जानकारी साथ अनुरोध गरिन्छ ।

ज.प्र. ०६२१९१६
पतिराम थारु
वडा नं. १५ वडा अध्यक्ष





कोहलपुर नगरपालिका ६ नं. वडा कार्यालय

कोहलपुर, बाँके
लुम्बिनी प्रदेश, नेपाल
स्था. २०७३

प.सं. २०७८/०७९

च.नं. १४४७

मिति २०७८/१०/०४

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
दरबारमार्ग, काठमाण्डौ ।



विषय:- सिफारिस सम्बन्धमा ।

प्रस्तुत विषयमा तैहा कार्यालयको च.नं.१३७ मिति २०७८/१०/०७ गतेको प्राप्त पत्रानुसार व्यहोरा जानकारी भयो । सो सम्बन्धमा यस कोहलपुर नगरपालिका वडा नं. ६ मा रहेको स्थानीय आदिवासी जनजाति बासिन्दाहरुलाई सो आयोजना कार्यान्वयन गर्दा कुनै नकारात्मक असर नपर्ने हुदा तैहा कार्यालयको नियमानुसार सो आयोजना कार्यान्वयन गर्न गराउनुहुन सिफारिस साथ अनुरोध गरिन्छ

(Signature)
०६-१०/०४
राम शरण थारु
वडा अध्यक्ष

"हरित संगमस्थल हाम्रो शहर सुन्दर समृद्ध कोहलपुर नगर"

Email-ward6.kohalpur@gmail.com C:\Users\admin\Desktop\वडा नं ०६ कार्यालय सम्पूर्ण सिफारिस\विद्युत सिफारिस.docx



श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
लुम्बिनी प्रदेश, बाँके जिल्ला, कोहलपुर गण्डा नपा
६ नं. वडाभा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबंदन तयारी सम्बन्धि सार्वजनिक सूचना यस लुम्बिनी प्रदेश,
बाँके जिल्ला, गाउँनगर पालिका वार्ड नं. ६ मा अवस्थित
यस वडा कार्यालय को सूचना पाटिमा २०७८.१०/०२ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।



हस्ताक्षर:

नाम: राम शरण थापा

पद: वडा अध्यक्ष

कार्यालय/संस्थाको छाप



श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
लुम्बिनी प्रदेश काँडा जिल्ला, कोहलपुर गाउँपालिका
०८ नं. वडा नं. नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यस लुम्बिनी प्रदेश
काँडा जिल्ला, गाउँपालिका वार्ड नं. ८ मा अवस्थित
यस कार्यालयको को सूचना पाटिमा २०७८/११/०१ गते टाँस
गरिएको व्यवहार जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम: जसो चयारा

पद: वडा अध्यक्ष



०६/११/०२
कार्यवाहक अध्यक्ष

कार्यालय/संस्थाको छाप

बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

लुम्बिनी प्रदेश, कैलाली जिल्ला, कैलपुर गापा/नपा
वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कैलाली जिल्ला
कैलपुर गाउँ/नगर पालिका वार्ड नं १५, चन्तवा मा
आज २०७८/११/२६ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिदियो।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१.	सन्तुका शर्मा	कैलपुर-१५	नडासुस्थ		
२.	शान्ति शर्मा	"	स्फाटिय		
३.	हेमराज शर्मा	"	"		

बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

मुम्बिनी ~~बैजुङ~~ प्रदेश, कर्दिमा जिल्ला, कोहलपुर गापा/नपा
४ वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कोहलपुर जिल्ला
कोहलपुर गाउँ/नगर पालिका वार्ड नं ४, अरुणिया मा
आज २०७८ १९.११.०६ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिदियो।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१.	नक्काशा अधिकारी	कोहलपुर न.पा-४ वडा नं.५	इन्जिनियर	९८५२९००२५	गोर्खा
२.	नक्काशा इन्जिनियर	कोहलपुर न.पा-४ वडा नं.५	इन्जिनियर	९८५२९००२५	गोर्खा
३.	विद्युत तालिम	कोहलपुर न.पा-४ वडा नं.५	सम्पादन		गोर्खा
४.	प्रिन्ट प्रसाद	कोहलपुर न.पा-४ वडा नं.५	सम्पादन		गोर्खा

बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

जुम्लि प्रदेश, कैलाली जिल्ला, कैलाली गापा/नपा
वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कैलाली जिल्ला
वडामा गाउँ/नगर पालिका वार्ड नं ४, वडामा मा
आज २०७८.१२.२१ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिदियौं।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१)	शमलान्धर थापा	वडामा-५	वडा सचिव	९८४८९३६२९६	
२)	एल कुमार् थापा	५	स्वास्थ्य	९८४६६२३६४	
३)	सुजिता थापा	५	स्वास्थ्य-सुजिता		

Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES

SIGNAL NOTICE



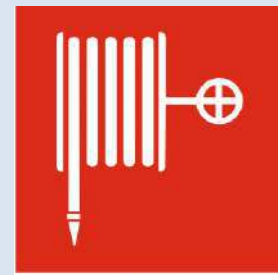
First Aid
प्राथमिक उपचार



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 - खुला खान्दा



Danger of open trench
खतरा - खुला ट्रेंच



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

INSTRUCTION SIGNS



Do Not Touch
छुन नपाउनुहोस्



Food and Drinks Prohibited
खाद्य र पेय निषेधित



Slow Sign for Traffic Control
निलम्बो चालुहोस्



Directional Exit Sign
बाहिर जाने दिशा

SAFETY AND SAFETY INSTRUCTION SIGNS



Safety Gloves Required
सुरक्षी घुन्नाको आवश्यक



Safety Vests Required
सुरक्षी वेस्टको आवश्यक



Safety Glasses Required
सुरक्षी चशमा आवश्यक



Safety Shoes Required
सुरक्षी जूता आवश्यक



Annex 8: PHOTOGRAPHS



DL alignment at Kohalpur Municipality, Ward No. 10



DL alignment at Kohalpur Municipality, Ward No. 9



Tapping point (Kohalpur Substation, Kohalpur Municipality Ward No. 10, Banke)



Distribution line alignment along cultivable land



Proposed distribution line alignment along the Sikta Irrigation Canal



Public Notice Pasted at Laxmana Settlement, Basgadhi Municipality, Ward No.8



Proposed area for substation at Bansgadhi Municipality, Ward No.8



Consultation Meeting at Chandani bazaar, Baijnath Rural Municipality, Ward No. 7



Consultation Meeting at Uttarbhakari, Basagadhi Municipality, Ward No. 03

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
SUNADWARI-ODALTAL DISTRIBUTION LINE SUBPROJECT

SUBSTATION (33/11 kV) AND DISTRIBUTION LINE (33 kV)

SURKHET DISTRICT, KARNALI PROVINCE

NEPAL ELECTRICITY AUTHORITY

**DISTRIBUTION AND CONSUMER
SERVICE DIRECTORATE**

**DISTRIBUTION SYSTEM UPGRADE AND
EXPANSION PROJECT (DSUEP)**

DURBARG MARG KATHMANDU NEPAL

CONSULTANT:

**NEA ENGINEERING COMPANY
LIMITED, TRADE TOWER**

THAPATHALI, KATHMANDU, NEPAL

JUNE 2022



TABLE OF CONTENT

LIST OF TABLES	II
LIST OF FIGURES	II
LIST OF ANNEXES	III
ABBREVIATIONS	IV
EXECUTIVE SUMMARY	VII
1. INTRODUCTION.....	1
1.1 PROJECT BACKGROUND.....	1
1.2 SCOPE OF STUDY	1
1.3 OBJECTIVE OF ESMP	1
1.4 LEGAL PROVISION FOR THE ESMP.....	2
1.5 METHODOLOGY FOR THE ESMP.....	2
1.6 CLASSIFICATION OF IMPACT AREA.....	3
2. DESCRIPTION OF THE SUBPROJECT.....	6
2.1 SUBPROJECT LOCATION AND ACCESSIBILITY.....	6
2.2 SUBPROJECT COMPONENTS	8
2.2.1 33 kV DISTRIBUTION LINE (DL).....	8
2.2.2 SUBSTATION	8
2.2.3 11 kV LINES AND LT LINES	9
2.3 MAJOR CONSTRUCTION ACTIVITIES IN THE SUBPROJECT	10
2.4 ENERGY TO BE USED	10
2.5 LAND REQUIRED.....	10
2.6 MATERIAL REQUIREMENT AND SOURCES	10
2.7 MAJOR EQUIPMENT AND POWER REQUIREMENTS	11
2.8 WORKFORCE REQUIREMENT	11
2.9 CONSTRUCTION AND IMPLEMENTATION SCHEDULE.....	12
3. DESCRIPTION OF THE ENVIRONMENT	13
3.1 PHYSICAL ENVIRONMENT.....	13
3.1.1 TOPOGRAPHY AND LAND USE	13
3.1.2 GEOLOGY	14
3.1.3 SEISMOLOGY	15
3.1.4 CLIMATE	15
3.1.5 AIR, NOISE, WATER QUALITY AND POLLUTING SOURCES.....	15
3.1.6 SOLID WASTE MANAGEMENT	16
3.2 BIOLOGICAL ENVIRONMENT	16
3.3 SOCIO-ECONOMIC ENVIRONMENT	17
4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES	19
4.1 ANTICIPATED BENEFICIAL IMPACTS	19

4.2	ANTICIPATED ADVERSE IMPACTS.....	20
5.	INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION.....	27
6.	INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM.....	30
7.	ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....	34
8.	CONCLUSION	43
	REFERENCES	44

LIST OF TABLES

Table 2-1:	Technical Description of the proposed Subproject	7
Table 2-2:	Approximate Quantity of Material for 33 kV line	11
Table 2-3:	Approximate Quantity of Material for 33/11 kV Substation	11
Table 2-4:	Human Resource Required for construction of 33 kV line and substation in a day of Construction.....	12
Table 2-5:	Construction Schedule of Project Implementation.....	12
Table 3-1:	Ambient Air and Noise Quality within the Proposed Subproject Site	16
Table 3-2:	Estimated Daily Solid Waste Generation from Campsite	16
Table 3-3:	The community forest along the proposed 33 kV distribution line.....	17
Table 3-4:	General Demographic Characteristic of Subproject Municipality	17
Table 4-1:	Detail of impacted forest area and trees loss	22
Table 5-1:	Summary of issues, comments and suggestions received in Consultations	29
Table 6-1:	Levels of Grievance Redress Mechanism Based on Time Bound	32
Table 7-1:	Environmental and Social Management Plan (ESMP)	35
Table 7-2:	Minimum Provisions for Environmental Monitoring	40
Table 7-3:	Mitigation Measures and Monitoring Activities Cost Estimates	42

LIST OF FIGURES

Figure 1-1:	Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Sunadwari–Odaltal DL Subproject	5
Figure 2-1:	Location and Accessibility Map of Sunadwari – Odaltal Subproject.....	6
Figure 3-1:	Location map and Land use details of the Subproject	13
Figure 3-2:	Tapping Point of DL at Hurke	14
Figure 3-3:	Sunadwari – Odaltal Substation View.....	14
Figure 3-4:	Geological Map of proposed Subproject Area	14
Figure 3-5:	Seismicity map of Nepal from 1964 -2019.....	15
Figure 5-1:	Identified Stakeholder in the Subproject	27
Figure 5-2:	Consultation with the stakeholders and communities in the Subproject Area....	28
Figure 6-1:	Institutional Arrangement for Environmental and Social Management.....	30
Figure 6-2:	Workflow Diagram for GRM from NEA	33




LIST OF ANNEXES

Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION LETTER TO STAKEHOLDERS	ii
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT	iv
Annex 3: FACILITY AND COMPONENTS	vi
Annex 4: LEGISLATIVE PROVISIONS	ix
Annex 5: CONSULATATION MEETING MINUTES.....	xv
Annex 6: DEED OF ENQUIRY (MUCHULKAS)	xvi
Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES.....	xviii
Annex 8: PHOTOGRAPHS	xx




ABBREVIATIONS

ACSR	Aluminum Conductor Steel Reinforced
AIIB	Asian Infrastructure and Investment Bank
BES	Brief Environment Study
COVID-19	Corona Virus Disease
CDP	Community Development Program
CPA	Core Project Area
DCSD	Distribution and Consumer Services Directorate
DHM	Department of Hydrology and Meteorology
DL	Distribution Line
DSUEP	Distribution System Upgrade and Expansion Project
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPA	Environment Protection Act
EPR	Environment Protection Regulation
EMF	Electromagnetic Field
ESP	Environmental and Social Policy
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policy
ESSs	Environmental and Social Standards
GHG	Green House Gas
GIS	Geographic Information System
GoN	Government of Nepal
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IP	Indigenous People
IUCN	International Union for Conservation of Nature
IUSGS	International Union of Geological Sciences
LPG	Liquid Petroleum Gas
MDB	Multilateral Development Bank
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MHT	Main Himalayan Thrust




NEA	Nepal Electricity Authority
PPE	Personal protective equipment
RM	Rural Municipality
RoW	Right of Way
SPA	Surrounding Project Area
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
US EPA	United States, Environment Protection Agency
USGS	United States Geological Survey
VC	vulnerable community



Unit

%	Percent/ Percentage
CO ₂	Carbon dioxide
dB	Decibel
g	Gram
ha	Hectare
HHs	Households
Kg	Kilogram
Km	Kilometer
kV	Kilovolt
kWh	Kilo Watt Hour
ltr	Liter
LV	Low Voltage
m	Meter
masl	Meter Above Sea Level
mm	Millimeter
MVA	Mega Volt Ampere
MW	Megawatt
NRs.	Nepalese Rupees
°C	Degree Centigrade
sq.m.	Square Meter



EXECUTIVE SUMMARY

Description of Project: Nepal Electricity Authority (NEA) under Ministry of Energy, Water Resources and Irrigation is responsible for the implementation of the Distribution System Upgrade and Expansion Project (DSUEP). DSUEP will enhance the distribution system to improve reliability and quality of electric supply in the Karnali Province and Lumbini Province. The proposed **Sunadwari–Odaltal Distribution Line Subproject** is located within Barahatal Rural Municipality, Ward no. 8 of Surkhet District in Karnali Province. The Subproject requires 0.45 ha of land (Government Land) for the construction of substation. The 33 kV distribution line of 0.25 km passes along the right of way of the road and private land with installation of poles at the edge of the farm land. The proposed subproject is financed with loan by Asian Infrastructure Investment Bank (AIIB).

Description of Environment

Physical Environment: The proposed Subproject (substation and distribution line) area lies in Surkhet Valley of Chure Range. The proposed substation lies at Latitude 28°38'17.48"N, Longitude 81°30'59.74"E and elevation of 806 masl. The climate of the Subproject area is sub-tropical. The temperature at the project valley varied from 10 °C to 33°C. The average annual rainfall is estimated at approximately 1500 mm per year. The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively. There are no any water sources recorded within distribution line (33kV) and nearby the substation area.

Biological Environment: The proposed Subproject (substation and distribution line alignment) passes along Bhairabisthan Community Forest. The Subproject does not lie in any protected area, although it is located within the Chure region without any induced impact to the biological environment. The vegetation recorded in the Subproject area are Sal (*Shorea robusta*), Chir pine (*Pinus roxburghii*), Sajh (*Terminalia elliptica*), Peepal (*Ficus religiosa*), Karam (*Hardina kardifolia*), and Jamun (*Syzygium cumini*). Similarly, Barking Deer (*Muntiacus muntjac*), Marsh Rabbit (*Sylvilagus palustris*), Jackel (*Canis aureus*), Red Monkey (*Macaca mulatta*), Yellow Throated Martin (*Martes flavigula*) and Malayan Porcupine (*Hystrix brachyuran*) are the wild animals recorded in SPA of the project area during consultation. Altogether seven species of birds were noted around the surrounding project area; House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), Eagle (*Haliaeetus leucocephalus*), Rock Pigeon (*Columba livia*), Kalij (*Lophura leucomelanos*), Tree Sparrow (*Passer montanus*), and Jureli (*Hypsipetes leucocephalus*). All these bird species are of least concern under IUCN categorization.

The proposed Sunadwari–Odaltal 33 kV distribution line passes through the 1 community forests as shown in

Table 3-3. A total of 0.59 ha of the forest area will be occupied by RoW of proposed 33 kV distribution line and substation area. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along a community forest are 24.

Socio-Economic Environment: The major ethnic compositions within the surrounding project area i.e., Ward No. 8 of Barahatal RM is Magar with 30.30% of the total population of 2,509. Likewise, Dalit, Chhetri, Brahmin and Thakuri are 28.98%, 24.61%, 4.54% and 4.03% respectively. The implementation of the Subproject will increase the electricity beneficiaries to

4637 HHs, 54 commercial purposes and 17 industries. Birendranagar and Chinchu and are the nearest business markets nearby the Subproject. The transportation facilities in this local level seems to be satisfactory. Tap/piped water is the main source of drinking water in the surrounding Subproject area. People of the Subproject have access with communication facilities mainly through mobile telephone services. The nearest and easily accessible equipped health facility to the proposed Subproject is in Hurke located at 10-minute driving distance from substation site. The main occupation of people in the area is agro base with nearly 80% contribution followed by small trade and business/enterprises and services.

Potential Impacts and Mitigation Measures: Civil works will be involved with temporary impacts on air, noise and water quality and occupational and community health and safety; particularly related to working with electricity and in the context of the COVID-19 pandemic. Long-term impacts, although insubstantial, during operation and maintenance include occupational and community health and safety risks related to the presence of electricity infrastructure. The potential environmental issues and mitigation measures identified in screening and the preparation of ESMP report will be addressed during the compliance monitoring carried out by the safeguard team. No issues were identified in the land requirement procedure and pole erection activities. Construction of substation and erection of poles for distribution lines would not affect any private structures as the proposed substation land is unused government land, and local people have agreed & permitted to install poles at the edge of RoW of road and forest area without affecting any private structures along the distribution line. The implementation of the proposed Subproject needs 0.59 ha of forest area with estimated loss of 24 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. The compensatory plantation will be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019) in the ration of 1:10. The ESMP cost estimated for the Subproject is NRs 13,00,000.00 associated to mitigation measures and monitoring activities. NEA Project Implementation Unit has agreed on the estimated cost for the mitigation measures and monitoring activities.

Environmental and Social Management Plan: The ESMP serves as a guide to implement environmental and social mitigation measures and responsibility of the concerned agencies during the construction and operations of the Subprojects. Monitoring and inspection of the environmental and social activities will be carried out by Environment and Social Management Unit and Project Supervision Consultant of PIU. ESMP will be an integral part of the contractor's Bidding document which will be updated by the contractor during the sub-project construction period.

Institutional Arrangements: To ensure the full compliance to the ESMP, institutional arrangement for monitoring and reporting has been proposed. All the resources needed for the implementation of ESMP for the construction and operation phase will be provided by the PIU. Project Supervision Consultant's with Environmental and Social Safeguard Specialist will be responsible for compliance monitoring activities during the construction phase. Environment and Social Management Unit of NEA will provide regular updates to the site offices regarding the implementation of ESMP. Contractor shall prepare an Environment, Health and Safety (EHS) plan approved by the PIU before field mobilization. Contractor should mobilize a safety officer at each work site during the construction period.




Public consultation: Public consultations have been conducted in the Subproject area. People in the Subproject area noted that electricity service is poor with frequent interruptions. People have suggested to install poles at the edge of farm-lands, and project components should not affect any house and structures along the line. The impacts on the crops while stringing of lines should be minimized. Prospective electricity consumers and people to be affected are supportive and have recommended for quick implementation of the project.

Grievance Redress Mechanism (GRM): A three-tier 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 issues at Subproject level. In each Subproject, two levels i.e., Tier-I and Tier-II of Grievance Redress Mechanism have been established. During the ESMP study period, NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the Subproject level.

Conclusion: The environmental impacts envisaged from the implementation of proposed Subproject are site specific, short term, temporary and reversible in nature. The Subproject will provide significant benefits to people and economy by providing the reliable and improve electricity supply. The implementation of the proposed Subproject needs 0.59 ha of forest area with estimated loss of 24 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. This ESMP is considered sufficient to mitigate the environmental and social issues identified for the Subproject and will be updated during the Subproject construction stage.



1. INTRODUCTION

1.1 Project Background

The proposed Distribution System Upgrade and Expansion Project (DSUEP) will enhance the distribution system to improve reliability and quality of electric supply in the Karnali Province. The project aims improvement in voltage level and reduction in power loss which in turn will improve Nepal Electricity Authority's (NEA) financial health, improve electricity supply reliability, and reduce dependence on petroleum-fueled accessories. Government of Nepal (GoN) has envisaged DSUEP to extend the reach of 33 kV and 11 kV distribution lines "to achieve affordable electricity fulfilling the demands at the local levels for all the households by 2022". Asian Infrastructure Investment Bank (AIIB) is financing a loan to upgrade existing and build new distribution systems in Lumbini Province and Karnali Province of Nepal. This ESMP is prepared for Sunadwari–Odaltal distribution line Subproject of DSUEP.

This Subproject has three major components:

Component 1: construction, extension and augmentation of distribution lines and substations, especially 33 kV lines and 33/11 kV substations.

Component 2: construction of 11 kV lines, distribution transformers, and Low Voltage (LV) lines for new power distribution facilities.

Component 3: Capacity Building, Project Implementation Support, and Technical Assistance.

1.2 Scope of Study

This study ensures that the project meets the requirements of Nepal Government's Environmental Regulations and Environmental and Social Policy (ESP) & Environmental and Social Standards (ESSs) of AIIB. This report provides the measures for environmental and social management, monitoring and reporting of the project.

1.3 Objective of ESMP

The Environment and Social Management Plan aims to sets out the measures required to maximize the benefits of the project; and to avoid, minimize and mitigate any adverse environmental and social impacts caused by the project. The objectives of this ESMP are to:

- Describe the existing natural and socio-economical resources in and surrounding Subproject area;
- Based on existing environmental conditions, identify and assess potential significant impacts during project preconstruction, construction, and operation & maintenance stages;
- Identify and recommend mitigation measures to minimize any potential impacts caused by Subproject activities;
- Identify the local concerns on environmental and social issues and address them;
- Develop environmental management plan and monitoring plan including cost.



- Recommend institutional arrangement, including capacity building to ensure proper environmental and social safeguards implementation during construction and operation phases.

1.4 Legal Provision for the ESMP

According to the E & S safeguard Screening report, safeguard risks/issues identified for this Subproject fall under Category III (ESMF), which triggers the preparation of ESMP to execute the Subproject. This Subproject has minimal or no adverse environmental and social impact; does not physically displace any family; and does not result in economic displacement of more than 10% of productive assets for any family.

Pertaining to Rule 3 (1), Environment Protection Act (EPA), 2019 describes completing Environmental Studies as per Schedule 1 or 2 or 3 under Environment Protection Regulation (EPR) 2020 (First Amendment in 2021/05/24 on Nepal Gazette), detailed environmental studies Brief Environmental Study (BES) or Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is required. For this Subproject, pertaining to Rule 3(1), EPA (2019) describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water resources and irrigation sector (1) under EPR (2020) state “use of forest area for the electricity distribution line project up to 66 KV”. The proposed Subproject will intercept the Bhairabisthan Community Forest land area for the purpose of 33 kV distribution line extension and substation construction. Thus, as per EPR (2020), a BES is mandatory for the proposed Subproject.

1.5 Methodology for the ESMP

The methodology that was followed while conducting the ESMP study is as follows:

- Literature Review:** Review of published literature were conducted, with priority given to publications of government institutions as well as international organizations, to collect information on project surroundings. The Municipality/Rural Municipality and its Ward profiles are used to collect the socio-economic baseline information of the Subproject. National policies, legislative frameworks and Multilateral Development Bank (MDB) policies were reviewed to understand the priorities and any legally binding requirements were studied that should be complied with while implementing the project. The Legislative provisions relevant to the project are listed in **Annex 4**.
- Field Survey and Investigation:** Field surveys were conducted to generate information on the physical, biological and socio-economic environment of the project area. The physical environment; air quality data was monitored by Temtop Airing-1000 PM Detector, noise level by UNI-T UT 353 Mini Sound Meter (dB) and water quality by EXTECH ExStik II DO600. Field observation of the core project area and the surrounding vicinity (500m) of project footprint area was applicable for the biological assessment. A circular quadrate of radius 12.5m was used for the estimation of the number of trees presence within the RoW of the proposed distribution line. A sample quadrate was used and trees numbers were estimated by extrapolation within RoW. The total enumeration of the trees to be cleared for the implementation of the Subproject will be estimated during the BES study. The tree clearance approval is




made once the Brief Environment Study (BES) is approved from the Ministry of Energy, Water Resources and Irrigation. Priority was given to the consultation with local communities at substation sites and the settlement areas that benefit from the project. Pertaining to Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019), BES report will be prepared. NEA/PIU must take approval from Government of Nepal, for the use of forest on the implementation phase. As per section 17 (3), the compensatory ratio for the loss of trees should be made in the ratio of 1:10 and require care, maintenance and upkeep of the planted trees before handover to concerned forest office after 5 years.

- iii. 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 CPA and SPS data and presentation of the maps in the ESMP report. The project foot print Ward and Municipality/Rural municipality are considered for the collection of socio-economic and baseline information.
- iv. Impact Evaluation: Significance of impacts are evaluated on the basis of reversibility, nature, magnitude, extent and duration of the impact. Identification of magnitude, extent and duration is as provided in the National EIA Guidelines, 1993 of Nepal. While evaluating the impacts and prescribing mitigation, maximum efforts were made to get expert opinion and input from the DSUEP's technical and safeguard consultant team.
- v. Public Consultation: As per the Government of Nepal EPA and the AIB Environmental and Social Policy (ESP), pre-notifications with subject of consultation, venue, and time were given at Subproject foot-print area, local level and affected Ward office in presence of concerned local stakeholders. Consultations were conducted in the Subproject area, at substations and the distribution line system settlement areas with local stakeholders.
- vi. Report Format: The ESMP report is prepared as per the Environmental and Social Policy (ESP) of the AIB, which contains an executive summary, a main report, and annexes as appropriate, including one on the nature and findings of consultations undertaken. All the comments and suggestions from the field consultation are mentioned in the ESMP report.

1.6 Classification of Impact Area

The National EIA Guidelines (GoN, 2050) has mentioned on 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.

Core Project Area (CPA) refers to the temporary and permanent area for the proposed project construction and associated activities. It is the area where direct impacts can be seen. For **Sunadwari – Odaltal Distribution Line Subproject**, proposed substation area with 0.45 ha and the 33 kV distribution line with 0.25 km length is considered as CPA. The Subproject components are located within the Ward No.8, of Barahatal Rural Municipality, Sirkhet

district. The major settlement in the Subproject area is Hurke. The distribution line stringing route passes along the right of way of the road alignment (0+025 to 0+040) and along the forest area (0+000 to 0+025, 0+040 to 0+240).

Surrounding Project Area (SPA) is the immediate vicinity of the footprint location of the proposed Subproject site. SPA is the moderate and indirect impact area. For this Subproject the 33 kV distribution line will be located within the Ward No.8, of Barahatal Rural Municipality of Surkhet district and is considered as SPA. The impact area showing the CPA and SPA area is presented in the google map **Figure 1-1**.





Figure 1-1: Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Sunadwari–Odaltal DL Subproject

2. DESCRIPTION OF THE SUBPROJECT

2.1 Subproject Location and Accessibility

The proposed **Sunadwari – Odaltal Distribution Line Subproject** is located within Barahatal Rural Municipality, Ward no. 8 of Surkhet District in Karnali Province. The tapping point of 33 kV line lies in Hurke, Barahatal RM Ward No. 8, Odaltal, Surkhet. The proposed distribution line (33 kV) is of 0.25 km length and runs by the edge of Bhairabasthan Community Forest. There is access to road within the proposed Subproject Ward area. The Subproject location and the accessibility are presented in the map below Error! Reference source not found.. The main features of the Subproject are presented in **Table 2-1**.

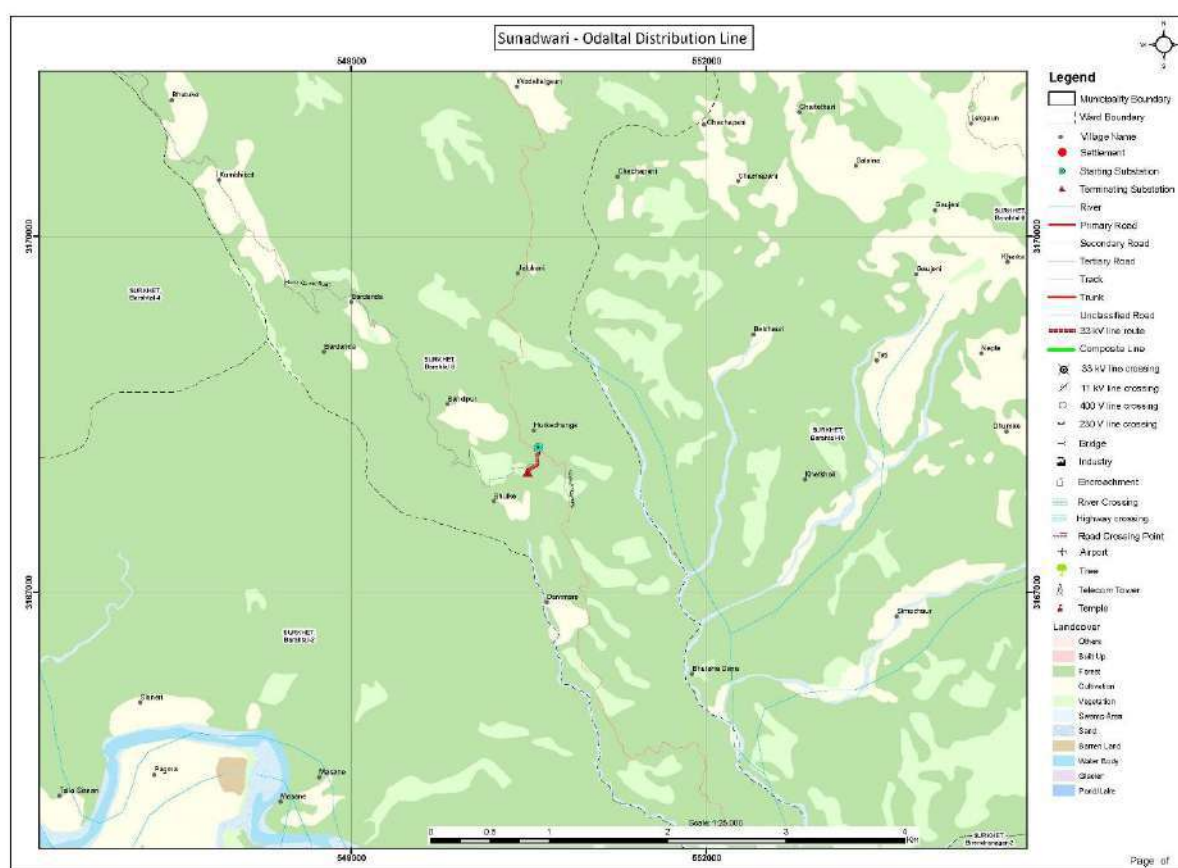


Figure 2-1: Location and Accessibility Map of Sunadwari – Odaltal Subproject¹

¹ Source: Department of Survey, 1995 and Field Study 2021

Table 2-1: Technical Description of the proposed Subproject

Description	Features
Proponent	Nepal Electricity Authority
Project	Distribution System Upgrade and Expansion Project (DSUEP)
Subproject	Sunadwari – Odaltal Distribution Line Project
Funding Agency	AIIB
Project Location	Barahatal RM-8, Odaltal, Surkhet, Karnali Province
Distribution Line	
33kV Line Starting Point	Tapped from Existing 33kV line at Barahatal RM-8, Odaltal, Surkhet Co-ordinate: Lat 28°4'22.05"N, Long 82°23'17.78"E
33kV Line End Point	Odaltal Substation (Proposed) at Barahatal RM-8, Odaltal, Surkhet Co-ordinate: Lat 28°3'47.03"N, Long 82°21'59.27"E
Land type	Government/Private
System Voltage	33 kV
Max, Min System Voltage	36, 30 kV
Climatic Condition	Wind Speed: As per IS 802-1-1 Maximum Ambient Temperature: 33 °C Altitude (Min, Max): 786, 806 masl
Length of Line/ No. of Pole	0.25 km/7 Poles
Right of way	6 m
Number of Circuit	1
Conductor	ACSR Dog
Line Capacity/Thermal Limit (approx.)	13.4 MW at 0.9 power factor
Type	Steel Tubular Pole with 11m/13m Height
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	Odaltal Substation (Proposed) at Barahatal RM-8, Odaltal, Surkhet Co-ordinate: Lat 28°3'47.03"N, Long 82°21'59.27"E Elevation: 806 masl
Land type	Government/Community Forest
Voltage Level	33/11 kV
Substation Capacity	8 MVA
Number and Capacity of Transformer	1 no., 6/8 MVA
Type of Transformer	3 Phase, ONAN, Mineral Oil
Type of Substation	AIS (33kV) and Indoor (11kV)
Number of 33kV Line Bays	1
Number of 33kV Transformer Bays	1
Number of 11kV Feeders	4
Substation Area	0.45 ha

2.2 Subproject Components

The major components of the Subproject are the 33/11 kV substation and 33 kV distribution line (DL). The 33 kV DL is tapped from an existing 33 kV network line and acts as a source feeding to the proposed 33/11 kV substation. 11 kV distribution feeders emerge from the substation, eventually supplying the electricity to the consumers. The structures of the Subprojects are briefly described below.

2.2.1 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 strung 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. Length of 33 kV distribution line is 0.25 km and the total number of steel tubular poles to be erected are estimated as 7.

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 poles 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.

2.2.2 Substation

The proposed substation 33/11 kV is of capacity 6/8 MVA. The substation plays the role of lowering the 33 kV voltage level to 11 kV, which will then be strung as distribution feeder to supply the consumers. The major component of the substation is power transformer, which is supported by the switchgear components and Civil Structures. The facility and components sample pictures are shown in **Annex 3**.

Transformers: Transformer is the major component of the distribution substation. It transforms power from higher voltage to lower voltage for distribution purpose. 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 6/8 MVA ONAF type.

Electrical Switchgear: Electrical Equipment comprising of Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers, etc. installed in the substation are called Electric Switchgear. They facilitate the objective of power conversion.

Civil Structures: A control building is essential for the operation of the substation. It houses the operating station, along with battery systems. Guard House and Staff Quarter are other essential buildings for smooth operation of the substation.

Switchyard, Boundary, Roads, Drainage and Essentials: The outdoor civil structure in the proposed substation includes the 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 component wise 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.

2.2.3 11 kV Lines and LT Lines

11 kV lines and LT lines take the access of electricity to the consumer households. It is why the construction of those lines are always encouraged by the local people. The line route, thus the installation of poles and lines, are envisaged to go through the edge of local roads. If any line route pass through any private lands, permission from the corresponding land owner will be taken before starting the construction of those lines.

The detailed line route survey for 11 kV and LT lines have not been done yet. The scope of detailed survey is in the scope of the construction Contractor. The construction Contractor will conduct Pre-Construction Survey (PCS) to finalize the line route of 11 kV lines and LT lines for the construction. PCS will prepare the detailed line route of those lines and submit to PIU for approval. After the detailed line route is submitted by the Contractor and approved by PIU, E&S team of Project Supervision Consultant (PSC) will conduct an E&S study and submit the findings that

- Do the lines pose any adverse Environmental or Social issues?
- If there are any Environmental or Social issue, how can they be resolved? If the lines do not pose any adverse Environmental or Social issue, the lines will be cleared by PIU after seeking concurrence from AIIB.
- If the solution measures are not implementable in the field, PCS will suggest for any other way to divert or reroute the lines? If yes, PCS will propose alternative line route. The lines will be cleared by PIU after seeking concurrence from AIIB, given that the lines do not pose any adverse Environmental or Social issue.



2.3 Major Construction Activities in the Subproject

Activities in the Subproject area can be sub-divided into three categories viz, Pre-Construction Phase, Construction Phase and Operation Phase. For the proposed Subproject, trees and bushes in the Right of Way of 33 kV lines have to be cleared whereas, no trees and bushes within the proposed substation boundary have to be cleared for the construction work. The proposed Sunadwari-Odaltal Line Subproject and substation intercept forest area of 0.59 ha. The estimated loss of trees species in the Right of Way of 33 kV lines are 24.

- I. **Preconstruction phase:** The activities to be carried out before the construction phase are:
 - Demarcation of land area for the proposed substation
 - Receive public opinion
 - Make clearance of the substation land area permanently
 - Distribution line route selection
 - Approval to cut down trees from the concerned government authorities
- II. **Construction phase:** The activities to be carried out during the construction phase are:
 - Establishment of labor camp for the labors
 - Assign the land area for temporary storage of construction materials
 - Transportation of construction materials
 - Leveling of land area for the proposed substation
 - Cutting down of trees in Right of Way of 33 kV lines
 - Construction of substation structures
 - Pole erection work
 - Stringing of 33 kV distribution line
- III. **Operation phase:** The activities to be carried out during the operation phase are:
 - Maintenance of the substation and 33 kV distribution line route

2.4 Energy to be used

During the construction period diesel fuel will be used to power construction equipment and transport vehicles, which emits air pollutants and greenhouse gases in insignificant quantity. Use of firewood shall be restricted in the labor camp, whereas the workers shall be provided LPG for cooking.

2.5 Land Required

The **Sunadwari-Odaltal Subproject** will require about 0.45 ha land for building the substation. The land is government land and managed by Bhairabisthan Community Forest User Group. The 33 kV distribution line of 0.25 km passes along the edge of Bhairabisthan Community Forest.

2.6 Material Requirement and Sources

A 33/11 kV substation, 33 kV, 11 kV and low-tension distribution lines will be constructed for this Subproject. Minimal excavation at the pole locations will be done to erect steel tubular poles of 11 m and 13 m. The depth of burial for 11 m (approximately 256 kg) and 13 m (approximately 343 kg) poles are 1.8 m and 2.17 m respectively. The construction works for

substation will not produce significant amount of spoils and thus it will not require spoil-dumping site. Similarly, excavation works carried out for digging pit holes for poles produces insignificant spoils which does not require management of earthworks.

Civil construction works will involve excavation for foundation of substation, steel reinforcement, cement, coarse aggregates and fine aggregates (sand). Materials will be procured from legally operating markets. The design team has provided the following estimate of construction materials required for 33 kV distribution line and the substation.

Table 2-2: Approximate Quantity of Material for 33 kV line

SN	Particular	Unit	Requirement
1	Amount of Steel	Ton/Km	5800
2	M15 concrete for Pole base	Cum/Km	12.5

Source: Design Report, DSUEP

Table 2-3: Approximate Quantity of Material for 33/11 kV Substation

SN	Particular	Unit	Support Structures, Road, Drainage	Control Building	Staff Quarter	Office Building	Guard House
1	M15 Concrete	cum	100	25	224	120	5
2	M25 Concrete	Cum	300	170	125	75	27
3	Reinforcement bar	Ton	7	27	20	12	4

Source: Design Report, DSUEP

2.7 Major Equipment and Power Requirements

Major equipments used during the Project implementation are:

One Excavator, One Roller, One Drilling Machine, One Crane, one Grid Supply of 100 kVA Distribution Transformer, and two 50 kVA capacity diesel generators.

2.8 Workforce Requirement

Local people in the surrounding Subproject area will be encouraged for the employment. Based on the skills (skilled, semi-skilled and unskilled labor), local people will be used for the construction and both male and female will get equal opportunity during construction. The number of human resources required depends upon the complexity of the project as well as the geographical location of the project. In case, of construction of 33 kV lines and 33/11 kV substations, the workforce typically varies from terai to hilly to mountain region. Expected number of manpower employed is enlisted hereunder.

Table 2-4: Human Resource Required for construction of 33 kV line and substation in a day of Construction

SN	Human Resource/Day	For Distribution Line	For Substation
1	Engineer (No.)	1	2
2	Supervisor (No.)	2	4
3	Foreman (No.)	3	5
4	Skilled (Lineman/Electrician) (No.)	5	7
5	Helper (No.)	3	12
6	Labour (No.)	15	20

Source: Design Report, DSUEP

2.9 Construction and Implementation Schedule

Implementation of the proposed Subproject comprises construction of a new 33/11 kV substation, 33 kV lines, 11 kV lines, low tension lines, and installation of distribution transformers. It includes construction and installation of components as mentioned in subsection 2.2. The estimated completion period is 24 Months.

Table 2-5: Construction Schedule of Project Implementation

SN	Activities/ Months	Months (After the completion of Detailed Survey Study)					
		1-3	4-6	7-10	11-15	16-20	20-24
1.	Invitation for tender, evaluation, and award						
2.	Implementation of Environmental and Social Safeguards						
3.	Erection of Poles						
4.	Stringing of conductor						
5.	Construction of substation						
6.	Charging and Testing						

Source: Design Report, DSUEP

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Physical Environment

3.1.1 Topography and Land Use

The Subproject area lies in Ward No. 8 of Barahatal Rural Municipality of Surkhet District, Karnali Province. The Subproject components are located within the Chure Range of Nepal. The proposed distribution line (33 kV) of 0.25 km passes along flat inner Surkhet valley. The tapping point is situated at Latitude 28°38'24.41"N and Longitude 81°31'3.15"E with an elevation of 786 masl (**Figure 3-1**). The proposed distribution line stringing route passes along the edge of Bhairabisthan Community Forest.

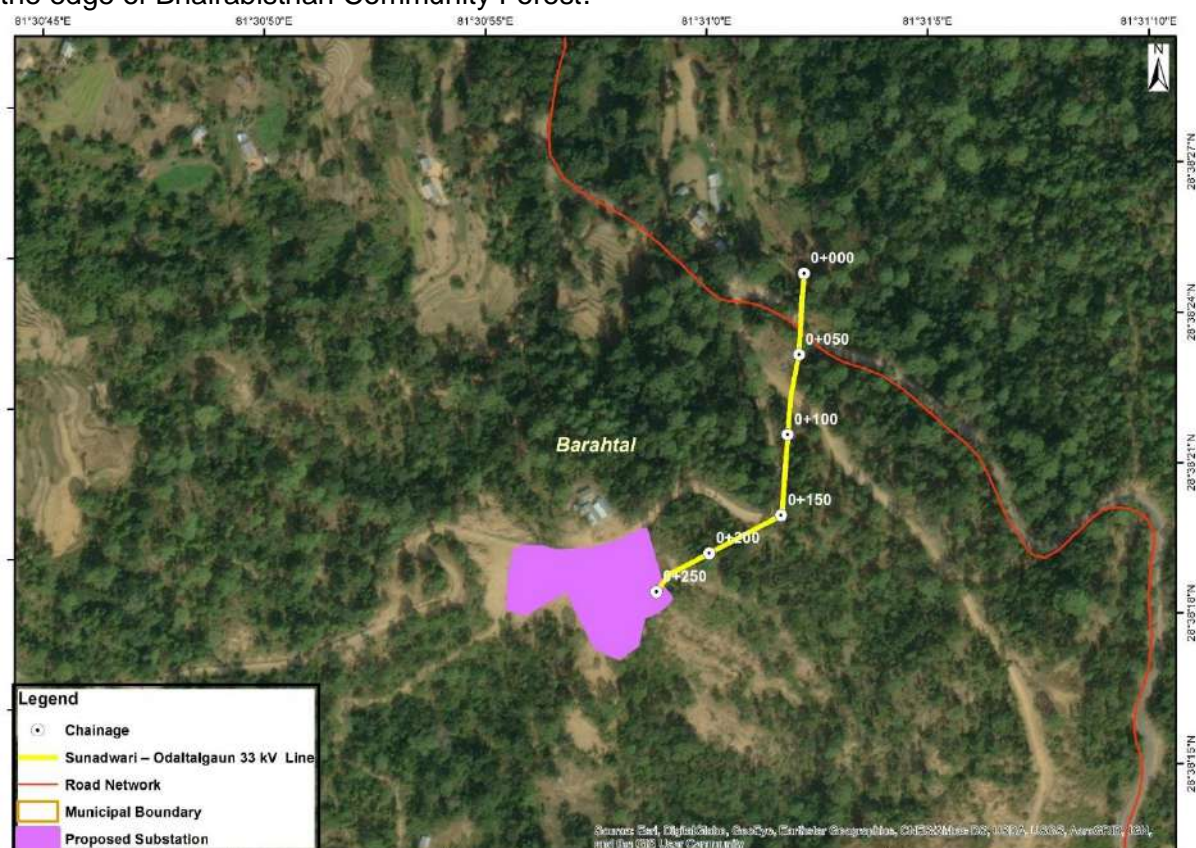


Figure 3-1: Location map and Land use details of the Subproject²

The proposed substation lies at Latitude 28°38'17.48"N, Longitude 81°30'59.74"E and elevation of 806 masl (**Figure 3-3**). The proposed substation boundary lies within 0.45 ha area. The site is primarily within the flat land with little depressed. It lies in open and clear barren land owned by GoN and managed by Bhairabisthan Community Forest. None of the private and public entities will be affected due to the implementation of the proposed Subproject, as it will be installed within Bhairabisthan Community Forest. The land use map details with the components of the Subprojects are presented in **Annex 2**.

² Source: Topographic Map, Department of Survey, 1995 and Field Study 2021



Figure 3-2: Tapping Point of DL at Hurke



Figure 3-3: Sunadwari – Odaltal Substation View

3.1.2 Geology

Geologically the proposed substation is located on the Siwalik Group. The line is routed from the tapping site at Hurke, which has cohesive silty clay soil with colluvium deposits and angular gneiss boulder fragments. The surrounding Siwalik mountains are rocky and is made up of Calcite and Quartzite Group. Alluvial/loam, soft soil and calcareous beds together with colluvium deposit and thin soil layer mixed with gravel are predominant in this area. No major geological hazard has been identified associated with the proposed Subproject.

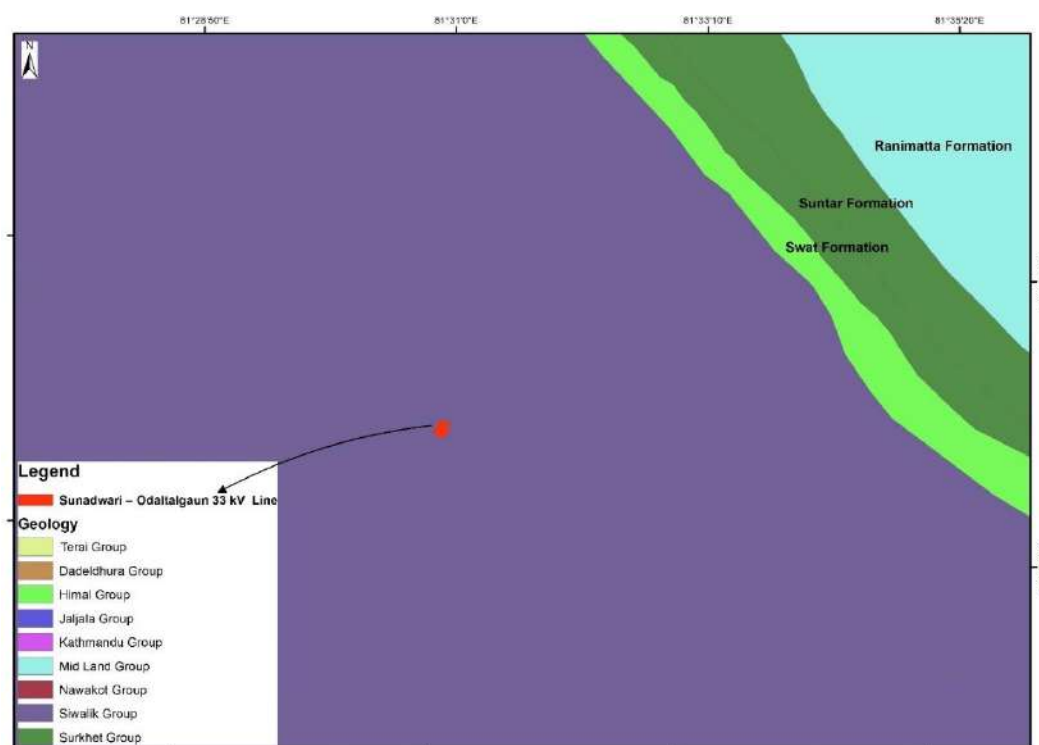


Figure 3-4: Geological Map of proposed Subproject Area³

³ Source: Department of Mines and Geology (DMG), 2020

3.1.3 Seismology

The entire country of Nepal is in a seismically active zone caused by subduction of Indian tectonic plate under the Tibetan Plate. According to National Seismological Center of Nepal several big earthquakes have been felt in Nepal, the earthquakes of magnitude 6 to 7 are mostly confined to the Main Himalayan Thrust (MHT) between the foot hills and the Higher Himalaya. Moreover, earthquake generation is confined to the crustal depth of 20 km. However, shallow earthquakes at depths down to 6 km are generated as a result of strike slip faults. Therefore, the substations and distribution lines of this Subproject will be designed and operated in accordance with seismic design requirements and best engineering practice. The seismic activity in Nepal between 1964 and 2019 as in IUSGS portal is shown in **Figure 3-5**.

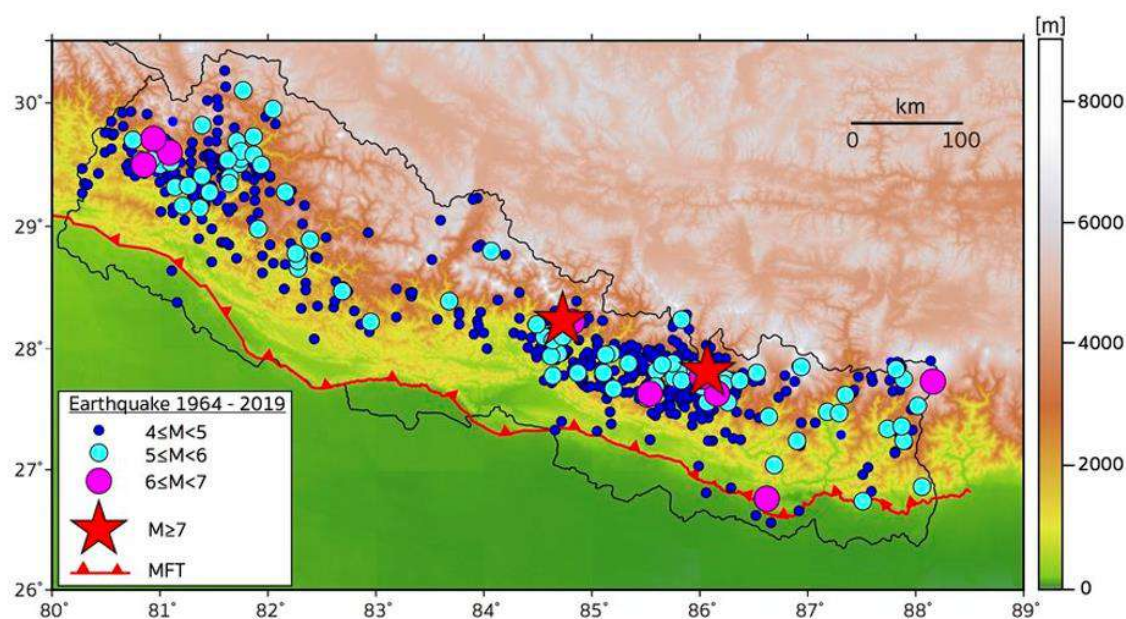


Figure 3-5: Seismicity map of Nepal from 1964 - 2019⁴

3.1.4 Climate

The climate of the Subproject area is sub-tropical. According to DHM 2021, the temperature at the project valley varied from 10 °C to 33°C. The relative humidity is in the range of 84% to 87 %. The average annual rainfall is estimated at approximately 1500 mm per year. Almost 80% of rainfall occurs during monsoon (June to September).

3.1.5 Air, Noise, Water Quality and Polluting Sources

The major air polluting sources recorded are only from vehicular emission and dust problem from plying of vehicles and high wind velocity. Noise polluting sources noted at the time of field study are similar to the air polluting sources. Unnecessary honking along the access road of site is the source of noise generation. Following table shows the real-time quality of air and noise during field study.

⁴ Source: USGS catalogue, 2019

Table 3-1: Ambient Air and Noise Quality within the Proposed Subproject Site

SN	Location/ Chainage	Air Quality ⁵ -Temtop Airing-1000 PM Detector ($\mu\text{g}/\text{m}^3$)					Noise Level -UNI-T UT 353 Mini Sound Meter (dB)		
		PM _{2.5}	Level	PM ₁₀	Level	Average Time of Measurement	Measured	Ref. ⁶	Area
1.	Tapping Point	26.3	100	37.1	200	1-hour	45	50	Residential Area
2.	Substation	20.9		39.7			39		

Source: Field Visit, 2021

The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively. There are no any water sources within the Subproject footprint area for which no special issues have been recorded.

3.1.6 Solid Waste Management

Wastes were found littered in front of HHs and along the side of the access road near Subproject area. People of the nearby area were found managing organic wastes within the household premises. Recyclable waste (large quantity) was sold to scrap collector occasionally. The estimated quantity of solid waste generation from the labor camp is shown in **Table 3-2**.

Table 3-2: Estimated Daily Solid Waste Generation from Campsite

SN	Description	Calculation	Remarks
1.	Total Labors within the Campsite	= 20 Labors	
2.	Total Waste Generation to be Expected	= 20 * 123.62 g/capita/day = 2472.4 g/capita/day = 2.4724 kg/day	
3.	Organic Waste Composition Responsible for Foul Smell, and Rodents	= 1.26 kg/day	Assuming 51% organic waste

Rest other waste is recyclable, and non-decomposable which could be stored for long period and have less impact on the environment if properly managed. The amount of organic waste is manageable within the Subproject site as organic waste per day will be expected to be only 1.26 kg/day.

3.2 Biological Environment

The proposed Subproject's distribution line passes along Bhairabasthan Community Forest at Barahatal Rural Municipality, Ward no. 8 of Surkhet District. The proposed Subproject lies at an elevation below 1000 (786-806) masl in upper tropical bioclimatic zone. The proposed Subproject site does not lie within any protected area and conservation area, although it is

⁵ National Indoor Air Quality Standard, 2009

⁶ National Ambient Sound Quality Standard, 2012

located within the Chure region without any induced impact to the biological environment. The vegetation recorded in the Subproject area are Sal (*Shorea robusta*), Chir pine (*Pinus roxburghii*), Sajh (*Terminalia elliptica*), Peepal (*Ficus religiosa*), Karam (*Hardina kardifolia*), and Jamun (*Syzygium cumini*). Similarly, Barking Deer (*Muntiacus muntjac*), Marsh Rabbit (*Sylvilagus palustris*), Jackel (*Canis aureus*), Red Monkey (*Macaca mulatta*), Yellow Throated Martin (*Martes flavigula*) and Malayan Porcupine (*Hystrix brachyuran*) are the wild animals recorded in SPA of the project area during consultation.

Altogether seven species of birds were noted around the surrounding project area; House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), Eagle (*Haliaeetus leucocephalus*), Rock Pigeon (*Columba livia*), Kalij (*Lophura leucomelanos*), Tree Sparrow (*Passer montanus*), and Jureli (*Hypsipetes leucocephalus*). All these bird species are of least concern under IUCN categorization.

The proposed Sunadwari-Odaltal 33 kV distribution line passes through the 1 community forest as shown in **Table 3-3**. A total of 0.59 ha of the forest area will be occupied by RoW of proposed 33 distribution line and substation area. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along a community forest are 24.

Table 3-3: The community forest along the proposed 33 kV distribution line

SN	Name of CF	Chainage	District	Municipality/RM	Ward
1	Bhairabisthan CF	0+000- 0+250	Jajarkot	Barahatal RM	8

3.3 Socio-economic Environment

Demography and Ethnic Compositions: The proposed Subproject area lies in Ward No. 8 of Barahatal RM, Surkhet. Birendranagar and Chinchu and are the nearest business markets nearby the Subproject. The general demographic information of the affected Ward is presented in Table 3-4. The major ethnic compositions within the surrounding project area i.e., Ward No. 8 of Barahatal RM is Magar is the major caste group residing in this area with 30.30% of the total population of 2,509. Likewise, Dalit, Chhetri, Brahmin and Thakuri are 28.98%, 24.61%, 4.54% and 4.03% respectively. Majority of people follow the Hindu religion and rest of them follow Buddhism and Christian religions. The Core Project Area (CPA) of the Subproject will not affect any indigenous people.

Table 3-4: General Demographic Characteristic of Subproject Municipality

SN	Wards	Population			Total Households
		Male	Female	Total	
Barahatal RM					
1.	All	12986	13816	26802	5448
2.	8	1251	1258	2509	450

Source: (CBS, Rural Municipality-Municipality Profile of Surkhet District, 2018)

Road Accessibility: Subproject-Ward No. 8 of Barahatal RM is connected to Barahatal RM Office through feeder type Road and the sub-project is connected to Karnali Highway at a distance of 0.25 km. The transportation facilities in this locality are good. It is 30-45 minutes to reach Barahatal RM office from the Subproject area.

Electricity Beneficiaries: The implementation of the Subproject will increase the electricity beneficiaries to 4,637 HHs, 54 commercial purposes and 17 industries. This will expand the electricity supply in the Subproject area with clean energy sources.

Water and Sanitation: Tap/piped water is the main source of drinking water in the surrounding Subproject area. About 63.2 % of the population in the proposed Subproject have the access of Tap/piped water. Almost all the houses in the area have some sort of toilet facility.

Health Facility: The nearest and easily accessible health facility nearby the proposed Subproject area is in Hurke located at a distance of 2 km from substation site.

Communication: People of the Subproject have access to communication facilities mainly through mobile telephone services. In the Subproject area, people have access to local and national FM Radio networks and local newspaper facility.

Occupation: Agriculture is the main occupation of people in the Subproject area with nearly 80% contribution; small trade and business/enterprises and services are other occupation of people in the Subproject area. Intermittent tripping and voltage drop of electricity was adversely affecting irrigation of crops and daily household chores activities.

COVID-19: The coronavirus (COVID-19) pandemic has been defined as global health crisis; the virus has spread in almost all parts of Nepal. Heedful of its vulnerabilities, the Government of Nepal had enforced a nationwide lockdown in 2020/2021 and activated its federal, provincial and local level mechanisms to respond to the crisis. In case of any sudden surge or outbreak of COVID-19, quarantine facilities and immediate health support should be provided to the workers and personnel involved in construction.

Other seasonal and minor diseases like dengue, fever, sneezing, cough, gastritis, diabetes and mental disorder have been reported within the Subproject area.



4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

The environmental and social impacts predicted during the construction of proposed Subproject are discussed in this chapter. National Environmental Impact Assessment Guidelines (GoN, 2050) has been referred for the predicting magnitude, extent, and duration of the project-induced environmental impacts in Subproject area. This chapter identifies the basic environmental and social impacts in the Subproject area that will arise during the construction. The detailed impacts of each domain of environmental and social safeguards have been addressed in this chapter.

4.1 Anticipated Beneficial Impacts

Construction Phase

4.1.1 Local Employment

Local employment will be created during the construction phase. As mentioned in section 2.8 Workforce Requirement, the typical construction team will have 21 skilled manpower and 58 unskilled manpower for the period 10-12 months for the erection of poles and stringing the distribution lines and 16-18 months of time for the building the substation. Local people within the SPA and OPA will be encouraged for employment during construction phase. Both male and female will get equal opportunity during construction Based on the skill levels (skilled, semi-skilled and unskilled labor) local people will be used for the construction as far as possible. *The magnitude of impact is considered moderate, the extent is local, and the duration is short-term.*

Operation Phase

4.1.2 Local Economy and Enhancement in Rural Electrification

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. Intermittent tripping and voltage drop problem nearby the settlement areas will be reduced. Upgrading and expansion of electricity distribution helps to way-out many electricity related issues and promotes the use of new types of home appliances, use of electric motors for irrigation, and establishment of small and large industries. *The magnitude of impact is considered high, the extent is local, and the duration is long-term.*

4.1.3 Greenhouse Gas Emission Balance

Net Green House Gas (GHG) emissions resulting from the Subproject area are expected to be low as the distribution lines will improve and expand electricity supply from clean energy sources. It will reduce the emission of GHG from the traditional source like Guitha (made from cow dung), firewood and timber along with commercial fuel Kerosene for cooking/lighting, heating and diesel for water pumping. *The magnitude of impact is high, the extent is local, and the duration is long term.*




4.2 Anticipated Adverse Impacts

A. Physical Environment

Construction Phase

4.2.1 Change in Land Use

The Subproject requires about 0.45 ha land for the substation. The proposed substation land area belongs to Bhairabistan community forest, i.e., government land. The land managed by the community forest will be converted to the substation area surrounded by proper boundary wall. Distribution Line passes through the edge of Bhairabistan community forest. The construction of the Subproject will bring change in the land use permanently. Potential impacts caused by distribution lines will be limited to approximately 0.22 m of land for each pole, at the edge of private lands. *The impacts due to use of land will be moderate in magnitude, site specific and long term in duration.*

Mitigation Measures

- Steel Tubular Pole for distribution lines will be planted at the right way of existing road without hampering traffic movement. In case of road alignments and forest areas land, minimal land will be used at the edge for planting the poles.
- Cropping calendar will be followed while planting poles and stringing of conductors so that standing crops will not be damaged.

4.2.2 Air Quality

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 of short term. Transportation of the materials and movement of construction crew and equipment will have minor impact on air quality. *The impact on air quality will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors' vehicles and equipment should meet Nepali vehicle emissions standards.
- Dust emissions shall be controlled with using 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.

4.2.3 Noise

Noise is inevitable during construction. As noted in section 3.1.5, noise is less around the substation area as the area is rural and settlement is sparse. Construction-related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites; construction related noise is not expected to exceed acceptable levels. *The impact on noise level will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors will be required to monitor noise during the construction.




- For substation site, boundary walls serve as noise barrier, and it should be constructed as early as possible.

4.2.4 Drainage and Water Quality

Substation sites of 0.45 ha. will result in slight alteration of drainage patterns, although the alterations in drainage will not be quantifiable. Interference with drainage patterns will be temporary during construction phase only. The impact on water quality during the construction period is expected to be insignificant. Water will be used primarily as a cement additive for construction of substation foundations and boundary walls, and to control dust. *The magnitude of impact is considered low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Storm water run-off from substation sites will be minimized and controlled with bunding temporary dikes (constructed boundary walls will also help contain run-off water).
- Proper management of ground drainage from camps as a preventive measure against breeding places of mosquitoes, and other pests.

4.2.5 Soil and Muck

As the proposed substation land's ground level is low, filling of soil is necessary. The required filling materials shall be purchased from nearby authorized crusher plant approved by local government. For distribution lines the excavation activity will be insignificant. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Soil required for filling shall be purchased from the nearby authorized crusher plant under local government.
- Soil shall be covered with tarpaulin while transporting it from earth-borrowing areas.
- Simultaneous water sprinkling and compaction of spoil shall be done using the roller.

4.2.6 Solid Wastes

The wastes generated during construction within the Subproject area are cement bags, iron bars, and other leftover construction materials, and waste generated by the labor camp. It might cause adverse impact if not properly managed. Organic wastes generated from labor camp may give foul smell, and attract rodents if not manage properly. Inorganic wastes generated during implementation shall be managed through source segregation. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Source segregation of organic and inorganic wastes in different storage areas or facilities in the designated location.
- The organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered by thick layer of soil on daily basis.
- Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix shall be used as refills for ground leveling.
- Packing materials used for casing components should be recyclable.




- 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.

Operation Phase

4.2.7 Electric and Fire Hazard

Employees performing servicing or maintenance of substations may be exposed to electric shock, burns and injuries from the unexpected energization or release of stored energy in the equipment. *The magnitude of impact is considered moderate, the extent is site-specific, and the duration is long term.*

Mitigation Measures

For this, the following mitigation measures will be practiced:

- 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.

B. Biological Environment

The proposed Subproject avoids forest area and other sensitive biodiversity area. Hence, there will be no significant impact to biological environment because of construction of substation and distribution lines.

Construction Phase

4.2.8 Loss of Habitat

As the proposed substation area is a barren land, whereas the 33 kV distribution line passes through the edges of road alignments and forest areas. The total area of the forest area that will be occupied within RoW of the proposed 33 kV distribution line and substation area is 0.59 ha. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along a community forest are 24. The possible use of firewood should be restricted during the construction activities. *The magnitude of impact is moderate, the extent is site-specific, and the duration is long term.*

Table 4-1: Detail of impacted forest area and trees loss

Area (ha)			Name of species	No. of trees	
33kV line	Substation	Total		33kV line	Substation
0.14	0.45	0.59	<i>Shorea robusta</i>	12	-
			<i>Terminalia elliptica</i>	2	-
			<i>Ficus religiosa</i>	2	-

			<i>Haldina cordifolia</i>	2	-
			<i>Syzygium cumini</i>	2	-
			<i>Pinus roxburghii</i>	4	-
			Total	24	-

Mitigation Measures

- Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019).
- Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years.
- Workers and staffs should be restricted to use firewood for cooking.
- Providing LPG based stoves in Labor camp.
- Labors and staff shall be made aware to avoid illegal activities in adjoining forest.

Operation Phase

4.2.9 Bird electrocution and collision

The Subproject area is located in a rural setting and there is no presence of critical habitat of avian fauna. Electrocution is a risk to bird species that perch on power line infrastructures (substations and distribution lines). List of birds presented in section 3.2, may collide to distribution lines and substation. Minimizing bird collision and electrocution risk is therefore a win-win for biodiversity and the power sector. *The magnitude of impact is low, the extent is site-specific, and the duration is long term.*

Mitigation Measures

- Bird guards should be installed above the poles and white spirals in the conductors to improve visibility electrical structures.

C. Socio-Economic and Cultural Environment

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

Construction Phase

4.2.10 Land Requirement

The land required for the proposed substation area is 0.45 ha, is the government land, that will be managed by NEA later. This has been confirmed officially through Bhairabistan community forest users' groups and Ward Office, Barahatal RM. NEA is given the right to use the land to build and operate a substation. The construction activities of the Subproject will not involve any private land. So, there will be no land acquisition, and thus no resettlement impacts. For the construction of distribution lines, community in the Subproject area have assured and committed for necessary help and support during implementation. They have agreed on NEA's proposal that poles shall be installed on the edge of road alignments and forest areas. *The impacts will be low in magnitude, site specific, and long term in duration.*

Mitigation Measures

- Distribution pole of diameter 0.22 m should be installed on the edge of road alignments and forest areas.

4.2.11 Public Health

Construction activities will be of small scale, causing no significant adverse impact to existing quality of air, water and sound. Local people except the workers do not involve in construction activities. Considering COVID-19 pandemic as an example, workers will be advised to avoid unnecessary contact with local people. *The magnitude of impact is low, the extent is site-specific, and the duration is short term.*

Mitigation Measures

- Contractors shall implement health and safety plans.
- Awareness on HIV/AIDS and other sexually transmitted disease should be provided to the labors.
- Awareness on basic sanitation and waste management should be provided to the labors.

4.2.12 Occupational Hazards and Safety of Workers

Occupational health hazard and safety of workers is the major issue during the construction period. Working without adopting safety measures during excavation work, spoil management work, mechanical and electrical equipment handling activities, chemical handling, etc. during construction may call the risk of accident. Primary victims are the workers involved in the construction. *So, the envisaged direct impact is high in magnitude, site specific in extent, short term in duration.*

Mitigation Measures

- Contractor shall prepare the Environmental, Health and Safety plan and take approval from the Client (NEA/PIU). Contractor shall employ Safety officer 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 7.**
- NEA will be responsible to supervise the EHS performance of the construction Contractor, and worker's health and safety.

4.2.13 Child Labor, and Gender Issues

During the construction period, people employed on daily wages for excavation, transportation of construction materials, and other construction-related works should avoid the involvement children and should avoid gender discrimination. Gender discrimination may occur as the Contractor may not be sensitive towards gender equity. Contractors should equally pay men and women workers. Construction area should be gender friendly with required facilities. *The envisaged impact is high in magnitude, site-specific in extent, and short-term in duration.*

Mitigation Measures

The Subproject will ensure to:

- Provide equal wage to male and female for similar nature of work.
- Restrict use of child labor i.e., below 16 years of age (which is as per government and ILO guidelines).
- Provide female friendly construction environment with separate cabins and toilet for women in the camp.
- Prepare suitable work categorization for women.

4.2.14 Socially Undesirable Activities

The workers may use alcohol and other forms of intoxication, gamble and quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area. *So, the envisaged impact is low in magnitude, local in extent, and short-term in duration.*

Mitigation Measures.

- Restrict movement of workers out of camp after dinner time in the night.
- Prohibit the 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 public relation officer to keep close and regular consultation and coordination with local communities.
- Regular monitoring of workers' behavior and take appropriate measure on rule violators.

Operation Phase

4.2.1 Hazards and Safety

Occupational health hazard and safety of staffs is the major issues during the operation phase of the substation. The possible electric shock and fire hazard might cause injury or




death to working staffs thus the protection measures should be taken all the time. *The envisaged direct impact is high in magnitude, site specific in extent, long term in duration.*

Mitigation Measures

- There will be the use of insulation, guarding, grounding, electrical protective devices, and 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

4.2.2 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; so, there will be no impact outside of the substation boundaries.⁷ 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 empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment.

⁷ 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: $1/(10*10*10) = 0.1\%$.

5. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

5.1 Methodology in Information Disclosure, Consultation and Participation

The following methodologies were followed for information disclosure, consultation and participation:

- i. Identification of the stakeholder is important to understand how the Subproject activities will engage with different institution/groups/individuals. The stakeholders are the groups that might be affected by the Subproject or might influence Subproject outcomes. The identified stakeholders are considered in three groups (**Figure 5-1**).

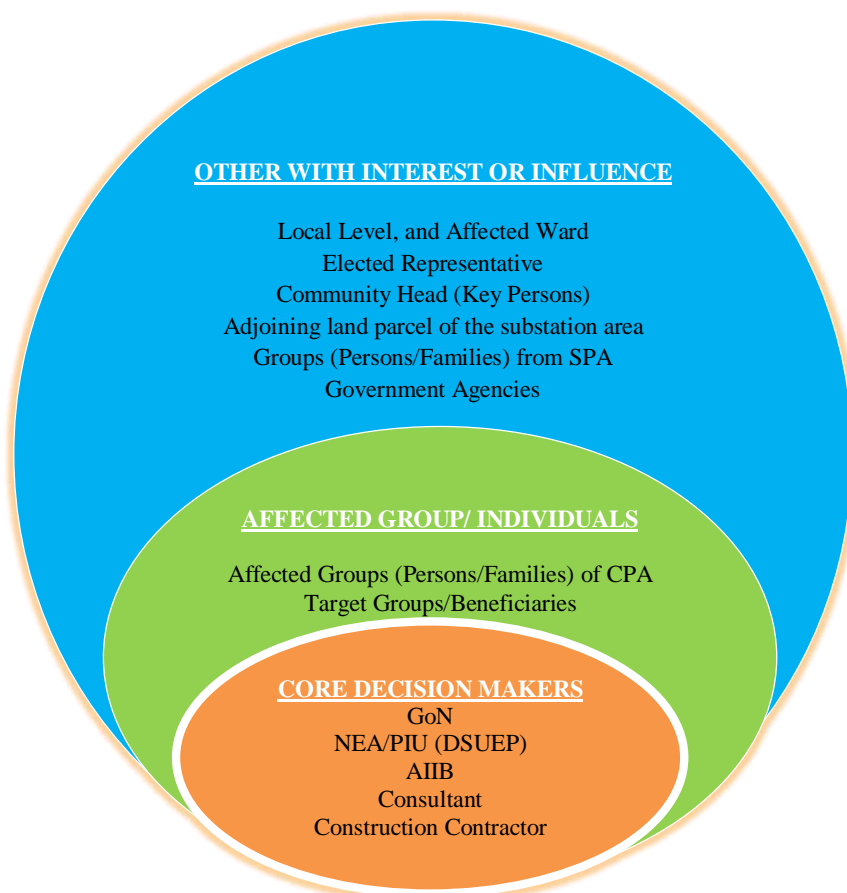


Figure 5-1: Identified Stakeholder in the Subproject⁸

- ii. The notice with subject of consultation, venue, and time was pasted at Subproject footprint area, local level and affected Ward office in presence of concerned local stakeholders (**Annex 1**). People were explained about the notices and their views were noted and agreed as Minutes.
- iii. Study team members visited all the local government offices within the Subproject influence area. Representatives from each local body were also consulted. All local governments were given request letters for their active support in project implementation. Municipalities were requested to provide written suggestions. The deed

⁸ Referenced Meaningful stakeholder engagement: a joint publication of the MFI working group on environmental and social standards / Reidar Kvam, PP-19, 2019.

of enquiry (Muchulkas) and Letter of Declaration from the stakeholders are presented in **Annex 6 and Error! Reference source not found.**

- iv. Local communities nearby substation area and along the distribution line routes were consulted, and were briefed about the Subproject activities and likely benefits with their suggestions (included in the Minutes).
- v. During the Subproject construction phase, booklets informing about the Subproject activities, likely impacts and mitigation measures together with the complaints handling mechanisms will be developed and distributed in the Subproject area.

5.2 Consultation and Information Disclosure

Consultation aims to encourage participation of stakeholders and communities of the Subproject area in identification of issues, comments and suggestions. The Subproject affected groups (persons/families) were given more emphasis during the field consultations. Public consultations were conducted at Hurke, Brahataal Rural Municipality, Ward no. 8 on 6th February, 2022 (**Figure 5-2**). The concerns expressed and issues/ raised during the consultation were documented as in the form of minutes (**Annex 5**).

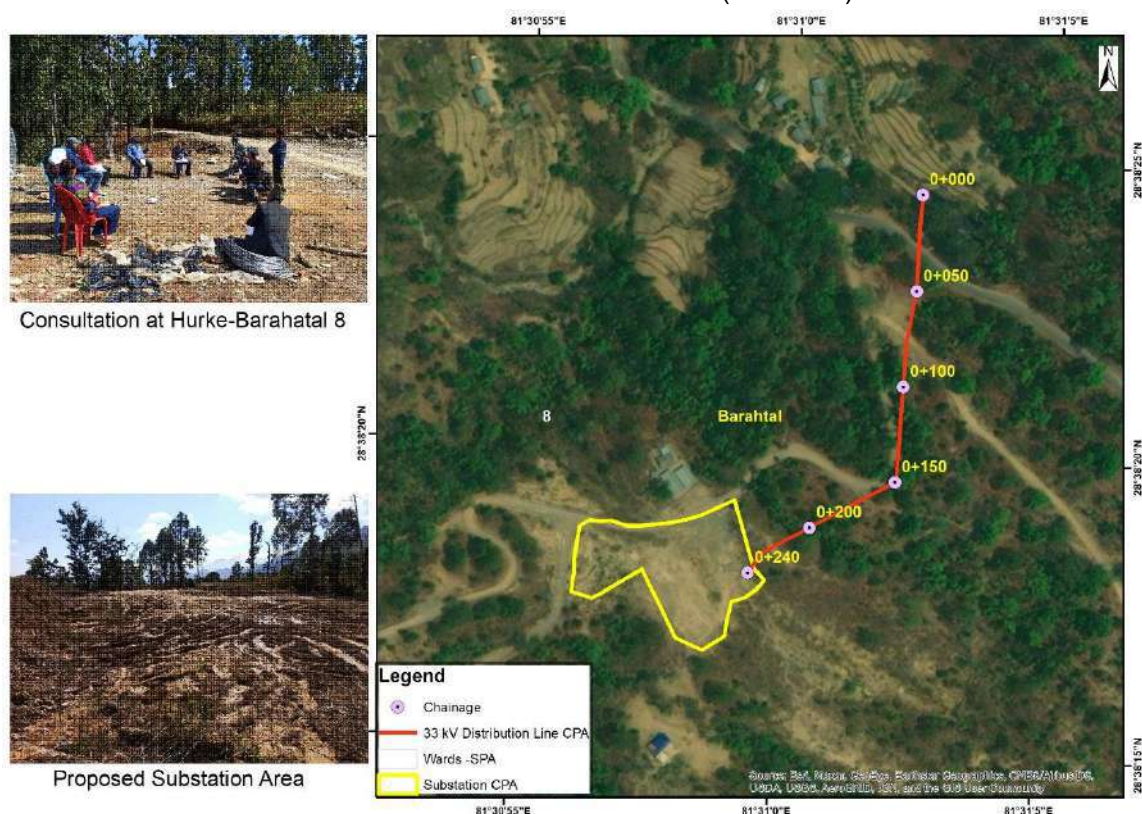


Figure 5-2: Consultation with the stakeholders and communities in the Subproject Area.⁹

Major benefits expected from the implementation of Subproject through the perspective of local people were identified from public interaction, and that included improvement in the rural electrification facilities ensuring the uninterrupted electricity in the households and better functioning of industries in the locality. The issues, comments and suggestions received in the consultation are presented in **Table 5-1**.

⁹ Field Study, 2021. Used SW Map and GIS

5.3 Comments and Suggestion Received

Table 5-1: Summary of issues, comments and suggestions received in Consultations

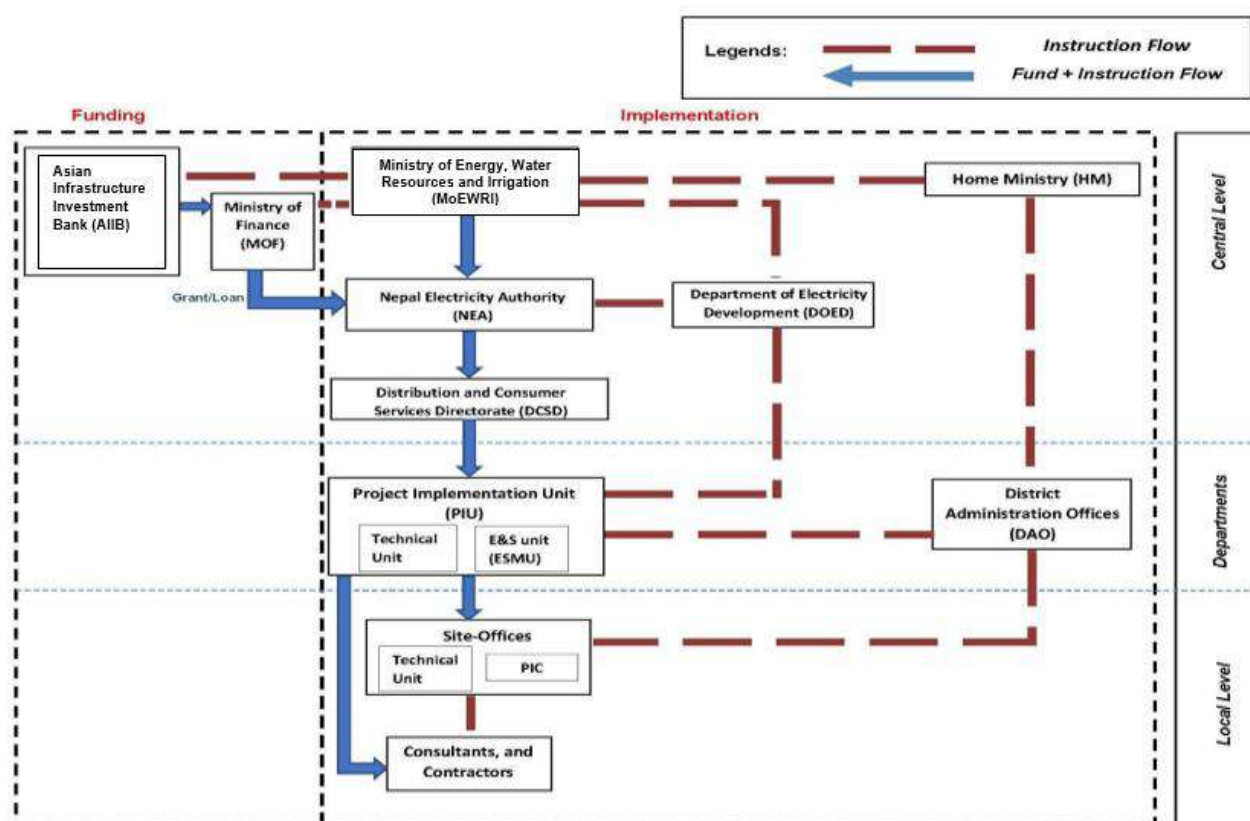
Source: Field Visit, 2022

Date	Location	Issues, comments and suggestions received	Participants
6 th February, 2022	Hurke, Brahataal Rural Municipality, Ward no. 8	<ul style="list-style-type: none"> The priority for the engagement should be given to the local during the proposed project construction The proposed project should be constructed by avoiding the adverse impact on the infrastructure of religious and traditionally important and should be managed accordingly if causes impact. The proposed project would not have any impact on the indigenous communities, tradition, religion, occupation and other customary right of the people The proposed project should be implemented as soon as possible to addressed the electricity problem in the area. The local people and the stakeholders have full support and agreement for the construction of the proposed project 	15,3F-12M

6. INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM

6.1 Institutional Arrangement

The Ministry of Energy, Water Resources and Irrigation (MEWRI) is responsible for overall planning and execution of the plans for the overall development of water and energy sector in Nepal. Nepal Electricity Authority (NEA) under MEWRI 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 activities during the construction phase. He will also provide technical support in preparing the monitoring report.



Source: ESMF-DSUEP

Figure 6-1: Institutional Arrangement for Environmental and Social Management

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/PIU 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 shall provide safeguard compliance orientation to all environment monitors and safeguard team of the contractor, one month before the construction works start.

6.2 Grievance Redress Mechanism

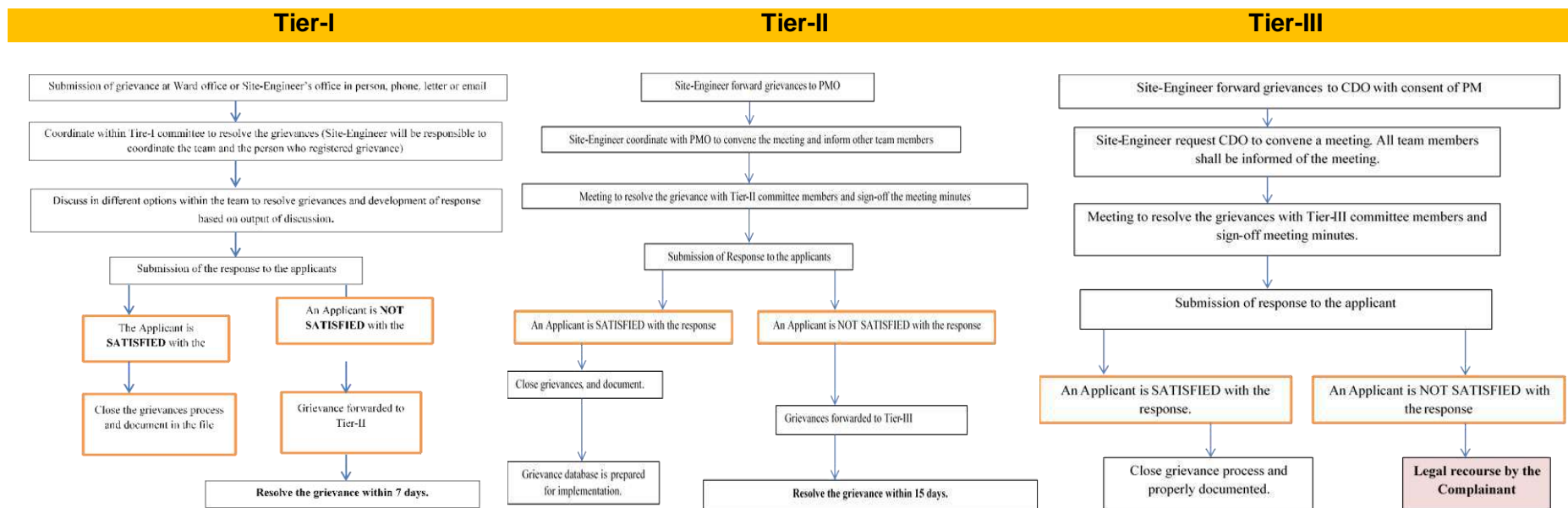
The Grievance Redress Mechanism (GRM) has been established to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental related issues at the subproject level. The GRM is designed to be simple, transparent and responsive. GRM shall address only the concerns arising due to the project implementation activities, mainly during construction stage. Social Comment Addressed -In each subproject, three levels Grievance Redress Mechanism will be established. During the ESMP study period NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the subproject level. Till date NEA has established Tier-I and Tier-II GRM has been established at local wards level and Municipality/RM level. Tier-II will be established before construction work start.

GRM 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, he/she should forward the grievance to the field office 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 carried to Tier II and Tier III. The three levels of GRM will be based on time-bound schedules as mentioned in **Table 6-1**. The subproject will carry the regular meeting for Tier-I, once a month to follow up if any grievances are received or not and to resolve the grievances received and update its status to PIU. **Figure 6-2** describes the Workflow Diagram of GRM for the Subprojects.




Table 6-1: Levels of Grievance Redress Mechanism Based on Time Bound

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. <i>If deemed necessary, representative from Forest Office, representative from Land Revenue Office, and representative from Land Survey Office are invited.</i>	
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
	Municipality Chief	Coordinator	Project Manager	Coordinator	Chief District Officer (CDO)	Chair
	Site-Engineer-NEA	Member secretary	Site-Engineer	Member Secretary	Project Manager	Coordinator
	Safeguards Expert from Consultant	Member	Municipality Chief	Member	Site-Engineer	Member Secretary
	Contractor Engineer	Member	Safeguards Expert from Consultant	Member	Municipality Chief/Ward Chair	Member
	Ward Chair	Member	Contractor Engineer	Member	Safeguards expert from consultant	Member
					Contractor Engineer	Member
					Representative from affected people	Member

Figure 6-2: Workflow Diagram for GRM from NEA¹⁰

* 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 Asian Infrastructure Investment Bank (AIIB) under Distribution System Upgrade and Expansion Project (DSUEP), Nepal Electricity Authority (NEA), May 2021.

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

7.1 Environmental and Social Management Plan and Mitigation Measures

The overall Environmental and Social Management Plan of the Subproject is presented in **Table 7-1**. 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 ESMU of PIU.



Table 7-1: Environmental and Social Management Plan (ESMP)

Project Activity	Environmental and Social Issues	Management/Mitigation Measures	Mitigation Cost	Responsibility	
				Planning and Implementation	Supervision and Monitoring
Pre-construction Phase					
Approvals, permits and clearances	Installation of poles along the edge of road alignments and forest areas	<ul style="list-style-type: none">Site office and the contractor must inform the community prior to the installation of poles and stringing of the line along DL route		Site Office/ Contractor/	DSUEP (PIU)/NEA
Construction Phase					
Construction work in substation area and distribution line alignment	<ul style="list-style-type: none">Inadequate/unsafe working conditions	<ul style="list-style-type: none">Appropriate contract clauses to ensure satisfactory implementation of contractual environmental, health, and safety measures.		Site Office/Contractor	PIU/NEA
	<ul style="list-style-type: none">Accident may arise if the pit hole (depth- 2m and diameter-0.22 m) prepared for steel tubular poles remains open for long time	<ul style="list-style-type: none">Pit holes for the steel tubular pole shall not be left open and should be filled instantly by erecting poles and concrete-cement around the base, that can strengthen the pole erectionContractors need to follow the guideline provided by the PIU	Project Cost	Contractor/ Site Office	PIU/ESMU/ PIU
	<ul style="list-style-type: none">Dust emission - transportation of materials and movement of	<ul style="list-style-type: none">Water sprays to be used for dust control as necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials	Air Quality Monitoring- 1,50,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

	construction crews and equipment will cause minor impact	(sand, cements, aggregates and spoil) to be stored in substation area. • Steel poles firstly stocked in the substation area and secondly in the open barren area in coordination with Municipalities and Rural Municipalities. No social and environmental issues for the stockpiling of the steel poles and stringing wires	Sprinkling water (Dust Management) 2,00,000.00 (NRs.)		
	• Noise emission-Construction related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites	• Boundary walls serves as a noise barrier, and these shall be constructed as early as possible. • Construction equipment to meet national emissions and noise control standards.	Noise Level Monitoring- 50,000.00 (NRs.) Provision of PPE in Project Cost	Contractor/ Site Office	PIU/ESMU
	• Interference with drainage patterns will be temporary at substation during construction phase	• A proper drainage system should be managed within the substation area. • Storm water run-off need to be minimized and controlled with bunding temporary dikes • Drainage management as a preventive measure against breeding of mosquitoes and other pests	Project Cost	Contractor/ Site Office	PIU/ESMU
	• Construction associated wastes generated within substation area and campsite location	• Organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered, by a thick layer of soil • Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and steel	Solid wastes management – 1,00,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

		<ul style="list-style-type: none"> mix should be used as refills for ground leveling. Recyclable wastes like left out/non-usable reinforcement bars, and packing materials to be sent or sold to scrap vendors. Effective coordination with local level government for the proper waste management 			
	<ul style="list-style-type: none"> Illegal bird hunting by the labors 	<ul style="list-style-type: none"> Discouraged through supplying adequate food items (poultry and fish) requirement within the camp. Awareness on legal provisions upon illegal hunting of biodiversity need to be disseminated 	Project Cost	Contractor/ Office Site	PIU/ESMU
	<ul style="list-style-type: none"> About 0.59 ha of forest area occurs within RoW of the proposed distribution line and substation Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 24 	<ul style="list-style-type: none"> Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019). Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years. 	The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report	Contractor/ Office Site	PIU/ESMU
	<ul style="list-style-type: none"> Use of firewood from nearby forests 	<ul style="list-style-type: none"> Workers and staffs should be restricted to use firewood for cooking. Providing LPG based stoves in Labor camp. 	Project Cost	Contractor/ Office Site	PIU/ESMU
Environment, Health and Safety	<ul style="list-style-type: none"> Injury and sicknesses workers 	<ul style="list-style-type: none"> Contractor shall prepare the Environmental, Health and Safety plan and take approval from the client. Provision of safety officer in the work 		Contractor/Site Office	PIU/ESMU

	<p>and members of the public</p> <ul style="list-style-type: none"> Potential fecal coliform contamination in drinking water 	<p>team shall be made during construction period.</p> <ul style="list-style-type: none"> All employees shall be provided with the necessary training, and safety equipment as required for their responsibilities and duties. Basic facilities of drinking water, sanitation & clean resting place, canteen, and first aid shall be made available for the campsite. Provision of health insurance to employees. Security fences around the substation. Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs). Awareness on HIV/AIDS and other sexually transmitted disease. Awareness on providing basic sanitation facilities and waste management control to the labors. For coronavirus (COVID-19) pandemic situation, Contractors should arrange for quarantine and health services for infected workers. 	<p>Establishment of Labor Camp with basic facilities – In Project Cost</p> <p>EHS Awareness Trainings -1,50,000.00 (NRs.)</p> <p>COVID-19 measures 2,00,000.00 (NRs.)</p>		
Management of electric equipment's, toxic materials of chemical wastes	<ul style="list-style-type: none"> Possible spills resulting in contamination of soil, water, and air 	<ul style="list-style-type: none"> Chemical waste generated from transformer shall be collected in leakage proof, corrosion free, specially designed container, and sealed carefully 	1,00,000.00 (NRs.)	Contractor/ Office Site	PIU/ESMU
Operation and Maintenance Phase					
Electric shock and fire hazard	<ul style="list-style-type: none"> Injury or death to the workers and public 	<ul style="list-style-type: none"> Use of insulation, guarding, grounding, electrical protective devices, and safe work practices. 	Project Cost	NEA	NEA

		<ul style="list-style-type: none"> Boundary walls and / or security fences around substations to prevent unauthorized access. Only trained and authorized personnel shall be allowed for the electrical works. No electric wire to be strung above the house. Installation of warning signs. 			
Routine operations and maintenance	<ul style="list-style-type: none"> Potential disturbance to other utility functions and vehicular traffic. 	<ul style="list-style-type: none"> Maintain warning / advisory signs in good and visible condition Visual and technical inspection 	Project Cost	NEA	NEA
Oil spillage	<ul style="list-style-type: none"> Contamination of land/nearby water bodies 	<ul style="list-style-type: none"> Substation transformers should be stored within secure and impervious bundled areas with a storage capacity of at least 110% of the capacity of oil in transformers and associated reserve tanks. 	Project Cost	NEA	NEA
Bird electrocution and collision	Electrocution can cause a risk to bird species which perch on power line infrastructures	Provision of bird guards above the poles and white spirals on the conductors to improve visibility	Project Cost	NEA	NEA

(The provision of environment and social management cost should be included in the project cost making each items visible in BOQ of bidding document for the safeguard compliance by the construction contractor)

7.2 Proposed Monitoring Plan

The monitoring proposed in **Table 7-2** will be of value primarily for establishing baseline conditions in the Subproject area, and then for ambient quality monitoring.

Table 7-2: Minimum Provisions for Environmental Monitoring

Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Construction Stage				
Clearing of construction site	Substation boundaries	<ul style="list-style-type: none"> Field inspection of Subproject Sites and ensure that appropriate safety measures are implemented 	Clearing and restoration: weekly	Contractors to implement corporate EHS plan, drainage management and solid waste control in substation area.
Use of forest area and loss of trees	33 kV DL alignment	<ul style="list-style-type: none"> Field inspection of Subproject sites and ensure the compensatory plantation of 1:10 Related approval document for tree clearance 	Prior to the construction work	Contractor responsibility under the supervision of PIU/DFO
Air: SPM, Noise: dB	Substation boundaries and nearest receptor to substation	<ul style="list-style-type: none"> Spot check for noise and dust using portable monitoring device 	Air, and noise: quarterly during construction period	Contractors need to conduct the air and noise monitoring during the construction period at the substation location

Construction wastes: on-site inspection	Visual inspection of active construction areas, including equipment staging areas and camps	<ul style="list-style-type: none"> Spot check / visual inspection of solid waste (spoil, muck etc.) generation and disposal. Analysis of transformer oils to determine if polychlorinated biphenyls are present. 	Monthly spot checks for construction waste management	PIU safeguard officers to provide oversight via regular field inspections, and submit monitoring reports to the Bank
Occupational health and safety	Substation boundaries	<ul style="list-style-type: none"> No. of Toolbox talk and safety orientation to the workers No. of workplace accidents Use of PPE by workers 	Daily Inspection during construction Monthly Inspection during operation phase	Inspection of the construction site by safety officer and PIU safeguard officer
Child involvement in construction work (need to be prohibited)	Substation work	<ul style="list-style-type: none"> Spot inspection at construction sites 	Monthly Inspection during construction	Site Office

7.3 Environmental and Social Mitigation and Monitoring Cost

Preliminary cost estimates for the ESMP implementation are shown in **Table 7-3**. **Error! Reference source not found..** These estimates cover the basic monitoring activities and the mitigation measures to be complied from the contractor's side. The ESMP cost estimated for the **Sunadwari–Odaltal Distribution Line** is NRs 13,00,000.00. The community support activities and the costs will be presented in the Community Development Plan (CDP) NEA has agreed for the effective implementation of the mitigation and monitoring cost items as mentioned in table below.

Table 7-3: Mitigation Measures and Monitoring Activities Cost Estimates

SN	Budget Items	Unit	Rate (NRs.)	Estimated Amount for Monitoring (NRs)-Lump Sum
1	Air Quality Monitoring (at substation)	6 (Times)	25,000.00	150,000.00
2	Noise Level Monitoring (at substation)	6 (Times)	8,334.00	50,000.00
3	Sprinkling of water to be used for dust control necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials (sand, cements, aggregates and spoil)	200 (Times) During Excavation and Civil works	1000.00	2,00,000.00
4	Management of electric equipment's, toxic materials of chemical wastes	-	L.S.	1,00,000.00
5	Segregation and management of solid wastes	-	L.S.	1,00,000.00
6	COVID-19 measures (considering pandemic situation) standardize the quarantine facilities with health aid to the labors	-	L.S.	200,000.00
7	EHS Awareness raising trainings to the labors	10 (Events)	15,000.00	1,50,000.00
8	Meeting of Safeguard Desk and Grievance Redress Committee at Field Level	24 (Months)	14,583.00	3,50,000.00
Total				13,00,000.00

8. CONCLUSION

Potential environmental impacts of this Subproject are not diverse and are all site-specific i.e., confined to the Core Project Area. Civil works will have minimal temporary impacts on air, noise and water quality. Erection of poles during construction shall follow right of way of existing roads and the edge of farmlands. The PIU should give prior information before installation of the poles. In the ESMP consultations conducted in the settlement area, people have agreed for the implementation of the Subproject and have suggested to install poles on the edge of farm-lands, without affecting any private structures along the distribution line. If there is loss of crops, appropriate compensation shall be provided. The implementation of the proposed Subproject needs 0.59 ha of forest area with estimated loss of 24 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. Mitigation measures are suggested in this ESMP to avoid any possible environmental and social impacts. The total ESMP cost for this Subproject is NRs. 13,00,000.00. NEA Project Implementation Unit has agreed to implement the estimated cost for the mitigation measures and monitoring activities.



REFERENCES

- CBS. (2019). Environmental Statistics of Nepal. Kathmandu: Central Bureau of Statistics.
- CBS. (2018). Rural Municipality-Municipality Profile of Surkhet District. Surkhet: Office of Statistics.
- DHM. (2021). Retrieved from <http://mfd.gov.np/city?id=26>
- DoS. (2020). Data & Metadata. Retrieved from National Spatial Data Center: Geoportal: <http://nationalgeoportal.gov.np>
- Environmental and Social Framework (ESF) Asian infrastructure investment Bank, Feb 2016 (Amended February 2019).
- Environmental and Social Management Framework (DSUEP) NEA- November 2021
- GoN (2019): Environmental Protection Act (EPA), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN (2020): Environmental Protection Rules (EPR), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN. (2050). National Environmental Impact Assessment Guidelines. National Planning Commission Secretariat.
- GoN. (2019). Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, Ministry of Forests and Environment, Singhadurbar, Kathmandu.
- Shahi, D. K., Rijal, H. B., & Shukuya, M. (2019). Study on Household Energy Usage Patterns in Urban and Rural Areas. Journal of the Institute of Engineering, 15 (No. 3), 402-410. doi:<https://doi.org/10.3126/jie.v15i3.32761>
- Stakeholder Engagement Strategy, DSUEP, NEA 2019.
- The White Paper. (2018). Energy, Water Resources and Irrigation Sector's Status and Roadmap for the Future. Kathmandu: Government of Nepal.
- WBG. (2018). <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2018&locations=NP&start=1996&view=chart>. Retrieved from <https://www.worldbank.org>.
- WECS. (2014). Energy Data Sheet. Water and Energy Commission Secretariat. www.energyefficiency.gov.np/downloadthis/final_data_book__11_june_2014.pdf




ANNEXES



**Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION
LETTER TO STAKEHOLDERS**



नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

फ्याक्स: ०१-४१५३१४४

फोन नं.: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।



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

सूचना प्रकाशन मिति:

..... प्रदेश जिल्ला
.....(नगरपालिका/गाउँपालिका/महानगरपालिका/उपमहानगरपालिका)
मा एसियन इन्फ्रास्ट्रक्चर इन्भेस्टमेन्ट बैंकको ऋण सहयोग भएको नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना प्रस्तावक रही कार्यान्वयन गर्न लागिएको आयोजना कार्यान्वयन हुनुभन्दा अघि सो आयोजनाले त्यस क्षेत्रको वातावरण तथा सामाजिक पक्षहरूमा 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:

मिति:

समय:





नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

(ए.आई.आई.बि.)

फ्याक्स: ०१-४१५३१४४

फोन नं: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।

प.सं. ०७८/७९: १३८.

मिति: २०७८/१०/०७

श्री

विषय: गुनासो समाधान संयन्त्र गठन भएको सम्बन्धमा।

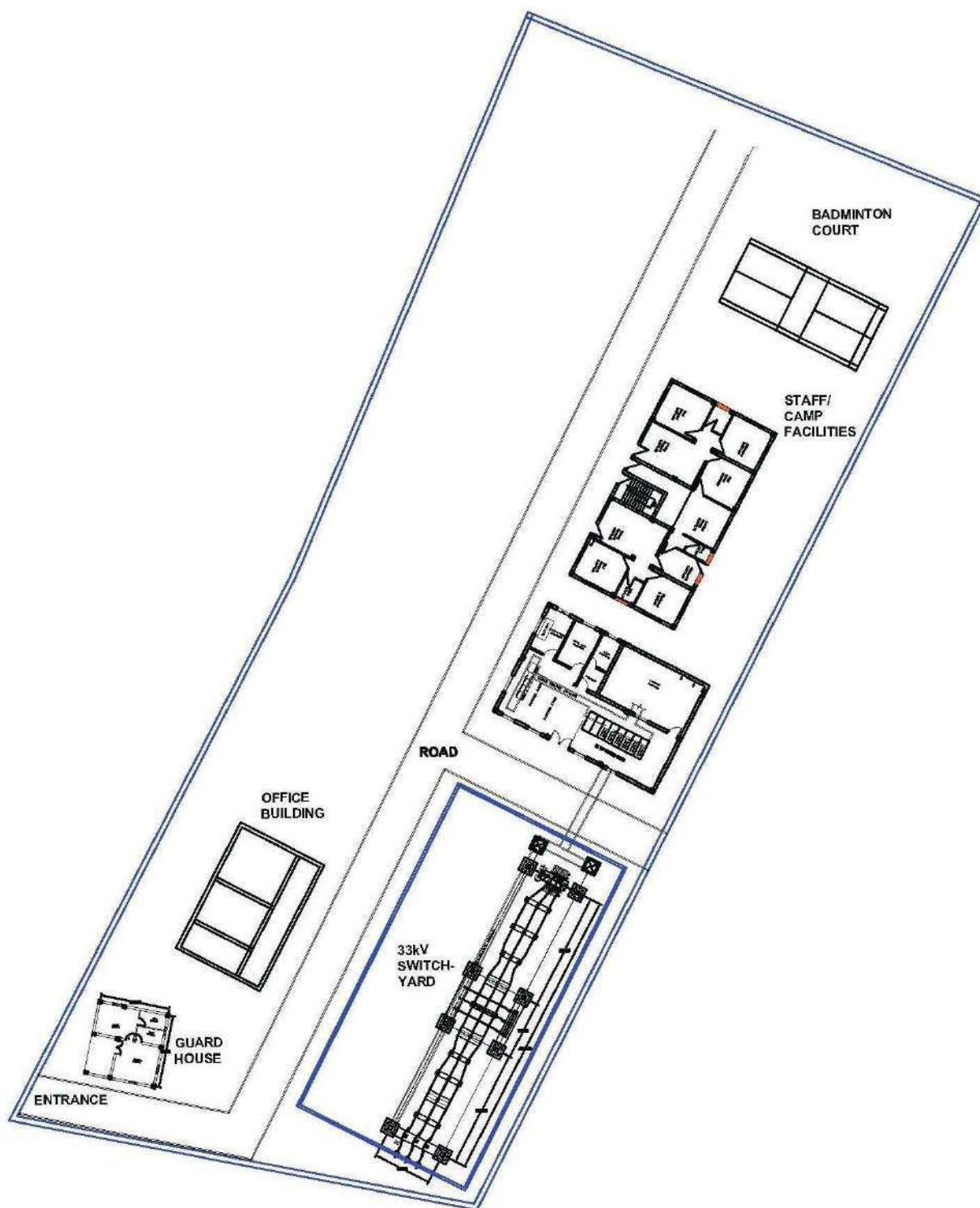
उपरोक्त विषयमा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंक (ए.आई.आई.बि.) को ऋण-सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (ए.आई.आई.बि.) प्रस्तावक रही कार्यान्वयन गर्न लागिएको आयोजना अन्तर्गत नेपाल सरकारको पूर्ण-विद्युतीकरण गर्ने लक्ष्य बमोजिम तहाँ वडा/गाउँपालिका/नगरपालिका/उप-महानगरपालिकामा ३३/११ के.भी. सब-स्टेशन, ३३ के.भी. लाईन, ११ के.भी. लाईन, ४०० भी. लाईन, आदि निर्माण कार्यहरु हुने भएकोले सो कार्यहरु गर्दा स्थानीय सरोकारवालाहरुको कुनै गुनासो भए सो गुनासोको समाधान गर्न गुनासो समाधान संयन्त्र निर्माण गरिएको छ। अतः संलग्न गुनासो समाधान संयन्त्र दस्तावेज बमोजिम आफ्ना गुनासोहरु दर्ता गर्न र सोही दस्तावेजमा भनिए बमोजिम गुनासोको समाधान हुने ब्यहोरा सम्पूर्ण सरोकारवालाहरुलाई जानकारी गराइन्छ।

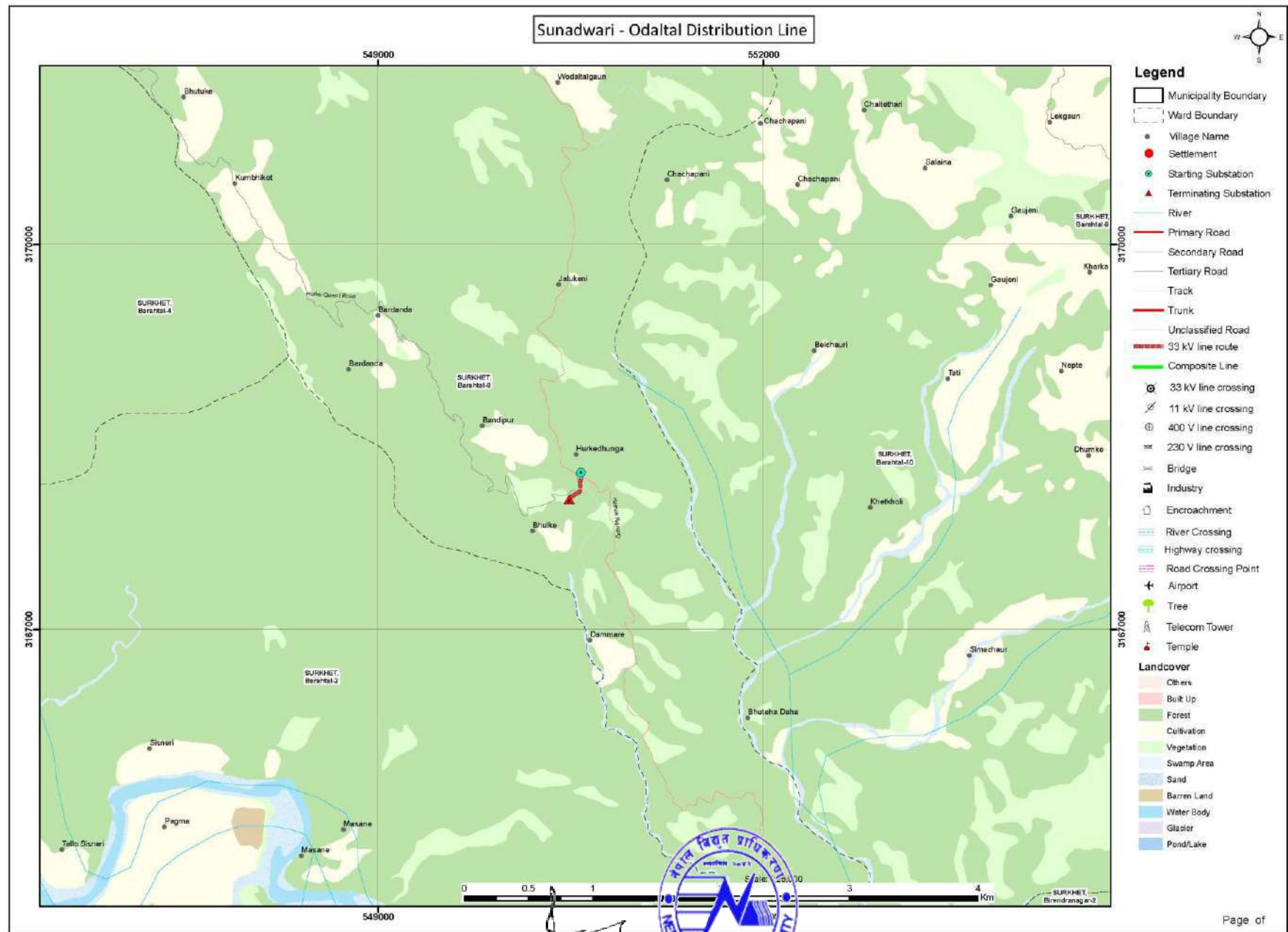
भवदीय,

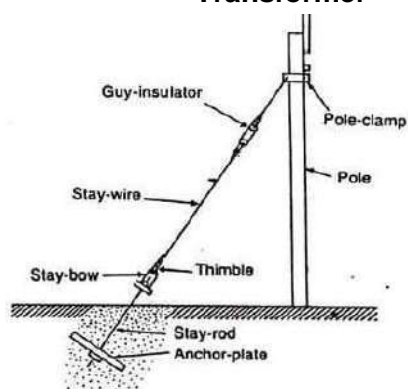
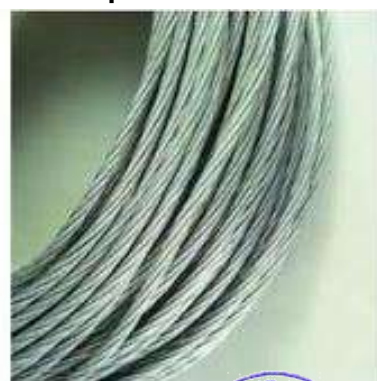
(केशव श्रेष्ठ)

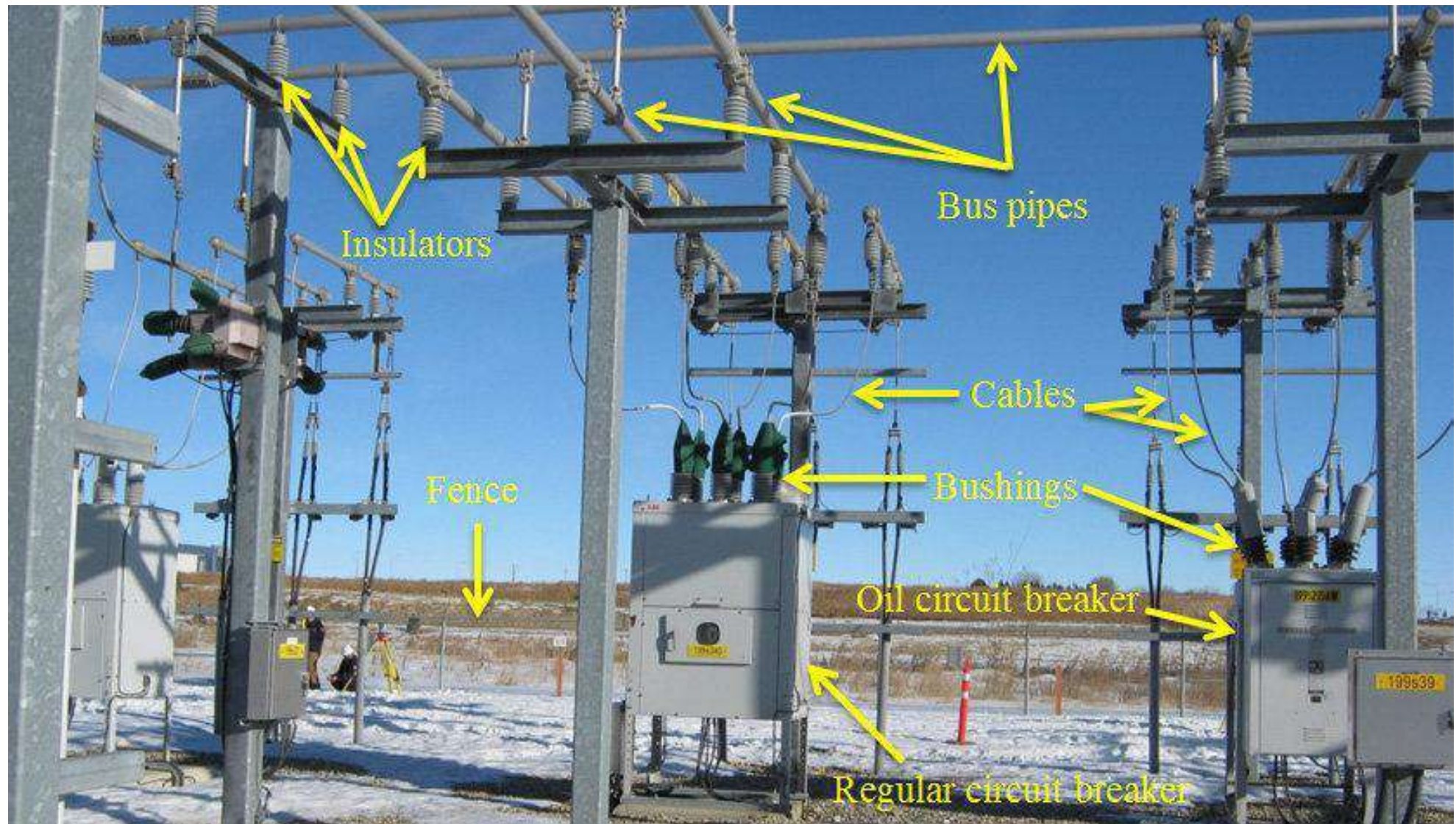
आयोजना प्रमुख



Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT



Annex 3: FACILITY AND COMPONENTS**Transformer****Switch Yard****Stay/Guy Sets****Steel Tubular Pole****Insulator****Civil-Structures Supporting Electrical Components****Conductor**



Possible components within 33 kV Substation



Bird Diverting Reflector



Wishbone Prevents Bird Landing on Wire




White Spiral in Wire Improves Visibility of Wire



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

Annex 4: LEGISLATIVE PROVISIONS

S N	Legal Provisions	Description	Relevancy concerning Project
1.	Constitution of Nepal	<ul style="list-style-type: none"> • The Constitution of Nepal is the main legal document, which emphasizes the right to a clean environment of the people, natural resources protection, preservation, and its prudent use. Rights regarding the clean environment, under article 30: • It includes making multi-purpose development of water resources, while according priority to domestic investment based on public participation to ensure a reliable supply of energy affordably, and easily, 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 fulfill the rights of people to live in a clean environment along with fulfilling the basic needs by providing access to sufficient energy.
2.	Environment Protection Act 2076 (2019 AD)	<ul style="list-style-type: none"> • Section 3 of the Act requires the proponent to conduct environmental studies concerning the prescribed proposals of any developmental works. Subsection 2 of this act provides the framework for the environmental study report prepared according to sub-section (1) shall, in fulfillment of the process as prescribed, be submitted to the relevant bodies of the Government of Nepal for approval. 	Environmental Studies, and approval of the report from the 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)]	<ul style="list-style-type: none"> • Under the Environmental Protection Rules (2020) first amendment (2021), 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. • Pertaining to Rule 3(1), Environment Protection Act (EPA), 2019 describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water resources and irrigation sector (1) under Environment Protection Regulation 2020 (First Amendment in 2021/05/24 on Nepal Gazette) state "use of forest area for the electricity distribution line project up to 66 KV" 	<p>This rule provides the overall guidance to what type of environmental studies is required according to the project by the Government of Nepal.</p> <p>The proposed Subproject will use the of Bhairabisthan Community Forest land for the purpose of 33 kV distribution line</p>




			extension and substation construction. For which, BES is mandatory.
4.	Nepal Environmental Policy, and Action Plan, 2050(1993)	<p>The aims of NEPAP are:</p> <ul style="list-style-type: none"> • To manage natural, and physical resources efficiently, and sustainably • To balance the development efforts, and environmental conservation for sustainable fulfillment 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 the adverse environmental impact of development projects, 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 the construction of a 33 kV distribution line along with a substation.
5.	Forest Act 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to the chapter 12, Section 42(1), if there is no other alternative to the using of forest area for the operation of a national priority project, plan of which investment is approved by the Investment Board, project of national pride and it appears from the environment examination referred to in the prevailing law that the operation of such plan does not result in significant adverse effects on the environment, the Government of Nepal may give approval, as prescribed, to use any part of the national forest for the purpose of operating such plan, • Similarly, in providing the forest area for the operation of a plan pursuant to sub-section (1), to the extent possible, a land that is adjoining to the national forest area near the project site and situated in the same geographical and ecological belt and has such landscape where forest can be developed shall be provided for the purpose of planting trees at least in the area equal to the forest area that has to be used. 	<ul style="list-style-type: none"> • About 0.59 ha of forest area occurs within RoW of the proposed 33 kV distribution line and substation area • Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 24
6.	Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to Section 4 (1), environmental study report should be prepared if the project needs the use of national forest area, • Section 7 require the approval of Government of Nepal, for the use of forest on the implementation of project • Section 17 (3) require plantation of trees in the ratio of 1:10 in the area given by the concerned forest office as a compensation for the removal trees during the project implementation 	<ul style="list-style-type: none"> • About 0.59 ha of forest area occurs within RoW of the proposed 33 kV distribution line and substation area • Estimated number of trees




		Section 17 (4) require care, maintenance and upkeep of the planted trees and handover to concerned forest office after 5 years.	that need to be cleared from the Core Project Area of the proposed DL alignment are 24
7.	Electricity Act 1992	<ul style="list-style-type: none"> • No person shall be entitled to conduct survey, generation, transmission, or distribution of electricity without obtaining a license under this act. • The Electricity Act of 1992 has the provision of land procurement for the development of Subprojects that involve electricity generation, transmission, or distribution. The Act states that the licensee may apply 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 a sufficient amount of electricity by constructing a 33 kV line, and substation by surveying to minimize the impacts.
8.	Rural Energy Policy, 2006	The rationale of formulating, and implementing this policy is to create a conducive environment that will self-motivate, and mobilize local institutions, rural energy user groups, non-government organizations, cooperatives, and private sector organizations 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 the promotion of such renewable energy technologies.	This project helps to improve the distribution and motivate use the of 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 the 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 the 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 kinds of characters.	The construction of a project is only possible when the rights of labor are secure. In this project, the Contractor should follow this act strictly.
10.	Child Labor (Prohibition, and	As per section 3 of this act, no child has not attained the age of 14 years shall be engaged in works as a laborer.	Child labor is strictly prohibited in this project, and




	Regulation) Act, 2056 (2000 AD)		Contractors should follow this act.
11.	Solid Waste Management Act, 2068 (2011 AD)	This act has been formulated to minimize solid waste products from the target area by setting rules, and regulations on solid waste management (SWM) in the country to develop a better environment for the systematic, and effective management of solid waste, and to involve all the concerned stakeholders in SWM practice. The main features of this act are the discussion of the 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 saves the money which could be used for other infrastructure development. Section 4 of the act assigns the local body to manage or use the solid waste discharged or dumped in the collection center, transfer station, or treatment plant or collected during cleaning.	These acts provide the overall framework to manage the solid waste generated from households to the project level. Also, 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 the provision made in article 50 of the 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 the segregation, and management of solid waste. It has been mentioned that it is essential to segregate degradable, and non-degradable solid waste at the source.	These rules provide the overall framework for how to reduce the volume of waste disposed of at the source during the construction of the substation.
13.	Fifteenth Plan	The vision of the 15th plan is to contribute to the prosperity of the nation through sustainable, and reliable development of hydropower by setting the goal which is to ensure energy security through intensifying hydropower generation. In addition, one of the strategies of the government of Nepal in the 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 the generation, and distribution of hydroelectricity in Nepal which is directly related to this project.
14.	United Nations Framework Convention on	UNFCCC, Signatories: 165. Parties: 195. (1), Article (4), commitment (f) states climate change considerations into account, to the extent feasible, in place	The goal of this project is to the




	Climate Change (UNFCCC), 1992	their relevant social, economic, and environmental policies, and actions, and employ appropriate methods, for example, impact assessments, formulated, and determined nationally, to minimize adverse effects on the economy, on public health, and the quality of the environment, of Subprojects or measures undertaken by them to mitigate or adapt to climate change. After it entered into force on 21 March 1994, it mandates the individual state for prioritization of resource conservation with development.	traditional form of energy with clean energy i.e. electricity which ultimately reduces air pollution, and smoke.
15.	ILO 169	<p>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. Article 1 on the First Part of this convention mainly focused on the following points:</p> <p>(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 customs or traditions or by special laws or regulations;</p> <p>(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 all of their own social, economic, cultural, and political institutions.</p> <ul style="list-style-type: none"> ● 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 people in this Convention shall not be construed as having any implications as regards the rights which may attach to the term under international law. 	Nepal is the part of ILO convention that's why ILO 169 should strictly follow during construction, and implementation of any types
16.	Environment and Social Management Framework	<ul style="list-style-type: none"> ● 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 Financiers' standards on E&S assessment and 	Main guiding document for E&S study to identify issues and recommending appropriate




		management, Involuntary Resettlement, Indigenous People, Gender, etc.).	augmentation/ mitigation measures
17.	Environmental and Social Policy (ESP)	<ul style="list-style-type: none"> 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
18.	Environmental and Social Standards of AIIB ¹¹	<ul style="list-style-type: none"> Three associated mandatory environmental and social standards (ESSs) set out more detailed environmental and social requirements relating to the ESMP 	ESMP requirement

¹¹ <https://www.aiib.org/en/policiesstrategies/download/environmentframework/2016022604753342.pdf>




Annex 5: CONSULATATION MEETING MINUTES

अज मिति २०७८/१०/२३ गतेको दिन बराहनाल गाउँपालिका वडा नं. ८ का अध्यक्ष श्री मणिराज ठाकुरी ज्यू वरिष्ठ अध्यक्ष तथा नेपाल विद्युत प्राधिकरण वितरण प्रणाली श्रृंखला उन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुने गडहरेनै सुन्दाबरी ओढालताल बिद्युत वितरण लाइन उपआयोजना निर्माणको शिलशिलामा पर्ने सक्ने कतासुरवीथ, सुम्नाजिक तथा सांस्कृतिक प्रभावहरूको बारेमा स्थानिय सरोकारवालाहरूको उपस्थितिमा बसेको भेलामा देहाय बमोजिमको हस्तगत तथा निर्णय गरियो।

क्र.सं.	नाम	हेतु/कारण	परिप्रेक्ष्य	थोडा	हस्ताक्षर
१	मणिराज ठाकुरी	बराहनाल-८	वडा अध्यक्ष	१०२०५१३०	...
२	समानन्द खोपरे	सुन्दाबरी, बेलौरी	वडा सदस्य		...
३	पद्म बराल	"	"		...
४	चन्द्र नरहरी गौतम	बराहनाल-८	मैलापान साव. उपप्रमुख		...
५	चन्द्र नरहरी महता	"	सुम्नाजिक		...
६	याम नरहरी ठाकुरी	"	"		...
७	कवि रोडाया	"	"		...
८	आशी रोडाया	"	"		...
९	सुके रोडाया	"	"		...
१०	बिमला रोडाया	"	"		...
११	देविसरा गौतम	"	"		...
१२	धर्मदेव ठाकुरी	"	"	८००५६३४६६	...
१३	जबिता ठाकुरी	"	"	"	...
१४	नर नरहरी गौतम	"	"	४८६८२८५०४	...
१५	विष्णु नरहरी नेपाली	"	मैलापान साव. उपप्रमुख	४८६८२८५०४	...
१६	कृष्ण कान्त	NEAEC	सुम्नाजिक		...
१७	प्रमोद रानी	"	"		...
१८	राम प्रसाद कुँडेल	"	कतासुरवीथ	४८६८२८५०४	...
१९	सुरम खोपरे	"	"		...
२०	नवरत्न बि.ड.	"	"		...

निर्णयहरू

१. आयोजनाको बारेमा DSUEP बाट रकम भन्दा विस्तृत जानकारी प्राप्त भयो।
२. यस आयोजना निर्माणको क्रममा स्थल तथा व्यक्तिको आधारमा स्थानियतालाई लाई रोजगारीमा प्राथमिकता दिन पर्नेछ।
३. यस आयोजना निर्माण गर्दा कुनै बिरुवा कटेर गर्नु पर्नेछ डाटनु पर्ने अवस्था आएमा नेपाल सरकारको नियमानुसार गर्नु पर्नेछ।
४. यस आयोजना निर्माण गर्दा धार्मिक तथा सांस्कृतिक महत्त्वका स्तम्भहरूमा कुनै प्रचुरी नकारात्मक असर नपर्ने गरी गर्नु पर्नेछ साथै कुनै प्रचुरी नकारात्मक असर पर्ने अवस्था आएमा आयोजनाले क्षतिपूरक कार्य गर्नु पर्नेछ।
५. यस आयोजना निर्माण गर्दा आफ्ना वनजग्गाहरूको सांस्कृतिक, धार्मिक, वैशा लगायतका अन्य customary right मा कुनै प्रचुरी नकारात्मक असर नपर्ने गरी जानकारी गराइनेछ।
६. यस क्षेत्रमा भन्दा निधुनिय स्वाम्य सम्पत्ति तथा यथापिष्ट आयोजना हुने गर्दा अनुरोधका साथ निर्णय गरियो।
७. यस आयोजना निर्माणमा राम्रो स्थानियता तथा सरोकारवालाहरूको पुर्ण सहयोग र समर्थन रहनेछ।

...



Annex 6: DEED OF ENQUIRY (MUCHULKAS)

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
.....दुर्गाती..... प्रदेश,सुदूरपश्चिम..... जिल्ला,बिराटमोड..... गाउँपालिका
.....८..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यसदुर्गाती..... प्रदेश,
.....सुदूरपश्चिम..... जिल्ला, गाउँ/नगर पालिका वार्ड नं१८..... मा अवस्थित
यसवडा कार्यालय..... को सूचना पाटिमा २०७८/१०/१२ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम: महिराज डडा
पद: वडा अध्यक्ष



कार्यालय/संस्थाको छाप



बराहताल गाँउपालिका
गाउँकार्यपालिकाको कार्यालय

द. न. वडा कार्यालय

कुनाथरी, सुर्खेत

कर्णाली प्रदेश, नेपाल

प.सं.- २०७८/०७९

च.नं.- ८८२

मिति-२०७८/१०/२३

विषय:- सिफारिस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण

नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना

दरबार मार्ग काठमाण्डौ।

प्रस्तुत विषयमा तहाँ कार्यालयको प.सं.२०७८/०७९ च.नं.१३७ र मिति२०७८/१०/०७ को पत्रबाट यस हुर्केदुङ्गा क्षेत्रमा निर्माण हुने सुन्दवारी ओदालताल आयोजनामा आदिवासी जनजाती तथा जोखिम युक्त परिवारहरु भए नभएको भनि पत्र बाट माग भएको हुदाँ हुर्केदुङ्गा क्षेत्रमा विद्युतको सबस्टेशन तथा वितरण लाइन निर्माण हुने आयोजनामा आदिवासी जनजाती तथा जोखिम युक्त परिवारहरु नभएको साथै निर्माणधिन आयोजनबाट प्रभावित हुने परिवारहरुको बस्ती नभएको र चरिचरणको रुपमा प्रयोग नभएको उक्त जग्गा विवाद रहित हाल प्रयोग विहिन रहेको व्यहोरा अनुरोध छ।

मणिराज कार्की

वडा अध्यक्ष

मणिराज कार्की
वडा अध्यक्ष



Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES**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 - खुला खान्दा



Danger of open trench
खतरा - खुला ट्रेंच



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

INSTRUCTION SIGNS

Do Not Touch
छुन नपाउनुहोस्



Food and Drinks Prohibited
खाद्य र पेय निषिद्ध



Slow Sign for Traffic Control
नियन्त्रणका लागि



Directional Exit Sign
बाहिर जाने दिशा

SAFETY AND SAFETY INSTRUCTION SIGNS

Safety Gloves Required
सुरक्षा पल्लोको आवश्यक



Safety Vests Required
सुरक्षा भेल्लोको आवश्यक



Safety Glasses Required
सुरक्षा चशमा आवश्यक



Safety Shoes Required
सुरक्षा जूता आवश्यक



Annex 8: PHOTOGRAPHS



Tapping point (Hurke, Brahataal Rural Municipality, Ward no. 8)



Proposed DL alignment at Brahataal Rural Municipality, Ward no. 8



Hurke Village on the Subproject area at Kalimati RM, Ward No.4



Alternative tapping point



**Proposed distribution line alignment at
Brahataal Rural Municipality, Ward no. 8**



**Existing vegetation along the proposed
distribution line alignment**



Alternative distribution line alignment



Proposed substation area at at Hurkue, Brahataal Rural Municipality, Ward no. 8



Consultation Meeting at Hurke, Brahataal Rural Municipality, Ward no. 8

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

MALARANI-PIPLE DISTRIBUTION LINE SUBPROJECT

SUBSTATION (33/11 kV) AND DISTRIBUTION LINE (33 kV)

SURKHET & SALYAN DISTRICT, KARNALI PROVINCE

NEPAL ELECTRICITY AUTHORITY

DISTRIBUTION AND CONSUMER
SERVICE DIRECTORATE

DISTRIBUTION SYSTEM UPGRADE AND
EXPANSION PROJECT (DSUEP)

DURBARG MARG KATHMANDU NEPAL

CONSULTANT:

NEA ENGINEERING COMPANY
LIMITED, TRADE TOWER

THAPATHALI, KATHMANDU, NEPAL

JUNE 2022



TABLE OF CONTENT

LIST OF TABLES	II
LIST OF FIGURES	II
LIST OF ANNEXES	III
ABBREVIATIONS	IV
EXECUTIVE SUMMARY	VII
1. INTRODUCTION.....	1
1.1 PROJECT BACKGROUND.....	1
1.2 SCOPE OF STUDY	1
1.3 OBJECTIVE OF ESMP	1
1.4 LEGAL PROVISION FOR THE ESMP.....	2
1.5 METHODOLOGY FOR THE ESMP.....	2
1.6 CLASSIFICATION OF IMPACT AREA.....	3
2. DESCRIPTION OF THE SUBPROJECT.....	6
2.1 SUBPROJECT LOCATION AND ACCESSIBILITY.....	6
2.2 SUBPROJECT COMPONENTS	8
2.2.1 33 kV DISTRIBUTION LINE (DL).....	8
2.2.2 SUBSTATION	8
2.2.3 11 kV LINES AND LT LINES	9
2.3 MAJOR CONSTRUCTION ACTIVITIES IN THE SUBPROJECT	10
2.4 ENERGY TO BE USED	10
2.5 LAND REQUIRED.....	10
2.6 MATERIAL REQUIREMENT AND SOURCES	11
2.7 MAJOR EQUIPMENT AND POWER REQUIREMENTS	11
2.8 WORKFORCE REQUIREMENT	11
2.9 CONSTRUCTION AND IMPLEMENTATION SCHEDULE.....	12
3. DESCRIPTION OF THE ENVIRONMENT	13
3.1 PHYSICAL ENVIRONMENT.....	13
3.1.1 TOPOGRAPHY AND LAND USE	13
3.1.2 GEOLOGY	14
3.1.3 SEISMOLOGY	15
3.1.4 CLIMATE	15
3.1.5 AIR, NOISE, WATER QUALITY AND POLLUTING SOURCES.....	15
3.1.6 SOLID WASTE MANAGEMENT	16
3.2 BIOLOGICAL ENVIRONMENT	17
3.3 SOCIO-ECONOMIC ENVIRONMENT	17
4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES	19
4.1 ANTICIPATED BENEFICIAL IMPACTS	19

4.2	ANTICIPATED ADVERSE IMPACTS.....	20
5.	INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION.....	27
6.	INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM.....	30
7.	ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....	34
8.	CONCLUSION	44
	REFERENCES	45

LIST OF TABLES

Table 2-1:	Technical Description of the proposed Subproject	7
Table 2-2:	Approximate Quantity of Material for 33 kV line	11
Table 2-3:	Approximate Quantity of Material for 33/11 kV Substation	11
Table 2-4:	Human Resource Required for construction of 33 kV line and substation in a day of Construction.....	12
Table 2-5:	Construction Schedule of Project Implementation	12
Table 3-1:	Ambient Air and Noise Quality within the Proposed Subproject Site	16
Table 3-2:	Estimated Daily Solid Waste Generation from Campsite	16
Table 3-3:	Forest type along the proposed distribution line	17
Table 3-4:	General Demographic Characteristic of Subproject Municipality	18
Table 4-1:	Detail of impacted forest area and trees loss	23
Table 5-1:	Summary of issues, comments and suggestions received in Consultations	29
Table 6-1:	Levels of Grievance Redress Mechanism Based on Time Bound	32
Table 7-1:	Environmental and Social Management Plan (ESMP)	35
Table 7-2:	Minimum Provisions for Environmental Monitoring	41
Table 7-3:	Mitigation Measures and Monitoring Activities Cost Estimates	43

LIST OF FIGURES

Figure 1-1:	Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Malarani–Piple DL Subproject.....	5
Figure 2-1:	Location and Accessibility Map of Malarani–Piple Subproject	6
Figure 3-1:	Location map and Land use details of the Subproject	13
Figure 3-2:	Tapping point (Malarani, Gurbhakot Municipality, Ward No. 2)	14
Figure 3-3:	Malarani–Piple Substation View	14
Figure 3-4:	Geological Map of proposed Subproject Area	14
Figure 3-5:	Seismicity map of Nepal from 1964 -2019.....	15
Figure 5-1:	Identified Stakeholder in the Subproject	27
Figure 5-2:	Consultation with the stakeholders and communities in the Subproject Area....	28
Figure 6-1:	Institutional Arrangement for Environmental and Social Management.....	30
Figure 6-2:	Workflow Diagram for GRM from NEA	33




LIST OF ANNEXES

Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION LETTER TO STAKEHOLDERS	ii
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT	v
Annex 3: FACILITY AND COMPONENTS	viii
Annex 4: LEGISLATIVE PROVISIONS	xi
Annex 5: CONSULATATION MEETING MINUTES.....	xvii
Annex 6: DEED OF ENQUIRY (MUCHULKAS)	xxii
Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES.....	xxxiii
Annex 8: PHOTOGRAPHS	xxxv




ABBREVIATIONS

ACSR	Aluminum Conductor Steel Reinforced
AIIB	Asian Infrastructure and Investment Bank
BES	Brief Environment Study
COVID-19	Corona Virus Disease
CDP	Community Development Program
CPA	Core Project Area
DCSD	Distribution and Consumer Services Directorate
DHM	Department of Hydrology and Meteorology
DL	Distribution Line
DSUEP	Distribution System Upgrade and Expansion Project
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPA	Environment Protection Act
EPR	Environment Protection Regulation
EMF	Electromagnetic Field
ESP	Environmental and Social Policy
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policy
ESSs	Environmental and Social Standards
GHG	Green House Gas
GIS	Geographic Information System
GoN	Government of Nepal
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IP	Indigenous People
IUCN	International Union for Conservation of Nature
IUSGS	International Union of Geological Sciences
LPG	Liquid Petroleum Gas
MDB	Multilateral Development Bank
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MHT	Main Himalayan Thrust




NEA	Nepal Electricity Authority
PPE	Personal protective equipment
RM	Rural Municipality
RoW	Right of Way
SPA	Surrounding Project Area
SPM	Suspended Particulate Matter
SWM	Solid Waste Management
US EPA	United States, Environment Protection Agency
USGS	United States Geological Survey
VC	vulnerable community



Unit

%	Percent/ Percentage
CO ₂	Carbon dioxide
dB	Decibel
g	Gram
ha	Hectare
HHs	Households
Kg	Kilogram
Km	Kilometer
kV	Kilovolt
kWh	Kilo Watt Hour
ltr	Liter
LV	Low Voltage
m	Meter
masl	Meter Above Sea Level
mm	Millimeter
MVA	Mega Volt Ampere
MW	Megawatt
NRs.	Nepalese Rupees
°C	Degree Centigrade
sq.m.	Square Meter



EXECUTIVE SUMMARY

Description of Project: Nepal Electricity Authority (NEA) under Ministry of Energy, Water Resources and Irrigation is responsible for the implementation of the Distribution System Upgrade and Expansion Project (DSUEP). DSUEP will enhance the distribution system to improve reliability and quality of electric supply in the, Karnali province and Lumbini province. The proposed **Malarani–Piple Distribution Line Subproject** is located within Kalimati Rural Municipality (RM), Ward No. 4 and 5, Salyan district and Gurbhakot Municipality, Ward No. 1 and 2, Surkhet district, Karnali Province. The Subproject requires 0.6 ha of land (Private Land) for construction of the substation. The 33 kV distribution line of 11.1 km passes along the right of way of the road and private land with installation of poles at the edge of the farm land. The proposed subproject is financed with loan by Asian Infrastructure Investment Bank (AIIB).

Description of Environment

Physical Environment: The Subproject (substation and distribution line) area lies in hilly region. The substation lies at Latitude 28°18'39.43", Longitude 82°0'57.66" E and elevation of 700 masl. The climate of the Subproject area is sub-tropical. The average temperature of the Subproject area varied from 10°C to 33°C. The average annual rainfall is estimated at approximately 1500 mm per year. The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively. There are no any water sources recorded within distribution line (33kV) and nearby the substation area.

Biological Environment: The proposed Subproject (substation and distribution line alignment) passes from the edge of Kisan CF (Community Forest), Tingharay Kapasini CF, Salleri CF, Baghkhori CF, and Sital takura CF. The Subproject does not lie in any protected area. The surrounding environment of the Subproject area contains sparse vegetation with species common to the area. The floral species recorded during the screening field visit are: Sal (*Shorea robusta*), Botdhayero (*Lagerstroemia parviflora*), Rohini (*Mallotus philippensis*), Karam (*Haldina cardifolia*), Sanj (*Terminalia elliptica*), Gidheri (*Premna latifolia*), Cheuri (*Diploknema butyracea*), Bhorlo (*Bauhinia vahlii Wight et Arn.*), Kyamuno (*Cleistocalyx operculatus (Roxb.)*), Amala (*Phyllanthus emblica*). Similarly, wild animal recorded during the public consultation are Barking Deer (*Muntiacus muntjak*), Jackel (*Canis aureus*), Malayan Porcupine (*Hystrix brachyuran*), Red Monkey (*Macaca mulatta*), Wild boar (*Sus scrofa*), and Yellow-throated martens (*Martes flavigula*). Altogether eight species of birds were noted around the surrounding project area; House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), House Sparrow (*Passer domesticus*), Tree Sparrow (*Passer montanus*), Jureli (*Hypsipetes leucocephalus*), Rock Pigeon (*Columbia lebia*), Kalij (*Lophura leucomelanos*) and Eagle (*Haliaeetus leucocephalus*). All these bird species are of least concern under IUCN categorization.

The proposed Malarani-Piple 33 kV distribution line passes through the 7 different community forests as shown in **Table 3-3**. A total of 2.142 ha of the forest area will be occupied by RoW of proposed 3 kV distribution line. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 428.

Socio-Economic Environment: The major ethnic compositions within the surrounding project area i.e., Ward No. 4 and 5 of Kalimati RM, Salyan district and Ward No. 1 and 2 of

Gurbhakot Municipality, Surkhet district are Magar (35.4%), Chettri (32.6%), Dalit (17.4%), Brahman (10.5%), and Thakuri (1.5%) of the total population of 11,793. The implementation of the Subproject will increase the electricity beneficiaries to 3,028 HHs, 30 commercial purposes and 10 industries. Birendranagar and Chinchu are the nearest business markets nearby the Subproject area. The transportation facilities in this local level seems to be satisfactory. Tap/piped water is the main source of drinking water in the surrounding Subproject area. People of the Subproject have access with communication facilities mainly through mobile telephone services. The nearest and easily accessible health facility nearby the proposed Subproject area is Kalimati Health Post with a travel distance of 50 m from the site. The main occupation of people in the area is agro base with nearly 70% contribution followed by small trade and business/enterprises and services.

Potential Impacts and Mitigation Measures: Civil works will be involved with temporary impacts on air, noise and water quality and occupational and community health and safety; particularly related to working with electricity and in the context of the COVID-19 pandemic. Long-term impacts, although insubstantial, during operation and maintenance include occupational and community health and safety risks related to the presence of electricity infrastructure. The potential environmental issues and mitigation measures identified in screening and the preparation of ESMP report will be addressed during the compliance monitoring carried out by the safeguard team. There will be no issues of land requirements for the pole erection and for the distribution line people have suggested to install poles at the edge of farm-lands, without affecting any private structures along the distribution line. But the proposed substation land is private land, so there is necessity of land acquisition which issues will be fulfilled by Resettlement Plan. The implementation of the proposed Subproject needs 2.142 ha of forest area with estimated loss of 428 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. The compensatory plantation will be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019) in the ratio of 1:10. The ESMP cost estimated for the Subproject is NRs 13,00,000.00 associated to mitigation measures and monitoring activities. NEA Project Implementation Unit has agreed on the estimated cost for the mitigation measures and monitoring activities.

Environmental and Social Management Plan: The ESMP serves as a guide to implement environmental and social mitigation measures and responsibility of the concerned agencies during the construction and operations of the Subprojects. Monitoring and inspection of the environmental and social activities will be carried out by Environment and Social Management Unit and Project Supervision Consultant of PIU. ESMP will be an integral part of the contractor's Bidding document which will be updated by the contractor during the sub-project construction period.

Institutional Arrangements: To ensure the full compliance to the ESMP, institutional arrangement for monitoring and reporting has been proposed. All the resources needed for the implementation of ESMP for the construction and operation phase will be provided by the PIU. Project Supervision Consultant's with Environmental and Social Safeguard Specialist will be responsible for compliance monitoring activities during the construction phase. Environment and Social Management Unit of NEA will provide regular updates to the site offices regarding the implementation of ESMP. Contractor shall prepare an Environment,




Health and Safety (EHS) plan approved by the PIU before field mobilization. Contractor should mobilize a safety officer at each work site during the construction period.

Public consultation: Public consultations have been conducted in the Subproject area. People in the Subproject area noted that electricity service is poor with frequent interruptions. People have suggested to install poles at the edge of farm-lands, and project components should not affect any house and structures along the line. The impacts on the crops while stringing of lines should be minimized. Prospective electricity consumers and people to be affected are supportive and have recommended for quick implementation of the project.

Grievance Redress Mechanism (GRM): A three-tier 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 issues at Subproject level. In each Subproject, two levels i.e., Tier-I and Tier-II of Grievance Redress Mechanism have been established. During the ESMP study period, NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the Subproject level.

Conclusion: The environmental impacts envisaged from the implementation of proposed Subproject are site specific, short term, temporary and reversible in nature. The Subproject will provide significant benefits to people and economy by providing the reliable and improve electricity supply. The implementation of the proposed Subproject needs 2.142 ha of forest area with estimated loss of 428 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. This ESMP is considered sufficient to mitigate the environmental and social issues identified for the Subproject and will be updated during the Subproject construction stage.



1. INTRODUCTION

1.1 Project Background

The proposed Distribution System Upgrade and Expansion Project (DSUEP) will enhance the distribution system to improve reliability and quality of electric supply in the Karnali Province. The project aims improvement in voltage level and reduction in power loss which in turn will improve Nepal Electricity Authority's (NEA) financial health, improve electricity supply reliability, and reduce dependence on petroleum-fueled accessories. Government of Nepal (GoN) has envisaged DSUEP to extend the reach of 33 kV and 11 kV distribution lines "to achieve affordable electricity fulfilling the demands at the local levels for all the households by 2022". Asian Infrastructure Investment Bank (AIIB) is financing a loan to upgrade existing and build new distribution systems in Lumbini Province and Karnali Province of Nepal. This ESMP is prepared for Malarani–Piple distribution line Subproject of DSUEP.

This Subproject has three major components:

Component 1: construction, extension and augmentation of distribution lines and substations, especially 33 kV lines and 33/11 kV substations.

Component 2: construction of 11 kV lines, distribution transformers, and Low Voltage (LV) lines for new power distribution facilities.

Component 3: Capacity Building, Project Implementation Support, and Technical Assistance.

1.2 Scope of Study

This study ensures that the project meets the requirements of Nepal Government's Environmental Regulations and Environmental and Social Policy (ESP) & Environmental and Social Standards (ESSs) of AIIB. This report provides the measures for environmental and social management, monitoring and reporting of the project.

1.3 Objective of ESMP

The Environment and Social Management Plan aims to sets out the measures required to maximize the benefits of the project; and to avoid, minimize and mitigate any adverse environmental and social impacts caused by the project. The objectives of this ESMP are to:

- Describe the existing natural and socio-economical resources in and surrounding Subproject area;
- Based on existing environmental conditions, identify and assess potential significant impacts during project preconstruction, construction, and operation & maintenance stages;
- Identify and recommend mitigation measures to minimize any potential impacts caused by Subproject activities;
- Identify the local concerns on environmental and social issues and address them;
- Develop environmental management plan and monitoring plan including cost.



- Recommend institutional arrangement, including capacity building to ensure proper environmental and social safeguards implementation during construction and operation phases.

1.4 Legal Provision for the ESMP

According to the E & S safeguard Screening report, safeguard risks/issues identified for this Subproject fall under Category III (ESMF), which triggers the preparation of ESMP to execute the Subproject. This Subproject has minimal or no adverse environmental and social impact; does not physically displace any family; and does not result in economic displacement of more than 10% of productive assets for any family.

Pertaining to Rule 3 (1), Environment Protection Act (EPA), 2019 describes completing Environmental Studies as per Schedule 1 or 2 or 3 under Environment Protection Regulation (EPR) 2020 (First Amendment in 2021/05/24 on Nepal Gazette), detailed environmental studies Brief Environmental Study (BES) or Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is required. For this Subproject, pertaining to Rule 3(1), EPA (2019) describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water resources and irrigation sector (1) under EPR (2020) state “use of forest area for the electricity distribution line project up to 66 KV”. The proposed Subproject will intercept the Kisan CF (Community Forest), Tingharay Kapasini CF, Salleri CF, Baghkhori CF, and Sital Takura CF land area for the purpose of 33 kV distribution line extension and substation construction. Thus, as per EPR (2020), a BES is mandatory for the proposed Subproject.

1.5 Methodology for the ESMP

The methodology that was followed while conducting the ESMP study is as follows:

- i. Literature Review: Review of published literature were conducted, with priority given to publications of government institutions as well as international organizations, to collect information on project surroundings. The Municipality/RM and its Ward profiles are used to collect the socio-economic baseline information of the Subproject. National policies, legislative frameworks and Multilateral Development Bank (MDB) policies were reviewed to understand the priorities and any legally binding requirements were studied that should be complied with while implementing the project. The Legislative provisions relevant to the project are listed in **Annex 4**.
- ii. Field Survey and Investigation: Field surveys were conducted to generate information on the physical, biological and socio-economic environment of the project area. The physical environment; air quality data was monitored by Temtop Airing-1000 PM Detector, noise level by UNI-T UT 353 Mini Sound Meter (dB) and water quality by EXTECH ExStik II DO600. Field observation of the core project area and the surrounding vicinity (500m) of project footprint area was applicable for the biological assessment. A circular quadrat of radius 12.5m was used for the estimation of the number of trees presence within the RoW of the proposed distribution line. A total of 7 different sample quadrat were used and trees numbers were estimated by extrapolation within RoW. The total enumeration of the trees to be cleared for the implementation of the Subproject will be estimated during the BES study. The tree




clearance approval is made once the Brief Environment Study (BES) is approved from the Ministry of Energy, Water Resources and Irrigation. Priority was given to the consultation with local communities at substation sites and the settlement areas that benefit from the project. Pertaining to Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019), BES report will be prepared. NEA/PIU must take approval from Government of Nepal, for the use of forest on the implementation phase. As per section 17 (3), the compensatory ratio for the loss of trees should be made in the ratio of 1:10 and require care, maintenance and upkeep of the planted trees before handover to concerned forest office after 5 years.

- iii. 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 CPA and SPS data and presentation of the maps in the ESMP report. The project foot print Ward and Municipality/RM are considered for the collection of socio-economic and baseline information.
- iv. Impact Evaluation: Significance of impacts are evaluated on the basis of reversibility, nature, magnitude, extent and duration of the impact. Identification of magnitude, extent and duration is as provided in the National EIA Guidelines, 1993 of Nepal. While evaluating the impacts and prescribing mitigation, maximum efforts were made to get expert opinion and input from the DSUEP's technical and safeguard consultant team.
- v. Public Consultation: As per the Government of Nepal EPA and the AIIB Environmental and Social Policy (ESP), pre-notifications with subject of consultation, venue, and time were given at Subproject foot-print area, local level and affected Ward office in presence of concerned local stakeholders. Consultations were conducted in the Subproject area, at substations and the distribution line system settlement areas with local stakeholders.
- vi. Report Format: The ESMP report is prepared as per the Environmental and Social Policy (ESP) of the AIIB, which contains an executive summary, a main report, and annexes as appropriate, including one on the nature and findings of consultations undertaken. All the comments and suggestions from the field consultation are mentioned in the ESMP report.

1.6 Classification of Impact Area

The National EIA Guidelines (GoN, 2050) has mentioned on 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.

Core Project Area (CPA) refers to the temporary and permanent area for the proposed project construction and associated activities. It is the area where direct impacts can be seen. For **Malarani–Piple Distribution Line Subproject**, proposed substation area with 0.6 ha and the 33 kV distribution line with 11.1 km length is considered as CPA. The Subproject components are located within the Ward No. 4 and 5 of Kalimati RM, Salyan District and Ward



No. 1 and 2 of Gurbhakot Municipality, Surkhet district. The major settlements in the Subproject area are Kalche Gau, Gairi Gau and Malarani. The distribution line stringing route passes along the barren land (0+000 to 0+600, 6+000 to 6+400), along the cultivable land (0+900 to 1+200, 5+050 to 5+850, 7+600 to 8+000, 10+800 to 11+100), along the right of way of road alignment (1+600 to 2+350, 4+450 to 5+050, 6+500 to 7+600, 8+200 to 9+600, 9+800 to 10+800), and along the forest land (2+350 to 4+450, 6+400 to 6+500, 8+000 to 8+200, 9+800 to 10+800).

Surrounding Project Area (SPA) is the immediate vicinity of the footprint location of the proposed Subproject site. SPA is the moderate and indirect impact area. For this Subproject the 33 kV distribution line will be located within the Ward No. 4 and 5 of Kalimati RM, Salyan district and Ward No. 1 and 2 of Gurbhakot Municipality of Surkhet district is considered as SPA. The impact area showing the CPA and SPA area is presented in the google map **Figure 1-1**.



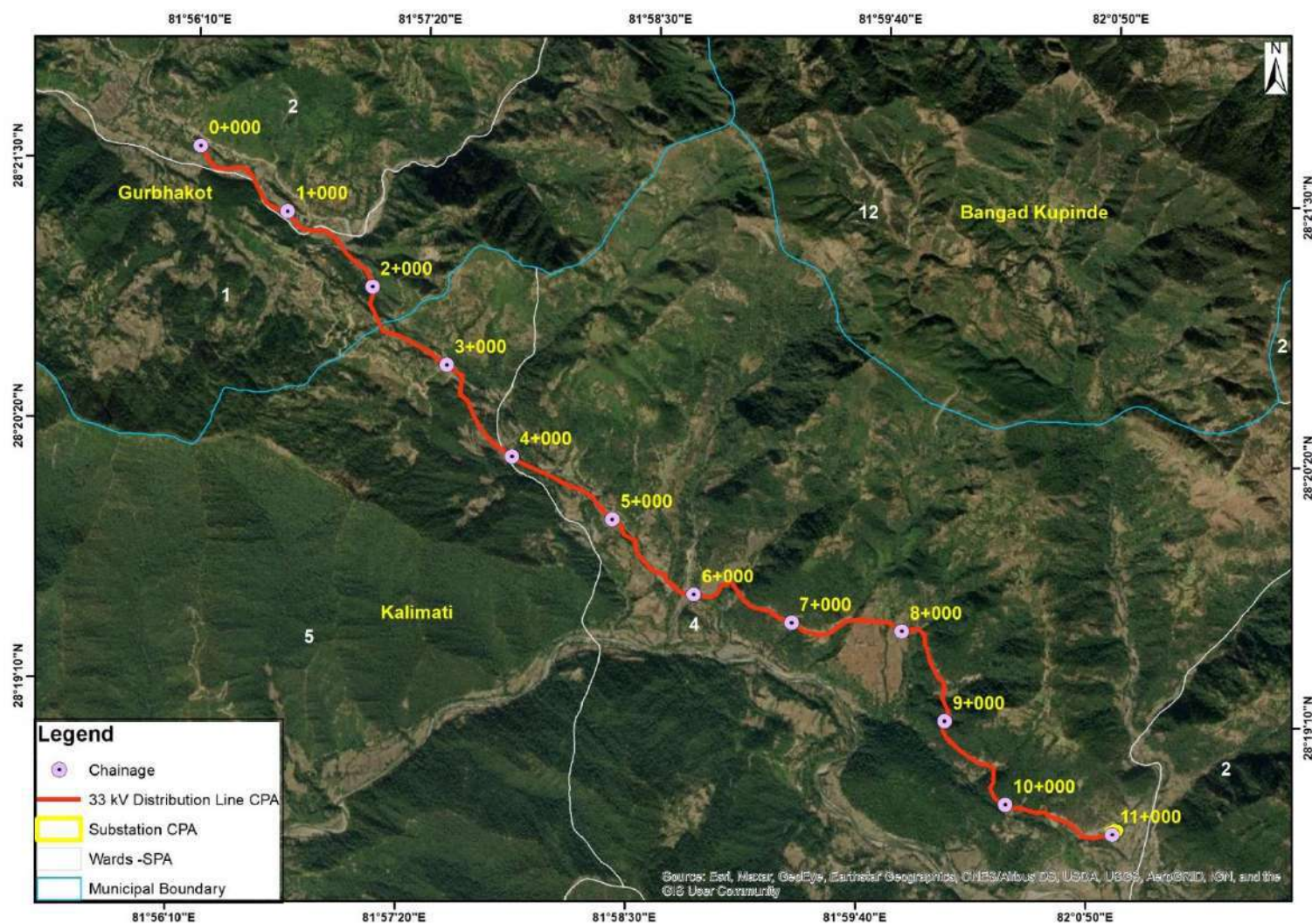


Figure 1-1: Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Malarani–Pipe DL Subproject

Table 2-1: Technical Description of the proposed Subproject

Description	Features
Proponent	Nepal Electricity Authority
Project	Distribution System Upgrade and Expansion Project (DSUEP)
Subproject	Malarani–Pipe Distribution Line Project
Funding Agency	AIIB
Project Location	Kalimati Rural Municipality, Ward No. 4 and 5, Salyan district and Gurbhakot Municipality, Ward No. 1 and 2, Surkhet district, Karnali Province
Distribution Line	
33kV Line Starting Point	Tapped from Existing 33kV DL at Gurbhakot - 2, Malarani, Surkhet Co-ordinate: Lat 28°21'34.42" N and Long 81°56'11.79"E
33kV Line End Point	Pipledanda substation (Proposed) at Kalimati - 4, Salyan Co-ordinate: Lat 28°18'39.43", Long 82°0'57.66" E
Land type	Government/Private
System Voltage	33 kV
Max, Min System Voltage	36, 30 kV
Climatic Condition	Wind Speed: As per IS 802-1-1 Maximum Ambient Temperature: 33°C Altitude (Min, Max): 650, 1070 masl
Length of Line/ No. of Pole	11.1 km/278 Poles
Right of way	6 m
Number of Circuit	1
Conductor	ACSR Dog
Line Capacity/Thermal Limit (approx.)	13.4 MW at 0.9 power factor
Type	Steel Tubular Pole with 11m/13m Height
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	Pipledanda substation (Proposed) at Kalimati - 4, Salyan Co-ordinate: Lat 28°18'39.43", Long 82°0'57.66" E Elevation: 700 masl
Land type	Private
Voltage Level	33/11 kV
Substation Capacity	8 MVA
Number and Capacity of Transformer	1 no., 6/8 MVA
Type of Transformer	3 Phase, ONAN, Mineral Oil
Type of Substation	AIS (33kV) and Indoor (11kV)
Number of 33kV Line Bays	1
Number of 33kV Transformer Bays	1
Number of 11kV Feeders	4
Substation Area	0.6 ha

2.2 Subproject Components

The major components of the Subproject are the 33/11 kV substation and 33 kV distribution line (DL). The 33 kV DL is tapped from an existing 33 kV network line and acts as a source feeding to the proposed 33/11 kV substation. 11 kV distribution feeders emerge from the substation, eventually supplying the electricity to the consumers. The structures of the Subprojects are briefly described below.

2.2.1 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 strung 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. Length of distribution line is 11.1 km and the total number of steel tubular poles to be erected are estimated as 278.

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 poles 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.

2.2.2 Substation

The proposed substation 33/11 kV is of capacity 6/8 MVA. The substation plays the role of lowering the 33 kV voltage level to 11 kV, which will then be strung as distribution feeder to supply the consumers. The major component of the substation is power transformer, which is supported by the switchgear components and Civil Structures. The facility and components sample pictures are shown in **Annex 3**.

Transformers: Transformer is the major component of the distribution substation. It transforms power from higher voltage to lower voltage for distribution purpose. 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 6/8 MVA ONAF type.

Electrical Switchgear: Electrical Equipment comprising of Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers, etc. installed in the substation are called Electric Switchgear. They facilitate the objective of power conversion.

Civil Structures: A control building is essential for the operation of the substation. It houses the operating station, along with battery systems. Guard House and Staff Quarter are other essential buildings for smooth operation of the substation.

Switchyard, Boundary, Roads, Drainage and Essentials: The outdoor civil structure in the proposed substation includes the 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 component wise 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.

2.2.3 11 kV Lines and LT Lines

11 kV lines and LT lines take the access of electricity to the consumer households. It is why the construction of those lines are always encouraged by the local people. The line route, thus the installation of poles and lines, are envisaged to go through the edge of local roads. If any line route pass through any private lands, permission from the corresponding land owner will be taken before starting the construction of those lines.

The detailed line route survey for 11 kV and LT lines have not been done yet. The scope of detailed survey is in the scope of the construction Contractor. The construction Contractor will conduct Pre-Construction Survey (PCS) to finalize the line route of 11 kV lines and LT lines for the construction. PCS will prepare the detailed line route of those lines and submit to PIU for approval. After the detailed line route is submitted by the Contractor and approved by PIU, E&S team of Project Supervision Consultant (PSC) will conduct an E&S study and submit the findings that

- Do the lines pose any adverse Environmental or Social issues?
- If there are any Environmental or Social issue, how can they be resolved? If the lines do not pose any adverse Environmental or Social issue, the lines will be cleared by PIU after seeking concurrence from AIIB.
- If the solution measures are not implementable in the field, PCS will suggest for any other way to divert or reroute the lines? If yes, PCS will propose alternative line route. The lines will be cleared by PIU after seeking concurrence from AIIB, given that the lines do not pose any adverse Environmental or Social issue.



2.3 Major Construction Activities in the Subproject

Activities in the Subproject area can be sub-divided into three categories viz, Pre-Construction Phase, Construction Phase and Operation Phase. For the proposed Subproject, trees and bushes in the Right of Way of 33 kV lines have to be cleared whereas, no trees within the proposed substation boundary have to be cleared for the construction work. The proposed Malarani–Piple Line Subproject intercept forest area of 2.142 ha. The estimated loss of trees species in the Right of Way of 33 kV lines are 428.

- I. **Preconstruction phase:** The activities to be carried out before the construction phase are:
 - Demarcation of land area for the proposed substation
 - Receive public opinion
 - Make clearance of the substation land area permanently
 - Distribution line route selection
 - Approval to cut down trees from the concerned government authorities
- II. **Construction phase:** The activities to be carried out during the construction phase are:
 - Assign the land area for temporary storage of construction materials
 - Transportation of construction materials
 - Leveling of land area for the proposed substation
 - Cutting down of trees in Right of Way of 33 kV lines
 - Construction of substation structures
 - 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 and 33 kV distribution line route

2.4 Energy to be used

During the construction period diesel fuel will be used to power construction equipment and transport vehicles, which emits air pollutants and greenhouse gases in insignificant quantity. Use of firewood shall be restricted in the labor camp, whereas the workers shall be provided LPG for cooking.

2.5 Land Required

The **Malarani–Piple Subproject** will require about 0.6 ha land for building the substation. The land is private land and will be managed by NEA to construct the substation in the designated area. The 33 kV distribution line of 11.1 km length which pass by RoW of Gothe Khola Corridor (about 650 m), barren land, community forest, private farm lands and RoW of the Tulasipur–Purandhara–Botechaur Road Section till the proposed substation. Poles shall be installed at the edge of private farm lands, which will not affect the usability and valuation of the lands.

2.6 Material Requirement and Sources

A 33/11 kV substation, 33 kV, 11 kV and low-tension distribution lines will be constructed for this Subproject. Minimal excavation at the pole locations will be done to erect steel tubular poles of 11 m and 13 m. The depth of burial for 11 m (approximately 256 kg) and 13 m (approximately 343 kg) poles are 1.8 m and 2.17 m respectively. The construction works for substation will not produce significant amount of spoils and thus it will not require spoil-dumping site. Similarly, excavation works carried out for digging pit holes for poles produces insignificant spoils which does not require management of earthworks.

Civil construction works will involve excavation for foundation of substation, steel reinforcement, cement, coarse aggregates and fine aggregates (sand). Materials will be procured from legally operating markets. The design team has provided the following estimate of construction materials required for 33 kV distribution line and the substation.

Table 2-2: Approximate Quantity of Material for 33 kV line

SN	Particular	Unit	Requirement
1	Amount of Steel	Ton/Km	5800
2	M15 concrete for Pole base	Cum/Km	12.5

Source: Design Report, DSUEP

Table 2-3: Approximate Quantity of Material for 33/11 kV Substation

SN	Particular	Unit	Support Structures, Road, Drainage	Control Building	Staff Quarter	Office Building	Guard House
1	M15 Concrete	cum	100	25	224	120	5
2	M25 Concrete	Cum	300	170	125	75	27
3	Reinforcement bar	Ton	7	27	20	12	4

Source: Design Report, DSUEP

2.7 Major Equipment and Power Requirements

Major equipments used during the Project implementation are:

One Excavator, One Roller, One Drilling Machine, One Crane, one Grid Supply of 100 kVA Distribution Transformer, and two 50 kVA capacity diesel generators.

2.8 Workforce Requirement

Local people in the surrounding Subproject area will be encouraged for the employment. Based on the skills (skilled, semi-skilled and unskilled labor), local people shall be used for the construction and both male and female will get equal opportunity during construction. The number of human resources required depends upon the complexity of the project as well as the geographical location of the project. In case, of construction of 33 kV lines and 33/11 kV

substations, the workforce typically varies from terai to hilly to mountain region. Expected number of manpower employed is enlisted hereunder.

Table 2-4: Human Resource Required for construction of 33 kV line and substation in a day of Construction

SN	Human Resource/Day	For Distribution Line	For Substation
1	Engineer (No.)	1	2
2	Supervisor (No.)	2	4
3	Foreman (No.)	3	5
4	Skilled (Lineman/Electrician) (No.)	5	7
5	Helper (No.)	3	12
6	Labour (No.)	15	20

Source: Design Report, DSUEP

2.9 Construction and Implementation Schedule

Implementation of the proposed Subproject comprises construction of a new 33/11 kV substation, 33 kV lines, 11 kV lines, low tension lines, and installation of distribution transformers. It includes construction and installation of components as mentioned in subsection 2.2. The estimated completion period is 24 Months.

Table 2-5: Construction Schedule of Project Implementation

SN	Activities/ Months	Months (After the completion of Detailed Survey Study)					
		1-3	4-6	7-10	11-15	16-20	20-24
1.	Invitation for tender, evaluation, and award						
2.	Implementation of Environmental and Social Safeguards						
3.	Erection of Poles						
4.	Stringing of conductor						
5.	Construction of substation						
6.	Charging and Testing						

Source: Design Report, DSUEP

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Physical Environment

3.1.1 Topography and Land Use

The Subproject area lies in Ward No. 4 and 5 of Kalimati RM, Salyan district and Ward No. 1 and 2 of Gurbhakot Municipality, Surkhet district in Karnali Province. The proposed project area is situated in hilly region. The tapping point is situated at Latitude 28°21'34.42" N and Longitude 81°56'11.79"E with an elevation of 800 masl (**Figure 3-1**). The proposed distribution line (33 kV) of 11.1 km passes edge of private farm lands of Gothe Khola Corridor (about 650 m), private farm lands, community forest, and RoW of the Tulasipur-Purandhara–Botechaur Road Section.



Figure 3-1: Location map and Land use details of the Subproject²

The substation lies at Latitude 28°18'39.43", Longitude 82°0'57.66" E and elevation of 700 masl (**Figure 3-3**). The site is primarily within the flat land. It lies in open and private farm lands. The proposed substation boundary lies within 0.6 ha area. None of the private and public entities will be affected due to the implementation of the distribution line system, as it will be installed within the RoW of existing road and the edges of the private farm lands. The land use map details with the components of the Subprojects are presented in **Annex 2**.

² Source: Topographic Map, Department of Survey, 1995 and Field Study 2022



Figure 3-2: Tapping point (Malarani, Gurbhakot Municipality, Ward No. 2)



Figure 3-3: Malarani–Pipe Substation View

3.1.2 Geology

Geologically, the proposed Subproject lies on the Lesser Himalaya sequence of Ranimatta formation. Greenish-grey phyllite with fragile and folded, deformed phyllite can be found on the left side of the road. The line passes from the road side, cultivation land of cohesive soil, and community forest on the left side of the road, with greenish-grey phyllite with fragile and folded, deformed NE foliation. The soil of proposed area of substations is made up of cohesive soil-silty clay and phyllite angular particles. There seems to be the proper management of the drainage system.

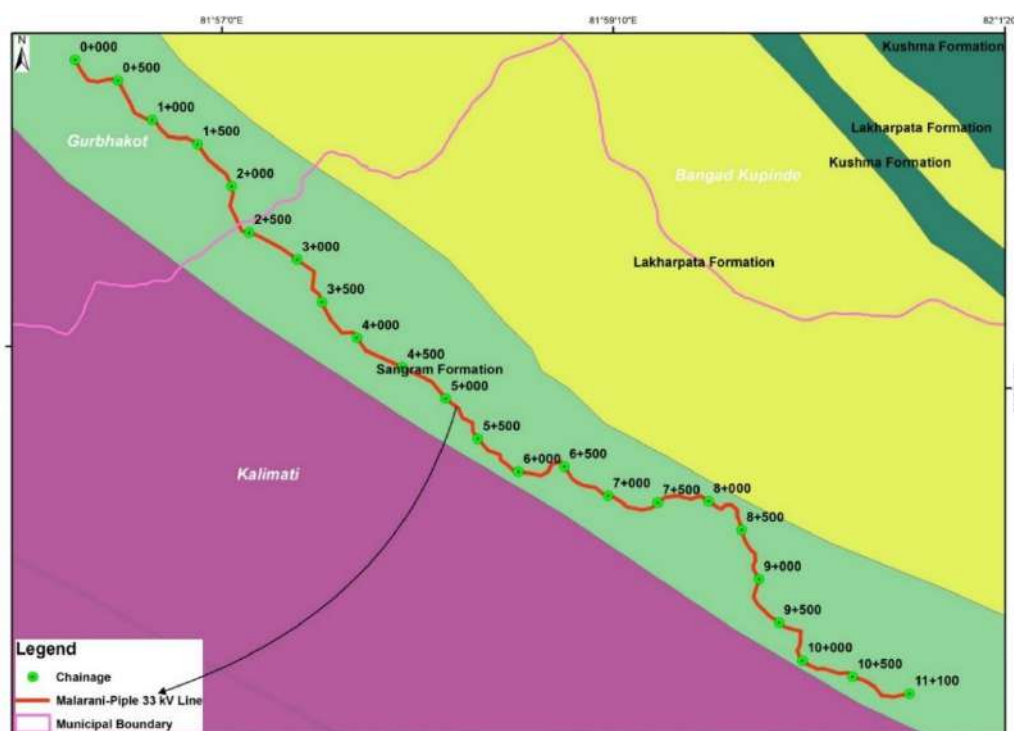


Figure 3-4: Geological Map of proposed Subproject Area³

³ Source: Department of Mines and Geology (DMG), 2020

3.1.3 Seismology

The entire country of Nepal is in a seismically active zone caused by subduction of Indian tectonic plate under the Tibetan Plate. According to National Seismological Center of Nepal several big earthquakes have been felt in Nepal, the earthquakes of magnitude 6 to 7 are mostly confined to the Main Himalayan Thrust (MHT) between the foot hills and the Higher Himalaya. Moreover, earthquake generation is confined to the crustal depth of 20 km. However, shallow earthquakes at depths down to 6 km are generated as a result of strike slip faults. Therefore, the substations and distribution lines of this Subproject will be designed and operated in accordance with seismic design requirements and best engineering practice. The seismic activity in Nepal between 1964 and 2019 as in IUSGS portal is shown in **Figure 3-5**.

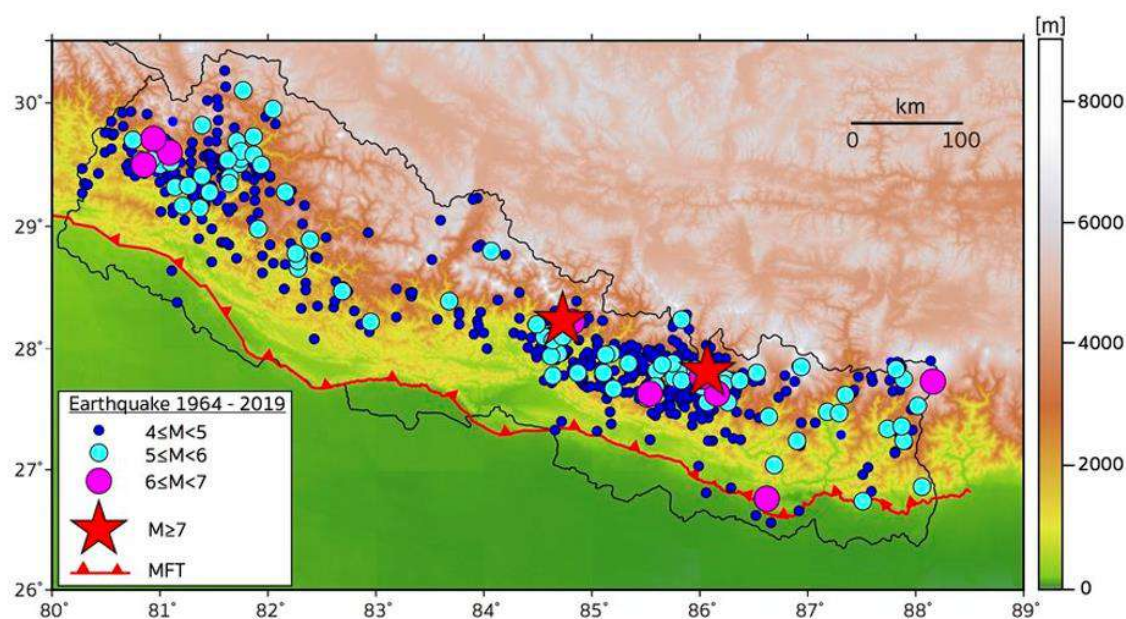


Figure 3-5: Seismicity map of Nepal from 1964 - 2019⁴

3.1.4 Climate

The climate of the Subproject area is sub-tropical. According to DHM 2021, the average temperature of the Subproject area varied from 10°C to 33°C. The average annual rainfall is estimated at approximately 1500 mm per year. Almost 80% of rainfall occurs during monsoon (June to September).

3.1.5 Air, Noise, Water Quality and Polluting Sources

The major air polluting sources recorded are only from vehicular emission and dust problem from plying of vehicles and high wind velocity. Noise polluting sources noted at the time of field study are similar to the air polluting sources. Unnecessary honking along the access road of site is the source of noise generation. Following table shows the real-time quality of air and noise during field study.

⁴ Source: USGS catalogue, 2019

Table 3-1: Ambient Air and Noise Quality within the Proposed Subproject Site

SN	Location/ Chainage	Air Quality ⁵ -Temtop Airing-1000 PM Detector ($\mu\text{g}/\text{m}^3$)					Noise Level -UNI-T UT 353 Mini Sound Meter (dB)		
		PM _{2.5}	Level	PM ₁₀	Level	Average Time of Measurement	Measured	Ref. ⁶	Area
1.	Tapping Point	12.1	100	16.6	200	1-hour	39	50	Residential Area
2.	Substation	14.6		13.3			35		

Source: Field Visit, 2022

The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively.

There are no any water sources recorded within and nearby the substation area instead Gothe Khola lies about 100m far from tapping point of 33 kV line which is seasonal and 33 kV distribution line route about 650 m will pass parallel to Gothe Khola. The construction activities of the Subproject components will not have impact to the local stream.

3.1.6 Solid Waste Management

Wastes were found littered in front of HHs and along the side of the access road near Subproject areas. People of the nearby area were found managing organic wastes within the household premises. Recyclable waste (large quantity) was sold to scrap collector occasionally. The estimated quantity of solid waste generation from the labor camp is shown in **Table 3-2**.

Table 3-2: Estimated Daily Solid Waste Generation from Campsite

SN	Description	Calculation	Remarks
1.	Total Labors within the Campsite	= 20 Labors	
2.	Total Waste Generation to be Expected	= 20 * 123.62 g/capita/day = 2472.4 g/capita/day = 2.4724 kg/day	
3.	Organic Waste Composition Responsible for Foul Smell, and Rodents	= 1.26 kg/day	Assuming 51% organic waste

Rest other waste is recyclable, and non-decomposable which could be stored for long period and have less impact on the environment if properly managed. The amount of organic waste is manageable within the Subproject site as organic waste per day will be expected to be only 1.26 kg/day.

⁵ National Indoor Air Quality Standard, 2009

⁶ National Ambient Sound Quality Standard, 2012

3.2 Biological Environment

The proposed Subproject's substation area land is private land. The land is private farm and no issues of tree loss in substation area. The proposed 33 kV distribution line passes from the edge of Kisan CF (Community Forest), Tingharay Kapasini CF, Salleri CF, Baghkhori CF, and Sital takura CF. The proposed Subproject lies at an elevation of 650-1070 masl in sub-tropical bioclimatic zone. The proposed Subproject development site does not lie within any protected area and conservation area. The floral species recorded during the screening field visit are: Sal (*Shorea robusta*), Botdhayero (*Lagerstroemia parviflora*), Rohini (*Mallotus philippensis*), Karam (*Haldina cardifolia*), Sanj (*Terminalia elliptica*), Gidheri (*Premna latifolia*), Cheuri (*Diploknema butyracea*), Bhorlo (*Bauhinia vahlii Wight et Arn.*), Kyamuno (*Cleistocalyx operculatus (Roxb.)*), Amala (*Phyllanthus emblica*). Similarly, wild animal recorded during the public consultation are: Barking Deer (*Muntiacus muntjak*), Jackel (*Canis aureus*), Malayan Porcupine (*Hystrix brachyuran*), Red Monkey (*Macaca mulatta*), Wild boar (*Sus scrofa*), and Yellow-throated martens (*Martes flavigula*). Altogether eight species of birds were noted around the surrounding project area; House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), House Sparrow (*Passer domesticus*), Tree Sparrow (*Passer montanus*), Jureli (*Hypsipetes leucocephalus*), Rock Pigeon (*Columbia lebia*), Kalij (*Lophura leucomelanos*) and Eagle (*Haliaeetus leucocephalus*). All these bird species are of least concern under IUCN categorization.

The proposed Malarani-Piple 33 kV distribution line passes through the 7 different community forests as shown in **A total** of 2.142 ha of the forest area will be occupied by RoW of proposed 33 kV distribution line. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 428.

Table 3-3. A total of 2.142 ha of the forest area will be occupied by RoW of proposed 33 kV distribution line. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 428.

Table 3-3: Forest type along the proposed distribution line

SN	Name of Forest	Chainage	District	Municipality/RM	Ward
1	Kisan CF	3+250-3+650	Salyan	Kalimati RM	5
2	National Forest	4+000-4+400	Salyan	Kalimati RM	4
3	Tingharay Kapasini CF	6+200-6+800	Salyan	Kalimati RM	4
4	Salleri CF	6+800-7+170	Salyan	Kalimati RM	4
5	Salleri CF	8+000-8+800	Salyan	Kalimati RM	4
6	Baghkhori CF	8+800-9+400	Salyan	Kalimati RM	4
7	Sital takura CF	9+600-10+400	Salyan	Kalimati RM	4

Source: Field Visit, 2022

3.3 Socio-economic Environment

Demography and Ethnic Compositions: The proposed Subproject area lies in Ward No. 4 and 5 of Kalimati RM, Salyan district and Ward No. 1 and 2 of Gurbhakot Municipality, Surkhet district. Birendranagar and Chinchu are the nearest business markets nearby the Subproject area. The general demographic information of the affected Municipality and RM is presented

in Table 3-4. The major ethnic compositions within the surrounding project area i.e., Ward No. 4 and 5 of Kalimati RM and Ward No. 1 and 2 of Gurbhakot Municipality are Magar (35.4%), Chettri (32.6%), Dalit (17.4%), Brahman (10.5%), and Thakuri (1.5%) of the total population of 11,793. Majority of people follow the Hindu religion and rest follow Buddhism and Christian religions. The Core Project Area (CPA) of the Subproject will not affect any indigenous people.

Table 3-4: General Demographic Characteristic of Subproject Municipality

S.N.	Municipality/RM	Ward No	HH	Population		
				Male	Female	Total
1	Kalimati RM	4	625	1664	1696	3360
		5	563	1549	1607	3156
2	Gurbhakot Municipality	1	401	969	1023	1992
		2	691	1550	1735	3285
Total			2280	5732	6061	11793

Source: (CBS, Rural Municipality-Municipality Profile of Surkhet and Salyan District, 2018)

Road Accessibility: Subproject's tapping point is connected to Tulasipur-Purandhara–Botechaur Road Section. The transportation facilities in this local level seems to be satisfactory.

Electricity Beneficiaries: The implementation of the Subproject will increase the electricity beneficiaries to 3028 HHs, 30 commercial purposes and 10 industries. This will expand the electricity supply in the Subproject area with clean energy sources.

Water and Sanitation: Tap/piped water is the main source of drinking water in the surrounding Subproject area. About 51.1% of the households in the proposed Subproject's area have access to tap/piped water. Almost all the houses in the area have some sort of toilet facility.

Health Facility: The nearest and easily accessible health facility nearby the proposed Subproject area is Kalimati Health Post located at a distance of 50 m from the site.

Occupation: Agriculture is the main occupation of people in the Subproject area with nearly 70% contribution; small trade and business/enterprises and services are other occupation of people in the Subproject area. Intermittent tripping and voltage drop of electricity was adversely affecting irrigation of crops and daily household chores activities.

COVID-19: The coronavirus (COVID-19) pandemic has been defined as global health crisis; the virus has spread in almost all parts of Nepal. Heedful of its vulnerabilities, the Government of Nepal had enforced a nationwide lockdown in 2020/2021 and activated its federal, provincial and local level mechanisms to respond to the crisis. In case of any sudden surge or outbreak of COVID-19, quarantine facilities and immediate health support should be provided to the workers and personnel involved in construction.

Other seasonal and minor diseases like dengue, fever, sneezing, cough, gastritis, diabetes and mental disorder have been reported within the Subproject area.

4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

The environmental and social impacts predicted during the construction of proposed Subproject are discussed in this chapter. National Environmental Impact Assessment Guidelines (GoN, 2050) has been referred for the predicting magnitude, extent, and duration of the project-induced environmental impacts in Subproject area. This chapter identifies the basic environmental and social impacts in the Subproject area that will arise during the construction. The detailed impacts of each domain of environmental and social safeguards have been addressed in this chapter.

4.1 Anticipated Beneficial Impacts

Construction Phase

4.1.1 Local Employment

Local employment will be created during the construction phase. As mentioned in section 2.8 Workforce Requirement, the typical construction team will have 21 skilled manpower and 58 unskilled manpower for the period 10-12 months for the erection of poles and stringing the distribution lines and 16-18 months of time for building the substation. The local people within the SPA and OPA will be encouraged for employment during construction phase. Both male and female will get equal opportunity during construction. Based on the skill levels (skilled, semi-skilled and unskilled labor) local people will be used for the construction as far as possible. *The magnitude of impact is considered moderate, the extent is local, and the duration is short-term.*

Operation Phase

4.1.2 Local Economy and Enhancement in Rural Electrification

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. Intermittent tripping and voltage drop problem nearby the settlement areas will be reduced. Upgrading and expansion of electricity distribution helps to way-out many electricity related issues and promotes the use of new types of home appliances, use of electric motors for irrigation, and establishment of small and large industries. *The magnitude of impact is considered high, the extent is local, and the duration is long-term.*

4.1.3 Greenhouse Gas Emission Balance

Net Green House Gas (GHG) emissions resulting from the Subproject area are expected to be low as the distribution lines will improve and expand electricity supply from clean energy sources. It will reduce the emission of GHG from the traditional source like Guitha (made from cow dung), firewood and timber along with commercial fuel Kerosene for cooking/lighting, heating and diesel for water pumping. *The magnitude of impact is high, the extent is local, and the duration is long term.*




4.2 Anticipated Adverse Impacts

A. Physical Environment

Construction Phase

4.2.1 Change in Land Use

The Subproject requires about 0.6 ha land for the substation. The proposed substation land area belongs to private land. The land will be managed by NEA and will be converted to the substation area surrounded by proper boundary wall. Distribution Line route about 650 m will pass parallel to Gothe Khola. The construction of the Subproject will bring change in the land use permanently. Potential impacts caused by distribution lines will be limited to approximately 0.22 m of land for each pole, at the edge of roads and cultivated lands. *The impacts due to use of land will be moderate in magnitude, site specific and long term in duration.*

Mitigation Measures

- Steel Tubular Pole for distribution lines will be planted 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 planting the poles.
- Cropping calendar will be followed while planting poles and stringing of conductors so that standing crops will not be damaged.
- In case of loss of standing crops, compensation will be made to the respective land owner as per the prevailing market rate.

4.2.2 Erosion and Landslide

The proposed Subproject area distribution line is nearby the Gothe Khola and is susceptible to high erosion and landslide from during rainy season. The distribution line length is 11.1 km and about 650 m length passes nearby and parallel to the Gothe Khola, adjoining edge of private land. Then, it will pass through private farm lands, community forest, and RoW of the Tulasipur-Purandhara–Botechaur Road Section till the proposed substation at Pipledanda. Possible landslide and erosion may result nearby the distribution lines alignments. *The magnitude of impact is moderate, the extent is site-specific, and the duration is long-term.*

Mitigation Measures

- Concrete foundation is recommended for steel tubular pole installation for 33 kV lines.
- Pit hole prepared for the installation of steel tubular pole shall not be left open as possibility of accident may arise.
- Protection works along the eroded section of the Gothe Khola at 650 m of the distribution line stretch.
- The client needs to coordinate with local level governments and request the local government to give priority for the embankment activities for the protection of cultivated land and proposed 33 kV distribution lines.

4.2.3 Air Quality

The impact on air quality during the construction period is expected to be insignificant, as site clearance, excavation, stockpiling of construction materials, waste burning, etc. are sites

and equipment installation are localized and of short term. Transportation of the materials and movement of construction crew and equipment will have minor impact on air quality. *The impact on air quality will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors' vehicles and equipment should meet Nepali vehicle emissions standards.
- Dust emissions shall be controlled with using 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.

4.2.4 Noise

Noise is inevitable during construction. As noted in section 3.1.5, noise is less around the substation area as the area is rural and settlement is sparse. Construction-related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites; construction related noise is not expected to exceed acceptable levels. *The impact on noise level will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors will be required to monitor noise during the construction.
- For substation site, boundary walls serve as noise barrier, and it should be constructed as early as possible.

4.2.5 Drainage and Water Quality

Substation sites of 0.6 ha. will result in slight alteration of drainage patterns, although the alterations in drainage will not be quantifiable. Interference with drainage patterns will be temporary during construction phase only. The impact on water quality during the construction period is expected to be insignificant. Water will be used primarily as a cement additive for construction of substation foundations and boundary walls, and to control dust. *The magnitude of impact is considered low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Storm water run-off from substation sites will be minimized and controlled with bunding temporary dikes (constructed boundary walls will also help contain run-off water).
- Proper management of ground drainage from camps as a preventive measure against breeding places of mosquitoes, and other pests.

4.2.6 Soil and Muck

As the proposed substation land's ground level is low, filling of soil is necessary. The required filling materials shall be purchased from nearby authorized crusher plant approved by local government. For distribution lines the excavation activity will be insignificant. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Soil required for filling shall be purchased from the nearby authorized crusher plant under local government.
- Soil shall be covered with tarpaulin while transporting it from earth-borrowing areas.
- Simultaneous water sprinkling and compaction of spoil shall be done using the roller.

4.2.7 Solid Wastes

The wastes generated during construction within the Subproject area are cement bags, iron bars, and other leftover construction materials, and waste generated by the labor camp. It might cause adverse impact if not properly managed. Organic wastes generated from labor camp may give foul smell, and attract rodents if not manage properly. Inorganic wastes generated during implementation shall be managed through source segregation. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Source segregation of organic and inorganic wastes in different storage areas or facilities in the designated location.
- The organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered by thick layer of soil on daily basis.
- Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix shall be used as refills for ground leveling.
- Packing materials used for casing components should be recyclable.
- 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.

Operation Phase**4.2.8 Electric and Fire Hazard**

Employees performing servicing or maintenance of substations may be exposed to electric shock, burns and injuries from the unexpected energization or release of stored energy in the equipment. *The magnitude of impact is considered moderate, the extent is site-specific, and the duration is long term.*

Mitigation Measures

For this, the following mitigation measures will be practiced:

- 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.




B. Biological Environment

The proposed Subproject avoids forest area and other sensitive biodiversity area. Hence, there will be no significant impact to biological environment because of construction of substation and distribution lines.

Construction Phase

4.2.9 Loss of Habitat

As the proposed substation area is a private farm land, whereas the 33 kV distribution line passes through the edges of road alignments, private farm lands and forest areas. The total area of the forest area that will be occupied within RoW of the proposed 33 kV distribution line is 2.142 ha. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests are 428. The possible use of firewood should be restricted during the construction activities. *The magnitude of impact is moderate, the extent is site-specific, and the duration is long term.*

Table 4-1: Detail of impacted forest area and trees loss

Area (ha)			Name of species	No. of trees	
33kV line	Substation	Total		33kV line	Substation
2.142	-	2.142	<i>Shorea robusta</i>	109	-
			<i>Terminalia elliptica</i>	105	-
			<i>Lagerstroemia parviflora</i>	52	-
			<i>Haldina cordifolia</i>	26	-
			<i>Mallotus philippensis</i>	39	-
			<i>Premna latifolia</i>	4	-
			<i>Diploknema butyracea</i>	44	-
			<i>Semecarpus anacardium</i>	17	-
			<i>Cleistocalyx operculatus (Roxb.)</i>	26	-
			<i>Bauhinia vahlii Wight et Arn.</i>	4	-
			Total	428	

Mitigation Measures

- Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019).
- Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years.
- Workers and staffs should be restricted to use firewood for cooking.
- Providing LPG based stoves in Labor camp.
- Labors and staff shall be made aware to avoid illegal activities in adjoining forest.

Operation Phase

4.2.10 Bird electrocution and collision

The Subproject area is located in rural setting and there is no presence of critical habitat of avian fauna. Electrocution is a risk to bird species that perch on power line infrastructure

(substations and distribution lines). List of birds presented in section 3.2, may collide to distribution lines and substation. Minimizing bird collision and electrocution risk is therefore a win-win for biodiversity and the power sector. *The magnitude of impact is low, the extent is site-specific, and the duration is long term.*

Mitigation Measures

- Bird guards should be installed above the poles and white spirals in the conductors to improve visibility electrical structures.

C. Socio-Economic and Cultural Environment

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

Construction Phase

4.2.11 Land Requirement

The land required for the proposed substation area is 0.6 ha, is the private land, that will be managed by NEA later. This has been confirmed officially through Community Forest User Group and Ward Office, Kalimati RM. NEA is given the right to use the land to build and operate a substation. There will be no issues of land requirements for the pole erection and for the distribution line people have suggested to install poles at the edge of farm-lands, without affecting any private structures along the distribution line. But the proposed substation land is private land, so there is necessity of land acquisition which issues will be fulfilled by Resettlement Plan. For the construction of distribution lines, owners of private land along the route have assured and committed for necessary help and support during implementation. They have agreed on NEA's proposal that poles shall be installed on the edge of cultivated lands and appropriate compensation for the loss of crops shall be given (**Annex 5**). Compensation shall be made on the basis of crops types and quantity of loss equivalent to the market price. *The impacts will be low in magnitude, site specific, and long term in duration.*

Mitigation Measures

- Distribution pole of diameter 0.22 m should be installed on the edge of cultivated land making no loss of standing crops.
- If there is loss of crops, appropriate compensation shall be made.

4.2.12 Public Health

Construction activities will be of small scale, causing no significant adverse impact to existing quality of air, water and sound. Local people except the workers do not involve in construction activities. Considering COVID-19 pandemic as an example, workers will be advised to avoid unnecessary contact with local people. *The magnitude of impact is low, the extent is site-specific, and the duration is short term.*

Mitigation Measures

- Contractors shall implement health and safety plans.
- Awareness on HIV/AIDS and other sexually transmitted disease should be provided to the labors.




- Awareness on basic sanitation and waste management should be provided to the labors.

4.2.13 Occupational Hazards and Safety of Workers

Occupational health hazard and safety of workers is the major issue during the construction period. Working without adopting safety measures during excavation work, spoil management work, mechanical and electrical equipment handling activities, chemical handling, etc. during construction may call the risk of accident. Primary victims are the workers involved in the construction. *So, the envisaged direct impact is high in magnitude, site specific in extent, short term in duration.*

Mitigation Measures

- Contractor shall prepare the Environmental, Health and Safety plan and take approval from the Client (NEA/PIU). Contractor shall employ Safety officer 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



श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्परा कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
कर्णाली प्रदेश, सुनसरी जिल्ला, कालिका गाउँपालिका
४ नं. वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कर्णाली प्रदेश,
सुनसरी जिल्ला, गाउँ/नगर पालिका बार्ड नं. ४ मा अवस्थित
यस कार्यालय को सूचना पाटिमा २०७८.१०.२६ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम: वै. बहादुर चन्द
पद: वडा अध्यक्ष
वडा अध्यक्ष
वडा अध्यक्ष



कार्यालय/संस्थाको छाप

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
कैलाली प्रदेश, सल्यान जिल्ला, हडालिगढी गाउँपालिका
वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कैलाली प्रदेश,
सल्यान जिल्ला, गाउँ/नगर पालिका वार्ड नं मा अवस्थित
यस कैलाली को सूचना पाटिमा २०७८.१०.१६ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम:

पद:

हरि बहादुर खत्री
प्रमुख प्रशासकीय अधिकृत



कार्यालय/संस्थाको छाप



"समृद्ध नगर, खुशी नगरवासी"
गुर्भाकोट नगरपालिका
नं. १०५ कार्यालय
राष्ट्रियडाँडा सुर्खेत
कर्णाली प्रदेश, नेपाल
२०६३

पत्र संख्या :- 206 T 1065
चलानी नं. :- 858

मिति:- 2068 190123

विषय:- आयोजनाले आदिवासी-जम्जातीलाई प्रखर
नेपाल विद्युत प्राधिकरण तर्फत पुरव्णमा ।
वितरण प्रणाली स्तरडन्तती तथा निष्काप आयोजना
द्वारा प्राप्ति उद्घाटन, नेपाल ।

[illegible]

लाल बहादुर शास्त्री
पदा अध्यक्ष





"समृद्ध नगर, खुशी नगरवासी"
गुर्भाकोट नगरपालिका
नं. वडा कार्यालय
मालारानी सुर्खेत
कर्णाली प्रदेश, नेपाल
२०७३

पत्र संख्या :- २०७८/०७९

चलानी नं. :- ६३३

मिति :- २०७८/१०/२४

विषय :- आदिवासी-जनजातिलाई असर नगर्ने सम्बन्धन

श्री नेपाल विद्युत प्राधिकरण
वितरण उपपुर्त स्तर पुर्त तथा विस्तार आयोजना
दरखास्त माफा, काठमाडौं, नेपाल

प्रस्तुत विषयमा नेपाल विद्युत प्राधिकरण वितरण तथा
ग्राहक सेवा निर्देशनालय वितरण प्रणाली स्तर पुर्त तथा
विस्तार आयोजना प्रस्तावक रहेको कारणले गर्दा लाग्ने
मालारानी पिएल विद्युत विस्तार एवं वितरण लाइन आयोजना
ले यस सुर्खेत जिल्ला गुर्भाकोट नगरपालिका वडा नं. २-
अन्तरगत यस आयोजना आसपासको आदिवासी जनजाति
लाई कुनै असर नगर्ने गरी सहकारिता साथ अनुरोध
गरिन्छ।

१०/१०/२४
मोह आचार्य
सहायक प्रमुख



कालिमाटी गाउँपालिका

४ न.वडा कार्यालय

घुरचौर सल्यान

कर्णाली प्रदेश नेपाल

प. सं २०७८।०७९

च. नं ४७०



मिति: २०७८।१०।२७

श्री नेपाल विद्युत प्राधिकरण

वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

दरबारमार्ग काठमान्डौ, नेपाल।

बिषय : सिफारिस सम्बन्धमा

प्रस्तुत विषयमा यस कालिमाटी गाउँपालिका वडा नं ४ स्थित कालिमाटी गाउँपालिकाको नाममा दर्ता श्रेष्ठा भएको जग्गामा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंकको ऋण सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना प्रस्तावक रही कार्यान्वयन गर्न लागिएको मालारानि पिप्ले विद्युत विस्तार एव वितरण लाईन आयोजनाले यस सल्यान जिल्ला कालिमाटी गाउँपालिका वडा नं.०४ अन्तरगत यस आयोजनाले आसपासका आदिवासी, जनजातिलाई कुनै प्रकारको नकारात्मक असर नपर्ने तथा उक्त सार्वजनिक क्षेत्रमा सबस्टेशन निर्माण गर्दा कुनै समस्या नहुने व्यहोरा सिफारिस साथ अनुरोध छ ।

बेल बहादुर चन्द

वडा अध्यक्ष

बेल बहादुर चन्द
वडा अध्यक्ष



कालिमाटी गाउँपालिका ५ नं. वडा कार्यालय



पत्र संख्या:- ०६८/०७९

कालिमाटी, सल्यान

चलानी नं.: ३४५

कर्णाली प्रदेश, नेपाल

मिति: २०७८/१०/१७

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
नेपाल वितरण प्रणाली स्तरीकृती तथा विस्तार आयोजना
स्वकारमार्ग, काठमाडौं ।
प्रस्तुत विषयमा विषय: सिफारिस सम्बन्धमा
तथा कार्यालयको न.नं. १३७ मिति
२०७८/१०/०७ गतेको पत्रानुसारको व्यहोरा अकाल भयी
सो सम्बन्धमा यस कालिमाटी गाउँपालिका वडा नं. ५ मा
रहिरा आदिवासी जनजातीहरूलाई सो आयोजना कार्यालय
गर्दा कुनै पनि नेवारात्मक असर नपर्ने हुँदा तहाँ कार्यालयको
नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध छ ।

—पञ्चाध—
चन्द्र बहादुर जाहा मगर
वडा अध्यक्ष
वडा अध्यक्ष



बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको

वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environmental and Social

Management Plan) प्रतिवेदन तयारी सम्बन्धी

सार्वजनिक सूचना टाँस को मुचुल्का

कोशी प्रदेश, सुर्खेत जिल्ला, गुर्काडोटे गापा/नपा
२ वडा नं. नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक ब्यबस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस सुर्खेत जिल्ला
गुर्काडोटे गाउँ/नगर प्रालिका वार्ड नं. २, जेरीकाला मा
आज २०७८/१०/२४ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिदियो।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१.	मोति प्र. चौधरी	गुर्काडोटे-२	व्यापारी	९८४८०४४९३०	
२.	रवेमराज चौधरी	"	व्यापारी	९८६८०३४८००	
३.	मो. वा. राणा मगर	"	शिक्षक	९८६८३४३२९९	
४.	राम वा. डोँगी	"	इपुड	९८६८९९२२७६	
५.	धन वा. मगर मगर	"	इपुड	९८४८९५२८९८	
६.	गणेशलाल श्रेष्ठ	"	व्यापारी	९८४८९०६५४८	

बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

.....कोशी प्रदेश, जिल्ला, गाँपा/नपा
..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस जिल्ला
..... गाउँ/नगर पालिका वार्ड नं. मा
आज २०७८/१०/२६ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिवर्यौ ।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१	कोज ल. थापा	कोशीगरी-५ अचुरेती	वडा सदस्य	९७०६३८०९९५	
२	लेपल राणा प्रजा	"	कृषि	९७२३३३५८६५	
३	कोज ल. थापा	"	कृषि	९७९०८५३३८२	
४	कुलमी ओली	कोशीगरी-५ हडाली	कृषि	९७८८५२७२३५	
५	पुन ल. शर्मा	कोशीगरी-५ हडाली	Drawing	९७९३३२६३८८	

- **Annex 7.**
- NEA will be responsible to supervise the EHS performance of the construction Contractor, and worker's health and safety.

4.2.14 Child Labor, and Gender Issues

During the construction period, people employed on daily wages for excavation, transportation of construction materials, and other construction-related works should avoid the involvement children and should avoid gender discrimination. Gender discrimination may occur as the Contractor may not be sensitive towards gender equity. Contractors should equally pay men and women workers. Construction area should be gender friendly with required facilities. *The envisaged impact is high in magnitude, site-specific in extent, and short-term in duration.*

Mitigation Measures

The Subproject will ensure to:

- Provide equal wage to male and female for similar nature of work.
- Restrict the use of child labor i.e., below 16 years of age (which is as per government and ILO guidelines).
- Provide female friendly construction environment with separate cabins and toilet for women in the camp.
- Prepare suitable work categorization for women.

4.2.15 Socially Undesirable Activities

The workers may use alcohol and other forms of intoxication, gamble and quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area. *So, the envisaged impact is low in magnitude, local in extent, and short-term in duration.*

Mitigation Measures.

- Restrict movement of workers out of camp after dinner time in the night.
- Prohibit 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 public relation officer to keep close and regular consultation and coordination with local communities.
- Regular monitoring of workers' behavior and take appropriate measure on rule violators.

Operation Phase

4.2.1 Hazards and Safety

Occupational health hazard and safety of staffs is the major issues during the operation phase of the substation. The possible electric shock and fire hazard might cause injury or




death to working staffs thus the protection measures should be taken all the time. *The envisaged direct impact is high in magnitude, site specific in extent, long term in duration.*

Mitigation Measures

- There will be the use of insulation, guarding, grounding, electrical protective devices, and 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

4.2.2 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; so, there will be no impact outside of the substation boundaries.⁷ 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 empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment.

5. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

5.1 Methodology in Information Disclosure, Consultation and Participation

The following methodologies were followed for information disclosure, consultation and participation:

- Identification of the stakeholder is important to understand how the Subproject activities will engage with different institution/groups/individuals. The stakeholders are the groups that might be affected by the Subproject or might influence Subproject outcomes. The identified stakeholders are considered in three groups (**Figure 5-1**).

⁷ 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: $1/(10*10*10) = 0.1\%$.

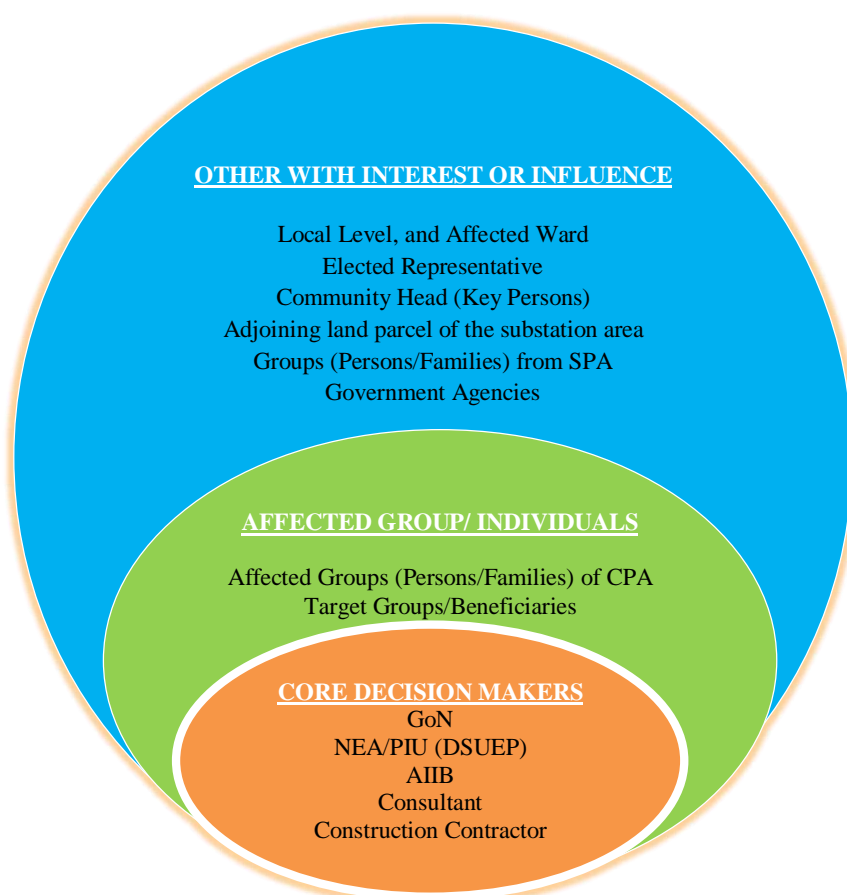


Figure 5-1: Identified Stakeholder in the Subproject⁸

- ii. The notice with subject of consultation, venue, and time was pasted at Subproject footprint area, local level and affected Ward office in presence of concerned local stakeholders (**Annex 1**). People were explained about the notices and their views were noted and agreed as Minutes.
- iii. Study team members visited all the local government offices within the Subproject influence area. Representatives from each local body were also consulted. All local governments were given request letters for their active support in project implementation. Municipalities were requested to provide written suggestions. The deed

⁸ Referenced Meaningful stakeholder engagement: a joint publication of the MFI working group on environmental and social standards / Reidar Kvam, PP-19, 2019.

of enquiry (Muchulkas) and Letter of Declaration from the stakeholders are presented in

पुष्पज ००१८
निलकंथापन ११
२६. डोंडी रोडमा ११
२७. पुवरज डोले ११ ३८३२४०२६३०
निर्णय ६६ त्रिभुवा रोडमा
कृष्ण माल

१. आयोजनाबाट स्वीकारा विस्तारबाट आयोजनाको बारेमा
विस्तृत जानकारी प्राप्त भयो।

२. यस आयोजना निर्माणको क्रममा रियल तथा कूलतको
आधारमा स्थानियवाहिनार्इ रेजगायीमा प्राथमिकता दिनु
पर्ने छ।

३. यस आयोजना निर्माण गर्दा खुसहद छलेर गर्नुपर्नेछ
कारण पर्ने अवस्था सृजना भएमा नेपाल सरकारको
नियमानुसार गर्नु पर्ने छ।

४. यस क्षेत्रमा रहेको विद्यमान विधुतिय समस्या
समाधानका लागि यथासिद्ध आयोजनाको कार्य शुरु
गर्ने अनुरोधका साथ निर्णय गरियो।

५. यस आयोजना निर्माण गर्दा धर्मिन् तथा संस्कृति
संरचनाहरूमा कुनै प्रभावको नकारात्मक असर नपर्ने गरि
गर्नु पर्नेछ साथै कुनै प्रभावको नकारात्मक असर
पर्ने अवस्था आएमा आयोजनले उचित व्यवस्थापन
गर्नु पर्नेछ।

६. यस आयोजना निर्माण गर्दा वस्ति क्षेत्र भन्दा बाहिरबाट
लेजानु पर्नेछ साथै निजि जग्गाबाट लेजानु पर्ने भएमा
लाइन तथा पोल जग्गाको आली वा हेडबाट लेजानु
पर्ने छ निर्माणको क्रममा जग्गाधनिसँग सहमति लिनुपर्नेछ।

७. यस आयोजना निर्माणमा हामी स्थानिय तथा सरोकारवालाहरूको
सहयोग र समर्थन रहेछ।

१०/११/२०८०

- v. **Annex 6 and** Error! Reference source not found..
- vi. Local communities nearby substation area and along the distribution line routes were consulted, and were briefed about the Subproject activities and likely benefits with their suggestions (included in the Minutes).
- vii. During the Subproject construction phase, booklets informing about the Subproject activities, likely impacts and mitigation measures together with the complaints handling mechanisms will be developed and distributed in the Subproject area.

5.2 Consultation and Information Disclosure

Consultation aims to encourage participation of stakeholders and communities of the Subproject area in identification of issues, comments and suggestions. The Subproject affected groups (persons/families) were given more emphasis during the field consultations. Public consultations were conducted at Gurbhakot Municipality, Ward No. 1, Kalche, Surkhet on 12th February, 2022, Kalimati RM, Ward No. 5, Salyan, Kalche Gau on 11th February, 2022 and Gurbhakot Municipality, Ward No. 2, Surkhet on 8th February, 2022. The concerns expressed and issues/ raised during the consultation were documented as in the form of minutes (**Annex 5**).

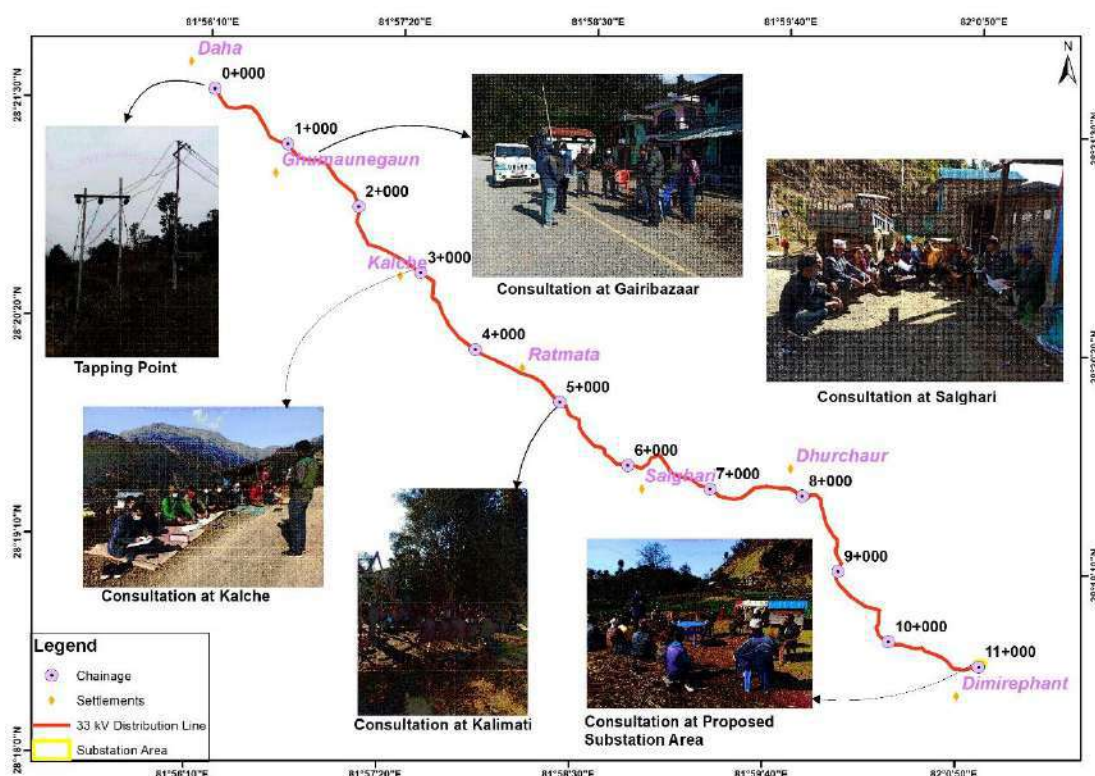


Figure 5-2: Consultation with the stakeholders and communities in the Subproject Area.⁹

Major benefits expected from the implementation of Subproject through the perspective of local people were identified from public interaction, and that included improvement in the

⁹ Field Study, 2021. Used SW Map and GIS

rural electrification facilities ensuring the uninterrupted electricity in the households and better functioning of industries in the locality. The issues, comments and suggestions received in the consultation are presented in **Table 5-1**.

5.3 Comments and Suggestion Received

Table 5-1: Summary of issues, comments and suggestions received in Consultations

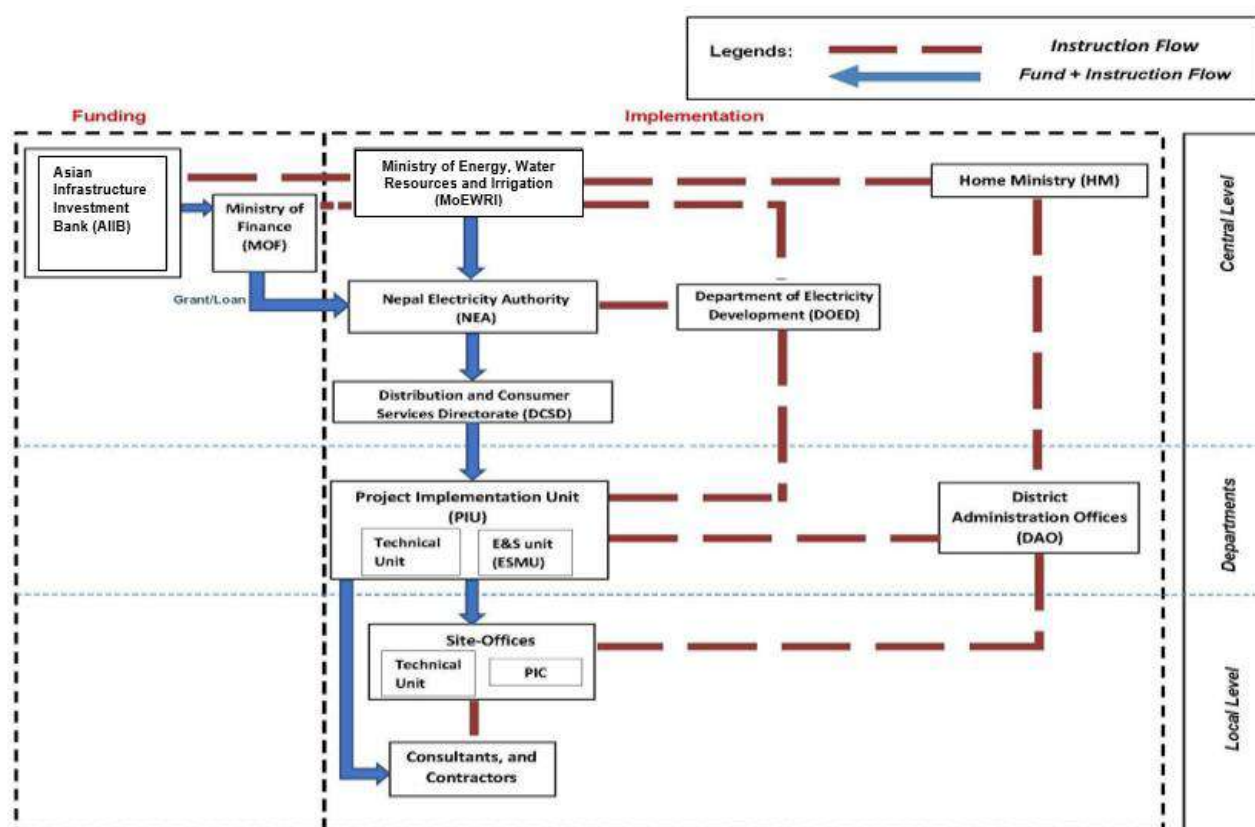
Source: Field Visit, 2022

Date	Location	Issues, comments and suggestions received	Participants
12th February, 2022	Kalche Gau, Gurbhakot Municipality, Ward No. 1, Surkhet	<ul style="list-style-type: none"> The project will not affect the cultural and religious beliefs, earnings, and other customary right of the indigenous people. Local people should be given priority on the basis of their and should give training during the construction and implementation of proposed project. This area currently is deprived of electrical services so local expect the proposed project to launch soon and help in the provision of electricity supply in the area. The proposed DL should avoid settlement as much as possible, and should take prior permission in the case of the private land affected. Local has agreed to help and support for the proposed project implementation. 	17,5F-12M
11th February, 2022	Kalche Gau, Kalimati RM, Ward No. 5, Salyan		32,12F-20M
10th February, 2022	Gairi Gau, Kalimati RM, Ward No. 4, Salyan		13,2F-11M
8th February, 2022	Malarani, Gurbhakot Municipality, Ward No. 2, Surkhet		28, 4F-24M

6. INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM

6.1 Institutional Arrangement

The Ministry of Energy, Water Resources and Irrigation (MEWRI) is responsible for overall planning and execution of the plans for the overall development of water and energy sector in Nepal. Nepal Electricity Authority (NEA) under MEWRI 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 activities during the construction phase. He will also provide technical support in preparing the monitoring report.



Source: ESMF-DSUEP

Figure 6-1: Institutional Arrangement for Environmental and Social Management

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/PIU 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 shall provide safeguard compliance orientation to all environment monitors and safeguard team of the contractor, one month before the construction works start.

6.2 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. Social Comment Addressed -In each Subproject, three levels Grievance Redress Mechanism will be established. During the ESMP study period NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the Subproject level. Till date NEA has established Tier-I and Tier-II GRM has been established at local wards level and Municipality/RM level. Tier-II will be established before construction work start.

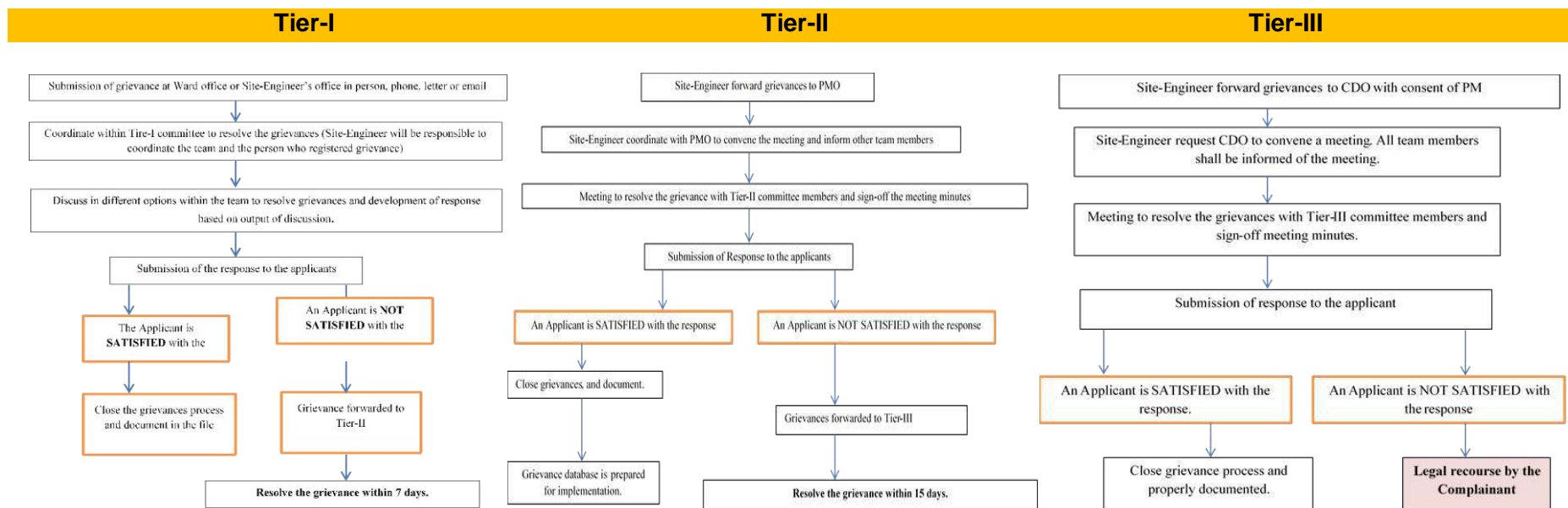
GRM process entails the concerned party submitting a grievance either in-person, or via phone, letter, or email to the Site-Engineer or the concerned Municipality Chief or the concerned Ward Chair. The Site-Engineer will record such complaint. In cases where Ward Chair has received such grievance, he/she should forward the grievance to the field office 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 carried to Tier II and Tier III. The three levels of GRM will be based on time-bound schedules as mentioned in

Table 6-1. The Subproject will carry the regular meeting for Tier-I, once a month to follow up if any grievances are received or not and to resolve the grievances received and update its status to PIU. **Figure 6-2** describes the Workflow Diagram of GRM for the Subprojects.




Table 6-1: Levels of Grievance Redress Mechanism Based on Time Bound

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. <i>If deemed necessary, representative from Forest Office, representative from Land Revenue Office, and representative from Land Survey Office are invited.</i>	
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
	Municipality Chief	Coordinator	Project Manager	Coordinator	Chief District Officer (CDO)	Chair
	Site-Engineer-NEA	Member secretary	Site-Engineer	Member Secretary	Project Manager	Coordinator
	Safeguards Expert from Consultant	Member	Municipality Chief	Member	Site-Engineer	Member Secretary
	Contractor Engineer	Member	Safeguards Expert from Consultant	Member	Municipality Chief/Ward Chair	Member
	Ward Chair	Member	Contractor Engineer	Member	Safeguards expert from consultant	Member
					Contractor Engineer	Member
					Representative from affected people	Member

Figure 6-2: Workflow Diagram for GRM from NEA¹⁰

* 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 Asian Infrastructure Investment Bank (AIIB) under Distribution System Upgrade and Expansion Project (DSUEP), Nepal Electricity Authority (NEA), May 2021.

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

7.1 Environmental and Social Management Plan and Mitigation Measures

The overall Environmental and Social Management Plan of the Subproject is presented in **Error! Reference source not found..** 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 ESMU of PIU.



Table 7-1: Environmental and Social Management Plan (ESMP)

Project Activity	Environmental and Social Issues	Management/Mitigation Measures	Mitigation Cost	Responsibility	
				Planning and Implementation	Supervision and Monitoring
Pre-construction Phase					
Approvals, permits and clearances	Installation of poles along the edge of private farm lands	<ul style="list-style-type: none">Site office and the contractor must inform the community prior to the installation of poles and stringing of the line along DL route	Cost will be included in the Resettlement plan	Site Office/ Contractor/	DSUEP (PIU)/NEA
Construction Phase					
Construction work in substation area and distribution line alignment	<ul style="list-style-type: none">Inadequate/unsafe working conditions	<ul style="list-style-type: none">Appropriate contract clauses to ensure satisfactory implementation of contractual environmental, health, and safety measures.		Site Office/Contractor	PIU/NEA
	<ul style="list-style-type: none">Accident may arise if the pit hole (depth-2m and diameter-0.22 m) prepared for steel tubular poles remains open for long time	<ul style="list-style-type: none">Pit holes for the steel tubular pole shall not be left open and should be filled instantly by erecting poles and concrete-cement around the base, should be used to strengthen the pole erectionContractors should follow the guideline provided by the PIU	Project Cost	Contractor/ Site Office	PIU/ESMU/ PIU
	<ul style="list-style-type: none">Dust emission - transportation of materials and movement of construction crews	<ul style="list-style-type: none">Water sprays to be used for dust control as necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials	Air Quality Monitoring- 1,50,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

	and equipment will cause minor impact	(sand, cements, aggregates and spoil) to be stored in substation area. • Steel poles firstly stocked in the substation area and secondly in the open barren area in coordination with Municipalities and Rural Municipalities. No social and environmental issues for the stockpiling of the steel poles and stringing wires	Sprinkling water (Dust Management) 2,00,000.00 (NRs.)		
	• Noise emission-Construction related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites	• Boundary walls serves as a noise barrier, and these shall be constructed as early as possible. • Construction equipment to meet national emissions and noise control standards.	Noise Level Monitoring-50,000.00 (NRs.) Provision of PPE in Project Cost	Contractor/ Site Office	PIU/ESMU
	• Interference with drainage patterns will be temporary at substation during construction phase	• A proper drainage system should be managed within the substation area. • Storm water run-off need to be minimized and controlled with bunding temporary dikes • Drainage management as a preventive measure against breeding of mosquitoes and other pests	Project Cost	Contractor/ Site Office	PIU/ESMU
	• Possible erosion and flooding in Gothe Khola	• Concrete foundation is recommended for Steel tubular pole installation for 33 kV lines. • Pit hole prepared for the installation of steel tubular pole shall not be left open as possibility of accident may arise.	Project Cost	Contractor/ Site Office	PIU/ESMU

(The provision of environment and social management cost should be included in the project cost making each items visible in BOQ of bidding document for the safeguard compliance by the construction contractor)

		<ul style="list-style-type: none"> Protection work along the eroded sections in the Gothe Khola, 20-30 m distance from the distribution line. Client need to coordinate with local level governments to give priority for the embankment activities for the protection of cultivated land and proposed 33 kV distribution lines. 	Cost from Local Government	Kalimati RM, Gurbhakot Municipality	Kalimati RM, Gurbhakot Municipality /PIU
	<ul style="list-style-type: none"> Construction associated wastes generated within substation area and campsite location 	<ul style="list-style-type: none"> Organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered, by a thick layer of soil Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix should be used as refills for ground leveling. Recyclable wastes like left out/non-usable reinforcement bars, and packing materials to be sent or sold to scrap vendors. Effective coordination with local level government for the proper waste management 	Solid wastes management – 1,00,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> Illegal fishing and bird hunting by the labors 	<ul style="list-style-type: none"> Discouraged by supplying adequate food items (poultry and fish) requirement within the camp. Awareness on legal provisions upon illegal hunting of biodiversity need to be disseminated 	Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> About 2.142 ha of forest area occurs 	<ul style="list-style-type: none"> Compensatory plantation shall be done as per Work Policy with the Guidelines 	The total enumeration of the loss trees and mitigation cost will be incorporated in the	Contractor/ Site Office	PIU/ESMU

	within RoW of the proposed distribution line <ul style="list-style-type: none"> Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 428 	National Forest Land Area to be Use for National Priority Plan, 2076 (2019). <ul style="list-style-type: none"> Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years. 	Brief Environmental Study (BES) report		
	<ul style="list-style-type: none"> Use of firewood from nearby forests 	<ul style="list-style-type: none"> Workers and staffs should be restricted to use firewood for cooking. Providing LPG based stoves in Labor camp. 	Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> Loss of standing crops at pole installation locations (depth-2m and diameter-0.22 m) 	<ul style="list-style-type: none"> Pole to be installed at the edge of cultivated land making no loss of standing crops Need to make prior consultation with landowner during installation of the pole and stringing of distribution lines If there is loss of crops, appropriate compensation will be made by the project 	Project Cost	Contractor/Site Office	PIU/ESMU
Environment, Health and Safety	<ul style="list-style-type: none"> Injury and sicknesses workers and members of the public Potential fecal coliform contamination in drinking water 	<ul style="list-style-type: none"> Contractor shall prepare the Environmental, Health and Safety plan and take approval from the client. Provision of safety officer in the work team shall be made during construction period. All employees shall be provided with the necessary training, and safety equipment as required for their responsibilities and duties. Basic facilities of drinking water, sanitation & clean resting place, canteen, and first aid shall be made available for the campsite. Provision of health insurance to employees. Security fences around the substation 	Establishment of Labor Camp with basic facilities – In Project Cost	Contractor/Site Office	PIU/ESMU

		<ul style="list-style-type: none"> • Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs). • Awareness on HIV/AIDS and other sexually transmitted disease. • Awareness on providing basic sanitation facilities and waste management control to the labors. • For coronavirus (COVID-19) pandemic situation, Contractors should arrange for quarantine and health services for infected workers. 	<p>EHS Awareness Trainings - 1,50,000.00 (NRs.)</p> <p>COVID-19 measures 2,00,000.00 (NRs.)</p>		
Management of electric equipment's, toxic materials of chemical wastes	<ul style="list-style-type: none"> • Possible spills resulting in contamination of soil, water, and air 	<ul style="list-style-type: none"> • Chemical waste generated from transformer shall be collected in leakage proof, corrosion free, specially designed container, and sealed carefully 	1,00,000.00 (NRs.)	Contractor/ Office Site	PIU/ESMU
Operation and Maintenance Phase					
Electric shock and fire hazard	<ul style="list-style-type: none"> • Injury or death to the workers and public 	<ul style="list-style-type: none"> • Use of insulation, guarding, grounding, electrical protective devices, and safe work practices. • Boundary walls and / or security fences around substations to prevent unauthorized access. • Only trained and authorized personnel shall be allowed for the electrical works. • No electric wire to be stringed above the house. <p>Installation of warning signs.</p>	Project Cost	NEA	NEA
Routine operations and maintenance	<ul style="list-style-type: none"> • Potential disturbance to other utility functions and vehicular traffic. 	<ul style="list-style-type: none"> • Maintain warning / advisory signs in good and visible condition • Visual and technical inspection 	Project Cost	NEA	NEA

Oil spillage	<ul style="list-style-type: none"> Contamination of land/nearby water bodies 	<ul style="list-style-type: none"> Substation transformers should be stored within secure and impervious bundled areas with a storage capacity of at least 110% of the capacity of oil in transformers and associated reserve tanks. 	Project Cost	NEA	NEA
Bird electrocution and collision	Electrocution can cause a risk to bird species which perch on power line infrastructures	Provision of bird guards above the poles and white spirals on the conductors to improve visibility	Project Cost	NEA	NEA




7.2 Proposed Monitoring Plan

The monitoring proposed in

Table 7-2 will be of value primarily for establishing baseline conditions in the Subproject area, and then for ambient quality monitoring.

Table 7-2: Minimum Provisions for Environmental Monitoring

Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Construction Stage				
Clearing of construction site	Substation boundaries	<ul style="list-style-type: none"> Field inspection of Subproject Sites and ensure that appropriate safety measures are implemented 	Clearing and restoration: weekly	Contractors to implement corporate EHS plan, drainage management and solid waste control in substation area.
Use of forest area and loss of trees	33 kV DL alignment	<ul style="list-style-type: none"> Field inspection of Subproject sites and ensure the compensatory plantation of 1:10 Related approval document for tree clearance 	Prior to the construction work	Contractor responsibility under the supervision of PIU/DFO
Air: SPM, Noise: dB	Substation boundaries and nearest receptor to substation	<ul style="list-style-type: none"> Spot check for noise and dust using portable monitoring device 	Air, and noise: quarterly during construction period	Contractors need to conduct the air and noise monitoring during the construction period at the substation location

Construction wastes: on-site inspection	Visual inspection of active construction areas, including equipment staging areas and camps	<ul style="list-style-type: none"> Spot check / visual inspection of solid waste (spoil, muck etc.) generation and disposal. Analysis of transformer oils to determine if polychlorinated biphenyls are present. 	Monthly spot checks for construction waste management	PIU safeguard officers to provide oversight via regular field inspections, and submit monitoring reports to the Bank
Occupational health and safety	Substation boundaries	<ul style="list-style-type: none"> No. of Toolbox talk and safety orientation to the workers No. of workplace accidents Use of PPE by workers 	Daily Inspection during construction Monthly Inspection during operation phase	Inspection of the construction site by safety officer and PIU safeguard officer
Child involvement in construction work (need to be prohibited)	Substation work	<ul style="list-style-type: none"> Spot inspection at construction sites 	Monthly Inspection during construction	Site Office

7.3 Environmental and Social Mitigation and Monitoring Cost

Preliminary cost estimates for the ESMP implementation are shown in **Table 7-3**. **Error! Reference source not found..** These estimates cover the basic monitoring activities and the mitigation measures to be complied from the contractor's side. The ESMP cost estimated for the **Malarani–Pipe Distribution Line** is NRs 13,00,000.00. The community support activities and the costs will be presented in the Community Development Plan (CDP). NEA has agreed for the effective implementation of the mitigation and monitoring cost items as mentioned in table below.

Table 7-3: Mitigation Measures and Monitoring Activities Cost Estimates

SN	Budget Items	Unit	Rate (NRs.)	Estimated Amount for Monitoring (NRs)-Lump Sum
1	Air Quality Monitoring (at substation)	6 (Times)	25,000.00	150,000.00
2	Noise Level Monitoring (at substation)	6 (Times)	8,334.00	50,000.00
3	Sprinkling of water to be used for dust control necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials (sand, cements, aggregates and spoil)	200 (Times) During Excavation and Civil works	1000.00	2,00,000.00
4	Management of electric equipment's, toxic materials of chemical wastes	-	L.S.	1,00,000.00
5	Segregation and management of solid wastes	-	L.S.	1,00,000.00
6	COVID-19 measures (considering pandemic situation) standardize the quarantine facilities with health aid to the labors	-	L.S.	200,000.00
7	EHS Awareness raising trainings to the labors	10 (Events)	15,000.00	1,50,000.00
8	Meeting of Safeguard Desk and Grievance Redress Committee at Field Level	24 (Months)	14,583.00	3,50,000.00
Total				13,00,000.00



8. CONCLUSION

Potential environmental impacts of this Subproject are not diverse and are all site-specific i.e., confined to the Core Project Area. Civil works will have minimal temporary impacts on air, noise and water quality. Erection of poles during construction shall follow right of way of existing roads and the edge of farmlands. The PIU should give prior information before installation of the poles. In the ESMP consultations conducted in the settlement area, people have agreed for the implementation of the Subproject and have suggested to install poles on the edge of farm-lands, without affecting any private structures along the distribution line. If there is loss of crops, appropriate compensation shall be provided. The implementation of the proposed Subproject needs 2.142 ha of forest area with estimated loss of 428 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. Mitigation measures are suggested in this ESMP to avoid any possible environmental and social impacts. The total ESMP cost for this Subproject is NRs. 13,00,000.00. NEA Project Implementation Unit has agreed to implement the estimated cost for the mitigation measures and monitoring activities.



REFERENCES

- CBS. (2019). Environmental Statistics of Nepal. Kathmandu: Central Bureau of Statistics.
- CBS. (2018). Rural Municipality-Municipality Profile of Surkhet District. Surkhet: Office of Statistics.
- CBS. (2018). Rural Municipality-Municipality Profile of Salyan District. Salyan: Office of Statistics.
- DHM. (2021). Retrieved from <http://mfd.gov.np/city?id=26>
- DoS. (2020). Data & Metadata. Retrieved from National Spatial Data Center: Geoportal: <http://nationalgeoportal.gov.np>
- Environmental and Social Framework (ESF) Asian infrastructure investment Bank, Feb 2016 (Amended February 2019).
- GoN (2019): Environmental Protection Act (EPA), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN (2020): Environmental Protection Rules (EPR), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN. (2050). National Environmental Impact Assessment Guidelines. National Planning Commission Secretariat.
- GoN. (2019). Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, Ministry of Forests and Environment, Singhadurbar, Kathmandu.
- Shahi, D. K., Rijal, H. B., & Shukuya, M. (2019). Study on Household Energy Usage Patterns in Urban and Rural Areas. Journal of the Institute of Engineering, 15 (No. 3), 402-410. doi:<https://doi.org/10.3126/jie.v15i3.32761>
- Stakeholder Engagement Strategy, DSUEP, NEA 2019.
- The White Paper. (2018). Energy, Water Resources and Irrigation Sector's Status and Roadmap for the Future. Kathmandu: Government of Nepal.
- WBG. (2018). <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2018&locations=NP&start=1996&view=chart>. Retrieved from <https://www.worldbank.org>.
- WECS. (2014). Energy Data Sheet. Water and Energy Commission Secretariat. www.energyefficiency.gov.np/downloadthis/final_data_book__11_june_2014.pdf




ANNEXES

**Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION
LETTER TO STAKEHOLDERS**



नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

फ्याक्स: ०१-४१५३१४४

फोन नं: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।



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

सूचना प्रकाशन मिति:

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

सार्वजनिक छलफल हुने स्थान, मिति र समय:

स्थान:

मिति:

समय:





नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्यामिति)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

(ए.आई.आई.बि.)

फ्याक्स: ०१-४१५३१४४

फोन नं: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।

प.सं. ०७८/७९: ५३८.

मिति: २०७८/१०/०७

श्री

विषय: गुनासो समाधान संयन्त्र गठन भएको सम्बन्धमा।

उपरोक्त विषयमा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंक (ए.आई.आई.बि.) को ऋण-सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (ए.आई.आई.बि.) प्रस्तावक रही कार्यान्वयन गर्न लागिएको

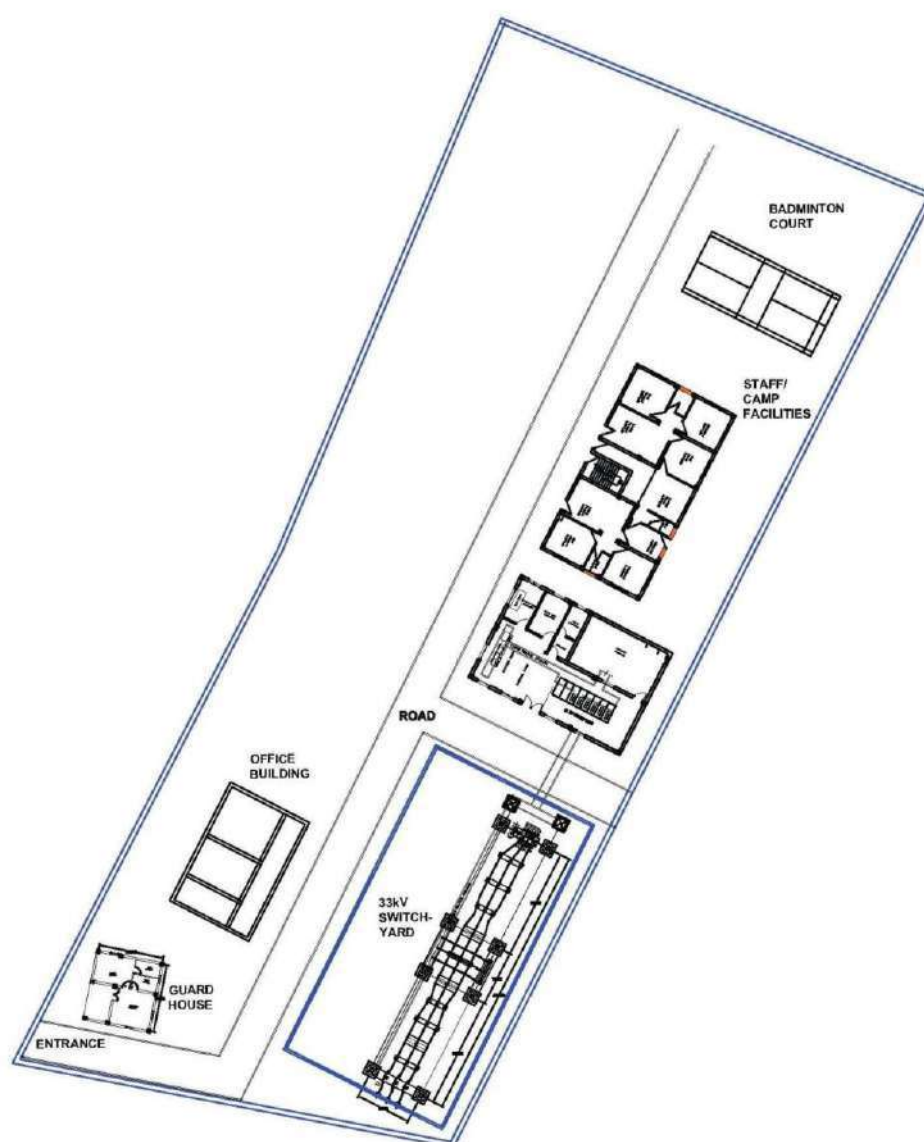
आयोजना अन्तर्गत नेपाल सरकारको पूर्ण-विद्युतीकरण गर्ने लक्ष्य बमोजिम तहो वडा/गाउँपालिका/नगरपालिका/उप-महानगरपालिकामा ३३/११ के.भी. सब-स्टेशन, ३३ के.भी. लाईन, ११ के.भी. लाईन, ४०० भी. लाईन, आदि निर्माण कार्यहरु हुने भएकोले सो कार्यहरु गर्दा स्थानीय सरोकारवालाहरुको कुनै गुनासो भए सो गुनासोको समाधान गर्न गुनासो समाधान संयन्त्र निर्माण गरिएको छ। अतः संलग्न गुनासो समाधान संयन्त्र दस्तावेज बमोजिम आफ्ना गुनासोहरु दर्ता गर्न र सोही दस्तावेजमा भनिए बमोजिम गुनासोको समाधान हुने व्यहोरा सम्पूर्ण सरोकारवालाहरुलाई जानकारी गराइन्छ।

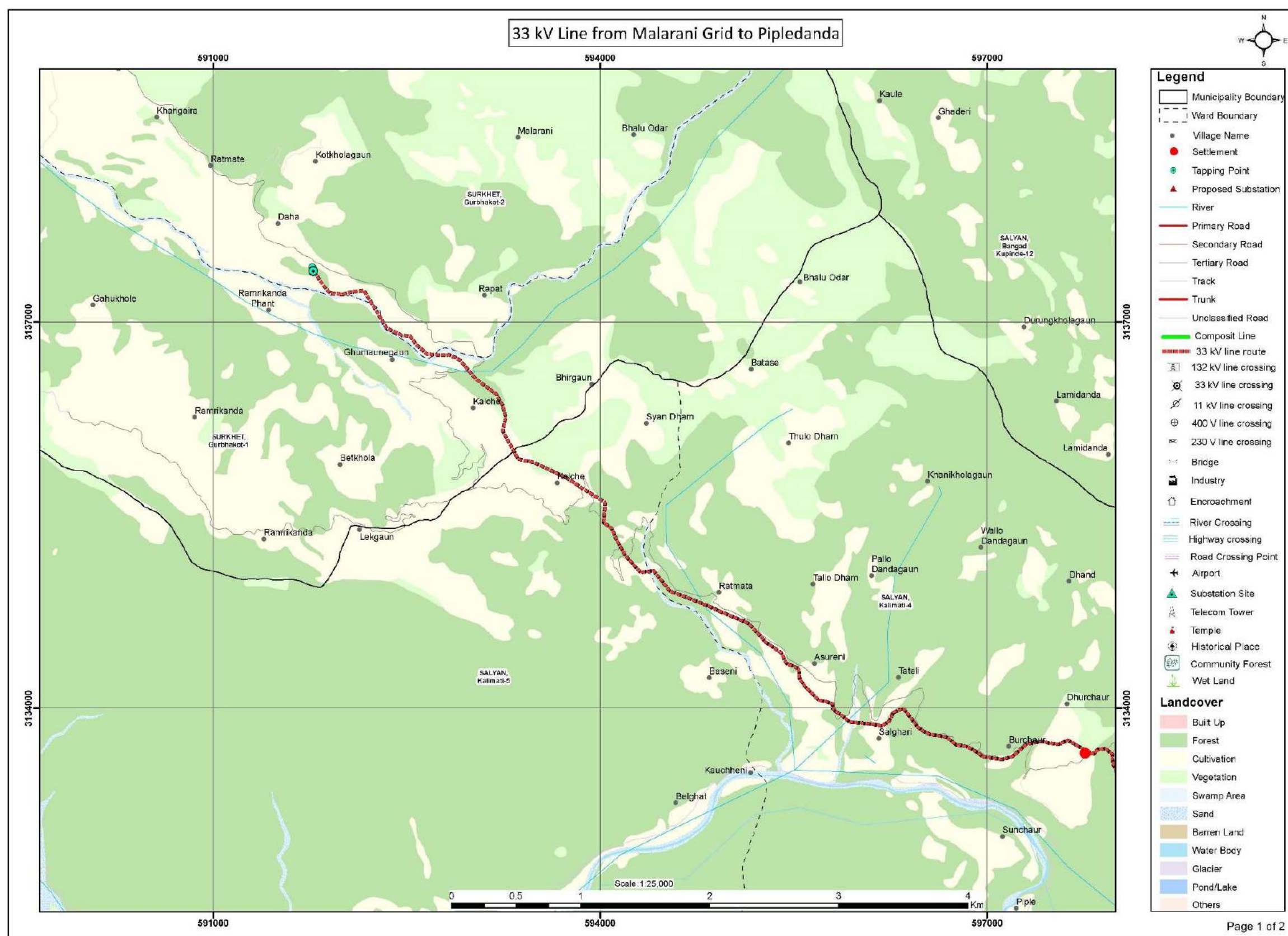
भवदीय,

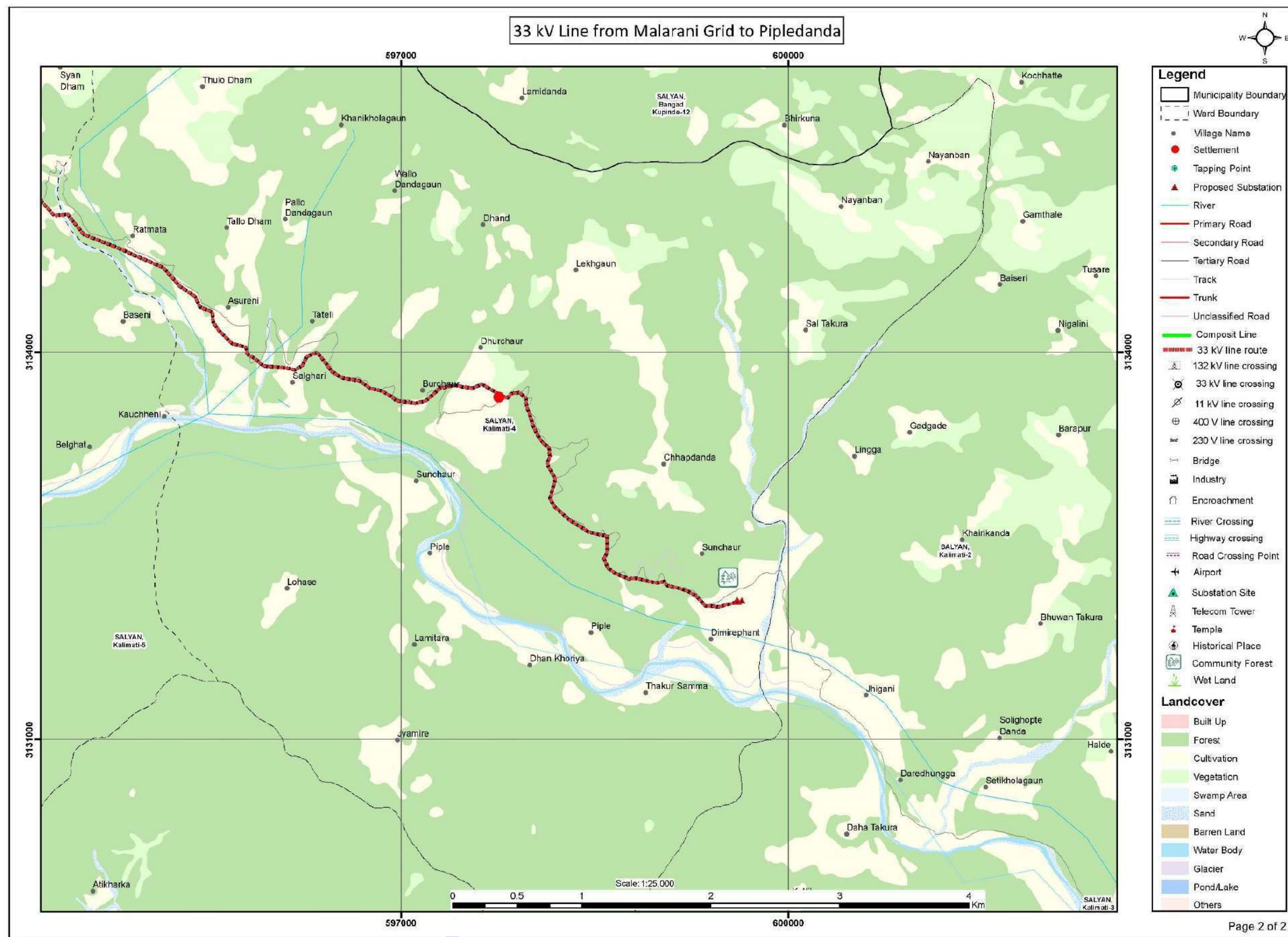
(केशव श्रेष्ठ)

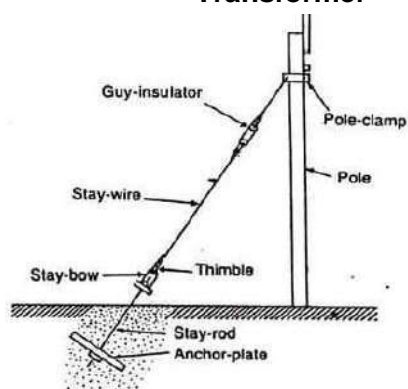
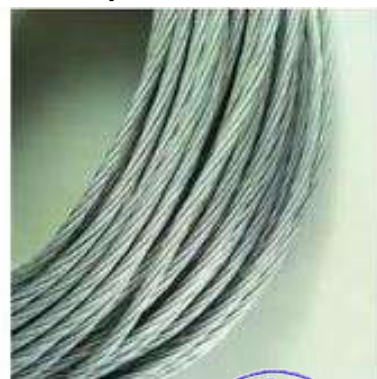
आयोजना प्रमुख

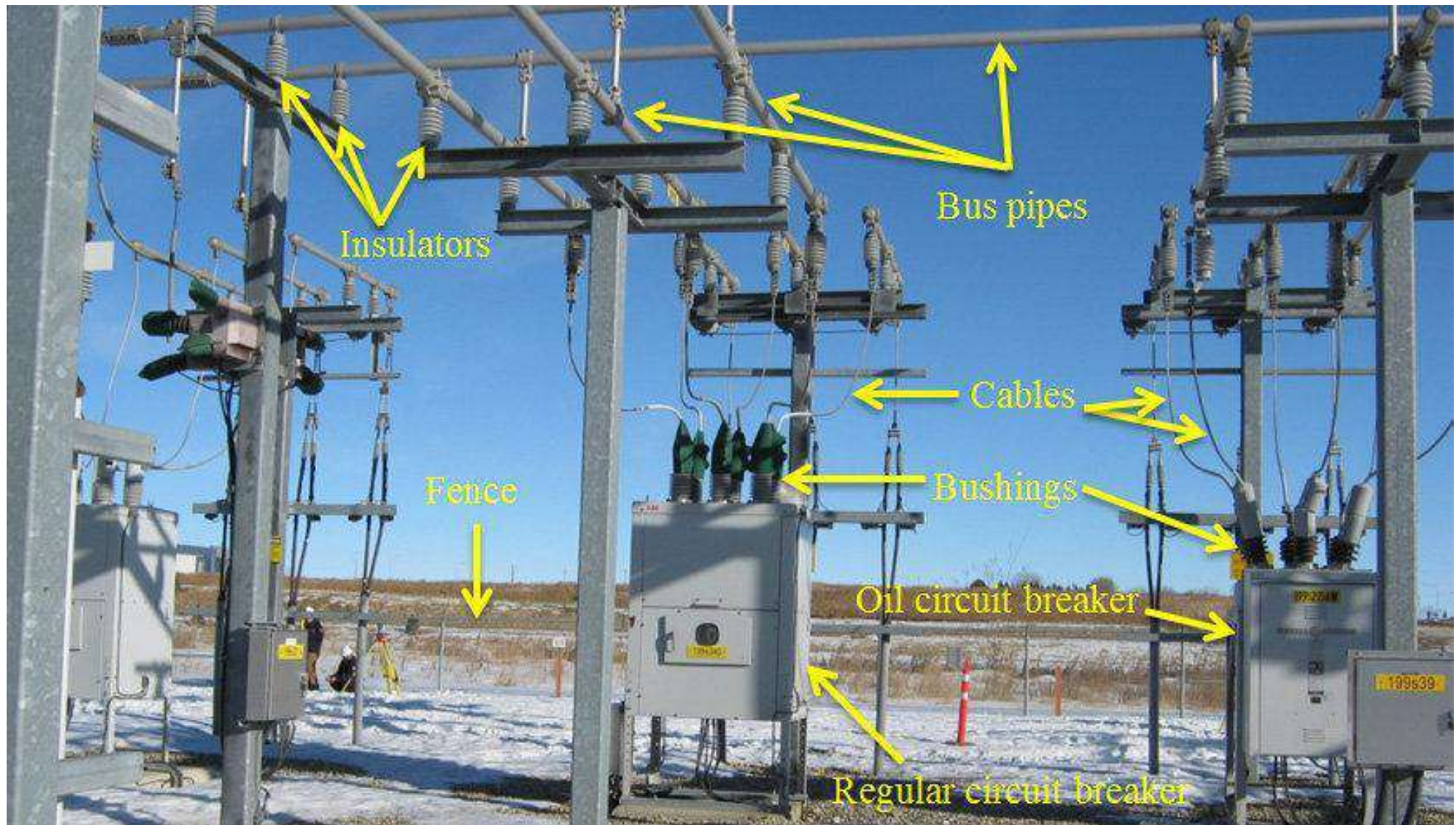


Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT





Annex 3: FACILITY AND COMPONENTS**Transformer****Switch Yard****Stay/Guy Sets****Steel Tubular Pole****Insulator****Civil-Structures Supporting Electrical Components****Conductor**



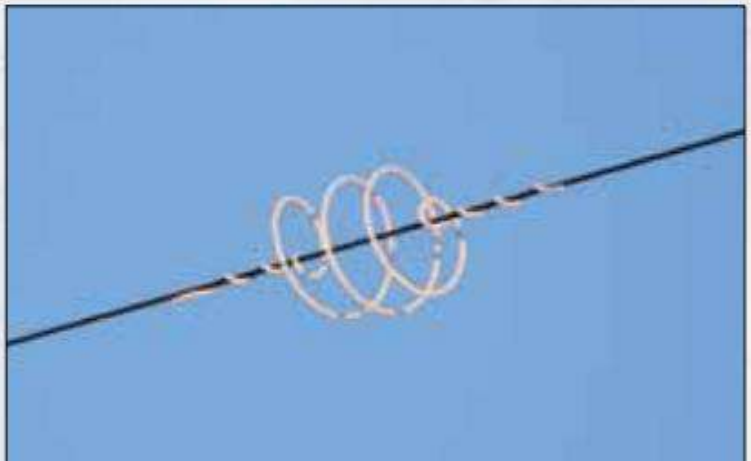
Possible components within 33 kV Substation



Bird Diverting Reflector



Wishbone Prevents Bird Landing on Wire



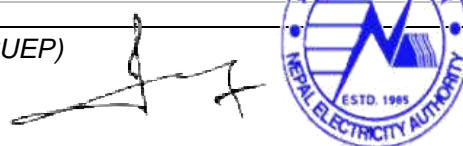
White Spiral in Wire Improves Visibility of Wire



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

Annex 4: LEGISLATIVE PROVISIONS

S N	Legal Provisions	Description	Relevancy concerning Project
1.	Constitution of Nepal	<ul style="list-style-type: none"> • The Constitution of Nepal is the main legal document, which emphasizes the right to a clean environment of the people, natural resources protection, preservation, and its prudent use. Rights regarding the clean environment, under article 30: • It includes making multi-purpose development of water resources, while according priority to domestic investment based on public participation to ensure a reliable supply of energy affordably, and easily, 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 fulfill the rights of people to live in a clean environment along with fulfilling the basic needs by providing access to sufficient energy.
2.	Environment Protection Act 2076 (2019 AD)	<ul style="list-style-type: none"> • Section 3 of the Act requires the proponent to conduct environmental studies concerning the prescribed proposals of any developmental works. Subsection 2 of this act provides the framework for the environmental study report prepared according to sub-section (1) shall, in fulfillment of the process as prescribed, be submitted to the relevant bodies of the Government of Nepal for approval. 	Environmental Studies, and approval of the report from the 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)]	<ul style="list-style-type: none"> • Under the Environmental Protection Rules (2020) first amendment (2021), 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. • Pertaining to Rule 3(1), Environment Protection Act (EPA), 2019 describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water resources and irrigation sector (1) under Environment Protection Regulation 2020 (First Amendment in 2021/05/24 on Nepal Gazette) state “use of forest area for the electricity distribution line project up to 66 KV” 	<p>This rule provides the overall guidance to what type of environmental studies is required according to the project by the Government of Nepal.</p> <p>The proposed Subproject will use the of Kisan CF (Community Forest), Tingharay Khasasini CF, Galtari CF,</p>



			Baghkhori CF, and Sital takura CF land for the purpose of 33 kV distribution line extension and substation construction. For which, BES is mandatory.
4.	Nepal Environmental Policy, and Action Plan, 2050(1993)	<p>The aims of NEPAP are:</p> <ul style="list-style-type: none"> • To manage natural, and physical resources efficiently, and sustainably • To balance the development efforts, and environmental conservation for sustainable fulfillment 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 the adverse environmental impact of development projects, 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 the construction of a 33 kV distribution line along with a substation.
5.	Forest Act 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to the chapter 12, Section 42(1), if there is no other alternative to the using of forest area for the operation of a national priority project, plan of which investment is approved by the Investment Board, project of national pride and it appears from the environment examination referred to in the prevailing law that the operation of such plan does not result in significant adverse effects on the environment, the Government of Nepal may give approval, as prescribed, to use any part of the national forest for the purpose of operating such plan, • Similarly, In providing the forest area for the operation of a plan pursuant to sub-section (1), to the extent possible, a land that is adjoining to the national forest area near the project site and situated in the same geographical and ecological belt and has such landscape where forest can be developed shall be provided for the purpose of planting trees at least in the area equal to the forest area that has to be used. 	<ul style="list-style-type: none"> • About 2.142 ha of forest area occurs within RoW of the proposed 33 kV distribution line • Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 428
6.	Work Policy with the Guideline of National Forest Land Area to be Use for National	<ul style="list-style-type: none"> • Pertaining to Section 4 (1), environmental study report should be prepared if the project needs the use of national forest area, • Section 7 require the approval of Government of Nepal, for the use of forest on the implementation of project 	<ul style="list-style-type: none"> • About 2.142 ha of forest area occurs within RoW of the




	Priority Plan, 2076 (2019)	<ul style="list-style-type: none"> Section 17 (3) require plantation of trees in the ratio of 1:10 in the area given by the concerned forest office as a compensation for the removal trees during the project implementation Section 17 (4) require care, maintenance and upkeep of the planted trees and handover to concerned forest office after 5 years. 	<p>proposed 33 kV distribution line</p> <ul style="list-style-type: none"> Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 428
7.	Electricity Act 1992	<ul style="list-style-type: none"> No person shall be entitled to conduct survey, generation, transmission, or distribution of electricity without obtaining a license under this act. The Electricity Act of 1992 has the provision of land procurement for the development of Subprojects that involve electricity generation, transmission, or distribution. The Act states that the licensee may apply 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. 	<p>The main goal of this project is to distribute a sufficient amount of electricity by constructing a 33 kV line, and substation by surveying to minimize the impacts.</p>
8.	Rural Energy Policy, 2006	<p>The rationale of formulating, and implementing this policy is to create a conducive environment that will self-motivate, and mobilize local institutions, rural energy user groups, non-government organizations, cooperatives, and private sector organizations 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 the promotion of such renewable energy technologies.</p>	<p>This project helps to improve the distribution, and motivate use the of electricity in rural areas of western Nepal.</p>
9.	Labor Act, 2074 (2017 AD)	<p>This labor Act was made under the management of parliament under sub-clause 1 of clause 296 of the 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 the 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,</p>	<p>The construction of a project is only possible when the rights of labor are secure. In this project, the Contractor should follow this act strictly.</p>




		origin, language, or intelligence or other kinds of characters.	
10.	Child Labor (Prohibition, and Regulation) Act, 2056 (2000 AD)	As per section 3 of this act, no child has not attained the age of 14 years shall be engaged in works as a laborer.	Child labor is strictly prohibited in this project, and Contractors should follow this act.
11.	Solid Waste Management Act, 2068 (2011 AD)	This act has been formulated to minimize solid waste products from the target area by setting rules, and regulations on solid waste management (SWM) in the country to develop a better environment for the systematic, and effective management of solid waste, and to involve all the concerned stakeholders in SWM practice. The main features of this act are the discussion of the 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 saves the money which could be used for other infrastructure development. Section 4 of the act assigns the local body to manage or use the solid waste discharged or dumped in the collection center, transfer station, or treatment plant or collected during cleaning.	These acts provide the overall framework to manage the solid waste generated from households to the project level. Also, 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 the provision made in article 50 of the 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 the segregation, and management of solid waste. It has been mentioned that it is essential to segregate degradable, and non-degradable solid waste at the source.	These rules provide the overall framework for how to reduce the volume of waste disposed of at the source during the construction of the substation.
13.	Fifteenth Plan	The vision of the 15th plan is to contribute to the prosperity of the nation through sustainable, and reliable development of hydropower by setting the goal which is to ensure energy security through intensifying hydropower generation. In addition, one of the strategies of the government of Nepal in the 15th plan is to make the distribution system effective, and reliable to increase energy efficiency, and increase power consumption by expanding the project.	This 5-year interim plan sets the goal about the generation, and distribution of hydroelectricity in Nepal which is directly related to this project.




		access to electricity by formulating the required policies:	
14.	United Nations Framework Convention on Climate Change (UNFCCC), 1992	UNFCCC, Signatories: 165. Parties: 195. (1), Article (4), commitment (f) 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, to minimize adverse effects on the economy, on public health, and the quality of the environment, of Subprojects or measures undertaken by them to mitigate or adapt to climate change. After it entered into force on 21 March 1994, it mandates the individual state for prioritization of resource conservation with development.	The goal of this project is to replace the traditional form of energy with clean energy i.e. electricity which ultimately reduces air pollution, and smoke.
15.	ILO 169	<p>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. Article 1 on the First Part of this convention mainly focused on the following points:</p> <p>(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 customs or traditions or by special laws or regulations;</p> <p>(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 all of their own social, economic, cultural, and political institutions.</p> <ul style="list-style-type: none"> • 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 people in this Convention shall not be construed as having any implications as regards the rights which may attach to the term under international law. 	Nepal is the part of ILO convention that's why ILO 169 should strictly follow during construction, and implementation of any types
16.	Environment and Social	<ul style="list-style-type: none"> • ESMF is to guide DSUEP sub-projects in the area of E&S management using appropriate 	Main guiding document for




	Management Framework	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 Financiers' standards on E&S assessment and management, Involuntary Resettlement, Indigenous People, Gender, etc.).	E&S study to identify issues and recommending appropriate practical augmentation/mitigation measures
17.	Environmental and Social Policy (ESP)	<ul style="list-style-type: none"> 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
18.	Environmental and Social Standards of AIIB ¹¹	<ul style="list-style-type: none"> Three associated mandatory environmental and social standards (ESSs) set out more detailed environmental and social requirements relating to the ESMP 	ESMP requirement

¹¹ <https://www.aiib.org/en/policiesstrategies/download/environmentframework/20160226047853542.pdf>




Annex 5: CONSULATATION MEETING MINUTES

Page No. _____
Date: / /

आज मिति २०७८/१०/१९ गतेका दिन सुर्खेत जिल्ला गुर्भाङ्गे नगरपालिका वडा नं. १ कास्कीमा नेपाल विद्युत प्राधिकरण वितरण प्रणाली स्तर उन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुन गई रहेको मालारानी-पिप्लेकोड विद्युत वितरण लाइन उप-आयोजना निर्माणको स्थलस्थलमा पर्ने सुर्खेत बातावरणीय, सामाजिक तथा सांस्कृतिक प्रभावहरूको बारेमा स्थानिय सरोकारवालाहरूको उपस्थितिमा वार्ता भैलासा देहाय कमेजिमको दलफल तथा निर्णय गरियो।

उपस्थित

क्र.सं.	नाम	हेतु/कारण	पद/पेशा	फोन	हस्ताक्षर
१.	लाल पाण्डे खानु	गुर्भाङ्गे नगरपालिका वडा नं. १	वा.स.स.स.	९८५८२४६९	
२.	लाल व. बि.क.	"	स्थानीय	९८५३९२९२०९	
३.	नन्दलाल सुवाल	"	"	९८५८९९९९९	
४.	गोविन्द नि.क.	"	"	गोविन्द गोविन्द	
५.	सोवर्ण भट्टराई	"	"	९८५५८७६९२१	
६.	रामप्रसाद भट्टराई	"	"	९८५८२२५६२२	
७.	तुर्दिसरा बि.क.	"	"		
८.	नराम बि.क.	"	"	९७५७७५५७	
९.	लाल बहादुर खोरे	"	"		
१०.	चन्द्रमणि भट्टराई	"	"		
११.	मनबिर बि.क.	"	"		
१२.	सिम्रिता बि.क.	"	"		
१३.	रुपा बि.क.	"	"		
१४.	सितली बि.क.	"	"		
१५.	फुलमाया बि.क.	"	"	९७५८०६९९	
१६.	सुभद्रा बि.क.	"	"	९९५८७९९९	
१७.	विद्या प्रसाद भट्टराई	समाजसेवा			
१८.	कृष्ण काजल	NEAEC	समाजसेवा		
१९.	यमनान खत्री	"	"		
२०.	रामप्रसाद कुँतेल	"	बातावरणीय	९८५९९९९९	
२१.	सुखन खोपा	"	"		
२२.	नराम बि.क.	"	"		

Page No. _____
Date: / /

निर्णयहरू

१. आयोजनाबाट स्वीकृत भएका विज्ञहरूबाट आयोजनाको बारेमा जानकारी प्राप्त भयो।
२. यत् आयोजनाको निर्माणको क्रममा रिप र प्लानको आधारमा स्थितिमाथीलाई रोजगारीमा अवसर प्रदान गरिने पनेछ।
३. यत् आयोजना निर्माण गर्दा कुनै विवाद हुने गर्ने पनेछ कुनै कानून पने अवस्था आएमा नेपाल सरकारको नियमानुसार गर्नु पर्नेछ।
४. यत् आयोजना निर्माण गर्दा यत् स्थलमा अनुपस्थित रहेको भएता पनि त्यस क्षेत्रमा जग्गाधनीहरूको अवस्थाको जानकारी तथा समन्वय गर्नु पर्नेछ।
५. यत् क्षेत्रमा विद्युतिय समस्या विकराल रहेकोमा समाधानको लागि आयोजनाको अतिरिक्त सह गर्न अनुरोध राख्ने निर्णय गरियो।
६. यत् आयोजना निर्माण गर्दा धार्मिक तथा पुरातात्विक महत्वका स्थलहरूमा कुनै प्रकारको नकारात्मक असर पर्ने गरि गर्नु पर्नेछ साथै कुनै नकारात्मक असर पर्ने अवस्था छैन भएमा आयोजनाले उचित व्यक्त-वापन गर्नु पर्नेछ।
७. यत् आयोजना निर्माण गर्दा वनक्षेत्रमा कुनै प्रकारको नकारात्मक असर पर्नेछ साथै निजी जग्गाको लैजान भएमा त्यस तथा पोल जग्गाको बेगले वा हेउवा लैजान पर्नेछ।
८. यत् आयोजना निर्माणमा हावा स्थानिय तथा सरोकार-वालाहरूको मुल सहयोग र समर्थन रहेकोछ।

मनेबिर बि.क.

अजमिति २०७८/१०/१० (तातेड) दिने सुन्यात जिल्हा द्यानिमये				
उपनिष्ठा वडा नं. ५ कक्षे अडेमा मेपान विद्युत अधिकारण				
वितरण प्रणाली हत उत्पत्ति तथा वितरण आमोजनवा (DSUEP)				
अन्तर्गत निर्माण हुने गर्दैहेको मानदानी पिप्लेडा विद्युत				
वितरण लाइन उप-अधीनता निर्माणको शिलशिलामा पर्ने				
सुक्ने वानवरणिय, सामाजिक तथा सांस्कृतिक प्रभावहउको				
वडेमा स्थानिय खरोकारवानाहउको उपनिष्ठाता वडेको भेनामा				
देहाय नमोजिमको छनफल तथा निर्णय गरियो ।				
उपनिष्ठाति				
क्र.सं.	नाम	हेगाना	पद/पेशा	डोने
१	अमिता शोभे	(का.ग.क.५.काल्व) जमि.ह		उत्ताहर
२	रुद्र वं. वि.क.	(" ")	हउ	धनिय
३	मन वं. पुन	" "	"	अ.१११३
४	कोष व. रवुका	" "	"	प्र.क. कुट
५	हरिप्रसाद थापा	" "	"	५८२४२५८७१
६	कुमार सिंह ज्ञानी	" "	"	झर
७	मन वं. वि.क.	" "	"	सुभा रानी ज्ञानी
८	लक्ष्मिन्दु की कुँडी	" "	"	जनकालातु
९	खेम रज कडावी	" "	"	५८६५३८८३१
१०	नेलधर घाले	" "	"	धनिय
११	दुर्गा देव भस्मई	" "	"	वडा
१२	भुम वं. पुन	" "	"	वुगी
१३	डिल वं. नेपाली	" "	"	मु.२५६५३५
१४	दुर्गा वं. नेपाली	" "	"	वि.व.
१५	पुष्पावती रवुका	" "	"	दुर्गादेव
१६	ताल वं. रक्ती	" "	"	नेपाल
१७	सुम वं. ज्ञानी	" "	"	ता.२५३
१८	कृष्णा कुँ साडी	" "	"	र.पु.न
१९	विष्णु भठवाडी	" "	"	५४७७
२०	मोतीमर नेपाली	" "	"	५४७७
२१	दुर्गा वं. पुन	" "	"	मोती
२२	लाल कुँ साहा	" "	"	५४७
२३	उमा वि.क.	" "	"	ला.ल
२४	अमृता थापा	" "	"	उमा
				अमृता

		Page No. _____
		Date: / /
22)	सुभा नि का (अ. ग. व. ५)	सुभा
23)	प्रवर्ती युवा	"
24)	अस क कुल धर्ति	"
25)	नर वहाई युवा	"
26)	सखी कला धर्ति	"
27)	हरि कला शोभे	"
28)	गगिहरा धावा	"
29)	दुगा क धर्ति	"
30)	प्रेम कला धर्ति	"
निर्णयहरू		
१.	अभियोजनको खर्चमा निर्माण हुने आशयको निर्माण	
२.	यस अभियोजनको निर्माणको क्रममा सिप र स्वतन्त्रताको आधारमा	
३.	यस अभियोजनको निर्माण गर्दा कसबिबुद्धता हुने गर्नु पर्नेछ	
४.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	
५.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	
६.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	
७.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	
८.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	
९.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	
१०.	यस अभियोजनको निर्माण गर्दा धर्म तथा सांस्कृतिक सम्मान	

Page No. _____
 Date: / /

लागी कपिगैरा मुहानडी संरक्षण तथा पाइपलाइन व्यवस्थापना
 आनमद सहयोगा लागी अनुमोद गर्ने निर्णय गरियो।
 १०. यस आयोजना निर्माणमा हाम्रो स्थानिय खरेवा खाना-
 च्छुडी पुर्ण सहयोग तथा समर्थन रहनेछ।

(सिने) (सिने) (सिने) (सिने) (सिने)
 (सिने) (सिने) (सिने) (सिने) (सिने)

Page No. _____					
Date: / /					
<p>अज मिनि २०६८/१०/२० गतेका दिन सल्यान जिल्ला कमिमी गाउँपालिका का ने. ४ जे रिगाउँमा नेपाल विद्युत प्राधिकरण वितरण प्रणाली इतर अति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुन गई रहेको मालाखानी पिपे लाईन विद्युत वितरण लाइन उप-आयोजना निर्माणको शिलशिलामा पर्ने सुर्खेत वातावरणिय सामाजिक तथा सांस्कृतिक प्रभावको कारण स्थानिय सुरेन्द्रा खालाहरुको उपस्थितिमा नभएको मालामा देहाय क्रमोजिमको चलपत्र तथा निर्णय गरियो।</p>					
<u>उपस्थिति</u>					
क्र.सं.	नाम	हेमा	चद/पिता	चौत	हस्ताक्षर
१.	केन बहादुर चन्द	कालिमाई ४	का प्रमुख		सुन्दर
२.	लक्ष्मी सुना	४	कार्यपालिका सदस्य		सुन्दर
३.	अमर सुब्बा सुना	४	सुपरिन्टेन्डन्ट		सुन्दर
४.	दिगन्दि प्रसादी	४	"		सुन्दर
५.	मोहनल सुना	४	"		मोहनल
६.	मन बहादुर सुना	४	"		सुन्दर
७.	मो बहादुर सुना	४	"		सुन्दर
८.	कुम्हार बहादुर सुना	४	"		सुन्दर
९.	शम्भु लक्ष्मी	४	"		सुन्दर
१०.	कुलि बहादुर सुना	४	"		सुन्दर
११.	अनार/अ/अनार	"	"		अनार
१२.	अनार परियार	"	"	५८६६४०६४१६	अनार
१३.	अमर सुब्बा सुना	"	"	"	सुन्दर
१४.	कुम्हार बहादुर सुना	NEAEC	संलग्नकर्ता	५८६६४०६४१६	सुन्दर
१५.	यमलाल सुब्बा	"	"	"	सुन्दर
१६.	रामप्रसाद सुब्बा	"	जातवासी	५८६६४०६४१६	सुन्दर
१७.	सुरेन्द्र खाला	"	"	"	सुन्दर
१८.	मोहनल सुब्बा	"	"	"	सुन्दर

निर्णयहरू

१. आयोजनाका स्वर्णिमहरू बिचकुना आयोजनाको वीरमा विस्तृत जानकारी प्राप्त भयो।
२. यस आयोजना निर्माणको क्रममा रिप र स्लैबको कक्षामा स्तम्भवाला रोजगारीमा प्रयोग हुने पर्नेछ।
३. यस आयोजना निर्माण गर्दा कुनै विवाद, कन्फ्लिक्ट गर्नेछैन भन्ने अवस्था छुन नभएमा नेपाल सरकारको निम्न अनुसूची गर्नु पर्नेछ।
४. यस क्षेत्रको विद्युतिय समस्या समाधानका लागि निर्माण कार्य सम्पन्न भएपछि युटिलिटी अफिस आयोजना समक्ष अनुरोधका साथ निर्णय गरियो।
५. यस आयोजना निर्माण गर्दा धर्मिन् तथा सांस्कृतिक सम्पदाहरूमा कुनै प्रकारको नकारात्मक असर पर्ने गरि गर्नु पर्नेछ, नकारात्मक असर पर्ने अवस्था आएमा आयोजनाले उचित व्यवस्थापन गर्नु पर्नेछ।
६. यस आयोजना निर्माणको क्रममा आनुभन्ने पर्नेपानी आपूर्ति गर्दा सबैभन्दा बढी क्षतिबाट बच्नको प्रयोग गर्ने ब्यानेपानी बहाव तथा पाइपलाइनको व्यवस्थापन गर्नुपर्नेछ।
७. हनपलमा अनुपस्थित स्टाफ/कर्मचारीको आवश्यकता सम्वन्ध गर्नेका लागि कडा कार्यलयले सहयोग गर्नु पर्नेछ।
८. यस आयोजना निर्माण गर्दा समन्जसपूर्ण वा. वि. सुर्जनमा मा खेल्नु हुनेछैन र सहयोग गर्नु पर्नेछ।
९. यस आयोजना निर्माणमा हामी स्थानीय तथा सरोकारवालाहरूको पुर्ण सहयोग र समर्थन हुनेछ।

अज गिति २०७८/१०/१५ गतेका दिन गुर्भाकोट नगरपालिका वडा नं. २ का अध्यक्ष श्री मोरबहादुर बस्नेतले अध्यक्षतामा नेपाल विद्युत प्राधिकरण वितरण प्रणाली स्तर उन्नति तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुन पर्नेछने मालारानी-पिप्लेडा विद्युत वितरण लाइन उप-आयोजना निर्माणको स्थितिबारेको पत्रे स्वरुपमा जानकारी, सामाजिक तथा सांस्कृतिक प्रभावहरूको बारेमा स्थानीय सरोकारवालाहरूको उपस्थितिमा बस्नेको भेलामा देहाय तथ्यांकहरूको हलफेल तथा निर्णय गरियो।

क्र.सं.	नाम	ठेगाना	पद/पेशा	फोन	हस्ताक्षर
१.	मोरबहादुर बस्नेत	गुर्भाकोट-पा.२	वडा अध्यक्ष	९८५०२२१२३	मोरबहादुर बस्नेत
२.	कल्याण बस्नेत	"	वडा सदस्य	९८५०२३३५५	कल्याण बस्नेत
३.	बिरेन्द्र प्रसाद ढकाल	"	नगर प्रमुख	९८५०२३५५५	बिरेन्द्र प्रसाद ढकाल
४.	विश्व बहादुर शाह	"	नडावाली	९८५०२३५५५	विश्व बहादुर शाह
५.	खैरजंग बस्नेत	"	नडावाली	९८५०२३५५५	खैरजंग बस्नेत
६.	नरमलाल श्रेष्ठ	"	नडावाली	९८५०२३५५५	नरमलाल श्रेष्ठ
७.	विजय बहादुर बस्नेत	"	वडा वडावाली	९८५०२३५५५	विजय बहादुर बस्नेत
८.	प्रो. एन. सापका	"	स्वास्थ्यकर्मी	९८५०२३५५५	प्रो. एन. सापका
९.	जोम. ए. ढकाल	"	"	९८५०२३५५५	जोम. ए. ढकाल
१०.	धनबहादुर श्रेष्ठ	"	"	९८५०२३५५५	धनबहादुर श्रेष्ठ
११.	प्रमोदबहादुर श्रेष्ठ	"	"	९८५०२३५५५	प्रमोदबहादुर श्रेष्ठ
१२.	समानप्रसाद श्रेष्ठ	"	"	९८५०२३५५५	समानप्रसाद श्रेष्ठ
१३.	देव बहादुर थापा	"	"	९८५०२३५५५	देव बहादुर थापा
१४.	राम बहादुर शाही	"	"	९८५०२३५५५	राम बहादुर शाही
१५.	जोम बहादुर श्रेष्ठ	"	"	९८५०२३५५५	जोम बहादुर श्रेष्ठ
१६.	नेत्रालाल श्रेष्ठ	"	"	९८५०२३५५५	नेत्रालाल श्रेष्ठ
१७.	राम बहादुर पन्थी	"	"	९८५०२३५५५	राम बहादुर पन्थी
१८.	नर बहादुर श्रेष्ठ	"	"	९८५०२३५५५	नर बहादुर श्रेष्ठ
१९.	गजनी बहादुर श्रेष्ठ	"	"	९८५०२३५५५	गजनी बहादुर श्रेष्ठ
२०.	विमलबहादुर श्रेष्ठ	"	"	९८५०२३५५५	विमलबहादुर श्रेष्ठ
२१.	मोना थापा	"	"	९८५०२३५५५	मोना थापा
२२.	जोम. प्रकाश श्रेष्ठ	"	"	९८५०२३५५५	जोम. प्रकाश श्रेष्ठ
२३.	सुमना बस्नेत	"	"	९८५०२३५५५	सुमना बस्नेत
२४.	दुर्गा लाल मण्डली	"	"	९८५०२३५५५	दुर्गा लाल मण्डली

२४.	मुद्राज ठोका	"	Page No.
२६.	निल कथापत्र	"	Date
२७.	उंठो रेखाती	"	को.सं.
२८.	चुवरण डेडेल	"	

SCD2502630

निर्णयहरू तिला रोमरा
कुल्लिमा माला

- आयोजनाबाट खोलिएको विज्ञापनबाट आयोजनाको बारेमा विस्तृत जानकारी प्राप्त भयो।
- यस आयोजना निर्माणको क्रममा शिप तथा फ्लूटको आधारमा स्थानियवाहिनार्ई रोजगारीमा प्राथमिकता दिनु पर्ने छ।
- यस आयोजना निर्माण गर्दा खुसहद छलेर गर्नुपर्नेछ काट्नु पर्ने अवस्था सुझना भएमा नेपाल सरकारको नियमानुसार गर्नु पर्ने छ।
- यस क्षेत्रमा रहेको विद्यमान विधुतिय समस्या समाधानका लागि यथासिक्क आयोजनाको कार्य थाल्न गर्न अनुरोधका साथ निर्णय गरियो।
- यस आयोजना निर्माण गर्दा धर्मिन्द तथा संस्कृति संरक्षणाहुमा कुनै प्रभावको नकारात्मक असर नपर्ने गरि गर्नु पर्नेछ साथै कुनै प्रकारको नकारात्मक असर पर्ने अवस्था आएमा आयोजनलाई उचित व्यवस्थापन गर्नु पर्नेछ।
- यस आयोजना निर्माण गर्दा वस्ति सँज भन्दा बाहिरबाट लैजाउ पर्नेछ साथै निजि जग्गाबाट लैजाउ पर्ने भएमा लाग्न तथा पोल जग्गाको आली वा हेडवाट लैजाउ पर्ने दशनिर्माणको क्रममा जग्गाधनिसँग सहमति लिनुपर्नेछ।
- यस आयोजना निर्माणमा हामी स्थानिय तथा सरकारीबाबलाहरुले पूर्ण सहयोग र समर्थन रहनेछ।

(Signature)

Annex 6: DEED OF ENQUIRY (MUCHULKAS)



"समृद्ध नगर, सुखी नगरवासी"
गुर्भाकोट नगरपालिका
व. नं. वडा कार्यालय
बासिन्डा, सुर्खेत
कर्णाली प्रदेश, नेपाल
२०७३

पत्र संख्या :- २७७८/१०६९

चलानी नं. :- ४९९

मिति: २७७८/१०/२४

विषय:- सूचना डाँस जाँचको बारे ।

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

उपरोक्त सम्बन्धमा तपास कम्पनीको मिति २७७८/१०/६ को प्राप्त पत्रानुसार उहाँको प्रवेष्ट सुर्खेत जिल्ला गुर्भाकोट नगरपालिका व. नं. वडामा नेपाल विद्युत प्राधिकरणद्वारा प्रस्तावित वितरण प्रणाली स्तर उन्नती तथा विस्तार आयोजनाको वातावरणीय तथा सामाजिक व्यवस्थापन योजना प्रतिवेदन तपासी सम्बन्धि सूचना प्राप्त उहाँको प्रवेष्ट सुर्खेत जिल्ला गुर्भाकोट नगरपालिका वडा नं. १ मा प्रकाशित यस वडा कार्यालयको सूचना बाझिमा मिति २७७८/१०/२४ गते डाँस जाँचको सम्वन्धमा जानकारी लीको प्रत्येक छ ।

२७/१०/२४

मोहन बहादुर सायु
वडा अध्यक्ष



"समृद्ध नगर, खुशी नगरवासी"
गुर्भाकोट नगरपालिका
नं. वडा कार्यालय
मालारानी सुर्खेत
कर्णाली प्रदेश, नेपाल
२०७३

पत्र संख्या :- २०७८/०७९

चलानी नं. :- ९९२

मिति: २०७८/१०/१४

विषय:- सूचना टाँस गरिएको बारे
श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्वरुद्धन्ती तथा विस्तार आयोजना
दस्तावेज डाकमापार्ने, नेपाल

उपरोक्त विषय सम्बन्धमा यस कम्पनीको मिति २०७८/१०/१४
को प्रवृत्त पत्रागुहा कर्णाली प्रदेश सुर्खेत जिल्ला गुर्भाकोट
नगरपालिका नं. वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रकाशित
वितरण प्रणाली स्वरुद्धन्ती तथा विस्तार आयोजनाको नक्सा
जातावशीय तथा सामाजिक व्यवस्थापन योजना प्रतिवेदन
सूचना यस वडा कार्यालयको सूचना पाटीमा मिति २०७८/१०/१४
गते टाँस गरिएको छ। सो जानकारीमा लागि अगुशोध
ह।

१०/१०/२४
लोख बहादुर वली
वडा अध्यक्ष
मालारानी सुर्खेत

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
कास्की प्रदेश, स्याङ्जा जिल्ला, कालिगौरी गाउँपालिका
कास्की प्रदेश, स्याङ्जा जिल्ला, कास्की गाउँपालिका वडा नं. १
वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस कास्की प्रदेश,
स्याङ्जा जिल्ला, गाउँनगर पालिका वार्ड नं. ५ मा अवस्थित
यस कार्यालय को सूचना पाटिमा २०७८.१०.२६ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम: के. वहादुर चन्द

पद: का. अध्यक्ष

के. वहादुर चन्द
वडा अध्यक्ष



कार्यालय/संस्थाको छाप

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
कल्लि प्रवेश, सल्यान जिल्ला, झालिमारी गाउँ/नपा
वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यस ठोली प्रवेश,
सल्यान जिल्ला, गाउँ/नगर पालिका वार्ड नं मा अवस्थित
यस कोसालमा को सूचना पाटिमा २०७८/१०/१६ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम:

पद:

हरि बहादुर खत्री
प्रमुख प्रशासकीय अधिकृत



कार्यालय/संस्थाको छाप



"समुद्र नगर, धुसी नगरवासी"
गुर्भाकोट नगरपालिका
१ नं. वडा कार्यालय
राष्ट्रियडाँडा सुर्खेत
कर्णाली प्रदेश, नेपाल
२०७३

पत्र संख्या :- 206 T 1065
चलानी नं. :- 858

मिति:- 2068 190123

विषय:- आयोजनाले आदिवासी-जतजातीलाई अप्ठेरो
नेपाल विद्युत प्राधिकरण तर्फबाट सम्बन्धमा ।
वितरण प्रणाली स्तरडन्तली तथा निष्कास आयोजना
द्वारा शक्ति उपभोक्ता, नेपाल ।

प्रस्तुत विषयमा यसैमत इन्फ्रान्स्ट्रक्चर इन्वेस्टमेन्ट बैङ्कको
 ऋण सहमोजमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक
 सेवा निदेशालय वितरण प्रणाली सुत्तरोन्नती तथा वितरण
 आमेजता प्रस्तावबद्ध रद्दी कार्यान्वयन गर्न लागिएको प्रत्यक्ष
 पिचले विद्युत वितरण एवं वितरण लाइन आमेजताले यस
 सुदृष्टत जिहला गुन्डिगेट नगरपालिका वडा नं. १ अन्तर्गत
 यस आमेजता प्राप्तपावडा आफ्नो जलजालीलाई कुनै
 प्रगाडो क्षयर नजन नभएर बिडालिब लय अन्तर्गत -
 गरिन्छ।

लाल बहादुर शास्त्री
पदा अध्यक्ष





"समृद्ध नगर, खुशी नगरवासी"
गुर्भाकोट नगरपालिका
न. वडा कार्यालय
मालारानी सुर्खेत
कर्णाली प्रदेश, नेपाल
२०७३

पत्र संख्या :- २०७८/०७९

चलानी नं. :- ६३३

मिति :- २०७८/१०/२४

विषय :- आदिवासी-जनजातिलाई असर गर्ने सम्बन्धमा

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरमुन्तर्गत तथा विस्तार आयोजना
दृष्टिकोणमा काठमाडौं, नेपाल

प्रस्तुत विषयमा नेपाल विद्युत प्राधिकरण वितरण तथा
ग्राहक सेवा निर्देशनालय वितरण प्रणाली स्तरमुन्तर्गत तथा
विस्तार आयोजना प्रस्तावक रही कार्यन्वयन गर्ने लागि छ
मालारानी पिल्ले विद्युत विस्तार एवं वितरण लाइन आयोजना
ले यस सुर्खेत जिल्ला गुर्भाकोट नगरपालिका वडा नं-२
अन्तर्गत यस आयोजना आसपासका आदिवासी जनजाति
लाई कुनै असर नगर्ने गरी सिफारिस साथ अनुरोध
गरिन्छ।

२०७८/१०/२४
मोड बाबुर वि.सि.
राम बज्र



कालिमाटी गाउँपालिका ४ न.वडा कार्यालय

घुरचौर सल्यान

कर्णाली प्रदेश नेपाल

प. सं २०७८।०७९

च. नं ४७०



मिति: २०७८।१०।२७

श्री नेपाल विद्युत प्राधिकरण

वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

दरबारमार्ग काठमान्डौ, नेपाल।

विषय : सिफारिस सम्बन्धमा

प्रस्तुत विषयमा यस कालिमाटी गाउँपालिका वडा नं ४ स्थित कालिमाटी गाउँपालिकाको नाममा दर्ता श्रेष्ठा भएको जग्गामा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंकको ऋण सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना प्रस्तावक रही कार्यान्वयन गर्न लागिएको मालारानि पिप्ले विद्युत विस्तार एव वितरण लाईन आयोजनाले यस सल्यान जिल्ला कालिमाटी गाउँपालिका वडा नं.०४ अन्तर्गत यस आयोजनाले आसपासका आदिवासी, जनजातिलाई कुनै प्रकारको नकारात्मक असर नपर्ने तथा उक्त सार्वजनिक क्षेत्रमा सबस्टेशन निर्माण गर्दा कुनै समस्या नहुने व्यहोरा सिफारीस साथ अनुरोध छ ।

बेल बहादुर चन्द

वडा अध्यक्ष





कालिमाटी गाउँपालिका ५ नं. वडा कार्यालय



पत्र संख्या:- ०६८/०७९

कालिमाटी, सल्यान

चलानी नं.: ३४५

कर्णाली प्रदेश, नेपाल

मिति: २०७८/१०/१७

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
नेपाल वितरण प्रणाली स्तरीयतरी तथा विस्तार आयोजना
स्वरूपमा, काठमाडौं ।
प्रस्तुत विषयमा विषय: सिफरिस् सम्वन्धमा
२०७८/१०/०७ गतेको पत्रानुसारको व्यहोरा अकाल भयो
सो सम्वन्धमा यस कालिमाटी गाउँपालिका वडा नं. ५ मा
रहेको आफ्नाको जनमाती छुल्ने सो आयोजना कार्यन्वयन
गर्दा कुनै पनि नेवारात्मक असर नपर्ने हुँदा तहाँ कार्यलयको
नियमानुसार सो कार्य गर्नुहुन सिफरिस् साथ अनुरोध छ ।

—प्राध—
चन्द्र बहादुर ज्ञानमगर
वडा अध्यक्ष
वडा अध्यक्ष

—प्राध—



बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको

वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environmental and Social

Management Plan) प्रतिवेदन तयारी सम्बन्धी

सार्वजनिक सूचना टाँस को मुचुल्का

कोशी प्रदेश, सुर्खेत जिल्ला, गुर्काडो गापा/नपा
 २. को. वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित 'बितरण प्रणाली स्तरउन्नति
 तथा विस्तार आयोजना' को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
 Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस सुर्खेत जिल्ला
 गुर्काडो गाउँ/नगर पालिका वार्ड नं. २, जैरीका मा
 आज २०७८/१०/२४ गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
 गरिदियो।



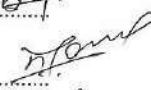


तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१.	मोति प्र. चामल्ले	गुर्काडो-२	स्थापा	९८२१०४४९३०	
२.	रवेमराज छोकोडे	"	स्थापा	९८६१०३४१००	
३.	राम वा. राणा मगा	"	बिज्ञा	९८६१३४३२९९	
४.	राम वा. डोँगी	"	बुध	९८६१८९१२२०	
५.	धन वा. मगा मगा	"	बुध	९८८९५२११८	
६.	गणेश लाल श्रेष्ठ	"	स्थापा	९८१८१०६५४८	

बितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना अन्तर्गतका उपआयोजनाहरुको
वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environmental and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धी
सार्वजनिक सूचना टाँस को मुचुल्का

.....कर्णाली..... प्रदेश,झुप्ला..... जिल्ला,कालिगारी..... गाँपा/नपा
.....४..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "बितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यस झुप्ला जिल्ला
कालिगारी गाउँ/नगर पालिका वार्ड नं ४, झुप्ला मा
आज २०७८/१०/२६... गते हामी तपसिलका व्यक्तिहरुको रोहवरमा टाँस गरिएको प्रमाणित गर्दै यो मुचुल्का
गरिविर्धौ ।

तपसिल

क्र.स.	नाम	ठेगाना	पेशा	सम्पर्क नम्बर	हस्ताक्षर
१	कोज ब. थापा	कालिगारी-४ झुप्ला	वडा सदस्य	९२०६२८०९९६	
२	लेपल राता प्रजा	"	कृषि	९२२३३३४४६५	
३	कोज ब. थापा	"	कृषि	९२९०८२३३८२	
४	कुनडी औली	कालिगारी-४ झुप्ला	कृषि	९६८८९२२३३५	
५	पुन ब. शर्मा	कालिगारी-४ झुप्ला	Drawing	९२९३३२६३८८	

Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES**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 - खुला खान्दा



Danger of open trench
खतरा - खुला ट्रेंच



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

INSTRUCTION SIGNS

Do Not Touch
छुन नपाउनुहोस्



Food and Drinks Prohibited
खाद्य र पेय नपाउनुहोस्



Slow Sign for Traffic Control
निलम्बो चालुहोस्



Directional Exit Sign
बाहिर जाने दिशा

SAFETY AND SAFETY INSTRUCTION SIGNS

Safety Gloves Required
सुरक्षी घुन्नाको आवश्यक



Safety Vests Required
सुरक्षी भेल्लको आवश्यक



Safety Glasses Required
सुरक्षी चशमा आवश्यक



Safety Shoes Required
सुरक्षी जूता आवश्यक



Annex 8: PHOTOGRAPHS

Tapping point (Malarani, Gurbhakot Municipality, Ward No. 2)



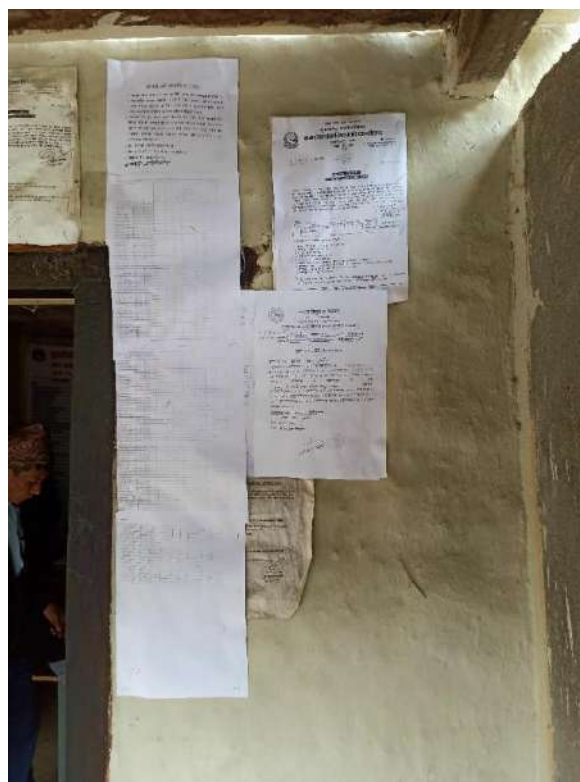
Proposed DL alignment at Kalimati Municipality, Ward No. 4



Substation Area (Meeting) at Kalimati RM, Ward No.4



**Proposed distribution line along the road at
Kalimati RM, Ward No. 4**



**Public notice pasted at Gurbhakot
Municipality, Ward No. 1**



**Proposed distribution line at Gurbhakot
Municipality, Ward No. 1**



**Proposed distribution line route at Asureni,
Kalimati RM, Ward No. 4**



Consultation Meeting at Malarani, Gurbhakot Municipality, Ward No. 2



Consultation Meeting at Kalche, Kalimati Rural Municipality, Ward No 5

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
BABIYACHAUR-BIJAURA DISTRIBUTION LINE SUBPROJECT

SUBSTATION (33/11 kV) AND DISTRIBUTION LINE (33 kV)

SURKHET DISTRICT, KARNALI PROVINCE

NEPAL ELECTRICITY AUTHORITY

**DISTRIBUTION AND CONSUMER
SERVICE DIRECTORATE**

**DISTRIBUTION SYSTEM UPGRADE AND
EXPANSION PROJECT (DSUEP)**

DURBARG MARG KATHMANDU NEPAL

CONSULTANT:

**NEA ENGINEERING COMPANY
LIMITED, TRADE TOWER**

THAPATHALI, KATHMANDU, NEPAL

JUNE 2022



TABLE OF CONTENT

LIST OF TABLES	II
LIST OF FIGURES	II
LIST OF ANNEXES	III
ABBREVIATIONS	IV
EXECUTIVE SUMMARY	VII
1. INTRODUCTION.....	1
1.1 PROJECT BACKGROUND.....	1
1.2 SCOPE OF STUDY	1
1.3 OBJECTIVE OF ESMP	1
1.4 LEGAL PROVISION FOR THE ESMP.....	2
1.5 METHODOLOGY FOR THE ESMP.....	2
1.6 CLASSIFICATION OF IMPACT AREA.....	3
2. DESCRIPTION OF THE SUBPROJECT.....	1
2.1 SUBPROJECT LOCATION AND ACCESSIBILITY.....	1
2.2 SUBPROJECT COMPONENTS	3
2.2.1 33 kV DISTRIBUTION LINE (DL).....	3
2.2.2 SUBSTATION	3
2.2.3 11 kV LINES AND LT LINES	4
2.3 MAJOR CONSTRUCTION ACTIVITIES IN THE SUBPROJECT	5
2.4 ENERGY TO BE USED	5
2.5 LAND REQUIRED.....	5
2.6 MATERIAL REQUIREMENT AND SOURCES	5
2.7 MAJOR EQUIPMENT AND POWER REQUIREMENTS	6
2.8 WORKFORCE REQUIREMENT	6
2.9 CONSTRUCTION AND IMPLEMENTATION SCHEDULE.....	7
3. DESCRIPTION OF THE ENVIRONMENT	8
3.1 PHYSICAL ENVIRONMENT.....	8
3.1.1 TOPOGRAPHY AND LAND USE	8
3.1.2 GEOLOGY	9
3.1.3 SEISMOLOGY	10
3.1.4 CLIMATE	10
3.1.5 AIR, NOISE, WATER QUALITY AND POLLUTING SOURCES.....	10
3.1.6 SOLID WASTE MANAGEMENT	12
3.2 BIOLOGICAL ENVIRONMENT	12
3.3 SOCIO-ECONOMIC ENVIRONMENT	13
4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES	15
4.1 ANTICIPATED BENEFICIAL IMPACTS	15

4.2	ANTICIPATED ADVERSE IMPACTS.....	16
5.	INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION.....	23
6.	INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM.....	27
7.	ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....	31
8.	CONCLUSION	40
	REFERENCES	41

LIST OF TABLES

Table 2-1:	Technical Description of the proposed Subproject	2
Table 2-2:	Approximate Quantity of Material for 33 kV line	6
Table 2-3:	Approximate Quantity of Material for 33/11 kV Substation	6
Table 2-4:	Human Resource Required for construction of 33 kV line and substation in a day of Construction.....	7
Table 2-5:	Construction Schedule of Project Implementation	7
Table 3-1:	Ambient Air and Noise Quality within the Proposed Subproject Site	11
Table 3-2:	Estimated Daily Solid Waste Generation from Campsite	12
Table 3-3:	The community forest along the proposed 33 kV distribution line.....	13
Table 3-3:	General Demographic Characteristic of Subproject Municipality	14
Table 4-1:	Detail of impacted forest area and trees loss	19
Table 5-1:	Summary of issues, comments and suggestions received in Consultations	25
Table 6-1:	Levels of Grievance Redress Mechanism Based on Time Bound	29
Table 7-1:	Environmental and Social Management Plan (ESMP)	32
Table 7-2:	Minimum Provisions for Environmental Monitoring	37
Table 7-3:	Mitigation Measures and Monitoring Activities Cost Estimates	39

LIST OF FIGURES

Figure 1-1:	Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Babiyachaur-Bijaura DL Subproject	5
Figure 2-1:	Location and Accessibility Map of Babiyachaur - Bijaura Subproject	1
Figure 3-1:	Location map and Land use details of the Subproject	8
Figure 3-2:	Tapping Point of DL at existing Babiyachaur Substation, Pachapuri Municipality Ward No.5,.....	9
Figure 3-3:	Babiyachaur - Bijaura Substation View.....	9
Figure 3-4:	Geological Map of proposed Subproject Area	9
Figure 3-5:	Seismicity map of Nepal from 1964 -2019	10
Figure 5-1:	Identified Stakeholder in the Subproject	23
Figure 5-2:	Consultation with the stakeholders and communities in the Subproject Area....	24
Figure 6-1:	Institutional Arrangement for Environmental and Social Management	27
Figure 6-2:	Workflow Diagram for GRM from NEA	30




LIST OF ANNEXES

Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION LETTER TO STAKEHOLDERS	ii
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT	iv
Annex 3: FACILITY AND COMPONENTS	viii
Annex 4: LEGISLATIVE PROVISIONS	xi
Annex 5: CONSULATATION MEETING MINUTES.....	xviii
Annex 6: DEED OF ENQUIRY (MUCHULKAS)	xxviii
Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES.....	xl
Annex 8: PHOTOGRAPHS	xlii




ABBREVIATIONS

ACSR	Aluminum Conductor Steel Reinforced
AIIB	Asian Infrastructure and Investment Bank
BES	Brief Environment Study
COVID-19	Corona Virus Disease
CDP	Community Development Program
CPA	Core Project Area
DCSD	Distribution and Consumer Services Directorate
DHM	Department of Hydrology and Meteorology
DL	Distribution Line
DSUEP	Distribution System Upgrade and Expansion Project
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPA	Environment Protection Act
EPR	Environment Protection Regulation
EMF	Electromagnetic Field
ESP	Environmental and Social Policy
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESP	Environmental and Social Policy
ESSs	Environmental and Social Standards
GHG	Green House Gas
GIS	Geographic Information System
GoN	Government of Nepal
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IP	Indigenous People
IUCN	International Union for Conservation of Nature
IUSGS	International Union of Geological Sciences
LPG	Liquid Petroleum Gas
MDB	Multilateral Development Bank
MoEWRI	Ministry of Energy, Water Resources and Irrigation
MHT	Main Himalayan Thrust




NEA	Nepal Electricity Authority
PPE	Personal protective equipment
RM	Rural Municipality
RoW	Right of Way
SPA	Surrounding Project Area
SPA	Surrounding Project Area
SWM	Solid Waste Management
US EPA	United States, Environment Protection Agency
USGS	United States Geological Survey
VC	vulnerable community



Unit

%	Percent/ Percentage
CO ₂	Carbon dioxide
dB	Decibel
g	Gram
ha	Hectare
HHs	Households
Kg	Kilogram
Km	Kilometer
kV	Kilovolt
kWh	Kilo Watt Hour
ltr	Liter
LV	Low Voltage
m	Meter
masl	Meter Above Sea Level
mm	Millimeter
MVA	Mega Volt Ampere
MW	Megawatt
NRs.	Nepalese Rupees
°C	Degree Centigrade
sq.m.	Square Meter



EXECUTIVE SUMMARY

Description of Project: Nepal Electricity Authority (NEA) under Ministry of Energy, Water Resources and Irrigation is responsible for the implementation of the Distribution System Upgrade and Expansion Project (DSUEP). DSUEP will enhance the distribution system to improve reliability and quality of electric supply in the, Karnali Province and Lumbini Province. The proposed **Babiyachaur - Bijaura Distribution Line Subproject** is located within Panchpuri Municipality, Ward No. 5, 8, and 9, and Chaukune Rural Municipality (RM) Ward No. 8, 7, 5, and 4 of Surkhet District in Karnali Province. The Subproject requires 0.67 ha of land (Government Land) for the construction of substation. The 33 kV distribution line of 22 km passes along the right of way of the road and private land with installation of poles at the edge of the farm land. The proposed subproject is financed with loan by Asian Infrastructure Investment Bank (AIIB).

Description of Environment

Physical Environment: The proposed Subproject (substation and distribution line) area lies in Hilly region of Surkhet District. The proposed substation lies at Latitude 28°51'13.47"N, Longitude 81°12'47.96"E and elevation of 305 masl. The climate of the Subproject area is sub-tropical. The average temperature at the project valley varied from 10°C to 33°C. The average annual rainfall is estimated at approximately 1500 mm per year. The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively. No water sources were recorded within distribution line (33 kV) and nearby the substation area.

Biological Environment: The proposed substation area land is Government and manage by Kullu Karnali Community Forest user group of Chaukune RM. The Subproject does not lie in any protected area, although it is located within the Chure region without any induced impact to the biological environment. The surrounding environment of the Subproject area contains sparse vegetation with species common to the area. The vegetation species recorded during the screening field visit are Sal (*Shorea robusta*), Valayo (*Toxicodendron wallichii*), Botdhayero (*Lagerstroemia parviflora*), Kyamuno (*Cleistocalyx operculatus*), Sajh (*Terminalia elliptica*), Jamun (*Syzygium cumini*), Chir pine (*Pinus roxburghii*), Rohini (*Mallotus philippensis*), Guava (*Psidium guajava*), and Mango (*Magnifera indica*). Similarly, wild animal recorded during the public consultation are Barking Deer (*Muntiacus muntjak*), Jackel (*Canis aureus*), Malayan Porcupine (*Hystrix brachyuran*), Wild Boar (*Sus scrofa*) and Common Leopard (*Panthera pardus*). Altogether nine species of birds were noted around the surrounding project area are House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), Tree Sparrow (*Passer montanus*), Jureli (*Hypsipetes leucocephalus*), Chyakhura (*Alectoris chukar*), White Throated Kingfisher (*Halcyon smyrnensis*), Rock Pigeon (*Columbia lebia*), Common Parrot (*Psittacula krameri*) and Red Junglefowl (*Gallus gallus*).

The proposed Babiyachaur-Bijaura 33 kV distribution line passes through the 12 different community forests as shown in Table 3-3. The total area of the forest area that will be occupied within RoW of the proposed 33 kV distribution line and substation area is 6.95 ha. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests and substation area are 2,064.

Socio-Economic Environment: The major ethnic compositions within the surrounding project area i.e., Ward No. 5, 8, and 9 of Panchpuri Municipality and Ward No. 8, 7, 5, and 4




of Chaukune Rural Municipality, Surkhet District are Dalit (28.9%), Chhetri (24.3%), Bhraman (21.9%) and Magar (19.9%) of total population of 20,009. The implementation of the Subproject will increase the electricity beneficiaries to 3,201 HHs, 30 commercial purposes and 10 industries. Birendranagar and Chinchu are the nearest business markets nearby the Subproject area. The transportation facilities in this local level seems to be satisfactory. Tap/piped water is the main source of drinking water in the surrounding Subproject area. People of the Subproject have access with communication facilities mainly through mobile telephone services. The nearest and easily accessible equipped health facility to the proposed Subproject is in Birendranagar located at 30-minute driving distance from substation site. The main occupation of people in the area is agro base with nearly 65% contribution followed by small trade and business/enterprises and services.

Potential Impacts and Mitigation Measures: Civil works will be involved with temporary impacts on air, noise and water quality and occupational and community health and safety; particularly related to working with electricity and in the context of the COVID-19 pandemic. Long-term impacts, although insubstantial, during operation and maintenance include occupational and community health and safety risks related to the presence of electricity infrastructure. The potential environmental issues and mitigation measures identified in screening and the preparation of ESMP report will be addressed during the compliance monitoring carried out by the safeguard team. No issues were identified in the land requirement procedure and pole erection activities. Construction of substation and erection of poles for distribution lines would not affect any private structures as the proposed substation land is unused government land, and local people have agreed & permitted to install poles at the edge of farm-lands without affecting any private structures along the distribution line. The implementation of the proposed Subproject needs 6.95 ha of forest area with estimated loss of 6,024 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. The compensatory plantation will be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019) in the ration of 1:10. The ESMP cost estimated for the Subproject is NRs 13,00,000.00 associated to mitigation measures and monitoring activities. NEA Project Implementation Unit has agreed on the estimated cost for the mitigation measures and monitoring activities.

Environmental and Social Management Plan: The ESMP serves as a guide to implement environmental and social mitigation measures and responsibility of the concerned agencies during the construction and operations of the Subprojects. Monitoring and inspection of the environmental and social activities will be carried out by Environment and Social Management Unit and Project Supervision Consultant of PIU. ESMP will be an integral part of the contractor's Bidding document which will be updated by the contractor during the sub-project construction period.

Institutional Arrangements: To ensure the full compliance to the ESMP, institutional arrangement for monitoring and reporting has been proposed. All the resources needed for the implementation of ESMP for the construction and operation phase will be provided by the PIU. Project Supervision Consultant's with Environmental and Social Safeguard Specialist will be responsible for compliance monitoring activities during the construction phase. Environment and Social Management Unit of NEA will provide regular updates to the site offices regarding the implementation of ESMP. Contractor shall prepare



Health and Safety (EHS) plan approved by the PIU before field mobilization. Contractor should mobilize a safety officer at each work site during the construction period.

Public consultation: Public consultations have been conducted in the Subproject area. People in the Subproject area noted that electricity service is poor with frequent interruptions. People have suggested to install poles at the edge of farm-lands, and project components should not affect any house and structures along the line. The impacts on the crops while stringing of lines should be minimized. Prospective electricity consumers and people to be affected are supportive and have recommended for quick implementation of the project.

Grievance Redress Mechanism (GRM): A three-tier 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 issues at Subproject level. In each Subproject, two levels i.e., Tier-I and Tier-II of Grievance Redress Mechanism have been established. During the ESMP study period, NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the Subproject level.

Conclusion: The environmental impacts envisaged from the implementation of proposed Subproject are site specific, short term, temporary and reversible in nature. The Subproject will provide significant benefits to people and economy by providing the reliable and improve electricity supply. The implementation of the proposed Subproject needs 6.95 ha of forest area with estimated loss of 6,024 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. This ESMP is considered sufficient to mitigate the environmental and social issues identified for the Subproject and will be updated during the Subproject construction stage.



1. INTRODUCTION

1.1 Project Background

The proposed Distribution System Upgrade and Expansion Project (DSUEP) will enhance the distribution system to improve reliability and quality of electric supply in the Karnali Province. The project aims improvement in voltage level and reduction in power loss which in turn will improve Nepal Electricity Authority's (NEA) financial health, improve electricity supply reliability, and reduce dependence on petroleum-fueled accessories. Government of Nepal (GoN) has envisaged DSUEP to extend the reach of 33 kV and 11 kV distribution lines "to achieve affordable electricity fulfilling the demands at the local levels for all the households by 2022". Asian Infrastructure Investment Bank (AIIB) is financing a loan to upgrade existing and build new distribution systems in Lumbini Province and Karnali Province of Nepal. This ESMP is prepared for Babiyachaur-Bijaura distribution line Subproject of DSUEP.

This Subproject has three major components:

Component 1: construction, extension and augmentation of distribution lines and substations, especially 33 kV lines and 33/11 kV substations.

Component 2: construction of 11 kV lines, distribution transformers, and Low Voltage (LV) lines for new power distribution facilities.

Component 3: Capacity Building, Project Implementation Support, and Technical Assistance.

1.2 Scope of Study

This study ensures that the project meets the requirements of Nepal Government's Environmental Regulations and Environmental and Social Policy (ESP) & Environmental and Social Standards (ESSs) of AIIB. This report provides the measures for environmental and social management, monitoring and reporting of the project.

1.3 Objective of ESMP

The Environment and Social Management Plan aims to sets out the measures required to maximize the benefits of the project; and to avoid, minimize and mitigate any adverse environmental and social impacts caused by the project. The objectives of this ESMP are to:

- Describe the existing natural and socio-economical resources in and surrounding Subproject area;
- Based on existing environmental conditions, identify and assess potential significant impacts during project preconstruction, construction, and operation & maintenance stages;
- Identify and recommend mitigation measures to minimize any potential impacts caused by Subproject activities;
- Identify the local concerns on environmental and social issues and address them;
- Develop environmental management plan and monitoring plan including cost.

- Recommend institutional arrangement, including capacity building to ensure proper environmental and social safeguards implementation during construction and operation phases.

1.4 Legal Provision for the ESMP

According to the E & S safeguard Screening report, safeguard risks/issues identified for this Subproject fall under Category III (ESMF), which triggers the preparation of ESMP to execute the Subproject. This Subproject has minimal or no adverse environmental and social impact; does not physically displace any family; and does not result in economic displacement of more than 10% of productive assets for any family.

Pertaining to Rule 3 (1), Environment Protection Act (EPA), 2019 describes completing Environmental Studies as per Schedule 1 or 2 or 3 under Environment Protection Regulation (EPR) 2020 (First Amendment in 2021/05/24 on Nepal Gazette), detailed environmental studies Brief Environmental Study (BES) or Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is required. For this Subproject, pertaining to Rule 3(1), EPA (2019) describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water resources and irrigation sector (1) under EPR (2020) state “use of forest area for the electricity distribution line project up to 66 KV”. The proposed Subproject will intercept the Kisan CF (Community Forest), Tingharay Kapasini CF, Salleri CF, Baghkhori CF, and Sital Takura CF land area for the purpose of 33 kV distribution line extension and substation construction. Thus, as per EPR (2020), a BES is mandatory for the proposed sub project.

1.5 Methodology for the ESMP

The methodology that was followed while conducting the ESMP study is as follows:

- i. Literature Review: Review of published literature were conducted, with priority given to publications of government institutions as well as international organizations, to collect information on project surroundings. The Municipality/Rural Municipality and its Ward profiles are used to collect the socio-economic baseline information of the Subproject. National policies, legislative frameworks and Multilateral Development Bank (MDB) policies were reviewed to understand the priorities and any legally binding requirements were studied that should be complied with while implementing the project. The Legislative provisions relevant to the project are listed in **Annex 4**.
- ii. Field Survey and Investigation: Field surveys were conducted to generate information on the physical, biological and socio-economic environment of the project area. The physical environment; air quality data was monitored by Temtop Airing-1000 PM Detector, noise level by UNI-T UT 353 Mini Sound Meter (dB) and water quality by EXTECH ExStik II DO600. Field observation of the core project area and the surrounding vicinity (500m) of project footprint area was applicable for the biological assessment. A circular quadrat of radius 12.5m was used for the estimation of the number of trees presence within the RoW of the proposed distribution line. A total of 11 different sample quadrat were used and trees numbers were estimated by extrapolation within RoW. The total enumeration of the trees to be cleared for the implementation of the Subproject will be estimated during the BES.




clearance approval is made once the Brief Environment Study (BES) is approved from the Ministry of Energy, Water Resources and Irrigation. Priority was given to the consultation with local communities at substation sites and the settlement areas that benefit from the project.

- iii. **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 CPA and SPS data and presentation of the maps in the ESMP report. The project foot print Ward and Municipality/Rural municipality are considered for the collection of socio-economic and baseline information.
- iv. **Impact Evaluation:** Significance of impacts are evaluated on the basis of reversibility, nature, magnitude, extent and duration of the impact. Identification of magnitude, extent and duration is as provided in the National EIA Guidelines, 1993 of Nepal. While evaluating the impacts and prescribing mitigation, maximum efforts were made to get expert opinion and input from the DSUEP's technical and safeguard consultant team.
- v. **Public Consultation:** As per the Government of Nepal EPA and the AIB Environmental and Social Policy (ESP), pre-notifications with subject of consultation, venue, and time were given at Subproject foot-print area, local level and affected Ward office in presence of concerned local stakeholders. Consultations were conducted in the Subproject area, at substations and the distribution line system settlement areas with local stakeholders.
- vi. **Report Format:** The ESMP report is prepared as per the Environmental and Social Policy (ESP) of the AIB, which contains an executive summary, a main report, and annexes as appropriate, including one on the nature and findings of consultations undertaken. All the comments and suggestions from the field consultation are mentioned in the ESMP report.

1.6 Classification of Impact Area

The National EIA Guidelines (GoN, 2050) has mentioned on 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.

Core Project Area (CPA) refers to the temporary and permanent area for the proposed project construction and associated activities. It is the area where direct impacts can be seen. For **Babiyachaur-Bijaura Distribution Line Subproject**, proposed substation area with 0.67 ha and the 33 kV distribution line with 22 km length is considered as CPA. The Subproject components are located within the Ward No. 5, 8 and 9 of Panchpuri Municipality and Ward No. 8, 7, 5, and 4 of Chaulkune RM of Surkhet district. The major settlements in the Subproject area are Majhigau, Bidhapur, Bijaura, Mayatal, Bishal Bazar and Dhamidada. The distribution line stringing route passes and along the right of way of the road alignment (0+000 to 0+400, 3+600 to 4+830, 5+000 to 5+250, 13+600 to 14+200), along the cultivable land (1+700 to 3+100), along the barren land (0+400 to 0+700), and along the forest area (0+700 to 1+530,

1+600 to 2+800, 3+200 to 5+300, 5+400 to 6+000, 6+350 to 6+750, 8+700 to 8+850, 13+500 to 14+500, 14+650 to 17+000, 17+950 to 19+000, 20+300 to 20+700).

Surrounding Project Area (SPA) is the immediate vicinity of the footprint location of the proposed Subproject site. SPA is the moderate and indirect impact area. For this Subproject the 33 kV distribution line will be located within the Ward No. 5, 8 and 9 of Panchpuri Municipality and Ward No. 8, 7, 5, and 4 of Chaukune RM of Surkhet district and along with these Wards, the adjoining Wards; Ward No. 6 of Panchpuri Municipality of Surkhet district is considered as SPA. The impact area showing the CPA and SPA area is presented in the google map **Figure 1-1**.



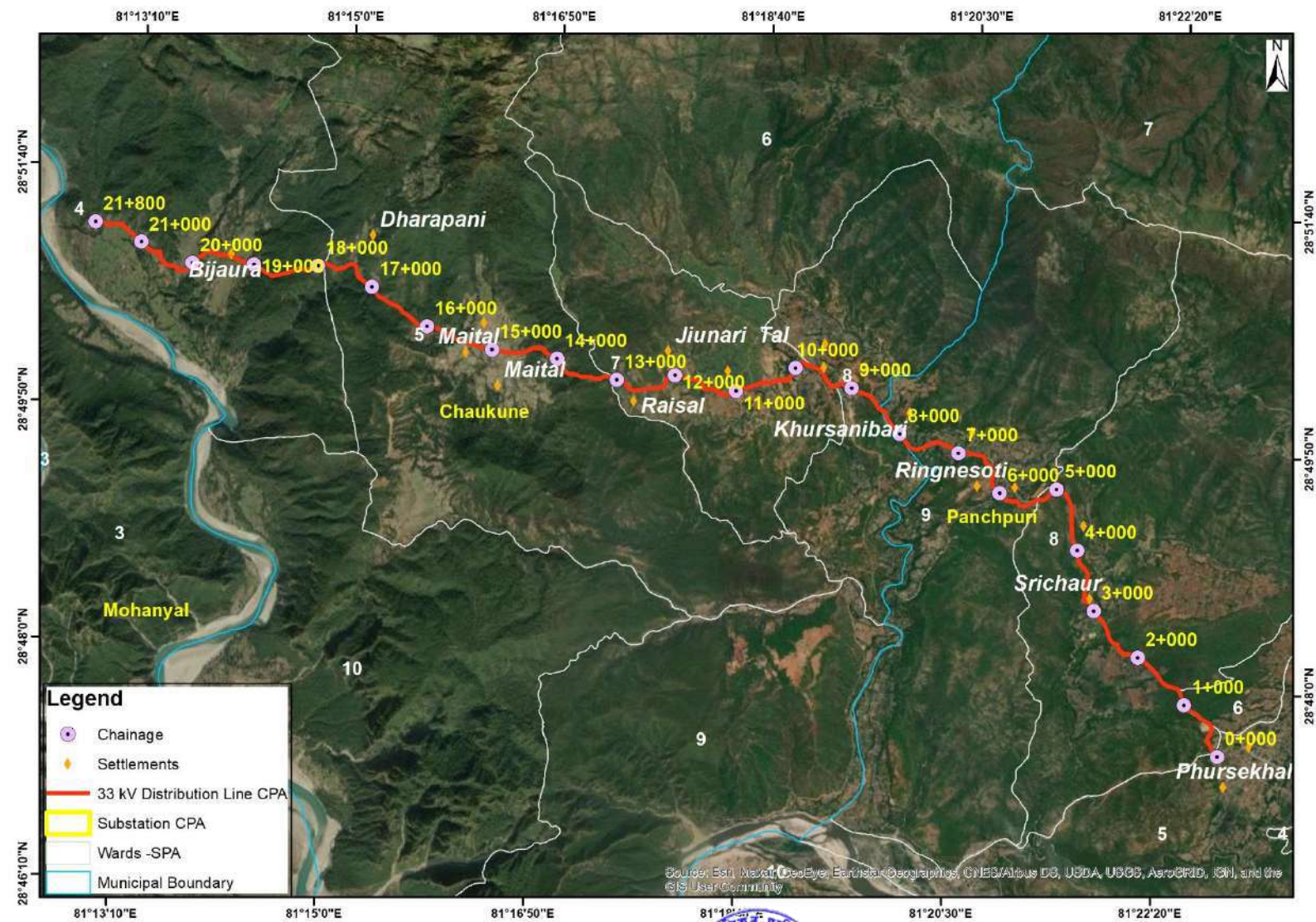


Figure 1-1: Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Babiyachaur-Bijaura DL Subproject

2. DESCRIPTION OF THE SUBPROJECT

2.1 Subproject Location and Accessibility

The proposed **Babiyachaur - Bijaura Distribution Line Subproject** is located within Panchpuri Municipality, Ward No. 5, 8, and 9, and Chaukune Rural Municipality Ward No. 8, 7, 5, and 4 of Surkhet District in Karnali Province. The tapping point of Subproject lies in Babiyachaur Substation, Pachapuri Municipality-5, Surkhet which is nearby the Baddichour-Gutu Road Section. The proposed distribution line (33 kV) is of 22 km length and runs by the RoW of access road. There is access to road transport within the proposed Subproject Ward area. The Subproject location and the accessibility are presented in Error! Reference source not found.. The main features of the Subproject are presented in **Table 2-1**.

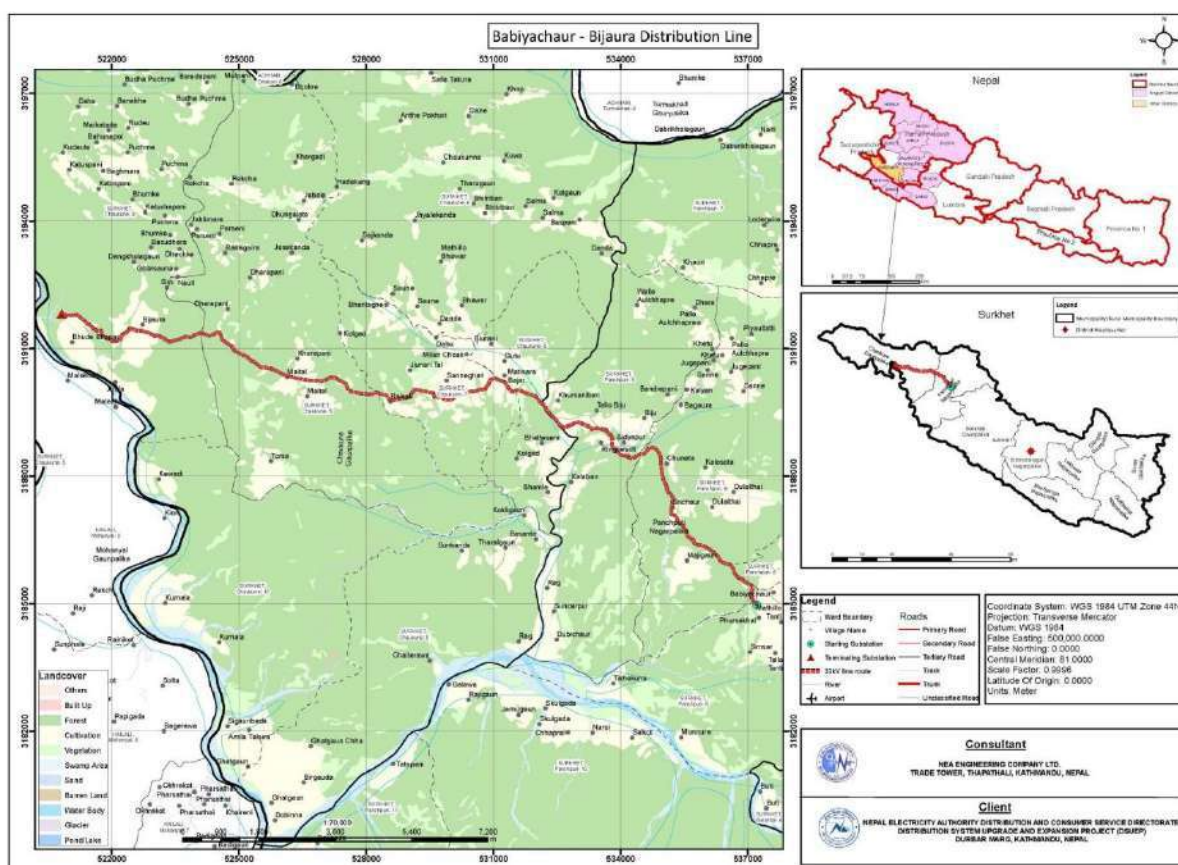


Figure 2-1: Location and Accessibility Map of Babiyachaur - Bijaura Subproject¹

¹ Source: Department of Survey, 1995 and Field Study 2022

Table 2-1: Technical Description of the proposed Subproject

Description	Features
Proponent	Nepal Electricity Authority
Project	Distribution System Upgrade and Expansion Project (DSUEP)
Subproject	Babiyachaur - Bijaura Distribution Line Project
Funding Agency	AIIB
Project Location	Panchpuri Municipality, Ward No. 5, 8, and 9, and Chaukune Rural Municipality Ward No. 8, 7, 5, and 4 of Surkhet District in Karnali Province
Distribution Line	
33kV Line Starting Point	Tapped from Existing Babiyachaur Substation, Pachapuri-5, Surkhet Co-ordinate: Lat 28°47'30.42"N and Long 81°22'52.84"E
33kV Line End Point	Budhebapar Substation (Proposed) at Chaukune-4, Budhebapar, Surkhet Co-ordinate: Lat 28°51'13.47"N, Long 81°12'47.96"E
Land type	Government/Private
System Voltage	33 kV
Max, Min System Voltage	36, 30 kV
Climatic Condition	Wind Speed: As per IS 802-1-1 Maximum Ambient Temperature: 33 °C Altitude (Min, Max): 305, 470 masl
Length of Line/ No. of Pole	22 km/550Poles
Right of way	6 m
Number of Circuit	1
Conductor	ACSR Dog
Line Capacity/Thermal Limit (approx.)	13.4 MW at 0.9 power factor
Type	Steel Tubular Pole with 11m/13m Height
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	Budhebapar Substation (Proposed) at Chaukune-4, Budhebapar, Surkhet Co-ordinate: Lat 28°51'13.47"N, Long 81°12'47.96"E Elevation:305 masl
Land type	Government
Voltage Level	33/11 kV
Substation Capacity	8 MVA
Number and Capacity of Transformer	1 no., 6/8 MVA
Type of Transformer	3 Phase, ONAN, Mineral Oil
Type of Substation	AIS (33kV) and Indoor (11kV)
Number of 33kV Line Bays	1
Number of 33kV Transformer Bays	1
Number of 11kV Feeders	4
Substation Area	0.67 ha




2.2 Subproject Components

The major components of the Subproject are the 33/11 kV substation and 33 kV distribution line (DL). The 33 kV DL is tapped from an existing 33 kV network line and acts as a source feeding to the proposed 33/11 kV substation. 11 kV distribution feeders emerge from the substation, eventually supplying the electricity to the consumers. The structures of the Subprojects are briefly described below.

2.2.1 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 strung 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. Length of 33 kV distribution line is 22 km and the total number of steel tubular poles to be erected are estimated as 550.

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 poles 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.

2.2.2 Substation

The proposed substation 33/11 kV is of capacity 6/8 MVA. The substation plays the role of lowering the 33 kV voltage level to 11 kV, which will then be strung as distribution feeder to supply the consumers. The major component of the substation is power transformer, which is supported by the switchgear components and Civil Structures. The facility and components sample pictures are shown in **Annex 3**.

Transformers: Transformer is the major component of the distribution substation. It transforms power from higher voltage to lower voltage for distribution purpose. 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 6/8 MVA ONAF type.

Electrical Switchgear: Electrical Equipment comprising of Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers, etc. installed in the substation are called Electric Switchgear. They facilitate the objective of power conversion.

Civil Structures: A control building is essential for the operation of the substation. It houses the operating station, along with battery systems. Guard House and Staff Quarter are other essential buildings for smooth operation of the substation.

Switchyard, Boundary, Roads, Drainage and Essentials: The outdoor civil structure in the proposed substation includes the 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 component wise 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.

2.2.3 11 kV Lines and LT Lines

11 kV lines and LT lines take the access of electricity to the consumer households. It is why the construction of those lines are always encouraged by the local people. The line route, thus the installation of poles and lines, are envisaged to go through the edge of local roads. If any line route pass through any private lands, permission from the corresponding land owner will be taken before starting the construction of those lines.

The detailed line route survey for 11 kV and LT lines have not been done yet. The scope of detailed survey is in the scope of the construction Contractor. The construction Contractor will conduct Pre-Construction Survey (PCS) to finalize the line route of 11 kV lines and LT lines for the construction. PCS will prepare the detailed line route of those lines and submit to PIU for approval. After the detailed line route is submitted by the Contractor and approved by PIU, E&S team of Project Supervision Consultant (PSC) will conduct an E&S study and submit the findings that

- Do the lines pose any adverse Environmental or Social issues?
- If there are any Environmental or Social issue, how can they be resolved? If the lines do not pose any adverse Environmental or Social issue, the lines will be cleared by PIU after seeking concurrence from AIIB.
- If the solution measures are not implementable in the field, PCS will suggest for any other way to divert or reroute the lines? If yes, PCS will propose alternative line route. The lines will be cleared by PIU after seeking concurrence from AIIB, given that the lines do not pose any adverse Environmental or Social issue.



2.3 Major Construction Activities in the Subproject

Activities in the Subproject area can be sub-divided into three categories viz, Pre-Construction Phase, Construction Phase and Operation Phase. For the proposed Subproject, trees and bushes in the Right of Way of 33 kV lines and substation area have to be cleared for the construction work. The proposed Babiyachaur-Bijaura Line Subproject alignment and substation area intercept forest area of 6.95 ha. The estimated loss of trees species in the Right of Way of 33 kV lines and substation area are 2,064.

- I. **Preconstruction phase:** The activities to be carried out before the construction phase are:
 - Demarcation of land area for the proposed substation
 - Receive public opinion
 - Make clearance of the substation land area permanently
 - Distribution line route selection
 - Approval to cut down trees from the concerned government authorities
- II. **Construction phase:** The activities to be carried out during the construction phase are:
 - Assign the land area for temporary storage of construction materials
 - Transportation of construction materials
 - Leveling of land area for the proposed substation
 - Construction of substation structures
 - 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 and 33 kV distribution line route

2.4 Energy to be used

During the construction period diesel fuel will be used to power construction equipment and transport vehicles, which emits air pollutants and greenhouse gases in insignificant quantity. Use of firewood shall be restricted in the labor camp, whereas the workers shall be provided LPG for cooking.

2.5 Land Required

The **Babiyachaur - Bijaura Subproject** will require about 0.67 ha land for the building substation. The land is government land of Kullu Karnali Community Forest User Group at Budhebapar and will be managed by NEA to construct the substation in the designated area. The 33 kV distribution line is 22 km length of which 2 km pass from private farm lands and 670 m pass by RoW of the road. Poles shall be installed at the edge of farmland, which will not affect the usability and valuation of the lands

2.6 Material Requirement and Sources

A 33/11 kV substation, 33 kV, 11 kV and low-tension distribution lines will be constructed for this Subproject. Minimal excavation at the pole locations will be done to erect steel tubular poles of 11 m and 13 m. The depth of burial for 11 m (approximately 250 cm) and 13 m




(approximately 343 kg) poles are 1.8 m and 2.17 m respectively. The construction works for substation will not produce significant amount of spoils and thus it will not require spoil-dumping site. Similarly, excavation works carried out for digging pit holes for poles produces insignificant spoils which does not require management of earthworks.

Civil construction works will involve excavation for foundation of substation, steel reinforcement, cement, coarse aggregates and fine aggregates (sand). Materials will be procured from legally operating markets. The design team has provided the following estimate of construction materials required for 33 kV distribution line and the substation.

Table 2-2: Approximate Quantity of Material for 33 kV line

SN	Particular	Unit	Requirement
1	Amount of Steel	Ton/Km	5800
2	M15 concrete for Pole base	Cum/Km	12.5

Source: Design Report, DSUEP

Table 2-3: Approximate Quantity of Material for 33/11 kV Substation

SN	Particular	Unit	Support Structures, Road, Drainage	Control Building	Staff Quarter	Office Building	Guard House
1	M15 Concrete	cum	100	25	224	120	5
2	M25 Concrete	Cum	300	170	125	75	27
3	Reinforcement bar	Ton	7	27	20	12	4

Source: Design Report, DSUEP

2.7 Major Equipment and Power Requirements

Major equipments used during the Project implementation are:

One Excavator, One Roller, One Drilling Machine, One Crane, one Grid Supply of 100 kVA Distribution Transformer, and two 50 kVA capacity diesel generators.

2.8 Workforce Requirement

Local people in the surrounding Subproject area will be encouraged for the employment. Based on the skills (skilled, semi-skilled and unskilled labor), local people will be used for the construction and the transportation of the material as far as possible. The number of human resources required depends upon the complexity of the project as well as the geographical location of the project. In case, of construction of 33 kV lines and 33/11 kV substations, the workforce typically varies from terai to hilly to mountain region. Expected number of manpower employed is enlisted hereunder.

Table 2-4: Human Resource Required for construction of 33 kV line and substation in a day of Construction

SN	Human Resource/Day	For Distribution Line	For Substation
1	Engineer (No.)	1	2
2	Supervisor (No.)	2	4
3	Foreman (No.)	3	5
4	Skilled (Lineman/Electrician) (No.)	5	7
5	Helper (No.)	3	12
6	Labour (No.)	15	20

Source: Design Report, DSUEP

2.9 Construction and Implementation Schedule

Implementation of the proposed Subproject comprises construction of a new 33/11 kV substation, 33 kV lines, 11 kV lines, low tension lines, and installation of distribution transformers. It includes construction and installation of components as mentioned in subsection 2.2. The estimated completion period is 24 Months.

Table 2-5: Construction Schedule of Project Implementation

SN	Activities/ Months	Months (After the completion of Detailed Survey Study)					
		1-3	4-6	7-10	11-15	16-20	20-24
1.	Invitation for tender, evaluation, and award						
2.	Implementation of Environmental and Social Safeguards						
3.	Erection of Poles						
4.	Stringing of conductor						
5.	Construction of substation						
6.	Charging and Testing						

Source: Design Report, DSUEP

3. DESCRIPTION OF THE ENVIRONMENT

3.1 Physical Environment

3.1.1 Topography and Land Use

The Subproject area lies in Ward No. 5, 8, and 9 of Panchpuri Municipality and Ward No. 8, 7, 5, and 4 of Chaukune Rural Municipality, Surkhet District in Karnali Province. The Subproject components are located within the Chure Range of Nepal. The tapping point is situated at Latitude 28°47'30.42"N and Longitude 81°22'52.84"E with an elevation of 355 masl (**Figure 3-1**). The proposed distribution line (33 kV) of 22 km passes along the RoW of access road, private farm lands and forest.



Figure 3-1: Location map and Land use details of the Subproject²

The proposed substation lies at Latitude 28°51'13.47"N, Longitude 81°12'47.96"E and elevation of 305 masl (**Figure 3-3**). The site lies in depressed flat land. It is barren land. The proposed substation boundary lies within 0.67 area. None of the private and public entities will be affected due to the implementation of the proposed Subproject, as it will be installed within the RoW of existing road, barren land and the edges of the cultivated land. The land use map details with the components of the Subprojects are presented in **Annex 2**.

² Source: Topographic Map, Department of Survey, 1995 and Field Study 2022



Figure 3-2: Tapping Point of DL at existing Babiyachaur Substation, Pachapuri Municipality Ward No.5,



Figure 3-3: Babiyachaur - Bijaura Substation View

3.1.2 Geology

The proposed distribution line runs from the tap point through the road portion, agriculture land of silty clay, and the geological formation is Siwalik Group. The distribution line runs from the tap point through the road portion, community forest and newly cut road. The surrounding Siwalik mountains are rocky and is made up of calcite and quartzite Group. Alluvial/loam, soft soil and calcareous beds together with colluvium deposit and thin soil layer mixed with gravel are predominant in this area. Exception on few moderate chances of erosion.

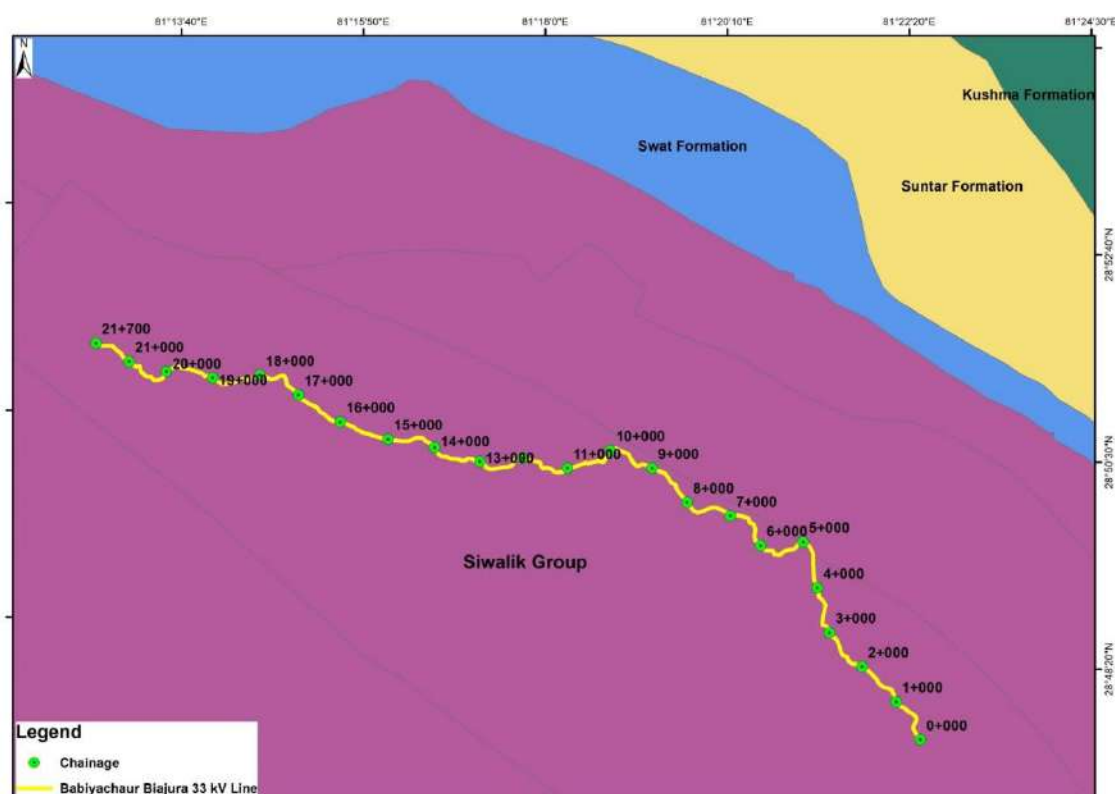


Figure 3-4: Geological Map of proposed Subproject Area³

³ Source: Department of Mines and Geology (DMG), 2020

3.1.3 Seismology

The entire country of Nepal is in a seismically active zone caused by subduction of Indian tectonic plate under the Tibetan Plate. According to National Seismological Center of Nepal several big earthquakes have been felt in Nepal, the earthquakes of magnitude 6 to 7 are mostly confined to the Main Himalayan Thrust (MHT) between the foot hills and the Higher Himalaya. Moreover, earthquake generation is confined to the crustal depth of 20 km. However, shallow earthquakes at depths down to 6 km are generated as a result of strike slip faults. Therefore, the substations and distribution lines of this Subproject will be designed and operated in accordance with seismic design requirements and best engineering practice. The seismic activity in Nepal between 1964 and 2019 as in IUSGS portal is shown in **Figure 3-5**.

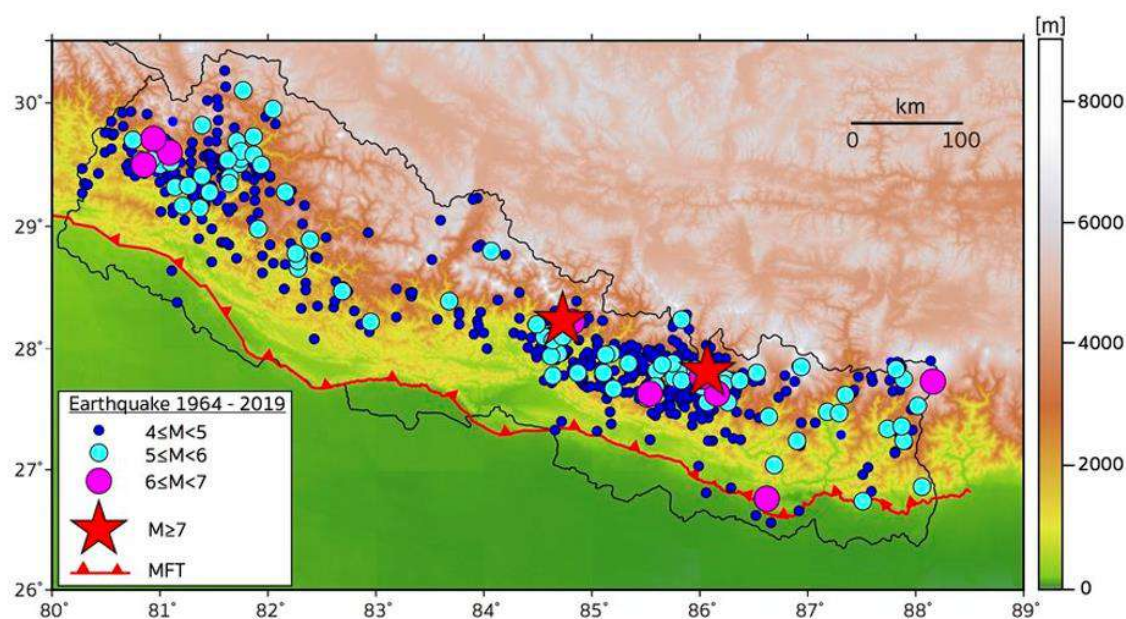


Figure 3-5: Seismicity map of Nepal from 1964 - 2019⁴

3.1.4 Climate

The climate of the Subproject area is sub-tropical. According to DHM 2021, the average temperature at the project valley varied from 10°C to 33°C. The relative humidity is in the range of 84% to 87 %. The average annual rainfall is estimated at approximately 1500 mm per year. Almost 80% of rainfall occurs during monsoon (June to September).

3.1.5 Air, Noise, Water Quality and Polluting Sources

The major air polluting sources recorded are only from vehicular emission and dust problem from plying of vehicles and high wind velocity. Noise polluting sources noted at the time of field study are similar to the air polluting sources. Unnecessary honking along the access road of site is the source of noise generation. Following table shows the real-time quality of air and noise during field study.

⁴ Source: USGS catalogue, 2019

Table 3-1: Ambient Air and Noise Quality within the Proposed Subproject Site

SN	Location/ Chainage	Air Quality ⁵ -Temptop Airing-1000 PM Detector ($\mu\text{g}/\text{m}^3$)					Noise Level -UNI-T UT 353 Mini Sound Meter (dB)		
		PM _{2.5}	Level	PM ₁₀	Level	Average Time of Measurement	Measured	Ref. ⁶	Area
1.	Tapping Point	14.1	100	15.3.	200	1-hour	40	50	Residential Area
2.	Substation	16.3		17.8			36		

Source: Field Visit, 2022

The air quality and noise level of the SPA was found within the range of National Ambient Air Quality Standard and Noise Quality Standard, respectively.

There is not any water body lie near bay extension substation point 33kV distribution line. Karnali river lies about 600 m to proposed substation area which is perennial. Distribution line crosses two streams of which one is seasonal and another is perennial starting from Mahabharat region, which are connected by natural water sources. The construction activities of the Subproject components will not have impact to the local stream.

⁵ National Indoor Air Quality Standard, 2009

⁶ National Ambient Sound Quality Standard, 2012

3.1.6 Solid Waste Management

Wastes were found littered in front of HHs and along the side of the access road near Subproject areas. People of the nearby area were found managing organic wastes within the household premises. Recyclable waste (large quantity) was sold to scrap collector occasionally. The estimated quantity of solid waste generation from the labor camp is shown in **Table 3-2**.

Table 3-2: Estimated Daily Solid Waste Generation from Campsite

SN	Description	Calculation	Remarks
1.	Total Labors within the Campsite	= 20 Labors	
2.	Total Waste Generation to be Expected	= 20 * 123.62 g/capita/day = 2472.4 g/capita/day = 2.4724 kg/day	
3.	Organic Waste Composition Responsible for Foul Smell, and Rodents	= 1.26 kg/day	Assuming 51% organic waste
Rest other waste is recyclable, and non-decomposable which could be stored for long period and have less impact on the environment if properly managed. The amount of organic waste is manageable within the Subproject site as organic waste per day will be expected to be only 1.26 kg/day.			

3.2 Biological Environment

The proposed substation area land is Government and manage by Kullu Karnali Community Forest (CF) user group of Chaukune Rural Municipality. The proposed Subproject distribution line passes from the edge of Majhigaaun Community Forest, Deurali CF, Majhigaaun CF, Bhitri kopila CF, Chulachuli CF, Dhamidanda CF, Mayatal CF, Kundali CF, Baaspaani CF, Sanu Danda CF, Kullu CF and National Forest. The proposed Subproject lies at an elevation below 1000 (305-470) masl in tropical bioclimatic zone. The proposed Subproject development site does not lie within any protected area and conservation area, although it is located within the Chure region without any induced impact to the biological environment. The vegetation species recorded during the screening field visit are Sal (*Shorea robusta*), Valayo (*Toxicodendron wallichii*), Botdhayero (*Lagerstroemia parviflora*), Kyamuno (*Cleistocalyx operculatus*), Sajh (*Terminalia elliptica*), Jamun (*Syzygium cumini*), Chir pine (*Pinus roxburghii*), Rohini (*Mallotus philippensis*), Guava (*Psidium guajava*), and Mango (*Magnifera indica*). Similarly, wild animal recorded during the public consultation are Barking Deer (*Muntiacus muntjak*), Jackel (*Canis aureus*), Malayan Porcupine (*Hystrix brachyuran*), Wild Boar (*Sus scrofa*) and Common Leopard (*Panthera pardus*).

Altogether nine species of birds were noted around the surrounding project area are House Crow (*Corvus splendis*), Spotted Dove (*Streptopelia chinensis*), Tree Sparrow (*Passer montanus*), Jureli (*Hypsipetes leucocephalus*), Chyakhura (*Alectoris chukar*), White Throated Kingfisher (*Halcyon smymensis*), Rock Pigeon (*Columbia lebia*), Common Parrot (*Psittacula krameri*) and Red Junglefowl (*Gallus gallus*). All these bird species are of least concern under IUCN categorizations.

The proposed Babiyachaur-Bijaura 33 kV distribution line passes through the 12 different community forests as shown in Table 3-3. A total of 6.95 ha of the forest area will be occupied by RoW of proposed 33 distribution line and substation area. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests and substation are 2064.

Table 3-3: The community forest along the proposed 33 kV distribution line

SN	Name of Forest	Chainage from	Chainage to	District	Municipality/ RM	Ward
1	Deurali CF	0+100	0+850	Surkhet	Panchapuri Municipality	8
2	Majhigaaun CF + Deurali CF	0+800	1+530	Surkhet	Panchapuri Municipality	8
3	Majhigaaun CF	1+600	2+400	Surkhet	Panchapuri Municipality	8
4	Bhitri Kopila CF	2+400	2+800	Surkhet	Panchapuri Municipality	8
5	Bhitri Kopila CF	3+200	4+600	Surkhet	Panchapuri Municipality	8
6	Bhitri Kopila CF + Majhigaaun CF	4+600	4+900	Surkhet	Panchapuri Municipality	8
7	Bhitri Kopila CF + School Forest	4+900	5+300	Surkhet	Panchapuri Municipality	9
8	Chulachuli CF	5+400	6+000	Surkhet	Panchapuri Municipality	9
9	National Forest	6+350	6+750	Surkhet	Panchapuri Municipality	9
10	National Forest	8+700	8+850	Surkhet	Chaukune RM	8
11	Dhamidanda CF + Sanu Danda CF	13+000	13+500	Surkhet	Chaukune RM	7
12	Mayatal CF	13+500	14+500	Surkhet	Chaukune RM	5
13	Mayatal CF+ Baaspaani CF	14+650	17+000	Surkhet	Chaukune RM	5
14	Kundali CF	17+950	19+000	Surkhet	Chaukune RM	4
15	Kullu Karnali CF	20+300	20+700	Surkhet	Chaukune RM	4
16	Kulu Karnali CF	20+700	21+800	Surkhet	Chaukune RM	4

3.3 Socio-economic Environment

Demography and Ethnic Compositions: The proposed Subproject area lies in Ward No. 5, 8, and 9 of Panchpuri Municipality and Ward No. 8, 7, 5, and 4 of Chaukune Rural Municipality, Surkhet District. Birendranagar and Chinchu are the nearest business market nearby the Subproject area. The general demographic information of the affected Municipality and RM is presented in The Core Project Area (CPA) of the Subproject will not affect any indigenous people.

Table 3-4. The major ethnic compositions within the surrounding project area i.e., Ward No. 5, 8, and 9 of Panchpuri Municipality and Ward No. 8, 7, 5, and 4 of Chaukune Rural Municipality are Dalit (28.9%), Chhetri (24.3%), Bhraman (21.9%), and Magar (19.9%) of total population of 20,009. The majority of people follow the Hindu religion and rest follow Buddhism and Christian religions. The Core Project Area (CPA) of the Subproject will not affect any indigenous people.



Table 3-4: General Demographic Characteristic of Subproject Municipality

S.N.	Municipality/RM	Ward No	HH	Population		
				Male	Female	Total
1	Panchapuri Municipality	5	559	1146	1315	2775
		8	668	1643	1731	3374
		9	642	1438	1602	3040
2	Chaukune RM	4	568	1451	1498	2949
		5	468	1193	1296	2489
		7	557	1499	1637	3136
		8	451	1108	1138	2246
Total			3913	9478	10217	20009

Source: (CBS, Rural Municipality-Municipality Profile of Surkhet District, 2018)

Road Accessibility: Subproject-Ward No. 5, 8, and 9 of Panchपुरi Municipality and Ward No. 8, 7, 5, and 4 of Chaukune RM are connected to Baddichour-Gutu Road Section. The transportation facilities in this locality are good. It is 30-45 minutes to reach Panchपुरi Municipality and Chaukune RM office from the Subproject area.

Electricity Beneficiaries: The implementation of the Subproject will increase the electricity beneficiaries to 3201 HHs, 30 commercial purposes and 10 industries. This will expand the electricity supply in the Subproject area with clean energy sources.

Water and Sanitation: Tap/piped water is the main source of drinking water in the surrounding Subproject area. Almost all the houses in the area have some sort of toilet facility.

Health Facility: The nearest and easily accessible health facility nearby the proposed Subproject area is Birendranagar located at 30-minute driving distance from substation site.

Communication: People of the Subproject have access to communication facilities mainly through mobile telephone services. In the Subproject area, people have access to local and national FM Radio networks and local newspaper facilities.

Occupation: Agriculture is the main occupation of people in the Subproject area with nearly 65% contribution; small trade and business/enterprises and services are other occupation of people in the Subproject area. Intermittent tripping and voltage drop of electricity was adversely affecting irrigation of crops and daily household chores activities.

COVID-19: The coronavirus (COVID-19) pandemic has been defined as global health crisis; the virus has spread in almost all parts of Nepal. Heedful of its vulnerabilities, the Government of Nepal had enforced a nationwide lockdown in 2020/2021 and activated its federal, provincial and local level mechanisms to respond to the crisis. In case of any sudden surge or outbreak of COVID-19, quarantine facilities and immediate health support should be provided to the workers and personnel involved in construction.

Other seasonal and minor diseases like dengue, fever, sneezing, cough, gastritis, diabetes and mental disorder have been reported within the Subproject area.




4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

The environmental and social impacts predicted during the construction of proposed Subproject are discussed in this chapter. National Environmental Impact Assessment Guidelines (GoN, 2050) has been referred for the predicting magnitude, extent, and duration of the project-induced environmental impacts in Subproject area. This chapter identifies the basic environmental and social impacts in the Subproject area that will arise during the construction. The detailed impacts of each domain of environmental and social safeguards have been addressed in this chapter.

4.1 Anticipated Beneficial Impacts

Construction Phase

4.1.1 Local Employment

Local employment will be created during the construction phase. As mentioned in section 2.8 Workforce Requirement, the typical construction team will have 21 skilled manpower and 58 unskilled manpower for the period 10-12 months for the erection of poles and stringing the distribution lines and 16-18 months of time for building the substation. Local people within the SPA and OPA will be encouraged for employment during construction phase. Both male and female will get equal opportunity during construction. Based on the skill levels (skilled, semi-skilled and unskilled labor) local people will be used for the construction as far as possible. *The magnitude of impact is considered moderate, the extent is local, and the duration is short-term.*

Operation Phase

4.1.2 Local Economy and Enhancement in Rural Electrification

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. Intermittent tripping and voltage drop problem nearby the settlement areas will be reduced. Upgrading and expansion of electricity distribution helps to way-out many electricity related issues and promotes the use of new types of home appliances, use of electric motors for irrigation, and establishment of small and large industries. *The magnitude of impact is considered high, the extent is local, and the duration is long-term.*

4.1.3 Greenhouse Gas Emission Balance

Net Green House Gas (GHG) emissions resulting from the Subproject area are expected to be low as the distribution lines will improve and expand electricity supply from clean energy sources. It will reduce the emission of GHG from the traditional source like Guitha (made from cow dung), firewood and timber along with commercial fuel Kerosene for cooking/lighting, heating and diesel for water pumping. *The magnitude of impact is high, the extent is local, and the duration is long term.*



4.2 Anticipated Adverse Impacts

A. Physical Environment

Construction Phase

4.2.1 Change in Land Use

The Subproject requires about 0.67 ha land for the substation. The proposed substation land area belongs to Kullu Karnali Community Forest, i.e., government land. The land managed by the Community Forest User Group will be converted to the substation area surrounded by proper boundary wall. Distribution Line passes through the RoW of the Baddichour-Gutu Road Section. The construction of the Subproject will bring change in land use permanently. Potential impacts caused by distribution lines will be limited to approximately 0.22 m of land for each pole, at the edge of roads and cultivated lands. *The impacts due to use of land will be moderate in magnitude, site specific and long term in duration.*

Mitigation Measures

- Steel Tubular Pole for distribution lines will be planted 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 planting the poles.
- Cropping calendar will be followed while planting poles and stringing of conductors so that standing crops will not be damaged.
- In case of loss of standing crops, compensation will be made to the respective land owner as per the prevailing market rate.

4.2.2 Air Quality

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 of short term. Transportation of the materials and movement of construction crew and equipment will have minor impact on air quality. *The impact on air quality will be minor in magnitude, site-specific in terms of extent, and of short duration.*

Mitigation Measures

- Contractors' vehicles and equipment should meet Nepali vehicle emissions standards.
- Dust emissions shall be controlled using 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.

4.2.3 Noise

Noise is inevitable during construction. As noted in section 3.1.5, noise is less around the substation area as the area is rural and settlement is sparse. Construction-related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites; construction related noise is not expected to exceed acceptable levels. *The impact on noise level will be minor in magnitude, site-specific in terms of extent, and of short duration.*



Mitigation Measures

- Contractors will be required to monitor noise during the construction.
- For substation site, boundary walls serve as noise barrier, and it should be constructed as early as possible.

4.2.4 Drainage and Water Quality

Substation sites of 0.67 ha. will result in slight alteration of drainage patterns, although the alterations in drainage will not be quantifiable. Interference with drainage patterns will be temporary during construction phase only. The impact on water quality during the construction period is expected to be insignificant. Water will be used primarily as a cement additive for construction of substation foundations and boundary walls, and to control dust. *The magnitude of impact is considered low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Storm water run-off from substation sites will be minimized and controlled with bunding temporary dikes (constructed boundary walls will also help contain run-off water).
- Proper management of ground drainage from camps as a preventive measure against breeding places of mosquitoes, and other pests.

4.2.5 Soil and Muck

As the proposed substation land's ground level is low, filling of soil is necessary. The required filling materials shall be purchased from nearby authorized crusher plant approved by local government. For distribution lines the excavation activity will be insignificant. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Soil required for filling shall be purchased from the nearby authorized crusher plant under local government.
- Soil shall be covered with tarpaulin while transporting it from earth-borrowing areas.
- Simultaneous water sprinkling and compaction of spoil shall be done using the roller.

4.2.6 Solid Wastes

The wastes generated during construction within the Subproject area are cement bags, iron bars, and other leftover construction materials, and waste generated by the labor camp. It might cause adverse impact if not properly managed. Organic wastes generated from labor camp may give foul smell, and attract rodents if not manage properly. Inorganic wastes generated during implementation shall be managed through source segregation. *The magnitude of impact is low, the extent is site-specific, and the duration is short-term.*

Mitigation Measures

- Source segregation of organic and inorganic wastes in different storage areas or facilities in the designated location.
- The organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered by thick layer of soil on daily basis.



- Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix shall be used as refills for ground leveling.
- Packing materials used for casing components should be recyclable.
- 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.

Operation Phase

4.2.7 Electric and Fire Hazard

Employees performing servicing or maintenance of substations may be exposed to electric shock, burns and injuries from the unexpected energization or release of stored energy in the equipment. *The magnitude of impact is considered moderate, the extent is site-specific, and the duration is long term.*

Mitigation Measures

For this, the following mitigation measures will be practiced:

- 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.

B. Biological Environment

The proposed Subproject avoids forest area and other sensitive biodiversity area. Hence, there will be no significant impact to biological environment because of construction of substation and distribution lines.

Construction Phase

4.2.8 Loss of Habitat

As the proposed substation area is a barren land, whereas the 33 kV distribution line passes through the edges of road alignments, cultivated lands and forest areas. The total area of the forest area that will be occupied within RoW of the proposed 33 kV distribution line and substation area is 6.95 ha. The estimated number of trees to be cleared from the Core Project Area of the distribution line alignment passes along different community forests and substation area are 2,064. The possible use of firewood should be restricted during the construction activities. *The magnitude of impact is moderate, the extent is site-specific, and the duration is long term.*

Table 4-1: Detail of impacted forest area and trees loss

Area (ha)			Name of species	No. of trees	
33kV line	Substation	Total		33kV line	Substation
6.28	0.67	6.95	<i>Shorea robusta</i>	1480	1
			<i>Terminalia elliptica</i>	215	-
			<i>Mallotus philippensis</i>	36	-
			<i>Pinus roxburghii</i>	27	-
			<i>Syzygium cumini</i>	18	-
			<i>Cleistocalyx operculatus</i>	90	-
			<i>Lagerstroemia parviflora</i>	72	-
			<i>Toxicodendron wallichii</i>	126	-
			Total	2063	1

Mitigation Measures

- Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019).
- Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years.
- Labors and staffs should be restricted to use firewood for cooking.
- Providing LPG based stoves in Labor camp.
- Labors and staff shall be made aware to avoid illegal activities in adjoining forest.

Operation Phase**4.2.9 Bird electrocution and collision**

The Subproject area is located in a rural setting and there is no presence of critical habitat of avian fauna. Electrocution is a risk to bird species that perch on power line infrastructures (substations and distribution lines). List of birds presented in section 3.2, may collide to distribution lines and substation. Minimizing bird collision and electrocution risk is therefore a win-win for biodiversity and the power sector. *The magnitude of impact is low, the extent is site-specific, and the duration is long term.*

Mitigation Measures

- Bird guards should be installed above the poles and white spirals in the conductors to improve visibility electrical structures.

C. Socio-Economic and Cultural Environment

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

Construction Phase

4.2.10 Land Requirement

The land required for the proposed substation area is 0.67 ha, is the government land, used by Kullu Karnali Community Forest User Group at Budhebapar that will be managed by NEA later. This has been confirmed officially through Ward Office, Chaukune RM. NEA is given the right to use the land to build and operate a substation. The construction activities of the Subproject will not involve any private land. So, there will be no land acquisition, and thus no resettlement impacts. For the construction of distribution lines, owners of private land along the route have assured and committed for necessary help and support during implementation. They have agreed on NEA's proposal that poles shall be installed on the edge of cultivated lands and appropriate compensation for the loss of crops shall be given (**Annex 5**). Compensation shall be made on the basis of crops types and quantity of loss equivalent to the market price. *The impacts will be low in magnitude, site specific, and long term in duration.*

Mitigation Measures

- Distribution pole of diameter 0.22 m should be installed on the edge of cultivated land making no loss of standing crops.
- If there is loss of crops, appropriate compensation shall be made.

4.2.11 Public Health

Construction activities will be of small scale, causing no significant adverse impact to existing quality of air, water and sound. Local people except the workers do not involve in construction activities. Considering COVID-19 pandemic as an example, workers will be advised to avoid unnecessary contact with local people. *The magnitude of impact is low, the extent is site-specific, and the duration is short term.*

Mitigation Measures

- Contractors shall implement health and safety plans.
- Awareness on HIV/AIDS and other sexually transmitted disease should be provided to the labors.
- Awareness on basic sanitation and waste management should be provided to the labors.

4.2.12 Occupational Hazards and Safety of Workers

Occupational health hazard and safety of workers is the major issue during the construction period. Working without adopting safety measures during excavation work, spoil management work, mechanical and electrical equipment handling activities, chemical handling, etc. during construction may call the risk of accident. Primary victims are the workers involved in the construction. *So, the envisaged direct impact is high in magnitude, site specific in extent, short term in duration.*

Mitigation Measures

- Contractor shall prepare the Environmental, Health and Safety plan and take approval from the Client (NEA/PIU). Contractor shall employ Safety officer 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 7**.
- NEA will be responsible to supervise the EHS performance of the construction Contractor, and worker's health and safety.

4.2.13 Child Labor, and Gender Issues

During the construction period, people employed on daily wages for excavation, transportation of construction materials, and other construction-related works should avoid the involvement children and should avoid gender discrimination. Gender discrimination may occur as the Contractor may not be sensitive towards gender equity. Contractors should equally pay men and women workers. Construction area should be gender friendly with required facilities. *The envisaged impact is high in magnitude, site-specific in extent, and short-term in duration.*

Mitigation Measures

The Subproject will ensure to:

- Provide equal wage to male and female for similar nature of work.
- Restrict use of child labor i.e., below 16 years of age (which is as per government and ILO guidelines).
- Provide female friendly construction environment with separate cabins and toilet for women in the camp.
- Prepare suitable work categorization for women.

4.2.14 Socially Undesirable Activities

The workers may use alcohol and other forms of intoxication, gamble and quarrel with locals, disrespect local culture and religion, and may promote socially undesirable activities in and around the project area. *So, the envisaged impact is low in magnitude, local in extent, and short-term in duration.*

Mitigation Measures.

- Restrict movement of workers out of camp after dinner time in the night.
- Prohibit the 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 public relation officer to keep close and regular consultation and coordination with local communities.
- Regular monitoring of workers' behavior and take appropriate measure on rule violators.




Operation Phase

4.2.1 Hazards and Safety

Occupational health hazard and safety of staffs is the major issues during the operation phase of the substation. The possible electric shock and fire hazard might cause injury or death to working staffs thus the protection measures should be taken all the time. *The envisaged direct impact is high in magnitude, site specific in extent, long term in duration.*

Mitigation Measures

- There will be the use of insulation, guarding, grounding, electrical protective devices, and 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 strung above the house.
- Security fences around the substation.
- Establishment of warning signs
- Shutdown shall be taken during work on DL route

4.2.2 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; so, there will be no impact outside of the substation boundaries.⁷ 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 empirical data demonstrating adverse health effects from exposure to typical EMF levels from power transmissions lines and equipment.

⁷ 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: $1/(10*10*10) = 0.1\%$.

5. INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

5.1 Methodology in Information Disclosure, Consultation and Participation

The following methodologies were followed for information disclosure, consultation and participation:

- i. Identification of the stakeholder is important to understand how the Subproject activities will engage with different institution/groups/individuals. The stakeholders are the groups that might be affected by the Subproject or might influence Subproject outcomes. The identified stakeholders are considered in three groups (**Figure 5-1**).

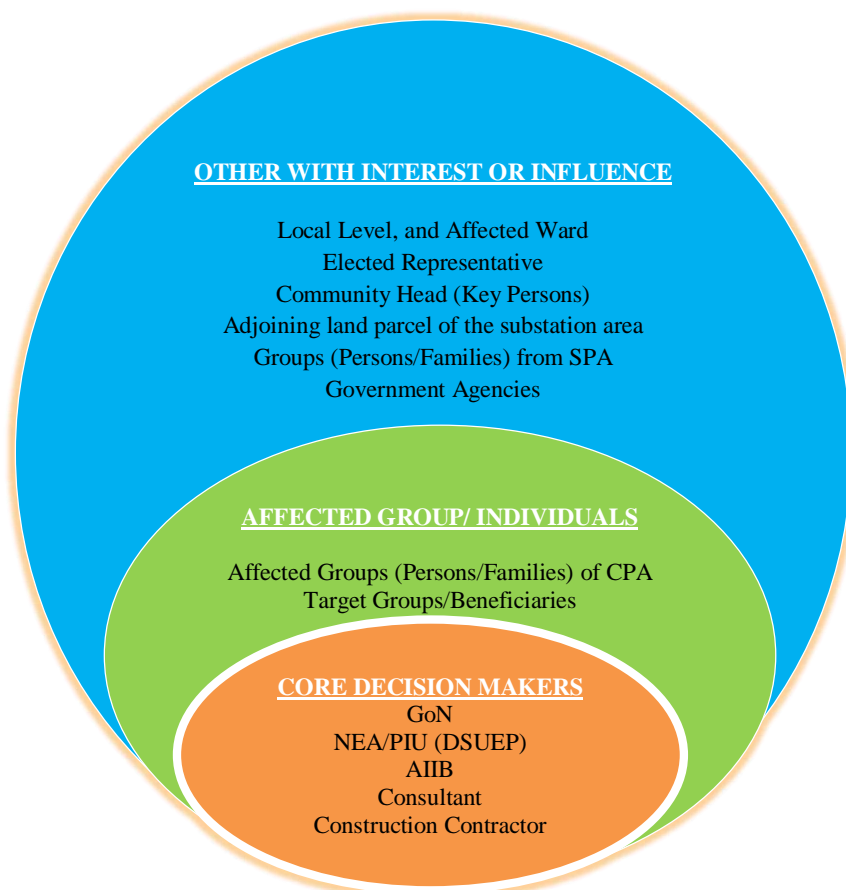


Figure 5-1: Identified Stakeholder in the Subproject⁸

- ii. The notice with subject of consultation, venue, and time was pasted at Subproject footprint area, local level and affected Ward office in presence of concerned local stakeholders (**Annex 1**). People were explained about the notices and their views were noted and agreed as Minute
- iii. Study team members visited all the local government offices within the Subproject influence area. Representatives from each local body were also consulted. All local governments were given request letters for their active support in project implementation. Municipalities were requested to provide written suggestions. The deed

⁸ Referenced Meaningful stakeholder engagement: a joint publication of the MFI working group on environmental and social standards / Reidar Kvam, PP-19, 2019.

of enquiry (Muchulkas) and Letter of Declaration from the stakeholders are presented in **Annex 6 and Error! Reference source not found..**

- iv. Local communities nearby substation area and along the distribution line routes were consulted, and were briefed about the Subproject activities and likely benefits with their suggestions (included in the Minutes).
- v. During the Subproject construction phase, booklets informing about the Subproject activities, likely impacts and mitigation measures together with the complaints handling mechanisms will be developed and distributed in the Subproject area.

5.2 Consultation and Information Disclosure

Consultation aims to encourage participation of stakeholders and communities of the Subproject area in identification of issues, comments and suggestions. The Subproject affected groups (persons/families) were given more emphasis during the field consultations. Public consultations were conducted at Panchapuri Municipality, Ward No. 05, Substation of 1st February, 2022, Panchapuri Municipality, Ward No. 08, Majhigau on 1st February, 2022, Panchapuri Municipality, Ward No. 09, Bidhapur on 3rd February, 2022, Chaukune RM, Ward No. 04, Bijaura on 4th February, 2022, Chaukune RM, Ward No. 05, Mayatal on 4th February, 2022, Chaukune RM, Ward No. 08, Bishal Bazar on 4th February, 2022, Chaukune RM, Ward No. 07, Dhamidada on 5th February, 2022 (**Figure 5-2**). The concerns expressed and issues/ raised during the consultation were documented as in the form of minutes (**Annex 5**).

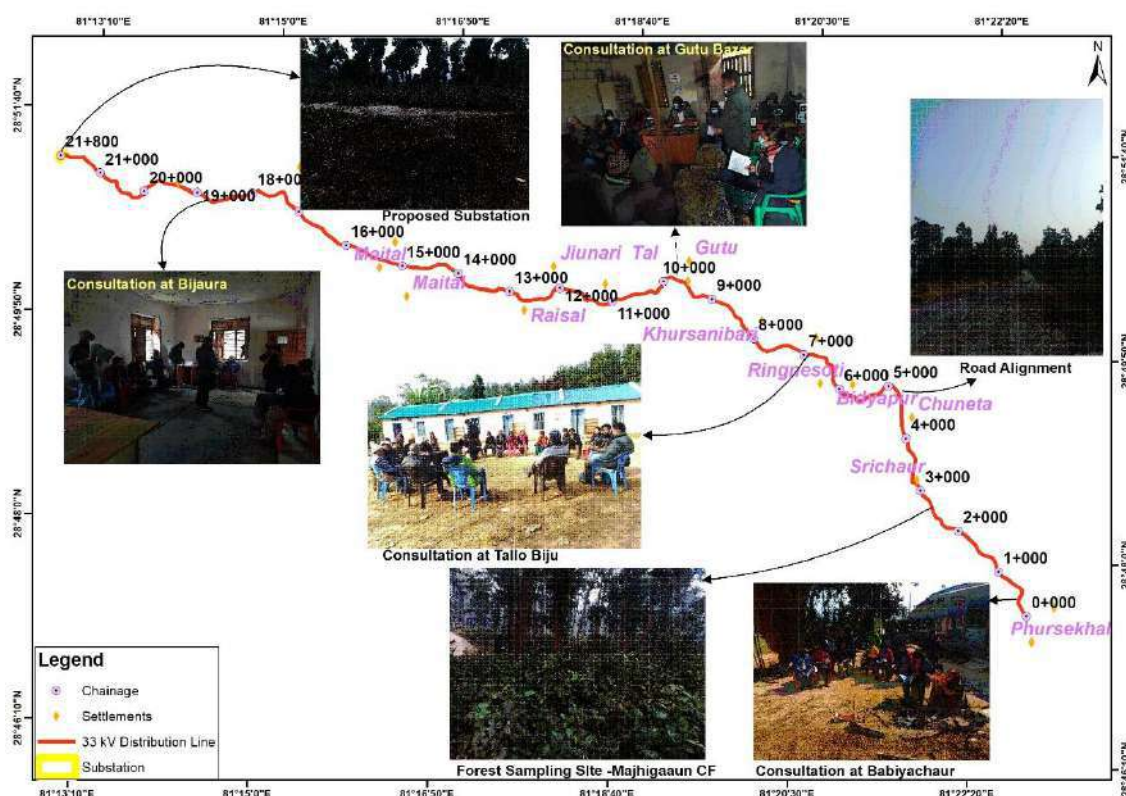


Figure 5-2: Consultation with the stakeholders and communities in the Subproject Area.⁹

⁹ Field Study, 2021. Used SW Map and GIS

Major benefits expected from the implementation of Subproject through the perspective of local people were identified from public interaction, and that included improvement in the rural electrification facilities ensuring the uninterrupted electricity in the households and better functioning of industries in the locality. The issues, comments and suggestions received in the consultation are presented in **Table 5-1**.

5.3 Comments and Suggestion Received

Table 5-1: Summary of issues, comments and suggestions received in Consultations

Source: Field Visit, 2022

Date	Location	Issues, comments and suggestions received	Participants
1 st February, 2022	Panchapuri Municipality, Ward No. 05, Substation	<ul style="list-style-type: none"> During the construction phase of the project, it is requested to provide the trainings related to wiring and plumbing to the local communities for the production of skilled manpower in the localities. The indigenous people currently are residents of the direct area of impact by the project. The project will not affect the cultural and religious beliefs, earnings, and other customary right of the indigenous people. This area currently is deprived of electrical services so we expect this project to launch soon which can help us eliminate our problems of no electricity. Local have shown full support for the implementation of proposed project. This area currently is deprived of electrical services so local expect this project to launch soon which can help us eliminate their problems of no electricity. Participants has informed that there is no impact in any cultural heritages, settlements, grassland, and crimination sites in the proposed project area 	15,2F-13M
1 st February, 2022	Panchapuri Municipality, Ward No. 08, Majhigau		24,2F-22M
3 rd February, 2022	Panchapuri Municipality, Ward No. 09, Bidhapur		25,1F-24M
4 th February, 2022	Chaukune RM, Ward No. 04, Bijaura		15,1F-14M
4 th February, 2022	Chaukune RM, Ward No. 05, Mayatal		18,5F-13M
4 th February, 2022	Chaukune RM, Ward No. 08, Bishal Bazar		20,3F-17M

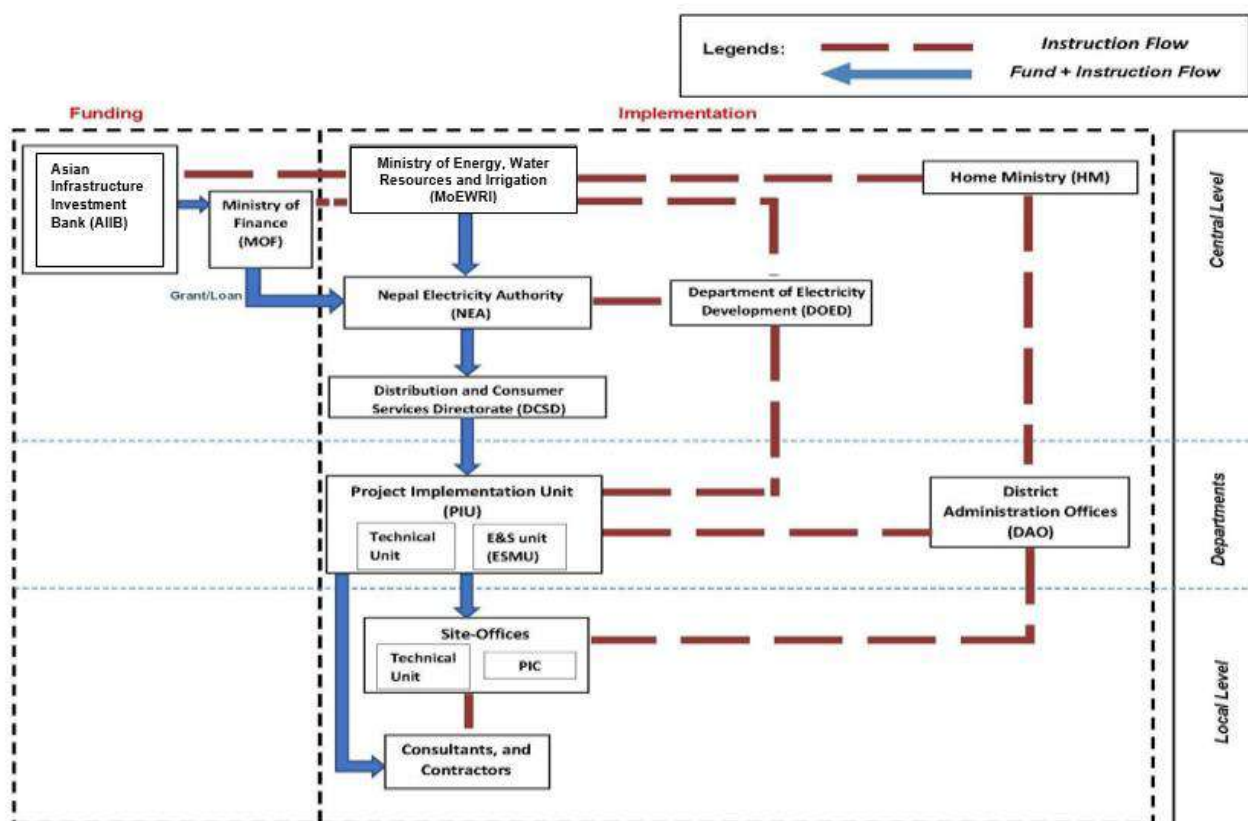
Date	Location	Issues, comments and suggestions received	Participants
5 th February, 2022	Chaukune RM, Ward No. 07, Dhamidada		22,0F-22M




6. INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM

6.1 Institutional Arrangement

The Ministry of Energy, Water Resources and Irrigation (MEWRI) is responsible for overall planning and execution of the plans for the overall development of water and energy sector in Nepal. Nepal Electricity Authority (NEA) under MEWRI 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 activities during the construction phase. He will also provide technical support in preparing the monitoring report.



Source: ESMF-DSUEP

Figure 6-1: Institutional Arrangement for Environmental and Social Management

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/PIU 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 shall provide safeguard compliance orientation to all environment monitors and safeguard team of the contractor, one month before the construction works start.

6.2 Grievance Redress Mechanism

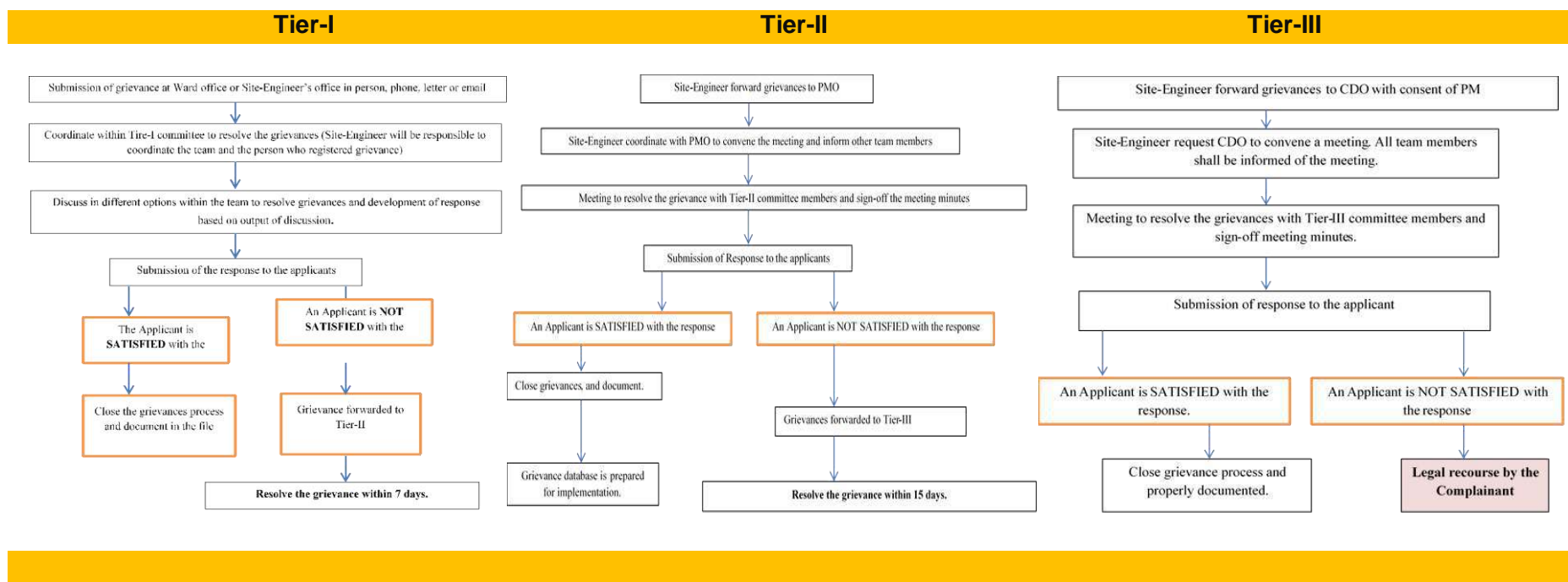
The Grievance Redress Mechanism (GRM) has been established to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about the social and environmental related issues at the subproject level. The GRM is designed to be simple, transparent and responsive. GRM shall address only the concerns arising due to the project implementation activities, mainly during construction stage. Social Comment Addressed -In each subproject, three levels Grievance Redress Mechanism will be established. During the ESMP study period NEA has disseminated letters to the local level stakeholders regarding the formation of the GRM at the subproject level. Till date NEA has established Tier-I and Tier-II GRM has been established at local wards level and Municipality/RM level. Tier-II will be established before construction work start.

GRM 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, he/she should forward the grievance to the field office 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 carried to Tier II and Tier III. The three levels of GRM will be based on time-bound schedules as mentioned in **Table 6-1**. The subproject will carry the regular meeting for Tier-I, once a month to follow up if any grievances are received or not and to resolve the grievances received and update its status to PIU. **Figure 6-2** describes the Workflow Diagram of GRM for the Subprojects.




Table 6-1: Levels of Grievance Redress Mechanism Based on Time Bound

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. <i>If deemed necessary, representative from Forest Office, representative from Land Revenue Office, and representative from Land Survey Office are invited.</i>	
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
	Municipality Chief	Coordinator	Project Manager	Coordinator	Chief District Officer (CDO)	Chair
	Site-Engineer-NEA	Member secretary	Site-Engineer	Member Secretary	Project Manager	Coordinator
	Safeguards Expert from Consultant	Member	Municipality Chief	Member	Site-Engineer	Member Secretary
	Contractor Engineer	Member	Safeguards Expert from Consultant	Member	Municipality Chief/Ward Chair	Member
	Ward Chair	Member	Contractor Engineer	Member	Safeguards expert from consultant	Member
					Contractor Engineer	Member
					Representative from affected people	Member

Figure 6-2: Workflow Diagram for GRM from NEA¹⁰

* 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 Asian Infrastructure Investment Bank (AIIB) under Distribution System Upgrade and Expansion Project (DSUEP), Nepal Electricity Authority (NEA), May 2021.

7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

7.1 Environmental and Social Management Plan and Mitigation Measures

The overall Environmental and Social Management Plan of the Subproject is presented in **Table 7-1**. 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 ESMU of PIU.



Table 7-1: Environmental and Social Management Plan (ESMP)

Project Activity	Environmental and Social Issues	Management/Mitigation Measures	Mitigation Cost	Responsibility	
				Planning and Implementation	Supervision and Monitoring
Pre-construction Phase					
Approvals, permits and clearances	Installation of poles along the edge of private farm lands	<ul style="list-style-type: none">Site office and the contractor must inform the community prior to the installation of poles and stringing of the line along DL route		Site Office/ Contractor/	DSUEP (PIU)/NEA
Construction Phase					
Construction work in substation area and distribution line alignment	<ul style="list-style-type: none">Inadequate/unsafe working conditions	<ul style="list-style-type: none">Appropriate contract clauses to ensure satisfactory implementation of contractual environmental, health, and safety measures.		Site Office/Contractor	PIU/NEA
	<ul style="list-style-type: none">Accident may arise if the pit hole (depth-2m and diameter-0.22 m) prepared for steel tubular poles remains open for long time	<ul style="list-style-type: none">Pit holes for the steel tubular pole shall not be left open and should be filled instantly by erecting poles and concrete-cement around the base, should be used to strengthen the pole erectionContractors should follow the guideline provided by the PIU	Project Cost	Contractor/ Office Site	PIU/ESMU/ PIU
	<ul style="list-style-type: none">Dust emission - transportation of materials and movement of construction crews	<ul style="list-style-type: none">Water sprays to be used for dust control as necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials (sand, cements, aggregates and spoil) to be stored in substation area.	Air Quality Monitoring- 1,50,000.00 (NRs.) Sprinkling water (Dust	Contractor/ Office Site	PIU/ESMU

	and equipment will cause minor impact	<ul style="list-style-type: none"> Steel poles firstly stocked in the substation area and secondly in the open barren area in coordination with Municipalities and Rural Municipalities. No social and environmental issues for the stockpiling of the steel poles and stringing wires 	Management) 2,00,000.00 (NRs.)		
	<ul style="list-style-type: none"> Noise emission-Construction related noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites 	<ul style="list-style-type: none"> Boundary walls serves as a noise barrier, and these shall be constructed as early as possible. Construction equipment to meet national emissions and noise control standards. 	Noise Level Monitoring- 50,000.00 (NRs.) Provision of PPE in Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> Interference with drainage patterns will be temporary at substation during construction phase 	<ul style="list-style-type: none"> A proper drainage system should be managed within the substation area. Storm water run-off need to be minimized and controlled with bunding temporary dikes Drainage management as a preventive measure against breeding of mosquitoes and other pests 	Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> Construction associated wastes generated within substation area and campsite location 	<ul style="list-style-type: none"> Organic waste generated from the campsite shall be managed within the substation premises, through composting in the bin or by constructing a ground pit, and covered, by a thick layer of soil Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and sand mix should be used as refills for ground leveling. Recyclable wastes like left out/non-usable reinforcement bars, and packing materials to be sent or sold to scrap vendors. 	Solid wastes management – 1,00,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU

		<ul style="list-style-type: none"> Effective coordination with local level government for the proper waste management 			
	<ul style="list-style-type: none"> Illegal fishing and bird hunting by the labors 	<ul style="list-style-type: none"> Discouraged by supplying adequate food items (poultry and fish) requirement within the camp. Awareness on legal provisions upon illegal hunting of biodiversity need to be disseminated 	Project Cost	Contractor/ Office	Site PIU/ESMU
	<ul style="list-style-type: none"> About 6.95 ha of forest area occurs within RoW of the proposed distribution line and substation area Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment and substation are 6,024 	<ul style="list-style-type: none"> Compensatory plantation shall be done as per Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019). Compensatory plantation to be made in the ratio 1:10, including cost for sapling and management cost for 5 years. 	The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report	Contractor/ Office	Site PIU/ESMU
	<ul style="list-style-type: none"> Use of firewood from nearby forests 	<ul style="list-style-type: none"> Workers and staffs should be restricted to use firewood for cooking. Providing LPG based stoves in Labor camp. 	Project Cost	Contractor/ Office	Site PIU/ESMU
	<ul style="list-style-type: none"> Loss of standing crops at pole installation locations (depth-2m and diameter-0.22 m) 	<ul style="list-style-type: none"> Pole to be installed at the edge of cultivated land making no loss of standing crops Need to make prior consultation with landowner during installation of the pole and stringing of distribution lines If there is loss of crops, appropriate compensation will be made by the project 	Project Cost	Contractor/Site Office	PIU/ESMU
Environment, Health and Safety	<ul style="list-style-type: none"> Injury and sicknesses workers and members of the public 	<ul style="list-style-type: none"> Contractor shall prepare the Environmental, Health and Safety plan and take approval from the 		Contractor/Site Office	PIU/ESMU

	<ul style="list-style-type: none"> Potential fecal coliform contamination in drinking water 	<p>client. Provision of safety officer in the work team shall be made during construction period.</p> <ul style="list-style-type: none"> All employees shall be provided with the necessary training, and safety equipment as required for their responsibilities and duties. Basic facilities of drinking water, sanitation & clean resting place, canteen, and first aid shall be made available for the campsite. Provision of health insurance to employees. Security fences around the substation. Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs). Awareness on HIV/AIDS and other sexually transmitted disease. Awareness on providing basic sanitation facilities and waste management control to the labors. For coronavirus (COVID-19) pandemic situation, Contractors should arrange for quarantine and health services for infected workers. 	<p>Establishment of Labor Camp with basic facilities – In Project Cost</p> <p>EHS Awareness Trainings - 1,50,000.00 (NRs.)</p> <p>COVID-19 measures 2,00,000.00 (NRs.)</p>		
Management of electric equipment's, toxic	<ul style="list-style-type: none"> Possible spills resulting in contamination of soil, water, and air 	<ul style="list-style-type: none"> Chemical waste generated from transformer shall be collected in leakage proof, corrosion free, specially designed container, and stored carefully 	1,00,000.00 (NRs.)	Contractor/ Office	Site PIU/ESMU

materials of chemical wastes					
Operation and Maintenance Phase					
Electric shock and fire hazard	<ul style="list-style-type: none"> Injury or death to the workers and public 	<ul style="list-style-type: none"> Use of insulation, guarding, grounding, electrical protective devices, and safe work practices. Boundary walls and / or security fences around substations to prevent unauthorized access. Only trained and authorized personnel shall be allowed for the electrical works. No electric wire to be strung above the house. Installation of warning signs. 	Project Cost	NEA	NEA
Routine operations and maintenance	<ul style="list-style-type: none"> Potential disturbance to other utility functions and vehicular traffic. 	<ul style="list-style-type: none"> Maintain warning / advisory signs in good and visible condition Visual and technical inspection 	Project Cost	NEA	NEA
Oil spillage	<ul style="list-style-type: none"> Contamination of land/nearby water bodies 	<ul style="list-style-type: none"> Substation transformers should be stored within secure and impervious bundled areas with a storage capacity of at least 110% of the capacity of oil in transformers and associated reserve tanks. 	Project Cost	NEA	NEA
Bird electrocution and collision	Electrocution can cause a risk to bird species which perch on power line infrastructures	Provision of bird guards above the poles and white spirals on the conductors to improve visibility	Project Cost	NEA	NEA

(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)

7.2 Proposed Monitoring Plan

The monitoring proposed in

Table 7-2 will be of value primarily for establishing baseline conditions in the Subproject area, and then for ambient quality monitoring.

Table 7-2: Minimum Provisions for Environmental Monitoring

Parameters to be Monitored	Location	Measurements	Frequency	Responsibility
Construction Stage				
Clearing of construction site	Substation boundaries	<ul style="list-style-type: none"> Field inspection of Subproject Sites and ensure that appropriate safety measures are implemented 	Clearing and restoration: weekly	Contractors to implement corporate EHS plan, drainage management and solid waste control in substation area.
Use of forest area and loss of trees	33 kV DL alignment and substation area	<ul style="list-style-type: none"> Field inspection of Subproject sites and ensure the compensatory plantation of 1:10 Related approval document for tree clearance 	Prior to the construction work	Contractor responsibility under the supervision of PIU/DFO

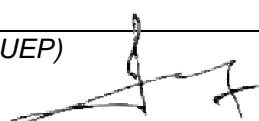
Air: SPM, Noise: dB	Substation boundaries and nearest receptor to substation	<ul style="list-style-type: none"> Spot check for noise and dust using portable monitoring device 	Air, and noise: quarterly during construction period	Contractors need to conduct the air and noise monitoring during the construction period at the substation location
Construction wastes: on-site inspection	Visual inspection of active construction areas, including equipment staging areas and camps	<ul style="list-style-type: none"> Spot check / visual inspection of solid waste (spoil, muck etc.) generation and disposal. Analysis of transformer oils to determine if polychlorinated biphenyls are present. 	Monthly spot checks for construction waste management	PIU safeguard officers to provide oversight via regular field inspections, and submit monitoring reports to the Bank
Occupational health and safety	Substation boundaries	<ul style="list-style-type: none"> No. of Toolbox talk and safety orientation to the workers No. of workplace accidents Use of PPE by workers 	<p>Daily Inspection during construction</p> <p>Monthly Inspection during operation phase</p>	Inspection of the construction site by safety officer and PIU safeguard officer
Child involvement in construction work (need to be prohibited)	Substation work	<ul style="list-style-type: none"> Spot inspection at construction sites 	Monthly Inspection during construction	Site Office

7.3 Environmental and Social Mitigation and Monitoring Cost

Preliminary cost estimates for the ESMP implementation are shown in **Table 7-3**. **Error! Reference source not found..** These estimates cover the basic monitoring activities and the mitigation measures to be complied from the contractor's side. The ESMP cost estimated for the **Babiyachaur - Bijaura Distribution Line** is NRs 13,00,000.00. The community support activities and the costs will be presented in the Community Development Plan (CDP). NEA has agreed for the effective implementation of the mitigation and monitoring cost items as mentioned in table below.

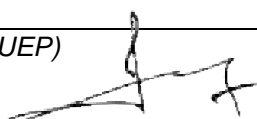
Table 7-3: Mitigation Measures and Monitoring Activities Cost Estimates

SN	Budget Items	Unit	Rate (NRs.)	Estimated Amount for Monitoring (NRs)-Lump Sum
1	Air Quality Monitoring (at substation)	6 (Times)	25,000.00	150,000.00
2	Noise Level Monitoring (at substation)	6 (Times)	8,334.00	50,000.00
3	Sprinkling of water to be used for dust control necessary in the earthen roads of the settlements nearby the substation area and proper storage of the construction materials (sand, cements, aggregates and spoil)	200 (Times) During Excavation and Civil works	1000.00	2,00,000.00
4	Management of electric equipment's, toxic materials of chemical wastes	-	L.S.	1,00,000.00
5	Segregation and management of solid wastes	-	L.S.	1,00,000.00
6	COVID-19 measures (considering pandemic situation) standardize the quarantine facilities with health aid to the labors	-	L.S.	200,000.00
7	EHS Awareness raising trainings to the labors	10 (Events)	15,000.00	1,50,000.00
8	Meeting of Safeguard Desk and Grievance Redress Committee at Field Level	24 (Months)	14,583.00	3,50,000.00
Total				13,00,000.00



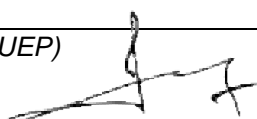

8. CONCLUSION

Potential environmental impacts of this Subproject are not diverse and are all site-specific i.e., confined to the Core Project Area. Civil works will have minimal temporary impacts on air, noise and water quality. Erection of poles during construction shall follow right of way of existing roads and the edge of farmlands. The PIU should give prior information before installation of the poles. In the ESMP consultations conducted in the settlement area, people have agreed for the implementation of the Subproject and have suggested to install poles on the edge of farm-lands, without affecting any private structures along the distribution line. If there is loss of crops, appropriate compensation shall be provided. The implementation of the proposed Subproject needs 6.95 ha of forest area with estimated loss of 6,024 trees. The total enumeration of the loss trees and mitigation cost will be incorporated in the Brief Environmental Study (BES) report. Mitigation measures are suggested in this ESMP to avoid any possible environmental and social impacts. The total ESMP cost for this Subproject is NRs. 13,00,000.00. NEA Project Implementation Unit has agreed to implement the estimated cost for the mitigation measures and monitoring activities.



REFERENCES

- CBS. (2019). Environmental Statistics of Nepal. Kathmandu: Central Bureau of Statistics.
- CBS. (2018). Rural Municipality-Municipality Profile of Surkhet District. Surkhet: Office of Statistics.
- DHM. (2021). Retrieved from <http://mfd.gov.np/city?id=26>
- DoS. (2020). Data & Metadata. Retrieved from National Spatial Data Center: Geoportal: <http://nationalgeoportal.gov.np>
- Environmental and Social Framework (ESF) Asian infrastructure investment Bank, Feb 2016 (Amended February 2019).
- Environmental and Social Management Framework (DSUEP) NEA- November 2021
- GoN (2019): Environmental Protection Act (EPA), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN (2020): Environmental Protection Rules (EPR), Ministry of Forests and Environment, Singhadurbar, Kathmandu
- GoN. (2050). National Environmental Impact Assessment Guidelines. National Planning Commission Secretariat.
- GoN. (2019). Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, Ministry of Forests and Environment, Singhadurbar, Kathmandu.
- Shahi, D. K., Rijal, H. B., & Shukuya, M. (2019). Study on Household Energy Usage Patterns in Urban and Rural Areas. Journal of the Institute of Engineering, 15 (No. 3), 402-410. doi:<https://doi.org/10.3126/jie.v15i3.32761>
- Stakeholder Engagement Strategy, DSUEP, NEA 2019.
- The White Paper. (2018). Energy, Water Resources and Irrigation Sector's Status and Roadmap for the Future. Kathmandu: Government of Nepal.
- WBG. (2018). <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2018&locations=NP&start=1996&view=chart>. Retrieved from <https://www.worldbank.org>.
- WECS. (2014). Energy Data Sheet. Water and Energy Commission Secretariat. www.energyefficiency.gov.np/downloadthis/final_data_book__11_june_2014.pdf




ANNEXES



**Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION
LETTER TO STAKEHOLDERS**



नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

फ्याक्स: ०१-४१५३१४४

फोन नं: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।



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

सूचना प्रकाशन मिति:

..... प्रदेश जिल्ला
.....(नगरपालिका/गाउँपालिका/महानगरपालिका/उपमहानगरपालिका)
मा एसियन इन्फ्रास्ट्रक्चर इन्भेस्टमेन्ट बैंकको ऋण सहयोग भएको नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना प्रस्तावक रही कार्यान्वयन गर्न लागिएको आयोजना कार्यान्वयन 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:

मिति:

समय:





नेपाल विद्युत प्राधिकरण

(नेपाल सरकारको स्वामित्व)

वितरण तथा ग्राहक सेवा निर्देशनालय

नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना

(ए.आई.आई.बि.)

फ्याक्स: ०१-४९५३९४४

फोन नं: ०१-४९५३९४५

दरबारमार्ग, काठमाडौं।

प.सं. ०७८/७९: ९३८.

मिति: २०७८/१०/०७

श्री

विषय: गुनासो समाधान संयन्त्र गठन भएको सम्बन्धमा।

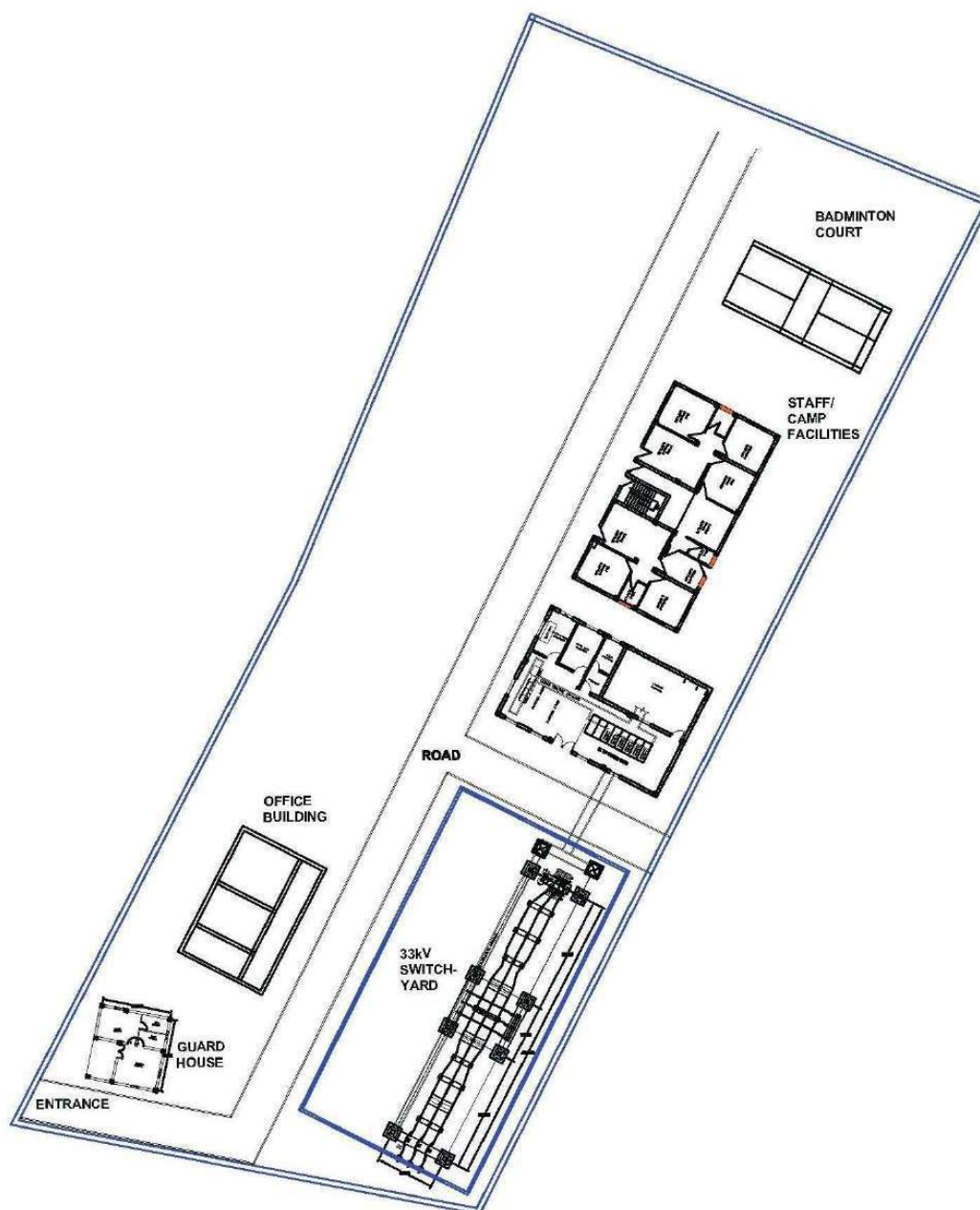
उपरोक्त विषयमा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंक (ए.आई.आई.बि.) को ऋण-सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (ए.आई.आई.बि.) प्रस्तावक रही कार्यान्वयन गर्न लागिएको आयोजना अन्तर्गत नेपाल सरकारको पूर्ण-विद्युतीकरण गर्ने लक्ष्य बमोजिम तहाँ वडा/गाउँपालिका/नगरपालिका/उप-महानगरपालिकामा ३३/११ के.भी. सब-स्टेशन, ३३ के.भी. लाईन, ११ के.भी. लाईन, ४०० भी. लाईन, आदि निर्माण कार्यहरु हुने भएकोले सो कार्यहरु गर्दा स्थानीय सरोकारवालाहरुको कुनै गुनासो भए सो गुनासोको समाधान गर्न गुनासो समाधान संयन्त्र निर्माण गरिएको छ। अतः संलग्न गुनासो समाधान संयन्त्र दस्तावेज बमोजिम आफ्ना गुनासोहरु दर्ता गर्न र सोही दस्तावेजमा भनिए बमोजिम गुनासोको समाधान हुने व्यहोरा सम्पूर्ण सरोकारवालाहरुलाई जानकारी गराइन्छ।

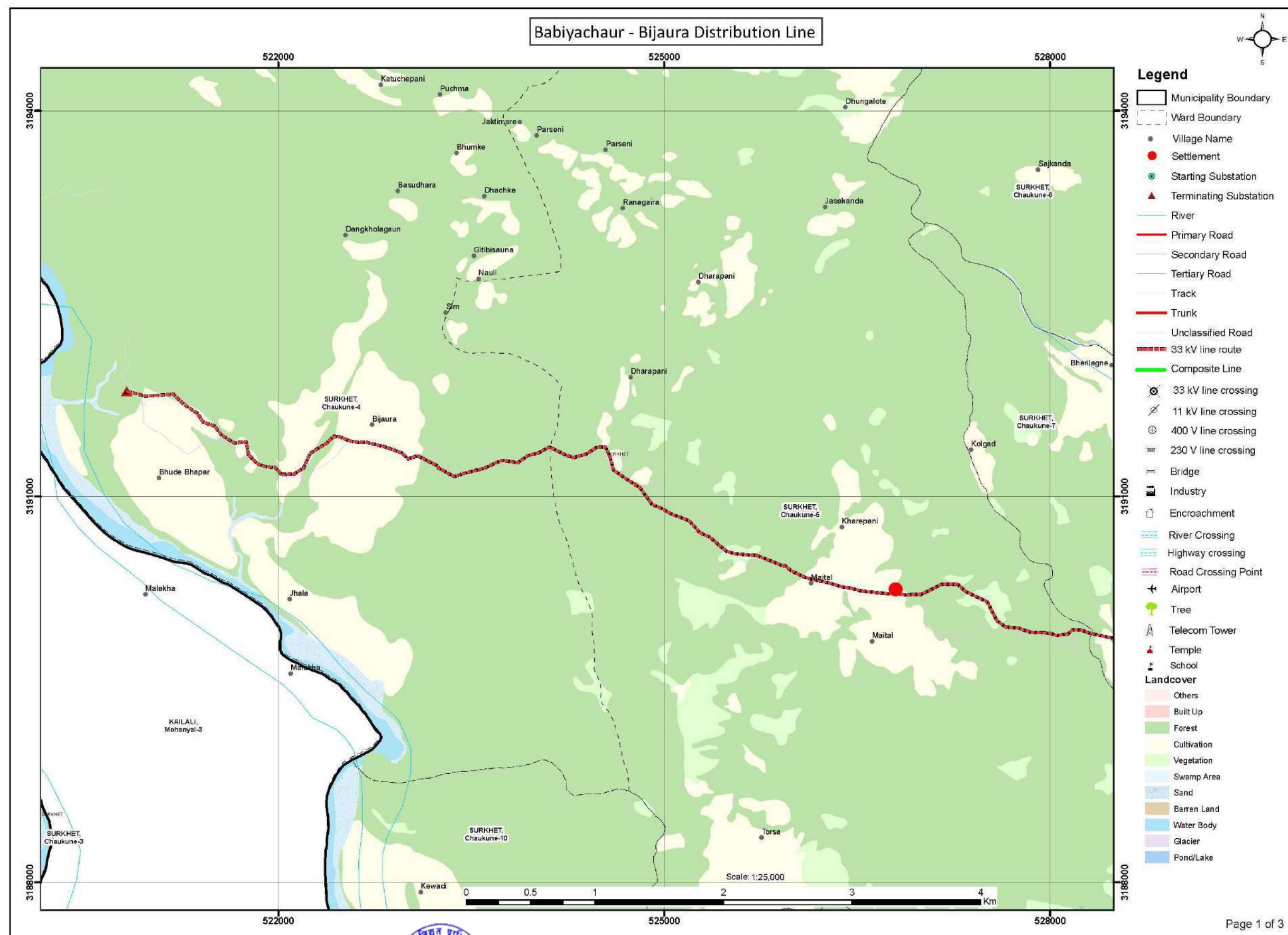
भवदीय,

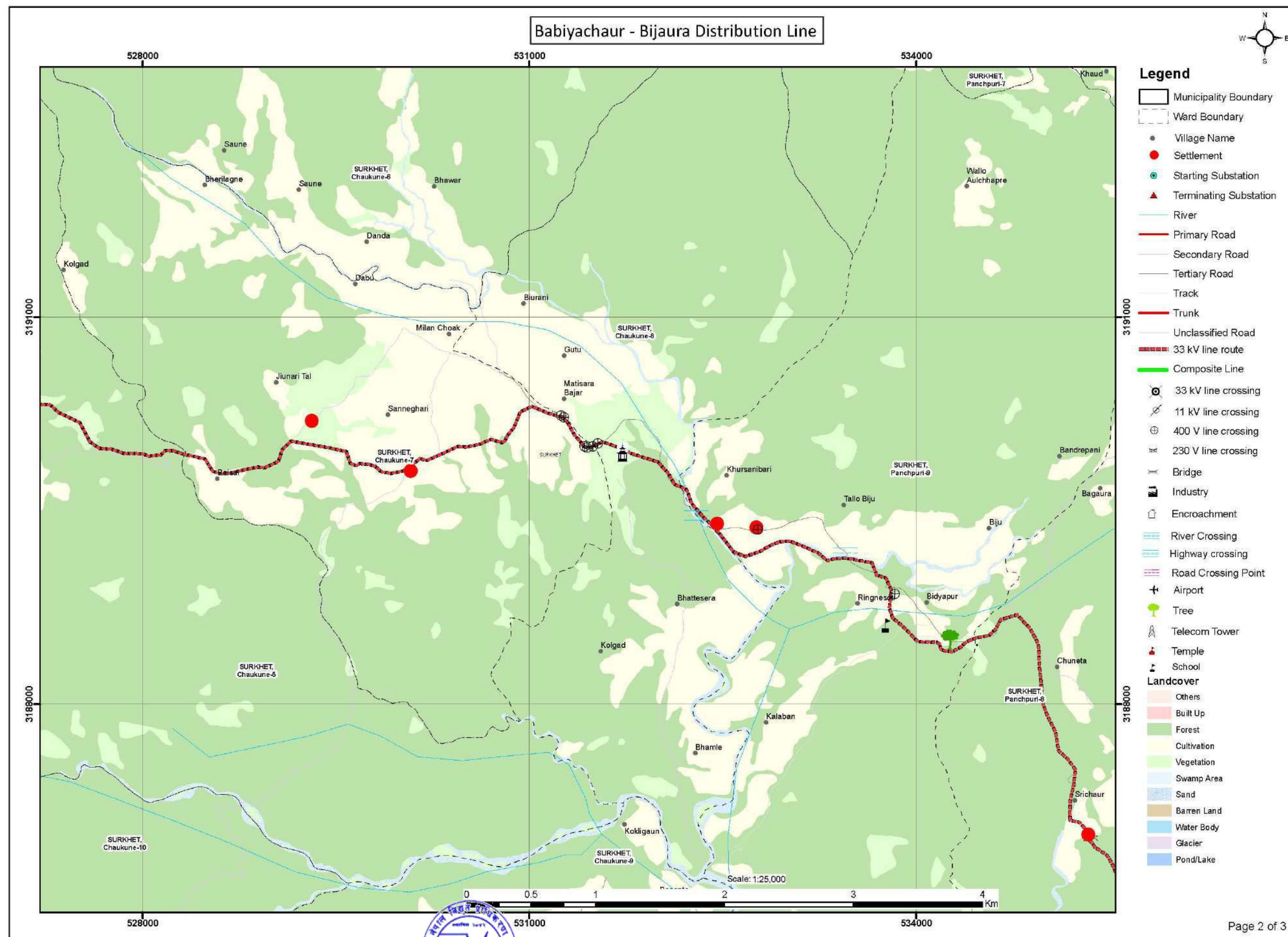
(केशव श्रेष्ठ)

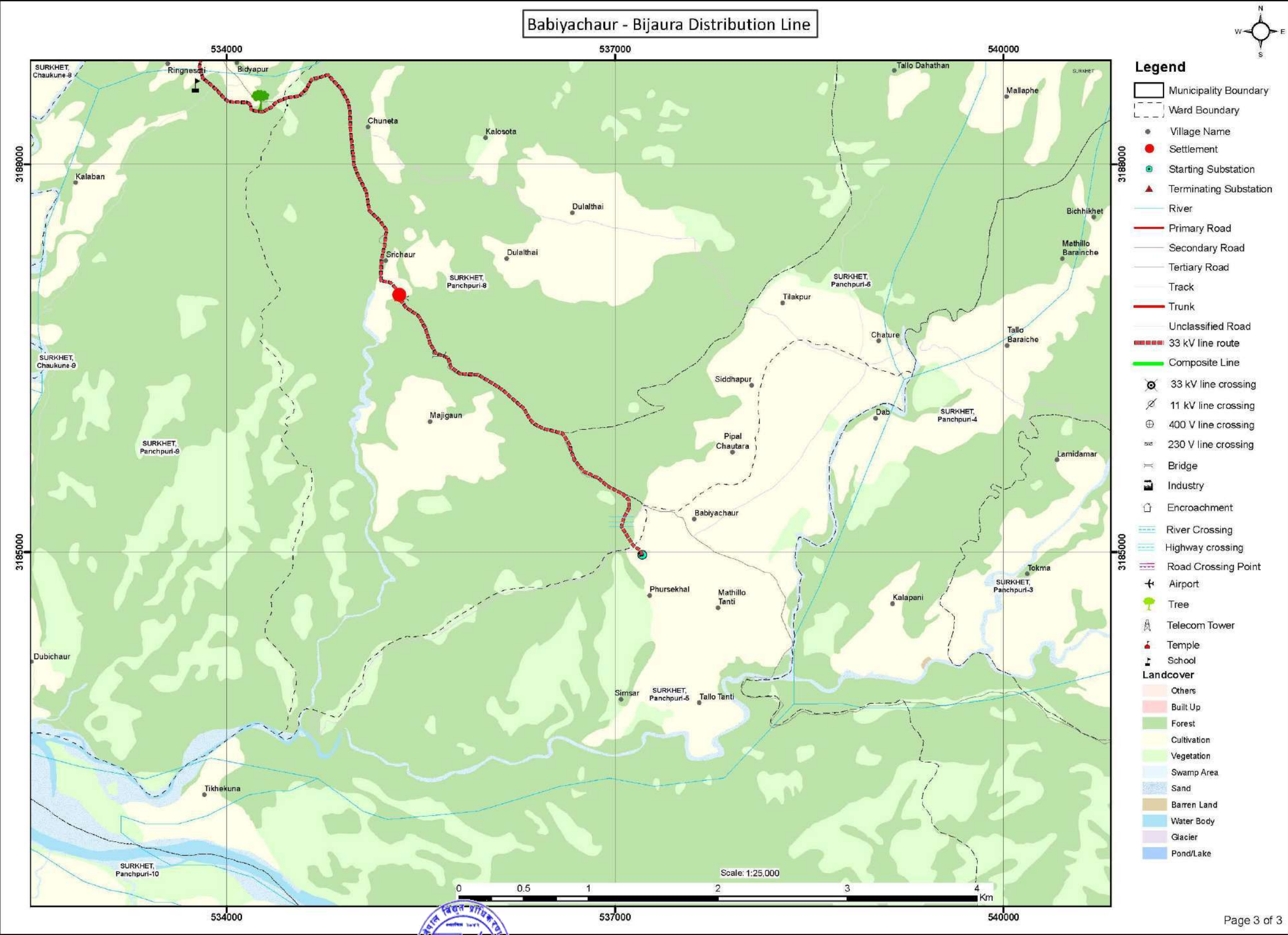
आयोजना प्रमुख

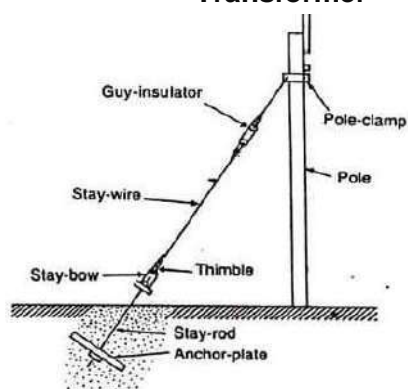
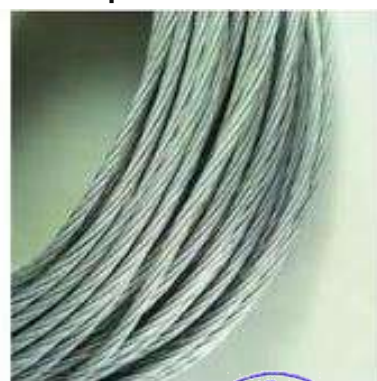


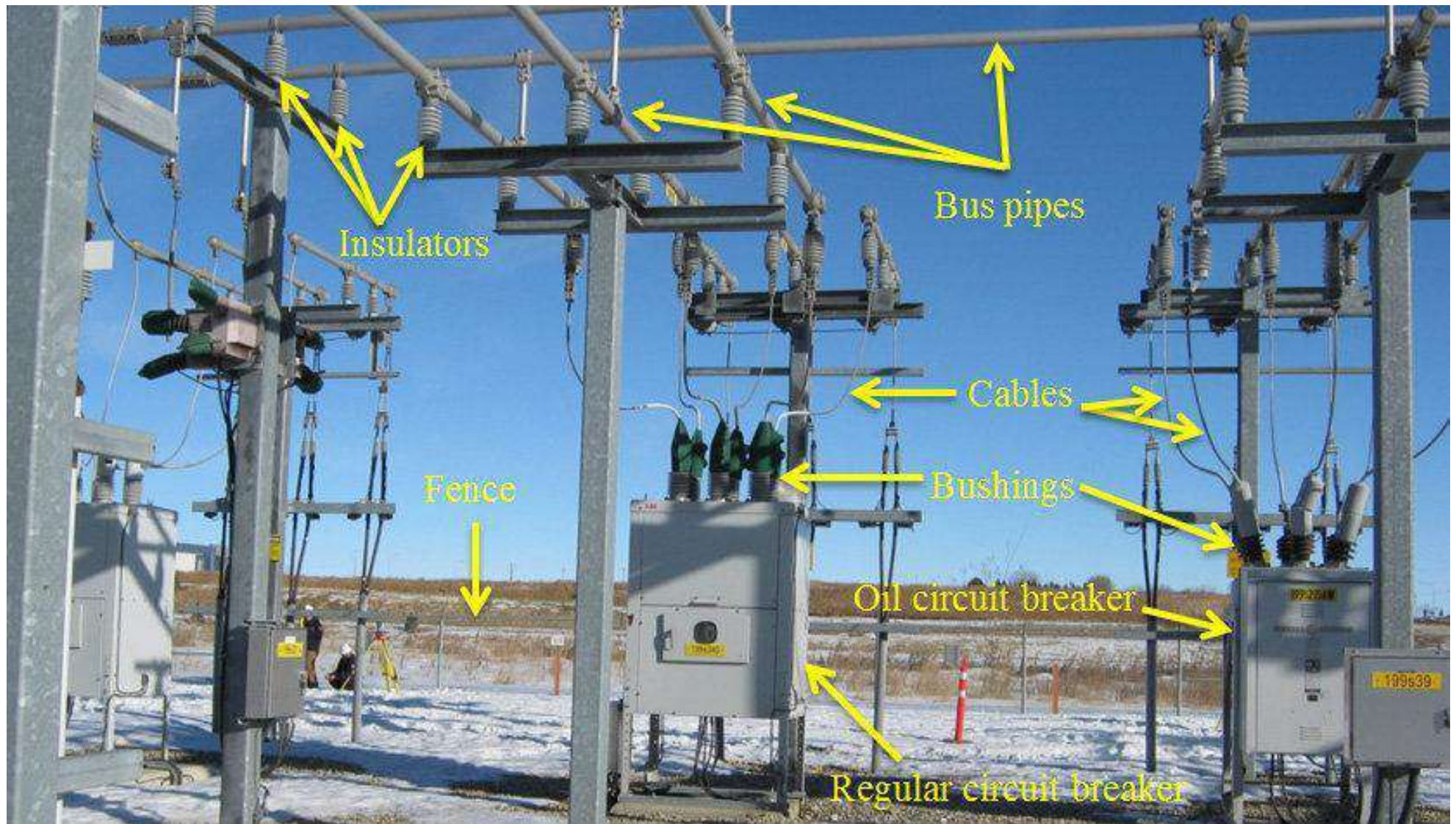
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT







Annex 3: FACILITY AND COMPONENTS**Transformer****Switch Yard****Stay/Guy Sets****Steel Tubular Pole****Insulator****Civil-Structures Supporting Electrical Components****Conductor**



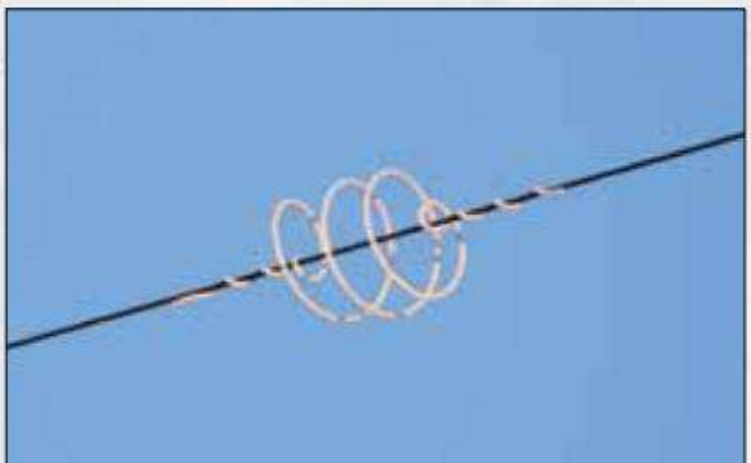
Possible components within 10 kV Substation



Bird Diverting Reflector



Wishbone Prevents Bird Landing on Wire



White Spiral in Wire Improves Visibility of Wire



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

Annex 4: LEGISLATIVE PROVISIONS

S N	Legal Provisions	Description	Relevancy concerning Project
1.	Constitution of Nepal	<ul style="list-style-type: none"> • The Constitution of Nepal is the main legal document, which emphasizes the right to a clean environment of the people, natural resources protection, preservation, and its prudent use. Rights regarding the clean environment, under article 30: • It includes making multi-purpose development of water resources, while according priority to domestic investment based on public participation to ensure a reliable supply of energy affordably, and easily, 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 fulfill the rights of people to live in a clean environment along with fulfilling the basic needs by providing access to sufficient energy.
2.	Environment Protection Act 2076 (2019 AD)	<ul style="list-style-type: none"> • Section 3 of the Act requires the proponent to conduct environmental studies concerning the prescribed proposals of any developmental works. Subsection 2 of this act provides the framework for the environmental study report prepared according to sub-section (1) shall, in fulfillment of the process as prescribed, be submitted to the relevant bodies of the Government of Nepal for approval. 	Environmental Studies, and approval of the report from the 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)]	<ul style="list-style-type: none"> • 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 the project by the Government of Nepal.
		<ul style="list-style-type: none"> • Pertaining to Rule 3(1), Environment Protection Act (EPA), 2019 describes to complete Environmental Studies as per Schedule 1(Cha) Energy, water 	The proposed Subproject will use the of




		resources and irrigation sector (1) under Environment Protection Regulation 2020 (First Amendment in 2021/05/24 on Nepal Gazette) state “use of forest area for the electricity distribution line project up to 66 KV”	Majhigaaun Community Forest, Deurali CF, Majhigaaun CF, Bhitri kopila CF, Chulachuli CF, Dhamidanda CF, Mayatal CF, Kundali CF, Baaspaani CF, Sanu Danda CF, Kullu CF and National Forest land for the purpose of 33 kV distribution line extension and substation construction. For which, BES is mandatory.
4.	Nepal Environmental Policy, and Action Plan, 2050(1993)	<p>The aims of NEPAP are:</p> <ul style="list-style-type: none"> • To manage natural, and physical resources efficiently, and sustainably • To balance the development efforts, and environmental conservation for sustainable fulfillment 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 the adverse environmental impact of development projects, 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 the construction of a 33 kV distribution line along with a substation.
5.	Forest Act 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to the chapter 12, Section 42(1), if there is no other alternative to the using of forest area for the operation of a national priority project, plan of which investment is approved by the Investment Board, project of national pride and it appears from the environment examination referred to in the prevailing law that the operation of such plan does not result in significant adverse effects on the environment, the 	<ul style="list-style-type: none"> • About 6.95 ha of forest area occurs within RoW of the proposed 33 kV distribution line




		<p>Government of Nepal may give approval, as prescribed, to use any part of the national forest for the purpose of operating such plan,</p> <ul style="list-style-type: none"> • Similarly, in providing the forest area for the operation of a plan pursuant to sub-section (1), to the extent possible, a land that is adjoining to the national forest area near the project site and situated in the same geographical and ecological belt and has such landscape where forest can be developed shall be provided for the purpose of planting trees at least in the area equal to the forest area that has to be used. 	<p>and substation area</p> <ul style="list-style-type: none"> • Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 2,064.
6.	Work Policy with the Guideline of National Forest Land Area to be Use for National Priority Plan, 2076 (2019)	<ul style="list-style-type: none"> • Pertaining to Section 4 (1), environmental study report should be prepared if the project needs the use of national forest area, • Section 7 require the approval of Government of Nepal, for the use of forest on the implementation of project • Section 17 (3) require plantation of trees in the ratio of 1:10 in the area given by the concerned forest office as a compensation for the removal trees during the project implementation <p>Section 17 (4) require care, maintenance and upkeep of the planted trees and handover to concerned forest office after 5 years.</p>	<ul style="list-style-type: none"> • About 6.95 ha of forest area occurs within RoW of the proposed 33 kV distribution line and substation area • Estimated number of trees that need to be cleared from the Core Project Area of the proposed DL alignment are 2,064.
7.	Electricity Act 1992	<ul style="list-style-type: none"> • No person shall be entitled to conduct survey, generation, transmission, or distribution of electricity without obtaining a license under this act. • The Electricity Act of 1992 has the provision of land procurement for the development of Subprojects that involve electricity generation, transmission, or distribution. The Act states that the licensee may apply 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. 	<p>The main goal of this project is to distribute a sufficient amount of electricity by constructing a 33 kV line, and substation by surveying to minimize the impacts.</p>
8.	Rural Energy Policy, 2006	<p>The rationale of formulating, and implementing this policy is to create a conducive environment that will self-motivate, and mobilize local institutions, rural</p>	<p>This project helps to improve the distribution, and</p>




		energy user groups, non-government organizations, cooperatives, and private sector organizations 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 the promotion of such renewable energy technologies.	motivate use the of 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 the 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 the 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 kinds of characters.	The construction of a project is only possible when the rights of labor are secure. In this project, the Contractor should follow this act strictly.
10.	Child Labor (Prohibition, and Regulation) Act, 2056 (2000 AD)	As per section 3 of this act, no child has not attained the age of 14 years shall be engaged in works as a laborer.	Child labor is strictly prohibited in this project, and Contractors should follow this act.
11.	Solid Waste Management Act, 2068 (2011 AD)	This act has been formulated to minimize solid waste products from the target area by setting rules, and regulations on solid waste management (SWM) in the country to develop a better environment for the systematic, and effective management of solid waste, and to involve all the concerned stakeholders in SWM practice. The main features of this act are the discussion of the 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 saves the money which could be used for other infrastructure development. Section 4 of the act assigns the local body to manage or use the solid waste discharged or dumped in the collection center, transfer station, or treatment plant or collected during cleaning.	These acts provide the overall framework to manage the solid waste generated from households to the project level. Also, 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 the provision made in article 50 of the 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 the segregation, and management of solid waste. It has been mentioned that it is essential to segregate degradable, and non-degradable solid waste at the source.	These rules provide the overall framework for how to reduce the volume of waste disposed of at the source during the construction of the substation.
13.	Fifteenth Plan	The vision of the 15th plan is to contribute to the prosperity of the nation through sustainable, and reliable development of hydropower by setting the goal which is to ensure energy security through intensifying hydropower generation. In addition, one of the strategies of the government of Nepal in the 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 the generation, and distribution of hydroelectricity in Nepal which is directly related to this project.
14.	United Nations Framework Convention on Climate Change (UNFCCC), 1992	UNFCCC, Signatories: 165. Parties: 195. (1), Article (4), commitment (f) 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, to minimize adverse effects on the economy, on public health, and the quality of the environment, of Subprojects or measures undertaken by them to mitigate or adapt to climate change. After it entered into force on 21 March 1994, it mandates the individual state for prioritization of resource conservation with development.	The goal of this project is to replace the traditional form of energy with clean energy i.e. electricity which ultimately reduces air pollution, and smoke.
15.	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	Nepal is the part of ILO convention that's why ILO 169 should strictly




		<p>during work. Article 1 on the First Part of this convention mainly focused on the following points:</p> <p>(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 customs or traditions or by special laws or regulations;</p> <p>(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 all of their own social, economic, cultural, and political institutions.</p> <ul style="list-style-type: none"> • 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 people in this Convention shall not be construed as having any implications as regards the rights which may attach to the term under international law. 	<p>follow during construction, and implementation of any types</p>
16.	Environment and Social Management Framework	<ul style="list-style-type: none"> • 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 Financiers' standards on E&S assessment and management, Involuntary Resettlement, Indigenous People, Gender, etc.). 	<p>Main guiding document for E&S study to identify issues and recommending appropriate practical augmentation/mitigation measures</p>
17.	Environmental and Social Policy (ESP)	<ul style="list-style-type: none"> • 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. 	<p>Mandatory requirement for ESMP study</p>
18.	Environmental and Social	<ul style="list-style-type: none"> • Three associated mandatory environmental and social standards (ESSs) set out more detailed environmental and social requirements relating to the ESMP 	<p>ESMP requirement</p>




	Standards of AIIB 11		
--	--------------------------------	--	--

¹¹ <https://www.aiib.org/en/policiesstrategies/download/environmentframework/20160226043633542.pdf>

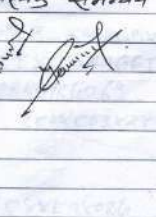

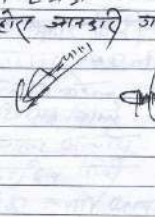


[illegible]

Page No: _____
 Date: / /

निर्वाचक

१. आयोजनाका आउनुभएका बिस्वका आयोजनाको बारेमा विस्तृत जानकारी भयो।
२. आयोजना विस्तारको क्रममा स्थानियवासीलाई क्षिप र क्षतिहरूको आधारमा रोजगारीमा प्राथमिकता दिनुपर्नेछ।
३. आयोजना प्रत्यक्ष प्रभावित क्षेत्र भित्र आदिवासी जनजाति तथा ओखिम्पुर्, फिलिपिनो, सांस्कृतिक, पेशा, धर्म तथा customary right मा कुनै प्रकारको नकारात्मक असर नपर्ने गरी जानकारी गराउनेछ।
४. यस आयोजना अन्तर्गत लाइन बिस्तर गर्दा वन क्षेत्रमा पर्ने करिब ६६ हेक्टर जग्गा पर्ने छ यदि कसैको जग्गा नभने भएमा नेपाल सरकारको नियम नमोजिम क्षतिपूर्ति प्रदान गर्नु पर्नेछ।
५. यस आयोजना अन्तर्गत बिस्तर लाइन बिस्तर गर्दा प्रिवेनो पार्क (जेजेन ०+३००) को पूर्व पछि कुलानी बाबिसाली अंगलफा सडक हुई बाबिसाली बेविधार सडक भए जानु पर्ने छ।
६. यस आयोजना निर्माणमा स्थानिय सह तथा सहकारिता हुनुको पूर्ण सहयोग तथा समर्थन रहनेछ।
७. यस क्लकमा अनुपस्थित रहनुभएका लइन तथा पोल रहने क्षेत्रको जग्गाधनी सँग आवश्यक समन्वय गरी गरी जानकारी गराउनेछ।

क्र	नाम	पद/पेशा	गोपनीय	Page No.	Date: / /
18)	प्रकाशनाथीला	प्रशासक	कम्प्यूटर	502259088	4/1/20
19)	कृष्णकुमार	समानाधिकारी	NBAEC		
20)	समानाधिकारी	"	"		
21)	रामप्रसाद कुँवर	कानूनवादी	"	502259088	(1/1/20)
22)	सुरेश कुमार	"	"		
23)	नवजोत सिंह	"	"		

गतिपूर्व तथा अन्तर्गत अवस्था अनुसार अनुसन्धानले डायग्नोस्टिक अध्ययन गर्नु पर्ने छ।

१. यस अनुसन्धान निर्माणका क्रममा माथीकाँडाको अवस्थित नेपाल राष्ट्रीय प्रा. वि.को गेट तथा निर्माण संस्थाको अखिरात डायग्नोस्टिक साथ अनुसन्धान गरिनेछ।

१०. यस उपसंस्थाको निर्माण गर्दाको क्रममा पुनरीक्षण रंगशालाको सुधार तथा खेल्नु सभाको उपलब्धताको लागि अनुसन्धान साथ निर्माण गरिनेछ।

प्रमुख अधिकारीहरूको हस्ताक्षरहरू:

आज मिति २०७८/१०/२० गतेका दिन पञ्चपुरी नगरपालिका का. नं. ३ विद्यापुरी नेपाल विद्युत प्राधिकरण वितरण प्रणाली स्वदेशी तथा विस्तार आयोजना (DSUEP) अन्तर्गत निर्माण हुने गहराइको बबियाचौर-बिजौरा विद्युत वितरण लाइन उपसंस्थाको निर्माणको शिलशिलामा पर्ने सम्बन्धित कर्मचारी तथा साहसिक प्रभावको असरको बारेमा यस का. नं. ३ का वडाअध्यक्ष श्री शाली राय खरेवालको अध्यक्षतामा, वडा प्रतिनिधि तथा स्थानीय बुद्धिजीविहरूको उपस्थितिमा गरिएको छलफल तथा निर्णयको दस्तावेज तयार पार्ने गरिएको छ।

उपस्थिति

क्र.सं.	नाम	पद/पेशा	ठेगाना	फोन	हस्ताक्षर
१.	श्री शाली राय खरेवाल	वडा अध्यक्ष-३	प. नं. ३-३	९८२०६२९२९	श्री शाली राय खरेवाल
२.	डिल्लीराज बस्नेत	ने. प्रा. वि. प्रा. वि.	पनपा-३	९८६९०३३६९	डिल्लीराज बस्नेत
३.	रंगशाला कान्छा	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	रंगशाला कान्छा
४.	शेरबहादुर थापा	तलाकामि सभा	११-३	९८३४३३४३४	शेरबहादुर थापा
५.	अनन्त कुमार बस्नेत	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	अनन्त कुमार बस्नेत
६.	डिल्लीराज बस्नेत	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	डिल्लीराज बस्नेत
७.	नन्दलाल बस्नेत	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	नन्दलाल बस्नेत
८.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
९.	श्रीमान बस्नेत	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	श्रीमान बस्नेत
१०.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
११.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१२.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१३.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१४.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१५.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१६.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१७.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१८.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
१९.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
२०.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
२१.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.
२२.	ने. प्रा. वि. प्रा. वि.	ने. प्रा. वि. प्रा. वि.	११-३	९८३४३३४३४	ने. प्रा. वि. प्रा. वि.



8. आश्रयोजना प्रस्तावित क्षेत्रका सांस्कृतिक सम्पदा, वस्ती, गौचरण, तथा संस्कार छाल नरहेको जानकारी गराइरह्य ।

90. यस अभियोजना निर्माण क्षेत्रका आश्रयवासी जनजातिक प्रत्यक्ष प्रभावित क्षेत्रका वसोबास नरहेको जानकारी गराइरह्य ।

91. प्रस्तावित आश्रयोजना निर्माणका क्रमका वडा अध्यक्षको क्षेत्रका टेकुल टेन्डिस तथा व्यापारिक व्यवसाय कोट निर्माण, जस्ता मा वि विद्यापुरको नाख्वा तथा जनता बा ज्ञेयापस्को लागि र्वेलन्डु सञ्चाली प्रशानका लागि अनुरोधका साथ निर्देश गरियो ।

१. आयोजनाको बारेमा DSUEP बाट खटिनु भएका विज्ञहरुबाट आयोजनाको जानकारी भयो ।
२. आयोजना विमताको रूपमा स्थानियबासीहरुलाई सिप तथा दक्षताको आबश्यकता रोजगारीका प्राधान्यता दिनुपर्ने ।
३. श्रम उपआयोजना निर्माण गर्दा वन क्षेत्रमा पर्ने सुदूरपश्चिम प्रदेशको दलैँद लैजानुपर्ने छ, तथापि अस्थायी विमताको रूपमा सुदूरपश्चिम प्रदेशको पर्ने भन्दा आएको खण्डमा नेपाल सरकारको निधि तथा निश्चित अनुसाको क्षतिपूर्तिबाट व्यवस्था आयोजनाले गर्नेछने छ ।
४. यस उपआयोजनाको निर्माणमा स्थानियतह तथा दामी सहकारितावालाहरुको पूर्ण सहयोग तथा सहभागिता रहने छ ।
५. यस आयोजना निर्माण गर्दा वस्ती क्षेत्र भन्दा, निम्न क्षेत्र भन्दा, निम्न जग्गा भन्दा, भद्रसुद दलैँद लैजानुपर्ने छ तथापि निम्न जग्गा वा लैजानुपर्ने अवस्था आइपरेमा लाग्ने तथा पोलहरु आलेको तथा जग्गाको हेरचाह लैजादा उचित हुने छ ।
६. प्रस्तावित आयोजना निर्माण गर्दा यस क्षेत्रमा रहेका धार्मिक, तथा पुजास्थलहरू सहितका संरचना तथा सांस्कृतिक संरचनाहरुमा कुनै प्रकारका नकारात्मक असर नहुनेगरी निर्माण गरिनुपर्ने तथा असर हुने अवस्था आएमा उपआयोजनाले उचित व्यवस्थापन गर्नु पर्ने छ ।
७. यस आयोजना निर्माण अन्तर्गत दलैँदपल्लमा अनुपस्थित रहुनुभएका लाग्ने तथा पोलहरु रहने क्षेत्रमा जग्गा धनीहरुसँग वा अग्रजहरुले आवश्यकता सहितका गर्नुपर्ने छ ।
८. यस क्षेत्रमा विद्युतिश्र सेवाको समस्याहरु रहेकाले गर्दा यस उपआयोजना निर्माण श्रवासादुरु सन्तुल्य गरि श्रवासा विद्युतको आपूर्तिको समस्याको हल गर्नेछने छ ।

Page No. _____
Date: / /

आव मिति २०७८/०७/२५ गतेको दिन, चौतुने गाँउपालिका
का नं: ४, ५, ६, ७, ८, ९, १०, ११, १२, १३, १४, १५, १६, १७, १८, १९, २० को निर्माण नेपाल विद्युत प्राधिकरण वितरण
प्रणाली स्थापना तथा विस्तार आयोजना (DSUEP) अन्तर्गत
निर्माण हुने गड्डौँडा बबियाचौर-बिजौरा विद्युत वितरण
लाइन आयोजनाको निर्माणको हिलबिलामा पर्ने सम्ने
वैतावलीय, सामाजिक तथा सांस्कृतिक प्रभावहरूको बारेमा
यस पृष्ठ नं २ को कार्यालयमा वडाअध्यक्ष श्री रामराज
जैसीको अध्यक्षता, वडा प्रतिनिधि तथा स्थानीय बुद्धिजीवि
हरूको उपस्थितिमा गरिएको छलफल देखाउने समितिमा
हलफल तथा निर्णय गरिएको छ।

अपेक्षित

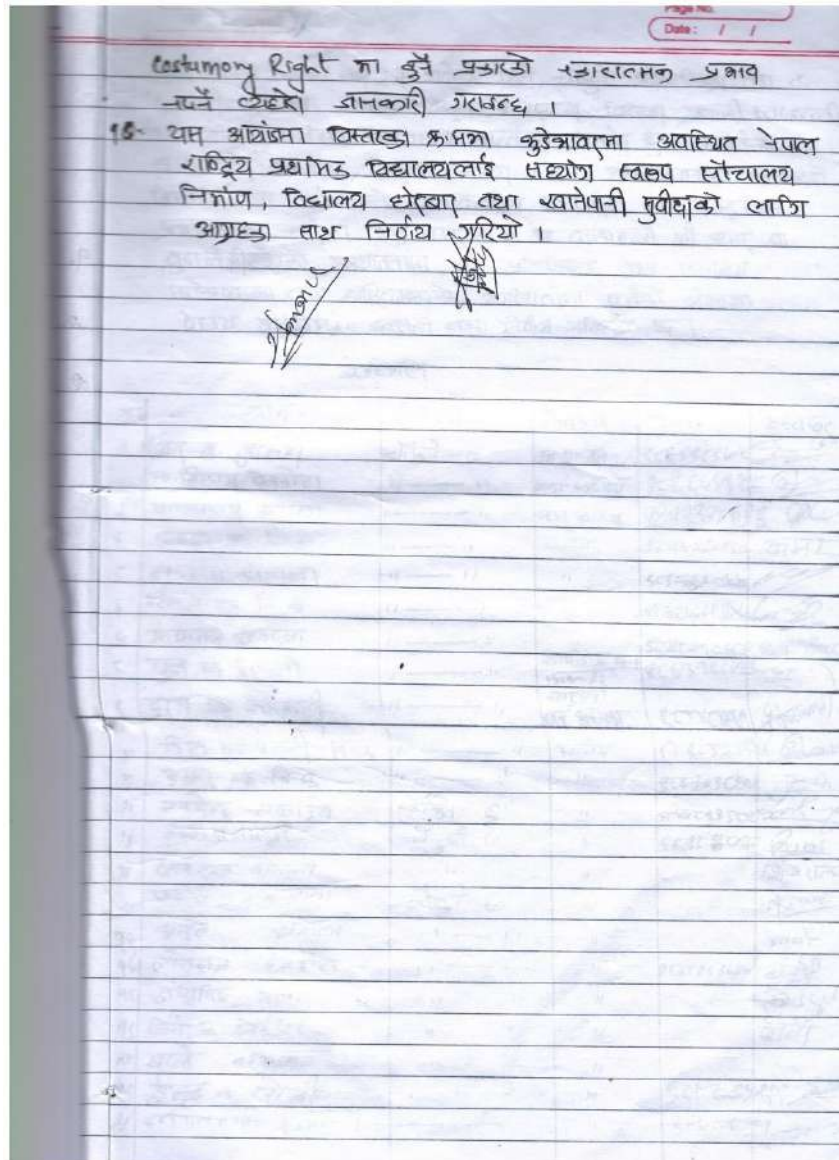
क्रम	नाम	ठेगाना	पद	चौतुने	हस्ताक्षर
१.	रामराज जैसी	चौतुने-४	वडा अध्यक्ष		
२.	रमेश कुमार रिजाल	" ५	वडा प्रतिनिधि		
३.	लेख्मी रिजाल	"	सुपरीभाषी		
४.	रमेश वं. कुँय	"	आयोजना निर्माण		
५.	रमेश वं. रिजाल	"	आयोजना निर्माण		
६.	कमल शिवाय	"	स्थानीय		
७.	बदाम सिंह रिजाल	"	स्थानीय		
८.	रमेश रिजाल	"	स्थानीय		
९.	गंगाधर रिजाल	"	स्थानीय		
१०.	नरहरि नेपाल	"	स्थानीय		
११.	नरहरि नेपाल	"	स्थानीय		
१२.	नरहरि नेपाल	"	स्थानीय		
१३.	विनोद खनाल	"	स्थानीय		
१४.	जयलाल खनाल	"	स्थानीय		
१५.	जोशी बकाल	"	स्थानीय		
१६.	कृष्ण खनाल	NEAEC	समन्वयक		
१७.	बमलाल खनाल	"	स्थानीय		
१८.	बमलाल खनाल	"	स्थानीय		
१९.	सुरेश खनाल	"	स्थानीय		
२०.	नरहरि खनाल	"	स्थानीय		

Page No. _____
Date: / /

निर्णयहरू:

१. आयोजनाको बारेमा DSUEP बाट आउनु गरी विकसित बाट जानकारी गरी।
२. यस आयोजना निर्माणको क्रममा, सिप तथा कर्मचारीको आवाजको यस स्थानको वासिन्दाहरूलाई रोक्नारीमा प्रतिक्रिया रहने।
३. यस आयोजना निर्माणको क्रममा सडकको आयोजनाको विस्तारको वन क्षेत्रलाई असर नपर्ने गरी लेखनपत्र र तथापि असर हुन सक्ने अवस्था भएमा वन क्षेत्रको फर्काउने लागि नेपाल सरकारको निविदा तथा नियन्त्रणको तोकिएको शर्तहरूको अन्तर्गतमा हुनु पर्ने।
४. यस आयोजना निर्माणको क्रममा बासिन्दा, छात्रा, पौराणिक, पुरातात्विक लगायतका महत्वपूर्ण संरचना तथा स्थानहरूलाई नष्ट नगर्ने गरी निर्माण गरिनुपर्ने। तथापि असर पर्ने सक्ने अवस्था आएमा तोकिएको असरको क्षतिपूर्ति आयोजनाले गरी उचित व्यवस्थापन गर्नु पर्ने छ।
५. यस आयोजना निर्माणको क्रममा हात्ती स्थानीयवासी तथा सडकजवलाहरूको हानि सम्बन्ध रहने छ।
६. यस क्षेत्रमा विद्युतिय सेवाको हात्ती स्थानीयवासीहरूले सहायता जोडिनुपर्ने अवस्था रहेको हुनाले गर्दा यस आयोजनाले सबै बाटो दिने पुछ गरी सेवा प्रदान गर्नुहुन अनुमोदना साथ निर्णय गरिन्छ।
७. यस आयोजना निर्माण गर्दा हलफलको अनुपस्थित लाइन तथा पोल रहने क्षेत्रको जग्गास्वीकृत तोकिएको अवस्थाको पछि वन कार्यलयले सम्पन्न गर्ने छ।
८. प्रस्तावित आयोजनाको सबै-स्तरको क्षेत्र बिजौरामा हुने प्रस्तावित चरिचरको क्षेत्र नरहेको तथा सडकको हुने अन्य प्रयोग नरहेको कुरा जानकारी गराइन्छ।
९. यस आयोजना निर्माण गर्दा यहाँको आदिवासी जनजातिहरूको सांस्कृतिक, धार्मीक, पेशा, लगायतका अन्य





Page No. _____
Date: / /

आइतमिति २०७८/१०/२१ गतेको दिन चौकुने गाउँपालिका
वडा नं. ४ को माथ्यावरमा नेपाल विद्युत प्राधिकरण वितरण
प्रणाली स्थापना तथा विस्तार साधन (DSUEP) अन्तर्गत
निर्माण हुन गइरहेको बाबियाचौर-बिजौरा विद्युत वितरण लाइन
उपआयोजना निर्माणको शिलशिलामा पर्ने सम्बन्धित वतावलीय,
स्वाभाविक तथा लोचनविक प्रभावको असरको बारेमा यस
वडा नं. ४ को वडाअध्यक्ष श्री तुलाधाम हिस्की मगरको अध्यक्षतामा
वडा प्रतिनिधि तथा स्थानिय बासिन्दा तथा बुद्धिजीवीहरूको
उपस्थितिमा गरेको शेलामा देख्यो बसोभित्तको स्तम्भ तथा
निर्माण गारियो ।

उपस्थिति

क्र.सं.	नाम	ठेगाना	पद	फोन	हस्ताक्षर
१.	तुलाधाम हिस्की मगर	चौकुने-४	गा. अध्यक्ष-२	९८४८४२०५६	<i>(Signature)</i>
२.	हरिहर चौकुने	" - "	नडावात्मक	९८४८२८१५०	<i>(Signature)</i>
३.	मानवी पौडेल	" - "	समानवेसी	९८४८२२०५७	<i>(Signature)</i>
४.	कमला वि.क.	" - "	नडावात्मक	९८४८६३६३९	<i>(Signature)</i>
५.	लोचन पौडेल	" - "	समानवेसी	९८४८४२०५३	<i>(Signature)</i>
६.	बसन्त वि.क.	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७.	नडावात्मक वि.क.	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८.	धाम केदार मगर	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९.	प्रमोद मोदी	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१०.	निर्मला पौडेल	" - "	"	९८४८२२०५३	<i>(Signature)</i>
११.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
२९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
३९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
४९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
५९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
६९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
७९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
८९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९०.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९१.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९२.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९३.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९४.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९५.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९६.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९७.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९८.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
९९.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>
१००.	मोहम्मद खान	" - "	"	९८४८२२०५३	<i>(Signature)</i>

१. आयोजनाको बारेमा DSVEP बाट व्यवस्था गरिने विज्ञापनबाट जानकारी गरीयो।
२. आयोजनाको विस्तारको क्रममा स्थानीयवासीहरूलाई हप्ता तथा हप्ताको आधारमा बैठकहरूमा प्रार्थनासँगै दिनु पर्ने छ।
३. यस आयोजनाको निर्माण गर्दा कुन क्षेत्रमा पर्ने क्षेत्रहरू भन्ने सम्बन्धमा जानकारी तथा यदि कुन क्षेत्रमा पर्ने क्षेत्रहरू भन्ने सम्बन्धमा जानकारी नेपाल सरकारको निजी नियममा आधारित सम्बन्धमा अनुमानित लागू लाग्ने भन्ने जानकारी दिनुपर्ने छ।
४. यस आयोजनाको निर्माण गर्दा यस क्षेत्रमा रहेका धार्मिक, सांस्कृतिक, पौराणिक, पुरातात्विक लगायतका महत्वपूर्ण स्थान तथा संस्थाहरूलाई नकारात्मक असर नपर्ने गरी निर्माण गरिनुपर्ने छ। यदि असर पर्ने भन्ने अवस्था आएमा आयोजनाले उचित व्यवस्थापन गर्नु पर्ने छ।
५. यस आयोजनाको निर्माण गर्दा ईलफलेमा अनुपस्थित भएका तथा यो निर्माण गर्दा क्षेत्रमा लगाइने बाटो आवागमनको लागि पक्का कार्यलयले निर्माण गर्नुपर्ने छ।
६. यस क्षेत्रमा विद्युतीय सेवा सुविधाहरू हामी स्थानीय वासीहरूले प्राप्त गर्न सकिने क्षेत्रमा निर्माण गर्नुपर्ने छ। विद्युतीय सेवाहरूको लागी यस क्षेत्रमा रहेका स्थानीयहरूले अनुपस्थित भएका तथा यो निर्माण गर्दा क्षेत्रमा निर्माण गर्नुपर्ने छ।
७. यस आयोजनाको निर्माणको क्रममा स्थानीयहरूलाई हामी स्थानीय वासीहरूले प्राप्त गर्न सकिने क्षेत्रमा निर्माण गर्नुपर्ने छ। विद्युतीय सेवाहरूको लागी यस क्षेत्रमा रहेका स्थानीयहरूले अनुपस्थित भएका तथा यो निर्माण गर्दा क्षेत्रमा निर्माण गर्नुपर्ने छ।
८. यस आयोजनाको निर्माण गर्दा यस क्षेत्रमा रहेका धार्मिक, सांस्कृतिक, पौराणिक, पुरातात्विक लगायतका महत्वपूर्ण स्थान तथा संस्थाहरूलाई नकारात्मक असर नपर्ने गरी निर्माण गरिनुपर्ने छ। यदि असर पर्ने भन्ने अवस्था आएमा आयोजनाले उचित व्यवस्थापन गर्नु पर्ने छ।

आजमिनि २००८।१०।१९ का दिन चैत्र शुक्ल गजपौर्णिमा वडा नं. ८ स्थित विशाल बजारमा नेपाल विद्युत प्राधिकरण त्रिएण प्रणाली स्थापनाति तथा विस्ताा आभोज्यता (८६०६६) अन्तर्गत निर्माण हुन गईरहेको त्रिविधमा विद्युत वितरण नएन उपआयोजना निर्माणको शिलशिलामा पर्ने सक्ने वातावरणिय, सामाजिक तथा सांस्कृतिक प्रभावहरुको अस्तछा बारेमा यस वडा नं.

इन्का वडा अध्यक्ष श्री तारा वैद्य सुवेदीको अध्यक्षतामा रंगम
गो. वडा समितिका तथा स्थानिय बुद्धिजिविरुद्धो उद्योगसितमा
जरिदको भेलामा देहाय वमेषजिमको हस्तपुल तथा
निर्णयहरु जरिदको छ ।

उपास्थिती

क्र.सं.	नाम	पद/पेशा	डेगना	मैत्र	हस्ताक्षर
१.	तारा केशर सुवेदी	बडा मजदूर	चौकुरे - ८	१८४८२०४२	सुवेदी
२.	निर्मला राना	गांधी उपाध्यक्ष	चौकुरे - ८	१८४९१०४९	राना
३.	जयराज सुवेदी	बडा मजदूर	चौकुरे - ८		सुवेदी
४.	मिने वसापुर मजली	"	"		मजली
५.	मोहन मजली	गानेश मजदूर	"		मजली
६.	उमेश देवी उपाध्यक्ष	महिला संघ	"		उमेश
७.	सुमित्रा कुमारी	बडा सचिव	"	१८४९१०४९	सुमित्रा
८.	भानुमती छिमिरी	भोल कर्मि	चौकुरे - ८	१८४९१०४९	छिमिरी
९.	गोत्राज नयड	स्वायामि	"	१८४९१०४९	गोत्राज
१०.	जयराज मिमिल्येता	"	"		जयराज
११.	बलदेव साकोरे	"	"	१८४९१०४९	बलदेव
१२.	अश्विनी साकोरे	स्वायामि	"	१८४९१०४९	अश्विनी
१३.	नर गी मिड	"	"	१८४९१०४९	नर गी
१४.	गंगाधर वडावन	"	"		गंगाधर
१५.	भीम केशरपानी	"	"	१८४९१०४९	भीम केशर
१६.	रत्ना मजली	"	"		रत्ना
१७.	सुमल देवी गीता	नर गी मजली	"	१८४९१०४९	सुमल देवी
१८.	सुमिल मजली	"	"	१८४९१०४९	सुमिल
१९.	राज देवी मजली	"	"	१८४९१०४९	राज देवी
२०.	सुमिल मजली	नर गी मजली	चौकुरे - ८	१८४९१०४९	सुमिल

Page No. _____
Date: / /

क्र.	नाम	पदावेला	ठेगाना	प्लान	हेडक्वार्टर
२१)	कृष्ण कान	रामजहासरी	NEAEC		
२२)	यमलाल खत्री	"	NEAEC		
२३)	रामप्रसाद कुँडेल	जातावरगविद	"	१८७११६०६८६	
२४)	सुरज व्योपाय	"	"		
२५)	नवराज वि.ड.				

निर्णयहरू

१. आयोगको वारेमा DSUEP का रनिनुभएको विशदता जानकारी भयो।
२. आयोगको निर्माणको क्रममा स्थानीयवासीहरूलाई रिप तथा हस्तान्तरण आयोगमा प्राप्तमिति दिनुपर्नेछ।
३. यस आयोगको निर्माण गर्दा वन क्षेत्रमा पर्ने कुनैसुकै स्थलहरू हने लक्ष्मण पर्ने छ तथापि आयोगको निर्माणको क्रममा कुनै कुरा हुने अवस्था भएमा नेपाल सरकारको नियमानुसार गरिनु पर्ने छ।
४. यस आयोगको निर्माण क्रममा स्थानीय तह तथा हामी सरकारी कर्मचारीहरू पुर्ण सहयोग तथा सहकार रहेने छ।
५. यस आयोगको निर्माण गर्दा यस क्षेत्रमा रहेका धार्मिक तथा पुरातात्विक स्थलको खोज्ने कार्यमा कुनै प्रकारको नकारात्मक असर नपर्ने गरि निर्माण गरिनुपर्ने छ अझै पनि अनुरोध गर्नु भएमा आयोगको इच्छित व्यवस्थापन गर्ने पर्ने छ।
६. यस आयोगको निर्माण गर्दा कुनैसुकै अनुपस्थित भएमा तथै पोल रहेको क्षेत्रमा अकाधनिकहरूको आवाजको परेमा कडा कार्रवाई गर्ने समझौता गर्नेछ।
७. यस क्षेत्रमा विद्युतीय सेवाहरू रहेका स्थलहरूको सुरक्षाका लागि यथासिक्क यस आयोगको शुक्र गर्नु अग्रपेक्षा निर्णय गरियो।

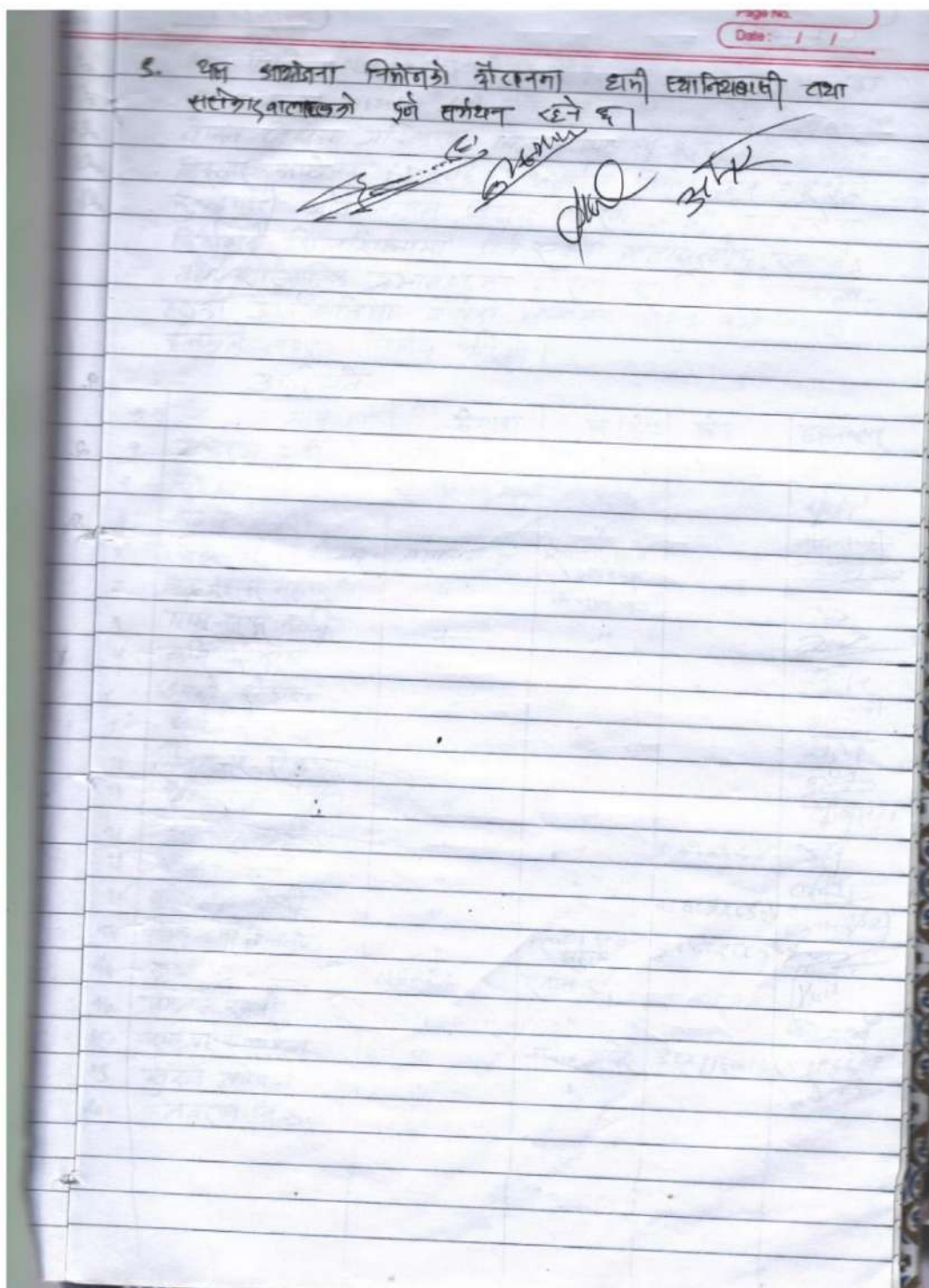
Page No. _____
Date: / /

८. यस आयोगको निर्माण गर्दा यस क्षेत्रमा वसोवास रहेका आदिवासी जनजातीहरूको सांस्कृतिक परम्परा, धर्म तथा Customary Right मा कुनै प्रकारको नकारात्मक असर नपर्ने गरी जानकारी गराइएको छ।

(Handwritten signatures and marks)



[illegible]



Annex 6: DEED OF ENQUIRY (MUCHULKAS)

पञ्चपुरी नगरपालिका
५ नं वडा कार्यालय
बाबियाचौर, बिर्तामूर, सुर्खेत
कर्णाली प्रदेश नेपाल

मिति : २०७८/१०/१७

विषय : सूचना टाँसको जानकारी पठाईएको सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण

वितरण तथा ग्राहक सेवा निर्देशनालय

दरबारमार्ग, काठमाण्डौ ।

प्रस्तुत विषयमा तँहा कार्यालयको च.नं. १३२ मिति २०७८/१०/०६ गतेको पत्रानुसारको व्यहोरा अवगत भयो, सो सम्बन्धमा यस पञ्चपुरी नगरपालिका वडा नं. ५ मा मिति २०७८/१०/१७ गतेका दिन सो उल्लेखित सूचना टास गरि सो जानकारी पठाईएको व्यहोरा अनुरोध छ ।


अमृता कुमारी पौडेल
वडा सदिव



प.सं. २०७८/०७९
च.नं. २०९

पञ्चपुरी नगरपालिका
५ नं. वडा कार्यालय
बाबियाचौर, सुर्खेत
कर्णाली प्रदेश नेपाल

मिति : २०७८/१०/१७

बिषय : सिफारिस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण

वितरण तथा ग्राहक सेवा निर्देशनालय

दरबारमार्ग, काठमाण्डौ

प्रस्तुत बिषयमा तँहा कार्यालयको च.नं. १३७ मिति २०७८/१०/०७ गतेको पत्रानुसारको व्यहोरा अवगत भयो, सो सम्बन्धमा यस पञ्चपुरी नगरपालिका वडा नं. ५ मा रहेका स्थानिय आदिवासी जनजातीलाई सो आयोजना कार्यन्वयन गर्दा कुनै पनि नकरात्मक असर नपर्ने हुँदा तँहा कार्यालयको नियमानुसार सो कार्या गर्नुहुन सिफारिस साथ अनुरोध छ ।

०७/१०/१७
डा. बहादुर शर्मा
का. अध्यक्ष

(Handwritten signature)





पञ्चपुरी नगरपालिका
द नं वडा कार्यालय
दुलालथाई, सुर्खेत
कर्णाली प्रदेश, नेपाल

प.स. २०७८/०७९

मिति: २०७८/१०/१७

च.न. ३६२

विषय : सुचना टाँस गरिएको सम्बन्धमा।

श्री नेपाल विद्युत प्राधिकरण,
विवरण तथा ग्राहक सेवा निर्देशनालय,
नेपाल वितरण प्रणाली स्तरउन्नती तथा विस्तार आयोजना।

उपरोक्त सम्बन्धमा तहाँ कार्यालयको मिति २०७८/१०/१७ च.न. १३४ को पत्रसाथ प्राप्त सुचना यस कार्यालयको सुचना पाटिमा टाँस गरिएको ज्ञोरा अनुरोध छ।

२०७८/१०/१७
भक्तिप्रसाद पाँडेल
वडा अध्यक्ष

(Handwritten signature)





पञ्चपुरी नगरपालिका
८ नं वडा कार्यालय
दुलालथाई, सुर्खेत
कर्णाली प्रदेश, नेपाल

प.स. २०७८/०७९

मिति: २०७८/१०/१८

च.न. २६१

विषय : सिफारिस सम्बन्धमा ।

श्री नेपाल विद्युत प्राधिकरण,
विवरण तथा ग्राहक सेवा निर्देशनालय,
नेपाल वितरण प्रणाली स्तरउन्नती तथा विस्तार आयोजना,
दरबारमार्ग काठमाण्डौ ।

उपरोक्त सम्बन्धमा तहाँ कार्यालयको मिति २०७८/१०/७ च.न. १३ को गतेको पत्रानुसारको व्यहोरा अवगत भयो, सो सम्बन्धमा यस पञ्चपुरी नगरपालिका वडा नं ८ मा रहेको स्थानिय आदिवासी जनजातिलाई सो आयोजना कार्यान्वयन गर्दा कुनै पनि नकरात्मक असर नपर्ने हुँदा तहाँ कार्यालयको नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध छ ।

(Signature)
२०७८/१०/१८
भक्तिप्रसाद पौडेल
वडा अध्यक्ष

(Signature)





प.स. ०७८/७९

च.नं. ५५५

पञ्चपुरी नगरपालिका
९ नं. वडा कार्यालय



मिति: २०७८/१०/१८

श्री:-नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना।

विषय: सूचना टाँस गरिएको सम्बन्धमा।

प्रस्तुत विषयमा नेपाल विद्युत प्राधिकरण को च.नं. १३२ मिति: २०७८/१०/०६ को सूचना यस
पञ्चपुरी नगरपालिका वडा नं. ९ मा सूचना टाँस भएको व्यहोरा अनुरोध छ।


शिवराज पौड्याल
वडा सचिव
शिवराज पौड्याल
वडा सचिव






पञ्चपुरी नगरपालिका
९ नं. वडा कार्यालय
बिद्यापुर, सुर्खेत
कर्णाली प्रदेश, नेपाल

प.स. ०७८/७९

च.नं. २२३

मिति: २०७८/१०/१८

श्री:- नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना।

विषय: आदिवासी जनजातिलाई असर नगर्ने सम्बन्धमा।

उपरोक्त सम्बन्धमा नेपाल विद्युत प्राधिकरण को च.न.१३७ मिति २०७८/१०/०७ को पत्रानुसार वितरण तथा ग्राहक सेवा निर्देशनालय वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना कार्यान्वयन गर्न पञ्चपुरी नगरपालिका वडा नं. ९ मा आदिवासी जनजातिलाई असर नगर्ने व्यहोरा अनुरोध छ।

शान्तिराज खरेल

वडा अध्यक्ष
शान्तिराज खरेल
वडा अध्यक्ष

श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
.....कठमाडौं..... प्रदेश,सुर्खेत..... जिल्ला,चौकु..... गापा/नपा
.....६..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित "वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना" को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यसकठमाडौं..... प्रदेश,
.....सुर्खेत..... जिल्ला, गाउँ/नगर पालिका वार्ड नं४..... मा अवस्थित
यसवडा कार्यालय..... को सूचना पाटिमा २०७८/१०/२० गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुसन्ध छ ।

हस्ताक्षर:

नाम:

पद:

नमराज जैसी

वडा अध्यक्ष

चौकु

असि

वडा अध्यक्ष



कार्यालय/संस्थाको छाप



चौकुने गाउँपालिका
४ नं. वडा कार्यालय
विजौरा, सप्तरी
कर्णाली प्रदेश, नेपाल

पत्र संख्या:-२०७८/०७९

चलानी नं.:- ३१३

मिति :-२०७८/१०/२९

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा माध्यम सेवा निर्देशनालय
दरबार मार्ग काठमाडौं

विषय : जानकारी सम्बन्धमा ।

उपर्युक्त सम्बन्धमा तपाईं कार्यालयको मिति २०७८/१०/०७ को नं. १३७ को प्राप्त पत्र अनुसार विद्युतीकरण गर्दा प्रसन्न क्षेत्रमा पर्ने जमीन-जग्गा आदिवासीहरूलाई कुनैपनि नकारात्मक असर नपर्ने साथै प्रभावित सब स्टेशन क्षेत्र विजौरा भुइँभावर्मा कुनै प्रकारको न्यारे नश्व क्षेत्र तथा उपयोग जग्गा नभएको तथ्यांक जानकारी गराइएको छ ।

नमराज जैसी
वडा अध्यक्ष
नमराज जैसी
वडा अध्यक्ष



चौकुने गाउँपालिका
५ नं. वडा कार्यालय
मायाताल, सुर्खेत

पत्र संख्या : ०७८/०७९
चलानी नं. : २५७

कर्णाली प्रदेश, नेपाल
मिति: २०७८ १०/२९

श्री नेपाल विद्युत प्राधिकरण

वितरण तथा ग्राहक सेवा निर्देशनालय

दरबार मार्ग, काठमाण्डौ ।

विषय : सिफारिस सम्बन्धमा ।

प्रस्तुत विषयमा तह्रा कार्यालयको च.न.१३७ मिति २०७८/१०/०७ गतेको पत्रानुसार को व्यहोरा अवगत भयो, सो सम्बन्धमा यस चौकुने गाउँपालिका वडा नं. ५ मा रहेका स्थानिय आदिवासी जनजातीलाई सो आयोजना कार्यान्वयन गर्दा कुनै पनि तक्रारत्मक असर नपने हुँदा तह्रा कार्यालयको नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध गरिन्छ ।


तुलाराम हिस्की मगर
वडा अध्यक्ष


श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
.....कोशी..... प्रदेश,सुर्खेत..... जिल्ला,चौकुने..... गाँपा/नपा
.....६..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित “वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना” को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिवेदन तयारी सम्बन्धि सार्वजनिक सूचना यसकोशी..... प्रदेश,
.....सुर्खेत..... जिल्ला, गाउँ/नगर पालिका वार्ड नं६..... मा अवस्थित
यसवडा कार्यालयमा..... को सूचना पाटिमा २०७८/१०/१० गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम:

पद:

अनुरोध गर्ने वडाका
वडा अध्यक्ष

कार्यालय/संस्थाको छाप



श्री नेपाल विद्युत प्राधिकरण
वितरण प्रणाली स्तरउन्नति तथा विस्तार आयोजना,
दरबारमार्ग, काठमाण्डौ, नेपाल ।

विषय: सूचना टाँस गरिएको सम्बन्धमा ।

उपरोक्त सम्बन्धमा त्यस कम्पनीको मिति २०७८/१०/०६ को प्राप्त पत्रानुसार
.....काठमाडौं..... प्रदेश, सुनसरी जिल्ला, सौकुले गाउँ/नपा
.....५..... वडामा नेपाल विद्युत प्राधिकरण द्वारा प्रस्तावित 'वितरण प्रणाली स्तरउन्नति
तथा विस्तार आयोजना' को वातावरणीय तथा सामाजिक व्यवस्थापन योजना (Environment and Social
Management Plan) प्रतिबेदन तयारी सम्बन्धि सार्वजनिक सूचना यस सुनसरी प्रदेश,
.....सुनसरी..... जिल्ला, गाउँ/नगर पालिका वार्ड नं ५ मा अवस्थित
यस वडा कार्यालयमा को सूचना पाटिमा २०७८/१०/१९ गते टाँस
गरिएको व्यहोरा जानकारीका लागि अनुरोध छ ।

हस्ताक्षर:

नाम: सुनसरी हिस्की गजाल

पद: वडा अध्यक्ष

सुनसरी हिस्की गजाल
वडा अध्यक्ष



कार्यालय/संस्थाको छाप



चौकुने गाउँपालिका
७ नं. वडा कार्यालय

गुठ, सुर्खेत

कर्णाली प्रदेश, नेपाल

पत्र संख्या : ०६८/०६८
चलानी नम्बर : ७४२



मिति : २०६८/१०/२१

विषय:- सिफारिस सम्बन्धमा

श्री नेपाल विद्युत प्राधिकरण
वितरण तथा ग्राहक सेवा निर्देशनालय
करमार् मार्ग काठमाडौं

प्रस्तुत विषयमा तँहा कार्यालयको च.नं. १३६ मिति २०६८/१०/०६ गतेको पत्राबुसारको व्यहोरा क्षमगत भयो, सो सम्बन्धमा चौकुने गाउँपालिका वडा नं. ७ मा रहेका स्थानीय आफन्तहरू अनजानीहरूलाई सो आयोजना कार्यन्वयन गर्दा कुनै पनि प्रकारको असर पर्ने हुँदा तँहा कार्यालयको नियमानुसार सो कार्य गर्नुहुन सिफारिस साथ अनुरोध गरिन्छ।

(Signature)
२०६८/१०/२१

अमर बहादुर षडोकेरी
अमर बहादुर षडोकेरी
वडा वडा अध्यक्ष

(Signature)



Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES**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 - खुला खान्दा



Danger of open trench
खतरा - खुला ट्रेंच



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

INSTRUCTION SIGNS

Do Not Touch
छुन नहोस्



Food and Drink Prohibited
खाद्य र पेय निषिद्ध



Slow Sign for Traffic Control
मिलको बाटुको



Directional Exit Sign
बाहिर जाने दिशा

SAFETY AND SAFETY INSTRUCTION SIGNS

Safety Gloves Required
सुरक्षी घुन्नाको आवश्यक



Safety Vests Required
सुरक्षी भेलको आवश्यक



Safety Glasses Required
सुरक्षी चशमा आवश्यक



Safety Shoes Required
सुरक्षी जूता आवश्यक



Annex 8: PHOTOGRAPHS



Tapping point (Babiyachaur Substation)



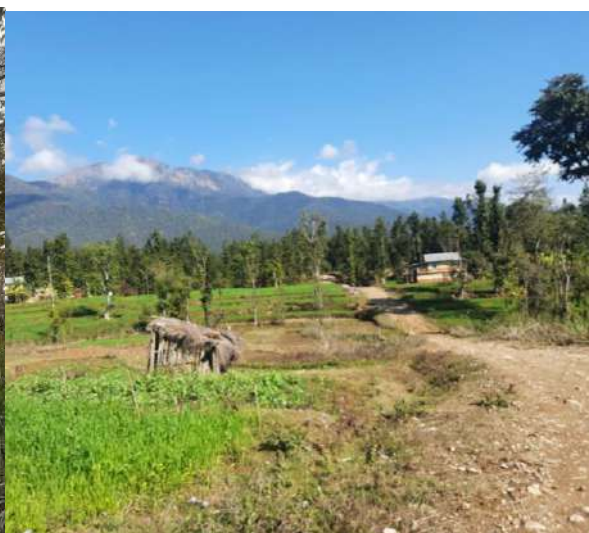
Bishal bazar along the DL alignment



Crossing of Bijju Khola at Chaukune RM, Ward No.8



Vitri Kopila at Panchapuri Municipality, Ward No. 09



Alignment of proposed DL at Chaukune RM, Ward No.7



Alignment of proposed DL at Kullu Community Forest at Chaukune RM, Ward No.4



Proposed area for substation at Chaukune RM, Ward No.4



Consultation Meeting at Bidhyapur, Panchapuri Municipality, Ward No. 9



Consultation Meeting at Guttu, Chaukune Rural Municipality, Ward No. 7



Consultation Meeting at Babiyachaur-5, Panchapuri Municipality



Consultation Meeting at Tallo Bijju-9, Panchapuri Municipality