

**ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN**

**LAMAHI-GADHAWA DISTRIBUTION LINE SUBPROJECT**

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

**DANG DISTRICT, LUMBINI PROVINCE**

**NEPAL ELECTRICITY AUTHORITY**

**DISTRIBUTION AND CONSUMER  
SERVICE DIRECTORATE**

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

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## TABLE OF CONTENT

<b>LIST OF TABLES .....</b>	<b>II</b>
<b>LIST OF FIGURES .....</b>	<b>II</b>
<b>LIST OF ANNEXES .....</b>	<b>III</b>
<b>ABBREVIATIONS .....</b>	<b>IV</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>VII</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
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
<b>2. DESCRIPTION OF THE SUBPROJECT.....</b>	<b>5</b>
2.1 SUBPROJECT LOCATION AND ACCESSIBILITY .....	5
2.2 SUBPROJECT COMPONENTS.....	7
2.2.1 33 kV DISTRIBUTION LINE (DL).....	7
2.2.2 SUBSTATION.....	7
2.2.3 11 kV LINES AND LT LINES.....	8
2.3 MAJOR CONSTRUCTION ACTIVITIES IN THE SUBPROJECT.....	9
2.4 ENERGY TO BE USED.....	9
2.5 LAND REQUIRED .....	9
2.6 MATERIAL REQUIREMENT AND SOURCES .....	9
2.7 MAJOR EQUIPMENT AND POWER REQUIREMENTS .....	10
2.8 WORKFORCE REQUIREMENT .....	10
2.9 CONSTRUCTION AND IMPLEMENTATION SCHEDULE.....	11
<b>3. DESCRIPTION OF THE ENVIRONMENT.....</b>	<b>12</b>
3.1 PHYSICAL ENVIRONMENT .....	12
3.1.1 TOPOGRAPHY AND LAND USE .....	12
3.1.2 GEOLOGY.....	13
3.1.3 SEISMOLOGY .....	14
3.1.4 CLIMATE.....	14
3.1.5 AIR, NOISE, WATER QUALITY AND POLLUTING SOURCES .....	14
3.1.6 SOLID WASTE MANAGEMENT .....	15
3.2 BIOLOGICAL ENVIRONMENT.....	16
3.3 SOCIO-ECONOMIC ENVIRONMENT .....	16
<b>4. ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES .....</b>	<b>19</b>
4.1 ANTICIPATED BENEFICIAL IMPACTS .....	19

<b>4.2</b>	<b>ANTICIPATED ADVERSE IMPACTS.....</b>	<b>20</b>
<b>5.</b>	<b>INFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION.....</b>	<b>27</b>
<b>6.</b>	<b>INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM.....</b>	<b>31</b>
<b>7.</b>	<b>ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....</b>	<b>35</b>
<b>8.</b>	<b>CONCLUSION.....</b>	<b>43</b>
	<b>REFERENCES.....</b>	<b>44</b>

#### LIST OF TABLES

<b>Table 2-1:</b>	Technical Description of the proposed Subproject .....	6
<b>Table 2-2:</b>	Approximate Quantity of Material for 33 kV line .....	10
<b>Table 2-3:</b>	Approximate Quantity of Material for 33/11 kV Substation .....	10
<b>Table 2-4:</b>	Human Resource Required for construction of 33 kV line and substation in a day of Construction.....	11
<b>Table 3-1:</b>	Ambient Air and Noise Quality within the Proposed Subproject Site .....	15
<b>Table 3-2:</b>	Water Quality of Stream along the Distribution Line Route .....	15
<b>Table 3-3:</b>	Estimated Daily Solid Waste Generation from Campsite .....	16
<b>Table 3-4:</b>	General Demographic Characteristic of Subproject Municipality .....	17
<b>Table 5-1:</b>	Summary of issues, comments and suggestions received in Consultations .....	29
<b>Table 6-1:</b>	Levels of Grievance Redress Mechanism Based on Time Bound .....	33
<b>Table 7-1:</b>	Environmental and Social Management Plan (ESMP) .....	36
<b>Table 7-2:</b>	Minimum Provisions for Environmental Monitoring.....	40
<b>Table 7-3:</b>	Mitigation Measures and Monitoring Activities Cost Estimates.....	42

#### LIST OF FIGURES

<b>Figure 1-1:</b>	Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Lamahi-Gadhawa DL Subproject .....	4
<b>Figure 2-1:</b>	Location and Accessibility Map of Lamahi-Gadhawa Subproject.....	5
<b>Figure 3-1:</b>	Location map and Land use details of the Subproject .....	12
<b>Figure 3-2:</b>	Tapping Point of DL at Lamahi Substation .....	13
<b>Figure 3-3:</b>	Lamahi-Gadhawa Substation View.....	13
<b>Figure 3-4:</b>	Geological Map of proposed Subproject Area .....	13
<b>Figure 3-5:</b>	Seismicity map of Nepal from 1964 -2019 .....	14
<b>Figure 5-1:</b>	Identified Stakeholder in the Subproject .....	27
<b>Figure 5-2:</b>	Consultation with the stakeholders and communities in the Subproject Area. ..	28
<b>Figure 6-1:</b>	Institutional Arrangement for Environmental and Social Management.....	31
<b>Figure 6-2:</b>	Workflow Diagram for GRM from NEA .....	34

**LIST OF ANNEXES**

<b>Annex 1: SAMPLE NOTICE FOR PUBLIC CONSULTATION AND GRM FORMATION LETTER TO STAKEHOLDERS .....</b>	<b>ii</b>
<b>Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT .....</b>	<b>v</b>
<b>Annex 3: FACILITY AND COMPONENTS .....</b>	<b>xiii</b>
<b>Annex 4: LEGISLATIVE PROVISIONS .....</b>	<b>xvi</b>
<b>Annex 5: CONSULATATION MEETING MINUTES.....</b>	<b>xxi</b>
<b>Annex 6: DEED OF INQUIRY (MUCHULKAS).....</b>	<b>xxvii</b>
<b>Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES .....</b>	<b>xxx</b>
<b>Annex 8: PHOTOGRAPHS .....</b>	<b>xxxii</b>
<b>Annex 9: ENVIRONMENTAL AND SOCIAL SCREENING AND RAPID ASSESSMENT GUIDANCE FOR DISTRIBUTION LINE.....</b>	<b>xxxiv</b>

**ABBREVIATIONS**

ACSR	Aluminum Conductor Steel Reinforced
AIIB	Asian Infrastructure and Investment Bank
BES	Brief Environment Study
COVID-19	Corona Virus Disease
CDP	Community Development Programme
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 <sub>2</sub>	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 the reliability and quality of electric supply in the Karnali Province, Lumbini Province and Sudurpashchim Province. The proposed **Lamahi-Gadhawa Distribution Line Subproject** is located within Lamahi Municipality, Ward No. 4 and 5, and Gadhawa Rural Municipality (RM), Ward No. 5, 6 and 7 of Dang District in Lumbini Province. The Subproject requires 0.69 ha of land (Government Land) for the construction of the substation. The 33 kV distribution line of 10.35 km passes along the Right of Way (RoW) of the road and private land with installation of poles at the edge of the private farm lands. 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 the Dang Valley of Chure Range. The substation lies at Latitude 27°48'46.47"N, Longitude 82°31'18.27"E, and elevation of 248 masl. The climate of the Subproject area is sub-tropical. The annual average maximum temperature is 28.73°C and the minimum with 15.94°C. The average annual rainfall is estimated at approximately 1560.9 mm per year. The air quality and noise level of the SPA were found within the range of the National Ambient Air Quality Standard and Noise Quality Standard, respectively. No water sources were recorded within and nearby the substation area and within the alignment of distribution line.

**Biological Environment:** The proposed Subproject Core Project Area avoids the forestland. The Subproject does not lie in any protected area, although it is located in the Chure region without any induced impact on the biological environment. The Subproject components substation and 33 kV distribution line do not intercept any forest area, thus there will be no issues of tree loss. The surrounding environment of the Subproject area contains sparse vegetation with species common to the area. Similarly, the bird species seen in the surrounding environment are House Crow (*Corvus splendens*), Western Spotted Dove (*Spilopelia suratensis*), Rock Dove (*Columba livia*), Rose-ringed Parakeet (*Alexandrinus krameri*), House Sparrow (*Passer domesticus*), Tree Sparrow (*Passer montanus*), Grey Francolin (*Francolinus pondicerianus*), Common Quail (*Coturnix coturnix*), Black-backed Forktail (*Enicurus immaculatus*), Common Kingfisher (*Alcedo atthis*), Red-wattled Lapwing (*Vanellus indicus*), Ruddy Shelduck (*Tadorna ferruginea*) and White-rumped Vulture (*Gyps bengalensis*).

**Socio-Economic Environment:** The major ethnic compositions within the surrounding project area i.e., Ward No. 4 and 5 of Lamahi Municipality and Ward No. 5, 6 and 7 of Gadhawa RM of Dang District are Tharu (60%) with their population of 28,538 and 17,563 in Lamahi Municipality and Gadhawa RM, respectively and followed by Chhetri (11%) and Brahmins (9%) of the total population. The implementation of the Subproject will increase the electricity beneficiaries to 18,707 HHs, 90 commercial purposes, and 23 industries. Lamahi, Kolahi, Balampur, Legadi, Madhya Deupur and Maurahawa are the nearest business market nearby the Subproject. The transportation facilities in this local level seem to be satisfactory. Tube-well and tap/piped water is the main source of drinking water in the surrounding area. People of the Subproject have access to communication facilities mainly through mobile



telephone services. The nearest and easily accessible well-equipped health facility to the proposed Subproject is in Lamahi Bazar located at a 30-minute driving distance from the substation site. The main occupation of people in the area is agro base with nearly 60% contribution followed by small trade and businesses/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 the 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 the 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 ESMP cost estimated for the Subproject is NRs 13,00,000.00 associated with 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 the 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 the Environment and Social Management Unit and the 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 full compliance with the ESMP, an 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 Specialists will be responsible for compliance monitoring activities during the construction phase. The Environment and Social Management Unit of NEA will provide regular updates to the site offices regarding the implementation of ESMP. The contractor shall prepare an Environment, Health and Safety (EHS) plan approved by the PIU before field mobilization. The 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 installing 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 the Grievance Redress Mechanism have been established. During the ESMP study period, NEA 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 a reliable and improved electricity supply. 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 the 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. The 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 the Karnali Province, Lumbini Province and Sudurpashchim Province of Nepal. This ESMP is prepared for Lamahi-Gadhawa 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, 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

Section 3 (1) of the Environment Protection Act (EPA), 2019 describes completing Environmental Studies as per Schedule 1 or 2 or 3 under Environment Protection Regulation 2020 (First Amendment in 2021/05/24 on Nepal Gazette). For this Subproject, none of the legal provisions are compliable to Schedule 1 or 2 or 3, and hence, detailed environmental studies (Brief Environmental Study (BES) or Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is not mandatory. 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.

#### 1.5 Methodology for the ESMP

The methodology adopted for this ESMP study is as follows:

- Literature Review:** Review of published literatures was conducted, with priority given to publications of government institutions as well as international organizations, to collect information on project surroundings. The Municipality/Rural 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**.
- 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 of the Subproject footprint area were applicable for the biological assessment. The consultation was conducted with local communities around substation site and the settlement areas that benefit from the project.
- 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, and also complied 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 footprint Ward and Municipality/RM are considered for the collection of socio-economic and baseline information.

- iv. **Impact Evaluation:** The significance of impacts was 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 the subject of consultation, venue, and time were given at Subproject footprint area, local level and affected Ward office in presence of the 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) have mentioned on the "Core Project Area", and "Surrounding Project Area" based on proximity and magnitude of the impacts due to the 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 the **Lamahi-Gadhawa Distribution Line Subproject**, the proposed substation area with 0.69 ha and Right of Way (RoW) of 33 kV distribution line with 10.35 km length is considered as CPA. The Subproject components are located within Ward No. 4 and 5 of Lamahi Municipality and Ward No. 5, 6 and 7 of Gadhawa RM. The major settlements are Lamahi, Arnahawa, Kolhai, Chailahi, Bhurdanda, Balarampur, Bodipur, Aatipakhar, Balapur and Gadhawa. The distribution line stringing route passes along the RoW of the road from Lamahi to Gadhawa.

**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 Lamahi Municipality, Ward No. 4 and 5, and Gadhawa RM Ward No. 5, 6 and 7 of Dang district being considered as SPA. The SPA will have impact on the beneficiary's area of 11 kV lines and Low Tension (LT) lines service. The impact area showing the CPA and SPA area is presented in the google map **Figure 1-1**.

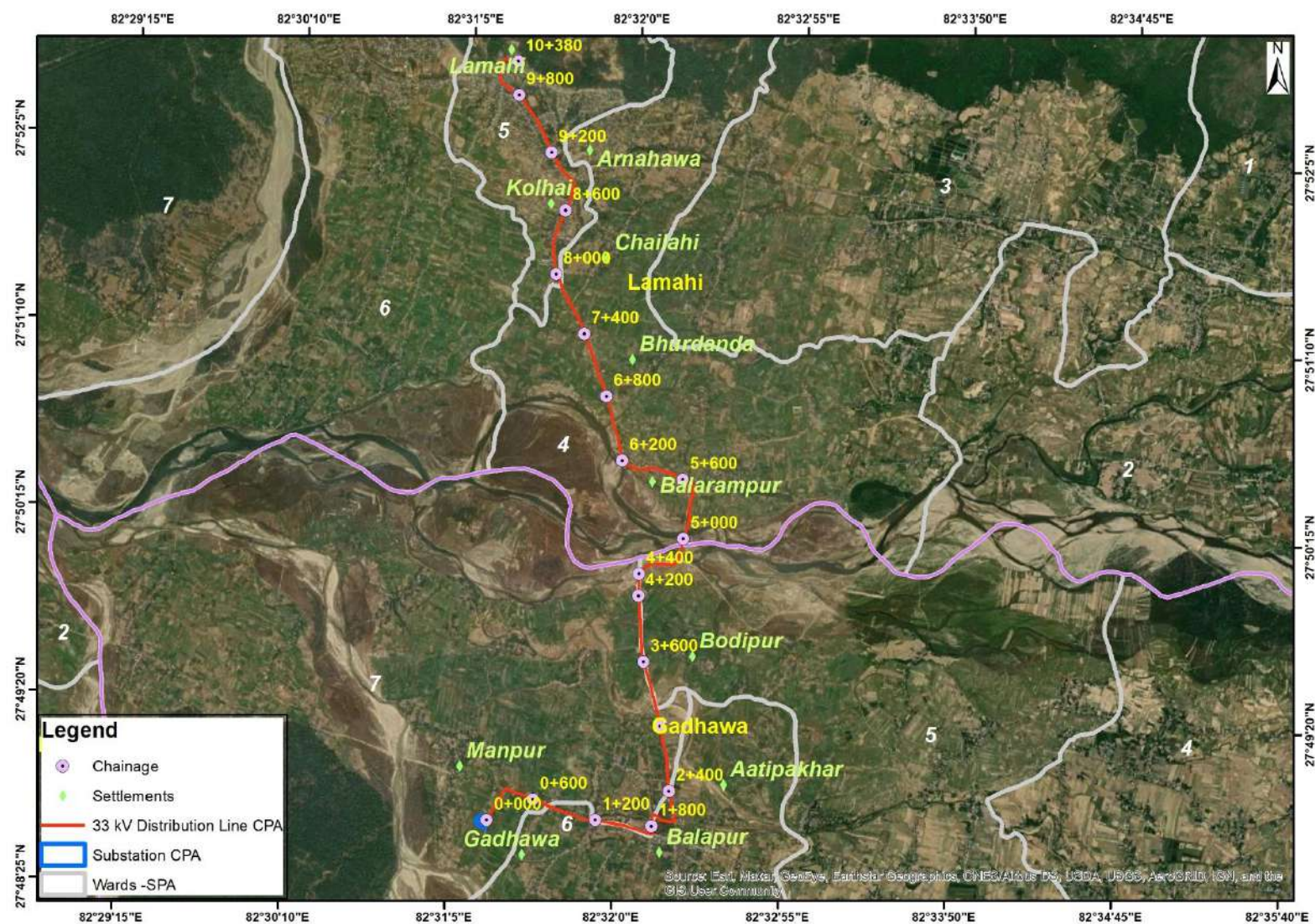


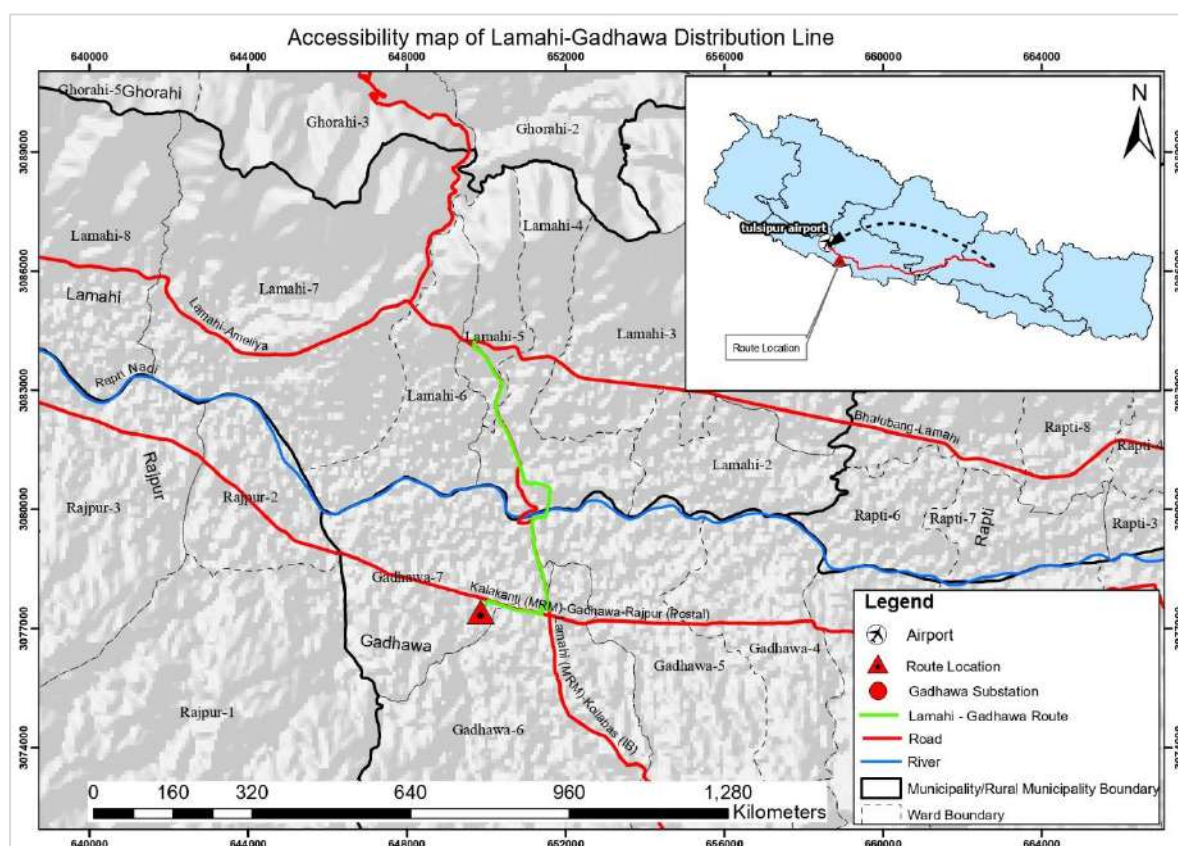
Figure 1-1: Core Project Area (CPA) and the Surrounding Project Area (SPA) Wards of the Lamahi-Gadhawa DL Subproject



## 2. DESCRIPTION OF THE SUBPROJECT

### 2.1 Subproject Location and Accessibility

The proposed **Lamahi-Gadhawa Distribution Line Subproject** is located within, Lamahi Municipality, Ward No. 4 and 5, and Gadhawa RM Ward No. 5, 6 and 7 of Dang District in Lumbini Province. The tapping point of 33 kV line lies in Lamahi substation, Lamahi Municipality-5 just adjoining to the East-West Highway (Mahendra Highway). The proposed distribution line (33 kV) is 10.35 km in length and run by the edge of private farm lands, and RoW of Lamahi-Koilabas Road up to the Gadhawa chowk towards south after crossing West-Rapti River; then through Kalakanti (MRM)-Gadhawa-Rajpur Postal highway section towards west from same chowk. There is the access to road within the proposed Subproject Ward area. The Subproject location and the accessibility map are presented in **Figure 2-1**. The main features of the Subproject are presented in **Table 2-1**.



**Figure 2-1: Location and Accessibility Map of Lamahi-Gadhawa Subproject<sup>1</sup>**

<sup>1</sup> 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)
Sub Project	Lamahi-Gadhawa Distribution Line Subproject
Funding Agency	AIIB
Project Location	Lamahi Municipality and Gadhawa Rural Municipality, Dang, Lumbini Province
<b>Distribution Line</b>	
33kV Line Starting Point	Line Bay Extension at 132/33 kV Lamahi Municipality-5 and 6, Lamahi Substation Point, Dang Co-ordinate: Lat 27°52'29.81"N, 82°31'20.06"E
33kV Line End Point	Gadhawa Substation (Proposed) at Gadhawa RM-7, Bhedi Dumna, Dang Co-ordinate: Lat 27°48'46.47"N, Long 82°31'18.27"E
Type of Land	Government/Ailani
System Voltage	33 kV
Max, Min System Voltage	36, 30 kV
Climatic Condition	Wind Speed: As per IS 802-1-1 Maximum Ambient Temperature: 45 °C Altitude (Min, Max): 230, 280 masl
Length of Line /Number of poles	10.35 km (2.43 km underground cabling and 7.92 km stringing line route)/ No. of Poles: 198
Right of way	6 m
Number of Circuit	2
Conductor	ACSR Dog
Line Capacity/Thermal Limit (approx.)	13.4 MW at 0.9 power factor
Type of Poles	Steel Tubular/Telescopic Pole, 13m
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) for Steel Tubular Pole 0.45m approx. for Steel Telescopic Pole
Planting Depth of Pole	2.2m
Insulators	Porcelain Disc and Pin Insulator
<b>Substation</b>	
Location	Gadhawa RM-7, Gadhawa, Dang Co-ordinate: Lat 27°48'45.99"N, Long 82°31'17.64"E Elevation: 248 masl
Type of Land	Government/Ailani
Voltage Level	33/11 kV
Substation Capacity	8 MVA
Number and Capacity of Transformer	1 nos., 8 MVA
Type of Transformer	3 Phase, ONAN/ONAF, 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	0.69 ha, Parcel Number (348)



## 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 Subproject 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 comprise the Steel Tubular Poles, Insulators, Conductors and Supporting Stays.

**Steel Tubular Poles:** Steel tubular poles will be installed in this Subproject. 11 m and 13 m long poles shall be used depending upon the location of the poles and the 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. Length of 33 kV stringing line route is 7.92 km and the total number of steel tubular poles to be erected are estimated as 198.

**Insulators:** The insulators provide insulation to the poles from the 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 their 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 8 MVA. The substation plays the role of lowering the 33 kV voltage level to 11 kV, which will then be strung as a distribution feeder to supply the consumers. The major component of the substation is the 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 purposes. 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 8 MVA ONAF type.

**Electrical Switchgear:** Electrical Equipment comprising of Circuit Breaker, Earth Switch, Current Transformer, Potential Transformers, etc. installed in the substation is called Electrical 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 the 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 the power system are laid in the switchyard based on 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 a site store for the 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 is always encouraged by the local people. The line route, thus the installation of poles and lines, is envisaged to go through the edge of local roads. If any line route passes through any private lands, permission from the corresponding land owner will be taken before the construction of those lines.

The detailed line route survey for 11 kV and LT lines has 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 it to PIU for approval. After the detailed line route is submitted by the Contractor and approved by PIU, the E&S team of the 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 issues, how can they be resolved? If the lines do not pose any adverse Environmental or Social issues, 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 any other way to divert or reroute the lines. If yes, PCS will propose an 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 issues.

## 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. The proposed Lamahi-Gadhawa Line Subproject does not intercept forest area, thus there will be no issues of tree loss in the RoW of 33 kV lines and the substation area.

- 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
- II. **Construction phase:** The activities to be carried out during the construction phase are:
  - Assign the land area for the 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 a vehicle, which emit air pollutants and greenhouse gases in insignificant quantities. Use of firewood shall be restricted in the labor camp, whereas the workers shall be provided LPG for cooking.

## 2.5 Land Required

The **Lamahi-Gadhawa Subproject** will require about 0.69 ha of land for building the substation. The land is government land and managed by Gadhawa RM. The 33 kV distribution line is 10.35 km length of which pass along the RoW of the East-West Highway Lamahi-Koilabas Road to the Gadhawa Chowk towards south after crossing West-Rapti River; then through Kalakanti-Gadhawa-Rajpur Postal Highway Section towards west from same Chowk till 1.7 km and finally to the substation in east direction. The distribution line starting from the taping point to Lamahi Municipality-5 with 2.43 km length will be underground cabling located within RoW of road.

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

Civil construction works will involve excavation for the foundation of the substation, steel reinforcement, cement, coarse aggregates, and fine aggregates (sand). Materials will be procured from legally operating local markets. Following estimated volume of construction materials are required for the proposed 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, Roads, 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 types of equipment 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 in such a way that both males and females will get an equal opportunities 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 the 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 the construction of a new 33/11 kV substation, 33 kV lines, 11 kV lines, low tension lines, and installation of distribution transformers. It includes the 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						

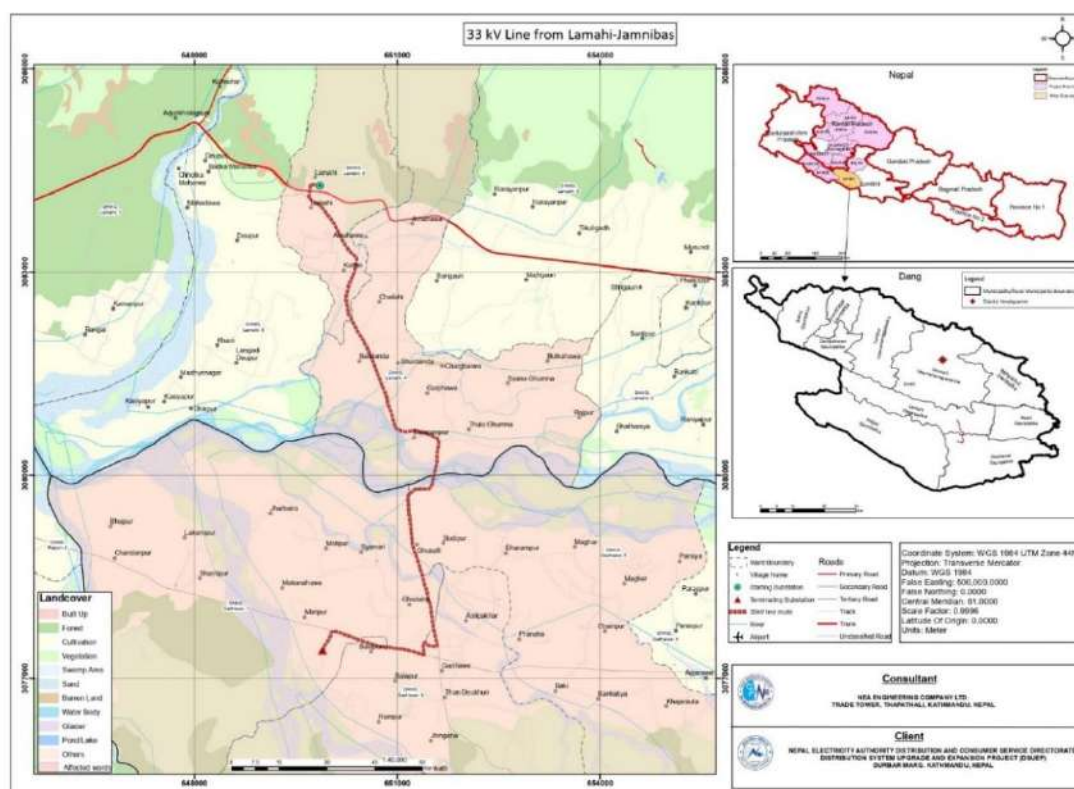
Source: Design Report, DSUEP

### 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 Lamahi Municipality and Ward No. 5, 6 and 7 of Gadhawa RM of Dang district, Lumbini Province. The Subproject components are located within the Chure Range of Nepal. The proposed distribution line (33 kV) of 10.35 km passes along a flat plain of Deukhuri Valley of Dang district through dense settlement. The tapping point is situated at Latitude 27°52'29.81"N, Longitude 82°31'20.06"E, with an elevation of 268 masl.



**Figure 3-1:** Location map and Land use details of the Subproject<sup>2</sup>

The substation lies at Latitude 27°48'46.47"N, Longitude 82°31'18.27"E, and elevation of 248 masl. The site lies in depressed flat land. It is barren land and managed by Gadhawa RM and is not used for any purpose or has no any users. The proposed substation boundary lies within a 0.69 ha area. None of the private and public entities will be affected due to the implementation of the proposed Subproject, as poles will be installed within the RoW of the existing road. The proposed distribution line sections from the taping point to 2.43 km section within Lamahi Municipality-5 Ward will be underground with cabling. Then after 7.92 km of the distribution line to the proposed substation is with stringing route. The land use map details with the components of the Subprojects are presented in **Annex 2**.

<sup>2</sup> Source: Topographic Map, Department of Survey, 1995 and Field Study 2021



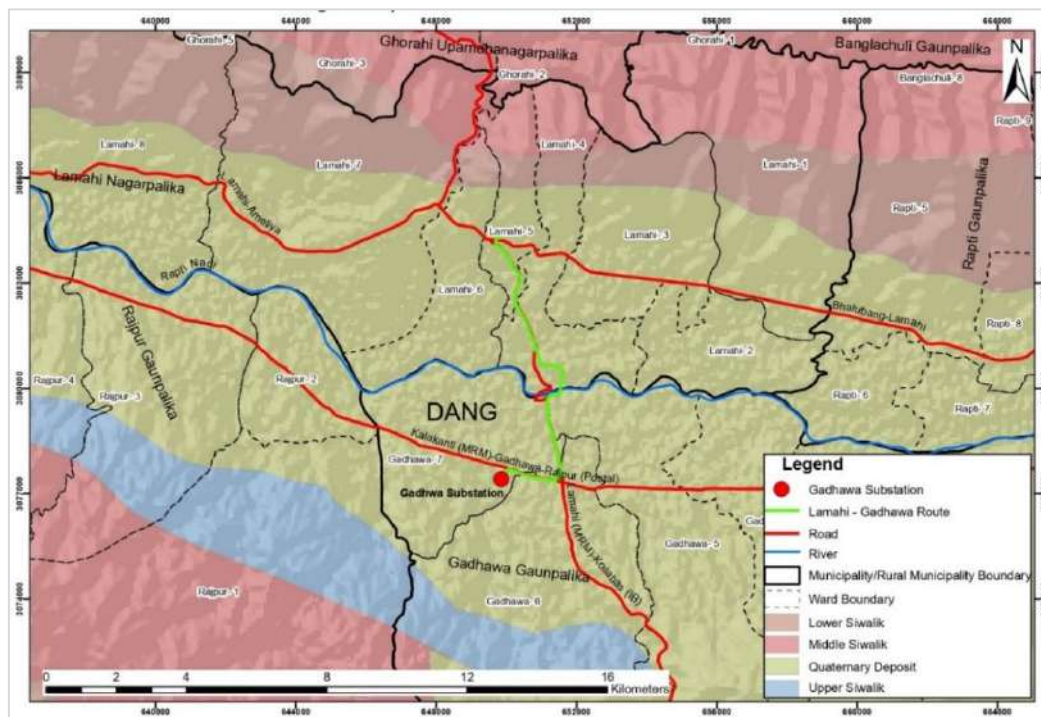
**Figure 3-2:** Tapping Point of DL at Lamahi Substation



**Figure 3-3:** Lamahi-Gadhawa Substation View

### 3.1.2 Geology

The Subproject area lies geologically in the Deukhuri Valley of Chure Range with a Quaternary to Recent deposit. Due to dense settlement from Lamahi Substation up to the Lamahi Municipality-5 Ward office at Maurighat Lalmatiya, The West Rapti River is braided and meandering pattern where high chance of riverbank cutting. The geology in and around the river is the deposit of non-cohesive soil with cobble, pebble, and gravel size content of limestone, sandstone, and coarse grain sand on the riverbank. The land is desolate and composed of cohesive silty clay (1.5 m) some silt (2.0 m) and top soil nearby the substation area. No major geological hazard has been identified associated with the proposed Subproject except moderate chances of erosion within the expanded flood plain area of West Rapti River.



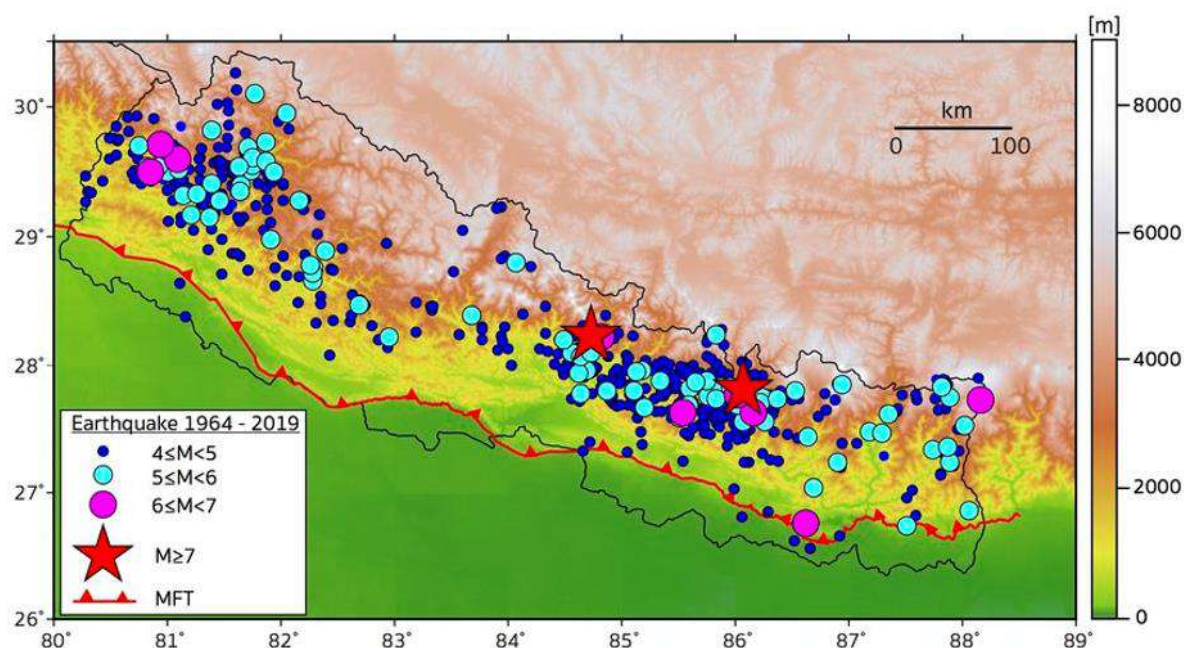
**Figure 3-4:** Geological Map of proposed Subproject Area<sup>3</sup>

<sup>3</sup> 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 the subduction of Indian tectonic plate under the Tibetan Plate. According to the 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 foothills 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 because of strike-slip faults. Therefore, the substations and distribution lines of this Subproject will be designed and operated in accordance with per seismic design requirements and best engineering practices. The seismic activity in Nepal between 1964 and 2019 as in the USGS portal is shown in **Figure 3-5**.



**Figure 3-5:** Seismicity map of Nepal from 1964 -2019<sup>4</sup>

### 3.1.4 Climate

The climate of the Subproject area is sub-tropical. According to DHM 2021, the annual average maximum temperature is 28.73°C and minimum with 15.94°C. The relative humidity is in the range of 84% to 87 %. The average annual rainfall is estimated at approximately 1560.9 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 the site is the source of noise generation. The following table shows the real-time quality of air and noise during a field study.

<sup>4</sup> Source: USGS catalogue, 2019



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

SN	Location/ Chainage	Air Quality <sup>5</sup> -Temptop Airing-1000 PM Detector ( $\mu\text{g}/\text{m}^3$ )					Noise Level -UNI-T UT 353 Mini Sound Meter (dB)		
		PM <sub>2.5</sub>	Level	PM <sub>10</sub>	Level	Average Time of Measurement	Measured	Ref. <sup>6</sup>	Area
1.	Tapping Point (Lamahi Bazar)	49.4	100	55.1	200	1-hour	47	50	Plying of Vehicle and business work
2.	West Rapti River Bridge	44.4		42.3			44.1		
3.	Substation	37.2		48.4			48.4		Plying of Vehicle

Source: Field Visit, 2021

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

There is not any presence of hydrological network within the tapping point and substation area instead DL will cross West Rapti River at Balarampur. Physical parameter of West Rapti River water was tested and the result obtained is presented in following table.

**Table 3-2:** Water Quality of Stream along the Distribution Line Route

SN	Location	Name River/ Stream	Flooding width Left-Right (m)	DL Pole from River/ Stream	Parameter- EXTECH ExStik II DO600		
					Temp. (°C)	pH	EC ( $\mu\text{c}/\text{cm}$ )
	Ch. 5+400	West Rapti River	526	80	37.8	8.53	0230

Source: Field Visit, 2021

The water quality of the West Rapti River was found to be within the accepted limit for aquatic life in the river. The water parameter data was assessed using Nepal Water Quality Guidelines for the Protection of Aquatic Ecosystem. The construction activities of the Subproject will not have any adverse impact on 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 the Subproject area. People in the nearby area were found managing organic wastes within the household premises. Recyclable waste (large quantities) was sold to scrap collector occasionally. The estimated quantity of solid waste generation from the labor camp is shown in **Table 3-3**.

<sup>5</sup> National Indoor Air Quality Standard, 2009

<sup>6</sup> National Ambient Sound Quality Standard, 2012

**Table 3-3:** 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

### 3.2 Biological Environment

The proposed Subproject's avoids the forest land but passes along the RoW of existing road and the edges of the private farm lands at Lamahi, Lamahi Municipality and Gadhawa RM of Dang District. The proposed Subproject lies at the elevation below 300 (243-268) masl in lower tropical bioclimatic zone. The proposed Subproject development site does not lie within any protected area or conservation area, although it is located within the Chure region without any induced impact on the biological environment. The Subproject components (substation and 33 kV distribution line) do not intercept any forest area, thus there will be no issue of tree loss.

The common fish species in West Rapti area are Katle (*Acrossocheilus hexagonolepis*), Rohu (*Labeo rohita*), Annandale garra (*Garra annandalei*), and Indian Mottled Eel (*Anguilla bengalensis*) were reported during consultation.

Altogether fourteen species of birds were noted around the surrounding project area; House Crow (*Corvus splendens*), Western Spotted Dove (*Spilopelia suratensis*), Rock Dove (*Columba livia*), Rose-ringed Parakeet (*Alexandrinus krameri*), House Sparrow (*Passer domesticus*), Tree Sparrow (*Passer montanus*), Grey Francolin (*Francolinus pondicerianus*), Common Quail (*Coturnix coturnix*), Black-backed Forktail (*Enicurus immaculatus*), Common Kingfisher (*Alcedo atthis*), Red-wattled Lapwing (*Vanellus indicus*), Ruddy Shelduck (*Tadorna ferruginea*) and White-rumped Vulture (*Gyps bengalensis*). All these bird species are of the least concern except White-rumped Vulture with critically endangered under IUCN categorization.

Herpetofauna like Asian Common Toad (*Duttaphrynus melanostictus*), Changeable Lizard (*Calotes versicolor*), Chequered Keelback (*Fowlea piscator*), Common Rat Snake (*Ptyas mucusa*), Common Krait (*Bungarus caeruleus*), Indian Cobra (*Naja naja*) and Indian Bullfrog (*Hoplobatrachus tigerinus*) were reported in the surrounding area of the Subproject.

### 3.3 Socio-economic Environment

**Demography and Ethnic Compositions:** The proposed Subproject area lies in Ward No. 4 and 5 of Lamahi Municipality and Ward No. 5, 6 and 7 of Gadhawa RM of Dang District. Lamahi, Kolahi, Balampur, Legadi, Madhya Deupur and Maurahawa are the nearest business market nearby the Subproject area. The general demographic information of the affected Wards is presented in **Table 3-4**. The major ethnic compositions within the

surrounding project area are Tharu (60%) with their population of 28,538 and 17,563 in Lamahi Municipality and Gadhawa RM, respectively and followed by Chhetri (11%) and Brahmins (9%) of the total population. The majority of people follow the Hinduism and the rest follow Buddhism and Christianity. 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	
Lamahi Municipality					
1.	All	22,898	24,757	47,655	9,432
2.	4	2,417	2,618	5,035	991
3.	5	3,417	3,756	7,173	1,644
Gadhawa Rural Municipality					
1.	All	18,489	20,103	38,592	7,267
2.	5	2,866	2,978	5,844	1,080
3.	6	3,043	3,403	6,446	1,260
4.	7	2,350	2,634	4,984	916

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

**Road Accessibility:** Subproject-Wards of Lamahi Municipality and Gadhawa RM are connected to all-weather DBST road. The transportation facilities in this local level seem to be satisfactory.

**Electricity Beneficiaries:** The implementation of the Subproject will increase the electricity beneficiaries to 18,707 HHs, 90 commercial purposes, and 23 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 equipped health facility to the proposed Subproject is in Lamahi Bazar located at a 30-minute driving distance from the substation site.

**Communication:** People of the Subproject have access with communication facilities mainly through mobile telephone services provided by both government and private sector. In the Subproject, people have access with local and national FM Radio networks and local newspaper facilities.

**Occupation:** Agriculture is the main occupation of people in the Subproject area with nearly 60% contribution; small trade and business/enterprises and services are other occupations of people in the Subproject area. Intermittent tripping and voltage drop of electricity were adversely affecting the irrigation of crops and daily household chores activities.

**COVID-19:** The coronavirus (COVID-19) pandemic has been defined as global and national health crisis; the virus has spread in almost all parts of Nepal. Heedful of its vulnerabilities, the Government of Nepal 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 supports 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) have been referred for the predicting magnitude, extent, and duration of the project-induced environmental impacts in the 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 15 to 20 workers for the period of 10-12 months for the erection of poles and stringing the distribution lines and 16-18 months for building the substation. Local people within the SPA and OPA will be encouraged to employment during the construction phase. 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 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 area 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, the use of electric motors for irrigation, and the establishment of small and large industries. *The magnitude of impact is 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 the 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 0.69 ha of land for the substation. The proposed substation land area belongs to government land and managed by Gadhawa RM. The land managed by the Gadhawa RM will be converted to the substation area surrounded by proper boundary wall. While in case for Distribution Line, it passes adjoining to the East-West Highway Lamahi-Koilabas Road up to the Gadhawa Chowk towards south after crossing West-Rapti River; then through Kalakanti-Gadhawa-Rajpur Postal Highway Section towards west from same Chowk till 1.7 Km and finally to the substation in east direction. The construction of the Subproject will bring change in the existing land use of the area for permanent period. Potential impacts associated with distribution lines will be limited to approximately 0.22 m of land for each pole, at the edge roads and cultivated lands. *The impacts due to the 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 the existing road without hampering traffic movement. In the case of cultivated land, minimal land will be used at the edge for planting the poles.
- A cropping calendar will be followed while erecting poles and stringing 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 Flooding

The proposed Subproject's distribution line crosses West-Rapti River; then through Kalakanti-Gadhawa-Rajpur Postal Highway Section. The river crossing is susceptible to erosion from flooding<sup>7</sup> during the rainy season. Possible flooding is during the rainy season result in erosion nearby the distribution line 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 a steel tubular pole shall not be left open as possibility of an accident may arise.

##### 4.2.3 Air Quality

The impact on air quality during the construction period is expected to be insignificant, as site clearance, excavation, haphazard 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 crews and equipment will have minor impact

<sup>7</sup> (Ghorahi SMC, 2018), P-44.

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 the 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 substation 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 construction.
- For the substation site, boundary walls serve as a noise barrier, and they should be constructed as early as possible.

#### **4.2.5 Drainage and Water Quality**

Substation land area of 0.69 ha will result in a slight alteration of drainage patterns, although the alterations in drainage will not be quantifiable. Interference with drainage patterns will be temporary during the 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 the construction of substation foundations and boundary walls, and to control dust. *The magnitude of impact is 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 by bundling temporary dikes (constructed boundary walls will also help contain run-off water).
- Proper management of ground drainage from camps as a preventive measure against the 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 a nearby authorized crusher plant approved by the 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 substation area shall be purchased from the nearby authorized crusher plant approved by the local government.
- Soil shall be covered with a 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 an adverse impact if not properly managed. Organic wastes generated from labor camp may give a foul smell, and attract rodents if not managed 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 a 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, and specially-designed containers and sealed carefully.
- Effective coordination shall be done with the local level government for proper waste management during the 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 are advised.
- Boundary walls and security fences around the 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 barren land and poles will be installed at the edge of roads and private farm land, no loss of forest and other biodiversity is expected. *The magnitude of impact is moderate, the extent is site-specific, and the duration is short-term*

#### Mitigation Measures

- Labors and staff shall be made aware to avoid illegal activities in adjoining forest.
- Labors and staffs should be restricted to use firewood for cooking

### 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 infrastructures (substation and distribution line). 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 0.69 ha, is owned by local government Gadhawa RM. The proposed physical activities of the Subproject will not be involved in private land. Therefore, there will be no land acquisition and resettlement impacts. In case of 33 kV distribution line, pass adjoining to the East-West Highway Lamahi-Koilabas Road up to the Gadhawa Chowk towards south after crossing West-Rapti River pass along the RoW of the road. The impacts on the crops while stringing of lines should be minimized. During the public consultation people have agreed to support the implementation of the Subproject (**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**

- A 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 a 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 the COVID-19 pandemic, 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 of HIV/AIDS and other sexually transmitted disease should be provided to the labors.
- Awareness of basic sanitation and waste management should be provided to the labors.
- For coronavirus (COVID-19) pandemic situation, contractor needs to handle the situation in case of any sudden surge and standardize the quarantine facilities with health aid to the labors.

**4.2.13 Contractor Occupational Hazards and Safety**

Occupational health hazard and the 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 accidents. The 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**

- The contractor shall prepare the Environmental, Health and Safety plan and take approval from the Client (NEA/PIU). The contractor shall employ a Safety officer during the 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 throughout construction.
- Installation of warning signs (High Voltage, Fire Safety Signs, and Emergency Signs).
- 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 of children and should avoid gender discrimination. Gender discrimination may occur as the Contractor may not be sensitive toward 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 wages to males and females for similar nature of work.
- Prohibit 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 at the night.
- Prohibit the use of alcohol and gambling in the camp.
- Supply water supply, daily consumable items, and communication facility in the camp so as not to create additional pressure on the local services.
- Orient workers to show respect for 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 taking appropriate measure on rule violators.

#### **Operation Phase**

##### **4.2.1 Hazards and Safety**

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

**4.2.2 Electric and Magnetic Field Effect**

Electric power distribution lines create electric and magnetic fields 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.<sup>8</sup> Research on the long-term effects of EMF associated with distribution lines is inconclusive for 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 transmission lines and equipment.

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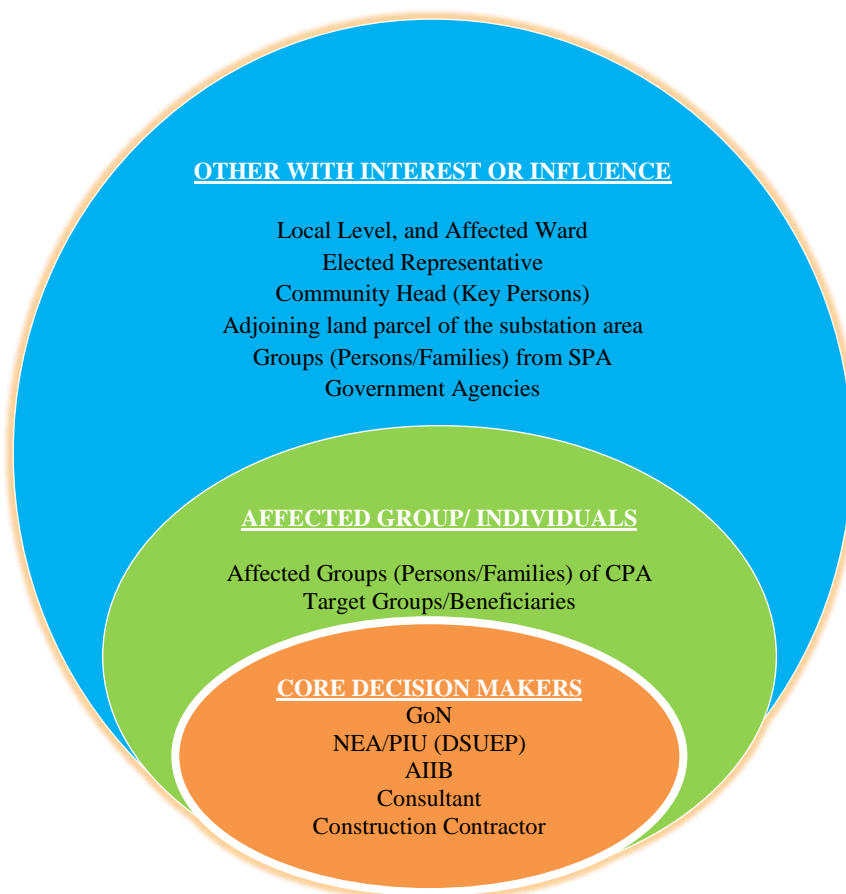
<sup>8</sup> E.g., at a distance of 10 meters from a single distribution line or conductor, electrical flux density drops to 1% of the field strength at a distance of 1 meter from the conductor:  $1/(10^2) = 1\%$ . Likewise, the magnetic field drops to 0.1% of the field strength at the conductor:  $1/(10^3) = 0.1\%$ .

## 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 stakeholders is important to understand how the Subproject activities will engage with different institutions/groups/individuals. Stakeholders are the groups that might be affected by the Subproject or might influence Subproject outcomes. The stakeholders were considered into three groups (**Figure 5-1**).



**Figure 5-1:** Identified Stakeholder in the Subproject<sup>9</sup>

- ii. The notices with the subject of consultation, venue, and time were pasted at the Subproject footprint area, local level and affected Ward office in presence of concerned local stakeholders. People were explained about the notices and their views were noted and agreed upon 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

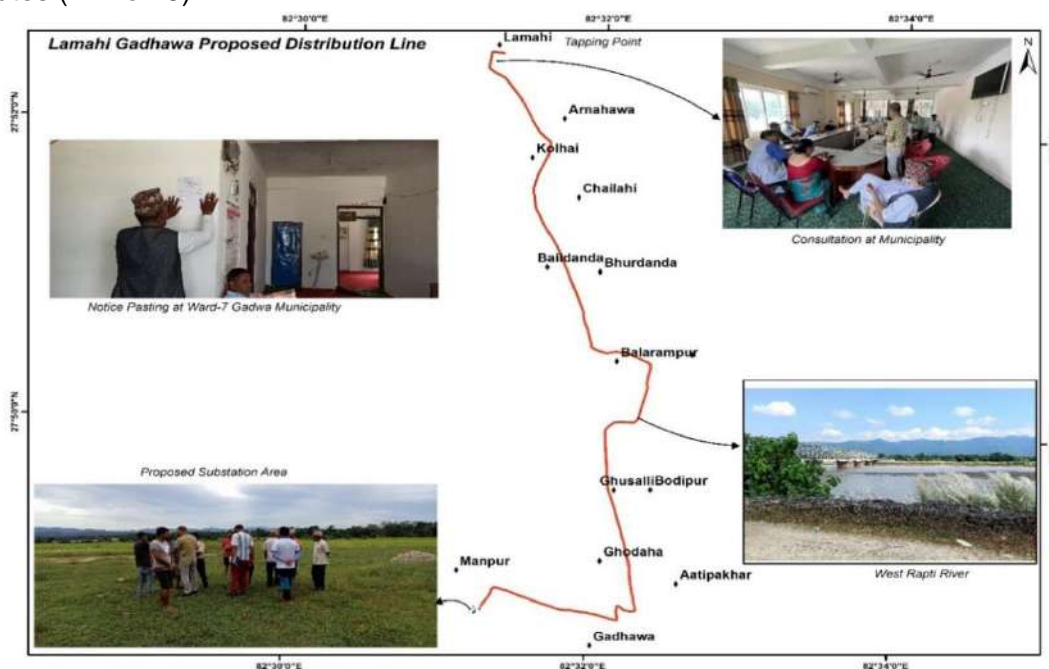
<sup>9</sup> Referenced Meaningful stakeholder engagement: a joint publication of the MFI working group on environmental and social standards / Reidar Kvam, PP-19, 2019.

implementation. Municipalities were requested to provide written suggestions. The deed of inquiry (Muchulkas) and Letter of Declaration from the stakeholders are presented in **ANNEX 6**.

- iv. Local communities nearby the 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

The consultation aims to encourage the participation of stakeholders and communities of the Subproject area in the 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 Lamahi Bazar, Lamahi Municipality, Ward No. 5 on 15<sup>th</sup> September (2021), at proposed substation area, Gadhawa RM, Ward No.7 on 16<sup>th</sup> September (2021), at Simrahawa, Lamahi Municipality, Ward No. 4 and Bhedi Dumna, Gadhawa RM, Ward No. 7 on 18<sup>th</sup> September (2021) (**Figure 5-2**). The concerns expressed/raised issues during the consultation were documented in the form of minutes (**Annex 5**).



**Figure 5-2:** Consultation with the stakeholders and communities in the Subproject Area.<sup>10</sup>

Major benefits expected from the implementation of the Subproject through the perspective of local people were identified from public interaction, and that included improvement in the rural electrification facilities ensuring 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**.

<sup>10</sup> 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, 2021

Date	Location	Issues, comments and suggestions received	Participants
15 <sup>th</sup> September 2021	Lamahi Bazar, Lamahi Municipality. -5	<ul style="list-style-type: none"> <li>Underground cabling should be done within Ward No. 5 of Lamahi Municipality.</li> <li>The underground cabling under all the security procedure and quality materials should be laid under the road-side canal and after completion of cabling the canal length needs to be reconstructed.</li> <li>During expansion of DL and substation construction, proper coordination with local level, stakeholders and people should be given emphasis before implementation</li> <li>Expansion of line needs to be completed without affecting private and public infrastructures</li> <li>We (local level, stakeholder and local people) have full support and assurance for the implementation of Subproject</li> </ul>	21,5F-16M
16 <sup>th</sup> September 2021	Proposed Substation, Gadhawa RM-7	<ul style="list-style-type: none"> <li>For the Subproject construction, the proposed substation land is public and none of the user have been found using the land. Also, we (Stakeholder and Local People) have full support and assurance for the implementation of Subproject</li> <li>Expansion of line needs to be completed without affecting private and public infrastructures</li> <li>The conductor should be covered or use of covered conductor within the settlement area</li> <li>Extension Tariff Counter needs to be established within substation boundary</li> <li>Local people will be prioritized for employment opportunity based on qualification and skills</li> <li>During expansion of DL and substation construction, proper coordination with local level, stakeholders and people should be given emphasis before implementation</li> <li>Coverage of area with no access to electricity (LT lines) needs to be addressed and while expanding this, aesthetic value and composite line system should be given more concern</li> <li>The implementation of this Subproject will be helpful in resolving present electricity problem; we (Stakeholders) request for the sooner implementation of Subproject for resolving the problem of electric power related issues</li> <li>We (Stakeholder and Local People) have full support during implementation of Subproject.</li> </ul>	26,4F-24M

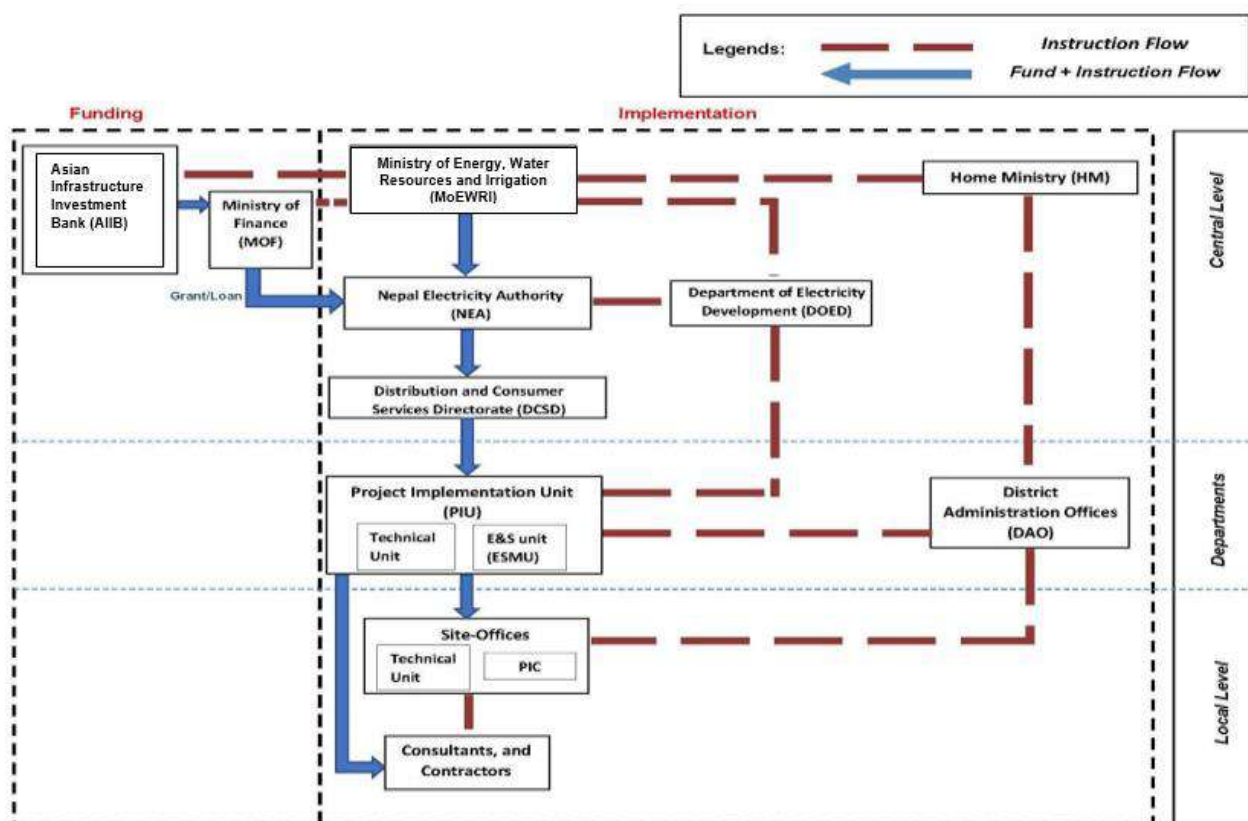
Date	Location	Issues, comments and suggestions received	Participants
18 <sup>th</sup> September 2021	Simrahawa, Lamahi Municipality. - 4	<ul style="list-style-type: none"> <li>The implementation of this Subproject will be helpful in resolving present electricity problem; we (Stakeholders) request for the sooner implementation of Subproject for resolving the problem of electric power related issues</li> <li>Within the section of Ward No. 4 of Lamahi Municipality, expansion of DL will be executed only after finalization of land compensation issues from Koilabas-Lamahi Postal Highway</li> <li>Expansion of line needs to be completed without affecting private and public infrastructures</li> <li>Local people will be prioritized for employment opportunity based on qualification and skills</li> <li>We (local level, stakeholder and local people) have full support and assurance for the implementation of Subproject</li> </ul>	72,25F-47M
18 <sup>th</sup> September 2021	Bhedi Dumna, Gadhawa RM-7	<ul style="list-style-type: none"> <li>Local people will be prioritized for employment opportunity based on qualification and skills</li> <li>Capacity Building Training needs to be developed and organized for DL route affected people</li> <li>We (Stakeholder and Local People) have full support during implementation of Subproject</li> </ul>	11,5F-6M



## 6. INSTITUTIONAL ARRANGEMENT AND GRIEVANCE REDRESS MECHANISM

### 6.1 Institutional Arrangement

The Ministry of Energy, Water Resources and Irrigation (MEWRI) is responsible for the overall planning and execution of the plans for the overall development of the 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 the Distribution and Consumer Services Directorate (DCSD) of NEA. Project Implementation Unit (PIU) under DSUEP is the implementing unit of the project. The 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 a supervision consultant with an 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

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

orientation to all environment monitors and safeguard team of the contractor one month before the construction works start.

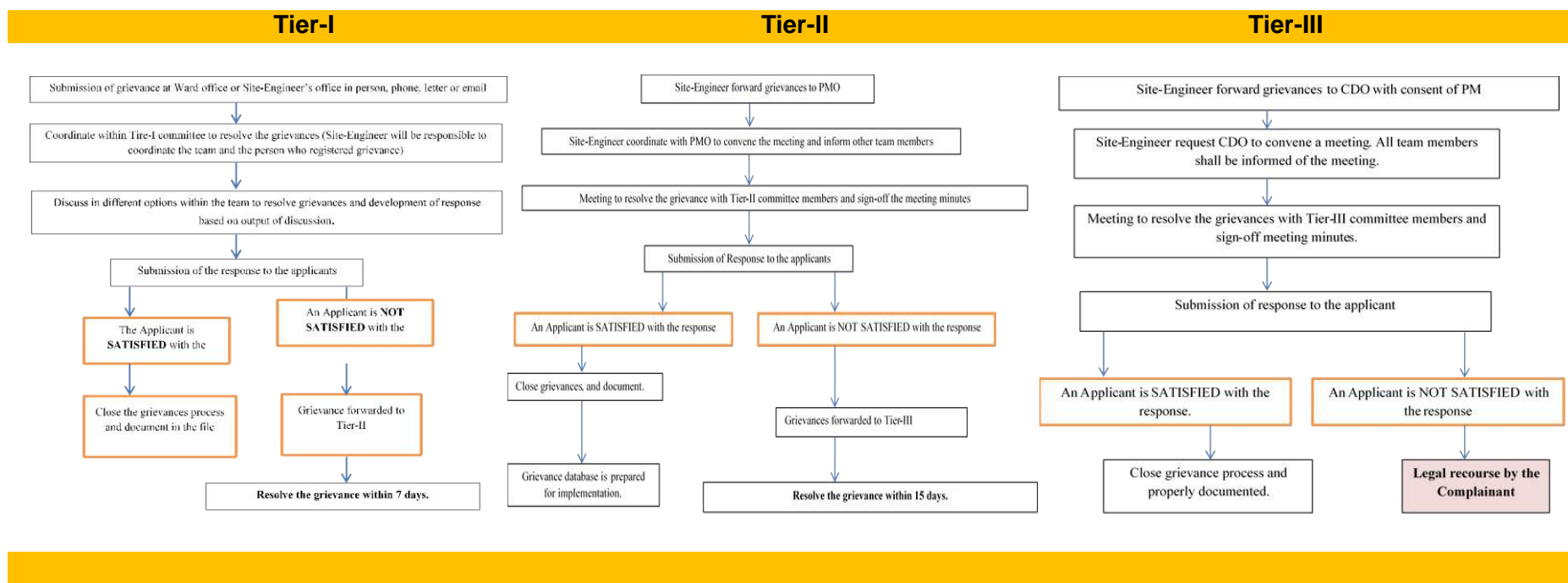
## 6.2 Grievance Redress Mechanism

The Grievance Redress Mechanism (GRM) has been established to receive, evaluate, and facilitate the resolution of affected people's concerns, complaints, and grievances about 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 the construction stage. Social Comment Addressed in each subproject, three levels of Grievance Redress Mechanism will be established. During the ESMP study period NEA disseminated letters to the local level stakeholders regarding the formation of the GRM at the subproject level. To date NEA has established Tier-I and Tier-II GRM has been established at the local wards level and Municipality/RM level. Tier-II will be established before construction work starts.

GRM process entails the concerned party submitting a grievance either in-person, 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 a 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 a 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)	
<b>Level</b>	Local Level		Project Manager Office (PMO) headed by the Project Manager (PM) at Project Implementation Unit (PIU)		District Level	
<b>Supervisory</b>	NEA Site-Engineer		PMO		Chief District Officer (CDO)	
<b>Assistance</b>	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>	
<b>Days for Resolving Complain</b>	7 days of receipt of a complaints/ grievance		15 days of complaints forwarded by Site-Engineer		15 days	
<b>Committee Members</b>	<b>Committee Member</b>	<b>Designation</b>	<b>Committee Member</b>	<b>Designation</b>	<b>Committee Member</b>	<b>Designation</b>
	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 NEA<sup>11</sup>

\* 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.

<sup>11</sup> 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 a 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"><li>Site office and the contractor must inform the community prior to the installation of poles and stringing of the line along DL route</li></ul>		Site Office/ Contractor/	DSUEP (PIU)/NEA
Construction Phase					
Construction work in substation area and distribution line alignment	<ul style="list-style-type: none"><li>Inadequate/unsafe working conditions</li></ul>	<ul style="list-style-type: none"><li>Appropriate contract clauses to ensure satisfactory implementation of contractual environmental, health, and safety measures.</li></ul>		Site Office/Contractor	PIU/NEA
	<ul style="list-style-type: none"><li>Accident may arise if the pit hole (depth-2m and diameter-0.22 m) prepared for steel tubular poles remains open for long time</li></ul>	<ul style="list-style-type: none"><li>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 erection</li><li>Contractors should follow the guideline provided by the PIU</li></ul>	Project Cost	Contractor/ Office      Site	PIU/ESMU/ PIU
	<ul style="list-style-type: none"><li>Dust emission - transportation of materials and movement of construction crews and equipment will cause minor impact</li></ul>	<ul style="list-style-type: none"><li>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)</li></ul>	Air Quality Monitoring- 1,50,000.00 (NRs.)  Sprinkling water (Dust Management) 2,00,000.00 (NRs.)	Contractor/ Office      Site	PIU/ESMU
	<ul style="list-style-type: none"><li>Noise emission- Construction related</li></ul>	<ul style="list-style-type: none"><li>Boundary walls serves as a noise barrier, and these shall be constructed as early as possible.</li></ul>	Noise Level Monitoring- 50,000.00 (NRs.)	Contractor/ Office      Site	PIU/ESMU

	noise will be limited to vehicular movement and inside-the-fence construction activities at substations sites	<ul style="list-style-type: none"> <li>Construction equipment to meet national emissions and noise control standards.</li> </ul>	Provision of PPE in Project Cost		
	<ul style="list-style-type: none"> <li>Interference with drainage patterns will be temporary at substation during construction phase</li> </ul>	<ul style="list-style-type: none"> <li>A proper drainage system should be managed within the substation area.</li> <li>Storm water run-off need to be minimized and controlled with bundling temporary dikes.</li> <li>Drainage management as a preventive measure against breeding of mosquitoes and other pests</li> </ul>	Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> <li>Construction associated wastes generated within substation area and campsite location</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Reusable waste like debris, broken brick pieces, sand, stone, waste cement, and the sand mix should be used as refills for ground leveling.</li> <li>Recyclable wastes like left out/non-usable reinforcement bars, and packing materials sent or sold to scrap vendors.</li> <li>Effective coordination with the local level government for the proper waste management</li> </ul>	Solid wastes management – 1,00,000.00 (NRs.)	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> <li>Illegal fishing and bird hunting by the labors</li> </ul>	<ul style="list-style-type: none"> <li>Discouraged supplying adequate food items (poultry and fish) requirement within the camp.</li> <li>Awareness of legal provisions upon illegal hunting of biodiversity need to be disseminated</li> </ul>	Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> <li>Use of firewood from nearby forests</li> </ul>	<ul style="list-style-type: none"> <li>Workers and staff should be restricted to use firewood for cooking</li> <li>Provision of use of LPG-based stoves in Labor camp</li> </ul>	Project Cost	Contractor/ Site Office	PIU/ESMU
	<ul style="list-style-type: none"> <li>Loss of standing crops at pole installation locations (depth-2m and</li> </ul>	<ul style="list-style-type: none"> <li>Poles are to be installed at the edge of cultivated land making no loss of standing crops.</li> <li>Need to make prior consultation with landowners during installation of the poles and stringing of</li> </ul>	Project Cost	Contractor/Site Office	PIU/ESMU

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



materials of chemical wastes	water, and air				
<b>Operation and Maintenance Phase</b>					
Electric shock and fire hazard	<ul style="list-style-type: none"> <li>Injury or death to the workers and public</li> </ul>	<ul style="list-style-type: none"> <li>Use of insulation, guarding, grounding, electrical protective devices, and safe work practices.</li> <li>Boundary walls and / or security fences around substations to prevent unauthorized access.</li> <li>Only trained and authorized personnel shall be allowed for the electrical works.</li> <li>No electric wire is to be strung above the house.</li> <li>Installation of warning signs.</li> </ul>	Project Cost	NEA Transmission Operations units and Distribution Service Center(s)	NEA
Routine operations and maintenance	<ul style="list-style-type: none"> <li>Potential disturbance to other utility functions and vehicular traffic.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain warning / advisory signs in the good and visible condition</li> <li>Visual and technical inspection</li> </ul>	Project Cost	NEA	NEA
Oil spillage	<ul style="list-style-type: none"> <li>Contamination of land/nearby water bodies</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>	Project Cost	NEA	NEA
Bird electrocution and collision	<ul style="list-style-type: none"> <li>Electrocution can cause a risk to bird species that perch on power line infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>Provision of bird guards above the poles and white spirals on the conductors to improve visibility</li> </ul>	Project Cost	NEA	

*(The provision of an 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 contract)*

## 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
<b>Construction Stage</b>				
Clearing of construction site	Substation boundaries	<ul style="list-style-type: none"> <li>Field inspection of Subproject Sites and ensuring that appropriate safety measures are implemented</li> </ul>	Clearing and restoration: Weekly	Contractors to implement corporate EHS plan, drainage management and solid waste control in the substation area.
Air: SPM, Noise: dB(A)	Substation boundaries and nearest receptor to substation	<ul style="list-style-type: none"> <li>Spot check for noise and dust using a portable monitoring device</li> </ul>	Air, and noise: quarterly during construction period	Contractors need to conduct air and noise monitoring during the construction period

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

### 7.3 Environmental and Social Monitoring Plan Cost Estimates

Preliminary cost estimates for the ESMP implementation are shown in **Table 7-3**. 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 **Lamahi-Gadhawa 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 to 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.)	Total Amount (NRs)
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 raisings 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
<b>Total</b>				<b>13,00,000.00</b>

## 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 the RoW 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 to the implementation of the Subproject and have suggested installing poles on the edge of farm-lands, without affecting any private structures along the distribution line. If there is a loss of crops, appropriate compensation shall be provided. 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.

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## **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 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: ०१-४१५३१४४

फोन नं: ०१-४१५३१४५

दरबारमार्ग, काठमाण्डौ।

प.सं. ०७८/७९: ५३८.

मिति: २०७८/१०/०७

श्री .....

## विषय: गुनासो समाधान संयन्त्र गठन भएको सम्बन्धमा।

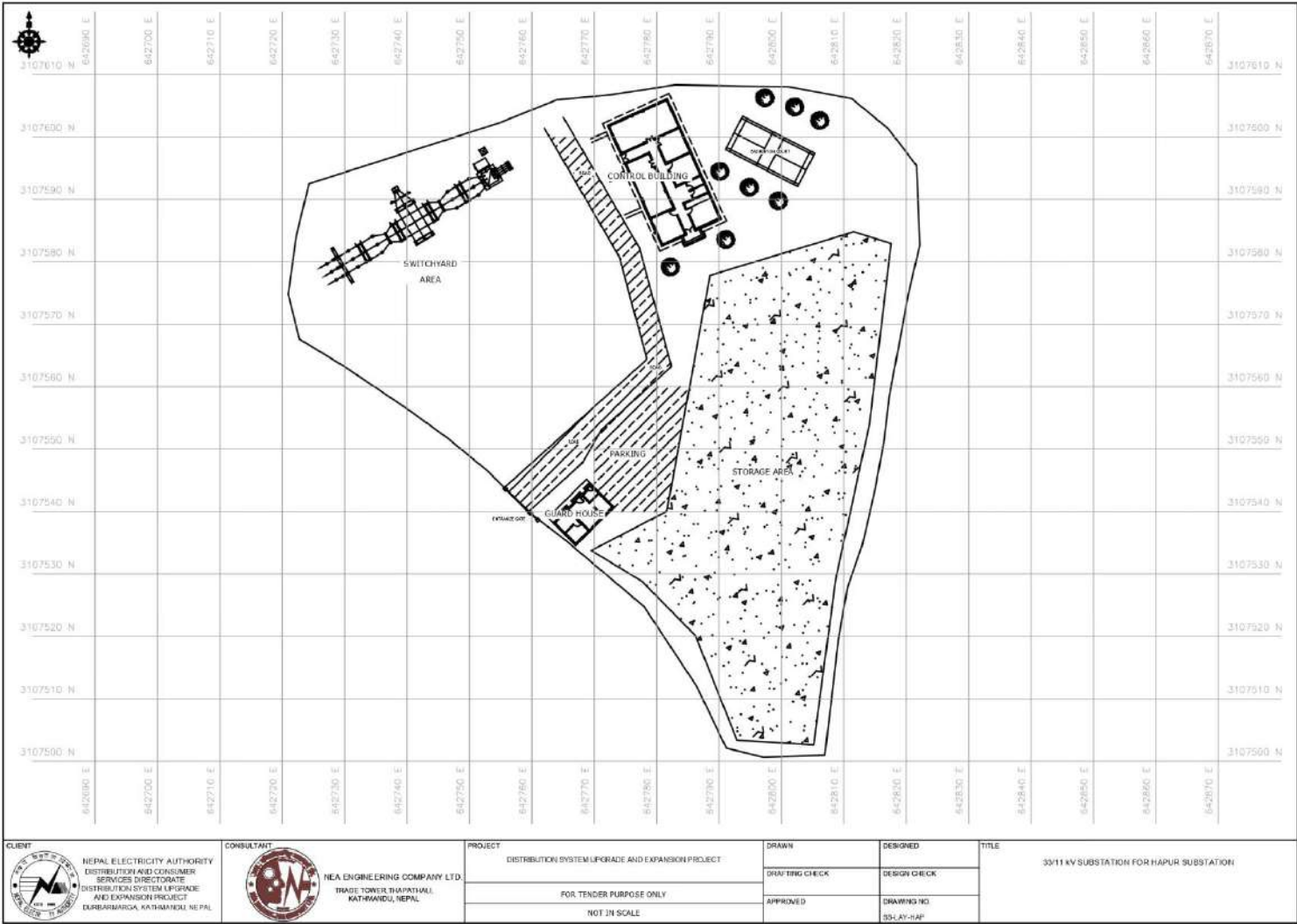
उपरोक्त विषयमा एसियन इन्फ्रास्ट्रक्चर इन्वेस्टमेन्ट बैंक (ए.आई.आई.बि.) को ऋण-सहयोगमा नेपाल विद्युत प्राधिकरण, वितरण तथा ग्राहक सेवा निर्देशनालय, वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजना (ए.आई.आई.बि.) प्रस्तावक रही कार्यान्वयन गर्न लागिएको .....  
आयोजना अन्तर्गत नेपाल सरकारको पूर्ण-विद्युतीकरण गर्ने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

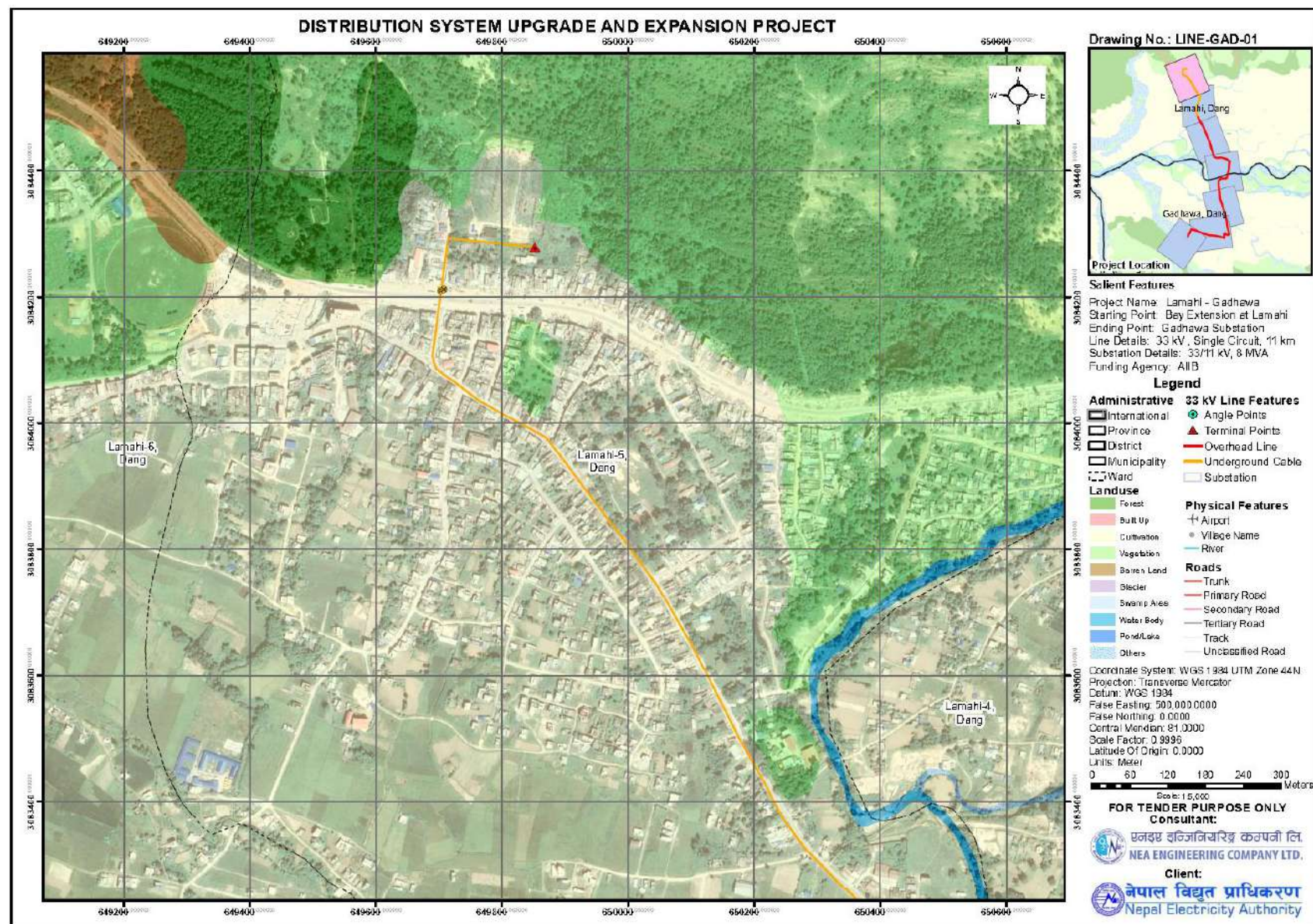
(केशव श्रेष्ठ)

आयोजना प्रमुख

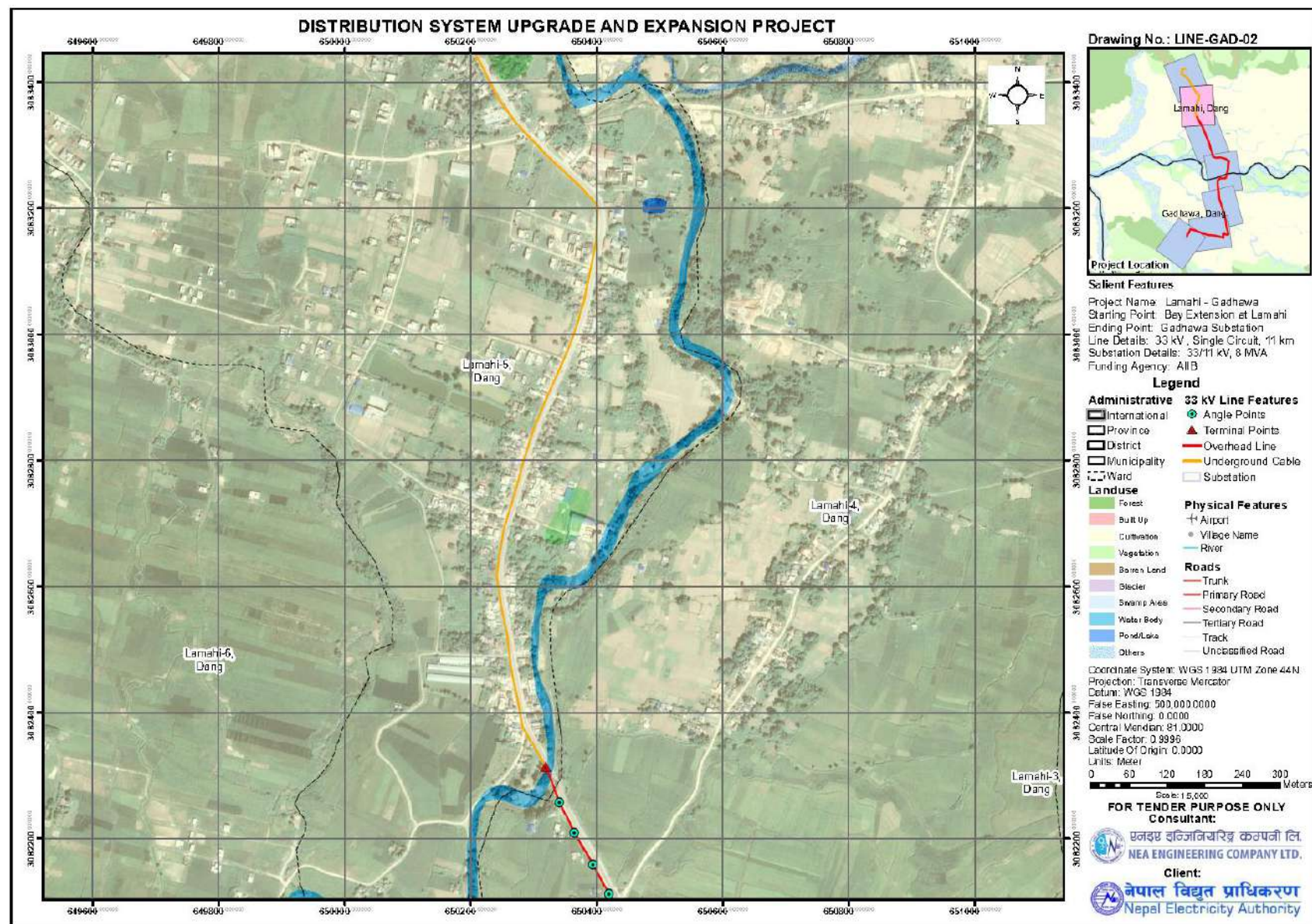
Annex 2: LAYOUT MAPS OF SUBSTATION AND DISTRIBUTION LINE ALIGNMENT



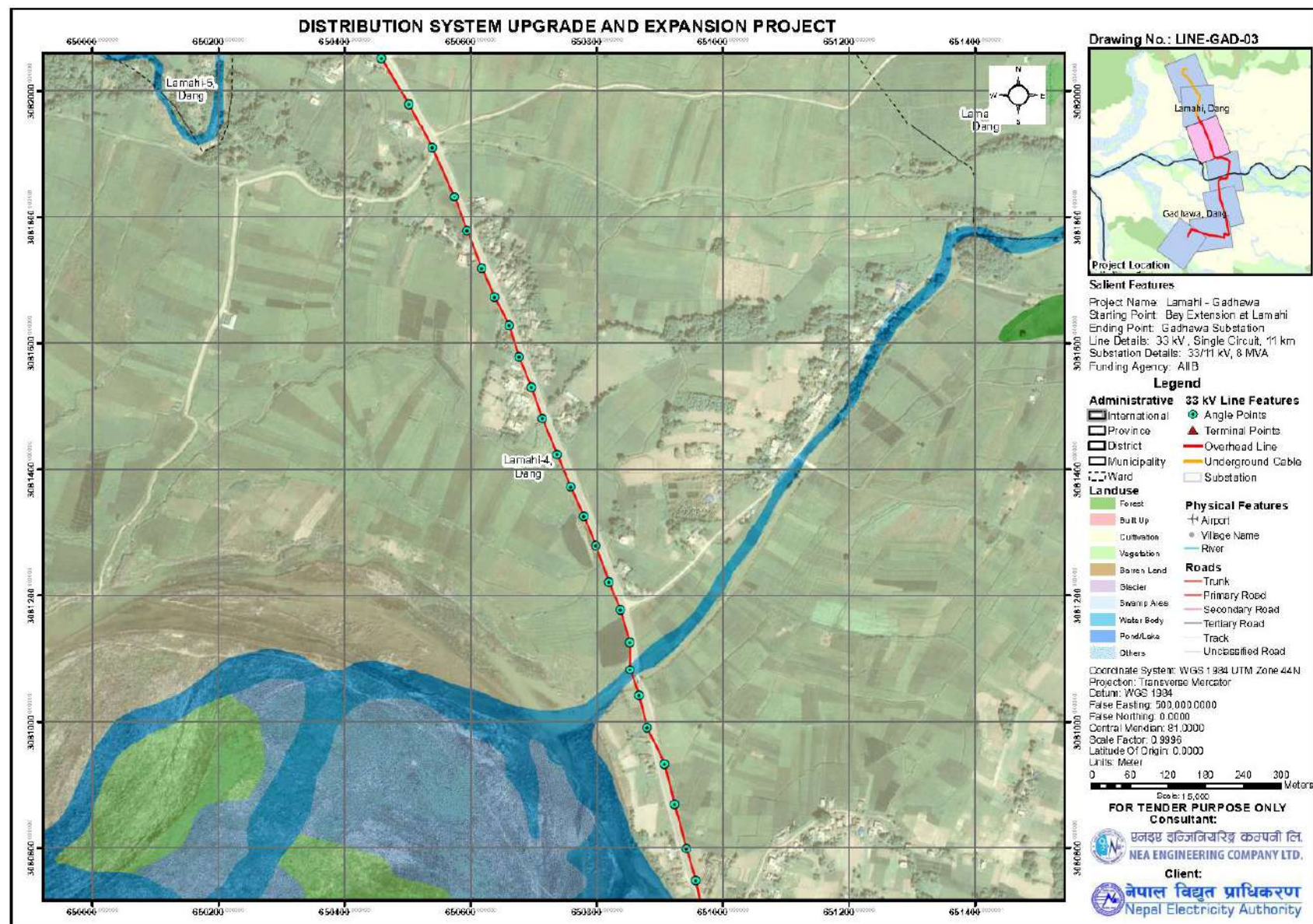




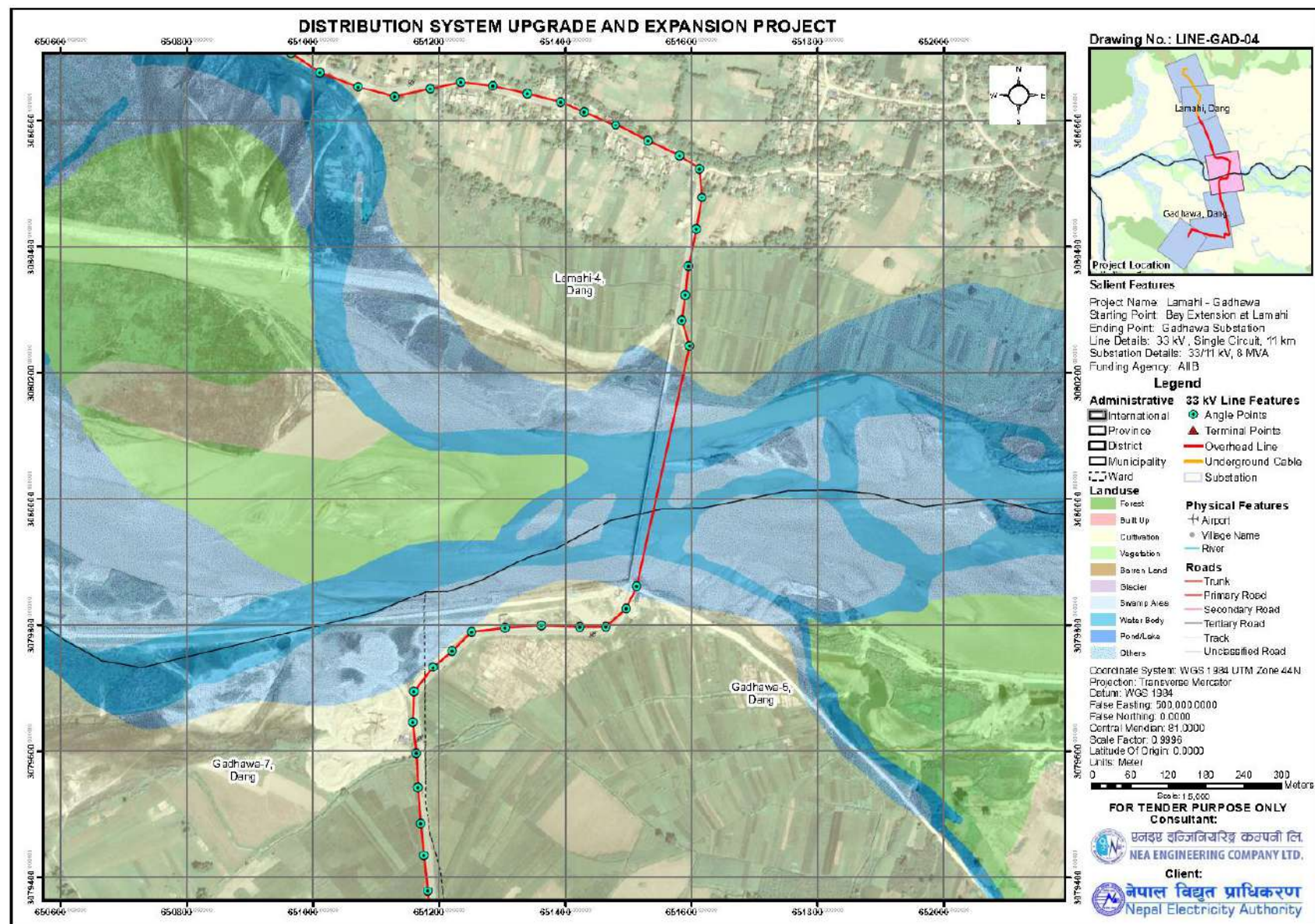




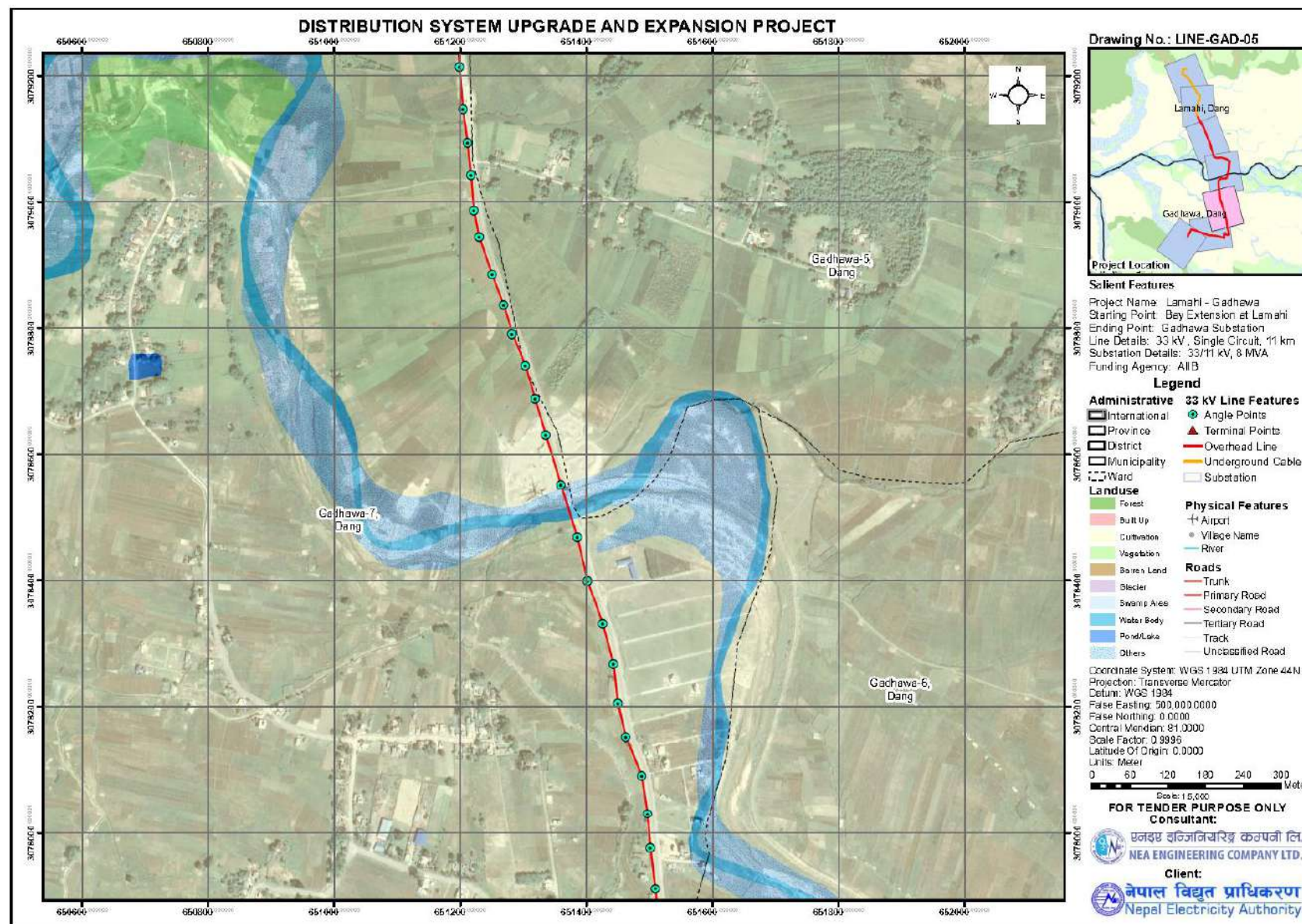




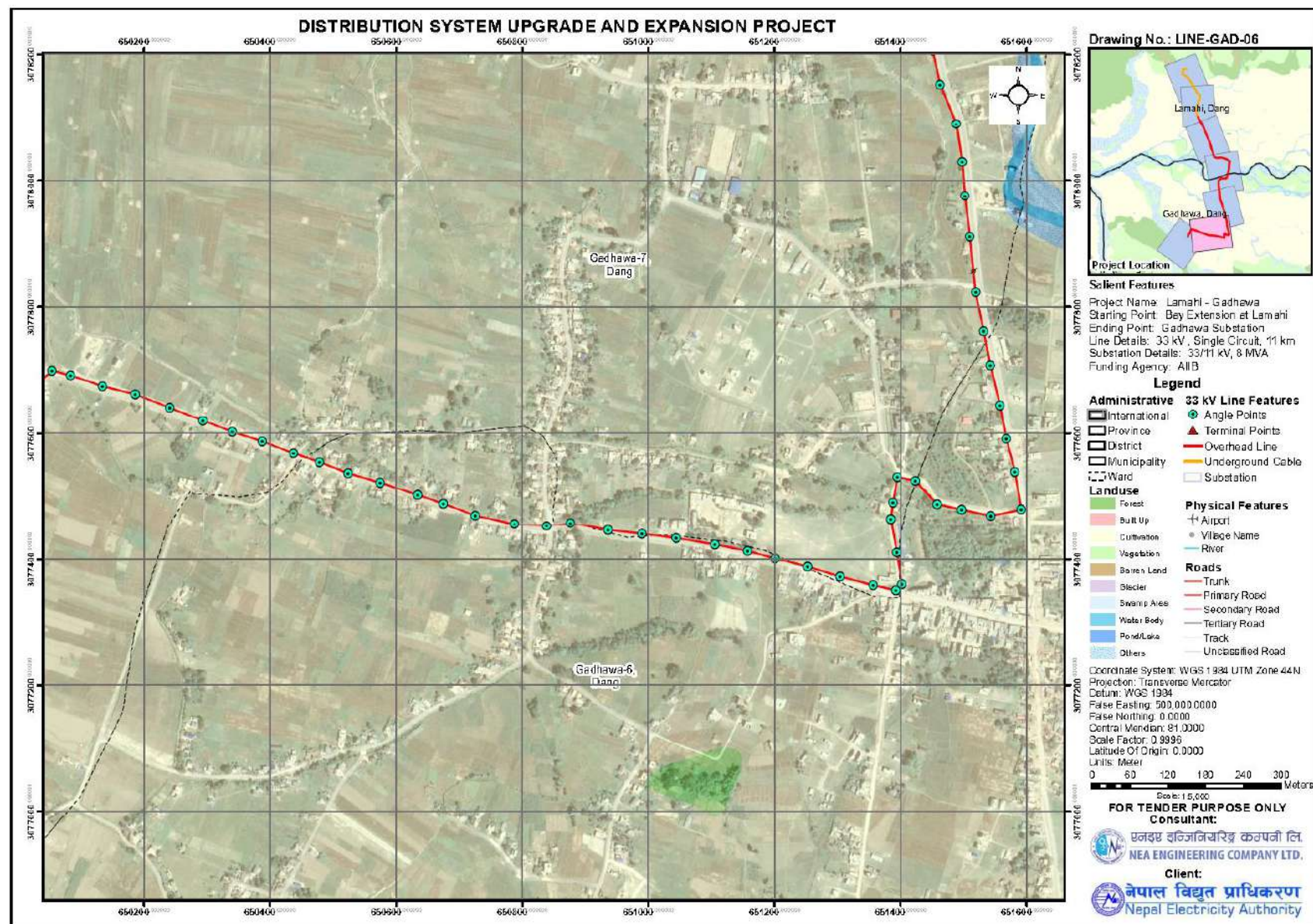




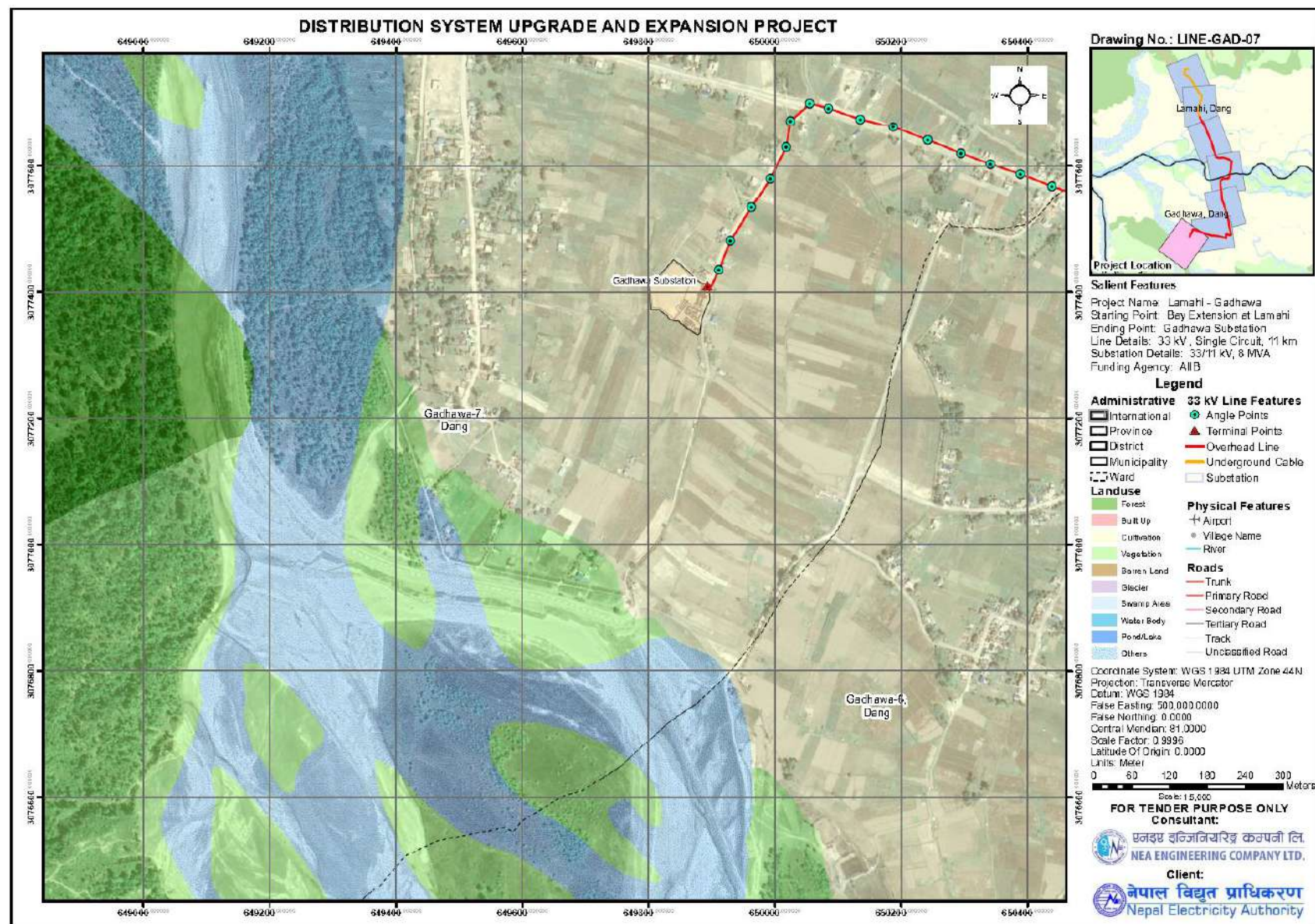














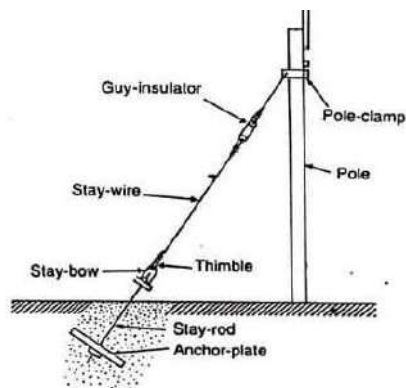
### Annex 3: FACILITY AND COMPONENTS



**Transformer**



**Switch Yard**



**Stay/Guy Sets**



**Steel Tubular Pole**



**Insulator**



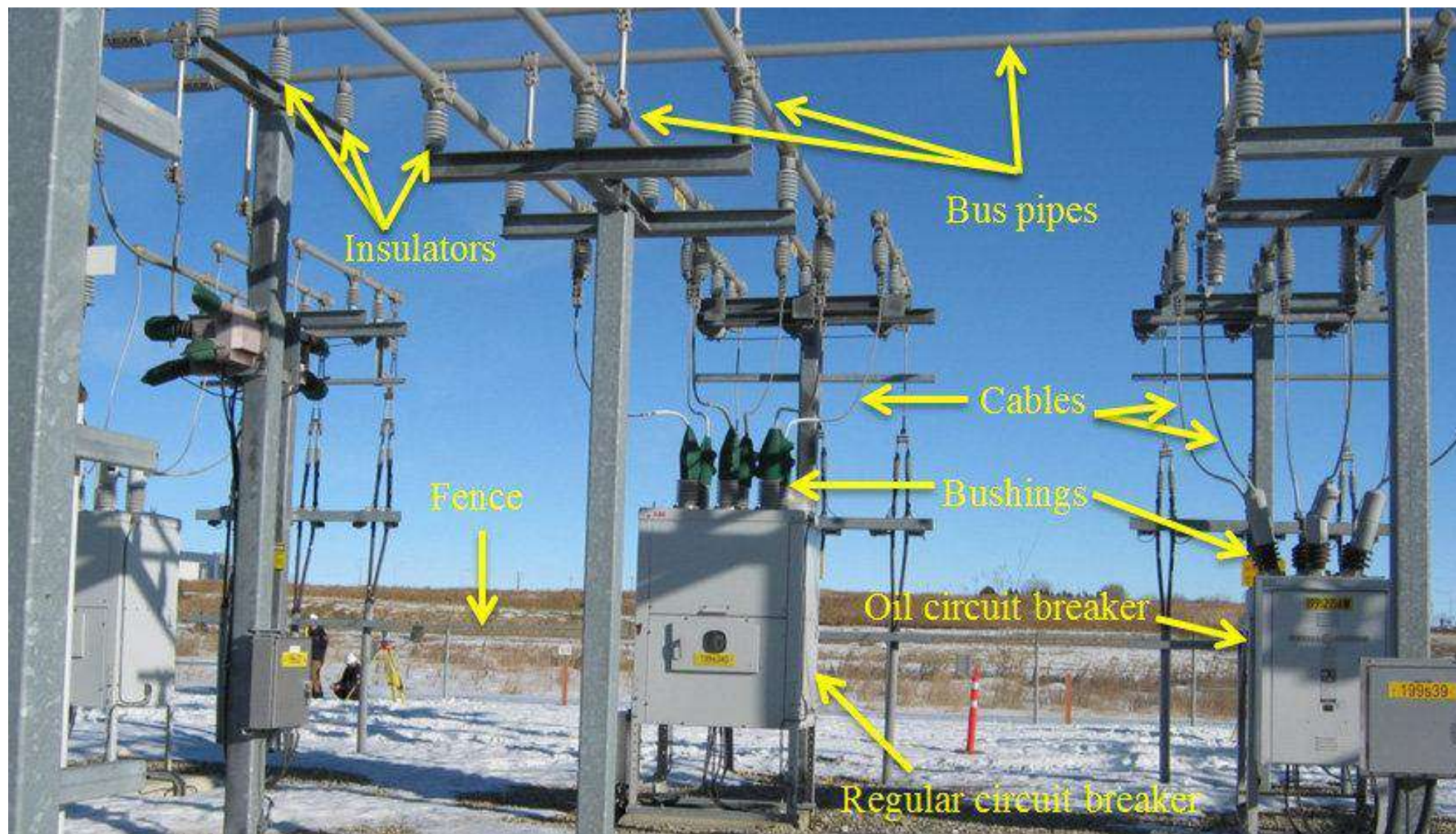
**Civil-Structures Supporting Electrical Components**



**Conductor**







**Possible components within 33 kV/11 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**

<b>S N</b>	<b>Legal Provisions</b>	<b>Description</b>	<b>Relevancy concerning Project</b>
1.	<b>Constitution of Nepal</b>	<ul style="list-style-type: none"> <li>• 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:</li> <li>• 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).</li> </ul>	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.	<b>Environment Protection Act 2076 (2019 AD)</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	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, 2019.
3.	<b>Environmental Protection Rule, 2077 (2020 AD) [First Amendment on 2078 (2021)]</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	This rule provides the overall guidance to what type of environmental studies is required according to the project by the Government of Nepal.
4.	<b>Nepal Environmental Policy, and</b>	<p>The aims of NEPAP are:</p> <ul style="list-style-type: none"> <li>• To manage natural, and physical resources efficiently, and sustainably</li> </ul>	DSUEP should follow the aims of NEPAP to

	<b>Action Plan, 2050(1993)</b>	<ul style="list-style-type: none"> <li>● To balance the development efforts, and environmental conservation for sustainable fulfillment of basic needs</li> <li>● To preserve endemic, and endangered species, and their habitats; the promotion of private, and public institutions for biological resources inventory, and conservation</li> <li>● To safeguard national heritage</li> <li>● To mitigate the adverse environmental impact of development projects, and human actions</li> <li>● To integrate environment, and development through appropriate institutions, adequate legislation, and economic incentives, and sufficient public resources</li> </ul>	protect, and conserve the physical, biological, and social environment during the construction of a 33 kV distribution line along with a substation.
5.	<b>Electricity Act 1992</b>	<ul style="list-style-type: none"> <li>● No person shall be entitled to conduct survey, generation, transmission, or distribution of electricity without obtaining a license under this act.</li> <li>● 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.</li> </ul>	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.
6.	<b>Rural Energy Policy, 2006</b>	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.
7.	<b>Labor Act, 2074 (2017 AD)</b>	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,	The construction of a project is only possible when the rights of labor are secure. In this project, the contractor should

		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.	follow this act strictly.
8.	<b>Child Labor (Prohibition, and Regulation) Act, 2056 (2000 AD)</b>	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.
9.	<b>Solid Waste Management Act, 2068 (2011 AD)</b>	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.
10.	<b>Solid Waste Management Rules, 2070 (2013 AD)</b>	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.
11.	<b>Fifteenth Plan</b>	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	This 5-year interim plan sets the goal about the generation, and distribution of hydroelectricity 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:	Nepal which is directly related to this project.
12.	<b>United Nations Framework Convention on Climate Change (UNFCCC), 1992</b>	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.
13.	<b>ILO 169</b>	<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 people 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) people 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"> <li>• 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.</li> </ul>	Nepal is the part of ILO convention that's why ILO 169 should strictly follow during construction, and implementation of any types

		<ul style="list-style-type: none"> <li>• The use of the term <b>people</b> in this Convention shall not be construed as having any implications as regards the rights which may attach to the term under international law.</li> </ul>	
14.	<b>Environment and Social Management Framework</b>	<ul style="list-style-type: none"> <li>• ESMF is to guide DSUEP sub-projects in the area of E&amp;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&amp;S regulations and the Financiers' standards on E&amp;S assessment and management, Involuntary Resettlement, Indigenous People, Gender, etc.).</li> </ul>	Main guiding document for E&S study to identify issues and recommending appropriate practical augmentation/mitigation measures
15.	<b>Environmental and Social Policy (ESP)</b>	<ul style="list-style-type: none"> <li>• This policy speaks for the mandatory E&amp;S requirements for each Project like, screening, DDR, E&amp;S Assessment, ESMP, ESMF, Information Disclosure, Consultation and Monitoring and Evaluation.</li> </ul>	Mandatory requirement for ESMP study
16.	<b>Environmental and Social Standards of AIIB <sup>12</sup></b>	<ul style="list-style-type: none"> <li>• Three associated mandatory environmental and social standards (ESSs) set out more detailed environmental and social requirements relating to the ESMP</li> </ul>	ESMP requirement

<sup>12</sup> <https://www.aiib.org/en/policiesstrategies/download/environmentframework/20160226043633542.pdf>

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अथ मिति २०७८ गण्डौ जौ हाउ जित्सा लगरी कार्यालयी बर्द नै २ लगरी  
 तनासा नेपाल विद्युत प्राधिकरण, विनास तथा साहसिकता निर्माण कार्य  
 विनास प्रवासी तथा सुरोन्नती तथा विनास आयोजना (DUEB) अन्तर्गत  
 लागी गढवा विद्युत निर्वाह लक्ष्मि आयोजना निर्माण पूर्व कार्यहरू तथा  
 सामग्री आप्रान्त प्रतिवेदन तथा कालगो NED Engineering Company  
 बुझाउने गरी विनास लगरी कार्यालयी डा. प्रेम, गौरी, गौरी, डा. प्रकाश, गौरी  
 निर्माण काल रोल विनास विनिर्माण कार्यहरू अथवा विनास निर्माण काल रोल  
 के उपर्युक्त देहाय कोषीमा डा. प्रकाश, विनास काल रोल गरीयो।

उपरोक्त

क्र.सं.	नाम तथा ठेकावा	मिति	लक्ष्य
१-	कुल गढवा विनास	२०७८/०८/२२	गौरी
२-	विनास प्रवासी लक्ष्मि आयोजना तथा विनास आयोजना	२०७८/०८/२२	गौरी
३-	देवडा गौरी लक्ष्मि आयोजना तथा विनास आयोजना	२०७८/०८/२२	गौरी
४-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
५-	गौरी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
६-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
७-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
८-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
९-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१०-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
११-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१२-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१३-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१४-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१५-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१६-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१७-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१८-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
१९-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
२०-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी
२१-	विनास प्रवासी लक्ष्मि आयोजना	२०७८/०८/२२	गौरी

लक्ष्मी देवि गहवा लईन बिला गदी निम्न लभोमी ह्यो सुखाव ह्मदूप  
 बिटी अवलेन गरी ह्यो गरी पुखाव उरीओ। खर्च कामेनाओ नरेमा  
 NEARBY कवलेन (KAPPA) अमि वाट अकार भयो।  
 १- लक्ष्मी अवलेन नाट लईन बिला गदी वाट मे २ मित्र सुमिन् लईन  
 निर्मोवा गरी ह्यो गरी नुपे।  
 २- सुमिन् लईन बिला गदी अवलेन को नाला मुनि ओ कामना सुरक्षा  
 मापण्ड उपनई काम गुनोनी यार्थ सङ्ग वाला लई पुन निर्मोवा  
 गरी नुपे।  
 ३ लईन बिला गदी स्थानिन् नह तथा सरोहा बिला यो समबन्ध  
 गरी काम अकारो लहाएन नै।  
 ४- लईन बिला गदी बिटी / शार्कनिन्, यैरुना लई अति नुने ५ मी  
 काम अति नुपे।  
 ५- कामेना निर्मोवा स्थानिन् नह तथा सरोहा वाला तथा  
 स्थानिन् वागो को सल लहणे समबन्ध बढेो नयेने अकार  
 गराउदी।

[Signatures and stamps follow]

कृष्णमैत्री २०७८ भद्रे ३० गते बुधवार काठमाडौं महानगरपालिका क्षेत्र

छात्राधिकार संरक्षण (अभिलेख) भेडिद्वारा मा नेपाल विद्युत प्राधिकार, बिस्मय तथा गण्डक क्षेत्र निर्देशनलय, बिस्मय प्रान्तीय स्तरिय तथा बिस्मय (अभिलेख) (DSUEP) इन्टरनेट लामही-गधवा बिजुलियुन इन्फ्रास्ट्रक्चर मिशन पूर्व बालाकविषय तथा ग्रामाधिकार स्वयंसेवक उन्निवेश तमारीकोनामी यस पुस्तकित स्वयंसेवक क्षेत्र तथा लार्डन बिस्मय गरीने क्षेत्रका स्थानित सुरक्षा बाला, बडिने तथा छ हा प्रत्यक्ष मन्त्रालय स्थानित बडिने को तथा NEMA एन्वयरामेन्ट कन्सर्वेसन एन्ड वार्डि आडुवस्त्र बिस्म को क्षेत्रको उपबोधको अभिलेखको कोषा दलकल तथा क्लोव स्थित देश कोषाको क्षेत्र स्थानित उन्निवेश।

उपबोधनी

क्र.सं.	नाम	ठेगाना	सम्पर्क नं.	चलाना
१	राहुन देव चौधरी	गधवा-६ गधवा	९८७८८८८८८८	अध्यक्ष
२	बाल चन्द चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
३	प्रबल लाल चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
४	दत्त चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
५	अनन्त चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
६	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
७	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
८	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
९	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१०	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
११	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१२	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१३	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१४	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१५	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१६	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१७	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष
१८	सुरेन्द्र चौधरी	"	९८७८८८८८८८	उप-अध्यक्ष

कृष्णमैत्री २०७८ भद्रे ३० गते बुधवार काठमाडौं महानगरपालिका क्षेत्र

छात्राधिकार संरक्षण (अभिलेख) भेडिद्वारा मा नेपाल विद्युत प्राधिकार, बिस्मय तथा गण्डक क्षेत्र निर्देशनलय, बिस्मय प्रान्तीय स्तरिय तथा बिस्मय (अभिलेख) (DSUEP) इन्टरनेट लामही-गधवा बिजुलियुन इन्फ्रास्ट्रक्चर मिशन पूर्व बालाकविषय तथा ग्रामाधिकार स्वयंसेवक उन्निवेश तमारीकोनामी यस पुस्तकित स्वयंसेवक क्षेत्र तथा लार्डन बिस्मय गरीने क्षेत्रका स्थानित सुरक्षा बाला, बडिने तथा छ हा प्रत्यक्ष मन्त्रालय स्थानित बडिने को तथा NEMA एन्वयरामेन्ट कन्सर्वेसन एन्ड वार्डि आडुवस्त्र बिस्म को क्षेत्रको उपबोधको अभिलेखको कोषा दलकल तथा क्लोव स्थित देश कोषाको क्षेत्र स्थानित उन्निवेश।

उपबोधनी

क्र.सं.	नाम	ठेगाना	सम्पर्क नं.	चलाना
१९	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२०	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२१	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२२	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२३	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२४	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२५	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२६	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२७	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२८	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
२९	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष
३०	सुरेन्द्र चौधरी	गधवा-६ गधवा	९८७८८८८८८८	उप-अध्यक्ष



A collection of handwritten signatures and initials in blue ink on lined paper. The signatures are scattered across the page, some appearing to be names like 'Gurpreet', 'Gurpreet Singh', and 'Gurpreet Singh', while others are more stylized or abbreviated. There are also some words like 'Gurpreet' and 'Gurpreet Singh' written in a more formal script. The handwriting is cursive and somewhat messy, typical of a quick signature.

क्र.सं.	नाम व पद	हस्ताक्षर	मोबा नं.	संसाधन
1)	विकासी मुख्यालय संपादन	वडा अध्यक्ष	9866282000	सुपुन
2)	कार्यालया संपादन	वडा अध्यक्ष	9866282000	सुपुन
3)	देवपुरा संपादन	देवपुरा संपादन	9866282000	सुपुन
4)	चुपडा संपादन	चुपडा संपादन	9866282000	सुपुन
5)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
6)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
7)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
8)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
9)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
10)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
11)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
12)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
13)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
14)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
15)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
16)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
17)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
18)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
19)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
20)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन
21)	गंगा संपादन	गंगा संपादन	9866282000	सुपुन

Date: _____	
Page: _____	
पार्वती चौधरी	9809776704 पार्वती चौ.
22 राजाराम चौधरी	संगीत - 9898651571 धन
23 प्रणेश चौधरी	9805288589 राजाराम
24 श्याम कुमार	9209900808 धन
25 लुटिलाल कुमान	9209900808 धन
26 जयंत कुमार	जयंत कुमार कुमान
27 राजेश कुमार	9809848930 राजेश
28 हसन चौधरी	हसन
29 मंगल कुमार चौधरी	मंगल 9209900808 धन
30 प्रकाश चौधरी	प्रकाश 9809900808 धन
31 सुप्रभात चौधरी	30 9809900808 धन
32 राम प्रभात चौधरी	9809900808 धन
33 मोहनलाल चौधरी	मोहनलाल
34 मनोष चौधरी	मनोष
35 राजी कुमान	राजी
36 गीता कुमान	गीता 9209900808 धन
37 अरुण कुमार	अरुण 9209900808 धन
38 विमल चौधरी	विमल 9209900808 धन
39 मीना चौधरी	मीना 9809900808 धन
40 अशोक कुमार	अशोक 9809900808 धन
41 नंदी कुमान	नंदी
42 पवित्रा कुमान	पवित्रा
43 शान्ती कुमान	शान्ती
44 लक्ष्मी कुमान	लक्ष्मी
45 शशीका कुमान	शशीका
46 प्राण चौधरी	प्राण
47 गीता चौधरी	गीता चौधरी
48 अरुण चौधरी	अरुण
49 मंगल चौधरी	मंगल
50 परदेसी कुमान	परदेसी
51 अशोक कुमान	अशोक
52 सुनील चौधरी	सुनील
53 राजेश चौधरी	राजेश
54 राजेश चौधरी	राजेश

Date: _____	
Page: _____	
राम ब. कुमान	राम ब. कुमान 9209900808 धन
45 रामलाल चौधरी	रामलाल चौधरी
46 मीना चौधरी	मीना चौधरी 9209900808 धन
47 नंदलाल चौधरी	नंदलाल चौधरी 9809900808 धन
48 गीता चौधरी	गीता चौधरी
49 गीता चौधरी	गीता 9809900808 धन
50 शांति चौधरी	शांति चौधरी
51 राम चौधरी	राम चौधरी 9809900808 धन
52 राम चौधरी	राम चौधरी 9809900808 धन
53 राम चौधरी	राम चौधरी 9809900808 धन
54 राम चौधरी	राम चौधरी 9809900808 धन
55 राम चौधरी	राम चौधरी 9809900808 धन
56 राम चौधरी	राम चौधरी 9809900808 धन
57 राम चौधरी	राम चौधरी 9809900808 धन
58 राम चौधरी	राम चौधरी 9809900808 धन
59 राम चौधरी	राम चौधरी 9809900808 धन
60 राम चौधरी	राम चौधरी 9809900808 धन
61 राम चौधरी	राम चौधरी 9809900808 धन
62 राम चौधरी	राम चौधरी 9809900808 धन
63 राम चौधरी	राम चौधरी 9809900808 धन
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66 राम चौधरी	राम चौधरी 9809900808 धन
67 राम चौधरी	राम चौधरी 9809900808 धन
68 राम चौधरी	राम चौधरी 9809900808 धन
69 राम चौधरी	राम चौधरी 9809900808 धन
70 राम चौधरी	राम चौधरी 9809900808 धन
71 राम चौधरी	राम चौधरी 9809900808 धन
72 राम चौधरी	राम चौधरी 9809900808 धन
73 राम चौधरी	राम चौधरी 9809900808 धन
74 राम चौधरी	राम चौधरी 9809900808 धन
75 राम चौधरी	राम चौधरी 9809900808 धन
76 राम चौधरी	राम चौधरी 9809900808 धन
77 राम चौधरी	राम चौधरी 9809900808 धन
78 राम चौधरी	राम चौधरी 9809900808 धन
79 राम चौधरी	राम चौधरी 9809900808 धन
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81 राम चौधरी	राम चौधरी 9809900808 धन
82 राम चौधरी	राम चौधरी 9809900808 धन
83 राम चौधरी	राम चौधरी 9809900808 धन
84 राम चौधरी	राम चौधरी 9809900808 धन
85 राम चौधरी	राम चौधरी 9809900808 धन
86 राम चौधरी	राम चौधरी 9809900808 धन
87 राम चौधरी	राम चौधरी 9809900808 धन
88 राम चौधरी	राम चौधरी 9809900808 धन
89 राम चौधरी	राम चौधरी 9809900808 धन
90 राम चौधरी	राम चौधरी 9809900808 धन
91 राम चौधरी	राम चौधरी 9809900808 धन
92 राम चौधरी	राम चौधरी 9809900808 धन
93 राम चौधरी	राम चौधरी 9809900808 धन
94 राम चौधरी	राम चौधरी 9809900808 धन
95 राम चौधरी	राम चौधरी 9809900808 धन
96 राम चौधरी	राम चौधरी 9809900808 धन
97 राम चौधरी	राम चौधरी 9809900808 धन
98 राम चौधरी	राम चौधरी 9809900808 धन
99 राम चौधरी	राम चौधरी 9809900808 धन
100 राम चौधरी	राम चौधरी 9809900808 धन



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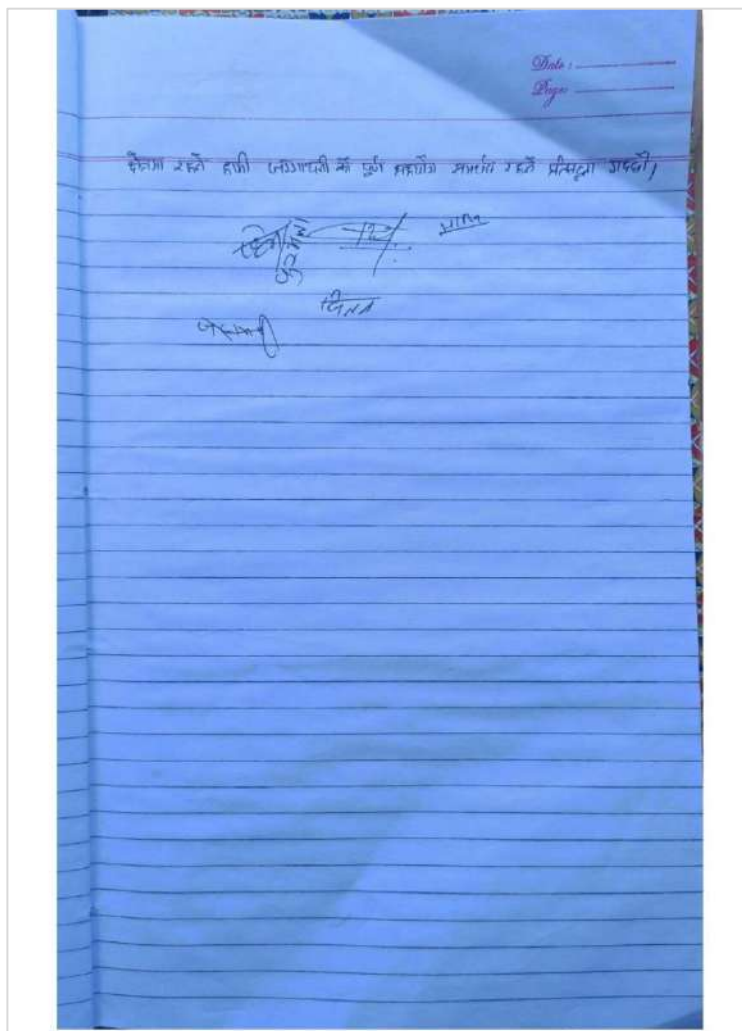
- पत्र रसूल खाना सनकुमारी  
जयपुर  
गणना प्रमाणिका २॥ नि

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क्र.सं.	नाम	पितामाता	फोटो	हस्ताक्षर
१.	जयप्रदी कशी	गणेशमाया - ७, गौरीकुला	१२०२८८२९८२	लक्ष्मन्नी
२.	भारत बहादुर कशी	"	"	अजय
३.	निशा बहादुर कशी	"	"	महेश
४.	दीप मुंगशी वि.क	"	१२०२८८२९८२	डि.जि
५.	मनदीप वि.क	"	"	कमल
६.	मिता वि.क	"	१२९२८२५०६६	मि.जि
७.	पूरभाना वि.क	"	१२९२८२९६२२	सु.जि मीन
८.	हनु वि.क	"	"	प्र.जि
९.	पिना वि.क	"	१२२५८३९२३	वि.जि ना
१०.	वीर कशी	"	१२१२८१५२६	जी.डी
११.	नैय कशी	"	१२०६२७०१०	


दस्तावेजों का विवरण

- 1) प्रमोविम आयोजना बोर्डो NEP Engineering Company तार मशीन आउट  
बायका सामाजिक, नागरिक में हुए लैबरी-उद्घाटन 30 के.पी  
विस्था नईत 3 प्रमोविम मत हैसता को लैबरी लातकी अवसर को  
मिलो आउतगा हामी जगजगतीनर पौजमर प्रमोविमर दिवस
  - 2) आयोजना बोर्डो आयोजन सामाजिक उत्पत्तिपत्त श्रमिक अन्तर्गत प्रमोविम
  - 3) हम्-हैसता क्षेत्रा मईत जगजगतीनर (दलीन मी) होपु-क  
नालीक जमर मीनर नईत, इरीक, Beauty park को पारवा  
प्रमोविम परी।
  - 4) विद्यु नईत विस्था नईत 2 मत हैसता मीरगा मई हामी मत हैसता
- महेश जगजगतीनर 30/10/2017





## Annex 6: DEED OF INQUIRY (MUCHULKAS)


 **नगर कार्यपालिकाको कार्यालय**  
लमही दाङ  
लुम्बिनी प्रदेश, नेपाल  
फोन नं. : ०८२-४४०८४०


प.सं.: २०७८/०७९  
च.नं.: ६२०  
मिति : २०७८/०४/२८

**विषय: सूचना टाँस गरी जानकारी गराएको सम्बन्धमा ।**

श्री नेपाल विद्युत प्राधिकरण  
वितरण तथा ग्राहक सेवा निर्देशनालय  
नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना,  
दरबारमार्ग, काठमाण्डौ

प्रस्तुत विषयमा तहाँ कार्यालयको च.नं. १६ मिति २०७८/०४/२४ गतेको पत्र अनुसारको सूचना यस कार्यालयको सूचना पाटीमा मिति २०७८/४/२८ गते टाँस गरीएको ब्यहोरा अनुरोध छ ।

  
गेहेन्द्र बहादुर डोगी  
प्रमुख प्रशासकीय अधिकृत  
प्रमुख प्रशासकीय अधिकृत


 **गाउँ कार्यपालिकाको कार्यालय**  
गडहवा गाउँपालिका  
लुम्बिनी प्रदेश, नेपाल  
मिति : २०७८/०४/३०


प.सं.: २०७८/०७८  
च.नं.: १५०

**विषय :- सूचना टाँसको जानकारी सम्बन्धमा ।**

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

प्रस्तुत सन्दर्भमा तहाँ कार्यालयको पत्रसंख्या ५६ च.नं. २०७८/०७९ DSVEP मिति २०७८/०४/२४ गतेको पत्रबाट प्राप्त मिति २०७८/०४/२९ गतेको नेपाल वितरण प्रणाली स्तरोन्नति तथा विस्तार आयोजनाको आवश्यकता तथा सामाजिक अध्ययन प्रतिवेदन तयारी सम्बन्ध सूचना यस कार्यालयको सूचना पाटीमा टाँस गरिएको ब्यहोरा अनुरोध छ ।

  
प्रमुख प्रशासकीय अधिकृत  
प्रमुख प्रशासकीय अधिकृत


**लमही नगरपालिका**  
**५ नं. वडा कार्यालय**  
 लमही, दाङ  
 ५ नम्बर प्रदेश, नेपाल।

०८२ : ०८२४४०१११

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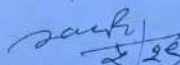
प.सं. : २०७८०७९      च.नं. : ८०९      मिति : २०७८/०५/२९

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विषय : सूचना टाँस गरी जानकारी पठाइएको बारे ।

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

उपरोक्त सम्बन्धमा नेपाल विद्युत प्राधिकरण नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजनाको च.नं. १६ मिति २०७८/०४/२५ गतेको प्राप्त पत्रानुसार लमही गडवा विद्युत वितरण लाईन आयोजना कार्यान्वयन हुनु भन्दा अघि सो आयोजनाले त्यस क्षेत्रको वातावरण तथा सामाजिक पक्षहरूमा के कस्तो प्रभाव पार्दछ भनि स्थानिय सरोकारवालाहरूसँग छलफल सम्बन्धि सूचना यान १ (एक) यस लमही नगरपालिका ५ नं. वडा कार्यालयको सूचना पार्टीमा मिति २०७८/०८/२८ गतेका दिन सूचना टाँस गरी सो को जानकारी गराइएको व्यहोरा अनुरोध छ ।

  
 विम बहादुर के.सी.  
 वडा अध्यक्ष  
 विम बहादुर के.सी.  
 वडा अध्यक्ष  
 लमही न.पा.-५

Email Id : lamahiwada5@gmail.com


**लमही नगरपालिका**  
**८ नं. वडा कार्यालय**  
 लमही, दाङ  
 लुम्बिनी प्रदेश, नेपाल

०८२ : ०८२४४०१११

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प.सं. : २०७८/०७९      च.नं. : ४८५      मिति : २०७८/०६/०९


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विषय : सूचना टाँस गरीएको सम्बन्धमा ।

नेपाल विद्युत प्राधिकरण  
 वितरण तथा ग्राहक सेवा निर्देशनालय  
 नेपाल वितरण प्रणाली स्तरोन्नती तथा विस्तार आयोजना  
 दरबारमार्ग, काठमाण्डौ

प्रस्तुत विषयमा तहो कार्यालयको च.नं १६ मिति २०७८/०४/२५ गतेको प्राप्त पत्रानुसार लमही गडवा विद्युत वितरण लाईन आयोजनाको वातावरणीय तथा सामाजिक व्यवस्थापन प्रतिवेदन तयारीका लागि सरोकारवाला सँग छलफल कार्यक्रम सम्बन्धि सूचना मिति २०७८/०६/०९ गते यस वडा कार्यालयको सूचना पार्टीमा टाँस गरीएको व्यहोरा जानकारी गरीन्छ ।

  
 विम बहादुर के.सी.  
 वडा अध्यक्ष  
 लमही न.पा. वडा नं. ४


 **गढवा गाउँपालिका**  
नं. ६ वडा कार्यालय  
गढवा, दाङ,  
लुम्बिनी प्रदेश, नेपाल


पत्र सं. :- २०७८/१०७९ मिति :- २०७८/१०/१२९  
च.नं. :- ४९५

**विषय :- सूचना टाँस गरिएको सम्बन्धमा ।**

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

उपरोक्त विषयमा तल कार्यालयको च.नं.१६ मिति २०७८/१०/१२५ गतेको पत्र यस गढवा गाउँपालिका वडा नं. ६ वडा कार्यालयमा मिति २०७८/१०/१२९ गते दर्ता भई यस वडा कार्यालयको सूचना पाटीमा प्राप्त भएको पत्र बमोजिम सूचना टाँस गरिएको व्यहोरा जानकारीको लागि सादर अनुरोध छ ।

  
बालचन्द्र ठाकुरी  
वडा अध्यक्ष


 **गढवा गाउँपालिका**  
नं. ६ वडा कार्यालय  
गढवा, दाङ,  
लुम्बिनी प्रदेश, नेपाल

पत्र सं. ०६८/१०७९ मिति २०७८/१०/१२९  
च.नं. ४८४

**विषय :- सूचना टाँस जानकारी चढाएको सम्बन्धमा ।**

५१२.

उपरोक्त पत्रमा नेपाल विद्युत प्राधिकरण नेपाल विद्युत प्राधिकरण स्तरोन्नती तथा विस्तार आयोजना दरबारमार्ग काठमाण्डौ को सं.सं. ०६८/१०७९ को च.नं. १६ को सूचना सहित को प्राप्त पत्रानुसार उक्त सूचना यस कार्यालयको सूचना पाटीमा टाँस भई सूचना टाँस भएको व्यहोरा जानकारीको लागि सादर अनुरोध छ ।

  
बालचन्द्र ठाकुरी  
वडा अध्यक्ष

**Annex 7: SAFETY RELATED SIGNS AND WASTE MANAGEMENT PRACTICES****SIGNAL NOTICE****DANGER SIGNS****INSTRUCTION SIGNS****SAFETY AND SAFETY INSTRUCTION SIGNS**





**Annex 8: PHOTOGRAPHS**

**Tapping point at Lamahi, DL Route for Underground Cabling, West Rapti River and Bridge view at the Left Bank, Material Deposited by the River and Proposed Substation Site at Bhedi Dumna (from left to right).**





**Bay Extension Point at Lamahi Substation**



**Discussion with DCS Officers at Lamahi**



**Proposed Land for Substation at Bhedi Dumna**



**Discussion with Local People about the Project**



**Stakeholders during Public Consultation cum FGD Meeting at Gadhawa RM, Dang**

## Annex 9: ENVIRONMENTAL AND SOCIAL SCREENING AND RAPID ASSESSMENT GUIDANCE FOR DISTRIBUTION LINE

### 9.1 Screening Guidance – to be filled up per subproject (11kV line)

Province:
District/Municipality:
Subproject Name:
Subproject Location: name of locations of distribution line (start from/ward/municipality .....end to..... (ward/municipality),
Total length of distribution line:.....km/m

Environmental and Social Screening Criteria	Project Requirement
<b>Environmental Impact Assessment Requirement</b> EIA/IEE. As per national requirement (as per Environmental Protection Act 2019) does the subproject require assessment of BES/IEE or EIA, Please tick the requirement.	
1.	If “Yes”, the subproject needs to prepare ESMP as per AIB requirement.
<b>Natural Habitat</b> Defined as the type of natural environment in which a particular species of organism lives. It is characterized by both physical and biological features and that human activity has not essentially changed the main ecological functions of the area	
4. Is the subproject located in a legally protected area based on Forestry Map?	If “Yes”, please indicate what type of permission it will requires
5. Does distribution line route/poles close to any touristic view points, wetlands, and sites of cultural / religious / archeological / historic significance?	If “Yes” please indicate what impact it will entail.
6. Will the subproject significantly make impact of degradation or change of the natural known habitat/migration movement route of protected rare and endangered species and/or forest in the protected area, proposed protected area or area considered with special ecology?	If “Yes”, please indicate what impact it will entails including cutting down trees etc.
7. Does the distribution line/ route and locations of poles are falling in any landslide & erosion prone/ risk spot where geological avoidance is not feasible	If “Yes” please indicate what impact it will entail.
<b>Indigenous Peoples (IPs)</b> Identification of the existence IPs is aimed to guarantee that IPs would be treated as well as other community members and given opportunity to participate and get access to the benefit of the project with ways that would not threat their exclusive culture and welfare. The project has to give correct and detail information of the objective and plan (design, schedule etc) of the subproject with consultation with the IPs before any construction activity in the area started. The term IPs is used generally for an ethnic individual or group that: (i) are considered	



<p>by national or local laws or policies as well as anthropological researches/studies as belonging to ethnic minorities or Indigenous Peoples defined by Nepal Federation of Indigenous Nationalities (NEFIN); (ii) identify as being part of a distinct social and cultural group; (iii) self-identify as being part of a distinct social and cultural group; (iv) maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories; (v) maintain cultural, economic, social, and political institutions distinct from the dominant society and culture; (vi) speak a distinct language or dialect; (vii) have been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against; (viii) represented as “Indigenous Peoples” or as “ethnic minorities” in any formal decision-making bodies at the national or local levels.</p>	
<p>7. Is the subproject area affected community:</p> <p>(i) Are considered by national or local laws or policies as well as anthropological researches/studies as belonging to ethnic minorities or Indigenous Peoples defined by Nepal Federation of Indigenous Nationalities (NEFIN)?</p> <p>(ii) Identify as being part of a distinct social and cultural group?</p> <p>(iii) Self-identify as being part of a distinct social and cultural group?</p> <p>(iv) Maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories</p> <p>(v) Maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?</p> <p>(vi) Speak a distinct language or dialect?</p> <p>(vii) Have been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against?</p> <p>(viii) Represented as “Indigenous Peoples” or as “ethnic minorities” in any formal decision-making bodies at the national or local levels?</p>	<p>If “Yes” in any of the question no 7, consultation should be conducted as described above. This should be documented as followed: (i) proof of dissemination of the notice for consultation; (ii) notes on when the consultation is being held, who attend the consultation, what is the result, and documentation of every consultation, with list of attendance segregated by gender. The form of attendance list and notes of meeting is attached in Appendix 11</p>
<p>8. Is there any adverse impact on any groups identified (by answering “Yes”) on the point 5?</p>	<p>If “Yes”, the subproject is not qualified to be included. Realign.</p>
<p><b>Cultural Resources</b></p> <p>Cultural resources include tangible culture (such as buildings, monuments, landscapes, books, works of art, and artifacts), intangible culture (such as folklore, traditions, language, and knowledge), and natural heritage (including culturally significant landscapes, and biodiversity)</p>	
<p>9. Is the subproject temporary or permanently causing relocation or any other negative impacts to cultural heritage that has important significance for local, regional or national based on provincial or national list, proposed provincial or national list, and/or just has been identified when the</p>	<p>If “Yes”, the subproject is not qualified to be included</p>

public consultation with project affected people was held?	
10. Is there any cultural heritage especially with important value for local community (eg. ancestral tomb) being negatively affected by the subproject?	If "Yes", the subproject is not qualified to be included
<b>Land Use</b> The development of or erection of distribution poles will require use of land. The land requirement would be optimized by using government owned land. For Right of Way, private land might be affected if there is no existing Right of Way available, and/or necessary to connect to private customers. Consent of landowners for use of their land and people whose non-land assets impacted by the project would be secured using written documentary evidences as in Appendix 11. During the construction phase, there would be land to be used temporary for construction activities. The contractor on behalf of NEA should maximise the usage of public land like roadside, and will rent private land with budget taken from the construction contract if public land is not available.	
11. Is there any land owned by individual or organisation to be affected because of the subproject?	If "Yes", the consent form has to be filled and collected. Keep all written letter request and filled consent documentation in hard copies
12. Is there any subproject activity that would restrict or close access to the community usual activities, facilities and services, productive assets and natural resources permanently or temporarily?	If "Yes", explain briefly why there would be restriction and/or closure and what would be the arrangement with the landowners and land users.  Keep all written filled consent documentation in hard copies
13. Is there any crops and/or trees (fruit, timber or herb) or fixed assets, loss of business or enterprises owned by individual or organisation to be affected because of the subproject?	If "Yes", explain briefly what would be the impacts of the trees and crops, loss of business or enterprises and the arrangement with the landowners, business owners and land users. Keep all written filled consent documentation in hard copies include reference/basis for compensation.
14. Is there any adverse impact on social and economic activities arising from change in land use	If "Yes", explain briefly what would be the adverse impacts on social and economic activities arising from change in land use
15. Is there restrictions on land and resources owned communally or by the Government	If "Yes", explain briefly what would be the impacts of the restrictions on land and resources owned communally or by the Government
16. Is there any private land to be used temporary during the construction phase for any construction activities?	If "Yes", explain briefly: - location(s) of private land to be used - evidence(s) that the land would be rented under contractor's contract
<b>Safety Distance</b> <b>As per Electricity Regulation 2050 (1993)</b>	
17 Schedule 12 (Distance which ought to be from wire to the ground)	If "Yes", for any of the question, the subproject has to redirect the distribution lines plan to follow the

18. Schedule 13 (Minimum distance which ought to be from the wire to the house of tree) a.	safety distance Note: Keep all plan documented in print-out, any change has to be noted in the resource documents
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## 9.2 Mitigation measures if the impact entails:

	Particulars	Mitigation measures	Responsibility	Remarks
E1.	If route passes through forest area and tree cutting is required.			
E2.	If the distribution line/ route and locations of poles are falling in any landslide & erosion prone/ risk spot where geological avoidance is not feasible.			
E3.	To maintain minimum clearance as per government/NEA standard.			
E4.	If existing transformers are replaced with new one. How to manage to those replaced one			
E5.	Occupational health and safety measures of the works during the erection/installation of poles/cables			
E6.	Issues related to influx of labor/labor camp and sanitation			
E7.	Other if any			

Note: Kindly response mitigation measures with example if any alternative option has been selected/proposed during the survey and design of route. Mitigations measures stated shall be implemented during construction and operation phase.

Each package of the proposal (distribution line) will be subject to environmental screening and environmental compliance monitoring.

### 9.3 Supporting Form

1	Subproject		
2	Type of Activity ( <i>choose in accordance with the activity</i> )	<input type="checkbox"/> Extension of 11 kV distribution lines <input type="checkbox"/> Expansion of distribution lines on existing right of way <input type="checkbox"/> :	
3	Project Description ( <i>describe briefly about the project activities from preparation to operation</i> )		
4	Project Location ( <i>describe the location of the project in detail, name of sub-village, village district, regency/city and province</i> )		
	Alternatives Considered and Hierarchy of Mitigation Measures applied (for private land and/or land belonging to IPs)		
5	Work Capacity ( <i>describe the capacity of the work</i> )		
6	Protected Area ( <i>checking whether the project location is in protected location below</i> )		
	a. Protected Area as defined By the Department of National Parks and Wildlife and conservation and Forest Act 2076	<input type="checkbox"/> Protected forest/Types of Forest <input type="checkbox"/> Wetland <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> National Park and Wildlife	<input type="checkbox"/>
		1.	
	c. List of protected species/animals based on the International Union for Conservation of Nature (IUCN) List		
7	Land Use – provide explanation for items 12-16 if applicable		
8	IPs Area ( <i>checking whether the project location is in IP location or there are presence of IP groups or ethnic minorities in the community</i> )		

\* might cross (X) more than one options

**Form on Consent of Private Land Owner(s)****Statement Letter**

The person signing below,

Name :

.....

:

.....

Address :

.....

Phone Number :

.....

In relation with the request for electricity distribution upgrade and expansion of NEA with the following details:

Power :

.....

Location :

.....

Geo-tagging (coordinates):

.....

Like to inform that we give permission for the electricity installation to the above location from all parties that whose land and non-land assets (like plants and crops) could be affected by the development for installing the poles, transformer and right of way. The parties on the list below agree for the usage of the land and any necessary clearance needed (e.g. trimming of branches, cutting of trees).

List of Name

No	Name	Address	Signature
1			
2			
3			
4			

....., ....., .....202..



Witnesses	Applicant
Ward Chair or Ward Member ..... (other authority)	(Legal stamp)
(Name and signature)	(Name and signature)

Attachment:

### **Map of Distribution Network Plan Drawing**

For any complaints or request for information, NEA can be contacted via **123**.

### Notes and List of Attendance of Community Consultations

#### **Notes of Community Consultations**

Date, time :

:

Name of the Village /Municipality and Ward:

:

Name of the Province :

:

Note of the Community Consultation:

- 1.
- 2.
- 3.

Name of the notes taker :		Signature:
Agreed by Position :	1.	Signature:
Position :	2.	Signature:

**List of Attendance of Community Consultations**

Date, time :

:

Name of the Village/Municipality and Ward:

:

Name of the Province :

:

No	Name	Gender		Address or Mobile Phone	Signature
		Male (M)	Female (F)		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

**Google map of 11kV distribution line**

Consent letter of Community Forest User Groups (If route alignment passes through forest)

E & S Screening completed by:

Name:

Designation:

Date:

E & S Screening verified/reviewed by:

Name:

Designation:

Date: