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Abbreviations and Acronyms

ABBREVIATIONS AND ACRONYMS

:	Bikram Sambat (Nepali Era)
:	Corporate Social Responsibility
:	District Agriculture Development Office
:	District Coordination Committee
:	District Forest Office
:	Department of Electricity Development
:	Environment and Social Management Framework
:	Environment and Social Management Plan
:	Environment Protection Rules, 1997
:	Environment and Social Studies Department
:	Government of Nepal
:	Grid Tied and Solar Energy Efficiency Project
:	Grievance Redress Cell
:	Grievance Redress Mechanism
:	Households
:	Initial Environmental Examination
:	Ministry of Energy, Water Resource and Irrigation
:	Ministry of Forest and Environment
:	Nepal Electricity Authority
:	Project Affected Settlement
:	Project Management Office
:	Supply and Installation of Distribution Project
.:	World Bank
:	Hectare
:	Kilometer
:	Kilo Volt
:	Square meter

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1 INTRODUCTION

1.1 Background

Over the past several years, NEA's operations have suffered from deficit of generation capacity and poor system performance at times of peak demand. The network voltages remain excessively low in many part of country. The major cause of the low system voltages has been identified as deficiencies in the distribution system. The network supplying the system is heavily overburdened and has exceeded technical and economic loading levels at many places, causing the consumers to receive power at voltages far below the required level. There is also high system loss in distribution with estimated average value ranging from 60 to 70 percent of the overall peak and energy losses. In particular possibilities of any short term actions to improve network voltages and enable new consumers to be added to the system at locations where such difficulties exist are to be explored.

The proposed Supply and Installation of Distribution Projects (SIDP) seeks to find solutions to redress the poor supply conditions in NEA's distribution network and to reduce the existing high level of system losses. This project includes supply and installation of 6 nos. of new 33/11kV, 3 MVA substations (SS), 2 nos. of new 33/11kV, 6/8 MVA substations (SS) and 33kV new lines for energizing those SS. However, this study focuses on the study of 8 new substations of 5 districts. Implementation of project would augment the system capacity which would consequently reduce the load shedding hours to some extent and improve the revenue collection for unutilized usable energy.

The proposed project has been selected avoiding the settlement areas, inbuilt structures, religious places, schools and other community infrastructures wherever possible. During the field study, it has been verified that due to the construction and operation of this proposed project, there shall be no obstruction in planned/proposed/operated hydropower, TL or other development projects in the vicinity. The environmental and social management plan (ESMP) prepared for this subproject includes 8 substations proposed in Doramba-2 (Doramba SS), Bamti bhandar (Bamti SS), Mathillo Bara (Khurkot SS), Marhillo Pachrang (Lampantar SS), Labani chauraha (Labani SS), Ghanchaura (Gorusinghe SS), Mehelpani, Ratanmare (Hansapur SS) and Bwase, Marbhung (Marbhung SS).

1.2 Objectives, rationale and Methodologies for Preparing ESMP

Objectives

The objective of the Environment and Social Management Plan (ESMP) is to identify the potentially significant environmental issues and risks of the proposed project and to suggest appropriate mitigation measures to mitigate and/or minimize the adverse impacts so that the project is implemented in an environmentally sound manner. The other general objectives of the study are to:

- Identify, predict and describe/ assess potential environmental and social impacts from the establishment of new substations.
- Define the roles and responsibilities of all parties involved in project environmental and social management (including monitoring mechanism which should be consistent with the provisions in the project's ESMF);
- Identify and describe measures for impact avoidance, minimization, and mitigation and their costs;

- Define environment and social management mechanism to ensure the implementation of mitigation measures and monitoring programs; and establish a supervision, monitoring and reporting as well as grievance handling mechanism.
- Consult with potentially affected people, community and stakeholders and help to identify/ understand people's concerns and suggestions and address them, if relevant.

Rationale

Based on the recommendation identified from screening report, the ESMP is prepared to address the impacts on the particular aspects and describe different measures to mitigate those impacts.

Methodology

This ESMP report is prepared in accordance with the recommendations provided in the screening reports of the subproject, field study, consultation with local people/stakeholders and officials. Various methodologies are used to prepare the ESMP; they are:

- Field Investigation
 - Identification of settlements nearby project area.
 - Meetings/Consultations/Public Participation
 - Verification of secondary data/ information and collection of data/ information from the field.

The project team visited the sub-project sites in 2075/01/24 to 2075/02/07. During site visit, 16 consultation meetings were conducted at project sites. Altogether, 149 people were participated in the meeting including ward representatives with 119 males and 30 females. The detail of the meeting is given in Annex I. The team also visited to Ward Office, district level line offices such as, District Coordination Committee (DCC), District Forest Office (DFO) and District Agriculture Development Office (DADO) of the project affected districts.

S.N Project Component		Location	Total	Male	Female	
1	Doramba SS	Doramba-2	18	12	6	
2.	Bamti SS	Bamti bhandar	19	14	5	
3	Khurkot SS	Mathillo Bara, Khurkot	17	9	8	
4	Lampantar SS	Marhillo Pachrang, Bangring Phedi	17	14	3	
5	Labani SS	Labani chauraha	21	21	-	
6	Gorusinghe SS	Ghanchaura and Rangai	19	16	3	
7	Hansapur SS	Mehelpani, Ratanmare	18	15	3	
8	Marbhung SS	Bwase, Marbhung	20	18	2	
		• Total	149	119	30	

Table 1-1: Detail of the	Consultation Meeting	s at Sub-Project Sites
	e ente anta tier inte etting	

Source: Field Survey, 2018

The consultation meetings were also participated by indigenous people in most of the sites depending on their presence in the area. Of the total participants during consultations, 33.56% represented different indigenous communities mainly Shrestha, Magar, Tharu and Tamang. The detail of indigenous caste group is given in Table 1-2.

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S.N	Project Component	Location	Total Partici pants	Indigen	ous Participants
		water a station of the	Total	Total	Caste
1	Doramba SS	Doramba-2	18	16	Moktan, Yonjan, Tamang and Shrestha
2	Bamti SS	Bamti bhandar	19	9	Shrestha, Sherpa and Tamang
3	Khurkot SS	Mathillo Bara, Khurkot	17	7	Shrestha
4	Lampantar SS	Marhillo Pachrang, Bangring Phedi	17	9	Magar, Bhujel, Shrestha and Tamang.
5	Labani SS	Labani chauraha	21	2	Tharu
6	Gorusinghe SS	Ghanchaura	19	6	Tharu and Gurung
7	Hansapur SS	Mehelpani, Ratanmate	18	1	Magar
8	Marbhung SS	Bwase, Marbhung	20	-	-
	•	Total	149	50	

Table 1-2: Detail of the indigenous caste group at sub project sites

Source: Field Survey, 2018

Consultations with indigenous peoples also involved Free Prior Informed Consent: (FPIC) regarding the construction of substations and transmission lines. The IPs showed concerns in providing priorities for their employment in the project works on the basis of their skills.

1.3 Project Area Description

Khurkot and Lampantar SS of Sindhuli District

Khurkot: The sub-project site Khurkot Substation (SS) (33/11kV, 3MVA) is a mild slope terrain, located in Golanjor Rural Municipality (RM), previously known as the Bhimeshwor VDC, of Sindhuli District. A total of 0.508 ha (Ten Ropani equals to 5087.36 sq meter) land is required for the project which has already been owned by NEA in 2072/73. There are no obstructions of trees, buildings and hills in the project site, but there are bushes in the project site which should be cleared during construction. The proposed SS site is accessed through B.P. Highway (Banepa-Bardibas road). The site is 80m upward from the highway and there is an earthen road that link the project site to the highway.

Lampantar: The sub-project site of Lampantar SS (33/11kV, 3MVA) is a flat terrain located in Tinpatan Rural Municipality (RM)-10 (previously known as the Lampantar VDC, ward no 3), Mathillo Pachrang of Sindhuli District. A total of 0.51ha (Fifteen Katha equals to 5079.45 sq meter) land is required for the project which has already been owned by NEA about one and half years back. There are no obstructions of trees, buildings, hills in the project site. The proposed SS site is connected to district headquarter Sindhulimadi by about 34km earthen road (Sindhuli-Bhimsthan-Chakmake-Baun Tilpung earthen road).

Doramba and Bamti SS of Ramechhap District

Doramba: The sub-project site Doramba SS (33/11kV, 3MVA) is located in Doramba Rural Municipality-2 (former Doramba VDC, ward no 4,), Bhumithan tole of Ramechhap District. About 0.29 ha (around 5.57 ropani) land is already acquired and owned by NEA about five years back. There are no obstructions of trees, buildings in the substation site. The proposed statements of the substation site.

SS site is connected to district headquarter Manthali by about 40 km earthen road and linked with rural village ring road. The project site has sub-tropical climate, influenced by monsoon rains (June-September) and has summer months from March to May.

Bamti: The sub-project site Bamti SS (33/11kV, 3MVA) is located in Umakunda Rural Municipality-2, Simgau tole of Ramechhap District. About 0.3745 ha (around 7.3634 ropani) land has been acquired and owned by NEA about five years back. And the area is compounded by stone-wall. The proposed SS site is connected to district headquarter Manthali by about Lamosangu-Ramechhap highway by 61km earthen road linked with rural village road named Chuchure-Deurali-Bamti earthen road and then district headquarter Manthali by about 15km paved road. The project site has sub-tropical climate, influenced by monsoon rains (June-September) and has summer months from March to May.

Labani and Gorusinge SS of Kapilbastu District

Labani: The sub-project site Labani SS (33/11kV, 6/8MVA) is a flat terrain, located in Suddodhan Rural Municipality-3 of Kapilvastu District. A total of 0.51ha (Fifteen Katha equals to 5079.45 sq meter) land will be required for the project which has already been owned by NEA about two years back. There are no obstructions of trees, buildings, hills in the project site. The proposed SS site is connected to district headquarter Taulihawa by about 15km Pitch road (Taulihawa-Bhairahawa road). The road is about 100m in distance from the proposed subproject site. The climate of the site is temperate influenced by monsoon rains (June-September) and has summer months from March to May.

Gorusnighe: The sub-project (SS) site Gorusinghe (33/11kV, 6/8MVA) is a flat terrain, located in Buddhabhumi Municipality-2 of Kapilvastu District. A total of 0.6772ha (Twenty Katha equals to 6772.63 sq. meter) land has already been owned by NEA about half years back. There are no obstructions of trees, buildings, in the project site. The proposed site is accessed through east-west highway (about 4500m far from the site) and the local road that goes to Ghanachaura village.

Hansapur Substation of Arghakanchi district

The sub-project site Hansapur Substation (SS) (33/11kV, 3MVA) is a mild slope terrain located in Malrani Rural Municipality (RM)-6 of Arghakhachi District. A total of 0.508 ha (Ten Ropani equals to 5087.36sq. meter) land will be required for the project which has already been owned by NEA. There are no obstructions of trees, buildings and hills in the project site. The proposed SS site is accessed through Mehelpani-Sautamare earthen road.

Marbhung Substation of Gulmi district

The sub-project site Marbhung SS (33/11kV, 3MVA) is a mild slope terrain, located in Malika Rural Municipality-8 of Gulmi District. A total of 0.51ha (Fifteen Katha equals to 5079.45sq meter) NEA holds the ownership title of the land. The land will be required for the project which has already been owned by NEA in 2072/73. There are no obstructions of trees, and hills in the project site. The proposed SS site is accessed through Tamghas-Simaltari-Chaurasi-Purkot daha road.



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Figure 1-1: Project Location Map

Figure 1-2: Geographica	I locations and	altitude of	sub-project sites
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S.	Out Designt	District	DM	GPS L	GPS	
Ν	Sub-Project	District	KIVI	Latitude	Longitude	Location
1	Doramba SS	Bamaabbaa	Doramba-2	27°30'19.06"N	85°56'23.74"E	2025
2.	Bamti SS	Ramechnap	Umakunda-2	27°34'34.60"N	86°20'26.45"E	2260
3	Khurkot SS	Sindhuli	Golanjor	27°17'57.53"N	86°00'04.60"E	893
4	Lampantar SS	Sinanui	Tinpatan-10	27° 6'36.13"N	86°08'15.85"E	555
5	Labani SS	Kapilbactu	Suddodhan-3	27°30'30.67"N	83°11'52.07"E	96
6	Gorusinghe SS	Kapibastu	Buddhabhumi-2	27°41'13.74"N	83°01'17.94"E	125
7	Hansapur SS	Arghakhachi	Malrani-6	28° 6'32.86"N	83°03'17.93"E	1770
8	Marbhung SS	Gulmi	Malika-8	28° 9'51.67"N	83°08'12.06"E	1015

Source: ESMP study team, GPS, 2018





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Introduction NEA-ESSD Map of Marbhung Substation and its Periphery Lagend Contraction Figure 1-3: Google Image of Sub-Project Sites ~ of Labani SS Google Image ESMP Report SIDP

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1.4 Construction Planning

The implementation of the proposed project comprises the construction of a new 8 substations. The estimated years of project completion is 18 months starting from June, 2018.

1.4.1 Preliminary Works

Preliminary works for the proposed project consist of contract award, the detail engineering and design study and mobilization of the contractors. The detail design study will carry out the preparation of longitudinal profiles, geological field test and laboratory testing, etc.

1.4.2 Land

The project requires a total of 3.8833ha of land for the construction of 8 substations and necessary physical facilities. Since the land is under NEA's ownership, there is no issue of further land acquisition from the public. Breakdown of the land acquired for eight substation sites are presented in Table 1-3.

S.N	Description	Land Acquired (ha)
1	Doramba SS	0.2903
2	Bamti SS	0.3746
3	Khurkot SS	0.5087
4	Lampangtar SS	0.5079
5	Labani SS	0.5079
6	Gorusinghe SS	0.6773
7	Hansapur SS	0.5087
8	Marbung SS	0.5079
	Total	3.8833

Table 1-3: Area of land acquired for the project

Source: SIDP

1.4.3 Requirement of Workforce

During the stages of the construction period of the project, altogether approximately 45 people will be employed in each sides for construction activities and transportation of materials including 15 unskilled, 20 semi-skilled and 10 skilled human resources. Most of the unskilled manpower will be hired locally as per available skill and experiences; approximately 10-15 manpower are hired locally whereas only 20-30 manpower will be migrant workers. The workforce will be used for a maximum of 14 months during construction period.

1.4.4 Materials

The main materials required for construction works related with the substations will be: Steel reinforcement, Cement, Fine aggregates (sand), Coarse aggregate, Boulder and Bricks. The requirement of the project materials are presented in the following table.



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S. N.	Description	Bamti	Doramba	Khurkot	Lampantar	Labani	Gorusinghe	Hansapur	Marbhung
1	Cement (Bags)	2900	3400	4100	4550	4850	5100	3850	4850
2	Sand (Cum)	360	530	625	586	620	675	580	825
3	Aggregate (Cum)	300	260	350	422	465	440	320	325
4	Boulder (Cum)	330	830	900	532	600	775	900	1500
5	Reinforcement (Tons)	21	21	21	32	32	32	21	21
6	Bricks (No.)	85,000	85,000	91,000	193,000	183,000	210,000	82,000	86,000

Table 1-4: Requirement of the Project Materials to the Project

Source: SIDP

Steel reinforcing bars and cement can be acquired from local manufacturers or can also be imported. Coarse aggregates will be produced at site from excavated materials or purchased from the nearby market. Likewise, fine aggregates will be collected from licensed/approved major quarries along riverbanks, the excavated foundation material can be used as a backfill material required for the foundation construction.



2 EXISTING ENVIRONMENTAL AND SOCIAL SETTINGS

This project includes eight substations located in five districts i.e., Doramba and Bamti SS in Ramechhap district, Khurkot and Lampantar SS in Sindhuli district, Labani and Gorusinghe substation in Kapilbastu district, Hangsapur SS in Arghakhachi district and Marbung SS in Gulmi district. For the study of existing environmental and social settings, the study area is defined as the area of SS and other physical facilities for construction of the SS. The settlement area, forests or other vegetation and places having built up infrastructures or facilities that falls within the boundary of SS are also under the study area.

2.1 Environmental Baseline

2.1.1 Physical Environment

The topography, land use, climatic condition, geomorphology and geology, air and noise condition, watershed and drainage pattern that shall be influenced due to the construction of this project has been discussed in physical environment. The detail of the physical environment of eight sub-project area are given the table below.

	Table 2-1: Summary of Physical Environment						
S.N	Project	Description					
	Component						
1	Doramba SS	 The elevation of proposed Doramba SS is about 2025masl; Temperate climate, influenced by monsoon rains from June to September and dry weather from October to May. Absolute extreme maximum and minimum temperature prevail in Ramechhap district are 36.5°C in May and 6.2°C in January respectively; Located in Lesser Himalayan zone which consists of rocks such as schist, phylite, gneiss, quartzite, granite, limestone etc. The SS site consists of colluvial soil; The sub-project area is apparently clean in terms of pollution level on air and noise as the sub-project lies in rural area. The sub-project area is not industrialized, so the only source of air and noise pollution is vehicular movement along the earthen road. Biomass burning for cooking contributes 					
		 Ittle pollutants to the ambient air; The slope of area is gentle within the SS boundary and moderate outside the project boundary; so chances of water logging is minimal. There is a small kholsi located at about 10m from the boundary of the SS which drains the SS area during monsoon season; Land acquired for Doramba SS is about 0.2903ha. The land is barren; and The proposed SS site is susceptible to bank erosion due kholsi during monsoon season. 					
2.	Bamti SS	 The elevation of proposed Bamti SS is about 2260masl; Temperate climate, influenced by monsoon rains from June to September and dry weather from October to May. Absolute extreme maximum and minimum temperature prevail in Ramechhap district are 36.5°C in May and 6.2°C in January respectively; Located in Higher Himalayan zone which consists of rocks such as gneiss, schists and marbles. 					

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S.N	Project Component	Description
		 The sub-project area is apparently clean in terms of pollution level on air and noise as the sub-project lies in rural area. The sub-project area is not industrialized, so the only source of air pollution is from dust, smoke generated by vehicular movement along the earthen road. Biomass burning for cooking contributes little pollutants to the ambient air. The main source of noise pollution in the sub-project area is the vehicular movement along the earthen road. Others source of noise in the area relates to the anthropogenic activities of rural population such as talking playing radio television, barking of dogs, calls of bird and animals and whispering of winds. In general the noise level in the area is near to the natural state. The SS site is located in hilly terrain which gentle slope within the boundary of SS, so chances of water logging is minimal. There is a small kholsi located at about 5m from the boundary of the SS which drains the SS area during monsoon season. The proposed SS site is susceptible to bank erosion by kholsi during monsoon season.
3	Khurkot SS	 The elevation of proposed Khurkot SS is about 893masl; Upper Tropical climate, influenced by monsoon rains from June to September and dry weather from October to May. Absolute extreme maximum and minimum temperature prevail in Sindhuli district are 32.5°C in April and 7.1°C in January respectively; Located in Lesser Himalayan zone which consists of rocks such as schist, phylite, gneiss, quartzite, granite, limestone; The sub-project area is not industrialized, so the only source of air and noise pollution is due to vehicular movement along the BP Highway. Combustion emission by vehicles contaminates ambient air. The overall status of air and noise quality found to be within the acceptable limit; The SS site is located in hilly terrain which moderate slope, so chances of water logging is minimal; and Land acquired for Khurkot SS is about 0.5087ha. The land is barren;
4	Lampantar SS	 The elevation of proposed Lampantar SS is about 555masl; Upper Tropical climate, influenced by monsoon rains from June to September and dry weather from October to May. Absolute extreme maximum and minimum temperature prevail in Sindhuli district are 32.5°C in April and 7.1°C in January respectively; The sub-project area is apparently clean in terms of pollution level on air and noise as the sub-project lies in rural area. The sub-project area is not industrialized, so the only source of air pollution is from dust, smoke generated by vehicular movement along the earthen road. Biomass burning for cooking contributes little pollutants to the ambient air; The main source of noise pollution in the sub-project area is the vehicular movement along the earthen road. Others source of noise in the area relates to the anthropogenic activities of rural population such as talking playing radio television, barking of dogs, calls of bird and animals and whispering of winds. In general the noise level in the area is near to the natural state;

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S.N	Project	Description
	Component	
		• The slope of SS area is flat and lies in chure area, so chances of water
		logging is minimal; and
		Land acquired for Lampantar SS is about 0.5079ha. The land is barren.
5	Labani SS	 The elevation of proposed Labani SS is about 96masl;
		· Lower Tropical climate, influenced by monsoon rains from June to
		September and dry weather from October to May. Absolute extreme
		maximum and minimum temperature prevail in Kapilbastu district are 42.7°C
		in May and 5.4°C in January respectively;
		Located in Terai consisting of old and new alluvium, both of which constitute
		as alluvial deposits mainly of sand, clay, silt, gravels and coarse fragments;
		• The sub-project area is apparently clean in terms of pollution level on air and
		noise as the sub-project site lies in non-industrial area, so the main source
		of air and noise pollution is due to vehicular movement along the Taulihawa-
		Bhairahawa road. There is market area within 300m from the SS site, so
		other source of noise is due to the market activities. The overall status of air
		and noise quality found to be within the acceptable limit;
		• There is small natural canal which is about 170m far away from the proposed
		SS which drains the sub-project area;
		 Land acquired for Labani SS is about 0.5079ha. The land is barren.
6	Gorusinghe SS	 The elevation of proposed Gorusinghe SS is about 125masl;
		• Lower Tropical climate, influenced by monsoon rains from June to
		September and dry weather from October to May. Absolute extreme
		maximum and minimum temperature prevail in Kapilbastu district are 42.7°C
		in May and 5.4°C in January respectively;
		 Located in Terai consisting of old and new alluvium, both of which constitute
		as alluvial deposits mainly of sand, clay, silt, gravels and coarse fragments;
		The sub-project area is apparently clean in terms of pollution level on air and
		noise as the sub-project lies in rural area. The sub-project area is not
		industrialized, so the only source of air pollution is from dust, smoke
		generated by vehicular movement along the earthen road. Biomass burning
		for cooking contributes little pollutants to the ambient air;
		 The main source of noise pollution in the sub-project area is the vehicular
		movement along the earthen road. Others source of noise in the area relates
		to the anthropogenic activities of rural population such as talking playing
		radio television, barking of dogs, calls of bird and animals and whispering of
		winds. In general the noise level in the area is near to the natural state;
		 Land acquired for Labani SS is about 0.6773ha. The land is barren.
7	Hansapur SS	 The elevation of proposed Hansapur SS is about 1770masl;
		Sub-tropical climate, influenced by monsoon rains from June to September
		and dry weather from October to May. Absolute extreme maximum and
		minimum temperature prevail in Arghakhachi district are 29.1°C in May and
		0.0°C in February respectively;
		Located in Lesser Himalayan zone which consists of rocks such as schist,
		phylite, gneiss, quartzite, granite, limestone;
		• The sub-project area is apparently clean in terms of pollution level on air and
		noise as the sub-project lies in rural area. The sub-project area is not

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S.N	Project Component	Description
		 industrialized, so the only source of air pollution is from dust, smoke generated by vehicular movement along the earthen road. Biomass burning for cooking contributes little pollutants to the ambient air. The main source of noise pollution in the sub-project area is the vehicular movement along the earthen road. Others source of noise in the area relates to the anthropogenic activities of rural population such as talking playing radio television, barking of dogs, calls of bird and animals and whispering of winds. In general the noise level in the area is near to the natural state. The SS site is located in hilly terrain which gentle slope within the boundary of SS, so chances of water logging is minimal. Land acquired for Hansapur SS is about 0.5087ha. The land is barren;
8	Marbhung SS	 The elevation of proposed Marbhung SS is about 1015masl; Sub-tropical climate, influenced by monsoon rains from June to September and dry weather from October to May. Absolute extreme maximum and minimum temperature prevail in Gulmi district are 31.8°C in May and -2°C in Febraury respectively; Located in Lesser Himalayan zone which consists of rocks such as schist, phylite, gneiss, quartzite, granite, limestone; The sub-project area is apparently clean in terms of pollution level on air and noise as the sub-project lies in rural area. The sub-project area is not industrialized, so the only source of air pollution is from dust, smoke generated by vehicular movement along the earthen road. The main source of noise pollution in the sub-project area is the vehicular movement along the earthen road. Others source of noise in the area relates to the anthropogenic activities of rural population such as talking playing radio television, barking of dogs, calls of bird and animals and whispering of winds. In general the noise level in the area is near to the natural state. The SS site is located in hilly terrain which gentle slope within the boundary of SS, so chances of water logging is minimal.

2.2 Biological Environment

Vegetation and forest resources, mammals and birds and rare and protected species of flora and fauna found in the subproject area are studied in biological environment. The summary of the biological environment of the subproject area is given the tables below.

Table 2-2: Detail of th	e biological environmen	t of the sub-project area.
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S.N.	Project Component	Description
1	Doramba SS	No obstruction of trees and other rapidly growing vegetation in the substation area. The land is barren land covered by shrubs/herbs mainly Aiselu (<i>Rubus spp.</i>), Chutro (<i>Berberis aristata</i>), Khar, Banmara (<i>Eupatorium spp.</i>), Ratnaulo, Dubo (<i>Cynodon dactylon</i>) etc.

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		Eastern boundary is covered by agricultural land (currently cultivated by wheat).
		the kholsi
		No natural forest occur in the sub-station area. The area does not lie within
		protected area (national park, wildlife reserve or conservation area).
2	Bamti SS	There is no obstruction of trees and other rapidly growing vegetation in the sub-
		station area.
		The land is barren land covered by shrubs/herbs like Titepati (Artemisia spp.),
		Gandhe jhar (Ageratum spp.), Banmara (Eupatorium spp.), Aiselu (Rubus spp.),
		Dubo (Cynodon dactylon) etc.
		The area does not lie within protected area (national park, wildlife reserve or
		conservation area).
3	Khurkot SS	The sub-station area is devoid of trees and other rapidly growing vegetation. The
		land is barren land.
		In the eastern boundary of the sub-substation occur few Chilaune and Salla
		trees.
		station area
		No natural forest occur in the Sub-station area. The area does not lie within
		protected area (national park, wildlife reserve or conservation area)
4	Lampantar	There is no obstruction of trees and other rapidly growing vegetation in the area.
2.07	SS	North-eastern side of the sub-station is occupied by agricultural land with sparse
	The Address	Aap trees (Mangifera indica).
		North western side is consists of sparse Bar trees (Ficus benghalensis) and
		Bamboo patches.
		No natural forest occur in the sub-station area.
5	Labani SS	The sub-station area does not consist of trees or other rapidly growing
		vegetation.
		No natural forest occur in the sub-station area.
		The area does not lie within protected area (national park, wildlife reserve or
		conservation area).
6	Convoingho	No natural forest occur nearby station.
0	Gorusingne	The proposed sub-station area is devoid of trees and other prominent type of
	33	The land is barren land with covered with dube (Overedon dectulor)
		Northern side of the sub-station falls under community forest area
		Western side is occupied by some Bar trees (Ficus benghalensis)
		No natural forest occur in the sub-station area.
		The area does not lie within protected area (national park, wildlife reserve or
		conservation area).
7	Hansapur SS	The sub-station area is covered by some trees which needs felling during the
		construction of the sub-station.
		There are about 22 Salla (Pinus roxburghii), 4 Utis (Alnus nepalensis) trees, 5
		Paiyun trees (Prunus cerasoides), 2-3 Forsa trees and 1 Naspati sapling in the
		surrounding of the sub-project area.
		Ground is covered by herbs/shrubs like banmara (Eupatorium spp.), aiselu
		(Rubus spp.), chutro (Berberis aristata), Buki phool (Anaphalis spp.),
		bhimsenpati jhar (Buddleja macrostachya) etc.

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		The area does not lie within protected area (national park, wildlife reserve or conservation area).
8	Marbhung SS	The area of Marbhung sub-station is barren land occupied by Kuro (<i>Bidens pilosa</i>), Ghodtapre (<i>Centella asiatica</i>), Dubo (<i>Cynodon dactylon</i>), Buki phool (<i>Anaphalis spp.</i>) About 7-8 scattered poles and saplings of Amba (<i>Psidium guajava</i>), one chilaune tree and some bamboo patches occur in the sub-station area. No natural forest occur in the sub-station area. The area does not lie within protected area (national park, wildlife reserve or conservation area).

Source: Field Visit, 2018



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S.N.	Project Components	Nearest CFs	Major Tree Species	Wildlife (mammals and birds)	NTFPs
1	Doramba SS	Kakling CF	Gurans (Rhododendron spp.), Utis (Alnus nepalensis), Chilaune (Schima wallichii), Lankuri (Fraxinus floribunda), Kafal (Myrica esculenta) etc.	Mriga (Muntiacus muntjak), Dumsi (Hystrix indica), Jackal (Canis aureus), Kalij (Lephura leucomelanos), Kharayo (Lepus nigricollis), Badhar (Macaca mulatta), Langur (Semnopithecus entellus), Salak (Manis spp.).	Kiwi, Alaichii, Chiraito, Pakhanbed, Bojho, Sungava, Jatamashi, Nagbeli etc.
2	Bamti SS	Kunsang CF	Uttis (<i>Alnus nepalensis</i>), Salla viz. Khote Salla, Bhange Salla, Thingre Salla, Patule Salla, etc.	Mriga (Muntiacus muntjak), Jackal (Canis aureus), Chituwa (Panthera pardus), Kharayo (Lepus nigricollis), Thar (Hemitragus spp.), Bandhel (Sus scrofa), Badhar (Macaca mulatta), Bat (Pteropus giganteus), Kalij (Lephura leucomelanos), Dhukur (Streptopelia chinensis), Sparrow (Passer domesticus), Kaag (Corvus splendens), Gauthali (Hirundo spp.) etc.	Lokta, Lauth Salla, Chiraito etc.
3	Khurkot SS	Panchakanya CF	Salla (<i>Pinus roxburghii)</i> and Sal (<i>Shorea robusta</i>).	Mriga (Muntiacus muntjak), Chituwa (Panthera pardus), Badhar (Macaca mulatta), Goral (Naemorhedus goral), Kafal pakyo (Cuculus micropterus), Mayur (Pavo cristatus), Kalij (Lephura leucomelanos)	

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Existing Environmental and Social Settings

5.N.	Project Components	Nearest CFs	Major Tree Species	Wildlife (mammals and birds)	NTFPs
4	Lampantar SS	Pachrang (Suryodaya CF)	Sal (Shorea robusta), Chilaune (Schima wallichii), Saj (Terminalia spp.), Barro (Terminalia bellirica), Harro (Terminalia chebula), Bhalayo (Semecarpus anacardium), Botdhayero (Lagerstroemia parviflora) etc.	Mriga (<i>Muntiacus muntjak</i>), Badhar (<i>Macaca mulatta</i>), Kalij (<i>Lephura leucomelanos</i>), Dhukur (<i>Streptopelia chinensis</i>), Sparrow (<i>Passer domesticus</i>), Kaag (<i>Corvus</i> <i>splendens</i>) etc.	
5	Labani SS	No CF	Teak (<i>Tectona grandis</i>) and Masala (<i>Eucalyptus</i> <i>spp.</i>) trees in private land.		
6	Gorusinghe SS	Janamukhi CF and JayMahalax mi CF	Sal (Shorea robusta), Harro (Terminalia chebula), Barro (Terminalia bellirica), Amala (Phyllanthus emblica), Sisau (Dalbergia sissoo), Saaj (Terminalia spp.), Botdhayero (Lagerstroemia parviflora), Khayer (Acacia catechu) etc.	Mriga (<i>Muntiacus muntjak</i>), Badhar (<i>Macaca mulatta</i>), Kalij (<i>Lephura leucomelanos</i>), Dhukur (<i>Streptopelia chinensis</i>), Sparrow (<i>Passer domesticus</i>), Kaag (<i>Corvus</i> <i>splendens</i>) etc.	
7	Hansapur SS	Pothrang CF	Salla (<i>Pinus roxburghii</i>), Utis (<i>Alnus nepalensis</i>), Gurans (<i>Rhododendron</i> <i>spp.</i>) etc.		Timur, Chiraito

Source: Field Visit, 2018



2.3 Socio-economic and Cultural Environment

The subproject sites of proposed SIDP affects 7 rural municipalities (RMs) and one municipality of five districts of Nepal. The total area of the project affected wards is 186.83sq.km. According to Central Bureau of Statistics (CBS) 2011, the total population of project affected wards is 30,576 with 14,351 male and 16,225 female which occupies 0.12% of the total population of the country (26,494,504). There are diverse ethnic caste groups residing in the subproject affected wards along with indigenous caste groups; Magar, Tamang, Sherpa, Muslim, Tharu, Chaudhary and others and dalit caste groups Kami and Sarki. The detail is given in Table 2-4.

The summary of the socio-economic and cultural baseline of the sub-project sites is presented in Table 2-4, 2-5, 2-6 and 2-7.

S. N	Project	RM/ Municipality	Ward	Area	HHs	Popula	ation		M/F	Pop.	Caste/
		manicipanty	no	(39.811)		Total	м	F	1	Density	Etime group
1	Doramba SS	Doramba RM	2	20.39	794	3,273	1,481	1,792	82.65	161	Magar, Tamang, Newar, Brahmin, Chhetri and dalit
2.	Bamti SS	Umakun da RM	2	20.28	739	3,144	1,453	1,691	85.93	155	Chhetri, Rai, Sherpa, Tamang and dalit.
3.	Khurkot SS	Golanjor RM	7	15.07	459	2298	1149	1149	100	152	Chhetri, Brahmin, Majhi, Janajati and dalit.
4.	Lampantar SS	Tinpatan RM	10	16.1	481	2,485	1,174	1,311	89.54	154	Magar, Brahmin, Janajati and dalit.
5.	Labani SS	Suddodhan RM	3	12.53	1055	7,092	3,538	3,554	99.55	566	Muslim, Chaudhari, Kurmi, Yadav, dalit (Chamar, Dhobi)
6.	Gorusinghe SS	Buddhabhumi*	3	75.59	1023	4936	2312	2624	88.11	65	Chaudhari, Tharu, Brahmin, Chhetri and dalit.
7.	Hansapur SS	Malrani RM	6	12.22	826	3,527	1,531	1,996	76.70	289	Chhetri, Brahmin, Sunar, Kami, Magar and Raut

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Table 2-4: Ward level Social Baseline of the sub-project Sites

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			Total	186.83	6,260	30,576	14,351	16,225			
8.	Marbhung SS	Malika RM	8	14.65	883	3,821	1,713	2,108	81.26	261	Chhetri, Brahmin, dalit (Sarki and kami)
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Source: CBS 2011

Note: HH= Household, M= Male, F= Female, M/F= Male/Female ratio, *=Area in Km², **= Persons/km²

Accessibility:

All the subproject sites are accessible by road round the year. And the construction of the substations will not be affected by the condition of the existing roads. The detail of the access roads to the subproject sites is given in Table.2-5.

S.N.	Name of the Project Site	Name of the access road to sub-project sites	Remarks
1	Doramba Substation	Mulkot-Sitkha-Doramba Khimti-Kukhure aahal-Daduwa-Doramba	1 motor able road from north region (gravel) and one from western region (earthen).
2	Bamti Substation	Chuchure-Deurali-Bamti One earthen road besides the SS site	The site is 700m far from Bamti buspark.
3	Khurkot Substation	B.P. highway (Banepa-Bardibas road)	
4	Lampantar SS	Sindhuli-Bhimsthan-Chakmake-Baun Tilpung road	The site is beside the road
5	Labani SS	Taulihawa-Bhairahawa road	The site is about 100m east from the road.
6	Gorusinghe SS	East-West highway Tikar-Buddhi-Bijgauri earthen road	About 4500m south from the site The road goes beside the SS site.
7	Hansapur SS	Mehelpani-Sautamare earthen road	30m above the road.
8	Marbhung SS	Tamghas-Simaltari-Chaurasi-Purkot daha road	The site is beside the road.

Table 2-5: Detail of the access roads to the sub-project sites

Source: Field Survey, 2018

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Settlements:

There are altogether 1,443 households in the nearby settlements of the substations with a total population of 30,576. Female population outnumber the male population in almost all sites. All settlements have mixed social groups comprising of different indigenous people, Dalits and Brahmin/Chhetries.

S. Nam N. the Site	Name of the Project	Distance from	Name of the Nearest	Total HHs		Popula	tion	Community Characteristics
	Site	Nearest Settlements Settlement		Total	Male	Female	1	
1	Doramba	200m	Gumba Tole, Ghyangdada	30	157	60	97	Majority of Tamang and Dalit community
	55	350m	Bhirdada	25	101	42	59	Tamang Community

Table 2-6: Detail of the nearest settlement of the sub-project sites

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SIDP Existing Environmental and Social Settings Chhetri, Ratnajyoti Majority of 700m 100 350 170 180 Bamti SS bazaar 2 Jananati and Dalit. 150m Singau 20 49 22 27 Sherpa community Dalit, Newar, Chhetri and Khurkot Mathillo 14 3 150m 69 32 37 SS Bara Magar community. Lampantar Mathillo Magar, Brahmin and dalit 4 150m 94 407 174 233 SS Pachrang community Labani Brahmin, Muslim, Yadav, 350m 5 Labani SS Chauraha 150 628 308 320 Chaudhary, Kalwar and Kurmi. chowk Ghanchaura Tharu, Magar, Gurung. 500 1500m 1160 510 650 Gorusinghe village Brahmin, Chhetri 6 SS Pratappur Chaudhary, Brahmin and 350m 100 585 270 315 village Chhetri. Hansapur Mehalpani Chhetri, Brahmin, Magar, 7 100m 200 938 423 515 SS village Raut and Pariyar. Chhetri, Brahmin, Sarki and 1.5km Bwase 10 56 26 30 Marbhung Kami. 8 SS Simaltari 200 5,378 393 485 bazaar

Source: Field Survey, 2018

Educational Institutions, Health Services, Market centers and other Social Infrastructures: There are some educational institutions, health institutions, market center and other social infrastructures near to the subproject sites (within 100m to 1km). The detail is given in Table 2-7.

S. N.	Name of the Project Site	Distance	Electric Lines	Educational Institution	Health Institution	Religious Sites	Market	Others
		200m	-	-	-	Doramba Gumba	-	
1	Doramba SS	150m	-		-	-	-	Shanti Park, One pond and Football ground
2		700m	-	-	-		Ratnajyoti bazaar	-
		250m 850m		-	-	Gumba Bhumethan temple	-	-
	Bamti SS	150m 1km	-	Primary school Higher secondary and public campus	-	-	-	-
		Left side of SS		-	-	-	-	One Kholsi;

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S. N.	Name of the Project Site	Distance	Electric Lines	Educational Institution	Health Institution	Religious Sites	Market	Others
		boundary ; 20-40m;	33kV TL of Likhu hydro					4 HHs (3 from left and 1 upward)
3	Khurkot Substation	30m; 15m	• 20 - 10 20 - 10 20 20 - 10 20 20 - 10 20 20 - 10 20 20 - 10 20 20 20 20 20 20 20 20 20 20 20 20 20	-		-	-	1HH; Banepa- Bardibas highway
	Lampantar	150m	n film ant	Mathillo Pachrang primary school	i Porqu	- 	-	-
4	SS	40m 15m		бі нік. П			-	Sindhuli- Bhimsthan- BaunTilpung road; 6HHs
5	Labani SS	100m	33kV TL	-	-	-	~	Bhairahawa- Lumbini- Taulihawa road
		250- 300m	-	Lower secondary school	Private hospital and health post	Durga temple	Labani chauraha	-
6	Gorusinghe SS	20m 40m						Tikar buddhi- Bijgauri road; 6HHs
7	Hansapur SS	1.5km 100- 200m	33kV TL	Primary school		Shivalaya		Saljhandi- Dhorpatan
8	Marbhung	30-100m						Tamghas- Simaltari- Purkotdaha road; 10 HHs
	55	350m		Shree kinsan boarding school				

Source: Field Survey, 2018

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3 ASSESSMENT OF IMPACTS AND MITIGATION MEASURES

The SIDP is classified as category B for environment due to limited adverse environmental impacts which are site specific, largely reversible and can be readily addressed through mitigation measures. The sub project sites do not locate in a sensitive ecosystem, and has avoided areas of historical and cultural significance. The land to be used for the substations has already acquired by NEA and there is no issue of encroachment. The main impacts are associated with the clearing of shrub vegetation and leveling the land, waste management and management of labor camps at the sites. Moreover, most of the associated impacts are limited to the construction phase and are temporary in nature.

3.1 Environmental Impacts (Physical and Biological)

The environmental impacts include physical and biological impacts on the existing environment due to the construction of the sub-projects during construction and operation phase. The adverse or negative impacts related to social issues and the potential mitigation measures required are presented in Table 3-1.



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Assessment of Impacts and Mitigation Measures

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S.N.	Project Site	Potential Issues	C/O Phase	Impacts	Mitigation Measures
1	All sub- project sites	Change in Landuse	С	The land use changes due to the construction of substations and their facilities in the permanent land. A total of 3.8833ha land is required for the construction of eight substations and land requirement for construction of each substation is given in Table 1-3. However, the land is under the ownership of NEA, thus no individuals will be directly affected by the project activities.	No mitigation measures required.
2	All sub- project sites	sub- ctCThe construction activities consist of site cle excavation work, cut-fill work for the levelling and of the land, concreting etc. These activities will g dust in the surrounding area of project sites. There major settlement within 100m of the project sites Mathillo Pachrang of Lampantar SS and few ho Marbung SS. Apart from these activities, mover transporting vehicles carrying the construction m along earthen road will generate fugitive as combustion emissions and will cause temporary im air quality and thus may cause problem on he construction workers and local people living near		The construction activities consist of site clearance, excavation work, cut-fill work for the levelling and grading of the land, concreting etc. These activities will generate dust in the surrounding area of project sites. There are no major settlement within 100m of the project sites except Mathillo Pachrang of Lampantar SS and few houses of Marbung SS. Apart from these activities, movement of transporting vehicles carrying the construction materials along earthen road will generate fugitive as well as combustion emissions and will cause temporary impact on air quality and thus may cause problem on health of construction workers and local people living near to the project sites.	 Water will be sprayed through tanker on the earthen road near Mathillo Pachrang and settlement near Marbung SS once a day to reduce the dust problem, particularly when construction materials is being transported to the project sites. Maintenance of all vehicles and construction machinery will be done. Helmets and air mask will be provided to labor force working in areas susceptible to dust pollution.
			0	No impact on air quality is envisaged during the operation phase.	There is no significant impact on air quality during the operation and maintenance period. So no mitigation measure is required.
3	Lampantar SS and Marbhung SS	Noise Quality	с	Generation of noise due to construction vehicles (grader, excavator and dumper). The emission of noise and vibrations are inevitable during construction though only insignificant interruption in noise quality has been expected for the 33kV substation project. No major settlements are located within 100m from the project sites except few houses near Lampantar SS and Marbhung SS.	 Maintenance of all vehicles and construction machinery will be done. Earmuffs will be provided to the workers as per the requirement. The construction work will be limited to daytime as far as possible.

Table 3-1: Environmental Impacts and their Mitigation Measures

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Assessment of Impacts and Mitigation Measures

S.N.	Project Site	Potential Issues	C/O Phase	Impacts	Mitigation Measures
				The impacts will be felt to the household near Lampantar SS and Marbhung SS.	 Inform local neighborhood community before construction activities start about planned civil works how they could be affected by them. Carry out noise construction activities and transports during normal working hours, never at night time or Saturdays
			0	Noise generated during the operational phase will generally result from vehicular movement which is expected to be negligible.	No mitigation required during this phase.
4	All sub- project sites	Waste Management	С	The improper disposal of solid waste like cement bags, iron bar and other leftover construction materials and wastes from workers might cause sanitary problem to workers involved and local people around the project sites.	 Domestic type solid wastes are biodegradable which will be managed by burying in pit; Recyclable wastes (such as glass, paper, plastic, etc.) will be collected separately to be sent for recycling. Separate waste containers (drums, bins, skips or bags) will be provided for different types of waste; No waste will be disposed along public road or in the surrounding area of project sites; Construction workers will be instructed for proper storage and handling procedures of construction waste and other solid wastes. The contractor will be responsible for the establishment of the waste management system at the construction and camp areas.
			0	The personnel who work during operation period will generate domestic solid waste.	The domestic wastes will primarily consist of organic food waste because this is easily biodegradable and non-hazardous. It will be managed by burying in pits and subsequently covering with soil.
5	Khurkot SS, Doramba	Erosion and Land stability	с	The project sites are located on relatively stable areas. Due to the sloppy land of Khurkot SS, during excavation, minor soil erosion may occur and may cause the	 Retaining wall along the boundary of Khurkot SS is needed to retain the soil mass and control minor soil erosion;

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Assessment of Impacts and Mitigation Measures

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S.N.	Project Site	Potential Issues	C/O Phase	Impacts	Mitigation Measures
	SS and Bamti SS		12	disturbance in the village road below the SS site. There is small kholsi in the southern part of Doramba SS and in the eastern part of Bamti SS which may cause bank erosion and thus leading to the erosion of SS sites. Moreover, there is a chances of erosion of access road to the Doramba SS.	 Gabion wall need to be constructed along the kholsi near Doramba SS and Bamti SS to prevent bank erosion; Hume pipe below the access road to Doramba SS, need to be provided for passage of monsoon water of kholsi;
			0	There is no impact on land stability during this phase.	No mitigation measures is required.
6	All sub- project sites	Impacts on wildlife	с	Restriction in movement of mammals and there could be hunting and poaching activities by labors in the nearby forest area.	Since most of the substation area lies far from the nearby forest, the scale of such impact is predicted to be low and thus no mitigation measures required.
0			0	All the labor force leave the construction site, the possibilities of hunting and trapping by workers will be subsided.	No mitigation measure is required.
7	All sub- project sites	Loss of	с	Loss of ground vegetation cover. Since ground coverage is mainly maintained by invasive species like <i>Eupatorium</i> <i>spp.</i> , the impact due to such removal will be low.	No mitigation measure is required.
		ground cover	0	No impact is seen on ground cover as the land will be occupied by sub-station components.	

Note: C: Construction Phase; O: Operation Phase

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3.2 Social Impacts

The social impacts would not be significant and are mostly restricted to the sub-project areas and its immediate surroundings. There will be no land acquisition and no impacts on the present land use as all the land required for the project is already owned by NEA and there is no issue of encroachment in the sub-project areas.

Social screening has already been carried out in all sites and no adverse social impacts are identified during screening. However, the construction works will affect the people of nearby communities in different ways viz noise, dust, accidents, vibrations as well as issues related to labor management (labor camp, hygiene and sanitation, potential conflict between labor and locals etc) which should be managed by the project and contractors. The adverse or negative impacts related to social issues and the potential mitigation measures required are presented in Table 3-2.

The project works in substations do not result any kind of involuntary resettlement as well as any physical or economic displacement of the locals. All land areas to be used for substations are free from squatters and encroachers. The construction works also do not lead to other adverse impacts to the local people, particularly in terms of loss of their properties viz land, houses, income, employment or their access to natural resources related to their livelihoods.

Impacts on Indigenous People: The subproject works also do not cause any adverse impacts to indigenous people like loss income, employment or restricted access to their resources for livelihoods. Rather, the project may provide new opportunities for them in different ways i.e employment in project works, increased business opportunities, increased income, increased land value, transfer of skills etc.



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Assessment of Impacts and Mitigation Measures

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S. N.	Project Site	Project Site Potential C/O Impacts Issues Phase		Impacts	Mitigation Measures
Co	mmon Issues		1	1	
1	All sub- project sites:	Construction related transportation and hauling of materials	с	Increase in traffic flow from the transportation of construction materials. There may be the transportation related impacts such as dust and gas emission, chances of road accidents and also there may be the issues of pedestrian safety in the nearby settlements of subproject sites.	 Avoid overloading trucks and cover trucks to minimize dust and loss of load from trucks during transportation. Use water sprays or covered chutes to reduce dust emission during loading and unloading of materials from barges. Maintain crushing and mixing plants in good working condition so as to reduce emission from the plant. As far as possible, plan truck trips during low traffic hours. Implement safety procedures during transport to reduce the potential for road accidents. Keep traffic signs around the construction sites.
2	All sub- project sites	Occupational Health and safety of employees	с	Impact on health and safety of the workers and there may be the occupational injuries to the workers.	 An on-site medical facility and first-aid will be provided for the construction workers. Personal protective equipment (Hard hats, gloves and steel-toed shoes with rubber soles) for workers will be provided, when necessary, to minimize health and safety risks. Education on basic hygienic practices to minimize spread of tropical diseases, including information on methods of transmission and protection will be given. Prohibition of drugs and alcohol on construction site. Fencing of the construction sites with sign boards required.

Table 3-2: Social Impacts and their Mitigation Measures



Assessment of Impacts and Mitigation Measures

N.	r roject Site	Issues	Phase	mpacts	Mitigation Measures
Cor	mmon Issues		1.11400		
				-	 Implement a system of penalties for violation of rules and regulations. All occupational health and safety requirements are
			0		 Operational Manual and professional training manual will be at all time in the facility. There will be sufficient fund available to carry out periodic maintenance and repairs of equipment.
3.	All sub- project sites	Change in the aesthetic value		The construction of the substation would result in an unmitigable visual impact because it would create a change to the existing landscape. It would introduce blockage and glare. This may destroy natural beauty.	The significant impact of substations on aesthetic value cannot be mitigated completely.
4.	All sub- project sites	Labor influx and labor camps	С	Increase in the number of labor leads to the issue of health and sanitation of the workers and also the solid waste management produced in the labor camp.	 Since the number of labor will be very small size for each subproject site, labor camp will be established within the premises of substation area. The labor camp will be provided with simple dry pit toilet constructed on hard ground and far from water sources. First aid kits will be maintained for preliminary treatment in emergencies. The domestic solid waste generated in the project area will be either buried in designed landfill areas or converted in to compost. Hand pump will be installed in the terai area (Labani and Gorusinghe SS) and in hilly area (other SSs), either piped water from nearby community or tanker will be provided to the workers for drinking water purpose.
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Assessment of Impacts and Mitigation Measures

S. N.	Project Site	Potential Issues	C/O Phase	Impacts	Mitigation Measures
Co	mmon Issues		1		
	-		0	The construction workers will be returned back and construction camp will be destroyed.	No mitigation measure is required.
Sp	ecific Issues			•	
1.	Khurkot SS; Lampantar SS; Doramba SS; and	Impact on nearby HHs and structure	с	In Khurkot SS site, there is one HH; in Lampantar SS site, there are 6 HHs, in Marbhung SS, there are 3 HHs and in Doramba SS site, there is one cowshed which are very near to SS sites (50-150m). Thus, project activities may affect these HHs.	 Fencing wall will be constructed around the sub- project site in the initial stage to avoid the disturbances from construction activities. Priority to employment in project activities will be given to the people of these HHs according to their skill.
	Marbhung SS.	0	0	No impacts is seen during this phase.	No mitigation measure is required.

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Note: C: Construction Phase, O: Operation Phase

3.3 Community Support Program (CSP)

Community Support Programme is the prime responsibility of any development project as the project has to do some support to the community near the project area for its development. 'National Energy Crisis and Electricity Development Decades, Concept Paper and work Procedure, 2072 has clearly defined it. Therefore, as a part of CSP, project will provide financial support on different sectors like education, health, infrastructure, service facility and religious sites. Following are the sectors covering as CSP:

a. Education Support Program

Schools which are in vulnerable condition and located in nearby the SS area, will be supported through educational support program. Support will be provided for purchase of computer, library establishment and extra curriculum activities. Altogether 8 schools will be benefited by this program. The total amount for this provision shall be NRs. 4,000,000.

b. Infrastructure and Service Facility

Project also aims to support to people/stakeholders of project affected ward /settlement in the infrastructures and service facility sector. Support will be provided for renovation of community building centers for study, temples near (200m) to the substation area, play-ground for the community, mothers group buildings etc. For this NRs. 4,000,000 has been allocated.

Summary of CSP Cost

The total CSP cost for the socio-economic and cultural environment is NRs. 8,000,000.

Description	Amount (NRs)			
Education Support Program	4,000,000			
Infrastructure and Service facility	4,000,000			
Total	8,000,000			
% of total project cost	0.5%			
	Description Education Support Program Infrastructure and Service facility Total % of total project cost			

Table 3-3: Summary of CSP Cost

3.4 Environment Mitigation Plan

The identified impacts due to project activities and the mitigation measures are explained in the given table.



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Monitoring and Reporting Mechanism

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Environmental Impact and Mitigation Matrix

			and the second sec			Estimated	Institutional Responsibility		
S.N	Issues	Impacts	Mitigation Measures	Location	Timing of Action	Mitigation Cost (NRs)	Implementation	Supervision	
Α.	Common issu	es for all sub stations:							
1	Change in Landuse	About 3.8833ha barren land	Labor camp and storage camp will be managed within the substation sites for minimizing the impact of landuse.	Sub-project Sites	Construction phase.	Project Cost	Contractor	-	
2	Air Quality The construction activities such as sinclearance, excavation work, cut-fill work for the levelling and grading the land, concreting and vehicular movement et will generate dust in the surrounding area project sites		Spraying water along earthen road near settlement, maintenance of construction vehicles and helmets and air mask for labor force.	Sub-project Sites	Construction phase.	Project Cost	Contractor	GSEEP/ ESSD	
3	Noise Quality	Noise generated by construction vehicles degrade noise quality of surrounding area of project sites	Maintenance of all vehicles and construction machinery, earmuffs for the workers as per the requirement and limiting the construction work in daytime.	Sub-project Sites	Construction phase.	Project Cost	Contractor	GSEEP/ ESSD	
4	Waste management	The improper disposal of solid waste like cement bags, iron bar and other leftover construction materials and wastes from workers might cause sanitary problem to workers involved and local people around the project sites.	Domestic type solid wastes will be managed by burying in pit. Recyclable wastes will be collected separately to be sent for recycling. Drums, bins, skips or bags will be provided for different types of waste collection. Construction workers will be instructed for proper storage and handling procedures of	Construction sites and camp site.	Construction phase.	Project Cost	Contractor	GSEEP/ ESSD	

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18 Junio				construction waste and other solid wastes.					
L'IMA L'IMA			The personnel who work during operation period will generate domestic solid waste.	Domestic solid waste will be managed by burying in pits and subsequently covering with soil.	Sub-project sites	Operation phase	-	-	-
N N	5	Erosion and Land Stability	Chances of soil erosion during excavation of sloppy land of Khurkot SS which may disturb movement along village earthen road below the SS site. Moreover, land erosion by kholsi near Doramba and Bamti SS may cause land instability.	Gabion wall need to be constructed along the kholsi near Doramba SS and Bamti SS to prevent bank erosion; Hume pipe below the access road to Doramba SS, need to be provided for passage of monsoon water of kholsi; Retaining wall along the boundary of Khurkot SS is needed to retain the soil mass and control minor soil erosion;	Sub-project sites	Construction phase.	Project Cost	Contractor	GSEEP/ ESSD
	6	Construction related transportation and hauling of materials	There may be the transportation related impacts such as dust and gas emission, chances of road accidents and also the issues of pedestrian safety.	Use water sprays or covered chutes to reduce dust emission during loading and unloading of materials from barges. Maintain crushing and mixing plants in good working condition so as to reduce emission from the plant. As far as possible, plan truck trips during low traffic hours. Implement safety procedures during	Construction site and surround settlement.	Construction phase.	Included in Project Cost	Contractor	NEA/ESSD

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Monitoring and Reporting Mechanism

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			potential for road accidents. Keep traffic signs around the construction sites.					
7	Health and Safety	The project activities will have direct impact on health and safety of the workers and there may be the occupational injuries to the construction workers.	An on-site medical facility will be designed to cater for primary health care needs of workers; Personal protective equipment (Hard hats, gloves and steel-toed shoes with rubber soles) for workers will be provided; Education on basic hygienic practices to minimize spread of tropical diseases, Fencing of the construction sites with sign boards required.	Construction site and surround settlement.	Construction phase.	Included in Project Cost	Contractor	NEA/ESSD
8	Change in the aesthetic value	The construction of the substation would result in an unmitigable visual impact because it would create a change to the existing landscape. It would introduce blockage and glare and this may destroy natural beauty.	The significant impact of substations on aesthetic value cannot be mitigated completely.			Lucona -	Chylenes	
9	Labor influx and labor camps	Increase in the number of labor leads to the issue of health and sanitation of the workers and also the solid waste management produced in the labor camp.	Since the number of labor will be very small size for each subproject site, labor camp will be established within the premises of substation area. The labor camp will be provided with simple dry pit toilet far from water sources.	Subproject sites	Construction phase.	Project Cost	Contractor	NEA/ESSD

-	SIDP						Monite	oring and Reportin	ng Mechanism
				First aid kits will be maintained for preliminary treatment in emergencies. The domestic solid waste generated in the project area will be either buried in designed landfill areas or converted in to compost. Hand pump will be installed in the terai area (Labani and Gorusinghe SS) and in hilly area (other SS sites) either piped water from nearby community or tanker will be provided to the workers for drinking water purpose.					
	в.	Specific issu	es						
	1	Impact on nearby HHs and structure	There are altogether 10 HHs and one cowshed near to sub-project sites (50-150m). Thus, project activities may affect these HHs.	Fencing wall will be constructed around the sub- project site in the initial stage to avoid the disturbances from construction activities. Priority to employment in project activities will be given to the people of these HHs according to their skill.	In Khurkot SS site (1 HHs), Lampantar SS site (6 HHs), Marbhung SS (3 HHs) and Doramba SS site (one cowshed)	Preconstructi on and construction phase.	Project cost	Contractor	NEA/ESSD

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4 MONITORING AND REPORTING MECHANISM

Monitoring is an essential aspect of environmental and social management plan. An Effective monitoring of the whole project cycle, will assist for the implementation of monitoring plan and coordination of work of the project with concerned stakeholders as well as identify the unexpected problems/outcomes that might come in physical, biological and socio-economical sector and facilitate the correction of those. Land use pattern, settlement, health and safety, infrastructure, implementation of the mitigation measures are the few areas of monitoring.

NEA/ESSD is responsible for regular monitoring and reporting of the implementation of the project. Ministry of Energy, Water Resource and Irrigation (MoEWI), Department of Electricity Development (DoED) and local bodies will also be involved during the monitoring.

The environmental and social monitoring and reporting will be carried out at project impact areas on a regular basis.

The experts from ESSD will visit project site at periodic interval for the environmental monitoring of the project and prepare the monitoring report. The project manager office (PMO) will be responsible for the distribution of report to the concerned agencies. The detail of monitoring parameters, schedule, method and agencies to be consulted during construction and operation phases for physical, biological and socio-economic and cultural environment is presented in table given below.

4.1 Environmental Monitoring Plan

A monitoring program, required for the project to evaluate the application and effectiveness of mitigation measures, is formulated in three phases.

a. Preconstruction Monitoring

Since the construction work of the project will start immediately, preconstruction monitoring is not required for the proposed SIDP.

b. Construction Monitoring

Impact and compliance monitoring will be conducted during this phase of project development.

Impact Monitoring

Impact monitoring will be carried out to assess actual level of impact due to project construction. The impact monitoring includes:

- monitoring of the impacts of the project on physical, biological and socioeconomic & cultural environment of the area;
- monitoring of the accuracy of the predicted impacts;
- identify the emerging impacts due to project activities or natural process and develop remedial action; and
- monitoring of the effectiveness of mitigation measures.

Compliance Monitoring

The compliance monitoring will be conducted to monitor the compliance of the proposed mitigation measures and monitoring activities. The compliance monitoring will mainly focus on;

- compliance of the tender clause;
- compliance of the mitigation measures;
- timely and adequately implementation of Environmental Management Plan; and
- overall environmental and social performance of the project.

ESMP Report



- Monitoring and Reporting Mechanism

S.N.	Parameter	Indicators	Method	Location	Schedule
Α	Construction Monitorin	g			
Impact	Monitoring				
1	Air Quality	Dust around the project area	Observation	Construction area	Weekly during construction
2	Noise Quality	Construction vehicles	Standard of MoEST	Construction area	Weekly during construction
3	Waste Management	Unpleasant odour and visual impact	Observation	Labor camp/ construction sites	Weekly during construction
	Erosion and Land stability	Management of kholsi and slopy area.	Observation	Construction area	Monthly during construction
4	Construction related transportation and hauling of materials	Use of water spray and placement of hoarding board around the construction sites	Direct observation	Construction area	Construction period
5	Occupational Health and Safety issues	Impacts on health of the workers; No. of accidents; use of personal protective instrument by the workers	Inspection of the construction place; Records of diseases and accidents	Sub-project area (construction sites)	Continuous during construction period
6.	Employment	No. of local people employed by project	Records kept by management	Construction area	Continuous during construction period and annually during operation
7.	Labor camp	Toilet and drinking water facility, availability of first aid kids in labor camp	Observation, consultation with the labor force	Construction area	Construction period
Compli	ance Monitoring				
1	Allocation of adequate budget for implementation of environmental mitigation measures and monitoring works	Yes/No	Review, inquiry and consultation	Kathmandu Office	Preconstruction phase

Table 4-1: Monitoring Plan

ESMP Report

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4.2 Environment Mitigation and Monitoring Cost

Environment Mitigation Cost

There is no mitigation cost for the proposed project and total CSP cost is estimated to be NRs 8,000,000 which is only 0.5% of the total project cost (Table 3-3).

Environment Monitoring Cost

The monitoring costs have been estimated in Table 4-2. The total cost for the monitoring activities (for construction phase) has been estimated as NRs. 2,813,550/-.

5.N.	Item	No. of Persons	Man-mo	onth	-747-20 1	Rate/Month (NRs.)	Amount (NRs.)
			Office (100%)	Field (150%)	Total	ing inter	
	Construction Phase	832 C Nº	,				
1	Manpower					P	
	Sr. Environment Expert	1	1	-	1	41,000	41,000
	Coordinator	1	5	2	7	35000	280,000
2010	Civil Engineer	1	4	2	6	35000	245,000
	Environmentalist	1	4	2	2	35000	245,000
8 - 4	Socio-economist	1	4	2	6	35000	245,000
Part	Electrical Engineer	1	1	-	1	35000	35,000
10000	Liaison Officer	1	1	-	1	30,550	30,550
	Support Staff	2	4		8	30,500	122,000
	Sub Total					A DESCRIPTION OF	1,243,550
	Out of Pocket Expenses						
or en	TA/DA					LS	550,000
11.10	Vehicle hire/ Maintenance					LS	400,000
2	Fuel			15/16.8		LS	200,000
2	Report Production	Dis un passi Di	au in a	in the side	3 10 21	LS	100,000
	Computer and Printer	in a state of		DATE FOR A	-	LS	120,000
	Community Consultation		and the set			LS	100,000
	Miscellaneous	In the control				LS	150,000
				2. I CO CO 11.2438		Sub-Total	1,570,000
		Tot	tal of Cor	nstruction	hase	Monitoring	2,813,550

Table 4-2: Monitoring Cost of the Proposed SIDP

4.3 Implementation of Mitigation Measures/CSP and Monitoring Activity

GSEEP/NEA has prime responsibility for implementing the proposed mitigation measures and NEA/ESSD for the monitoring activities. GSEEP/NEA has an obligation to carry out all these activities along with cost.

5 GRIEVANCE REDRESS MECHANISM (GRM)

Grievance redress mechanism (GRM) must be established to allow project affected families/households (PAFs/HHs), community or other stakeholder to appeal any disagreeable decisions, practices and activities arising from compensation for assets, environmental and community concerns related to project. GRM for any infrastructure project provides an effective approach for complaints and resolution of issues made by the affected community in a reliable way. Considering this, Grievance redress mechanism will be established to allow project affected families/households (PAFs/HHs), community or other stakeholder to make appeal on any disagreeable decisions and practices arising due to project works. GRM provides an effective approach for filing complaints and their resolution effectively and timely. Considering this, a Grievance Redress Cell (GRC) has already been established at project level on 2072/05/11 as required by the project's Environment and Social Management Framework (ESMF). The GRC consists of the following members.

Project Coordinator, Coordinator

Project Manager, 33 kV DSE & R Component, Member Secretary Officer from Concern Rural Municipality/Municipality, Member Secretary, from Concern Rural Municipality/Municipality, Member

The field level GRC will be formed after the commencement of work in the site. Till then the project level GRC will look after the grievances, if any. The GRC maintains registration books and files to keep the records of complaints filed by the affected people and community. The GRC seeks to resolve the issues quickly in order to expedite the project works without resorting to expensive and time-consuming legal actions. The budget for setting up the grievance cell has been provided by the PMO itself.

The field level GRC will be formed after the commencement of work in the site. Till then the project level GRC will look after the grievance if any. The GRC maintains registration books to look into complaints and concerns about ownership disputes, inheritance of assets missing affected assets etc. The GRC seeks to resolve the issues quickly in order to expedite the receipt of compensation, without resorting to expensive and time-consuming legal actions. The budget for setting up the grievance cell has been provided by the PMO itself. All the grievances or complaints filed at local level will be resolved by the field level GRCs. However, grievances not resolved locally or beyond the capacity of local GRC will be forwarded to the GRC at the center which will be responsible to address them on a timely manner.

6 THE STUDY TEAM

The following personnel were involved during the ESMP of the proposed SIDP:

S.N	Name	Designation/Expertise		Phone No.
1	Rabindra Pd. Chaudhary	Chief (Team Coordinator)		
2	Poonam Pokharel	Asst. Director (Team Leader)		
3	Nagendra Mulmi	Civil Engineer	- NEA-ESSD	01-6611580
4	Kabita Poudel	Environmentalist	-	

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Table 6-1: ESMP Team



NEA-ESSD

Annex I Project Related Photographs and Minutes of Consultation Meeting







Figure II: Bamti SS site



Picture III: Khurkot SS site



Picture IV: Labani SS





Picture V: Gorusinghe SS site





Picture VII: Lampantar SS site

Picture VIII: Marbhung SS

Picture I: Consultation Meetings at Sub-project Site





नेपाल विद्युत प्राधिकरणढारा प्रस्तावित ग्रिड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो ।

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ठाउँ : दोर्म्वा

मिति : २०७४ १०१ १२४ समय:.....

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Supply and Installation of Distribution Projects (33kV Substation and Lines) NEA, 2018 <u>PRA Checklist</u>

District : Ramechhap

Location (area) : Doramba . Ward No 2. Village/Tole Dramba Bazar

RM/ward : Doramba - 2.

No. Of Participants :....

Date : 2075-01-25 Participant's Profile

S.N.	Name	Caste/ Ethnicity	Main Occupation	Ph. No.	Signature
1	Khadka Bdr, Shrestha.			9851190386	Karth
2	Narayan Shrestha.		4-21-121 FICTILLA	9854040341	Same V
3	Rajkumar 11		कांच मार्ग	98148419010	A
4	Bam Bdr. Tamang		Rappin, sant	9841815093	Die
5	Prakash Moktan.	The second	21 a 12 11	51 6150 5.	andall
6	Pranisha Tamang.		Sale of-		anadt.
7	Ranjit Moktan.		AST HEFE	9841355311	1 Sam
8	Amar Moktan.		x10	9844302564	A S
9	Bal Bdr. Shrestha.			98440 2051	92
10	Kalpana		वनहुमन्दारी	9861572816	din a
11	Poonan Porchard.	नोडेरी	hursel	12-121240	line
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नेपाल विद्युत प्राधिकरणद्धारा प्रस्तावित ग्रिंड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो।

स्थान : जिल्ला : रामदाण

न.पा./गा.पा./वडा नं: 341605 - 2

ठाउँ: काम्त्री आण्डा। २०२१माली मिति : २०७४ १०१ । २७. समय

उपस्थिती

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Supply and Installation of Distribution Projects (33kV Substation and Lines) NEA, 2018 <u>PRA Checklist</u>

District RAMECHHAP

Location (area) :....

RM/ward : UMAKONDA

No. Of Participants :....

Village/Tole

Date: 207511126

S.N.	Name	Caste/ Ethnicity	Main Occupation	Ph. No.	Signature
1	KHAMBA DHOAJ BASNER	CHHETRI	WARD	9854040568	Q80
2	SURVA BASNET	12	ASS. SUB	3851153495	- QLOZ
3	PASANN LAMA	SHERPA	LAMA	9868133053	Dares.
4	DUPUA KHADAKA	CHIHERRA	,	7860102135	A
5	singang karki			9060.10-000	-4
6	Ruding Bahadur Barn	et .,		JEMELHS1804_	D.C
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स्थान : जिल्ला : <u>मिन्ह</u>्युली न.पा./गा.पा./वडा नं: <u>तिनपाटत - 10</u> ठाउँ : माहिप्रस्तेर पाच्यन्दुः मिति : 206 ४ 09 / २८. समय:

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District : Location (area) :.	RM/ward 1/14412 A - 10.
No. Of Participan	ts

Participant's Profile

S.N.	Name	Caste/ Ethnicity	Main Occupation	Ph. No.	Signature
1	ponyahani Bhujel.		ने जिल्ला	STREGKTOT	tes
2	मून मुमारी पोरपरेल		सामाजीड करिक	READENTAGE	5
3	क्ति वेराष्ट्र पर्यार		कार्शलय सहन	SCOSESCOTE SCORE	and
4	में दिती प्रः पोर्क्सल			STRKEBYER	201
5	51511 go 510H			STOSEDST9X	BITICE
5	1-UALOL BIELGIS			8722233536	For ADEL
1	1249 - ST&	~		5298232289	(A)
8	ELAHINI GILVIL			_	ध्वमाया
9	राग्रियाद्वात्वम		Anniner &	5206712368 5288356858	30g
11	HAS as skallis.		12:345	STEVOZKAOZ	- Storig
2	anari Ticona				Yor .
3	3, 21(01	-			Kabele





नेपाल विद्युत प्राधिकरणद्धारा प्रस्तावित ग्रिंड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो।

स्थान : जिल्ला : रेसिन्ह्यूली

אול : אווצוררו מינין

T. M. / M. / asi T: STIM-WIL RM 17.

मिति: 20 5 × 109 130. समय

उपस्थिती

क.सं.	नाम थर	पद ∕ पेशा	ठेगाना/संस्था	सम्पर्क नं	हस्ताक्षर
۹.	र्गलांख शामा	0210412	Dire-Luit -7.	9851212660	Ghet
२.	TIMBHIT STOR	Jigut	11		
ą.	EITHINI MES	14 D 14	·		-CLI WAN
٢.	रोवान आराय			9801124361.	form
X.	4105CT STOE	eat	14	9844251139	unset.
Ę.	25th 0 417	and the		9814899888	Citra-
9	אין און און און אין				
۶.	21221 4136	DZIAHIZA-	1.	9823556696	Makand
٩.	रति जुमार क्रिप्ठा	Facint		9864207245	RASI
90.	माजना में 401	ti .		-	Siv Jana

रायसुभाव :

fairance function yezzigh Rip 3112, maryon FIDILICHES



Supply and Installation of Distribution Projects (33kV Substation and Lines) NEA, 2018 PRA Checklist

District IL-ELON

RM/ward : JICI-LAIL 6 Village/Tole

No. Of Participants :....

Date: 2062 109129

Participant's Profile

S.N.	Name	Caste/ Ethnicity	Main Occupatio	n Ph. No.	Signature
1	रोमवरापुर डेवरीर		931 31 2457	984419820	2220
2	Suzza Prasad laandel		Engineer	9840352506	Zin
3	INAM Maya pres		ANM	9847274112	Ny
4	Menuka Adhikan		VITA	9844210291	R
5	Salina Basyal		HOA	9860099521	Sout
6	Kallana Puklyel		A.N.M.	2862529504	Kalling
7	Duga Dev.		H.A.	910722092	Dute
8	Poonan Porchard.		Service.	June	forman
9	Kabita Poudgal		Low PService		1. bde
10	Nagendra mulni		GOUL SERVICE		Ala-
11	Q				MA
2					
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नेपाल विद्युत प्राधिकरणढारा प्रस्तावित ग्रिड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो।

स्थान : जिल्ला : Muraty न. पा. / गा. पा. / वडा नं: X-1.5.14- RM-3

(मिति : <u>२०७२ | ०३ | ०२</u> समय:

and: Chart anni

उपस्थिती

क.सं.	नाम थर	पद/पेशा	ठेगाना/संस्था	सम्पर्क नं	हस्ताक्षर
۹.	मुवारक मुसलमाव	C41415	236181-3	SCO88 2838	FRUID
२.	श्चिषुजन सहानी	,,	235/817-2	SE99390622	ह्रीयप्रजन
ą.	214 9137	a '' o	राष्ट्रीधन-3	STOBETHOS	- Aa
۲.	हजरत आने मुख्लम	राजगरी	A. 19. 410	27-2943373	a sp
X.	2167 पश्चर्र स्मार	i day	g. 10. 5.	85088968	19 AND
¥.	PR Byun and	DE EN	man		ue De
9.	मनम पोर्वास	artito	101-111	9885445974	free 1
5.	astern itseller			Martin Sha	2 hele
٩.	אותה ש. ניוןמות				Trataig
90.	14721 21140				Acrad

mi

रायसुभाव :



Supply and Installation of Distribution Projects (33kV Substation and Lines) NEA, 2018 <u>PRA Checklist</u>

District Silverara

Location (area): right, city 18.1

No. Of Participants :....

RM/ward: MG16+ RM-3. Village/Tole

Date: 206 × 102/09.

Participant's Profile

S.N.	Name	Caste/ Ethnicity	Main Occupation	Ph. No.	Signature
1	माहमाहेन युमलमान		CISI 3482151	9823922120	- un
2	Branza Ulla		annul	9 805404200	R
3	ZINT OTO ZHEAT		19001	9817571260	25
4	HANT CHIST		1 2. 150	980/140866	alie
5	जागरम-या घर्		रीजगारी	9847413043	A
6	हजर त'झोल मुंग		•)	9821533832	-05
7	नेगर साल मु.		• •	9819437599	सारीज
8	2000		वर्डा जाद्यम	9806908482	- aller Mark
9	साताराम् पाउप		लवनी	モモタタをそしまして	ARKA-
10	ART MEHS BT		2321 7 11.4.	2298828626	PROPOST
11	काल वादिवान				
12	ट्रेजेश मान तियारी		मिं के की साथ। समाज केवी	9817525719	aning .
3	गरिब्रुल्ला मुझ्लमान		मिस्ती	98154415520	51210





Participant's Profile

S.N.	Name	Caste/ Ethnicity	Main Occupation	Ph. No.	Signature
1	25:1 2110	10044	वडा सदस्य	578621252	2500
2	कल्पना घार्षल		वज्ञ सपस्य	5182727899	chay (01)
3	fatig gon (3745,	311118	वर्ध संदहम्	STEGGAZER	Saile
4	शिवरतन प्र- चीहारी		पद्य स्तिव	ST95K80382.	Bring
5	्राालग पार्डल		कर्मारी	5-86209529	am
6	हिमकाला नारुराई		स्वेम सेविडा-	ST 86× 83709	Fernand
7	HIM R POLE		ast. a	BERGATTER	· 227
8 2	वेद्राम कार्राई		र्रवान्यि	828868888	- Adu
9	यमलाल मरुराई	31.25	'/		Your
10	यनम पोवरिस		नोको	1.1.1.2	yos
11				Land Barth	
12				- 15 15 - 17 K M	34 1 14
13					





नेपाल विद्युत प्राधिकरणढारा प्रस्तावित ग्रिड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो।

स्थान : जिल्ला : को पटावम् तु न.पा./गा.पा./वडा नं: की कि भू भी - २... ठाउँ : ट्रान्ट्रोर्ग्रा मिति : २०७४/ ७२ / ०२ समय

उपस्थिती

क.सं.	नाम थर	पद∕पेशा	ठेगाना/संस्था	सम्पर्क नं	हस्ताक्षर
۹.	20400) 4.30	gia/Amisi	9 572in 3.	9857050180	856.87
२.	210xa7-5-+1	2 3. 3. A. 4	81 23.7	681220070	ZITA
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۲.	2507 215	तिक्र एसउम्र गेरेष	9243	901 - 2000	george
X.	allog grand	Leano) IT	. 05, 05, -2	90:3000100	4 - 2200) Adara
٤.	tones asis	Ela	4.4.3	9857061220	1 OIL SIS
ଓ.	21 Poid	Lentat.	11	0002000	a On
ፍ.	स्रताव कुन्	**	-11-	9840234945	- Altour
٩.	atizitan 2 digo	ī.		98631702	w Zerzeran
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रायसुभाव :

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नेपाल विद्युत प्राधिकरणद्धारा प्रस्तावित ग्रिड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो।

and : AELILIA मिति : 206 210 202. समयः

उपस्थिती

क.सं. नाम थर पद/पेशा ठेगाना/संस्था सम्पर्क नं हस्ताक्षर ET-2 902131 मेरलपान 9. EN 2112 -R aD 2131 ₹. ٠, 8586285399 87889 गोवि-ट्रबण्महत 3. 378 491 Innerd महेलणन USI OD XI37 EIRA 8 SEX69093K2 जारीया महत ٢. 214 90 2131 ٤. DIAID 86×60664203 and as ray 9 20 Trout Gierarisiza USI aD ZIZA 5. JI COUTH • , 5186929898 61 विस्त पाडल 9. 3206882029 1) • 1 51-57 90. 90 2137 2160 1 SEEBLERGE

रायसुभाव :

सबारेषत तहन लागेकेचा महावा जनताहरु आताहते दुर्ग्ध भएका हिधातीम जतताहकते रात प्रचते केजनगात्री को आता पाछा बाट करत लागेका विश्व हवा रुर्वाहा महा आता जाते के मार्थ दाईका जातताहरूलाहे केजगारीमा न्याथणिकता दित पत





नेपाल विद्युत प्राधिकरणद्धारा प्रस्तावित ग्रिड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुभाव संकलन गरियो।

स्थान : जिल्ला : 31 हो र्वारी	न.पा./गा.पा./वडा नं: २ना.सा.(ानी	- E
गउँ : मेरेहापानी	मिति : 20 6 2 0 8 0 2	समय:

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क.सं.	नाम थर	पद ⁄ पेशा	ठेगाना/संस्था	सम्पर्क नं	हस्ताक्षर
۹.	Cerm XI3d	Gizu124 929.	महेलपात	3188626266	Junto
२.	र पुभा राउत	पत्नल	11	9867195008	रवमा २132
₹.	क्रमल रहत	न्द्र थि	reitz		
۲.	समिर राष्ट्रत		मेटलेपान	4	LINZ
X .	-रेत कुमार रिग्ते	• ,	17		MARTI
Ψ.	serg on Ho		۰,	9617841780	Ship
હ	LIER ATSA	121879		9847109515	nerra
۶.	वप्रती याउत	1,	11	9847396723	(3Bdg
٩.	कविता पीड्यान				habet
90.	म ज्ञेन्द्र मुलमी				Pulat

रायसुभाव :

9. प्रय म्हेल् कला लागेको मा यहा का जातरा का अत्यन्त रपुरी भएषा 2. २. थानीय जातराहराले जती प्रको रोजगारीमा आहा 3. प्रयाह पार कल लागेका लिझायका निर्माण क र्स्ट्रीशास्तु आरगा राखेको 8. यत्र भाष्ठी जातराहरूगाद् रोजगारीमा प्राथमिका दिन पत





नेपाल विद्युत प्राधिकरणढारा प्रस्तावित ग्रिंड सोलार तथा इनर्जि इफिसियन्सि आयोजना अन्तर्गत Supply and Installation of Distribution Projects (33kV Substation and Lines) कार्यान्वयन गर्दा आयोजना प्रभावित क्षेत्रमा पर्न सक्ने वातावरणीय प्रभावहरुका बारेमा ने.वि.प्रा., वातावरण तथा सामाजिक अध्ययन विभाग, भक्तपुरबाट प्रारम्भिक वातावरणीय परिक्षण (IEE)/Enviornment Management Plan प्रतिवेदन तयार गर्ने सिलसिलामा खटिआएका वातावरणीय अध्ययन टोली तथा स्थानियबासी, सरोकारवालाहरु विच निम्न मिति, समय र स्थानमा छलफल गरी निम्नलिखित रायसुफाव संकलन गरियो।

ठाउँ : क्रवामि

उपस्थिती

क.सं.	नाम थर	पद∕पेशा	ठेगाना/संस्था	सम्पर्क नं	हस्ताक्षर
۹.	कारील पत्थी	5 Acust	A TIT	ADECIN	- 4 /
२.	Gaaren verer (372/	नामाजने प्राप्त	ग्रेम् मानिका ग्रा	98054 74999 T &T C. EV (90) 82	chapit (1)
₹.	Tato tread	सामाजिरेपरिया	HIGDIN	2 3 2 3 60 17 72	1 de la
٢.	रिवेम वहादुर् छि.	क्रोपि	11	STOPES 6653	Bisty
X.	Rantiton Stand	. 1	11	86860532	I Joseb)
۴.	Annac Wiem	asi wiin	и	140 - 40238	COCZ
9	272161	OTSIA '	2 2 1	SCX6026550	Sing
5.	तरेवा हिन्दी	Gila.	Willow D	56567201	130 -
٩.	4211-121 ISIM	 \\		9869451254	Red
90.	प्रमय कीवील			3869451261	ang 10
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रायस्भाव :

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		PRACI	ecklist		601
Dis	trict		RM/ward .	TINI - T	14-2
Loc	ation (area)		i din ward	A A A A A A A A A A A A A A A A A A A	
No	Of Participants	***	Village/Tole	·······	A1
	Or Participants :		Date : 2.0.6	x102108.	Stan aure
	P	articipant	's Profile		9003
S.N	I. Name	Carto			Signature
		Ethnicity	Main Occupation Ph. No.	n Ph. No.	
1	The alle			the second second second	12
1/25	ina Bahadus GC		Ward chairm	9857072608	Sans
2	412 8 CA - FT		वडा- सन्दिव	STYLOTHER	
3	VIA DEIFI LIST		काल का निहि	820412390N	290
4	Snin			3 1052 100	R
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5	(3086902994	40
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7	HEI GEIZE HAVE		act and	3-(423-(393)	- mina
-	18 DEPA Road		22	23054553	2g
8			21811 21 2119		tere
9	280/04/92572		021142	GENOGRAGE	A
10	differed thous		and	07620202000	X
11	0		2.0	> CARDON (CTY)	2.7
	aren miles		व्याभवासित	STX63×5132	m.
2				2	4.
3					

Issues raised by the public during Consultation meetings:

- 1. Priority will be given to the locals in employment of project work.
- 2. Local are very happy for the construction of substation.
- 3. Difficulties for going to 1-2 hour distance in electricity office for bill payment will be removed after the construction of substation and bill-payment counter in the area.

