

IPP727

GRID SOLAR AND ENERGY EFFICIENCY PROJECT

Indigenous People and Vulnerable Community Planning Framework

Submitted To:

**Nepal Electricity Authority
Government of Nepal**

Submitted By:

Nepal Environmental & Scientific Services [NESS] (P) Ltd.

GPO Box No: 7301, Jitjung Marga 26, Thapathali, Kathmandu, NEPAL

Tel.: 977 1 4244989/4241001; Fax: 977 1 4226028

E-mail: ness@mos.com.np Website: www.ness.com.np

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EXECUTIVE SUMMARY

1.0 Introduction

Nepal is a land-locked country facing major development challenges. It is among the poorest countries in the world, with per capita GDP of US\$ 619 (2011 prices) and an estimated 25 percent of Nepalese falling below the international poverty line (US\$ 1.25 per day). Despite a decade-long armed insurgency and protracted political transition, Nepal has made exemplary progress in poverty reduction and human development. One of the key inputs for the accelerated economic growth is Power. Nepal is endowed with huge hydropower potential. Estimated theoretical power potential from its water resources is about 84,000 MW of which recent studies estimates 43,000 MW economically exploitable. But the installed hydropower generation capacity as of July 2013 is merely 746 MW, of which 704 MW is grid-connected. The power cut/ load shedding in the peak dry season reaches up to 18 hours a day. This gap between power supply and demand needs immediate attention with economically viable short term options.

Average solar radiation varies from 3.6 to 6.2 kWh/m² per day in Nepal; while the total sun shines days is about 300 per year. According to July 2008 assessment of solar and wind energy in Nepal, the commercial potential of solar power for grid connection is about 2,100 MW. Since solar electricity generation systems are easy and quick to install, are very attractive option in many locations in the county. Keeping in line with the GON strategies, the proposed pilot projects of grid-connected solar power generation as a short term opting is being considered for financing by the World Bank. As of the date NEA has selected few potential sites in the surroundings of the Kathmandu valley and these are Kulekhani, (1 and 2), Sunkoshi, Panauti, Sundarijal, Pharping, TrishuliDevighat. The lands and properties within the sites are owned by NEA. Some of the sites, however, are encroached by outsiders due to poor property management by the concerned NEA management.

The Grid Solar and Energy Efficiency Project (GSEEP) development objectives are to: (i) increase grid power supply through installation of solar power generation facility; and (ii) improve NEA's financial performance through distribution system loss reduction and financial restructuring. The implementing agency for the GSEEP will be NEA. A project management Team (PMT) will be established at NEA. A project manager has already been appointed and the PMT will be staffed with necessary technical and procurement officials. Detailed organization structure will be finalized during the project preparation.

Based on the identified sample sites, the expected site specific environmental, social and cultural impacts are of limited nature. Since specific project activities are yet to be defined the exact nature and scale of their impacts will be known only later. Apart from the site specifics of the solar farm, the project area would include communities and settlements in its surroundings. A safeguard framework document will serve as a 'guiding document' the planning, design and construction elements of the project activities. Such a guidance document or a framework would help in integrating and harmonizing the environment and social management principles at the various stages of project preparation and execution. In this context, this Environment and Social Management Framework (ESMF) has been prepared for the GSEEP.

2.0 Overview of Project Area

Potential candidate project sites for the solar farm are identified by NEA and have been jointly inspected by the team of NEA and World Bank. These candidate sites were also subject to preliminary environmental and social assessment prior to the preparation of this ESMF. The identified sites for solar farm are located in the Kathmandu valley and its surroundings in the districts of Kathmandu, Makawanpur, Nuwakot, Kavrepalanchok and Sindhupalanchok in the Central Development Region of Nepal. All of the candidate sites are within the land property boundaries owned by NEA. The NEA land survey report (2014) has covered only flat or south facing areas in the candidate sites, however, the

preliminary field survey for the preparation of this ESMF reveals larger NEA owned land areas within the candidate sites.

The candidate sites are located in the rural setting except for the Trishuli and Sundarijal, which are within the well developed area of urban or peri-urban setting. All sites lie outside the protected National Parks, Wildlife Reserves or Conservation areas. The Sundarijal site lies within 5 km distance of the protected site i.e. Shivapuri- Nagarjun National Park, while the other sites are more than 30 km from the nearest National Parks. The Google Images depicts the overall landscape, land use, access, built structures, settlements etc within and outside the proposal sites. The above features depicted in the images fairly capture the proposal site's physical environments with some level of information on the biological (particularly forest and vegetation cover and their distribution) and social (settlement pattern, agro-economic practices) environments.

3.0 Regulatory and Legal Framework

All investments under the GSEEP must be consistent with the applicable laws, regulations, and notifications of the GoN that are relevant in the context of the proposed interventions/activities. The NEA and the concerned line departments/agencies will ensure that the GSEEP investments proposed and executed under GSEEP are consistent with the regulatory and/or legal framework, whether national, districts or municipal/VDCs. Additionally, it is also to be ensured that activities are consistent with the World Bank's operational policies and guidelines. This section is not a legal opinion on the applicability of the law but serves as guidance in the application of the various laws and regulations to the current project context.

Environmental Assessment format of WB is used to identify, avoid, and mitigate the potential negative environmental impacts associated with the Bank's operations early on in the project cycle. The policy states that Environment Assessment (EA) and mitigation plans are required for all projects having significant adverse environmental impacts or involuntary resettlement. This assessment has included analysis of alternative designs and sites, including the "no project option" and also conducted series of public consultations and information disseminations at all project sites. It is obvious that for World Bank-funded operations, and believes that Environmental Assessment will improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been properly consulted and their concerns are addressed.

4.0 Potential Social Impacts and their Management

The GSEEP project is classified 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 GSEEP sites do not locate in a sensitive ecosystem, and has avoided areas of historical and cultural significance. The land to be used for the Solar Farm development is the unused lands owned by NEA. The location of the project site coupled with the clean nature of solar power generation ensures that the GSEEP will not cause any significant adverse environmental and social impacts during construction and operation. The main project impacts are associated with clearing of shrub vegetation, waste management and management of labor camps at the site. Moreover, most of the associated impacts are limited to the construction phase and are temporary in nature. Except for the visual quality, operational phase GSEEP impact has negligible footprint.

Environmental and economic benefits of adding renewable energy to the national electrical grid can include: (i) Generating energy that produces no greenhouse gas emissions from fossil fuels and reduces some types of air pollution; (ii) Diversifying energy supply and reducing dependence on imported fuels; (ii) Creating economic development and jobs in manufacturing, installation, and more.

The potential adverse impacts and generic mitigation measures are discussed under three broad headings as impact related to Design-Preconstruction Phase, Construction Phase, and Operation and Maintenance Phase. The Design-Preconstruction Phase is, the period before the actual project

implementation when designs are being prepared. This allows the designers to avoid potential impacts in the project design, technical specifications and contract documentations.

The social impacts would not be significant and are mostly restricted to the project area and its immediate surroundings. There will be no land acquisition and no impacts on the present land use, including natural habitats. The solar farms will be installed on NEA property and to the extent possible encroached area will be avoided to minimize adverse social impacts. Social screening however will be carried out in the project sites to identify any adverse social impact and presence of indigenous community.

5.0 Social Screening and Management

Social considerations were envisioned right from the stage of project identification. In general, projects are identified on peoples' demand which is a good practice but when social consequences of implementation of a project are not well thought through, project implementation may lead to serious social problems. While identifying and designing sub-projects under GSEEP, all possible alternatives were examined and assessed. The Project Management Team (PMT) has collected information on the social setting; identify possible beneficiaries and assess potential social impacts of different alternatives. The general public should be made aware of the social consequences of project implementation at later stages in GSEEP.

Each of the investments to be funded under the GSEEP will be subject to social screening process before it is selected for inclusion in the project. The screening process establishes the level of social assessment required and will apply the exclusion criteria. The screening process intends to identify relevant possible social concerns as well as suggest any further investigation and assessment as necessary. The PMT will fill in a screening form with assistance of the consultants, if so required, for activities funded under the GSEEP. The PMT will carry out the social screening for the investments implemented under the GSEEP.

Every candidate site will be subjected to social screening process before it is selected for inclusion in the project. The screening process will establish the degree of adverse impact (if any) and also the level of social assessment required and application of exclusion criteria. The Project will make best use of its social planning approaches and fully ensure that the potential social issues are avoided or minimized to the extent possible. This would require deploying stringent measures for site selection at the early stage of project design and planning by undertaking environmental and social screening. Ideally, the possibility of avoiding or minimizing the issues related to involuntary resettlement would be possible by taking into account the following considerations while selecting the subproject site.

Gender analysis will be an integral part of the initial social assessment carried out as part of the safeguard screening of the GSEEP investments interventions. The issues identified at the screening stage will be assessed during the preparation of the GSEEP investments interventions and adequately addressed during implementation. Since the actual project cost for each site is not known at the ESMF preparation stage, the financial criteria for conducting EA (whether IEE or EIA) is written based on the EPA/EPR ceiling.

6.0 Information and Consultation Framework

The information and consultation framework is intended to lay out the way in which information will be provided to the project implementers and beneficiaries and also how consultations will be held during GSEEP implementation. Its purpose is to ensure that social and environmental issues are effectively addressed by the project in a transparent and participatory manner. The primary responsibility for the implementation of information and communication strategies lies with the PMT.

Public consultations in each candidate sites were initiated during the survey i.e from the earliest (planning) stages of the project. Relevant stakeholders will be essential especially during the identification of GSEEP investments, proposal preparation, and implementation phases. Each stakeholders group

plays a distinct role in the planning and implementation of the GSEEP. Outcomes of public consultations will help to identify all potential project stakeholders along with their specific interests and needs. Stakeholders' identification, consultation and analysis will be continued throughout the project cycle and remain dynamic. Consultations were held with special emphasis on vulnerable groups. Encouraging public participation in consultations informs the public and serves as a venue for the public to express their opinion on priorities which the Project should address.

7.0 Grievance Redress Mechanism

Through a participatory process, grievances are expected to be minimized. However, it is necessary to establish an effective grievance redress mechanism to address complaints/grievances that may arise related to the project in general including but not limited to environmental and social issues. Any grievances and objections will be referred to the project Grievances Redress Committee (GRC).

The GRC needs to be established as soon as the Project is effective. A complaint cell is designed under the site management office and at central PMT office to collect complaints and transmit them to the GRC. Any affected family or person can approach the GRC directly regarding environmental and social issues including temporary impacts and impacts during construction.

The functions of the GRC which is envisaged in this document which includes: (i) to redress grievances of project affected persons (PAPs) in all respects; (ii) rehabilitation and resettlement assistance and related activities; (iii) GRC will only deal/hear the issues related to R&R and individual grievances; (iv) GRC will give its decision/verdict within 15 days after hearing the aggrieved PAPs; (v) final verdict of the GRC will be given by the Chairman/Head of GRC in consultation with other members of the GRC and will be binding to all other members.

8.0 Monitoring And Evaluation

A Monitoring & Evaluation (M&E) system is planned and will be established for the project, and safeguard compliance will be integral part of the project M&E. Both an internal and periodic external monitoring is proposed to ensure ESMF implementation. Internal monitoring will be carried out by the candidate site Management Office regularly and periodically by central PMT office, focusing on outcomes, outputs and implementation progress for each GSEEP candidate sites and components. The candidate site management office will submit to central PMT office NEA and World Bank regular bimonthly (once in two months) reports during implementation. Similarly, periodic external monitoring will be carried out by independent consultant or agency using quantitative and qualitative methods and review of information and site visit. The ESMF evaluation will be mid-term and end term and both have to be third party evaluation.

9.0 Capacity Building

NEA has its own Environmental and Social Studies Department (ESSD) and has experience with the implementation of World Bank-funded projects. However, due to large numbers of sub-projects within NEA, ESSD often falls short of required human resource capacity to design and implement ESMF. It is therefore, the ESMF has included capacity strengthening measures to the members of PMT and Manager of Candidate Site as installing a solar farm is a new intervention for NEA.

Training is an important component for developing capacities. Appropriate and timely training to the officials with regard to various issues can bring a positive change in the functioning of the staff. Apart from training in generic areas such as human resource management, information management, government functionaries require training in handling certain specialized tasks pertaining to environmental and social issues. The Project's consultant will identify the training need assessment for PMT and staff of Candidate Sites and suggest the training packages including their modality of operation.

LIST OF ACRONYMS

BP	Bank Procedures
BS	BikramSambat
CDG	Captive Diesel Power Generator
CDM	Cleaner Development Mechanism
CEO	Chief Executive Officer
DDC	District Development Committee
DLRMP	Distribution Loss Reduction Management Plan
DoED	Department of Electricity Development
EA	Environmental Assessment
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPA	Environment Protection Act
EPR	Environment Protection Regulation
ESMF	Environmental and Social Management Framework
FGDs	Focus Group Discussions
GDP	Gross Domestic Product
GIS	Geographical Information System
GoN	Government of Nepal
GRC	Grievances Redress Committee
GSEEP	Grid Solar and Energy Efficiency Project
IDA	International Development Association
IEE	Initial Environmental Examination
IFC	International Finance Corporation
ILO	International Labor Organization
IPPs	Independent Power Producers
IPs	Indigenous People
IP-VCDF	Indigenous Peoples and Vulnerable Community Development Framework
kg	Kilogram
kV	Kilo Volt
kWh	Kilowatt Hours
MoE	Ministry of Energy
MV	Medium Voltage
MW	Mega Watt
NEA	Nepal Electricity Authority
NGO	Non-Government Organization
OP	Operation Policy
PCB	Polychlorinated biphenyl
PMT	Project Management Team
PPAs	Power Purchase Agreement
RAP	Resettlement Action Plan
SAP	Social Action Plan
SIA	Social Impact Assessment
TL	Transmission Line
TYIP	Three Year Interim Plans
UN	United Nations
UNESCO	United Nation's Organization for Education, Science and Culture
VCs	Vulnerable Communities
VDC	Village Development Committee

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1.1 Background

Nepal is a land-locked country facing major development challenges. It is among the poorest countries in the world, with per capita GDP of US\$619 (2011 prices) and an estimated 25 percent of Nepalese falling below the international poverty line (US\$1.25 per day). Despite a decade-long armed insurgency and protracted political transition, Nepal has made exemplary progress in poverty reduction and human development. In addition, Nepal has achieved gender parity in education and sharp reductions in infant and maternal mortality. While the country has achieved good growth rates of over the past years despite its fragile environment, the economy is yet to move towards its full growth potential. Going forward and in the absence of new endogenous sources of growth, economic activity will remain dependent on consumption (supported by remittances), and attributed to weather conditions and external developments.

One of the key inputs for the accelerated economic growth is Power. Nepal is endowed with huge hydropower potential. Estimated theoretical power potential from its water resources is about 84,000 MW of which recent studies estimates 43,000 MW economically exploitable. But the installed hydropower generation capacity as of July 2013 is merely 746 MW, of which 704 MW is grid-connected. Predominance of run off the river type hydropower projects, resulted low available energy output in the dry season, when the system demand is high, which is nearly 40 to 45% of the installed capacity. It is to be noted that 80 percent of rainfall in this Himalayan country occurs in the wet season (or the monsoon months of July, August and September), while the dry season (October through June) rainfall contribution is limited to only 20%. This variation in the rainfall in monsoon and non-monsoon months, with a hydropower generation schemes based on run off the river types, has resulted in acute power shortages in dry months with wide ranging economic implications. The power cut/ load shedding in the peak dry season reaches upto 18 hours a day. For instances, in November 2012, early post monsoon month, shortfall of nearly 470MW¹ was recorded.

The other factor contributing to the gap between the power demand and supply in Nepal is also due to high power losses in the system. In 2012, accounted net energy loss was 26.4 percent of net generation nearly 15% higher than the loss accounted in the developed countries. Such high system loss is largely due to the poor quality of the power distribution system managed by NEA. Major causes of the system losses include: (i) overloading of distribution transformers; (ii) long distance and overloading (due to wrong sizes) of distribution feeder lines; (iii) high voltage drop of the distribution system due to lack of reactive power compensations; and (iv) commercial losses (poor metering, electricity theft, etc.). Owing to the high system losses, not only there is gap in the demand and supply, but also on the cost of energy supplied. This has resulted in the poor financial performance of NEA with increasing debts. It is to be noted that NEA incurs a loss of about 2 cents for every kilowatt-hour of electricity it sells. As a consequence, NEA is neither able to service its debts, nor generate funds required to invest in generation, transmission, and distribution infrastructures.

This gap between power supply and demand needs immediate attention with economically viable short term options. Accordingly Government of Nepal (GoN), to deal with the energy crises and eventually achieve sustainable, reliable and affordable electricity supply, has given priority to the strategies such as (i) reduce the load shedding by adding generation capacity that can be installed in a short term; (ii) reach supply and demand balance in a medium term through commissioning of hydropower under construction and power import from India; and (iii) develop its huge hydropower resources to sustain domestic growth and earn export revenues in a long term. In line with the strategy are actions including: (a) pilot projects

¹In November 2012, the available capacity was only 625 MW including 53MW thermal and about 100 MW import from India (hydro contributed only 472 MW); while, the peak demand was 1,095 MW.

of grid-connected solar power generation for the short term; (b) high voltage cross-border transmission line under construction for up to 1,000 MW power import from India (expected to be completed by 2016); and (c) development of large hydropower and cross-border transmission line for power export to India (about 4,000 MW in the pipeline with feasibility studies completed and the second cross-border high voltage transmission line to India (under feasibility study).

Keeping in line with the GON strategies, the proposed pilot projects of grid-connected solar power generation as a short term option is being considered for financing by the World Bank.

1.2 Sectoral and Institutional Context

Average solar radiation varies from 3.6 to 6.2 kWh/m² per day in Nepal, while the total sun shines days is about 300 per year. According to July 2008 assessment of solar and wind energy in Nepal, the commercial potential of solar power for grid connection is about 2,100 MW. Since solar electricity generation systems are easy and quick to install, are very attractive option in many locations in the country. Further as solar radiation are strongest during winter season, when the electricity demand is high and hydropower-based power generation is low, this option for short term measure is considered more attractive. It is therefore, solar power is considered as one of the ideal power generation sources to complement the hydropower dominated electricity generation in Nepal. Grid-connected solar power generation is technically proven, however, is nearly two times costlier than the current retail tariff.

The electricity sector in Nepal is under the responsibility of the Ministry of Energy (MoE), which is responsible for formulating sector policies, and regulations, and overseeing planning, investment and development of the power sector. The MoE is also responsible for issuing licenses for electricity generation, transmission and distribution. In addition, the Investment Board established in November 2011 was entrusted with the responsibility of facilitating the development of large infrastructure projects including hydropower projects above 500 MW. NEA was formed in August 1985, under the Nepal Electricity Authority Act of 1984, as a vertically-integrated government-owned utility responsible for generation, transmission, and distribution of electricity in Nepal. Independent Power Producers (IPPs) also invest, own, and operate power generation facilities, mostly based on hydro resources. For domestic grid-based electricity supply, NEA serves as the single buyer for the electricity generated by IPPs. NEA being the sole agency for power generation, transmission and distribution in Nepal has the obligation to meet the power demand complying with the GON strategies to fill the gap between supply and demand in short, mid and long term. Considering the escalating power crisis, NEA has keen interest for the potential short term options of power supply such as grid connected solar power generation to minimize the gap between generation and supply

Given the power crisis, availability of strongest sunshine radiation in the critical power shortage periods, and interest of concerned institutions of GoN and NEA, the proposed project is the best option among alternatives that can deal with the energy crisis in the short term.

1.3 Project Description

1.3.1 Broader Project Objectives

The GSEEP broad objective is to reducing gap between demand and supply of grid power and contributing to the economic and social development of Nepal.

1.3.2 Development Objectives

The GSEEP development objectives are to: (i) increase grid power supply through installation of solar

2UNEP/GEF, 2008. Solar and Wind Energy Resource Assessment in Nepal (SWERA), July 2008.

power generation facility; and (ii) improve NEA's financial performance through distribution system loss reduction and financial restructuring.

1.3.3 Project Beneficiaries

The primary beneficiaries are (a) industries, commercial enterprises and households of Kathmandu Valley and surrounding areas directly benefiting from the increased supply of energy as well as (b) NEA who will be benefited from the reduction on system losses. In addition NEA personnel will be trained on installation, operation and maintenance of the grid connected solar power, while the transmission and distribution system engineers will be benefited from the proven software and training for distribution system loss identification and reduction planning; and development of a GIS database.

1.3.4 GSEEP Components

The GSEEP consists of three components: (1) Grid-connected Solar Farm Development ;(2)Distribution System Loss Reduction; and (3) Technical Assistance to improving NEA's Financial Performance.

1.3.4.1 Component 1: Grid-connected Solar Farm Development

This component will support design, construction, commissioning, and operation and maintenance (O&M) of a grid connected 20MW solar farm (without having electricity storage facility) nearby Kathmandu valley to supply electricity directly to NEA's distribution network. It will include:

1. Supply, installation, and commissioning of solar power generation equipment; and
2. Associated 11kV medium voltage (MV) line connecting to the existing substations.

As of the date NEA has selected few potential sites in the surroundings of the Kathmandu valley and these are Kulekhani, (1 and 2), Sunkoshi, Panauti, Sundarijal, Pharping, Trishuli Devighat. The lands and properties within the sites are owned by NEA. Some of the sites, however, are encroached by outsiders due to poor property management by the concerned NEA management. NEA has conducted initial load flow and system stability studies, fault level analysis, connection concept design, facility protection design, optimal site selection, environmental and social impact assessments, and bid documents preparation. Technical assistance will be provided to NEA to finalize these technical studies and the bidding document for design, supply, installation and commissioning of the solar farm. O&M services for 5 years from the date of commission, including supply of spare parts, preparation of an O&M manual and training of NEA's engineers will also be included. An Owner's Engineer (or individual consultants) will be hired by NEA to assist in construction supervision, acceptance test, commissioning, and reviewing the O&M Manuals.

1.3.4.2 Component 2: Distribution System Loss Reduction

This component will support preparing the Distribution Loss Reduction Management Plan (DLRMP) to redress the high system losses in the country and enhancing NEA's capacity in distribution system planning and management. It will identify causes of technical and nontechnical losses for the distribution system and prepare an action plan for rectification including investment in technical losses reduction and measures for non-technical loss reduction and prevention. The program includes:

1. Replacing conductors of distribution feeders to reduce line losses;
2. Adding or replacing distribution transformers to reduce over-load of transformers; and
3. Adding capacitor banks to compensate reactive power to manage voltage levels.

The capacity building programs include :(i) provision of instruments and proven software and training for distribution system loss identification and reduction planning; and (ii) development of a GIS database. The GIS database is critical for rural electrification planning, loss reduction planning, and distribution system and customer management. Following recommendations of the DLRMP, investment for system loss reduction will be piloted in selected distribution areas of NEA.

1.3.4.3 Component 3: Technical Assistance to Improving NEA's Financial Performance

This component will support preparation and implementation of an Action Plan for NEA Financial Restructuring. The Action Plan will be based on studies on: (i) NEA tariff adjustment; and (ii) NEA financial restructuring needed to improve NEA's financial performance. The tariff study will target: (i) annual tariff adjustment reaching cost recovery and a positive return on assets in a stepped approach over a certain tariff adjustment period and mechanism to mitigate NEA's exposure to inflation and foreign exchange risks; (ii) mechanisms to mitigate financial impacts on the poor; and (iii) key communication strategy to gain support from public and consumers. It will review power purchase agreements (PPAs) signed, debt service obligations, operation and maintenance cost, investment plan on the NEA side, and affordability and social impacts on the consumer side. The financial restructuring study will focus on: (i) settlement of dues between NEA and GoN; (ii) restructuring NEA's loans; and (iii) defining responsibility, accountability, and performance monitoring for the distribution business. It will also be coordinated with the technical assistance activities to be initiated under the Nepal-India Electricity Transmission Project pricing policies and institutional arrangement needed for trading power with neighboring countries, given the first major cross-border 400 kV transmissions is planned for commissioning by 2016. The studies will also review previous studies, recommendation, and implementation results.

1.4 Project Institutional and Implementation Arrangement

The implementing agency for the GSEEP will be NEA. A project management Team (PMT) will be established at NEA. A project manager has already been appointed and the PMT will be staffed with necessary technical and procurement officials. Detailed organization structure will be finalized during the project preparation.

1.5 Type and Nature of Civil Works Supported Under the GSEEP

The component 1 is to construct a grid-connected 20MW solar farm (without having electricity storage facility). The construction works of grid connected solar project involves little civil works, such as clearing of vegetation, leveling of ground, construction of control buildings, and installation of solar panels and electro-mechanical equipment. In addition, the component also constitute establishment of short distance 11 kV transmission lines from the solar farm to the nearest sub-station. Construction works for the transmission line involves clearing of standing trees, structures along the alignment, preparation of 11 kV pole foundations and stringing of conductors.

The component 2 activities are to replace the conductors in the existing distribution feeders, add or replace the existing distribution transformers and add capacitor banks in the existing substations. This component, in actuality does not involve any civil construction works, however, entail management of the hazardous waste of the replaced transformer in case they are PCB based.

The Component 3 is a soft component comprising of desk and field studies and does not involve civil construction and waste management issues for consideration.

The allocated budget for component 1 is US\$55 million, while component 2 and 3 budget is US\$16 and US\$ 2 million respectively. The total budget estimated is US\$ 73 million of which GON will contribute US\$ 3 million and remaining US\$ 70 million will be IDA soft loan.

1.6 Activities Excluded from GSEEP

The following lists the activities that cannot be supported under the GSEEP.

1. Any activity within the protected area/UNESCO declared heritage site;
2. Protected area or critical natural habitat is excluded.

3. Any activity that requires the physical relocation of households through involuntary acquisition of land and property excluding encroachers occupying the land and property of NEA
4. Any activity that requires dismantling of the cultural resources such as temples, shrines historical and archeological objects
5. Transformers and capacitor banks based on PCBs

1.7 Need for Environment and Social Management Framework

The general thrust and broad project interventions are well understood as outlined above. Based on the identified sample sites, the expected site specific environmental, social and cultural impacts are of limited nature. Since specific project activities are yet to be defined the exact nature and scale of their impacts will be known only later. Apart from the site specifics of the solar farm, the project area would include communities and settlements in its surroundings. Besides, the 11kV medium voltage alignments to conduit the power from solar farm to sub-station and vice versa has potentials of diverse impacts, though of localized nature, which are largely unknown at this stage of planning. The component 2 including replacement of conductors, addition and or replacement of transformers and addition of capacitor banks could have issues related to community discomfort, community and occupational health and safety etc, depending upon the areas where such activities will be carried out. As these component activity sites are yet to be finalized, the nature and gravity of the impacts could only be assessed once the sites are identified and project activity foot prints are fixed.

In the above context, a safeguard framework document is needed to 'guide' the planning, design and construction elements of the project activities. Such a guidance document or a framework would help in integrating and harmonizing the environment and social management principles at the various stages of project preparation and execution. In this context, this Environment and Social Management Framework (ESMF) has been prepared for the GSEEP.

This ESMF forms part of the comprehensive environmental and social management approach that has been adopted for addressing the potential environmental and social impacts from GSEEP, even when these are considered minor in nature.

Since specific GSEEP activities will only be identified in the course of project implementation, a mechanism for screening and assessing possible adverse short-term environmental and social impacts during the project preparation is required. This ESMF defines (a) the approach for identifying the environmental and social issues associated with the GSEEP activities, (b) the requirements for conducting environmental and social screening and environment and social assessment studies, and (c) measures to prevent, mitigate and manage adverse impacts and enhance positive ones. This ESMF includes an exclusion list and a simplified screening checklist, which will be used to determine what types of environmental and social assessment are required for the proposed initiatives. Environmental Management Plans/Social Action Plans (EMP/SAP) for specific initiatives will be prepared if required. This ESMF includes a resettlement policy framework describing mechanisms for addressing the possible temporary disruption of services and income (e.g., temporary displacement of informal vendors), and temporary restrictions on access to facilities while the construction work is ongoing in the project area. The ESMF includes a vulnerable community development plan, a gender development framework, and capacity building measures and a monitoring mechanism. This ESMF specifies norms and procedures for the conservation and restoration of historic and archeological objects for dealing with chance finds during small works.

1.8 Process Adopted for Preparing the ESMF

The process adopted for the preparation of this ESMF includes: review of relevant environmental and social policies, acts, regulations and guidelines of GON, safeguard policies of World Bank, and interactions and consultations with all concerned stakeholders. Therefore, this ESMF is primarily based

on the reviews of available relevant literatures and consultations with the sample project level stakeholders.

1.9 Purpose and Objectives of the ESMF

The ESMF seeks to:

1. Establish clear procedures and methodologies for screening, reviewing and managing environmental and social safeguards for the components to be financed under the GSEEP.
2. Consolidate and facilitate understanding of all essential policies and regulations of the GoN as well as the World Bank's environmental and social safeguards regime that are applicable to the Project
3. Provide practical guidance on the implementation of the environmental and social management measures.
4. Specify norms and procedures for the conservation and restoration of historic and archeological objects for dealing with chance finds during works.
5. Specify institutional arrangements, including appropriate roles and responsibilities for managing, reporting and monitoring environmental and social concerns of the GSEEP component investments.
6. Provide a framework for consultation and information disclosure.
7. Determine the other institutional requirements, including those related to training and capacity building, needed to successfully implement the provisions of the ESMF.

The application and implementation of the ESMF therefore, will:

1. Support the integration of environmental aspects into the decision making process at all stages related to planning, design, execution, operation and maintenance of GSEEP investments, by identifying, avoiding and/or minimizing adverse environmental impacts early-on in the project cycle.
2. Minimize environmental degradation to the extent possible resulting from either directly GSEEP component activities or through indirect, induced and cumulative effects of project activities.
3. Enhance the positive/sustainable environmental and social outcomes through improved/appropriate planning, design and implementation of sub-activities of the project components.
4. Consider the level of environmental and social risk of each type of GSEEP component activates in allocating time and resources to be dedicated for stakeholder consultation.
5. Build the capacity of the NEA to take-up and coordinate responsibilities related to the application and implementation of the ESMF, including the preparation of the GSEEP Component specific Environmental Assessment and Management Plans (if required).
6. Provide guidelines and procedures for further consultations during project implementation, in particular in defining and designing GSEEP component specific works.
7. Provide a systematic guidance to address potential risks and to enhance quality, targeting, and benefits to the surrounding communities.
8. Ensure that those stakeholders, irrespective of whether they benefit from or are adversely affected by the project interventions, are well informed and are able participate in the decision-making process.
9. Support compliance with applicable legal/regulatory requirements of GoN as well as with the requirements set forth in the relevant Bank policies.
10. Protect human health.
11. Minimize adverse impacts on cultural property.

1.10 Revision/Modification of the ESMF

The ESMF will be an 'up-to-date' or 'live document' enabling revision, when and where necessary. Unexpected situations and/or changes in the project or components design would therefore be assessed and appropriate management measures will be incorporated by updating this ESMF. Such revisions will also cover and update any change/modification introduced in the legal/regulatory regime of the country.

Also, based on the experience of application and implementation of this framework, the provisions and procedures would be updated, as appropriate, in agreement with the World Bank and the NEA.

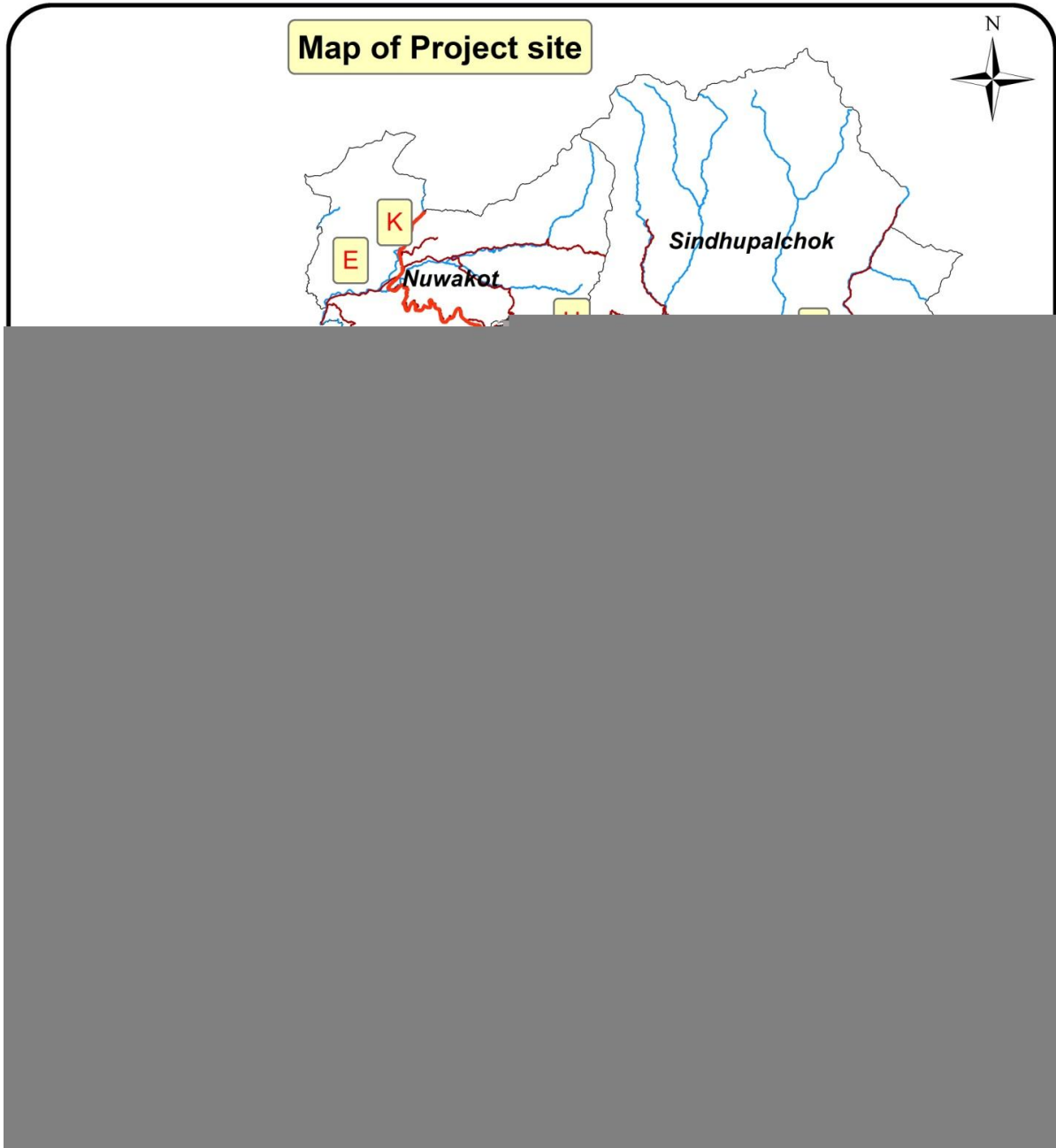
1.11 Limitations of the ESMF

This ESMF has been developed in line with World Bank's Operational Policies (OPs) and is based on GoN laws and regulations, as applicable at the time of preparation of this document. Any proposed modifications in the laws, regulations or guidelines that were notified as 'draft' at the time of preparation of this document have not been considered.

CHAPTER II: OVERVIEW OF THE PROJECT AREA

Potential candidate project sites for the solar farm related to component 1 investments are identified by NEA and have been jointly inspected by the team of NEA and World Bank. These candidate sites were also subject to preliminary environmental and social assessment prior to the preparation of this ESMF. The identified sites for solar farm are located in the Kathmandu valley and its surroundings in the districts of Kathmandu, Makawanpur, Nuwakot, Kavrepalanchok and Sindhupalanchok in the Central Development Region of Nepal (**Figure 1**). Candidate sites for the component 2 investments are not yet identified but are envisaged to be within the geographical boundaries of the candidate solar farm districts.

Figure 1: Location Map of the Candidate GSEEP Solar Farm Sites



2.1 Geographical Location

Geographical locations of the candidate solar farm sites are presented in **Table 1**.

Table 1: Geographical Locations of the Candidate Solar Farm Sites

SN	Project Site	VDC and Ward No and District	GPS Location	Land Area (m ²)*
1	Pharping Powerhouse	Setidevi VDC ward no 6,4,5; Kathmandu	Lat: 27°36'49.18" N Long: 85°17'19.74" E	17862.65
2	Kulekhani 2 Powerhouse	Bhainse VDC ward no.3 Makwanpur	Lat: 27°31'6.99" N Long: 85°2'57.2" E	6004.45
	Kulekhani 1 Reservoir area	Markhu VDC ward no 8 ; Makwanpur	Lat: 27°37'8.51" N Long: 85°9'3.12" E	59450.31
	Kulekhani 1B, Reservoir Area	Markhu VDC Ward no 8; Makwanpur	Lat: 27°36'40.27" N Long: 85°9'21.65" E	6254.07
3	Devighat	Charghare VDC ward no.2 ; Nuwakot	Lat: 27°52'56.51" N Long: 85°7'30.65"E	23570.977
4	Panauti	Panauti municipality ward no 12, Kavre	Lat: 27°33'50.57" N Long: 85°32'0.28E	1721.21
	Panauti 2	Panauti Municipality ward no 12, Kavre	Lat: 27°33'49.46" N Long: 85°32'9.72"E	1575.43
5	Sundarijal	Sundarijal VDC ward no 9 ; Kathmandu	Lat: 27°45'33.74" N Long: 85°25'12.99"E	2533.19
6	Sunkoshi 1	Pangretar VDC ward no-5, Sindhupalanchok	Lat: 27°45'14.02" N Long: 85°50'36.82"E	11217.02
	Sunkoshi 2	Mangka VDC ward no. 6 Sindhupalanchok	Lat: 27°45'18.71" N Long: 85°50'6.82"E	17862.65
7	Trishuli	Bidur Municipality ward no 10, Nuwakot	Lat: 27°55'19.89" N Long: 85°8'48.26"E	2815.73

Note: * Land area of candidate site as per NEA 2014 survey.

All of the candidate sites are within the land property boundaries owned by NEA. The NEA land survey report (2014) has covered only flat or south facing areas in the candidate sites, however, the preliminary field survey for the preparation of this ESMF reveals larger NEA owned land areas within the candidate sites. In some of the candidate sites, parts of the NEA owned land areas are encroached by the outsiders.

Figure 2 to 9 depicts the locations of the candidate sites in the recent Google Images. White line is the approximate boundary of the candidate sites, while the yellow notation with site name is marked on the central part of the candidate site location.

Figure 2: Pharping Powerhouse site



Figure 3: Kulekhani 2 Powerhouse Site



Figure 4: Kulekhani 1 and 1B sites Kulekhani Reservoir Sites



Figure 5: Devighat Powerhouse site

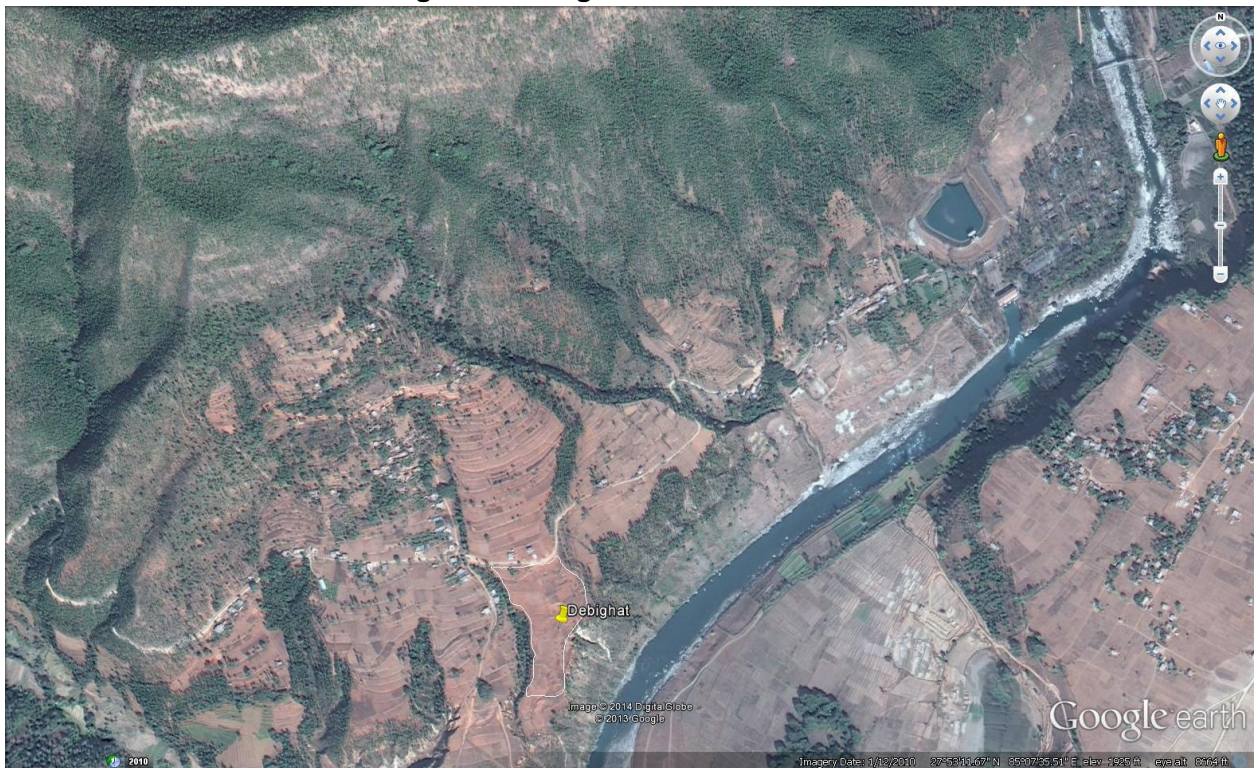


Figure 6: Panauti and Panauti 2 Site



Figure 7: Sundarijal Powerhouse site

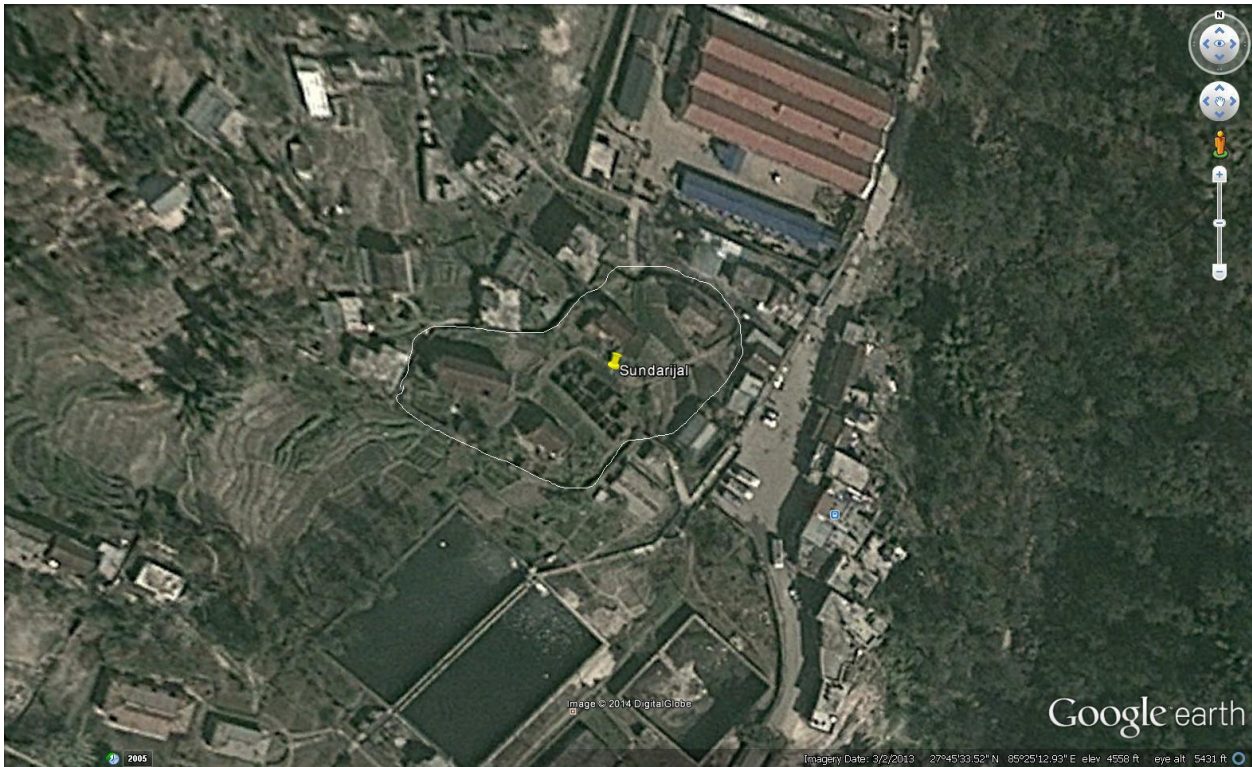


Figure 8: Sunkoshi 1 and 2 Sunkoshi Powerhouse Sites



Figure 9: Trishuli Powerhouse Site



2.1.2 Environmental Baseline

The candidate sites are located in the rural setting except for the Trishuli and Sundarijal, which are within the well developed area of urban or peri-urban setting.

All sites lie outside the protected National Parks, Wildlife Reserves or Conservation areas. The Sundarijal site lies within 5 km distance of the protected site i.e. Shivapuri- Nagarjun National Park, while the other sites are more than 30 km from the nearest National Parks.

The Google Images depicts the overall landscape, land use, access, built structures, settlements etc within and outside the proposal sites. The above features depicted in the images fairly capture the proposal site's physical environments with some level of information on the biological (particularly forest and vegetation cover and their distribution) and social (settlement pattern, agro-economic practices) environments. **Table 2** presents the environmental baseline summary of the proposal sites based on the Google image interpretation, reconnaissance field visits and available secondary literatures of the respective areas.

Table 2: Summary Environment and Social Baseline

SN	Project Site	Accessibility	Environmental and Social Baseline	Development needs
1	Pharping Powerhouse	Motorable access along the southern boundary	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Limited surface run off erosion. ▪ Land unit is sloping at 20 degree towards south. ▪ The land is terraced. Open agricultural land. No tree obstruction. ▪ Four built structures within the site along the southern boundary. ▪ Nearest settlement is about 5 m of the southern border. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Demolition of built structure; ▪ Land to be planed for flat panel PV ▪ Need 12 km of 11 kV line evacuate power or has to free or add conductor on existing 11 kV distribution line
2	Kulekhani 2 Powerhouse	Motorable access along the southwestern boundary line	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. Lies above flood plain. ▪ Lower part of the site shows landslide scars, erosion prone with Moderate to high surface run off. ▪ Open land barren. Upper part represents terraced agricultural land sloping at angle greater than 20 degrees. ▪ No tree obstruction. ▪ No built structures within the site. ▪ Nearest settlement about 75 m to the northwest and about 25 m to the 	<ul style="list-style-type: none"> ▪ Land slide potential, and need protection against landslide, ▪ Land to be planned for flat panel PV, ▪ Need a 11 kV TL line to evacuate power length not known; or has to free or add conductor on existing 11 kV distribution line

SN	Project Site	Accessibility	Environmental and Social Baseline	Development needs
			<p>southwest of the site boundary.</p> <ul style="list-style-type: none"> ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	
	Kulekhani 1 Reservoir area	Motorable access along the eastern boundary of the site	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Limited surface run off erosion. ▪ Southwest facing slope (<20 degree), terraced land. More than 30 trees along the border line on the south and east. ▪ 53 structures within the site. ▪ Nearest settlements and built structures from the site boundary on the north, and east within 5 to 20 m distance. ▪ Not a historical and religious site and i ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Demolition of structures, ▪ clearance of vegetation, ▪ Land to be planned for flat PV panel, ▪ Need a 11 kV TL line length unknown or has to free or add conductor on existing 11 kV distribution line
	Kulekhani 1B, Reservoir Area	No motorable access, about 200m access road will have to be developed through the sparsely vegetated slope from the north east side from the main access road.	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Limited surface run off erosion. ▪ Terraced agricultural land mostly open. ▪ Three bamboo clumps on the northern boundary and few bushy types of vegetation on the southern side. ▪ One structure within the site. ▪ Nearest structures from the site boundary locates at the western (4 nos) and eastern borders (2 nos). ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Need Motorable access, ▪ Demolition of structure, ▪ Clearance of vegetation, ▪ Need a TL line length not known or has to free or add conductor on existing 11 kV distribution line
3	Devighat	Motorable access along the northern boarder	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. 	<ul style="list-style-type: none"> ▪ Landslide protection, Land to be planned for flat PV panel, ▪ Need a TL line length unknown or has to free or add conductor on existing 11 kV distribution line

SN	Project Site	Accessibility	Environmental and Social Baseline	Development needs
			<ul style="list-style-type: none"> ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Limited surface run off erosion. Small landslide on the eastern boundary facing to Trishuliriver. ▪ A deep gully (vegetated) marks the western boundary. ▪ Site is open terraced land sloping due south at angle about 20 degree. ▪ No vegetation and trees within the site. ▪ No structures within the site. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	
4	Panauti	No motorable access to the site. About 100m access to be developed along the western embankment of the reservoir.	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. Lies above flood plain. ▪ It forms the part south facing slope of the reservoir embankment, approximately 15m wide and about 115 long. ▪ The site sloping about 12 degree to the south. ▪ No tree vegetation within the site. ▪ No built structures within site. ▪ A foot trail pass along the site. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Development of motorable access, ▪ Need provision of access trail, ▪ Site too narrow ▪ Need a TL line length unknown or has to free or add conductor on existing 11 kV distribution line
	Panauti 2	Motorable access to be improved (approximate length 90m, trail exists need to be developed).	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Open barren land. ▪ Moderate Surface runoff erosion. ▪ Two trees on the northern boundary line and few bushy vegetation on the east. ▪ One structure within the site. ▪ Nearest structures are within 15 m distance to the north and about 35 m to the east of the site boundary. ▪ A foot trail pass through the site. <p>1. Not a historical and religious site and</p>	<ul style="list-style-type: none"> ▪ Development of motorable access, ▪ vegetation clearance, ▪ provision of alternative access trail ▪ Site very small by area ▪ Need a TL line length unknown or has to free or add conductor on existing 11 kV distribution line ▪ Potential of NEA owned additional area

SN	Project Site	Accessibility	Environmental and Social Baseline	Development needs
			<ul style="list-style-type: none"> ▪ Devoid of built temples within the site boundary. 	
5	Sundarijal	Motorable access from the northern side	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain ▪ . Agricultural open land of flat nature. ▪ No tree vegetation. ▪ Four built structures within site. ▪ Sitesurrounded by built structures on three sides. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Demolition of structure.
6	Sunkoshi 1	Motorable access along the southern border.	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Limited surface runoff erosion ▪ A rolling spur forming the embankment of the reservoir on the northern and northeastern side of the reservoir. ▪ Partly afforested land with a number of small trees. ▪ The land unit slope both to the north and south at gentle angle. ▪ No built structure within the site. ▪ The nearest built structure is about 60 m to the east of the site boundary. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Vegetation clearance, ▪ Land to be developed for flat PV panel , Need 3-3.5 km of new 11 kV line or has to free or add conductor on existing 11 kV distribution line ▪ Potential of additional NEA owned land area
	Sunkoshi 2	Motorable access from the northwestern corner.	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. Lies above flood plain. ▪ Limited surface runoff erosion. ▪ Open land sloping due south at gentler angle, terraced agricultural land. 	<ul style="list-style-type: none"> ▪ Clearance of vegetation , ▪ Need 3-3.5 km of new 11 kV line or has to free or add conductor on existing 11 kV distribution line

SN	Project Site	Accessibility	Environmental and Social Baseline	Development needs
			<ul style="list-style-type: none"> ▪ No built structure within the site ▪ Nearest building is about 5 m from the eastern border. ▪ One tree on the northern border. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	
7	Trishuli	Motorable access all along the northern border	<ul style="list-style-type: none"> ▪ Sub-tropical climate, influenced by monsoon rains (June to September) ▪ Summer months (March to May) hazy with high suspended dusts in the atmosphere ▪ Sites not important from water resource point of view ▪ Lies outside national Park & conservation areas. ▪ No natural forest within the site. ▪ Lies above flood plain. ▪ Limited surface runoff erosion. ▪ More than 30 trees covering the site. ▪ Two built structure within the site. ▪ Dense settlement to the north and east of the site boundary. ▪ Not a historical and religious site and ▪ Devoid of built temples within the site boundary. 	<ul style="list-style-type: none"> ▪ Demolition of structure, ▪ clearance of vegetation, ▪ Need a TL line length unknown or has to free or add conductor on existing 11 kV distribution line

Source: Google Image 2009/2011.

All of the structures within the candidate sites surveyed by NEA 2014 are under the ownership of NEA. All of these structures are abandoned structures while some structures are being occupied by the NEA's local staff. Similarly, some land plots are also under cultivation by the NEA's local staff.

2.1.3 Social Baseline

Table 3 presents summary of the VDC level social baseline data of the candidate project sites.

Table 3: Summary of VDC Level Social Baseline

VDC Area and Demography											
SN	Project Site	VDC and Ward No	Area*	HH	Total	M	F	HH size	M/F	Pop. Density*	Caste/Ethnic Group
1	Pharpin g Powerhouse	Setidevi VDC ward no 6,4,5; Kathmandu	5.87	1039	4248	2117	2131	4.09	0.99	724	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Magar, Gurung, Dalit, Rai, and Tharu. Chetri is dominant (48%) followed by Newar (22%). Janajati group constitute 36.85% while upper caste make up 54.83% and Dalit 8.32%

VDC Area and Demography											
SN	Project Site	VDC and Ward No	Area*	HH	Total	M	F	HH size	M/F	Pop. Density*	Caste/Ethnic Group
2	Kulekhani 2 Powerhouse	Bhainse VDC ward no.3 Makwanpur	63.01	1388	6717	3228	3489	4.84	0.93	107	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Magar, Gurung, Dalit, Chepang, Rai, and Thakuri. Tamang is dominant (66%) followed by Magar (11%). Janajati group constitute 82.64% while upper caste make up 11.86% and Dalit 5.31%
	Kulekhani 1 Reservoir area	Markhu VDC ward no 8 ; Makwanpur	15.87	634	3071	1452	1619	4.84	0.90	194	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Magar, and Dalit,.Tamang is dominant (52%) followed by Newar (25%). Janajati group constitute 83.48% while upper caste make up 15.50% and Dalit 1.02%
	Kulekhani 1B, Reservoir Area	Markhu VDC Ward no 8; Makwanpur	15.87	634	3071	1452	1619	4.84	0.90	194	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Magar, and Dalit,.Tamang is dominant (52%) followed by Newar (25%). Janajati group constitute 83.48% while upper caste make up 15.50% and Dalit 1.02%
3	Devighat	Charghare VDC ward no.2 ; Nuwakot	18.39	1190	5419	2478	2941	4.55	0.84	295	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Gurung, Dalit, Magar, Rai, Gharti/Bhujel and Thakuri. Bahun is dominant (45%) followed by Tamang (16%). Janajati group constitute 27.49% while upper caste make up 57.31% and Dalit 15.2%.
4	Panauti	Panauti municipality ward no 12, Kavre	31.73	5943	27358	13091	14267	4.60	0.92	862	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Gurung, Rai, Dalit, Magar,

VDC Area and Demography											
SN	Project Site	VDC and Ward No	Area*	HH	Total	M	F	HH size	M/F	Pop. Density*	Caste/Ethnic Group
											Shanyashi, Thakuri, Pahari, Gharti/Bhujel, Majhi, and Sherpa. Chetri is dominant (47%) followed by Newar (29%). Janajati group constitute 55.91% while upper caste make up 60.50% and Dalit 5.47%.
	Panauti 2	Panauti Municipality ward no 12, Kavre	31.73	5943	27358	13091	14267	4.60	0.92	862	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Gurung, Rai, Dalit, Magar, Shanyashi, Thakuri, Pahari, Gharti/Bhujel, Majhi, and Sherpa. Chetri is dominant (47%) followed by Newar (29%). Janajati group constitute 55.91% while upper caste make up 60.50% and Dalit 5.47%.
5	Sundarijal	Sundarijal VDC ward no 9 ; Kathmandu	35.31	547	2552	1252	1300	4.67	0.96	72	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamamng, Gurung, Dalit, and Shanayshi. Tamang is dominant (64%) followed by Newar (11%). Janajati group constitute 79.51% while upper caste make up 20.05% and Dalit 0.4%.
6	Sunkoshi 1	Pangretar VDC ward no-5, Sindhupalanchok	9.62	762	2952	1428	1524	3.87	0.94	307	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Gurung, Dalit, Magar, Gharti/Bhujel, Majhi, and Thami. Chetri is dominant (35%) followed by Bahun (23%). Janajati group constitute 19.54% while upper caste make up 60.50% and Dalit 19.96%.

VDC Area and Demography											
SN	Project Site	VDC and Ward No	Area*	HH	Total	M	F	HH size	M/F	Pop. Density*	Caste/Ethnic Group
	Sunkoshi 2	Mangka VDC ward no. 6 Sindhupalanchok	15.46	1860	7752	3698	4054	4.17	0.91	501	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Gurung, Dalit, Magar, Gharti/Bhujel, and Sherpa. Tamang is dominant (37%) followed by Bahun (27%). Janajati group constitute 47.39% while upper caste make up 46.14% and Dalit 6.15%
7	Trishuli	Bidur Municipality ward no 10, Nuwakot	33.48	6270	26750	12712	14038	4.27	0.91	799	The caste ethnic groups in the VDC are Newar, Bahun. Chetri, Tamang, Gurung, Dalit, Magar, Rai, Gharti/Bhujel, Kumal, Sherpa, Bhote, Shanayshi and Thakuri. Newar is dominant (24%) followed by chhetri (22%). Janajati group constitute 45.13% while upper caste make up 46.24% and Dalit 8.63%.

Source: CBS 2012, and CBS 2001

Note: HH = Household, M= Male, F = Female, M/F – Male/Female ratio,

* = Area in Km², ** Population Density – Persons/km².

Candidate site level detailed baseline database are presented in the **Annex 1**, while the summary is presented in Table 4, 5, 6, and 7

Table 4: Access conditions of the candidate Solar Farm Sites

SN	Name of the Project Site	Number of Access to the site	Remarks
1	Pharping Powerhouse	2 motor able road and 1 small road from where only bikes are accessed	1 motor able road from north region (graveled) one from western region (graveled) and one small road from southern part.
2	Kulekhani 2 Powerhouse	One motor able access road from west	The site is at distance of 2 km toward Daman from Bhaise
	Kulekhani 1 Reservoir area	One motor able access road from north east	The graveled road extends 5km along the eastern side of the Kulekhani Hydropower Reservoir up to the Markhu village. Around 20m motor able graveled access road extends from main road up to the site.
	Kulekhani 1B, Reservoir Area	One motor able access road from north	The site is at distance of 500m from the simlangbazartar, where the kulekhaniMarkhu

			road passes
3	Debighat	One motor able access road from North	The access road to site is gravel road from Trishuli to the project site
4	Panauti 1	1 foot trail	The access road to the site is foot trail that extends 150m south from main road
	Panauti 2	1 foot trail	From the access road, the sitelies at the south- western side about 200 m in distance
5	Sundarijal	One motor able access road from East	Site is near Sundarijal bus park at about 10 meter distance
6	Sunkoshi 1	One motor able access road from North east	About 1 kilometer far from PasangLhamu highway
	Sunkoshi 2	One motor able access road from North	About 40 meter far from Araniko highway
7	Trishuli	One motor able access road from East	About 1.5km from the Trishuli Bridge, 70m above the microbus park.

Source: Field Survey 2014

Table 5: Land Use of the Candidate Solar Farm Sites

SN	Name of the Project Site	Specific Land Use	Remarks
1	Pharping Powerhouse	Barren land	Majority portion of land is barren and covered by grasses
2	Kulekhani 2 Powerhouse	Barren land	Majority portion of land is barren and covered by grasses
	Kulekhani 1 Reservoir area	Residential area (for staff of NEA)	It is basically designed as a NEA staff colony that consists of staff quarters, NEA office, planted area with several variety of tree species, kitchen garden developed by NEA staffs and fallow land covered with grasses.
	Kulekhani 1B, Reservoir Area	Agricultural land	The proposed project site is the nursery of Nepal Electricity Authority, used for growing sapling of tree.
3	Debighat	Agricultural land	Five Rai family of vultar village have been practicing agriculture on the project site
4	Panauti 1	Barren land	Majority portion of land is barren and covered by grasses
	Panauti 2	Barren land	The site is devoid of forest & natural vegetation and other infrastructures
5	Sundarijal	Residential & agricultural land	Utilized by NEA staff member
6	Sunkoshi 1	Forest land	Planted by NEA in 2046 B.S
	Sunkoshi 2	Agricultural land	Utilized by Bhakta BahadurKhadka
7	Trishuli	Barren land	Site being used as store of worn out machineries.

Table 6: Nearest Settlement and Communities Candidate Solar Farm Sites

SN	Name of the Project Site	Distance from Nearest settlement	Name of the Nearest Settlements	Total HH	Population		Community Characteristics
					Male	Female	
1	Pharping Powerhouse	250 m towards south west from south western corner of site	Setidevi VDC, ward number 4	5	23	18	Majority of Newar community
		250 m towards east and south from eastern and southern corner of site respectively	Setidevi VDC, ward number 6	5	29	16	Settlement is mostly dominated by Chettri community
2	Kulekhani 2 Powerhouse	200 m north west from the site	Aapchaur	51	103	112	Settlement is mostly dominated by Magar community
	Kulekhani 1 Reservoir area	Adjacent to northern side	Markhu	48	113	123	Majority of Tamang community
	Kulekhani 1B, Reservoir Area	100 m west from the project site	Simlang	18	25	31	Majority of Newar community
		115 m north west of the site	Bazartar	16	21	23	Majority of Newar community
		130 m north of the site	Dhakyu	2	4	5	Majority of Newar community
3	Debighat	25 m north of the site	Manthala	56	178	178	Settlement dominated by Brahmin community
		200 m far north west of the site	Vultar	15	32	34	Settlement dominated by Rai community
4	Panauti 1	100 m far towards western side	Satyal Dada	50	100	90	Mainly Chhetri and Brahmin community
	Panauti 2	100 m far towards western side	Satyal Dada	50	100	90	Mainly Chhetri and Brahmin community
5	Sundarijal	Adjacent to South east of the site	Sundarijal	61	178	178	Settlement is mostly dominated by ethnic groups of Tamang.
6	Sunkoshi 1	Adjacent to East of the site	LapsiKhola	5	13	15	Settlement is mostly dominated by Chettri community
	Sunkoshi 2	Adjacent to East of the site	Aakar	3	9	10	Mixed type of settlement with ethnic groups of Chhetri, Brahmin, Tamang
7	Trishuli	200 m east from the site	Trishuli bazar	250	483	585	Majority of Tamnag community

Source: Field Survey 2014

Table 7: Built Infrastructures in the Candidate Solar Farm Sites

SN	Project Sites	Electric lines	Storm water drains and drainage	Water supply pipes through the sites	Wells, tube wells & tap	Other Structures	Religious structures
1	Pharping Powerhouse	-	-	-	-	1 cow shed 14 retaining wall	-
2	Kulekhani 2 Powerhouse	-	-	-	-	1 cowshed for cattle	-
	Kulekhani 1 Reservoir area	23 pole	-	-	-	46 house	-
	Kulekhani 1B, Reservoir Area	1 pole	-	-	-	1 house	-
3	Debighat	2 pole	-	-	-	-	-
4	Panauti 1	-	-	-	-	-	-
	Panauti 2	5 pole	-	-	-	-	1 krishna temple
5	Sundarijal	2 pole	-	-	1 tap	6 residential buildings 1 toilet 1 Building Block	-
6	Sunkoshi 1	3 pole	-	-	-	-	-
	Sunkoshi 2	1 pole	-	-	-	1 temporary stall	-
7	Trishuli	2 pole and 1 transmission pole	-	-	-	2 store building	-

Source: Field Survey 2014

Table 8: Numbers of Trees inside the Candidate Solar Farm Sites

SN	Name of the Project Site	Local Name of Tree species	Scientific name	Number
1	Pharping Powerhouse	Bakaino	Meliaazedarach	4
		Uttis	Alnusnepalensis	5
		Painyu	Prunuscerasoides	1
		Aangari	Melastomamelabathricum	1
		Hadibayer	Zizyphusincurva	1
2	Kulekhani 2 Powerhouse	Chilaune	SchimaWalichi	7
		Kutmero	LitseaMonopetala	2
		Sal	Shorea Robusta	3
	Kulekhani 1 Reservoir area	Kainyo	Wendlandiapuberula	132
		Kalki	Callistemon citrinus	112
		Salla	Pinusruxburghii	18
		Kapur	Cinnamomumcamphora	13
		Naspati	Pyruscommunis	21
		LaharePeepal	Populusdeltoides	7
		Uttis	Alnusnepalensis	14
	Dhupi	Cryptomeriajaponica	66	
	Kulekhani 1B, Reservoir Area	Naspati	Pyruscommunis	27
		Kaiyo	Wendlandiapuberula	5
		Khari	Celtisaustralis	2
Kafal		Myricaesculenta	1	

SN	Name of the Project Site	Local Name of Tree species	Scientific name	Number
		Salla	<i>Pinusruxburghii</i>	2
		Utis	<i>Alnusnepalensis</i>	3
		Laharepipal	<i>Populusdeltooides</i>	2
3	Debighat	Jamun	<i>Syzygiumcumini</i>	1
		Khayer	<i>Acacia catechu</i>	1
		Pipal	<i>Ficusreligiosa</i>	1
		Katahar	<i>Artocarpusheterophyllus</i>	1
		Sal	<i>Shorearobusta</i>	1
		Aap	<i>Mangiferaindica</i>	1
		4	Panauti 1	Nil
Panauti 2	Lapsi		<i>Choerospondiasaxillaris</i>	1
	Paiyu		<i>Betulaalnoides</i>	1
5	Sundarijal	Aru tree	<i>Prunuspersica</i>	3
		Naspati tree	<i>Pyruscommunis</i>	2
		Lapsi tree	<i>Choerospondiasaxillaris</i>	1
6	Sunkoshi 1	Sissau Tree	<i>DalbergiaSisso</i>	109
		Mauwa tree	<i>Madhucalongifolia</i>	4
		Amba tree	<i>Psidiumguajava</i>	1
		Chilaune tree	<i>Schimawallichii</i>	4
		Salla	<i>Pinusroxburghi</i>	1
		Swami tree	<i>Ficusbenjamina</i>	1
	Sunkoshi 2	Pipal	<i>Ficusreligiosa</i>	2
		Kutmero	<i>Litseamonopelata</i>	5
		Aru	<i>Prunuspersica</i>	2
		bamboo	<i>Bambusavulgare</i>	1 clump (around 30 in number)
7	Trishuli	Aap	<i>Mangiferaindica</i>	3
		Sisso	<i>DalbergiaSisso</i>	8
		Chuwa	<i>Phlogacanthusthysiflorus</i>	1
		Bhogote	<i>Maesamacrophylla</i>	1

Source: Field Survey 2014

Table 9: Nearest Educational and Health Institutions of the Candidate Solar Farm sites

SN	Project Sites	Educational Institution	Distance from site (m)	Health Institution	Distance from site (m)
1	Pharping Powerhouse	Setidevi Lower Secondary School	500 m	Setidevi health post	1000 m
2	Kulekhani 2 Powerhouse	primary care teaching center	10 m	Health post	1500 m
	Kulekhani 1 Reservoir area	Shree SaraswotiBalbodhini High School	200 m	Health post	700 m
	Kulekhani 1B, Reservoir Area	Shree Chandra primary school	200 m	Health post	500 m
3	Debighat	Mandredhunga Primary school	1000 m	Health post	3000 m
4	Panauti 1	Shree BalAdarsha High School	60 m	Primary Health Post	50 m
	Panauti 2	Shree BalAdarsha High School	70 m	Primary Health Post	60 m
5	Sundarijal	Okhareni Higher Secondary School	400 m	Nepal Medical Hospital	2000 m
6	Sunkoshi 1	Shree	600 m	Pangretar sub	800 m

SN	Project Sites	Educational Institution	Distance from site (m)	Health Institution	Distance from site (m)
		SetideviSharda Higher Secondary School		- health post	
	Sunkoshi 2	Shree SetideviSharda Higher Secondary School	800 m	Mankha Health post	600 m
7	Trishuli	TribhuvanTrishuli Higher secondary school	300 m	Private clinic	100 m

Source: Field Survey 2014

CHAPTER III: REGULATORY AND LEGAL FRAMEWORK

All investments under the GSEEP must be consistent with the applicable laws, regulations, and notifications of the GoN that are relevant in the context of the proposed interventions/activities. The NEA and the concerned line departments/agencies will ensure that the GSEEP investments proposed and executed under GSEEP are consistent with the regulatory and/or legal framework, whether national, districts or municipal/VDCs. Additionally, it is also to be ensured that activities are consistent with the World Bank's operational policies and guidelines. This section is not a legal opinion on the applicability of the law but serves as guidance in the application of the various laws and regulations to the current project context.

3.1 Key Applicable Social Laws and Regulations

3.1.1 Key Applicable National Social Laws and Regulations

There are a several laws addressing social issues in Nepal. The policies and legislative instruments relevant to the GSEEP are briefly highlighted in **Table 11**.

Table11: Applicable Social Policies, Acts, and Regulations

Act / Regulation	Salient Feature/s	Applicability
The Interim Constitution of Nepal 2063 BS (2007)	The interim constitution of Nepal, 2007 focuses on raising the standards of living of the general public. The Article 35 (1) asserts that; The State shall pursue a policy of raising the standards of living of the general public through the development of infrastructures such as education, health, housing and employment of the people of all regions, by equitably distributing investment of economic investment for the balanced development of the country.	Yes
National Foundation for Upliftment of Adivasi/Janjati Act, 2058 (2002)	Government of Nepal has identified and legally recognized 59 indigenous communities. They are officially referred to as Adivasi/Janajati in Nepali and Indigenous Nationalities in English as per the National Foundation for Upliftment of Adivasi/Janjati Act, 2058 (2002). One can find vast disparities in terms of socio-economic standing among the Adivasi and Janajati groups. According to Nepal Federation of Adivasi/Janajati (NEFIN) 10 of the 59 Adivasi/Janajati are "endangered", 12 "highly marginalized", 20 "marginalized", 15 "disadvantaged" and 2 are "advanced" or better off on the basis of a composite index consisting of literacy, housing, landholdings, occupation, language, graduate and above education, and population size.	Yes
ILO Convention on Indigenous and Tribal Peoples, 1989 (No.169)	In 2007, the UN Declaration on the Rights of Indigenous Peoples was adopted by the General Assembly. Nepal ratified ILO Convention No. 169 on September 14, 2007 (BS 2064/05/28). Article 1 of the convention provides a definition of tribal and indigenous peoples. Article 6 requires consultation with the peoples concerned through appropriate procedures and, in particular, through their representative institutions, whenever consideration is being given to legislative or administrative measures which may affect them directly. In Article 15, it states that indigenous and tribal peoples shall, wherever possible, participate in the benefits of natural resource utilization activities and shall receive fair compensation for any damages which they may sustain as a result of such activities. Article 16(2) clearly mentions that where the relocation of these	Yes. IAs indigenous peoples are present in the sub- project area, the convention requirements are applicable to the proposed project.

Act / Regulation	Salient Feature/s	Applicability
	<p>peoples is considered necessary, such exceptional measures and such relocation shall take place only with their free and informed consent.</p> <p>Where their consent cannot be obtained, such relocation shall take place only following appropriate procedures established by national laws and regulations, including public inquiries where appropriate, which provide the opportunity for effective representation of the peoples concerned.</p> <p>Article 16(3) mentions that, whenever possible, these peoples shall have the right to return to their traditional land as soon as the grounds for relocation cease to exist.</p> <p>Article 16(5) specifies the persons thus relocated shall be fully compensated for any resulting loss or injury.</p>	
Right to Information Act, 2064 (2007)	<p>The aim of this act is to make the functions of the state open and transparent in accordance with the democratic system and to make it responsible and accountable to the citizens. It intends to make the access of citizens to the information of public importance held in public bodies simple and easy and to protect sensitive information that could have an adverse impact on the interest of the nation and citizens.</p> <p>Clause 3 of the act ensures the Right to Information. It says that every citizen shall, subject to this Act, have the right to information and they shall have access to the information held in the public Bodies unless confidentiality has been maintained by laws.</p> <p>Clause 4 of the act describes the Responsibility of a Public Body to disseminate information. It mentions that each Public Body has to respect and protect the right to information of citizens. Public Bodies shall have the following responsibilities for the purpose of protecting the right to information of citizens: to classify and update information and make them public, publish and broadcast to make the citizens' access to information simple and easy to conduct its functions openly and transparently, to provide appropriate training and orientation to its staffs,</p> <p>Public Bodies may use different national languages and mass media while publishing, broadcasting or making information public. A Public Body shall arrange for an Information Officer for the purpose of disseminating information held in its office.</p> <p>The clause 7 of the act prescribes the Procedures of Acquiring Information. It states that a Nepali Citizen, who is interested to obtain any information under this Act, shall submit an application before a concerned Information Officer by stating the reason to receive such information. United Nations Declaration on the Rights of Indigenous Peoples shall be followed (as applicable)</p>	Yes

3.2 Applicable World Bank Policies

The World Bank's environmental and social safeguard policies (ten of them) are a cornerstone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to people and the environment in the development process. These policies provide guidelines for the identification, preparation, and implementation of programs and projects.

The following operational policies of the World Bank are relevant for GSEEP from an environmental and social viewpoint:

Table12: Safeguard Policies Triggered in GSEEP

Safeguard Policies Triggered by the GSEEP	Yes	Potential	No
Indigenous Peoples OP/BP 4.10	X		

Indigenous People (OP/BP 4.10)

Indigenous People (OP/BP 4.10) is triggered because of the presence of janajati in the project area (See section 3.1.2 for explanation). Dalits and other vulnerable groups are also present in the project area.

This policy states that any development process under World Bank financing should fully respect the dignity, human rights, economies, and cultures of Indigenous Peoples (IPs). The project should engage in a process of free, prior, and informed consultation with IPs that should result in broad community support to the project by the affected Indigenous Peoples.

Projects should include measures to avoid potentially adverse effects on the IP's communities or when avoidance is not feasible, minimize, mitigate, or compensate for such effects. They should ensure that the IPs receive social and economic benefits that are culturally appropriate and gender and inter-generationally inclusive.

3.3 Comparison of Government of Nepal and World Bank Policies

Table 13 presents a comparison of Government of Nepal and World Bank policies, and recommendations to bridge identified gaps.

Table 13: Comparison of GoN and World Bank Policies Gaps and Recommendations

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
D. Indigenous Community	<p>The Interim plan encourages each development program to incorporate infrastructure and income generation program targeted to indigenous community.</p> <p>NFDIN Act 2002, Local Self-Governance Act, 1999 and Tenth Plan (2007-10) and Three Year Interim Plan (2011-13)</p>	<p>Ensures free, prior, and informed consultation (FPIC) with the affected indigenous people to obtain broad community support to the project. Social Assessment will be carried out to identify potential effect and prepare plan to ensure that indigenous peoples receive social and economic benefits that are culturally appropriate.</p> <p>Nepal does not have a standalone policy on Indigenous Peoples and other vulnerable communities. These acts have been placed significant emphasis on delivering basic services to the disadvantaged and indigenous people, Dalits, women, disabled and other vulnerable groups</p> <p>These acts and plans include policies for the development of Adivasi/Janajati and other disadvantaged groups:</p> <ul style="list-style-type: none"> creating an environment for social inclusion; participation of disadvantaged groups in policy and decision making; developing special programs for disadvantaged groups; positive discrimination or reservation in education, employment, etc.; protection of their culture, language and knowledge; 	<p>Though GoN's interim plan encourages development programs to incorporate income generation schemes for IPs, there is no mention of broad consent from the IPs. At the same time GoN has also ratified ILO 169 and United Nations Declaration of Rights of Indigenous People (UNDRIP), and is in the process of preparing National Action Plan for implementation of these international commitments</p>	<p>Project will carry out free prior informed consultations with the indigenous community and other vulnerable communities to obtain broad consent for the project. Project will prepare Vulnerable Community Development Plan (VCDP) based on community needs of indigenous as well as other vulnerable communities.</p>

Category	GON Policy	World Bank Policy	The GAP	Recommendations to Bridge Gaps
		proportional representation in development process; and making the country's entire economic framework socially		

Indigenous Peoples and Vulnerable Communities Development Framework (IP-VCDF)

This Indigenous Peoples and Vulnerable Community Development Framework (IP-VCDF) is developed to guide the preparation of GSEEP investments to ensure better distribution of the benefits of the project activities with a focus on the *adivasi/janajatis* and other disadvantaged social groups located in areas in which GSEEP civil works take place. The IP-VCDF is developed based on the national policies/strategies as well as the World Bank's Indigenous Peoples Policy. The principal objectives of the IP-VCDF are to:

1. Ensure that the project engages in free, prior, and informed consultation with affected communities, leading to broad community support for the project, with particular attention to vulnerable groups;
2. Ensure that project benefits are accessible to the vulnerable communities living in the project area;
3. Avoid any kind of adverse impact on vulnerable communities to the extent possible and if unavoidable ensure that adverse impacts are minimized and mitigated;
4. Ensure vulnerable peoples' participation in the entire process of preparation; implementation and monitoring of the sub-project activities;
5. Minimize further social and economic imbalances within communities; and
6. Develop appropriate training / income generation activities in accordance to their own defined needs and priorities.

5.3.9.1 Relevant Policies on Indigenous People and other Vulnerable Communities

Nepal is a signatory to ILO convention on Indigenous and Tribal Peoples, 1989 (No.169). Besides that Nepal does not have a standalone policy on Indigenous Peoples. However in the Three Year Interim Plan (TYIP) (2007-2010), or the Tenth Plan, significant emphasis has been placed on delivering basic services to the disadvantaged and Indigenous People (IPs), women, disabled and vulnerable communities (VCs) such as *Dalits* and *Adhibasi / Janajati*. One of the main objectives of the Tenth Plan is the implementation of targeted programs for the uplifting, employment and basic security of *Dalits*, indigenous people and disabled peoples. The policy provision also outlines that the Government should pilot strong and separate packages of programs for the basic security of the vulnerable sections of society. The Three Year Interim Plan (TYIP) (2007- 2010) includes the following policies for inclusive development of *Dalits*, *Adivasi/Janajatis* and other vulnerable groups:

1. Creating an environment for social inclusion;
2. Participation of disadvantaged groups in policy and decision making;
3. Developing special programs for disadvantaged groups;
4. Positive discrimination or reservation in education, employment, etc.;
5. Protection of their culture, language, and knowledge;
6. Proportional representation in development; and
7. Making the country's entire economic framework socially inclusive.

The National Foundation for the Upliftment of *Adivasi/Janajatis* Act, 2058 (2002), the National Human Rights Action Plan 2005, the Environmental Act 1997, and the Forest Act 1993 have emphasized protection and promotion of vulnerable groups in general, IPs' knowledge, and cultural heritage in particular. In 1999, the Local Self-Governance Act was amended to give more power to the local political bodies, including authority to promote, preserve, and protect the IPs' language, religion, culture, and their welfare.

The World Bank policy on indigenous peoples emphasizes the need to design and implement projects in a way that fosters full respect for indigenous peoples' dignity, human rights, and cultural uniqueness and so that they:

1. Receive culturally compatible social and economic benefits, and

2. Do not suffer adverse effects during the development process.

5.3.9.2 Screening and Categorization of Impacts on IPs and VCs

These steps will be followed to assess impacts on IPs and VCs:

1. A social assessment will be carried out for the entire project at the beginning of the activities as part of the pro-poor participatory planning process (only for component 1)
2. Then a social screening will be carried out to determine whether IPs and VCs will be affected by the activities as part of the environmental and social screening for the GSEEP investments carried out at the identification stage

The screening will involve identifying IPs and VCs belonging to the area where the GSEEP investments interventions for component 1 activities will be undertaken, their population (number and ratio), and their characteristics as compared to the main population in the project area through primary and secondary data collection.

The social screening will provides the necessary information to determine impact including: (i) the beneficiary population living within the impact zone of the GSEEP component 1 investments (ii) the extent of land required (even temporary) and number of land owners affected (if applicable); (iii) impacts on poor and vulnerable groups including needs and priorities for social and economic betterment; (iv) other social impacts.

The screening report for each subproject will provide adequate information about the potential losses and damages to the vulnerable peoples and communities which will be crucial to decide whether further works regarding impact assessment and mitigation plans including preparation of abbreviated RAP are required or not,

GSEEP investments Component 1 will be categorized according to the level of impacts on IPs and VCs. The categorization will be determined by the type, location, scale, nature, and presumed magnitude of potential impacts on IPs and VCs. The GSEEP investments will be categorized as per the following table (**Table 19**) using the information in the IPs & Vulnerable Groups Impact Screening & Categorization Form presented in **Annex 6**.

Table 19: Categorization of Impact on IPs and VCs for GSEEP

Category	Determination of the type of Social Assessment Needed
Category A	GSEEP component 1 investments expected to have significant impacts ³ that require an Indigenous People (IP)/Vulnerable Group Development Program (VCDP)
Category B	GSEEP investments expected to have limited impacts that require specific action for IP/ Vulnerable Groups in the form of social action plans
Category C	GSEEP investments expected to have impacts on IP/ Vulnerable Groups and, therefore, do not require special provision for IP/ Vulnerable Groups

The impacts on IP/ Vulnerable Group will be considered 'significant' or Category A if the GSEEP affects positively or negatively:

1. Affects their customary rights of use and access to land and natural resources,
2. Changes their socio-economic status,
3. Affects their cultural and communal integrity,
4. Affects their health, education, livelihood, and social security status, and/or
5. Alters or undermines the recognition of indigenous knowledge.

In case of significant impacts (falling in categories A and B) on IPs and VCs, the PMT by itself or through the appointed consultant will submit the IP-VCDP to the World Bank for clearance. The Outline Structure of an IP - Vulnerable Community Development Plan is presented in **Annex 7**. Short IP-VCDPs prepared as a part of 'less impact' or 'no impact' category will be internally evaluated. The World Bank will periodically review and do random review of these documents.

5.3.9.3 Specific Measures to be followed while Dealing with Vulnerable Groups

Specific measures for vulnerable groups including indigenous peoples, *Dalits*, minor ethnic communities, women, and powerless communities are outlined below:

1. Ensure awareness raising, active participation and capacity building of the vulnerable communities
2. Ensure participation in awareness campaigns, project implementation and monitoring of vulnerable groups
3. Ensure equal wages for similar work during implementation
4. Launch project information campaign to inform the target groups about the key features of the project and the GSEEP investments interventions implemented.
5. Assess and analyze the presence of indigenous and Dalits in the areas where GSEEP component 1 investments are implemented
6. Treat and support indigenous people, Dalits and other vulnerable communities preferentially
7. Involve IPs and Dalits in beneficiary groups as needed to increase their participation.
8. Ensure the identified needs and priorities of vulnerable people are taken into account in the GSEEP investments interventions
9. Conduct project related meetings in indigenous and vulnerable community areas to encourage their participation. Ensure a quorum which includes representation from IP groups.
10. Encourage interventions providing targeted assistance/training aimed at vulnerable groups to enhance livelihoods and participation
11. Build capacity of indigenous peoples, Dalits and other vulnerable communities to enhance their knowledge and skills to participate in the project activities
12. Encourage capacity development through trainings on skill enhancement (agriculture, veterinary, vocational training in different fields) of local people as part of the GSEEP interventions.

CHAPTER VI: INFORMATION AND CONSULTATION FRAMEWORK

The information and consultation framework is intended to lay out the way in which information will be provided to the project implementers and beneficiaries and also how consultations will be held during GSEEP implementation. Its purpose is to ensure social and environmental issues are effectively addressed by the project in a transparent and participatory manner. The primary responsibility for the implementation of information and communication strategies lies with the PMT. The details are elaborated below.

6.1 Information and Consultation Framework for GSEEP

Effective public consultation will be needed from the earliest (planning) stages of the project. Input from relevant stakeholders will be essential especially during the identification of GSEEP investments, proposal preparation, and implementation phases.

6.1.1 Identify and Analyze Potential Stakeholders to Understand their Interest and Needs

Each stakeholders group plays a distinct role in the planning and implementation of the GSEEP. A comprehensive participatory consultation process will be an integral part of the Project and undertaken at the start of subproject planning and design to identify all potential project stakeholders along with their specific interests and needs. Stakeholders' identification, consultation and analysis will be continued throughout the project cycle and remain dynamic. The relevant types of stakeholders are the following:

1. Users and beneficiaries of the GSEEP;
2. People likely to be adversely affected by the GSEEP investments, directly or indirectly;;
3. Poor and vulnerable groups, women groups, and professional/occupational groups;
4. Government agencies, and government officials at national, regional, and ward level; and
5. National and international non-government organizations and donor agencies, community based organizations and community leaders.

6.1.2 Engage Stakeholders Systematically Throughout the Design and Implementation Stages

Communication and consultations should include, but not limited to, the identification and record of the following:

1. Identification of stakeholder groups to be engaged in participatory processes;
2. Specific decisions being made through participation, and consultation;
3. Anticipated roles and interests of stakeholder engagement at each stage of the project cycle;
4. How will participation be linked to social and gender strategy, management plans, resettlement planning and other National/Bank and safeguard requirements;
5. How will participation be used during implementation;
6. What participation methods will be used, including timeline, sequence and roles and responsibilities for participatory activities

Important aspects of the communication strategy include communication objectives; challenges and obstacles to achieving these objectives; target audiences; nature of communication messages; communication channels; and aspects required for successful implementation of the strategy such as timelines, responsibilities and resources.

All communication products targeting communities and their representatives including civil society groups and ward officials should be available in languages appropriate and understandable by the target audience.

6.1.3 Inform Stakeholders and Accountability Mechanism

Participation is central to the safeguard policy statements and will be facilitated, as and if required, in the project sites by PMT. Specific participation requirements related to the IPs such as broad-base indigenous consent (OP 4.10) need to be observed. Participation needs to be gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups.

6.2 Present Status of Consultations Completed at GSEEP

6.2.1 Consultations during Prefeasibility Study and Preparation of ESMF

Consultations with key stakeholders have been an integral part of the ESMF preparation. During the preparation of ESMF, a series of consultations was held at the candidate sites. The details are as follows:

GSEEP Site Identifier	Location	Date of Consultation
Pharping Powerhouse	Setidevi VDC ward no 6,4,5; Kathmandu	25/02/2014
Kulekhani 2 Powerhouse	Bhainse VDC ward no.3 Makwanpur	2/04/2014
Kulekhani 1 Reservoir area	Markhu VDC ward no 8 ; Makwanpur	2/04/2014
Kulekhani 1B, Reservoir Area	Markhu VDC Ward no 8; Makwanpur	3/04/2014
Debighat	Charghare VDC ward no.2 ; Nuwakot	5/04/2014
Panauti	Panauti municipality ward no 12, Kavre	24/03/2014
Panauti 2	Panauti Municipality ward no 12, Kavre	23/03/2014
Sundarijal	Sundarijal VDC ward no 9 ; Kathmandu	25/02/2014
Sunkoshi 1	Pangretar VDC ward no-5, Sindhupalanchok	27/03/2014
Sunkoshi 2	Mangka VDC ward no. 6 Sindhupalanchok	27/03/2014
Trishuli	Bidur Municipality ward no 10, Nuwakot	5/04/2014

The list of participants and outcomes of above consultation meetings are elaborated in Candidate site level baseline database in **Annex 1** of this ESMF. Such type of consultations, workshops, and interactions shall be continued during the GSEEP implementation cycle. This type of consultations will be the forum for sharing information about the project's objectives, scope, alternative design options, and stakeholders' perspectives regarding GSEEP.

6.2.2 Modes of Future Consultations

A range of formal and informal consultative methods will be carried out for component 1 and 2GSEEP investments including, but not limited to: focus group discussions (FGDs), public meetings, community discussions, and in-depth and key informant interviews; in addition to the socio-economic surveys required as part of the project M&E framework. Consultations will be held with special emphasis on vulnerable groups. Encouraging public participation in consultations informs the public and serves as a venue for the public to express their opinion on priorities which the Project should address.

The key stakeholders to be consulted during GSEEP investments, RP/IP&VCDP implementation, and program implementation include:

1. all Affected Persons (APs,) including vulnerable households (AdivashiJanajati and disadvantageous groups);
2. project beneficiaries;

3. political party representatives, community leaders, and representatives of community based organizations; representatives from recipient wards
4. local NGOs;
5. Officials of NEA and relevant government agency representatives.

In the local cultural and social set up women do not play an active part in decision-making regarding energy services and their standards, although women with relatively higher awareness level (e.g., social mobilizers, GoN employees, health workers, teachers, etc.) manage to express their concerns. Ideally separate meetings will be held for women.

The PMT will ensure that views of stakeholders, particularly those who are vulnerable, related to the project are looked into and addressed. The PMT will ensure that stakeholders consulted are informed of the outcome of the decision-making process, and will confirm how their views were incorporated.

6.3 Information Disclosure and Dissemination

This ESMF will be made available in Nepali language to GSEEP component 1 and 2 candidate sites. Copies of these documents will be provided to the stakeholders upon their request and payment of minimum charge for producing the document... The draft and final ESMF will be disclosed in the websites of NEA and made available to concerned DDC/VDCs/Municipality. Information dissemination and consultation will continue throughout program implementation.

For component 1 and 2 GSEEP investments, information will be disseminated to local candidate sites at various stages. In the initial stage, the NEA will be responsible for informing potential candidate sites and the general public of the project about the components of the project through leaflets and publication in local media outlets and newspapers. The PMT will conduct consultations and disseminate information to all stakeholders during these initial stages to create awareness of the project.

CHAPTER VII: GRIEVANCE REDRESS MECHANISM

Through a participatory process, grievances are expected to be minimized. However, it is necessary to establish an effective grievance redress mechanism to address complaints/grievances that may arise related to the project in general including but not limited to environmental and social issues. Any grievances and objections will be referred to the project Grievances Redress Committee (GRC).

The structure of GRC shall be as follows:

1. Project Manager, PMT; Chairperson of GRC
2. Candidate Site manager: Member secretary of GRC
3. Representative from candidate site , member of GRC
4. Representative from VDC/Municipality of the candidate project site, member of GRC

The GRC needs to be established as soon as the Project is effective. A complaint cell will be established under the site management office and at central PMT office to collect complaints and transmit them to the GRC. The affected persons/communities can register their grievances through multiple ways including locked complaint boxes at the site project office or at central PMT office that can only be opened by a designated person, an email address, a designated telephone number, and submission of complaints in the VDCs etc. Any affected family or person can approach the GRC directly regarding environmental and social issues including temporary impacts and impacts during construction. Handouts providing details of - grievance filing and redressing mechanism will be distributed through the candidate project office. All cases will be registered, categorized and prioritized by the complaint cell. The GRC will meet in a monthly basis to discuss the petitions submitted by the people/community. If any member (including PMT manager) is concerned, then the grievances will be forwarded to the NEA CEO for needed action. The GRC will be regularly supervised by the project, including reviews of documentation.

GRC will have its own bye-laws.

The functions of the GRC will include: (i) to redress grievances of project affected persons (PAPs) in all respects; (ii) rehabilitation and resettlement assistance and related activities; (iii) GRC will only deal/hear the issues related to R&R and individual grievances; (iv) GRC will give its decision/verdict within 15 days after hearing the aggrieved PAPs; (v) final verdict of the GRC will be given by the Chairman/Head of GRC in consultation with other members of the GRC and will be binding to all other members.

CHAPTER VIII: MONITORING AND EVALUATION

8.1 Monitoring and Evaluation

A Monitoring & Evaluation (M&E) system will be established for the project, and safeguard compliance will be integral part of the project M&E. Both an internal and periodic external monitoring is proposed to ensure ESMF implementation. Internal monitoring will be carried out by the candidate site Management Office regularly and periodically by central PMT office, focusing on outcomes, outputs and implementation progress for each GSEEP candidate sites and components. The candidate site management office will submit to central PMT office NEA and World Bank regular bimonthly (once in two months) reports during implementation.

Similarly, periodic external monitoring will be carried out by independent consultant or agency using quantitative and qualitative methods and review of information and site visit.. The ESMF evaluation will be mid-term and end term and both have to be third party evaluation.

The table showing indicators, methods, and responsibilities for social and environmental safeguard monitoring in GSEEP is highlighted in **Table 23**.

Table 23: Indicators, Methods, and Responsibilities for Social and Environmental Safeguard Monitoring

Indicators	Methods	Responsibility
Number of land and property owners affected by subprojects	Review report, on the group field verification	Candidate site Management Office
Adherence to ESMF requirements including number of screening carried out for subproject selection	Review of report, direct observation	Candidate site Management Office
Adherence to mitigation measures (social and environmental) during planning and design (preparation of documents)	Review of report, field verification	Candidate site Management Office
ESMF requirements incorporated in tender and bidding documents as needed	Review of tender/contract document	PMT/ Consultant
No. of complaints filed and grievances handled/ managed	Review periodic reports	PMT/ Consultant
Mitigation measures deployed to address the adverse impacts and enhance beneficial impacts including compensation payment, R&R assistances, skill training and livelihood restoration of APs	Review periodic reports, site visit and consultations	PMT/ Consultant
Use of internal and external/ independent experts/ agency for monitoring and reporting	Review of contract documents and published/ unpublished reports	PMT/ Consultant

Responsibility of Monitoring: The environmental and social expert of PMT is responsible for central level periodic internal monitoring of ESMF. The mid-term and end term monitoring shall be done by external experts.

CHAPTER IX: CAPACITY BUILDING

NEA has its own Environmental and Social Studies Department (ESSD) and has experience with the implementation of World Bank-funded projects. However, due to large numbers of sub-projects within NEA, ESSD often falls short of required human resource capacity to design and implement ESMF. It is therefore, the ESMF has included capacity strengthening measures to the members of PMT and Manager of Candidate Site as installing a solar farm is a new intervention for NEA.

9.1 Training

Training is an important component for developing capacities. Appropriate and timely training to the officials with regard to various issues can bring a positive change in the functioning of the staff. Apart from training in generic areas such as human resource management, information management, government functionaries require training in handling certain specialized tasks pertaining to environmental and social issues. The Project's consultant will identify the training need assessment for PMT and staff of Candidate Sites and suggest the training packages including their modality of operation.

Potential training areas are:

1. General Introduction to EA and adverse social and environmental impacts;
2. Orientations on ESMF and awareness raising about Project and management/ mitigation of impacts;
3. Orientations on legal requirements including grievance filing by APs;
4. Preparing EMPs/Social Action Plans through participatory approach;
5. Hazardous waste management, including handling, storage and disposal, and
6. Construction related hazards in GSEEP and related occupational and safety issues and their management.

9.2 Training on Preparing Communication Strategies

A well-developed communication strategy needs to be in place to realize better results and outcomes with effective implementation of the project activities. The PMT will have to develop and effectively implement their own consultation and communication strategy. Successful implementation of GSEEP components would depend, to a large extent, on the ability to maintain close contact with the APs, communities and other stakeholders in the candidate project sites. For this purpose, the PMT central office and site office needs to develop consultation and communication strategies and materials to help improve better communication and understanding of social problems, awareness raising about project impacts and, , effective conflict resolution and grievance redressing. Training modules may be developed to help PMT central and site office draft and implement appropriate consultation strategies. Project's Experts will assist the PMT in preparing and imparting training.

9.3 Information Dissemination and ESMF Trainings

Prior the beginning of the work, ESSD/NEA will develop an ESMF information packages and disseminated in the stakeholders of project sites. The packages include the ESMF requirements, roles and responsibilities of implementing agencies, contractors. The ESMF training will be provided to ESSD/NEA staff and contractors prior the beginning of the construction. The details of dissemination and trainings are highlighted below (**Table 24**):

Table 24: ESMF Training Package and Orientation Training Responsibility and Costs

S.N	Particulars	No of training	Responsibility	Tentative Cost	Remarks
1	ESMF information package preparation and	10	ESSD/or consultant	100000.00 100000.00/training	

S.N	Particulars	No of training	Responsibility	Tentative Cost	Remarks
	information dissemination				
2	ESMF orientation training	2 nos	ESSD/or consultant	300000.00 (Rs 150000.00 each training)	Participants includes site mangers and contract's representative

9.4 Institutional Arrangement for ESMF Implementation

Envisaged institutional arrangements for ESMF implementation is presented in the flow diagram below.

