

**REPUBLIC OF THE UNION OF MYANMAR**

**Myanmar National Electrification Project  
Environmental and Social Management Framework**

DRAFT  
April 2015

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## Abbreviations

ADB	Asian Development Bank
CDD	Community Driven Development
CERC	Contingency Emergency Response Component
CPF	Country Partnership Framework
DFID	Department for International Development
DP	Development Partner
DRD	Department for Rural Development
EI	Earth Institute
EMP	Energy Master Plan
EMR	Enlightened Myanmar Research
ESE	Electricity Supply Enterprise
ESMF	Environmental and Social Management Framework
FGD	Focus Group Discussion
GoM	Government of Myanmar
GRS	Grievance Redress System
HH	Household
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFC	International Finance Corporation
IPP	Indigenous Peoples Plan
IPPF	Indigenous Peoples Planning Framework
JICA	Japan International Cooperation Agency
KII	Key Informant Interview
kWh	Kilowatt hour
LV	Low Voltage
MEPP	Myanmar Electric Power Project
MFLRD	Ministry for Livestock and Rural Development
MIGA	Multilateral Investment Guarantee Agency
MOAI	Ministry of Agriculture and Irrigation
MOECAF	Ministry of Environmental Conservation and Forestry
MOEP	Ministry of Electric Power
MV	Medium Voltage
NEMP	National Electricity Master Plan

NEP	National Electrification Plan
OBA	Output Based Aid
OP	Operational Policy
PFM	Public Finance Management
PMO	Programme Management Office
PSIA	Poverty and Social Impact Assessment
PV	Photovoltaic
REAM	Renewable Energy Association of Myanmar
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SG	Safeguards Specialist
SHS	Solar Home System
SME	Small and Medium Sized Enterprise
SRE	Self-Reliant Electrification
TA	Technical Assistance
UHC	Universal Health Coverage
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WBG	World Bank Group
YESB	Yangon Electricity Supply Board

## 1. Executive Summary

Executive Summary: TO BE COMPLETED - will include a page or two summarizing the project, safeguards requirements, explaining the framework approach and the why and what of this ESMF document, and finally how following the ESMF, safeguards will be organized by PMOs on a subproject by subproject basis.

## 2. Background

Myanmar energy consumption is among the lowest in the world. About 70 percent of the population has no access to grid-based electricity services, and the consumption per capita is 160 kWh per annum – twenty times less than the world average. Electricity consumption is growing fast in Myanmar. The peak load demand reached 2,100 mega-watts (MW) in 2014, growing on average 14 percent per annum in the past five years. Electricity shortages and supply disruptions remain prevalent in the country. Accumulated delays in investments in power infrastructure, over-reliance on seasonal hydropower production, together with a rapid increase in electricity demand, which tripled over the last decade, results in large electricity shortages which peaked at about 30 percent of power demand in 2012-2013. The energy sector institutional and regulatory framework is fragmented, particularly in rural electrification.

The proposed World Bank supported National Electrification Project aims to help scale-up access to electricity and support the implementation of the Government's National Electrification Plan (NEP), which aims for universal access to electricity by 2030. The project is an essential element of the joint World Bank Group (WBG) engagement in the energy sector. The sector is one of key drivers of economic growth and poverty reduction in Myanmar, but also a source of public frustration due to lack of access and poor reliability of power supply. The joint WBG program includes on-going and future support for institutional development and capacity building, public and private sector investments in generation, transmission and distribution, hydropower and gas subsectors. Together these sequenced interventions support the WBG twin goals of reducing extreme poverty and increasing shared prosperity in an environmentally and socially sustainable manner.

The Project is funded by the World Bank through an International Development Association (IDA) loan of up to US\$ 400 million over fiscal years 2016-2020, implemented by the Ministry of Electric Power (MOEP) and Ministry of Fisheries, Livestock and Rural Development. The expected results include new household and community electricity connections in urban and rural areas across the country. Also, the project will help establish and support a coordinated sector-wide institutional framework for the implementation of a national electrification program and strengthen the institutional capacity of implementing agencies, including both public and private sector organizations active in the grid rollout and off-grid pre-electrification.

The project is intended to not only improve the well-being of the population by better lighting and telecommunications, but also enable income generation opportunities and enhanced productivity. It will prioritize connections for health clinics and schools to maximize developmental impacts.

The Project is intended to establish the basis for sustained engagement of the WBG in supporting public and private sector investments needed to achieve universal access to electricity in Myanmar by 2030, as well as to strengthen the institutional capacity of GoM. It is expected that the programmatic engagement will comprise three phases with the first phase covering fiscal year 2016-2020. In addition to working with the public and private sector investors, the joint WBG energy team will work closely with all development partners (DPs) active in the power sector (ADB, JICA, KfW, DFID, Norway, Australia, etc.). The NEP is open for other DPs to join with parallel financing. Such a coordinated, sector-wide approach is considered the most effective to deliver benefits of electrification.

### 3. Project description

The NEP has the following components:

#### *Component 1: Grid rollout [up to US\$ 300 million].*

The grid component will support the purchase of equipment to extend distribution networks currently operated by the Yangon Electricity Supply Board (YESB) and Electricity Supply Enterprise (ESE) and connect communities identified in the National Electrification Plan as closest to the existing national grid and thus on the least-cost path for the grid rollout.

This component will include purchase of equipment to:

- Expand existing Medium Voltage (MV) substations and construct new MV substations;
- Construct new or rehabilitate existing MV lines, Low Voltage (LV) lines and MV/LV transformers; and
- Connect households with service lines and meters.

MOEP Project Management Office manages this component, working closely with ESE, YESB and other partners.

International Development Assistance (IDA) funding will finance procurement of goods (transformers, poles, conductors, cables, meters and auxiliary equipment), which ESE and YESB will be responsible to install. The International Finance Corporation (IFC) may support private sector participation in installation, in a manner to be determined.

#### *Component 2: Off-grid pre-electrification [IDA US\$ 80 million].*

The off-grid component will target those communities located outside the reach of the existing national grid or unlikely to receive grid-based access in the next 10 years. This component will be based on application of mini-grids and household energy systems, including solar photovoltaic (PV) systems, mini-hydropower (not expected to exceed one megawatt), wind, diesel and hybrid systems (e.g. diesel/solar). MLFRD is responsible for off-grid rural electrification through its national and sub-national Department for Rural Development (DRD) offices.

#### *Component 3: Capacity building and technical assistance [IDA US\$ 20 million].*

This component will provide Technical Assistance (TA), capacity building and advisory support to Government agencies at all institutional levels (union, state/ region, and district) involved in electrification planning and implementation, technical design, economic and financial analysis, environmental and social impact management, monitoring and evaluation, as well as procurement and financial management.

For the grid component, TA is expected to support development of:

- design standards;
- technical specifications and standard procurement packages;
- project design for the balance of the project;
- project management and implementation support including the management of safeguards compliance; and
- extensive training and capacity building on all planning, engineering and commercial aspects.

For the off-grid component, TA is expected to support development of:

- technical and financial support to local technical advisors who operate at district or township level assisting villages with technology choice decisions, pre-feasibility studies, and project oversight;
- support for feasibility studies and business plans for village mini-grids;
- technical and business development support for companies that manufacture, install, and maintain renewable energy systems;
- support to DRD on technical specifications, procurement documents and bid evaluations, project management and implementation, including the management of safeguards compliance;
- assistance to the financial sector to adopt/adapt mechanisms for consumer and supplier financing
- extensive training and capacity building on all planning, regulatory, policy, engineering and commercial aspects.

*Component 4: Contingent Emergency Response [US\$ 0 million].*

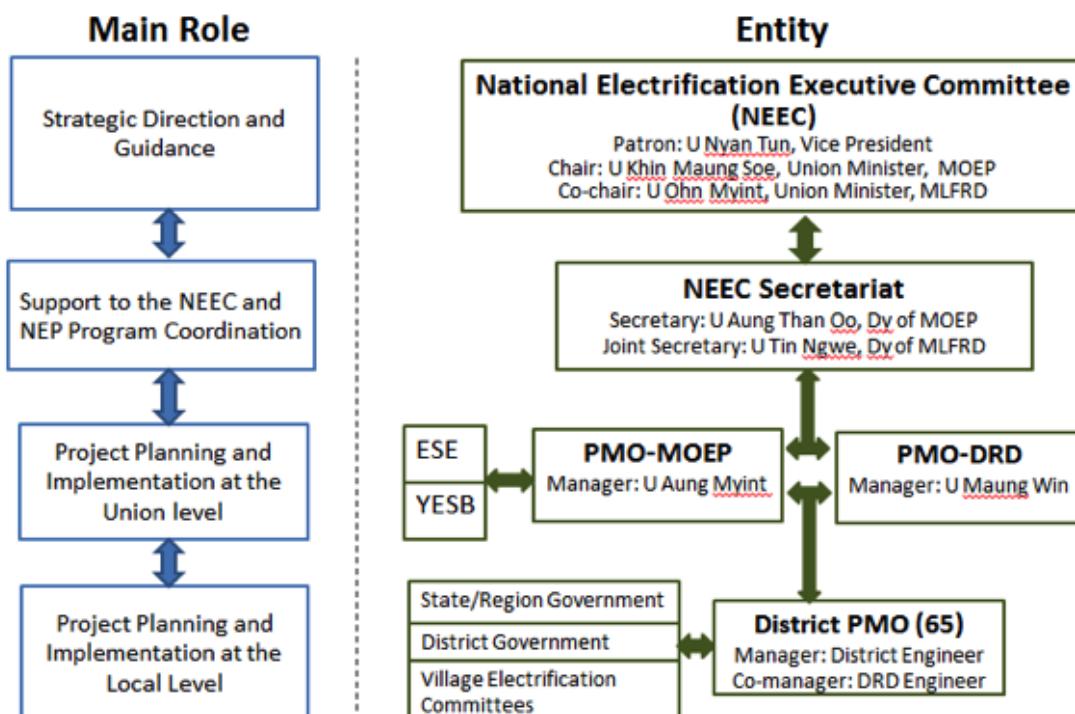
The objective of this “zero component” is to allow a rapid reallocation of IDA credit proceeds from other components to provide emergency recovery and reconstruction support following an adverse natural disaster event. This component would finance public and private sector expenditure on a positive list of goods and/or specific works, goods, services and emergency operation costs required for Myanmar’s emergency recovery. A Contingency Emergency Response Component (CERC) Operational Manual will apply to this component, detailing financial management, procurement, safeguard and any other necessary implementation arrangements.

## 4. Institutional Arrangements for Project Implementation

### Overall NEP Institutional Arrangements

Following the NEP recommendations, the government has established a National Electrification Executive Committee (NEEC) under the patronage of the Vice President through a decree issued on August 27, 2014. NEEC is chaired by the minister of MoEP and co-chaired by the minister of MLFRD. Also, a permanent NEEC Secretariat has been established in MOEP and MLFRD, overseeing Project Management Offices (PMOs), which are responsible for the technical activities carried out by ESE, YESB and DRD. The Figure below shows the institutional implementation framework and responsibilities allocated to each level.

**Figure 4.1: NEP Institutional Implementation Framework**



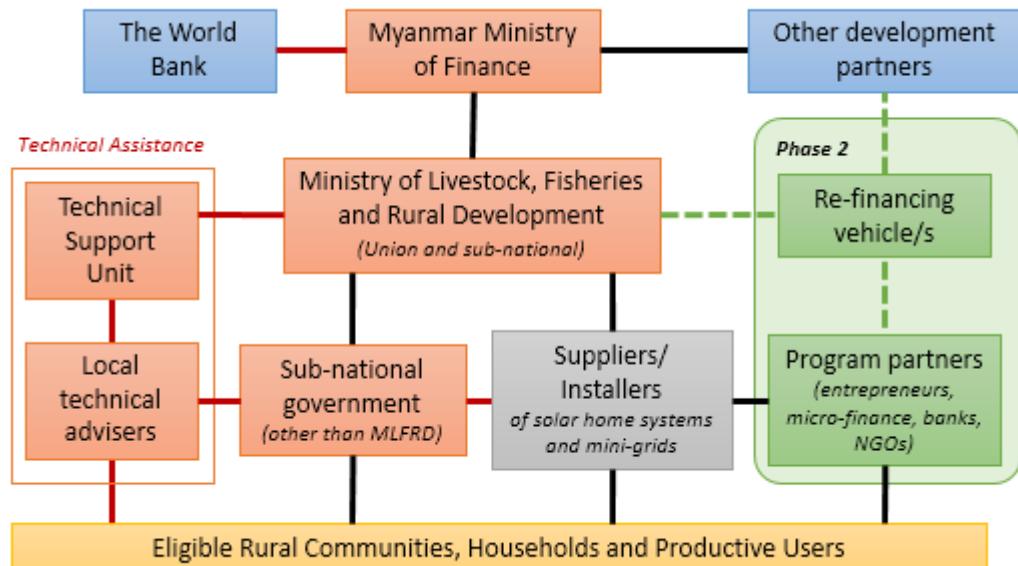
The NEEC Secretariat would be informed and engaged regularly in the implementation of the ESMF as part of general reporting of project implementation. Within the MoEP and MFLRD (DRD), the Executive Committee, consisting of the MoEP and MFLRD Union Ministers and other senior officials would have overall oversight responsibility of the proposed operation, including the ESMF, and would be informed regularly about overall implementation.

As outlined within Figure 4.1, the Union-level PMOs would be responsible for project planning and implementation at the union level, while local level project planning and implementation will be led by the District PMOs.

## Off-Grid Program Institutional Arrangements

The institutional framework is currently being further developed for the off-grid, down to village level. Figure 4.2 below shows the current proposed implementation framework.

**Figure 4.2: Electrification Program Off-grid Component Design Proposal (2015-2020)**



The NEP Off-grid component intends to provide substantial technical assistance to overcome limitations in access to knowledge and technology, inadequate capabilities of businesses and government, poor quality of products and services, low consumer awareness and knowledge, among others.

The Project will provide substantial technical assistance to overcome limitations in access to knowledge and technology, inadequate capabilities of businesses and government, poor quality of products and services, and low consumer awareness. At the township and village level Local Technical Advisors (LTA) comprise local NGO/CSOs and consultants collaborating with local government (especially but not exclusively DRD staff). LTAs provide guidance to village communities and townships in selecting and developing appropriate off-grid electrification solutions.

A Technical Support Unit (TSU) at the Union level with international and national expertise will provide technical backstopping to the local technical advisors, as well as support policy and regulatory development. The TSU will assist the financial sector to adopt/adapt mechanisms for consumer and supplier financing and provide trainings to improve their capacity to assess the creditworthiness of off-grid electrification projects. For state DRD offices the TSU will develop and disseminate streamline contracting and procurement processes, support DRD in consumer information campaigns, monitoring and evaluation, and assist in program management. The TSU will assist private sector equipment suppliers and installation companies through capacity building and training on technical as well as business development topics

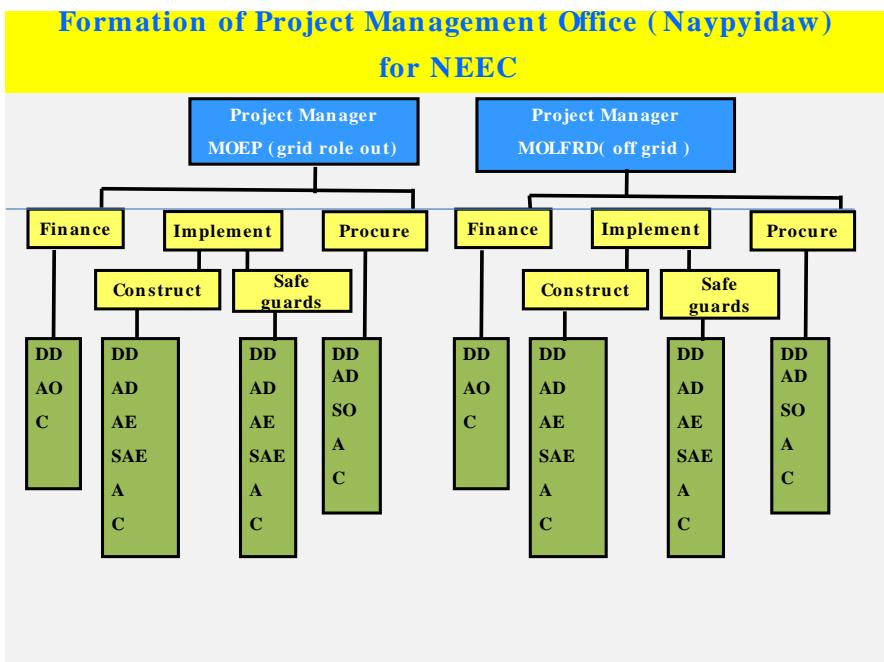
### **Institutional Arrangements for environmental and social performance**

The two implementing agencies—MoEP and MLFRD, through their respective PMOs—will be ultimately responsible for the environmental and social performance of the NEP and the subprojects that are implemented with the support of the NEP. The PMOs will be adequately staffed for this purpose with environmental and social safeguards officers. For each subproject, once it has been identified, the responsible PMO (under MoEP or DRD) will clarify tasks and responsibilities regarding implementation of the subproject (e.g. operators, ESE/YESB or villages). The PMOs will be responsible for creating a screening report and draft TOR for ESMP or ESIA and requirements to prepare a Resettlement Action Plan (RAP) and/or Indigenous Peoples Plan (IPP), as needed. The resulting ESMP or ESIA, and RAP and/or IPP if needed, have been consulted with the public and stakeholders as required, have been made available to the public and will also be submitted to the World Bank. The PMOs are also responsible for submitting monitoring reports to the World Bank as established in this ESMF. Detailed procedures are provided in Section 8.

[ADD NUMBER OF STAFF]

### **Figure 4.3. Institutional Arrangements for NEP Environmental and Social Performance**

[TO BE REVISED AND IMPROVED.]



## 5. Relevant Environmental and Social Project Requirements

### 5.1. Environmental Legal and Institutional Framework

The GoM is currently in the process of updating and developing its environmental legal and institutional framework. Numerous challenges remain. Myanmar Environmental policies and laws are mostly sectoral and are gradually transitioning from a nature conservation focus to environmental mainstreaming into the economic and social development of the country.

Sector specific laws - where developed - regulate particular environmental aspects. Therefore, there are gaps in legislation that comprehensively regulate cross-sectoral aspects such as environmental impact assessment, waste management, involuntary resettlement, or particular measures for vulnerable groups such as ethnic minorities. Sectoral laws also produce overlapping of certain responsibilities. Myanmar is party to several international treaties, provisions of which are partially incorporated into domestic law.

The legal and institutional gap also extends into administrative and procedural structures, and capacity and resources to enforce such provisions. There is also a need for better coordination between sectoral ministries and between union and local government. The Government acknowledges the importance of environmental protection legislation and enforcement capacity to avoid ecological degradation.

Currently, there is no environmental and social impact assessment framework in Myanmar. The 2012 Conservation Law provides a general mandate to MOECAF to produce an ESIA system but, as of April 2015, specific ESIA procedures and guidelines by sector are pending. Myanmar Electricity Law (27 Oct 2014) states that in accordance with the Law for Environmental Conservation, Myanmar 2012, all electrification projects shall comply to environmental and social assessment work, impact mitigation works, compensation on affected losses, environmental conservation fund raising work shall be carried out by the respective ministry, district and regional government or respective federal government/department. Table 5.1 summarizes the main aspects of the draft EIA rules vis-a-vis the World Bank Operational Policy (OP) 4.01 procedures.

Table 5.1: National Draft EIA rules versus OP/BP 4.01 EIA requirements

Issue	Draft EIA Rules	OP 4.01
Screening	<p>Lists projects that require environmental examination including land use change, exploitation of resources for introduction of new species.</p> <p>MOECAF shall determine the format and timing of the reports. MOECAF will determine the type of environmental assessment required based on the environmental examination</p>	The Bank screens all projects and classifies them into one of four categories (Category A, B, C, and FI), depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts
Triggers	Projects with significant environmental impact	All projects financed by the World Bank. EA process depth will depend on the risk and impacts associated with the Project.
Responsibilities	Project proponent leads the EA process	Borrower leads the EA process

<b>Issue</b>	<b>Draft EIA Rules</b>	<b>OP 4.01</b>
Public participation	<p>MOECAF shall arrange as it deems necessary for Public Participation.</p> <p>In the process of approving the EIA report, MOECAF shall take into account suggestions from project affected people and civil society. However, the rules do not specify the process of receiving feedback or incorporating it into the proposed project.</p>	<p>For all Category A and B projects, during the EA process, the borrower consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental and social aspects and takes their views into account. The borrower initiates such consultations as early as possible. For Category A projects, the borrower consults these groups at least twice: (a) shortly after environmental screening and before the terms of reference for the EA are finalized; and (b) once a draft EA report is prepared. In addition, the borrower consults with such groups throughout project implementation as necessary to address EA-related issues that affect them.</p>
Disclosure	<p>The Project proponent shall disclose all relevant project information to MOECAF.</p> <p>No further requirement of disclosure to project affected people or civil society is made in the EIA rules.</p>	<p>The borrower provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted.</p> <p>Any separate Category B report is made available to project-affected groups and local NGOs. Public availability in the borrowing country and official receipt by the Bank of Category A reports, and of any Category B report, are prerequisites to Bank appraisal of these projects.</p> <p>Once the borrower officially transmits the Category A EA report to the Bank, the Bank distributes the summary (in English) to the executive directors (EDs) and makes the report available through its InfoShop. Once the borrower officially transmits any separate Category B EA report to the Bank, the Bank makes it available through its InfoShop.</p>
Screening	<p>Lists projects that require environmental examination including land use change, exploitation of resources for introduction of new species.</p> <p>MOECAF shall determine the format and timing of the reports. MOECAF will determine the type of environmental assessment required based on the environmental examination</p>	<p>If the borrower objects to the Bank's releasing an EA report through the World Bank InfoShop, Bank staff (a) do not continue processing an IDA project, or (b) for an IBRD project, submit the issue of further processing to the EDs.</p> <p>The Bank screens all projects and classifies them into one of four categories (Category A, B, C, and FI), depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts</p>

<b>Issue</b>	<b>Draft EIA Rules</b>	<b>OP 4.01</b>
EA Content	MOECAF determines the content of the EA report, which primarily includes assessment of direct impacts linked to project and description of mitigation measures (environment mitigation plan).	The EA needs to include assessment of project alternatives; cumulative impacts; specific mitigation measures and monitoring activities.
Monitoring	<p>MOECAF shall monitor project performance in accordance to the Environmental Management Plan (EMP).</p> <p>The Project proponent shall comply with the EMP and the terms included in the license throughout the lifetime of a project.</p> <p>If found in non-compliance, MOECAF shall impose penalties or suspend project construction or operation.</p>	During project implementation, the borrower reports on (a) compliance with measures agreed with the Bank on the basis of the findings and results of the EA, including implementation of any EMP, as set out in the project documents; (b) the status of mitigation measures; and (c) the findings of monitoring programs. The Bank bases supervision of the project's environmental aspects on the findings and recommendations of the EA, including measures set out in the legal agreements, any EMP, and other project documents

## 5.1. Physical Cultural Resources

The World Bank's policy on physical cultural resources (PCR) OP 4.11 is triggered to the project as PCRs may be present in subproject sites. PCRs are movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Their cultural interest may be at the local, provincial or national level, or within the international community.

Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Since the exact locations of the subprojects to be implemented are not known at this moment, a guideline for identification of physical cultural resources and determination of the suitability of the subprojects from the perspective of PCR is provided in Annex 2. The likely impacts to PCR for-typical activities of the subprojects are also discussed in Annex 2. The "Chance Find" procedure for protection of cultural property is presented in Annex 3, following the World Bank Operational Policy OP 4.11 physical cultural resources. Contracts for subcontractors should include "Chance Find" procedures.

**[ADD NATIONAL LEGISLATION ON PCR / Cultural Heritage]**

## 5.2. Land acquisition and Involuntary Resettlement

The project will finance distribution networks, including expansion of existing Medium Voltage (MV) substations and construction of new MV substations, (ii) construction of new MV lines, Low Voltage (LV) lines and MV/LV transformers. These investments have a minimal footprint, normally follow existing right-of-way and have some flexibility in terms of specific location to avoid land acquisition or loss of property.

However, some land acquisition or loss of assets may be needed for some subprojects, particularly in cases where new substations will be financed. Off-grid investments, such as mini-hydro systems may also have minor impacts. Since subprojects are not identified until project implementation a Resettlement Policy Framework has been prepared, providing guidance on the screening and planning process for subprojects concerning involuntary resettlement impacts (Annex 5). The RPF includes a protocol for voluntary land donations.

The legal framework for land in Myanmar is made up of at least 73 active laws, amendments, orders, and regulations passed under different governments. Analysis suggests that these often overlap, conflict with each other, or do not refer to preceding laws.<sup>1</sup> All land belongs to the state under the current legal system, and land users receive certificates from the Settlement Land Records Department.

The legal framework concerning land acquisition in Myanmar is evolving. In October 2014 the GoM released a draft National Land Use Policy (NLUP) and plans for a subsequent National Land Law, for public consultation. GoM has been developing the draft policy since 2012 through a multi-stakeholder consultation process. The draft policy aims to strengthen the government's mechanisms for handling land acquisition, compensation, relocation, and restitution.

The 1894 Land Acquisition Act remains the legal basis for land acquisition in Myanmar – however different regulations apply for different types of land and there are no comprehensive regulations related to land use rights, transfer of rights, land acquisition or resettlement issues. Section 23 determines suitable amounts of compensation to be made for affected persons when the land is acquired by the government. Detailed descriptions and procedures are mentioned in the Land Acquisition Directions. The Act and associated Rules (Land Acquisition Rules, 1932) further outline relevant procedures including for notice periods, objections of interested persons to acquisition, methods of valuation of land, temporary land occupation, court processes and appeals and acquisition of land for companies.

The Farmland Act of 2012 determines land use rights for farmland and granting of land use rights to eligible farmers. It allows the right to sell, mortgage, lease, exchange and gift whole or a part of the right to use the farmland. The law determines the formation as well as roles/responsibilities of farmland administrative bodies at various levels. The Farmland rules determine procedures such as the application for farmland registration and obtaining land use certificates; application of transfer of farmlands for other purposes; and indemnities and compensation.

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<sup>1</sup> Land Use Policy Reform in Burma: Engaging Stakeholders and Regional Lessons”, 24 March, 2014, United States Agency for International Development, <http://usaidlandtenure.net/commentary/2014/03/land-use-policy-reform-burmaengaging-stakeholders-regional-lessons>

The current national legislation regarding compensation for loss of land and assets, as described above, include some measures similar to key principles of World Bank OP 4.12 on Involuntary Resettlement. However, OP 4.12 is more detailed and includes a number of requirements not found in national legislation, such as preparation of a Resettlement Action Plan (RAP), consultations and public disclosure. For the NEP, all requirements of OP 4.12 apply and the Government of Myanmar agrees to waive any legal or regulatory provisions in contradiction to the requirements of OP 4.12 as established in the Resettlement Policy Framework (RPF), annexed to this ESMF, and to take actions necessary to ensure full and effective implementation of RAPs prepared in accordance with the RPF and OP 4.12. More description of the national legal framework is found in the RPF and should the draft Land Law be approved during project implementation a more detailed comparison to OP 4.12 should be undertaken and the RPF may be changed in agreement between GoM and the World Bank.

### 5.3. Ethnic Minorities

The Government recognises 135 separate ethnic groups referred to within the Constitution as “*national races*.” Major groups include Burman/Bamar, Shan, Karen/Kayin, Kachin, Chin, Rakhine, Mon and Kayah. The largest ethnic group is the Bamar (Burmese) people comprising about two-thirds of the population and who reside predominantly in the central and delta (seven) regions. Other *national races* or *ethnic minorities* account for about one third of the population and live mainly within the seven states (although not exclusively). Aside from the 14 States and Regions, there are five self-administered zones: Naga (Sagaing Region); Danu (Shan State); Pa-O (Shan State); Pa Laung (Shan State); and Kokang (Shan State). There is also one self-administered division: Wa (Shan State). These six self-administered sub-national units are recognised in the 2008 Constitution (section 56) and are the result of earlier ceasefire agreements. Myanmar’s ethnic minorities make up an estimated 30 – 40 per cent of the population, and ethnic states occupy around 57 per cent of the total land area along most of the country’s international borders.<sup>2</sup>

The 2008 Constitution provides equal rights to the various ethnic groups included in the term *national races* and a number of laws and regulations aim to preserve their cultures and traditions.<sup>3</sup> Myanmar national law sets

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<sup>2</sup><http://www.tni.org/sites/www.tni.org/files/download/accesdenied-briefing11.pdf>, accessed 09 March 2015

<sup>3</sup>Republic of the Union of Myanmar, Ministry of Health, *Myanmar Essential Health Services Access Project Community Engagement Planning Framework*

out rights of ethnic races or nationalities to representation in State parliament.<sup>4</sup> The National Races Protection Law, of February 2015, contains sections guaranteeing minorities the right to study their language and literature, practice other elements of their culture and maintain their traditions.<sup>5</sup>

The GoM generally uses terms other than ‘indigenous peoples’. In September 2007, Myanmar endorsed the United Nations Declaration on the Rights of Indigenous Peoples, which among other things provides indigenous peoples the right to free and prior informed consent and notes that “States shall consult and co-operate in good faith with the Indigenous Peoples concerned through their own representative institutions in order to obtain Free and Prior Informed Consent prior to approval of any project affecting their land or territories.”

The World Bank’s Indigenous Peoples policy (OP 4.10) generally applies to the 135 officially recognized *national races*, except for the majority Bamar group. The Community Engagement Planning Framework (IPPFIPP), annexed to this ESMF, provides more details on the application of OP 4.10 to NEP.

Since the project is country-wide and cover all States and Regions it will include areas with ethnic minorities or national races covered by OP 4.10. While ethnic minority communities would benefit from project activities, the project also presents risks and challenges concerning ethnic minorities, particularly in terms of ensuring that they will receive appropriate benefits. Investing in distribution networks and off-grid electrification in conflict or post-conflict areas where ethnic minority organizations provide parallel social services and community infrastructure also poses risks that require a good consultation and project management approach. Since specific project sites will not be identified during project preparation, these issues will be assessed and addressed at a subproject level during project implementation. An Indigenous Peoples Planning Framework has been prepared as part of the ESMF to provide guidance on the screening and planning process for subprojects, including requirements for site-specific social assessment and consultations and the preparation of site-specific Indigenous Peoples Plans to address particular issues concerning ethnic minorities (See Annex 4).

#### 5.4. Overview of World Bank Safeguard Policies Triggered

The proposed NEP triggers the following World Bank policies: Environmental Assessment (OP 4.01); Natural Habitats (OP 4.04); Physical Cultural Resources (OP 4.11); Involuntary Resettlement (OP 4.12) and Indigenous Peoples (OP 4.10). The World Bank has identified NEP as Category B as per OP/BP 4.01, as the

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<sup>4</sup><http://www.myanmar-responsiblebusiness.org/pdf/SWIA/Oil-Gas/11-Ethnic-Minorities-Indigenous-Peoples.pdf>, accessed 09 March 2015

<sup>5</sup> Myanmar Times, 23 January 2015, MPs prepare to debate proposed law on ethnic rights

safeguard impacts of the type of subprojects supported are site-specific, few are irreversible and mitigation measures can be designed to minimize and mitigate impacts during project implementation (see Table 5.2 for details). In addition to the mitigation measures described in this ESMF, a screening process is included to prevent the execution of subprojects with significant negative environmental or social impacts.

Table 5.2. World Bank Safeguard Policies Triggered and Explanation

Safeguard Policy	Triggered?	Explanation
Environmental Assessment	Yes	<p>The project will invest substantially in grid roll-out through the purchase of equipment including for MVsubstations (expansion of existing substations and new), MV/LV transformers, MV and LV lines, household connections, meters, and off-grid systems including solar PV systems, mini hydro power, wind, diesel and hybrid systems. Environmental impacts for grid extensions are related to works at substations and the installation of power lines, which for instance may require safe disposal of construction, old equipment and other waste. These substations are small and impacts are expected to be limited. Off-grid investments could include systems based on diesel generators, wind turbines and small scale hydropower expected not to exceed 1 MW. Possible impacts related for instance to fuel usage and installation of turbines in water streams would require environmental control measures but investments will not go beyond village level schemes (in principle less than 1 MW) and potential impacts are expected to be limited.</p> <p>In view of this, the project has been given a Category B classification under OP4.01. This ESMF provides for screening investments into the above described limited scope and avoiding significant impacts. Arguably, the single type of projects that could challenge the Category B classification could be the off-grid mini hydro-systems. Given that these systems remain below 1 MW, without a need for building significant reservoirs or land-take, it is not expected that these systems would require a different categorization.</p> <p>The Project will focus on building the capacity of staff, with strong mechanisms and procedures in place to screen, assess, plan and monitor the implementation of subprojects. This capacity will also be required to support applicants with the efficient preparation of proposals for subprojects. The implementation stage of the Project will also include the design of subprojects based on approved application for subprojects. Given this need to establish institutional arrangements and build implementation capacity first, all subprojects and equipment purchases will be determined during project implementation, this framework provides for the modalities of selection and implementation of equipment purchases and implementation of subprojects. The framework includes a Resettlement Policy Framework and an Indigenous Peoples Planning Framework. This ESMF also includes guidance in the form of an Environmental Code of Practice, and health and safety standards to be followed during project implementation based on the World Bank Group's Environmental, Health and Safety (EHS) Guidelines for Power Transmission and Distribution and including provisions for beneficiaries and worker health and safety. The ESMF provides guidelines for screening of all subprojects including procurement of goods that would result in investments, determination</p>

Safeguard Policy	Triggered?	Explanation
		<p>of requirements for assessment and preparation of further documentation in accordance with the World Bank safeguard policies including site-specific environmental and social management plans (ESMPs), Environmental and Social Impact Assessments (ESIA) and the implementation and monitoring of these. When needed, the ESMPs will include a Resettlement Action Plan and Indigenous Peoples Plan as described below.</p> <p>Social impacts have been assessed through the PSIA which has taking place in two phases. The first phase focused on generating an overall understanding of access to electricity (barriers to access in rural and urban areas and for poor and marginalized households in particular), uses of electricity, quality of service and affordability of new tariffs of April 2014. The PSIA phase 1 report was finalized in December 2014. The second phase (PSIA2) was initiated in January. The preliminary PSIA to inform this ESMF is available as a separate document. It analyzes potential project impacts and mitigations measures in view of OP 4.01, OP 4.10 and OP 4.12.</p> <p>Given the current lack of capacity with the implementing agencies and other parties that are expected to implement the project and investments in sub projects, a comprehensive safeguards capacity building program is required to prepare designated PMO staff and others for project implementation. PMO staff has received on the job training preparing this ESMF and undertaken part of the PSIA phase 2 analysis and consultations working alongside international and local safeguard consultants. This ESMF includes a training program for PMO staff and other project counterparts; it also includes technical assistance to assist the PMOs during project and ESMF implementation.</p> <p>In addition to subprojects that are implemented by ESE and YESB, it is expected that part of the subprojects' investments to be funded by the Project will be implemented by private investors / operators and local communities. The ESMF includes procedures for screening, impact assessments, planning, implementation and monitoring that differentiate [TO BE FINALIZED ONCE FINAL DESIGN AND INSTITUTIONAL ARRANGEMENTS HAVE BEEN FINALIZED] for the various categories of implementing entities. Since the Project in principle will only finance the purchase of goods, the ESMF procedures considers that these investments will be matched with funding from investors and local communities, as applicable, e.g.in-kind contributions to implement the project. All project funded activities, including the subproject</p>

Safeguard Policy	Triggered?	Explanation
		that are implemented by private parties, will be required to comply with the World Bank Safeguard Policies and this ESMF. <sup>6</sup>
Natural Habitats OP/BP 4.04	Yes	Significant impacts on natural habitats are not expected. However as specific subprojects and their locations are yet to be determined further information may be needed during implementation to ascertain specific impacts. This ESMF provides specific screening provisions to determine if natural habitats are an issue, and what environmental instrument is needed if the level of significance of the impacts is unknown. If the impacts were to be considered significant, the Project will not finance the particular subproject.
Forests OP/BP 4.36	No	This policy is not triggered as the Project is not expected to have impacts on the health and quality of forests, nor affect the rights and welfare of people and their level of dependence upon or interaction with forests, nor aims to bring about changes in the management, protection or utilization of natural forests or plantations. This ESMF provides for screening investments to avoid impacting the health and quality of forests.
Pest Management OP 4.09	No	This policy is not triggered. It is not practice in Myanmar to include pesticides in maintaining the right of way under transmission lines.
Physical Cultural Resources OP/BP 4.11	Yes	Since specific project investments are not known, it is not possible to rule out the presence of physical cultural resources. This ESMF provides for screening investments during project implementation and, when needed, including requirements as part of environmental assessment and ESMP, to avoid impacting physical cultural resources.
Indigenous Peoples OP/BP 4.10	Yes	The project is country-wide and covers all States and Regions, including areas with ethnic minorities who are covered by OP 4.10. Ethnic minorities in Myanmar live mainly, however not exclusively, in the seven States (Kayah, Kayin, Kachin, Chin, Mon, Rakhine, and Shan). Ethnic minority communities would benefit from project activities. However, the project also presents risks

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<sup>6</sup>Diversion of safeguard responsibilities to investors under the World Bank's Operational Policy on (OP 4.03) is not foreseen as the capacity concerning safeguards is not expected to be in place. Should this change during project implementation the ESMF may be revised in agreement between the World Bank and GoM.

Safeguard Policy	Triggered?	Explanation
		<p>and challenges concerning ethnic minorities, particularly in terms of ensuring that they receive appropriate benefits. Investing in distribution networks and off-grid electrification in conflict or post-conflict areas where ethnic minority organizations provide parallel social services and community infrastructure also poses risks that require a good consultation and project management approach. Since specific project sites will not be identified during project preparation, the ESMF include an Indigenous Peoples Planning Framework to guide the screening and planning process for subprojects, including requirements for site-specific social assessment and consultations and the preparation of site-specific IPPs to address particular issues concerning ethnic minorities. Electrification of the villages near the Thaton Power Station in Mon State, supported by the World Bank-financed Myanmar Electric Power Project, is a priority for electrification under the NEP Project once the power plant is upgraded (scheduled for 2017). An Indigenous Peoples Plan for Thaton and other subprojects in areas with ethnic minorities will be prepared during project implementation once site-specific information will become available with the investment proposals.</p> <p>A Poverty and Social Impact Assessment has been undertaken during project preparation to assess potential project impacts and risks as well as issues pertaining to accessibility, affordability, vulnerability, poverty, gender, productive uses and benefits related to electricity. The PSIA included social assessment requirements of OP 4.10, as well as OP 4.01, and has informed project design, the ESMF and the IPPF to address any particular issues concerning ethnic minorities. Thaton District and the villages near the power station supported by the Myanmar Electric Power Project was covered by the PSIA. Consultations were also undertaken in select villages in Chin and Shan States, and with civil society organizations, including ethnic minority organizations. The preliminary PSIA to inform this ESMF is available as a separate document.</p>
Involuntary Resettlement OP/BP 4.12	Yes	Since specific project investments are not known by appraisal, it is not possible to rule out that some subproject would involve involuntary resettlement in the form of land acquisition or loss of other assets. The project will finance distribution networks, including expansion of existing Medium Voltage (MV) substations and construction of new MV substations,(ii) construction of new MV lines, Low Voltage (LV)lines and MV/LV transformers. These investments have a minimal footprint, normally follow existing right-of-way and have some flexibility in terms of specific location to avoid land acquisition or loss of property. However, according to the PSIA some land acquisition or loss of assets may be needed for some subprojects, particular in cases where new substations will be financed or required for distribution systems financed by the project. Off-grid investments, such as mini-hydro systems may also have minor land acquisitions impacts. The PSIA also assessed common arrangements for village based compensation for loss of assets or voluntary donations of land for rural electrification infrastructure undertaken by village cooperatives and other private sector entities. A Resettlement Policy Framework has been prepared as part of the ESMF to provide guidance on the screening and planning process for subprojects concerning involuntary resettlement impacts and includes a protocol for voluntary land donations.
Safety of Dams OP/BP 4.37	No	The project interventions are not expected to require the construction of dams or impoundment structures, nor is it expected that they could cause impacts to

Safeguard Policy	Triggered?	Explanation
		existing structures as governed by this policy.
Projects on International Waterways OP/BP 7.50	No	The project interventions are small in nature and in scale not expected to cause any drainage or discharges to surface waters, nor entail any significant usage of surface water for cooling or other purposes, that would affect international waterways.
Projects in Disputed Areas OP/BP 7.60	No	The project interventions are not in disputed areas as defined by OP 7.60 and will be wholly within the borders of Myanmar.

## 6. Environmental and Social Management Framework Approach

### 6.1. Framework Approach

As the specific infrastructure and location of the grid extension and off grid electrification are not identified at this stage and specific subprojects for implementation are not known, a framework approach has been adopted to assess the potential environmental and social impacts and risks of the Project. This Environmental and Social Management Framework (ESMF) is provides general policies, guidelines and procedures to prevent or minimize environmental and social impacts for all components and subprojects.

The objective of the ESMF is that:

- Subprojects (e.g., distribution line, substations, solar panels, mini-grids) are formulated considering potential environmental and social issues, especially of those people who would be directly benefited or impacted by the proposed project;
- Subprojects are designed considering the unique socio-cultural and environmental situation prevailing in the areas where the specific project subproject would be implemented;
- Possible environmental and social impacts of subproject activities during both construction and operational phases are identified during project formulation and design, and appropriate mitigation/enhancement measures are devised and a monitoring plan prepared, as part of the overall environmental and social management instruments;
- Environmental and Social Management Instruments such as Environmental and Social Impact Assessments (ESIA), Environmental and Social Management Plans (ESMP), Resettlement Action Plans (RAPs), Indigenous Peoples Plans(IPP)and Environmental Codes of Practices (ECoP) are properly prepared and followed; and
- Project activities comply with the relevant World Bank Group Safeguard Policies, as well as National Regulation. As Myanmar legislative framework is expected to continue developing throughout the life of the Project, appropriate gap analysis will be carried out to fill the possible gaps between National Regulation and World Bank Group Safeguard Policies.

Under the Project, the two implementing agencies – MoEP and DRD, through their respective PMOs – are responsible for identification and screening of subprojects and their adequate environmental and social performance. More particularly, the PMOs will prepare a subproject description (see section 5), carry out an environmental/social screening and will assess the requirements for subsequent environmental and social management instruments (e.g. ESIA, ESMP, RAP, IPP).

In general, the environmental and social due diligence to be carried out by the PMOs for each subproject includes: (i) subproject description, (ii) identification of subproject area of influence; (iii) establishment of an environmental and social baseline against which impacts of the proposed subproject would be evaluated; (iv) assessment and evaluation of environmental and social impacts and risks of the subproject both during construction and operation; (v) carrying out public consultations, when applicable, and disclosure; and (vi) application of environmental code of practice (ECoP)<sup>7</sup> and/or identification of mitigation measures and preparation of environmental and social management plans (ESMP, RAP, IPP, as needed) including implementation arrangements, monitoring requirements, budgeting and grievance redress mechanism. This ESMF presents detailed guidelines for carrying out each of these activities.

The Project and this ESMF supports a consultative process with local communities and other relevant stakeholders. It supports decision making by allowing the public access to information on environmental and social aspects of the project and involving local communities in preparation of subprojects and their safeguard instruments when required, as included in World Bank Safeguard Policies, including for Environmental Assessment, Involuntary Resettlement and Indigenous Peoples (see Section 11 for details).

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<sup>7</sup>An Environmental Code of Practice (see Annex XX – TO BE DEVELOPED) has been prepared to manage minor environmental negative impacts associated with NEP subprojects. ECoP sets out environmental impacts and mitigation measures during construction. ECoP will be incorporated into bidding documents and/or contracts.

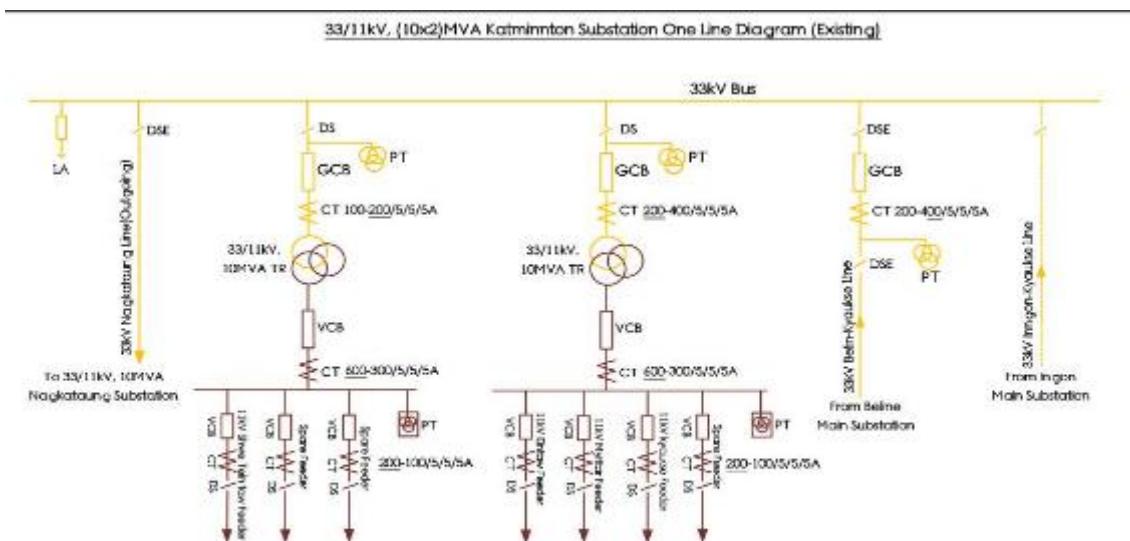
## 7. Description of typical infrastructure for subprojects

### 7.1. Grid Roll Out

#### Expansion of Existing MV Substations and Construction of MV (33/11 KV) Substation

The Project is financing equipment that will be used to expand existing MV substations and construct new MV substations. Then from these substations, distribution lines can be installed that can connect the national grid via distribution line infrastructure to a transformer and to a household. Existing substations will be expanded by: (i) Installing an additional set of relevant Transformer (for example installing an additional 10 MVA Transformer to a 33/11 KV Substation with a 10 MVA Capacity); (ii) Providing a set of substation extension Protection System (for example installing a 33 KV Protection System to a 33/11 KV Substation with a 20 MVA Capacity)

**Figure 7.1 Line Diagram of different units of a 33/11 KV substation**



Once land for the new Substation or its expansion is selected and acquired, the soil has to be investigated to assess its suitability for constructing infrastructure such as staff housing, control buildings and switch yard. Each new substation needs an estimated 1.2 hectare (3 acres). The civil construction works include the construction of the control room (building) along with the construction of the foundations for different equipment, followed by the construction of the boundary wall and the guard room.

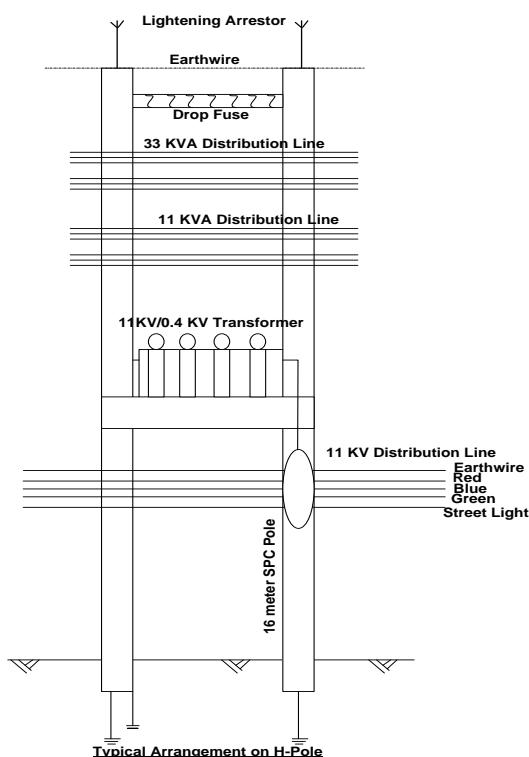
After manufacturing and shipment of the 33 KV auto reclosers (disconnecting switch DS), 11 KV auto reclosers and the 33/11KV single phase transformers, these are installed in the switchyard within the Substation complex. The incoming line, switchgears, transformers and outgoing lines are connected by 33 KV, 11 KV and 0.4KV cables along with the control cables both inside and outside the control building. Lightening arrestors as well as earthing cables need to be installed to prevent damage of equipment due to lightening during a storm event. The terminal structures for the 33 KV and 11 KV lines need to be constructed within the premises of the Substation for final connectivity with the distribution system.

## Construction of 33 KV and 11 KV Distribution Lines, LV lines and MV/LV transformers

The first step in constructing the distribution lines is conducting a survey of the probable routes. A topographical survey is often conducted along the selected routes to assess the need for ground modification and/or preparation. Spun Pre-stressed Concrete (SPC) poles are erected along the selected routes at designated intervals. The height of the poles depends on the supply power. Usually, 16 m poles are used for 33 KV distribution lines, which simultaneously extend the 11KV and 0.4 KV Lines. H- Poles are used to mount 11/0.4 KV transformers from which three phase lines are extended to the domestic users. Figure 5.2 below shows a schematic diagram of such an H-pole with the dual lines for 33 KV and 11 KV power distributions.

After procuring, the SPC Poles are stacked along the route at designated storage areas beside the road. A hydraulic jack and drilling rig equipped truck is generally used to install the SPC Poles. First, the existing short poles are pulled out and the exposed hole is enlarged and deepened by the truck-mounted drilling rig. The 16m SPC Poles (with two concrete blocks at the bottom) are inserted with the help of the hydraulic elbow-jack mounted on the truck. Following erection of poles, assortments are installed for extending the 33 KV, 11 KV and 0.4 KV lines. A copper wire is passed through the poles into the ground to secure earthing. Lightening arrestor is installed at the top. Drop fuses are mounted on top of the H-poles to prevent short-circuiting.

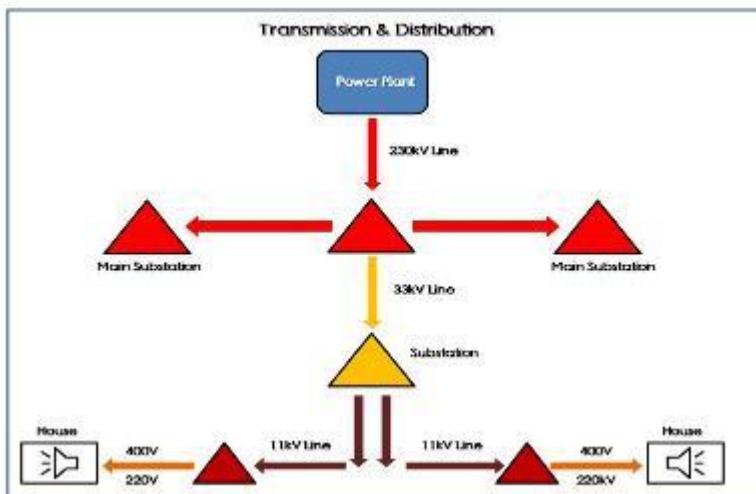
**Figure 7.2: Typical H-Pole Arrangement along 33 KV and 11 KV Distribution Lines**



Household Connections and meters

Household connections are distributed from step down transformers (11KV/0.4KV) which are mounted on H-Poles (Figure 5.2) from which three phase lines (400V/ 220V) are extended to the domestic users. Figure 5.3 shows a Typical Transmission and Distribution System to the Household Level electrification diagram. Before entering the household, a meter box is installed to monitor the electrical supply. A switch board with chain rover (switch) controls the electrical supply and cut off.

**Figure 7.3: Electrical Power Transmission and Distribution System**



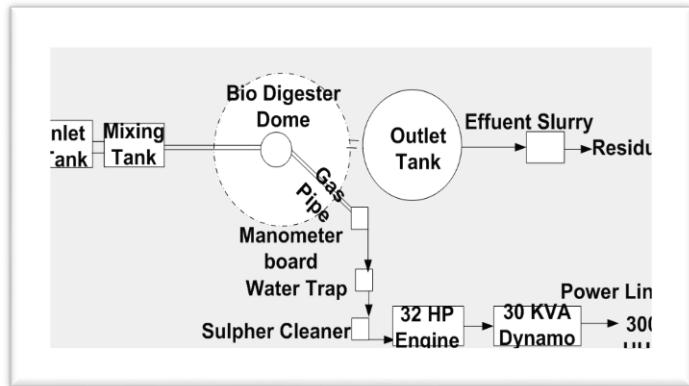
## 7.2. Off Grid Electrification

### Bio Gas Power Plant

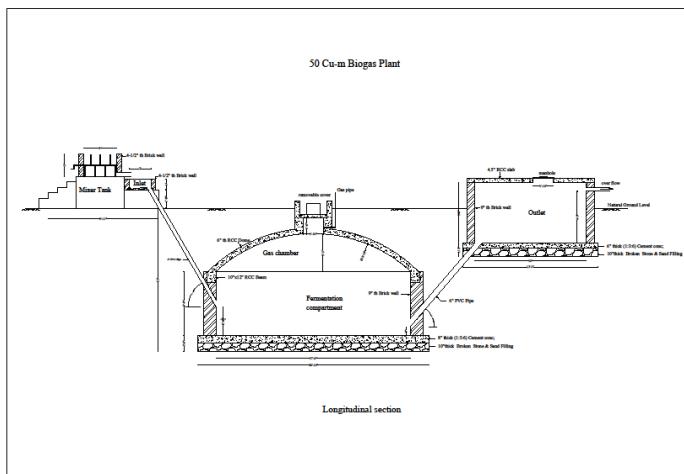
A Bio Gas Power Plant consists of a small anaerobic masonry digester constructed below ground level. The system is used to convert animal wastes and plant wastes through anaerobic digestion processes to produce energy that can be converted to electricity. A buried masonry anaerobic digester may generate Gas to lamps. There may also be cook stoves and possibly a small engine.

Dual biogas power plant consist of an inlet Tank (Mix Cow Dung with water at a ratio of 1:1, grinder blades, sieve), Bio digestion chamber, Anaerobic Digestion, gas storage with Dome shape, Methane (CH<sub>4</sub> 60-70%), outlet tank, effluent slurry, gas pipe, water trap, H<sub>2</sub>S cleaner, 32 HP Diesel Engine and 30 KVA Dynamo, Mixer, Panel board, Copper Wire 10G, Concrete Posts 7 meters height.

**Figure 7.4: Flow chart of the Bio Gas Plant**



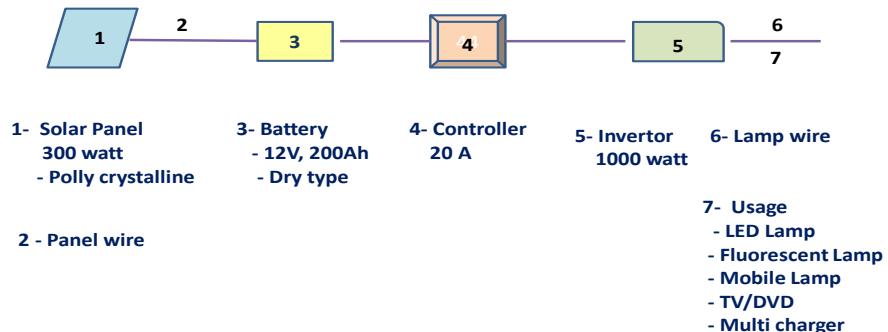
**Figure 7.5: Cross Section of Bio Gas Plant**



## Solar Home Systems

Solar Home Systems consist of a solar panel (0.02 – 0.05 KW) on a pole or on a house roof, battery, controller, inverter, and indoor wiring of bulb, lamps, cables and switches. Figure 5.6 below shows the components of a Typical Solar Home System.

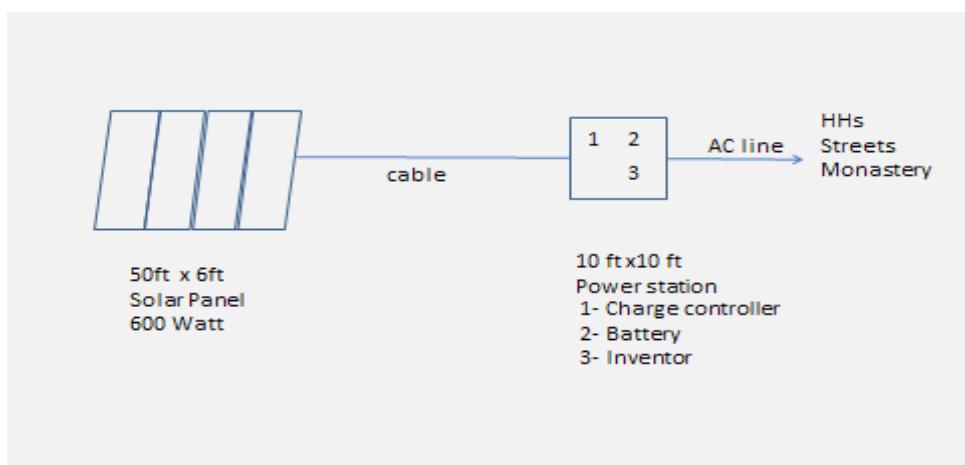
**Figure 7.6: Components of a Typical Solar Home System**



### Mini Grid Solar Photovoltaic (PV)

Under the Project, mini-grids could be built to generate and distribute electricity for villages from hydro, solar, bio mass, wind, diesel or some combination thereof. A Mini Grid Solar Photovoltaic (PV) usually consists of one or more solar panels (e.g. 50'x6'), cable, power station (charge controller, battery, inverter), AC Lines (3 phase, 4 wire) to users in a village (Figure 5.7 & 5.8)..

**Figure 7.7 Components of a Typical Mini Grid SHS**



### Diesel Generator for Electrification

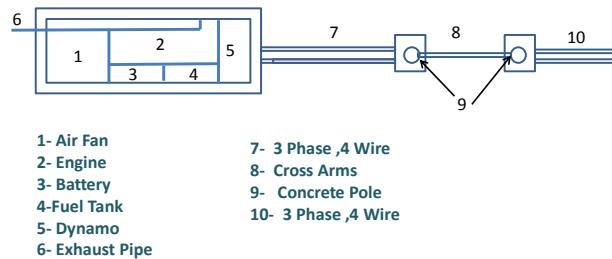
Diesel is a least preferred option under the Project due to its environmental and health impacts, however in some circumstances it may nevertheless present an appropriate solution.

Diesel generators are widely used in Myanmar as supplement energy as hybrid system for other off-grid connections such as min-hydro power and solar PV systems especially when during rainy season for solar

(when sunshine is insufficient); and during dry season for Hydro power, when the stream water resource are insufficient for hydropower plants.

The components of a typical diesel generator plant are an air fan, engine, battery, fuel tank, dynamo, exhaust pipe, concrete poles for cables, 3 phase, 4 wiring system to end users.

**Figure 7.9 Layout Plan of a Diesel Generator Plant**



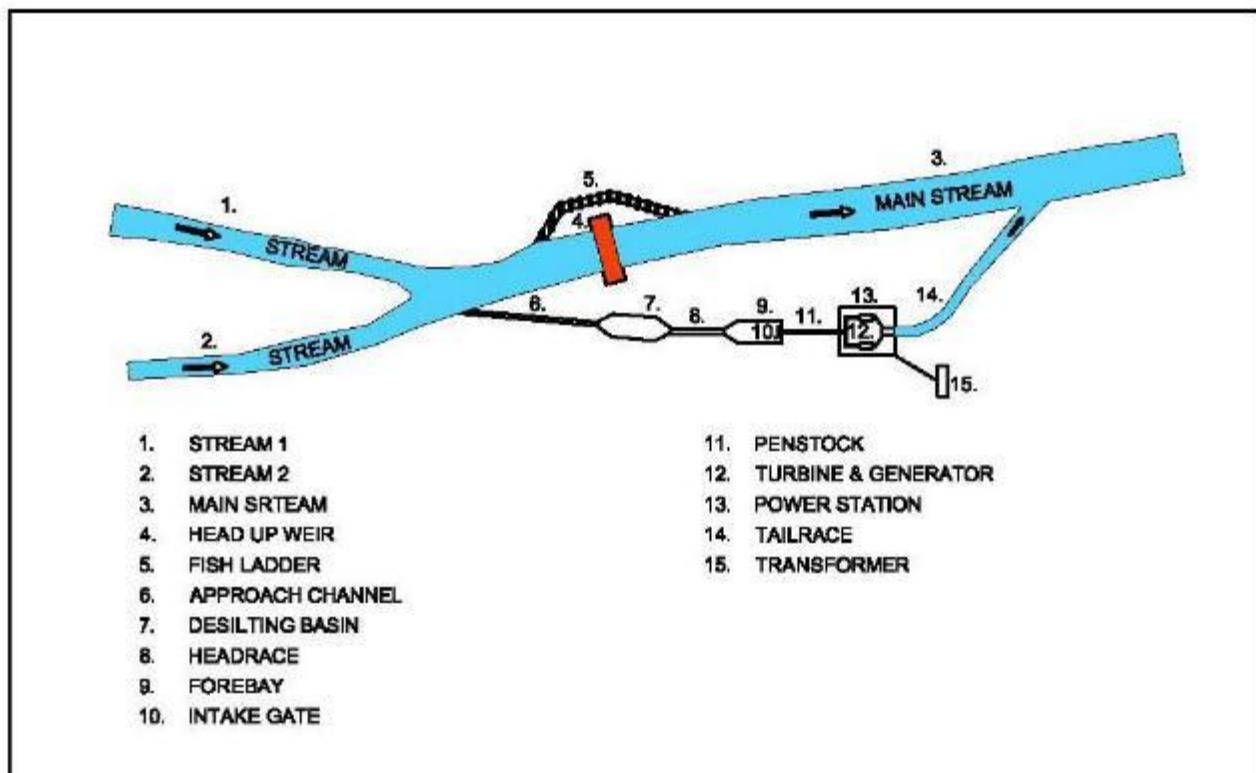
### Mini Hydro Power Plant (<1MW)

Mini Hydro Power plants envisioned under the Project are run-of-the river projects (which require little or no storage of water) and can be installed in place where the water drop and the steady flow rate are high enough. This system requires a potential stream(s) (as shown in below Figure 7.10: stream 1 and stream 2) and rerouting <10% of the water stream, to maintain its environmental flow by a head up weir,, into a leading canal (approach channel), a de-silting basin, a headrace to a forebay (water collection pond) before entering the intake gate of a penstock and to the turbine / generator, which converts the hydraulic energy into electrical power. The outflow water from the turbine is then conveyed into the tailrace and eventually discharged back into its original natural stream.

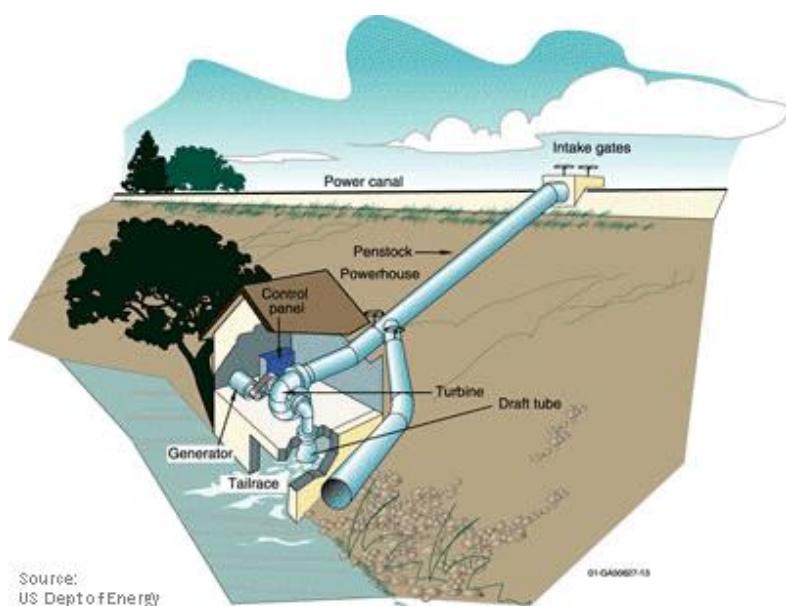
Safeguard measures such as trash racks are generally provided at intake gate of the penstock to protect aquatic biota (fish, crabs, snails, etc) being sucked into the turbines or debris flowing into the engines. Fish by-pass (fish ladder) for fish migration should also be considered to include in the civil works to maintain the natural stream's aquatic ecosystem. Erosion and siltation of the natural stream banks and the intake parts, and tailrace of a mini hydro power plant are to be considered during construction phase of the subproject. Measures to protect the banks with stone pitching, cement grouting should be observed for good engineering practice.

Figure 7.10 shows the components of a typical mini hydropower plant. The electrical power generated from a mini hydro power plant is distributed through a low voltage network with a transformer and transmission lines, concrete poles for cables, a 3 phase 4 wiring system to the end user households.

**Figure 7.10 Layout Plan of a Typical Mini Hydro Power Plant**



**Figure 7.11 Illustration of a Typical Mini Hydro Power Plant**



Wind turbines range in size. The Project is expected to support only small wind turbines. Small wind turbines have direct drive generators, direct current output, aero elastic blades, lifetime bearings and use a vane to point into the wind. Larger turbines generally have geared power trains, alternating current output, flaps and are actively pointed into the wind.

As a general rule, wind generators are practical where the average wind speed is 4.5 m/s or greater. Usually sites are pre-selected on the basis of a wind atlas, and validated with on site wind measurements. For small turbines, the electricity generated can be used to charge batteries or used directly.

**Figure 7.12: Typical Wind Energy Blades**



## 8. Addressing Environmental and Social Impacts

### 8.1 ESMF Implementation Flowchart and Responsibilities

The following general procedures apply for all works/goods for subprojects financed through the Project. The details of this procedural flow may vary, depending on the specific nature of the proposed activity.

#### **Screening and Scoping**

For every activity the responsible PMO analyzes the following: Does the activity have potential for any type of social or environmental impact, and which –if any-- World Bank safeguard policies are triggered? Could there be activities under a subproject with high impacts, beyond what is acceptable under Category B Environmental Assessment categorization?

The PMOs screen each activity in more detail for potential impacts, identify the triggered safeguard policies, and propose the general scope of work for safeguard instrument (ESIA, ESMP, RAP, IPP). The PMOs prepare a screening report (typically less than five pages with supporting maps).

Initially, the PMOs will submit screening reports to the World Bank for review. As PMO's capacity increases, may turn to post-review or spot-checking with subsequent screening reports.

#### **Safeguard Instrument Preparation**

The PMOs are responsible for preparing the safeguard instruments. The responsible PMO may contract consultants to prepare a safeguard instrument. In this case, the responsible PMO prepares detailed terms of reference according to the general guidelines of this ESMF.

The PMOs are responsible for preparing the safeguard instruments. The responsible PMO has the option to contract a contractor or consultant to prepare the safeguard instrument. The responsible PMO contracts the consultant per World Bank procurement rules.

The PMO ensures quality and consistency with the ESMF. PMO will disclose instruments locally. Public consultations with affected communities and other relevant stakeholders are required in the preparation of the safeguard instrument.

The World Bank will initially review TORs and safeguard instruments prior to finalization. As PMO capacity increases, the World Bank will turn to post-review or spot-checking.

#### **Safeguard Instrument Implementation**

The PMOs are responsible to monitor and ensure the adequate implementation of the safeguard instrument/s. The responsible PMO may contract consultants to implement the safeguard instrument/s. In this case, the Responsible PMO prepares a TOR and procures the contractor per World Bank procurement rules.

The World Bank will review and provide comments the TOR for the contractor/consultant initially and, as PMO's capacity increases, then turn to post-review or spot-checking with subsequent TOR for contractors, if more than one contractor/consultant are needed.

The responsible PMO contracts the contractor/consultant to implement the safeguard instrument per World Bank procurement rules.

The PMO supervises the implementation of the contractor to ensure successful implementation of the safeguard instrument. If necessary, an independent environmental or social monitor is contracted under a TOR acceptable to the World Bank to supervise the implementation of the safeguard instrument.

The PMO includes reporting of safeguard implementation as a chapter of its normal project status reports and regular monitoring reports.

World Bank environmental and social specialists will supervise compliance and inform the World Bank's Regional Safeguard advisor.

## 8.2 Procedures for screening environmental and social impacts

All subprojects will be subject to an environmental/social screening. A Screening form is provided in Annex 1. The purpose of environmental/social screening is to get a preliminary assessment of: (i) the degree and extent potential environmental and social impacts of a particular subproject, and (ii) the need for further environmental/social assessment.

The Project is Categorized as 'B' per World Bank Safeguard Policies, that is a project which "*may have potentially limited adverse social or environmental impacts that are few in number, generally site specific, largely reversible, and readily addressed through mitigation measures.*" Therefore, the screening will have the dual function of determining whether the subprojects fall into a Category B, as well as preventing the execution of projects with significant negative environmental impacts.

The PMOs will identify, select and screen subprojects for environmental/social impacts.

The screening involves: (i) a reconnaissance survey of the subproject area to identify important environmental and social features (e.g., human settlements, religious establishments, water bodies); (ii) identify the major subproject activities; and (iii) preliminarily assess activity impacts. The PMO may delegate this work to a consultant as mentioned in the previous section. An Environmental and Social Screening Forms are presented in Annex 1.

NEP subprojects are expected to fall within nine types of infrastructure (see Section 7). The potential impacts of each subproject, or typical infrastructure, have been divided into: (A) impacts during construction phase; and (B) impacts during operational phase. For each phase, the impacts have been further categorized into (i) ecological, (ii) physical-chemical impacts, and (iii) social impacts. A number of parameters have been identified for each of these categories: extent, duration, magnitude/intensity, probability and significance. The significance of each impact will be classified as "significant", "moderate" and "low".

## 8.3 Guidelines for environmental and social screening of subprojects

Sub projects of the Grid component are expansion of existing MV Stations and construction of MV Substation, construction of MV and LV Power lines, installation of household connections and meters. For the off-grid connection the expected sub projects are Bio Gas Power Plant, SHS (Solar Home System), Mini Grid Solar Photovoltaic (PV) Systems, Diesel Generator, Mini Hydro Power Plant (<1 MW) and Wind Energy Plant. A subproject is screened for its ecological, physical-chemical and social impacts according to its qualitative measure of severity as described in Annex 1.

## Ecological Impacts

Generally, four parameters have been considered for screening of ecological impacts during construction phase; these include (i) presence of ECA (Ecological Critical Areas such as forest, national parks, rivers, lakes, wetlands, endangered species) for which protection is required under WB Safeguard policies and Myanmar Laws, (ii) felling of trees, (iii) clearing of vegetation, and (iv) impact on terrestrial / aquatic / avian habitat.

If the answer to whether the location of the subproject or related infrastructure is fully or partially in an ECA is "Yes", then the PMO must consider an alternative site for construction of the subproject. If the proposed route of, for example, a power line subproject passes through biodiversity areas and a notable biological corridor, then a detailed analysis of alternative routes should be carried out to identify possible route(s) that would eliminate/reduce risk to biodiversity, vegetation and habitat. If it is not possible to completely avoid such sensitive areas, then possible impacts on biodiversity must be addressed, in such cases, necessary permission needs to be taken from relevant authority (e.g. Forest department / local forest officer) for construction /maintenance of power line.

Construction and maintenance of a subproject in the vicinity of a water body (e.g. river, wetland) could have negative impacts on the aquatic ecology (e.g. conversion of wetland, introduction of invasive species), thereby affecting aquatic flora and fauna, during construction phase. The impact of each parameter could be classified as significant, moderate or insignificant depending on the amount of biomass removed and/or its importance for ecosystems nearby. If there is a water body (pond /stream) located close to the proposed subproject location, then construction and operation of the project could generate adverse impact (e.g. through discharge of waste/wastewater from subproject activities, spills and leaks of oil/chemical) on the aquatic habitat in the absence of any mitigation/management. The nature of impact would be classified as "significant' or "moderate" or "insignificant", depending on the proximity of the proposed subproject location to the water body, and the nature of the water body (i.e., whether it is an important habitat for aquatic flora / fauna). Also the clearing of vegetation can have impacts on hydrology, erosion patterns. The significance of such impacts will depend on the importance of the water body in term of ecosystem value and the proximity of a sub project. The electromagnetic field (EMF) of an electrical power line should also be screened for its potential impact on birds and bats which risk electrocution from touching the lines. Screening should also include biological impacts such as likelihood to birds getting trapped in wind plant's blades, likelihood of possible change in aquatic life due to hydro power plants and possible disease causing impacts due to insanitary conditions.

## Physical-Chemical Impacts

The parameters considered for screening of physical-chemical impacts during construction phase of a subproject include noise and air pollution, and water/land pollution, and drainage congestion. If construction of the subproject involves use of equipment/machines producing significant noise (e.g., generators, pile driver) and if the proposed subproject site is located close to human settlements/schools/hospitals, noise pollution would be significant (in the absence of mitigation measures). Similarly, use of stone crushers, excavation works and movement of vehicle would generate air pollution. Possible air pollution form activities involved in subproject construction is not likely to be significant, and could be classified as "minor', unless the subproject site is located very close to human settlements. If there is a water body (pond/stream) located close to the

proposed substation location, then the potential adverse impact (e.g., through discharge of waste/wastewater from subproject activities, spills and leaks of oil /chemical) on water quality could be classified as "significant" or "moderate" or "insignificant", depending on the proximity of the proposed subproject location to the water body and the nature of the water body (i.e., whether it is an important habitat for aquatic flora / fauna). If the location of the proposed substation site is such that it obstructs the flow of natural drainage water, then it could generate "significant" drainage congestion/water logging during both construction and operational phases of the substation; otherwise impact on drainage would most likely be "minor".

During operational phase of a subproject, parameters including noise level, air pollution, erosion and siltation, drainage congestion, water logging, water pollution, solid/liquid waste disposal, likelihood of PCBs and hazardous material are screened for their impact as significant, moderate or insignificant depending on its likelihood of severity.

## Social Impacts

The proposed subprojects to be funded by the Project are expected to provide a number of positive impacts to local communities as a result of improved access to electrification (e.g. improved livelihoods and economic development, improved health and education services, community safety, and women's empowerment).

However, some subprojects may also have adverse social impacts on, and pose social risks to, local communities and households. Such adverse impacts and risks may include (see the PSIA for more detailed discussion of subproject impacts).

- Infrastructure impacts during construction and operations activities, including land acquisition and/or loss of assets such as trees and standing crops;
- Social exclusion, based on an inability to afford access to the expanded electricity services available and lack of connections to facilitate access;
- Indebtedness, in particular due to the high cost of connection via self-reliant electricity systems;
- Impacts on ethnic minorities and vulnerable groups;
- Governance and capacity of Village Electrification Committees;

For most subprojects to be funded by the Project, the primary potential social impacts relate to land and livelihoods as well as ethnic minorities in areas where they are present.

Potential impacts related to land and livelihoods could include direct or indirect change of land use; loss of income; the potential requirement for land acquisition. The footprint of subprojects is generally small and it is not expected that people would need to relocate or resettle, although the RPF allows for this should it be needed in exceptional cases.<sup>8</sup> Subprojects may also include instances of voluntary land donation for infrastructure. While such donations are not directly covered by OP 4.12 they are closely related and should only occur under certain circumstances allowing affected people to decline such donations and receive compensation instead. A protocol for voluntary land donations is included in the RPF.

In regards to livelihoods, it is important to gain early insights into the potential impacts of the proposed subproject on livelihoods within the proximity of the proposed subproject, both those linked to land and others. This screening may also highlight opportunities to involve businesses and workers within local communities in construction, operations and maintenance activities.

Screening for the presence of ethnic minorities is undertaken to determine the needs for free, prior and informed consultations with these communities, and preparation of subproject IPPs, as required by OP 4.10. Consultations and social assessment—at a scale proportional to the subproject’s impacts—aim to gain insights into potential cultural, language and other important dimensions to be considered to ensure that subprojects provide appropriate benefits to, and do not have adverse impacts on, ethnic minorities.

Potential positive impacts should also be considered to enhance such benefits from the project. This includes the benefits of ensuring that subprojects include poor and vulnerable communities and households and provide electricity to social infrastructure such as health clinics, and schools, and lighting to enhance safety, particularly for women and children.

#### 8.4 Procedures for scoping of environmental and social issues

In general, the screening process identifies what impacts the subproject will generate in its area of influence (see section 8.5. below) and what type of instrument is required to assess those impacts. The choice of instrument primarily depends on the degree of significance of expected impacts and the level of risk.

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<sup>8</sup> OP 4.12 covers direct economic and social impacts that result from Bank-assisted investment projects, and are caused by the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) lost of assets or access to assets; or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location.

During the scoping stage, the PMOs will identify the key environmental and social issues, risks and impacts. During scoping, problems can be pinpointed early allowing mitigating design changes to be made and the project location to be modified.

The impact assessment considers the main potential issues associated with project development and also takes into account the project cycle. The assessment is carried out prior to any mitigation or management measures being applied, thus impacts that are indicated as significantly negative may be minimized or reduced by effective mitigation strategies applied subsequently.

The scoping process identifies the significance of a screening parameter in four areas of assessment: Extent, Duration, Magnitude and Probability. The four parameters are assigned a score from 1 to 3 based on a grading, which is illustrated in the table below; this then allows an assessment of overall significance to emerge.

**Table 8.1. Scoring for Extent, Duration, Magnitude and Probability**

SCORE	Extent	Duration	Probability	Magnitude
1	Direct impact zone: Within the works/site area or immediate surroundings	Short: The impact is short term (0- 12 months) or intermittent	Low	Low: No or negligible alterations to environmental functions and processes
2	Locally: Effects measurable/noticeable outside the works area and immediate surroundings	Medium: Medium term (1-2 years)	Medium	Medium: Natural ecosystems are modified
3	Wide Area: The activity has impact on a larger scale such as sub- catchment or entire city	Long: the impact persists beyond the construction phase for years or the operational life of the project and may be continuous	High	High: Environmental functions altered

Based on the scores related to extent, duration, magnitude and probability of a specific impact, the significance of the impacts are expressed as an indicator given by:

$$\text{Significance} = (\text{Extent} + \text{Duration} + \text{Probability}) \times \text{Magnitude}$$

Significance is rated as low, medium and high according to:

- Low = < 9
- Medium =  $\leq 14$ , and
- High =  $\geq 15$ .

Impacts are negative unless indicated with shading in the impact matrix. Green shading represents a positive impact or benefit.

**Table 8.2: Example of Impact Matrix for a subproject during construction**

CONSTRUCTION PHASE IMPACTS for Environmental and Social Impact Assessment (ESIA), NEP							
Ref.	Impact/Issue	Comment/Description of Impact	Green for positive impact		Extent	Duration	Magnitude/intensity
			low 1, low 2	moderate 3, 4 or 5			high 6, 7 or 8
<b>Bio-Physical &amp; Chemical</b>							
RPC1	Changes in surface water quality	Significance mostly in direct area during construction period.	1	1	1	2	low
RPC2	Changes in groundwater quality	Soil composition has low permeability, so negligible impact by infiltration into the ground water.	1	1	1	1	low
RPC3	Changes in drainage patterns	Alteration of the natural drainage system	1	3	1	5	low
RPC4	Changes in rates of erosion and sedimentation	No significant erosion but some dilution may occur in nearby water body because of construction work.	1	1	1	3	low
RPC5	Changes to air quality	Air quality will be changed because of particulate matter.	2	3	2	2	medium
RPC6	Changes to ambient noise levels	Noise levels will be significant during construction if all infrastructural works are carried out simultaneously.	2	3	2	2	medium
RPC7	Changes in aquifer flows	No significant change in aquifer flows due to construction of embankment	1	1	2	2	low
RPC8	Changes in terrestrial biota	No significant changes expected in terrestrial flora as site all ready cleared.	1	3	1	5	low
RPC9	Changes in fauna & vector populations	High risk to conversion (shifting) during construction period.	1	3	1	2	low
RPC10	Changes to land cover	Due to different kinds of construction works, original land cover may change.	1	3	1	3	low
RPC11	Changes to areas of natural habitat	Due to the changes in vegetation in land and water, natural habitat may be changed to a certain extent.	1	3	1	3	low
<b>Socio-Economic &amp; Cultural</b>							
SEC1	Changes involving loss of primary assets	No significant habitation of local inhabitants in project area.	1	3	1	1	low
SEC2	Changes involving loss of cultural heritage	No significant cultural heritage.	1	1	1	1	low
SEC3	Changes involving displacement of people	No significant displacement of inhabitants.	1	3	1	1	low
SEC4	Changes in rural traffic patterns	Simultaneous construction works may change traffic pattern.	2	2	1	5	low
SEC5	Changes in Rebozo	Some changes in fishery expected at nearby pool.	1	2	1	2	low
SEC6	Changes in local wage labour - newly civilised opportunities	Imported skilled workers are mostly employed.	2	2	1	2	low
SEC7	Changes in local trade/commercial income opportunities	No significant local trade/commercial income during construction phase.	1	2	1	2	low
SEC8	Changes in visual amenity	No significant amenity in vision during construction period.	1	1	1	3	low
SEC9	Changes to public infrastructure/community resources	Improved infrastructure and community resources with positive impact.	2	3	1	2	low

**Table 8.3: Example of Impact Matrix for a subproject during Operation**

OPERATIONAL PHASE IMPACTS for Environmental and Social Impact Assessment (ESIA), NEP

Ref.	Impact/Issue	Comment/Description of Impact	Green for positive impact		Severity	Duration	Magnitude/Terminity	Probability	Significance
			2000-2004	2005-2009					
<b>Env-Physical &amp; Chemical</b>									
RPC1	Changes in surface water quality	In case of effluent (waste water) from vegetation spills into streams and water body untreated.	2	1	1	1	1	1	low
RPC2	Changes in groundwater quality	Due to the soil type, there is low permeability for pollution of ground water.	1	1	1	1	1	1	low
RPC3	Changes in drainage patterns	Operation of the the valuation do not effect existing drainage system.	1	3	1	1	3	1	low
RPC4	Changes in rates of erosion and infiltration	Due to the sea going vessels coming to and from... River, the flow pattern of the ... river may change to a certain extent.	1	3	1	1	3	1	low
RPC5	Changes to air quality	Due to the wind speed and wind direction, the air quality in the project area and its surroundings may change.	2	2	2	2	1	1	medium
RPC6	Changes to ambient noise levels	Noise from electrical equipment / generators may affect noise levels.	2	2	2	2	3	1	medium
RPC7	Changes to aquatics life	In case of leakage of petroleum, oil, lubricants (POL) and chemicals, changes in aquatic life may happen.	1	2	1	1	2	1	low
RPC8	Changes to terrestrial biota	No terrestrial biota are expected after construction phase.	0	0	0	0	0	1	low
RPC9	Changes to disease vector populations	Some Health risks to people at project area due to melting ice etc. From plant.	1	1	1	1	2	1	low
RPC10	Changes to land cover	No decline impact after construction of infrastructure in the project area.	0	0	0	0	0	1	low
RPC11	Changes to areas of natural habitat	No further impact in project area	0	0	0	0	0	1	low
<b>Socio-Economic &amp; Cultural</b>									
SEC1	Changes involving loss of private assets	No potential impact.	0	0	0	0	0	0	low
SEC2	Changes involving loss of cultural heritage	No impact in operational phase.	0	0	0	0	0	0	low
SEC3	Changes involving displacement of people	No potential social issues.	0	0	0	0	0	0	low
SEC4	Changes to local traffic patterns	For the future development of Myanmar, there may be changes in local traffic patterns.	2	3	1	1	2	1	low
SEC5	Changes to fisheries	Water, air, and noise pollution may interfere with fish migration.	2	3	1	1	3	1	low
SEC6	Changes in local wage labour income/dividend opportunities	Probability of Increased Income and livelihood opportunities due to the project.	2	3	1	1	2	1	low
SEC7	Changes in local trade/commercial income/dividend opportunities	Probability of Increased Income and livelihood opportunities due to the project.	2	3	2	2	2	1	medium
SEC8	Changes in visual amenity	Developmental infrastructure appears instead of natural landscape.	2	3	1	1	2	1	low
SEC9	Changes to public infrastructure/community services		2	3	1	1	2	1	low

As mentioned above, the NEP is Categorized as B as per World Bank Safeguard Policies, that is a project which “*may have potentially limited adverse social or environmental impacts that are few in number, generally site specific, largely reversible, and readily addressed through mitigation measures.*” The significance of the impacts scoped will determine the level of environmental and social assessment and instrument needed. The environmental and social instruments may range from an ECoP through an environmental and social management plan to a full environmental and social impact assessment (see Table 8.4 below).

Table 8.4. Environmental Instrument needed based on Impact Scoped

Impacts Scoped (overall)	Environmental Instruments
Low	IEE/ ESMP/Environmental Code of Practice
Medium	ESMP/ESIA
High	ESIA

Current Myanmar Legislation considers all typical subprojects under NEP as Initial Environmental Examination (IEE). However, a full ESIA will be required if impacts on biota / ethnic minorities are high, even if the rest of the parameters are low / medium; although a sub project could remain in an Environmental Category of B according to WB standards. In summary, if any of the following impacts would be considered high, an ESIA will be required for the sub projects under NEP: air quality, areas of natural habitat, ambient noise levels and aquatic plants or animals, acquisition of land requiring resettlement and ethnic minorities.

## 8.5 Procedures and Guidelines for (site-specific) safeguard instruments per subproject

### Preparation of Environmental and Social Impact Assessment or Environmental and Social Management Plan

The environmental and social impact assessment instruments envisioned in the Project range from a full Environmental and Social Impact Assessment (ESIA) to an Environmental and Social Management Plan (ESMP) and an Environmental Code of Practice. Both ESIA and ESMP would cover the same elements, but with different level of analysis:

- Identification of subproject influence area;
- Establishment of "baseline environment" and "baseline social" within the subproject influence area, against which impacts of the proposed subproject would be evaluated;
- Identification of major subproject activities during construction phase and operational phase;
- Assessment and evaluation of impacts of major project activities on the baseline environment during construction phase and operational phase;
- Carrying out public consultations;
- Identification of mitigation measures for avoiding/mitigating/compensating adverse impacts and enhancing positive impacts;
- In the case of the ESIA, development of environmental management plan (ESMP), including monitoring requirements, and estimation of cost of ESMP;
- Identification of environmental code of practice (ECoP), including cost of ECoP;
- Disclosure of documents.

#### Subproject Area of Influence

Area of influence, where the environmental and social impacts of a subproject will be or could be 'felt' under the Project consist of the subproject direct area of influence and its ancillary facilities. In order to establish a subproject area of influence, the activities to be carried out and processes that would take place during both construction phase and operational phase of the subproject need to be carefully evaluated.

The subproject area of influence area would depend on the type of subproject (e.g., substation, power line, mini hydro), and on the nature site/area where it will be implemented (e.g. near a water body or a school). For example, for the majority of subprojects the area of influence is likely to be limited to the footprint of the works (plots, corridors of power lines, access roads, etc.) and its direct vicinity. However, some impacts such as noise and air pollution can have effects beyond the footprint of the works. Attention is required also for impacts on waterways because some subprojects (e.g. mini-hydros) can have downstream effects, as well as waste and hazardous materials disposal if it is being taken to another location.

Table 8.5 below provides general guidelines to identify the subproject area of influence when limited to the footprint of the works and direct vicinity. As mentioned above, depending on the subproject, the area it will be implemented, and the significance of impacts, the area of influence may encompass a sub catchment for mini-hydro impacts on sediment flow/ecosystems or air basin for diesel plan impacts on air quality. The area of influence will be determined for each subproject.

**Table 8.5 Guidelines for identifying direct area of influence when limited to the works<sup>9</sup>footprint**

Subproject	Area of Influence
Substation	Areas and communities within around 1 km surrounding the location of the Substation Areas on either side (within ~15 m) of the access road from the main road to the Substation
Power Line	Areas and communities within the Right of Way (-27m) of the Distribution line route Areas on either side (within -15m) of the access road from the main road to the distribution line poles/tower, which could be affected during construction
Mini-Hydro	Area 0.5 km within fore bay water shed area and 2 km downstream of Mini Hydro Power Plant
Diesel Generator Plant	Villages and communities within 0.5 km of Diesel Generator Plant
SHS (Solar Home System)	Areas and communities 0.2 km around a solar home system using Acid Type Battery
Wind Energy System	Atmospheric area of flying birds and insects within 1 km of Wind Energy Plant

## Ancillary Facilities

Although NEP will finance specific sections of grid and off grid electrification, some ancillary facilities (such HV transmission lines; access roads; water supply lines) could be essential for the NEP to achieve its development objectives. Therefore, and as part of World Bank OP 4.01 requirement for ESIA to include “the area likely to be affected by the Project, including all its ancillary aspects,” NEP will carry out a reasonable due diligence in relation to existing or simultaneously built ancillary facilities that will be connected to and/or can be affected by NEP. As part of this due diligence it is expected that the PMOs will:

- Determine which (i.e. type and location) ancillary facilities (e.g. power plants and HV transmission lines) will be feeding or are fundamental part of the grid roll out or rural pre/electrification schemes

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<sup>9</sup>Concession from PMOs (MOEP/MLFRD) during site visit Feb 2015

- Carry out an audit to assess ancillary facilities environmental and social performance including an action plan if issues are found regarding the World Bank Group Operational Policies

## Environmental Baseline

In order to conduct an adequate environmental impact assessment, it is very important to define the "environmental baseline" against which environmental impacts of a particular subproject would be subsequently evaluated. The characteristics of "environmental baseline" would depend on:

- Nature of the subproject location,
- Nature/extent of a subproject and its likely impacts,
- Level of detail related to the type of environmental safeguards instrument (e.g., ESMP, ESIA)

For example, ambient air quality and noise level are important parameters for describing baseline scenario for a substation subproject, because these parameters are likely to be impacted by the project works. However, these parameters are not likely to be important for subprojects like construction of a distribution line. Similarly, ecological parameters (e.g., diversity of plants and animals) are not likely to be critical for a power line to be constructed along the main road or through the commercial area, but these could be important for a power line that crosses a river or marshy land, where aquatic plant and animal habitat could be impacted by the project activities.

For systematic recording of data, baseline environment is usually classified into physical-chemical and ecological environment, and social issues; and important features/parameters under each category are identified and measured/recorded during baseline survey. The important features/parameters would depend on the nature of subproject location, category of subproject, and level of environmental assessment. The following sections provide guideline on identification of important features/parameters and collection of subproject specific environmental baseline data.

## Ecological environment

Important parameters for description of biological environment include:

- General bio-ecological features of the subproject area and its surroundings (e.g. bio-ecological zone, rivers, wetlands, hills, agricultural lands)
- Wildlife sanctuary, protected area, park, ecologically critical area
- Plant habitat and diversity (terrestrial and aquatic)
- Animal (including fish)
- Threatened plants and animals

It should be noted that all the subprojects (namely, grid roll out and off-grid projects) are likely to have minor ecological impacts since they will most likely be located in areas close to human settlements. In most cases, the most significant direct impact would result from felling/cutting of trees/vegetation within the subproject sites and along the route of the new distribution lines. If the particular subproject is located close to a water body, it could have some potential impacts on water quality and aquatic ecology during construction and operation. However, for many subprojects these are not expected to be significant, thus, for these subprojects a general bio-ecological description of the subproject area would be sufficient for description of baseline biological environment.

**Table 8.6 Guidelines for collection and presentation of data for Biological environment for a sub project**

Sub project	Data / Information from secondary source	Data from primary survey / measurement
Expansion of Existing MV Station and construction of MV (33/11 KV) Substation	General Bio-ecological features, wild life sanctuary, ECA (Ecological critical area)	Number of trees to be felled; Area to be cleared of vegetation; Filling up of seasonal wetland (if required)
Construction of 33 KV & 11 KV Distribution Lines, LV Lines and MV/LV Transformer	General bio-ecological features, Wildlife sanctuary, ECA; Plant and animal diversity	Number of trees to be felled or trimmed
Household Connections and Meters	General bio-ecological features	Number of trees felled or trimmed
Bio Gas Plant	General bio-ecological features, Wildlife sanctuary, ECA; Plant and animal diversity	Number of trees to be felled
Solar Home System (SHS)	General bio-ecological features	Number of trees felled or trimmed
Mini Grid Photovoltaic PV System	General bio-ecological features, Wildlife sanctuary, ECA; Plant and animal diversity	Number of trees to be felled or trimmed
Mini Hydro Plant (<1MW)	General bio-ecological features, Wildlife sanctuary, ECA; Plant and animal diversity	Number of trees to be felled, biodiversity study: aquatic biota at intake stream / river,
Diesel Generator Plant	General bio-ecological features, Wildlife sanctuary, ECA; Plant and animal diversity	Number of trees to be felled
Wind Energy Plant	General bio-ecological features, Wildlife sanctuary, ECA; Plant and animal diversity	Number of trees to be felled or trimmed, avian study of birds / bats at project site

## Physical-chemical environment

The important physical-chemical parameters for defining baseline include:

### Important Environmental Features

The baseline exercise will include a map of Important Environmental Features (IEFs) such as human settlements; educational institutions (school, college, university); health care facilities (hospitals, clinics); commercial/recreational establishments (tea shops, markets, restaurants, parks, offices); religious establishments (temples, pagodas, shrines); major utility infrastructure (water/wastewater treatment plants, water mains, sewers, power plants, sub-station, gas/electricity transmission/distribution lines); landfills; major ponds, and rivers; historical archaeological establishments; ecologically critical area (wildlife sanctuary, public protected forest, forest reserve, protected area, and national park).

Under most circumstances, it is sufficient to identify IEFs based on a survey covering the subproject influence area. Thus, a rapid physical survey of each subproject and a desk review of available maps will be required to identify the IEFs within the subproject influence area.

### Climate

It is important to have a general idea about the climate of the area where the subproject would be implemented. Important climatic parameters include precipitation, temperature, relative humidity, wind speed and direction. These data should be collected from secondary sources (e.g. Hydro-Meteorological Department, Myanmar Information Management Unit, Myanmar Meteorological Department).

### **Topography and Drainage**

Data and information on topography are important for the design of the subprojects. Information on the topography is essential for locating subprojects in areas with low environmental impacts. For example, it is important to know whether the area where the substation would be constructed suffers from water-logging or inundation problems, which could endanger the equipment and operation for the substation. For the design of these subprojects, it may be necessary to carry out topographic survey in the subproject area. However, for environmental assessment (EIA or EMP), secondary information on topography and drainage may be sufficient.

### **Geology and soil**

Characteristics of soil could be important if a particular subproject involves significant excavation/earthworks, because wind-blown dust from these activities could contribute to air pollution. In such cases, characteristics of soils (particularly heavy metal content) are often determined as a part of baseline survey. However, considering the nature and scale of the structures to be constructed in the subprojects to be implemented under the ESE/DRD, geology and soil characteristics do not appear to be critical except for the off-grid subproject. However for mini-hydropower, geology and soil pose a very critical parameter to assess as they play a very important role in dam stability. The soil for the foundation of a dam construction should have enough bearing capacity to withhold the dam from seepage, and bearing pressure

### **Air quality**

Data on ambient air quality is not likely to be available in the areas where the ESE and DRD subprojects will be implemented. Particulate matter (particularly PM<sub>10</sub> and PM<sub>2.5</sub>) is the most important air quality parameter from health perspective. However, measurement of air quality is relatively expensive and facilities for air quality measurement are not widely available. Therefore, baseline air quality data (PM) may be collected only when carrying out detailed ESIA.

### **Noise Level**

Noise is typically generated from operation of machines and equipment (e.g., pile drivers, excavators, concrete mixing machine), and movement of vehicles. Noise is of particular importance if the subproject component (e.g. substation, transmission tower, or other subproject) is located close to sensitive installations such as educational institutions, health care facilities, religious establishments, and human settlements. Activities to be carried out during construction phase of the subprojects would generate noise. For subprojects with potential for significant noise generation during operation and close to sensitive installations, baseline noise level should be measured and recorded, so that these could be compared with those generated during construction/operation phase of the subprojects. The location and frequency of baseline noise level measurements would depend on physical extent of project, and presence of sensitive installations within subproject influence area, as noted above.

### **Water Quality**

A number of activities during the implementation of subprojects could have impacts on water quality both during construction and operation. Accidental spillage of gasoline, transmission oil, transformer oil, etc., may contaminate surface or ground water-bodies. Stagnation resulting from obstruction of cross drainage pattern in rural areas following construction of access roads and substations may result in deterioration water quality in the areas surrounding these sites. For subprojects close to sensitive installations such as educational institutions, health care facilities, religious establishments, and human settlements as well as important natural habitats, baseline water quality of the relevant water body should be measured, as a part of baseline.

With respect to water quality, the dry season is the critical period, and hence water samples for water quality characterization should –where relevant-- be collected during the dry season. Parameters will be determined for each subproject, and could include pH, TDS, TSS, ammonia, nitrate, phosphate, BOD<sub>5</sub>, and COD.

## **Traffic**

Storage of construction materials, power cables (conductors), poles of distribution lines, steel members of transmission towers, transformers, etc. on adjacent roads are likely to cause traffic congestion. Similarly, movement of additional vehicles carrying construction and power transmission equipment along public roads is likely to increase traffic congestion. For all subprojects, it would be necessary to collect traffic data from primary survey, as part of carrying out ESMP/ESIA (by the consultant engaged for this purpose); both number and composition of traffic are important in the baseline study.

## **Electro-Magnetic Fields (EMF):**

Health concerns over exposure to EMF are often raised when a new transmission line is proposed. To date the research has not been able to establish a cause and effect relationship between exposure to magnetic fields and human disease, no a plausible biological mechanism by which exposure to EMF could cause disease. Rehabilitation of existing power lines is unlikely to increase EMF but new lines may induce EMF. However, this issue needs to be addressed while conducting a comprehensive impact assessment. Thus, measurement of existing EMF along the selected route of the existing and new transmission and distribution lines around the substation sites would be necessary, as a part of carrying out ESMP /ESIA (by the consultant engaged for this purpose).

Below table presents a guideline for collection of primary and secondary data on physical-chemical environmental parameters for different types of sub projects.

**Table 8.7 Guideline for collection of sub project specific physical-chemical data / information**

Sub project	Data / Information from secondary source	Data from primary survey / measurement
Expansion of Existing MV Station and construction of MV (33/11 KV) Substation	IEFs; Climate; Geology and soil; Hydrology and water resources; and drainage	IEFs; Noise level, Soil, Surface water quality <sup>1</sup> ; site topography; EMF
Construction of 33 KV & 11 KV Distribution Lines, LV Lines and MV/LV Transformer	IEFs; Climate; Geology and soil; Topography and drainage, Hydrology and water resources	IEFs; Noise level, Surface water quality <sup>2</sup> ; Traffic; EMF
Household Connections and Meters	Climate, Geology and soil; Topography and drainage, Hydrology and water resources	IEFs; Site topography
Bio Gas Plant	IEFs; Climate; Geology and soil; Topography and drainage, Hydrology and water resources	IEFs; Noise level, Soil, Surface water quality <sup>1</sup> ; site topography
Solar Home System (SHS)	Climate; Geology and soil; Topography and drainage, Hydrology and water resources	IEFs; site topography
Mini Grid Photovoltaic PV System	IEFs; Climate; Geology and soil; Topography and drainage, Hydrology and water resources	IEFs; Surface water quality <sup>1</sup> ; site topography
Mini Hydro Power Plant (<1MW)	IEFs; Climate; Geology and soil; Topography, Hydrology and drainage	IEFs; Noise level, Soil, Surface water quality testing; site topography
Diesel Generator Plant	IEFs; Climate; Geology and soil; Topography and drainage, Hydrology and water resources	IEFs; Noise level, Soil, Surface water quality <sup>1</sup> ; site topography, noise level, air quality (if required)
Wind Energy Plant	IEFs; Climate; Meteorological	IEFs; Sub project site wind (speed

	<p>data including wind speed and direction (minimum past continuous 7 years data), Geology and soil; Topography and drainage, Hydrology and water resources</p>	<p>and direction) for analysis of feasibility study for plant implementation; site topography, noise level</p>
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<sup>1</sup>If water body is located close to the sub project site

<sup>2</sup>If the power line passes over or close to stream/ river / wetlands

## Social Issues

All the subprojects (namely, grid roll out and off-grid projects) to be carried out by ESE / DRD will have socio-economic impacts. In most cases impacts are expected to be positive, but adverse impact may also occur.. The most significant direct impacts would result from changes associated with access to electricity and also in regards to land use changes, as well as impacts experienced during construction and operations activities. Socio-economic aspects to be considered are summarized in the table below. These would differ for different subprojects and the scope of data collection depends on the type and level of impacts a particular subproject will have. Some of the data will be available through secondary sources – in particular from the Integrated Households Living Condition Assessment (IHLCA), Central Statistical Organization (CSO), 2014 Population and Housing Census and Living Standards Measurement Survey (LSMS). However, it is likely that primary surveys will be required to be undertaken to supplement existing data.

**Table 8.8 Guidelines for collection and presentation of data for Social Issues for a subproject**

Subproject	Data / Information from secondary source	Data from primary survey / measurement

Construction of 33/11 KV Substation / Switching stations	<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p>	<p>Livelihood and land use survey</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p>
Construction / Rehabilitation of 33 KV & 11 KV Distribution Lines	<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p> <p>Social infrastructure: education and health facilities</p> <p>Electricity infrastructure</p>	<p>Livelihood and land use survey</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p> <p>Organizational capacity, current role and governance of Village Electrification Committee (VEC)</p>

Bio Gas Plant	<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p> <p>Social infrastructure: education and health facilities</p> <p>Electricity infrastructure</p>	<p>Livelihood and land use survey</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p> <p>Organizational capacity, current role and governance of Village Electrification Committee (VEC)</p>
Mini Hydro Plant (<1MW)	<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p> <p>Social infrastructure: education and health facilities</p> <p>Electricity infrastructure</p>	<p>Livelihood and land use survey</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p> <p>Organizational capacity, current role and governance of Village Electrification Committee (VEC)</p>
Diesel Generator Plant	<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p>	<p>Livelihood and land use survey</p> <p>Conflict assessment</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p> <p>Organizational capacity, current role and governance of Village</p>

		<p>Social infrastructure: education and health facilities</p> <p>Electricity infrastructure</p>	Electrification Committee (VEC)
Photovoltaic System SHS	PV	<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p> <p>Social infrastructure: education and health facilities</p> <p>Electricity infrastructure</p>	<p>Livelihood and land use survey</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p> <p>Organizational capacity, current role and governance of Village Electrification Committee (VEC)</p>
Wind Energy Plant		<p>Demographic characteristics, including administrative boundaries, ethnic and gender composition</p> <p>Settlement patterns</p> <p>Planning and zoning (land use and land ownership)</p> <p>Livelihood data</p> <p>Social infrastructure: education and health facilities</p> <p>Electricity infrastructure</p>	<p>Livelihood and land use survey</p> <p>Local companies and workers that may be able to be involved in construction and/or operations activities</p> <p>Organizational capacity, current role and governance of Village Electrification Committee (VEC)</p>

## Assessment and Evaluation of Impacts

After identification of the subproject activities during construction phase, the next step in the ESMP/ESIA involves assessment/prediction of the impacts of these activities on the baseline environment.

### **Assessment and Prediction of Environmental Impacts during Construction and Operational Phase**

The potential environmental impacts during construction phase of sub projects could be categorized into: (a) bio-physical-chemical impacts; and (b) social impacts.

Assessing the ecological impacts of a sub project is combined with its Physical chemical Impacts and assessed as Bio Physical and Chemical (BPC) as described with examples in Table 6.2, 6.3, 6.4 and 6.5: Impact Assessment Matrix in the scoping process of a proposed sub project.

The potential impacts of a proposed sub project on the BPC (bio physical and chemical) parameters and SEC (Socio economic and cultural) parameters are assessed according to rating scores of 1/2/3 according to their extent, duration, magnitude and probability to identify its significance indicator of an impact (positive / negative) as low, medium and high rating for each BPC and SEC parameters of impact assessment described below.

#### **Bio-physical-chemical Impacts:**

Possible bio-physical-chemical impacts may occur in various degrees of the four parameters: extent, magnitude, probability and are scored accordingly as 1(low), 2(medium) and 3 (high) as described earlier in Chapter 6 in the scoping section with examples Table 6.2 and Appendix B2. Each subproject's impact on the following issues / concerns may not be of the same extent, magnitude or probability, thereby defining its role of impact significance. For example a wind energy plant may not have significant impact on water quality but a diesel engine could. Changes in the following issues / considerations may be generally assessed for impacts in the subprojects:

- Surface water quality
- Ground water quality
- Drainage patterns
- Erosion and siltation
- Air Quality
- Ambient noise levels
- Aquatic Biota
- Terrestrial Biota
- Disease Vector population
- Land Cover
- Areas of Natural Habitat

#### **Surface Water Quality:**

Pollution to surface water sources may result from discharge of wastewater (e.g. liquid waste from labor sheds), spills and leaks of oils / chemical into nearby water bodies and erosion from soils stripped of vegetation. The presence and existing use of water bodies surrounding the subproject site would determine the

level of impact. For example, if a pond located close to a subproject site is being used for washing/ bathing or for fish culture, pollution of the pond from subproject activities would generate significant adverse impacts.

Construction of infrastructure near water bodies could also generate water pollution during construction phase. Leakage of oils/fuel from diesel generator could also pollute surface water sources nearby.

#### **Ground Water Quality:**

Soil contamination from spilled oils, lubricants can pose a risk to and ultimately pollute ground water resources of the locality of a sub project. Over exploitation of ground water resources (over pumping) for a sub project can also change the ground water level, and can ultimately impose subsidence in the locality. However, it is not expected that subprojects will make use of excessive ground water resources.

#### **Drainage congestion:**

During execution of civil engineering projects, temporary drainage congestion often results from obstruction to natural flow of drainage water due to the storage of materials, piled up excavated material / soil, and temporary embankments constructed to keep the work area dry. Such congestion is particularly important at the project sites adjacent to low-lying areas. Drainage congestions could create significant discomfort to people living in project-surrounding areas.

In some sub projects, construction debris is likely to be generated from different sub project activities. Solid wastes will also be generated from labor sheds. Improper management of construction debris and solid waste could cause blockage of drainage line/path and environmental pollution.

#### **Erosion and siltation:**

During construction of a sub project erosion and siltation may result due to soil condition of the foundation, slope or the hydro-morphology of a stream or river, in the case of Mini-Hydro.

#### **Air Quality:**

During construction phase, air pollution may result from emissions from machines and equipment (e.g. drilling rig, mixing machines, generators) used for different sub project activities, and movement of vehicles (carrying material and equipment) to and from the subproject site. However, for the proposed sub project, adverse impacts of air pollution are likely to be limited to the areas surrounding the sub project sites.

#### **Noise Level:**

Noise pollution could results from a wide range of construction activities, including movement of vehicles (carrying equipment / material to and from site), operation of construction equipment and generators. Significant noise is generated from operation of pile drivers, bulldozers, dump trucks, compactors, mixing machines, and generators, etc. (which could be used for construction of substations and transmission towers). Demolition activities, if required, also generate noise. Such noise may cause discomfort to the people living in the surrounding areas at close proximity of the sub project site, especially if such activities are continued during the night. Noise pollution is particularly important for sensitive establishment. e.g. hospitals, educational and religious institutions.

#### **Aquatic and Terrestrial Biota:**

The proposed Subproject Mini Hydro power plant (<1MW) will be a run-of-the river hydroelectric plant, which do not require the construction of a dam and can be installed in place where the water drop and the steady flow rate are high enough. However, Mini Hydro can impact fish migration by the way of interfering to fish migration route. Moreover, fish and other aquatic biota could be sucked into the turbines of a hydro power plant.

The oscillating blades of the wind energy plant generate wind energy which is converted into electricity at the wind energy plants. Flying birds, bats and avian population encounter risk of being cut by the blades while they fly in the air near / at the plant

Some of the power transmission line may have to cross some major River like Ayeyarwaddy, Chindwin, or Sittang River. The foundation of each tower requires installation of piles of large diameter to a depth of significant length. Pile driving activities generate very high under water noise levels and have potential impact on the aquatic life. Piles are usually driven into the substrata using one of two types of hammers – impact hammers and vibratory hammers. Impact hammers consist of a heavy weigh that is repeatedly dropped onto the top of the pile, driving it into the substrata. Vibratory hammers utilize a combination of a stationary, heavy weight and vibration, in the plane perpendicular to the long axis of the pile, to force the pile into the substrate. The type of hammer used depends on a variety of factors, including pile material and substrate type. Impact hammers may be more harmful than vibratory hammers for two reasons: First they produce more intense pressure waves, and second, the sounds produced do not elicit an avoidance response in fishes, which will expose them for longer periods to those harmful pressures.

It can be concluded that noise levels from vibratory pile driving are limited to near the vicinity of piles and have comparatively lesser impacts on fisheries and other aquatic life than impact drivers.

#### **Disease Vector population:**

During the construction phase of a sub project, water borne disease, cholera, dysentery, malaria and other contagious diseases are to be considered that can have a negative impact to the health and well-being of the workers and local population. Insanitary practices and unhealthy living with no proper sanitation facilities and drainage, may impact the health of workers, especially contagious disease may affect the other person's health (for example: disease transmitted from one person to another through excrement, body fluids) and ultimately the entire surrounding inhabitants with a risk of an epidemic if not properly addressed.

#### **Land Cover:**

Land use and land cover change is an important parameter to consider when assessing impacts so that careful site selection is made to avoid any wildlife sanctuary or ECA. Change in land cover could be also of positive impact if the land area becomes more pleasing and aesthetic than before the implementation of a sub project.

#### **Areas of Natural Habitat:**

Areas of Natural Habitat should be considered in assessing an impact from a sub project that would pass over natural habitat for example power lines, and mini hydro power plants and should be assessed for its impact to the environment of natural habitation to eliminate / reduce risk to biodiversity, vegetation, and habitat.

### **Assessment and Prediction of Social Impacts during Construction and Operational Phase**

Table 6.9 below summarizes key potential social impacts that typically occur during the construction and operations phases of infrastructure projects. The *themes of common changes* and *description of potential impacts / mitigation measures* should be considered by the PMOs when identifying potential impacts associated with the subprojects at a scale proportional to the subproject's level and types of impacts (all of these themes may not be relevant to many subprojects as they are expected to have minor or limited adverse social impacts). Additional guidance may be provided in the Operational Manual for the Project or guidance material prepared under the TA activities during project implementation.

**Table 8.9 Description of Potential Impact for Social and Cultural Change**

<b>Theme of Common Changes</b>	<b>Description of Potential Impact / Mitigation Measures</b>
<b>Social and Cultural Change</b>	

<b>Theme of Common Changes</b>	<b>Description of Potential Impact / Mitigation Measures</b>
Population and demographics	In-migration, out-migration, workers' camps, social inclusion, conflict and tensions between social groups
Social infrastructure and services	Demands on and investment in housing, skills (shortages, retention), health (i.e. health clinics), education (i.e. schools), and training
Social order	Change in social norms, pace of change for vulnerable communities
Culture and customs	Change in traditional family roles, changing production and employment base, reduced participation in civil society, community cohesion, community leadership, cultural heritage
Community health and safety	Disease, vehicle accidents, spills, alcohol and substance abuse, pollution, interruption to traditional food supply, awareness and treatment programs
Labor	Health and safety, working conditions, remuneration, labor force participation for women
Gender and vulnerable groups	Disproportionate experience of impact and marginalization of vulnerable groups (e.g., women, disabled, aged, ethnic minorities, indigenous, and young), equity in participation and employment
Security	Conduct of security personnel
<b>Economic Change</b>	
Distribution of benefits	Employment, training, local business spending, community development and social programs, compensation, managing expectations, equitable distribution across state/regional, local/ethnic/family groups
Inflation/deflation	Food, access to social services
Infrastructure	Demands on roads, rail, ports, sanitation, telecommunications, power and water supplies
<b>Socio-Environmental Change</b>	

<b>Theme of Common Changes</b>	<b>Description of Potential Impact / Mitigation Measures</b>
Pollution and amenity	Air (e.g., dust), water (e.g., acid and metalliferous drainage, cyanide, riverine and submarine waste disposal), noise, scenic amenity, vibration, odor, radiation, traffic, government capacity to monitor and regulate
Resources (access/competition)	Land, water (groundwater, river, ocean), cultural heritage, forest resources, human
Resettlement	Acquisition of land or loss of assets such as trees and standing crops. Consultation for adequate compensation, ties to land, equity, livelihoods, voluntary land donations
Disturbance	Disruption to economic and social activities, consultation for land access, frequency and timing, compensation
<b>The Process of Change</b>	
Community engagement	Consultation, communication, participation, empowerment, access to decision makers, transparency, timing, inclusiveness – particularly for vulnerable and marginalised groups – respect of customs and authority structures, reporting
Participation	Planning, development of programs, monitoring, selection of alternatives and technologies, operational aspects
Remedy	Grievance and dispute resolution, acknowledgment of issues, compensation, mitigation
Agreements	Equity, timely honoring of commitments, issues with delivery, duress, clarity of obligations, capacity and governance (including government capacity to respond to and manage change)
Community development	Participation, adequacy, appropriateness, capacity to facilitate, consistency, prioritization

## Environmental and Social Management Plan

An Environmental and Social Management Plan (ESMP) is prepared either as a stand-alone document or as part of an ESIA depending on the scale and scope of impacts. The primary objective of the ESMP is to record environmental and social impacts resulting from the subproject activities and ensure implementation of the identified mitigation measures. An ESMP is prepared in order to reduce adverse impacts and enhance positive impacts. It is also intended to address any unexpected or unforeseen environmental and social impacts that may arise during the construction and operational phases of the subprojects.

The ESMP should clearly lay out: (a) the measures to be taken during both the construction and operational phases of a subproject in order to eliminate or offset adverse environmental and social impacts, or reduce them to acceptable levels, and maximize positive social impacts; (b) the actions needed to implement these measures; and (c) a monitoring plan to assess the effectiveness of the mitigation measures employed.

The ESMP should be carried out as an integrated part of the project planning and execution. It must not be seen merely as an activity limited to monitoring and regulating activities against a pre-determined checklist of required actions. Rather it should be used as a dynamic management approach, dealing flexibly with environmental and social impacts, both expected and unexpected, as subproject implementation proceeds. For all subprojects, the ESMP should be a part of the Contract Document.

The major components of the ESMP include:

- Summary of Impact Analysis
- Mitigation and enhancement measures
- Community Consultation and Engagement Approach
- Grievance Redress Mechanism
- Monitoring plan
- Estimation of cost of ESMP
- Institutional arrangements for implementation of ESMP

## Mitigation and Enhancement Measures

Mitigation and enhancement measures will be design in accordance with existing GoM regulations and World Bank Group Safeguard Policies, including but not limited to noise and vibration generation, air quality, vapor and exhaust emissions, water quality, fisheries, access to natural resources, impacts on utilities and public/worker health and safety.

### Construction Phase:

This section suggests mitigation and enhancement measures that could be applied to sub project construction. It is expected that subproject specific ESMP and ESIA, where applicable, will determine more specific impacts and mitigations measures. Preliminary estimations and fields visits to potential project sites and existing infrastructure susceptible to be replicated under the Project reveal that many of the adverse impacts anticipated could be minimized by adopting readily available mitigation measures. There is also scope to enhance some of the beneficial impacts generated from the proposed sub projects.

In order to identify potential mitigation/enhancement measures, the possible impacts have been categorized into: (a) “general impacts”, which are typical common impacts to be experienced in most sub projects, and (b) “sub project specific impacts” which are impacts expected for particular subprojects.

Table 6.7 shows typical activities to be carried out under different sub projects, corresponding “general impacts” and suggested mitigation and enhancement measures. It also assigns responsibility for implementation of mitigation and enhancement measures. Table 6.8 shows “subproject specific” impacts and corresponding mitigation / enhancement measures. These tables are a reference and it is expected that all sub projects would not generate all of the impacts at the same level/magnitude.

### **Operational Phase:**

Apart from regular operation and maintenance, a number of issues have been identified as critical to reduce or avoid possible adverse environmental impacts.

These include regular maintenance of storm drains in the sub projects (e.g. restricting discharge and periodically cleaning the drain), to reduce risk of water pollution. Adequate monitoring is also needed to make sure that the storm drain does not receive direct discharge of toilet wastewater from the office or residential quarters located within the sub project area. Such discharges would contaminate the drainage water and eventually the receiving water body (river or stream), and would bring about a wide range of adverse environmental and health outcomes.

Accidental spillage of transformer/generator fuel into the drainage system is also a serious concern, which can cause environmental pollution. Spilled fuel from transformer/generator, if not properly disposed, could bring about adverse health and environmental impacts. Proper management of traffic and pedestrian movement could often minimize increased risks of accidents during the maintenance of transmission lines/distribution lines sub project by ESE and DRD near the roadways. Movement of heavy vehicles (loaded trucks) in local roads is a common cause of road damage at many sub project sites. Table 6.10 shows some important subproject specific impacts during operation phase and corresponding mitigation measures.

Table 8.10: Typical “general impacts” during construction phase and corresponding mitigation and enhancement measures

<b>Activity / Issues</b>	<b>Potential Impacts</b>	<b>Proposed Mitigation and Enhancement Measures</b>	<b>Responsible Parties</b>
Construction and operation of labor shed for workers	Generation of sewage and solid waste; water/environmental pollution	Construction of sanitary pit latrine/septic tank system Erection of “no litter” sign, provision of waste bins/ cans, where appropriate	Contractor (Monitored by ESE/DRD)
	Worker’s Health and Safety	Raising awareness about hygiene practices among workers Availability and access to first-aid equipment and medical supplies	Contractor (Monitored by ESE/DRD)
	Possible development of labor camp into permanent settlement	Contractor to remove labor camp at the completion of contract	Contractor (Monitored by ESE/DRD)
	Outside labor force causing negative impact on health and social well-being of local people	Contractor to employ local work force, where possible; promote health, sanitation and road safety awareness	Contractor (Monitored by ESE/DRD)
General construction works of sub-projects	Drainage congestion and flooding	Provision for adequate drainage of storm water Provision of adequate diversion channel, if required Provision of pumping of congested water, if needed Ensure adequate monitoring of drainage effects, especially if construction works are carried out during the wet season	Contractor (Monitored by ESE/DRD)
	Air pollution	Ensure that all project vehicles are in good operating condition Spray water on dry surfaces / unpaved roads regularly Maintain adequate moisture content of soil during transportation, compaction and handling Sprinkle and cover stockpiles of loose materials (e.g. fine aggregates) Avoid use of equipment such as stone crushers at site, which produce significant amount of particulate matter	Contractor (Monitored by ESE/DRD)
	Traffic congestion, obstruction to pedestrian movement	Schedule deliveries of material/equipment during off peak hours Depute flagman for traffic control Arrange for signal light at night	Contractor (Monitored by ESE/DRD)

	Noise pollution	<p>Use of noise suppressors and mufflers in heavy construction equipment</p> <p>Avoid prolonged exposure to noise (produced by equipment) by workers</p> <p>Limit the use of construction equipment producing excessive noise from 9.00am to 5.00pm</p> <p>Regulate use of horns and avoid use of hydraulic horns in project vehicles</p> <p>Schedule delivery of material/equipment from 9.00am to 5.00pm</p>	Contactor (Monitored by ESE/DRD)
	Water and soil pollution Destruction of aquatic habitat	<p>Prevent discharge of fuel, lubricants, chemicals, and wastes into adjacent rivers / streams / drains</p> <p>Install sediment basins to trap sediments in storm water prior to discharge to surface water</p> <p>Keep noise level (e.g. from equipment) to a minimum level, as certain fauna are very sensitive to loud noise (e.g. during transmission tower construction over river / wetlands)</p>	Contactor (Monitored by ESE/DRD)
	Felling of trees, clearing of vegetation	<p>Replant vegetation when soils have been exposed or disturbed</p> <p>Offsetting of felled trees in a new location</p>	Contactor (Monitored by ESE/DRD)
	Workers health and safety	<p>Following IFC Performance Standards Health and Safety Guidelines</p> <p>Capacity building on Environmental health and safety</p> <p>Provision of adequate health and safety materials (e.g. helmets, boots, gloves, masks, etc)</p> <p>Provision of appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.)</p>	Contactor (Monitored by ESE/DRD)
	Spills and leaks of oil, toxic chemicals	<p>Good housekeeping</p> <p>Proper handling of lubricating oil and fuel</p> <p>Collection, proper treatment, and disposal of spills</p>	Contactor (Monitored by ESE/DRD)
Health and Safety	Exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; Exposure to dust and noise; falling objects; work in confined spaces; Exposure to hazardous materials; Exposure to electrical hazards from the use of tools and machinery	<p>A safety observer must be appointed at each subproject site by the contractor before the commencement of work</p> <p>Only allowing trained and certified workers to install, maintain, or repair electrical equipment;</p> <p>Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines;</p> <p>Proper Personal Protective Equipment (PPE) for all workers and others associate with work</p> <p>Where rehabilitation is required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined before work.</p>	Contractor (Monitoring by ESE / DRD)

All construction works	Beneficial impact on employment generation General degradation of environment Discovery of historical items and cultural remains	Employ local people in the project activities as much as possible Environmental enhancement measures, such as plantation, landscaping, traffic / direction signs Follow "chance find procedure" (see Appendix... for protection of cultural resources)	Contractor (Monitoring by ESE / DRD)
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Table 8.11: "Sub project specific impacts" during construction phase and corresponding mitigation measures of sub project, NEP

Activity / Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Setting up and operation of asphalt plant and bitumen preparation area (for sub station access road construction, other sub projects if needed)	Air and noise pollution affecting nearby settlements	Locate plant away from residential settlement Consider use of emulsified bitumen	Contractor (Monitoring by ESE/DRD)
	Possible water pollution (surface and groundwater) by bitumen and solvents	Avoid spills; surround plant area with a ditch with a settling pond / oil trap at the outlet	
	Possible PCB contamination from dismantling of old transformers with PCB	Treat PCB of old transformers following specified methods in ECOP (e.g. dehalogenation, electrochemical oxidation, etc.)	
	Cutting down trees to use a fuel wood for heating bitumen	Strictly prohibit use of fuel wood for heating bitumen	
Access road construction (if needed for a specific sub project)	Effect on traffic and pedestrian safety Water pollution from bituminous products / solvents	Employ traffic control measures and limit possible disruption to non construction traffic Strict control to avoid spills; provision for adequate clean up	
Installation of poles of transmission / distribution lines adjacent to roadways for a specific electrification sub project in its distribution power line construction	Traffic congestion / traffic problems Safety	Not storing electric poles / transmission tower components over busy roads / highways Following standard safety protocols while erecting poles and stretching cables Taking appropriate protective measures against accidental fall from elevated height (e.g. using body harness, waist belts, secured climbing devices, etc.) as specified in ECOP.	Contractor (Monitoring by ESE / DRD)

Construction of power line through natural habitat or tree plantation area	Impact on biodiversity, vegetation and habitat	If there is no alternative, Felling, pollarding, lopping and pruning of trees for electric clearance, whenever necessary, to be done with permission from the local forest office / appropriate authority Hand clearing of vegetation Strict prohibition on use of chemicals for forest clearance / ROW maintenance Use of existing path / access roads for movement of man and machinery Carrying tower materials into forest by head loads	Contractor (Monitoring by ESF / DRD)
Transmission Tower Foundation in Major River / Stream	Impact on Fisheries and Other Aquatic Life in the Major River Collision with water vessels	Use of vibratory hammer for pile work Installation of underwater enclosures to minimize sound Use signage and construct fender (if necessary)	Contractor (Monitoring by LSL / DRD)
Acquisition of required Land area for a specific sub project	Resettlement Problem Potential impact on livelihood of inhabitants	Alternate choice of land use Carry out RAP (Resettlement action plan): inventory of losses, compensation for land use, crops, fruit bearing trees, etc. Consultation for addressing grievances Funds for acquiring land	Project proponent ESE / DRD
Hoisting of Poles / Towers for a specific sub project (wind energy / H poles, Concrete poles (for power lines)	Risk of accidents, worker safety	Adherence to good engineering practice of hoisting poles and towers and preventive measures to prevent accidents and mishaps	Contractor (Monitored by ESF/ DRD)
Construction of intake accessories of a mini hydropower plant (<1MW)	Impact on fish migration / habitat  Soil erosion and siltation	Provide alternate fish ladder (fish by pass) at intake for fish migration Provide trash capture mesh / screen at intake / entrance gate of penstock before turbines Provide stone pitching or masonry work at banks of intake structures Provide siltation basin before forebay and de-silt regularly	Contractor (Monitored by LSL / DRD)

Table 8.12: Typical "general impacts" during operational phase and corresponding mitigation and enhancement measures

Potential Impacts	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Air Pollution from exhaust emissions, vapor , etc.	Impact on health (lung disease) and well being of workers and inhabitants in the vicinity of sub project	Grow trees within sub project compound and environs to absorb Green house Gas emission and particulate matter (PM <sub>10</sub> , SO <sub>2</sub> , NO <sub>2</sub> , CO <sub>2</sub> )  Ensure exhaust height according to technical specification	(Monitored by LSL / DRD)

Noise Levels for subproject operation	Impact on workers / surrounding inhabitants well being and health concern	Safety gears for works in operation  Noise mitigation measures such as acoustic system / sound proof system in plant / generator, engine and turbine room	(Monitored by ESE / DRD)
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Table 8.13: Typical “specific impacts” during operational phase and corresponding mitigation and enhancement measures			
Activity / Issues	Potential Impacts	Proposed Mitigation and Enhancement Measures	Responsible Parties
Erosion and siltation	Impact on stability of substation structure or accessories	Landscaping and erosion control work for each sub project will be developed	Monitored by ESE / DRD
	Blockage in operation of plant		
Spillage of oil to water body / soil from a specific sub project operation (diesel engine, mini hydro turbine, other dual system / hybrid using diesel engine)	Pollution surface water / soil	Provide grease / oil traps	Monitored by ESE / DRD

## 9. Monitoring and Evaluation

A number of implementing agencies will have monitoring and evaluation responsibilities during implementation of the Project. The PMOs have the overall responsibility for monitoring the implementation of the overall ESMF and will also play a key role in monitoring the preparation and implementation of safeguard instruments for subprojects.

During project implementation, the PMOs will check with local environmental authorities to determine if the project implementation is meeting all specified ESMF, ESIAs, ESMP and related safeguard requirements (e.g. RAP, IPP). They will also perform supervision site visits to the various stages of investments construction to confirm safeguard instruments are being adequately implemented. A supervision report covering the environmental and social management issues should be included in the overall site visit report.

The PMOs will regularly inform the Project Steering Committee and World Bank Task Team on the status of ESMF implementation and an overview of implementation of subproject environmental and social instruments. They will prepare quarterly and annual reports on the key steps, outputs and results of the environmental and social management actions taken for the implementation of the ESMF and subprojects. The PMOs will inform the Project Steering Committee and World Bank Task Team of any shortcomings in the implementation of the ESMF and of any circumstances or occurrences that could have a materially adverse impact on the environmental and social performance of the project that go beyond the impacts envisioned and managed under the ESMF.

As needed and required by national legislation, the PMOs will check with local environmental authorities to determine if the project implementation is meeting all safeguard requirements specified in the ESMF and subproject safeguard instruments.

In accordance with the Institutional Implementation Framework developed for the Project, District PMOs are responsible for planning and implementation of subprojects in coordination with Village Electrification Committees, District Government and State/Region Government. The District PMOs are also responsible, under the guidance of the central PMOs, for monitoring the implementation of subproject safeguard instruments. Detailed arrangements for monitoring subprojects will be spelled out in the respective safeguard instruments (see also Section 9.1).

#### **[M&E TO BE DEVELOPED FURTHER]**

#### **9.1 Monitoring plan for a subproject**

The primary objective of environmental monitoring is to verify the absence of or record environmental and social impacts resulting from the subproject activities and to ensure compliance with the "mitigation measures" identified earlier under the ESIA/ESMP/ECoP/RAP/IPP in order to prevent or reduce adverse impacts and enhance positive impacts from project activities.

##### **Monitoring during construction:**

During implementation of all subprojects, the MOEP and DRD PMOs will be responsible to monitor and make sure that the environmental and social mitigation/enhancement measures (including health and safety measures) outlined in the ESIA/ESMP/ECoP/RAP/IPP for the particular subproject are being implemented.

Apart from general monitoring of mitigation/enhancement measures and health and safety protocols (as outlined in the ESMF and Tender Document), important environmental parameters to be monitored during the construction phase of the subprojects include noise level, water quality, drainage congestion, and traffic problems. However, the requirement and frequency of monitoring would depend on the type of subproject, the anticipated impacts and the field situation, and will be determined during preparation of the ESMP (standalone or under ESIA) or selection of ECoP. Table 9.1 below provides a general example of monitoring arrangements.

The (daily) routine monitoring work will be done by MOEP / ESE / DRD to ensure that:

- All personnel at work sites shall be provided with protective gears like helmets, goggles, boots, etc. Workforce, likely to be exposed to noise levels beyond regulatory stipulated limits, shall be provided with protective gears like ear plugs etc. and regularly rotated.
- Dust suppression measures like sprinkling of water shall be ensured at all operations areas.

- The construction camps shall have health care facilities and all construction personnel shall be subjected to routine vaccinations and other preventive / healthcare measures.
- The work and campsites shall have suitable facilities for handling any emergency situation like fire, explosion, electrocution, etc.
- All areas intended for storage of hazardous materials shall be quarantined and provide with adequate facilities to combat emergency situations. All required permits for storage of inflammable / hazardous materials are to be obtained.
- The construction workers, supervisors and engineers shall be properly trained and with sufficient experience.
- The operational areas shall be access controlled and entry shall be allowed only under authorization.
- The construction camps shall have in-house community / common entertainment facilities.
- Daily/weekly check on ESMP requirements.
- Measures outlined in the RAP and/or IPP, if any, are being implemented as described in the plans (RAPs and IPPs will include specific monitoring arrangements).

**Table 9.1: Guidelines for monitoring of environmental parameters during construction for subprojects with medium/high impacts**

Monitoring Parameter and Scenario	Monitoring Frequency	Resource Required and Responsibility
Noise Level	Once every week, particularly during operation of heavy equipment	Contractor, under guidance of ESE
Surface Water Quality (pH, BOD <sub>5</sub> / COD)	Once during construction period (at a location downstream of the work area)	Contractor, under the guidance of ESE
Visual observation of drainage congestion within around sub project location		
Visual observation of traffic within around sub project location	Once a week, when drainage / traffic congestion suspected	Contractor, under the guidance of ESE / DRD

Occupational health and safety of project personnel (also includes general health, water supply and sanitary provision, etc.)	Once a week, and as and when needed	
---	-------------------------------------	--

### **Monitoring during operation**

During operational phase, monitoring of environmental parameters would be required for the sub project Table 9.2 presents guideline for monitoring of specific environmental parameters during operation phase that needs to be further tailored to specific subproject

**Table 9.2 Guidelines for monitoring during operational phase**

Parameters	Monitoring Frequency	Resource Required and responsibility	Comment
Danger Trees	Once every month, and as directed by Project Engineer	Vehicle with Ladder and cutting accessories; maintenance team's responsibility	Results to be reported to ESE or relevant party
Dielectric strength of Transformers	Once in 6 months, and as directed by the Project Engineer	Testing equipment, Monitoring team	
Tan – δ test	Once in 10 years, and as directed by the Project Engineer	Testing equipment, Monitoring team	

## 10. Estimated Budget for Environmental and Social Mitigation and Management

The indicative cost estimate for basic implementation of the environmental and social components under the ESMF is approximately USD 3,800,000. This amount was estimated by allocating 1% of the total budget for infrastructure building, USD 380 million (i.e. USD 300 million for grid roll out (Component 1) and USD 80 million for

off grid (Component 2 under NEP)). This amount is an estimation and may differ from the final cost expected under this ESMF.

The Contractor carrying out the construction of the subproject is assumed to include the cost of compliance with the ESMF in the bid. These estimates should be prepared for all mitigation and monitoring measures proposed in the ECoP/ESMP/ESIA.

**[TO BE COMPLETED]**

**Table 10.1: Indicative Budget Estimate for Environmental and Social Management**

Activity	Indicative Cost (USD)			
	Integrated into ESMP	ESIA	Training, Technical Assistance & Services	
Installation Contract				
<b>Environmental and Social Mitigation</b>				
<b>A. Pre-Installation Phase</b>				
A.1 Environmental and Social Assessment; preparation of safeguard instruments (consultancy contracts)			930,000	279,000
A.2 Design Measures	X			
<b>B. Installation Phase</b>				
B.1 Implementation of construction engineering best practice as mitigation				
C. Operational Phase				
C.1 Implementation of mitigation measures in design	X			
C.2 Implementation of operational practices as mitigation measures.	X			
<b>Environmental Effects Monitoring</b>				
<b>A. Pre-Installation Phase</b>				
A. Pre-Installation Phase				
A.1 Measurement of Baseline Conditions		93,000		
<b>B. Installation Phase</b>				
B.1 Monitoring of air, noise, vibration, water (including purchase of environmental		155,000		46,500

monitoring equipment by central PMOs)				
B.2 Monitoring of community & workers' health and safety		155,000		46,500
<b>C. Operational Phase</b>				
C.1 Monitoring of air, noise, water			93,000	46,500
C.2 Monitoring of community & workers' health and safety			93,000	46,500
<b>Sub-total (USD)</b>		<b>403,000</b>	<b>1,116,000</b>	<b>465,000</b>
<b>Performance Monitoring</b>				
Environmental auditor				186,000
PMOs Environmental/Social manager				31,000
Local environmental/social site manager	x	217,000		
<b>Sub-total (USD)</b>		<b>217,000</b>		<b>217,000</b>
Contingency at 15%		93,000	167,400	102,300
<b>Sub-totals (USD)</b>		<b>713,000</b>		
<b>Total USD</b>			<b>2,780,700</b>	

Cost of implementing environmental and social management plan (ESMP) and other safeguard instruments, including monitoring activities, needs to be estimated as a part of the preparation of the ESMP/ESIA/RAP/IPP. Many of the activities to be carried out as a part of ESMP/ESIA/RAP/IPP would not involve any additional direct cost e.g., employing local work force, where appropriate; keeping subproject vehicles in good operating condition; scheduling deliveries of materials/ goods in off-peak hours; good housekeeping, avoiding spills; prohibiting use of fuel wood for heating bitumen; etc. On the other hand, a number of activities would require additional cost. Environmental and social monitoring during both construction and operational phases would involve direct cost. At the same time, a number mitigation measures (including health and safety measures) would also require additional cost; these include of installation of septic tank/sanitary latrine/portable toilets, installation of health and safety signs, awareness documents (signs/ posters), water sprinkling on aggregates and unpaved surfaces, traffic control (e.g., deputing flagman), traffic light, plantation, and protective gear. Costs for compensation for land acquisition and related impacts, as defined in the RPF, will be funded by the project implementer in agreement with the respective local authorities depending on the type of subproject; this should be included in the subproject budget.

#### [ALTERNATIVE AND SIMPLER BUDGET FORMAT FOR ESMF]

Activity	Unit	Cost
Safeguard Capacity Building		
Monitoring		
Personnel		


## 11. Community Engagement, Consultation and Public Disclosure

The GoM emphasizes the importance of “good governance, clean government” and is taking a series of actions to improve participation, public consultation and disclosure. However, implementation of these will rely on strategies, legislation and procedures that are still to be prepared and passed. In the meantime, the Project will follow World Bank Group Safeguard Policies for participation, consultation, disclosure as described in this ESMF, including particular procedures included in the IPPF and RPF.

The Project aims at achieving meaningful consultation that is a two way process in which beneficiaries provide advice and input on the design or the proposed subproject that affect their lives and environment. Meaningful consultation shall promote dialogue between government, communities, NGOs and implementing agencies to discuss all aspects of the Project. Consultation is an ongoing process and therefore it is to be carried out both during subproject preparation and implementation. Consultations with project affected people have been undertaken as part of preparation of the NEP and will continue throughout project implementation.

The Project supports decision making by allowing the public access to information on environmental and social aspects of the project, as included in World Bank Safeguard Policies, including for Environmental Assessment, Involuntary Resettlement and Indigenous Peoples. This ESMF and the site specific ESIA/ESMPs/RAPs/IPPs (and other relevant documents such as lease agreements voluntary land donation forms) prepared for the subprojects will be disclosed to the public. Copies should be made available to communities and interested parties in local language in accessible locations, including through local government authorities, (e.g., local and district level ESE, DRD, GAD offices) before works may commence. The IPP, where prepared, should also be made available to the affected ethnic minority communities in places, manner and language that are accessible to them.

The PMOs and partners will also provide periodic reports to the affected communities and other relevant stakeholders on the implementation status or any modification to environmental and social management plans. The PMOs will use a variety of communication tools that will be included in the communication strategy and could include infographics, leaflets and frequent questions and answers to be distributed among different stakeholders, a phone-line to the PMOs etc.

In addition to overall consultations carried out regarding this ESMF, the Project will consult communities where grid and off-grid subprojects (Components 1 and 2) are to be

implemented. The objective of the community consultation is to encourage potential beneficiaries to participate in the subprojects, as relevant, by informing them of various benefits of the subproject, and ensuring that they are also aware of potential negative environmental and social impacts, measures to address them and the contact of the GRM, VEC and Safeguard Focal Point within the MOEP and DRD PMOs.

Community engagement and consultation is deeply embedded in the Project and is considered a strategic part of its Results Framework. As part of its Citizen Engagement section, the PMOs will consider the number of consultation and the average number of beneficiaries and share of vulnerable people participating in each public consultation for grid and off-grid electrification as an indicator of success.

**Table 11.1 Key stakeholder groups**

Government and regulatory agencies	DRD, ESE, States/Regions, Districts and Townships affected by the project.
Private sector companies and social enterprises	Private sector companies with the skills and capabilities, and interest, in implementing subprojects. This will likely include both national and international companies and, for the off-grid component, may also include social enterprises.
Non-government organizations	International and local stakeholder groups, including environmental and ethnic minority organizations and NGOs.
Local stakeholders	Community-based organizations (CBOs), Municipal and district-level committees, unions, and other local groups.

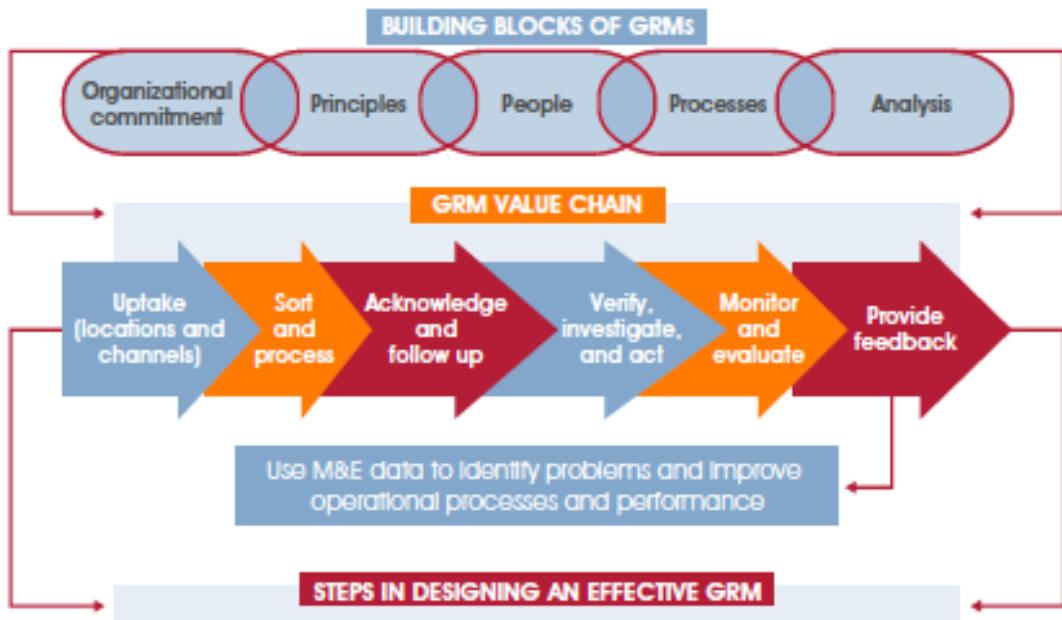
Academic and research institutions	Environmental research groups, universities, and technical institutes.
Ethnic minority communities	If projects are planned to be performed in areas ethnic minority communities a process of free, prior and informed consultations will be undertaken with communities in the project area of influence (see IPPF, Annex 5))
Development Partners	Other development organisations engaged in the energy sector in Myanmar

During the process of preparing the ESMF the *PSIA to inform the ESMF* involved stakeholder consultations. More than 20 organisations based in Yangon were consulted; many of which were CSOs with a specific focus on ethnic minorities, land and/or gender. In addition, key resource persons identified as those that could provide insights relevant to ethnic minorities were interviewed. An early consultative meeting was held on January 30, 2015 in Yangon with civil society organizations, including some ethnic minority organizations. Background documentation on the proposed project was prepared in Myanmar and English and provided in advance of this meeting. In addition, meetings and discussions were held with community leaders and CSOs in Chin and Shan States during the PSIA field visits.

The draft ESMF and PSIA will be disclosed in English and Myanmar prior to public consultations scheduled to be held in the week of May 11, 2015 [TO BE UPDATED]. See Annex 6 for more details on the consultation process during project and ESMF preparation.

## Grievance redress mechanism

A grievance redress mechanism (GRM) has been prepared for the Project with aim to with theto allow affected communities and individuals to raise complaints to implementing entities in regards to the preparation and implementation of subprojects. It also aims to enable the PMOs to receive and facilitate resolution of the specific concerns of affected communities and project participants regarding project environmental and social performance. The GRM will aim to resolve concerns promptly, in an impartial and transparent process tailored to the specific community, and at no cost and without retribution to the complainant/s. The GRM is based on the following six principles: fairness; objectiveness and independence; simplicity and accessibility; responsiveness and efficiency; speed and proportionality; participatory and social inclusion.



Source: World Bank, Feedback Matters: Designing Effective Grievance Redress Mechanisms for Bank-Financed Projects p. 3

The GRM will be communicated to different stakeholders. It is intended that information on the GRM will be disseminated widely in meetings and through pamphlets and brochures in Myanmar language, and ethnic languages as needed/relevant. Specifically, information will be provided about how and where to lodge complaints/grievances. Villagers will be encouraged to seek clarification or remediation through the mechanism if they have any questions or complaints/ grievances.

Subproject specific safeguard instruments (ESMP, RAP, IPP) will describe the GRM in detail based on the following procedures for addressing grievances [TO BE COMPLETED]:

Stage 1: An initial stage, within the local village or township level, in which any person/s aggrieved by any aspect of the Project can lodge an oral or written complaint/grievance to the local Village Electrification Committee (VEC) or implementing partner/operator. The VEC or implementing partner/operator should keep a written record of complaints/grievances raised by villagers and their resolution; they should inform the District DRD or ESE/MOeP PMO of such complaints and resolutions.

If the complaint cannot be resolved within 155 days of receipt between the aggrieved person/s and the VEC or implementing partner/operator, it should be escalated to the second step of the process.

Stage 2: If the aggrieved person is not satisfied with the outcome of the initial stage, she/he/they can lodge the complaint to the District DRD or ESE/MOeP PMO. During the dialogue process the issues raised will be reviewed, and actions for resolution will be agreed by the parties. The dialogue will seek a resolution to the grievance as long as all the parties involved are amenable to the process. The District DRD or ESE/MOeP PMO should keep a written record of complaints/grievances raised by villagers and inform the State/Region and National PMOs of such complaints.

If the complaint cannot be resolved within 15 days of receipt between the aggrieved person/s and the District DRD or ESE/MOeP PMO it should be escalated to the third step of the process.

Stage 3: If the aggrieved person is still dissatisfied following review by the District DRD or ESE/MOeP PMOPMO, the case should be referred to the respective State/Region and/or National PMOs. The State/Region and/or National DRD should keep a written record of complaints/grievances raised by villagers and inform the NEEC and World Bank of such complaints.

If the complaint cannot be resolved within 20 days of receipt between the aggrieved person/s and the District DRD or ESE/MOeP PMO, the aggrieved person/s may proceed to legal proceedings in accordance with the GoM's laws and procedures.

The VECs and respective PMOs will keep a record of all complaints received, including a description of issues raised and the outcome of the review process. A grievance database template will be prepared to ensure that all key information is captured. Written feedback will be provided to aggrieved persons or parties to the dispute throughout the GRM process.

Regular monitoring of the effectiveness of the GRM will be included in the monitoring and evaluation (M&E) approach for the Project. In undertaking the regular M&E activities, the following questions will be raised:

- Does the project have clear, formal, and transparent internal mechanisms and rules for addressing grievances?
- Do project officials responsible for grievance redress have the authority to take or demand remedial action?
- Are officials responsible for grievance redress obliged to take action on all grievances?
- Do project-affected people feel that they can lodge grievances without fear of retaliation?
- Are project beneficiaries aware of their right to file a grievance and of the grievance redress procedure in general?
- Are there internal processes in place to record, track, and monitor the grievances and the action taken on them?
- Does the GRM provide timely feedback (written or otherwise) to the petitioner on actions taken?
- Is there an appeals process in place that GRM users can access if they are not satisfied with how their grievance has been resolved?

Grievance redress monitoring indicators may include:

- Number of complaints/ grievances registered.
- Percentage of grievances resolved.
- Percentage of grievances resolved within stipulated time period.
- Time required to resolve complaints (disaggregated by different types of grievances).
- Percentage of complainants satisfied with response and grievance redress process.
- Percentage of project beneficiaries that have access to the GRM.

## 12. Capacity building and Training Plan.

Overall capacity for environmental and social management within the PMOs needs to be developed.

Although both DRD and MOEP have recent experience implementing a World Bank-financed projects, capacity is low and experienced staff limited. Both the MOEP and DRD PMOs have assigned the human resources for carrying out safeguard and operational standards-related activities. However, the background and experience of government staff, is mostly focused on engineering, needs to be expanded to environmental and social management and, more specifically, World Bank Group Safeguard Policies.

Basic training on regulatory requirements, environmental and social impacts, and environmental and social assessment and management would greatly improve the capability of relevant MOEP / DRD engineers and experts in carrying out their responsibilities under the proposed Project. From a logistical point of view, the trainings may be organized on a regional basis, however this will be determined on a case-by-case basis.

**Table 13.1. Training Requirements for Environmental and Social Management**

Training Type /Contents	Participants	Schedule
General environmental and social awareness, regulatory requirements, ESMF for project, environmental and social impacts and mitigation, analysis of alternatives, environmental and social management	Relevant engineers/officials of ESE/MOEP / DRD	Prior to commencement of subproject activities
Advance training on environmental and social assessment and management (ESIA, ESMP, RAP, IPP, ECoP), monitoring, including details on ESMF	Participants from (a) Environment/safeguard Unit of MOEP/ MoLFRD (b) Relevant engineers/ official of ESE/DRD Participants will include local level staff	Immediate after project commencement
Mentoring and on the job training for the PMOs four dedicated staff, by pairing them with international consultants, specific site visits, study tours, etc.	PMOs environmental and social dedicated staff, including local level staff	Immediate after project commencement
Health and Safety, and relevant Performance Standards, such as Labor	PMOs environmental and social dedicated staff, included local level staff, constructor when necessary	Prior to commencement of subproject activities

**Annex 1: Environmental and Social Screening Form**

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**Annex 1: Environmental/Social Safeguard Screening Form**

<b>Region/State:</b>	
<b>Township:</b>	
<b>Village Tract:</b>	
<b>Village:</b>	
<b>Subproject:</b>	
<b>Subproject ID:</b>	

**Subproject Description:**

Type: (See Typical Infrastructure)

Nature: Rehabilitation/Extension/New Work/Other

Cost estimate:

Location (with GPS longitudes and latitudes, if available and map outlining Important Environmental Features (IEFs)<sup>10</sup>:

Number of Beneficiaries:    Total:                                  By Gender:

Number of Villages Served:

(For Off-Grid): Number and Denomination of Schools in Village:

(For Off-Grid): Number and Denomination of Religious Buildings in Village

Is there any electricity initiative and/or government assistance in the same village? Y

N

Identified Ancillary Facilities<sup>11</sup>: Briefly identify type and location of ancillary facilities and the possible need of an environmental and social performance audit

Ownership of subproject land:

- (a) Government owned (acre)
  - (b) Private land (need acquisition) (acre)
- 

<sup>10</sup> Educational institutions, health care clinic/center, pond, canal, river, utility infrastructure, park, green area etc.

<sup>11</sup> Facilities that may not be funded by NEP but would not have been constructed or expanded if NEP did not exist and without which NEP would not be viable

- (c) Partly private/Partly government owned
- (d) Communally owned land
- (e) Other (please describe) \_\_\_\_\_

Brief description of proposed subprojectsite:(indicate information on present landuse, HFL For last 30 years and Important Environmental Features adjacent to the site. Also indicate if there is a history of conflict in and/or within proximity to the proposed subproject site)

Summary of possible environmental/social impacts for the subproject, including cumulative impacts and ancillary facilities:

### **Potential Environmental Impact during Construction Phase:**

#### **Ecological Impacts**

Briefly describe the vegetation/trees in/adjacent to the project area:

Felling of trees:	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Minor				
Number of trees:	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Clearing of vegetation:	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Minor				
Impact on terrestrial /aquatic / avian Habitat:	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Minor				

Presence of natural forest, national parks, rivers, lakes, wetlands, habitats of endangered species for which protection is required under World Bank Safeguard Policies/Myanmar Laws:

Yes  No

**Note:** if answer to the above question is “Yes”, then a detailed analysis of alternative routes would be carried out to considerably decrease or eliminate impacts to natural resources, forestry and biodiversity. If impacts to natural resources remain unclear (e.g. what surface will be affected or the vulnerability of the Natural Resources) an

ESIA or EMP will be carried out to ascertain the level of impact. If the impact of Natural Resources is expected to be significant and affecting an area broader than the sites subject to physical works, the subproject could be considered a Category A and therefore would be outside of the project's scope.

### **Physical-chemical Impacts**

Noise pollution:	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Insignificant				
Air pollution:	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Insignificant				
Drainage congestion / Water logging	<input type="checkbox"/>	Very likely	<input type="checkbox"/> Likely	<input type="checkbox"/> Unlikely
Water pollution	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Insignificant				
Pollution from solid / Construction waste	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/> Insignificant
Likelihood of encountering PCBs and hazardous materials (e.g. disposal of old machinery) or lead batteries:			<input type="checkbox"/> Very likely	<input type="checkbox"/> Likely
	<input type="checkbox"/> Unlikely			

### **Health and Safety/Cultural Resources**

Traffic congestion	<input type="checkbox"/>	Very likely	<input type="checkbox"/> Likely	<input type="checkbox"/>
Unlikely				
Health and safety	<input type="checkbox"/>	Significant	<input type="checkbox"/> Moderate	<input type="checkbox"/>
Insignificant				

Cultural Resources: Based on available sources, consultation with local authorities, local knowledge and/or observations, could the subproject alter any historical, archaeological or cultural heritage site (pagodas, memorials, graves, natural resources with cultural value, other) or require excavation near same?

Yes  No

### **Potential Social Impact during Construction Phase:**

#### **Land and Livelihood Impacts**

##### *Loss of crops, fruit trees and household infrastructure*

Will the subproject result in the permanent or temporary loss of crops, fruit trees and household infrastructure (such as granaries, outside toilets and kitchens, etc)?

Yes\_\_\_\_ No\_\_\_\_

*Resettlement and/or land acquisition*

Will land that is privately or communally used for farming, residence, grazing or other purposes be permanently acquired or temporarily occupied by subproject implementation?

Yes\_\_\_\_ No\_\_\_\_

>If the answer is yes, proceed to the guidance on land acquisition (voluntary donation or resettlement action plan, as appropriate)

**Equitable Access to Local Benefits**

*Accessing subproject benefits*

Will the following groups in the village have access to and benefit from the subproject?

Women	Yes	No
Youth Groups	Yes	No
Ethnic minorities	Yes	No
Religious minorities	Yes	No
Other groups (e.g. the poor, elderly)	Yes	No

>For each group: if the answer is ‘yes’, specify how it will benefit, and if it is ‘no’, explain why they will not benefit.

Will villagers be employed for the implementation of works?      Yes      No

**Potential Environmental Impact during Operational Phase:**

**Physicalchemical Impacts**

- Noise pollution:  
Insignificant       Significant       Moderate
- Air pollution:  
Insignificant       Significant       Moderate
- Erosion and Siltation  
Insignificant       Significant       Moderate
- Drainage congestion /  
Insignificant       Significant       Moderate

## Biological Impacts (Ecology)

- Likelihood of avian biota trapping <sup>†</sup> Very likely <sup>†</sup> Likely  
Unlikely
  - Likelihood Change in aquatic biota <sup>†</sup> Very likely <sup>†</sup> Likely  
Unlikely
  - Disease vector population <sup>†</sup> Very likely <sup>†</sup> Likely  
Unlikely

**Identified Ancillary Facilities:** Identification of issues related to environmental performance/need for an environmental performance audit

### **Potential Social Impact during Operations Phase:**

## **Land and Livelihood Impacts**

## *Loss of crops, fruit trees and household infrastructure*

Will the subproject result in the permanent or temporary loss of crops, fruit trees and household infrastructure (such as granaries, outside toilets and kitchens, etc)?

Yes        No

### *Resettlement and/or land acquisition*

Will land that is privately or communally used for farming, residence, grazing or other purposes be permanently acquired or temporarily occupied by subproject implementation?

Yes       No

>If the answer is yes, proceed to the guidance on land acquisition (voluntary donation or resettlement action plan, as appropriate)

## **Equitable Access to Local Benefits**

## *Accessing subproject benefits*

Will the following groups in the village have access to and benefit from the subproject?

Women	Yes	No
Youth Groups	Yes	No
Ethnic minorities	Yes	No
Religious minorities	Yes	No
Other groups (e.g. the poor, elderly)	Yes	No

>For each group: if the answer is ‘yes’, specify how it will benefit, and if it is ‘no’, explain why they will not benefit.

Will villagers be employed for the operation/maintenance of works? Yes  
No

**Category of subproject:** A / B / C

**Proposed environmental assessment exercise and attach Terms of Reference:  
Scoping Studies ESMP ESHIA as appropriate**

## **Overall Comments:**

Prepared by:

(Name, designation, mobile number, signature,  
date).....

**Reviewed by:**

(Name, designation, mobile number, signature, date).....



## Annex 2: Guidelines for Physical and Cultural Resources

As stated in the World Bank Physical and Cultural Resources (PCS) Safeguard Policy Guidebook, The PCR policy applies to projects having any one or more of the following three features:

- (i) Projects involving significant excavations, demolition, movement of earth, flooding or other major environmental changes
- (ii) Projects located within or in the vicinity of a recognized PCR conservation area or heritage site
- (iii) Projects designed to support the management or conservation of PCR

The subprojects under the proposed project will involve some excavation works, movement of earth and temporary flooding. A generic impact assessment of Physical Cultural Resources is outlined below.

### **Guidance on identification of PCR**

In the context of the proposed project, the probable examples of PCR may be the following:

- 1. Human made: Religious buildings such as Buddhist temples or shrines; exemplary indigenous vernacular architecture buildings; the remains of buildings of architectural or historic interest, historic or architecturally important townscapes; archaeological sites (unknown or known, excavated or unexcavated); and Commemorative monuments
- 2. Natural: historic trees, natural landscapes of outstanding aesthetic quality
- 3. Combined man-made or natural: Sites used for religious or social functions such as weddings, funerals, or other traditional community activities (community centres, burial grounds, family graves, cultural landscapes)
- 4. Movable: registered or unregistered artifacts in temples or mosques, paintings, statues of important historical figures, religious artifacts, cultural artifacts etc.

### **Assessment of probable impacts due to activities**

Below is a list of project activities or features under the context of the proposed project, which may commonly give rise to negative impacts on PCR, divided into two periods: construction phase and operational phase.

#### Construction phase:

- 1. Establishment of work camps:
  - Vandalism, theft and illegal export of movable PCR, and of pieces of monumental PCR accessible directly or indirectly to migrant labourer
  - Desecration of sacred sites.

2. Excavation, construction and soil compaction:

-Direct physical damage to natural, manmade and buried PCR on site

- Construction traffic,

- Vibration, soil, air and water pollution causing damage to natural or manmade PCR on site.

- Noise pollution can interfere with the use and enjoyment of PCR such as tourist destinations, historic buildings, religious establishments and cemeteries.

Mobilization of heavy construction equipment:

- Damage to natural or manmade PCR on site

- Soil compaction, damaging buried PCR (archaeological) onsite, and damaging pipelines and drains serving built PCR in the vicinity.

5. Flooding and Inundation:

-Submergence or destruction of human-made, natural or buried PCR. - Barrier to access of all types of PCR.

- Raised water table can lead to damage to all types of PCR.

- Damage to aesthetics of scenic landscapes.

6. Waste disposal or landfill:

-Burial or damage to natural, buried or underwater PCR.

**Operational phase:**

1. New and upgraded Roads:

- Increased human traffic enjoying improved access to PCR of public interest leading to increased wear and damage, sacrilege of sacred sites, theft and vandalism of movable and, breakable PCR.

- New highways cutting off access to living-culture PCR by residents of settlements on other side of the highway.

- Increased air pollution and vibration from traffic causing damage to man-made PCR, particularly monuments and buildings.

- Increased noise pollution interfering with enjoyment of people in tourist destinations, historic buildings, religious establishments and cemeteries.

- In scenic areas, obtrusive highways having a negative visual impact on the landscape.

- Roads and bridges which themselves constitute PCR being damaged by increased traffic.

- Positive impacts may also occur, through the discovery of hitherto unknown sites and artifacts and generation of tourism.

2. Induced development:

- Induced development leading to increased wear and damage, sacrilege of sacred sites, theft and vandalism of movable and breakable PCR, and damage to the aesthetics of scenic landscapes and townscapes.

3. Urban development:

- Changes in demography or settlement patterns leading to decay of inner cities and abandonment and neglect of older residential areas containing built PCR such as vernacular architecture.
- Developments which are out-of-character with their surroundings diminishing the aesthetic value of the townscape, decline in property values and ultimately, neglect of built PCR in the area.
- Damage to the aesthetics of scenic landscapes and townscapes.

### Annex 3: Chance Find Procedures

Works could impact sites of social, sacred, religious, or heritage value. "Chance find" procedures would apply when those sites are identified during the design phase or during the actual construction period and the related activity will not be eligible for financing under the project.

- (1) Cultural property includes monuments, structures, works of art, or sites of significant points of view, and are defined as sites and structures having archaeological, historical, architectural, or religious significance, and natural sites with cultural values. This includes cemeteries, graveyards and graves.
- (2) The list of negative subproject attributes which would make a subproject ineligible for support includes any activity that would adversely impact cultural property.
- (3) In the event of finding of properties of cultural value during construction, the following procedures for identification, protection from theft, and treatment of discovered artifacts should be followed and included in standard bidding document.
  - (a) Stop the construction activities in the area of the chance find;
  - (b) Delineate the discovered site or area;
  - (c) Secure the site to prevent any damage or loss of removable objects.
  - (d) Notify the supervisory Engineer who in turn will notify the responsible local authorities;
  - (e) Responsible local authorities and the relevant Ministry would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures.
  - (f) Decisions on how to handle the finding shall be taken by the responsible authorities and the relevant Ministry. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance), conservation, restoration and salvage.
  - (g) Implementation of the authority decision concerning the management of the finding shall be communicated in writing by the relevant Ministry.
  - (h) Construction work could resume only after permission is given from the responsible local authorities and the relevant Ministry concerning safeguard of the heritage.

These procedures must be referred to as standard provisions in construction contracts. During project supervision, the Site Engineer shall monitor the above regulations relating to the treatment of any chance find encountered.

Relevant findings will be recorded in World Bank Supervision Reports and Implementation Completion Reports will assess the overall effectiveness of the project's cultural property mitigation, management, and activities, as appropriate.

## **Annex 4 Indigenous Peoples Planning Framework**

### **1. Introduction**

#### **1.1 Project Objective**

The proposed World Bank-financed Myanmar National Electrification Project (NEP) aims to support the Government of the Republic of the Union of Myanmar in increasing access to electricity services across Myanmar.

The project will provide support to the Government of Myanmar in its efforts to meet the goal of *universal access to electricity* by 2030.

#### **1.2 Poverty and Social Impact Analysis (PSIA) Research**

To inform the project design, poverty and social impact analysis (PSIA) research was undertaken in 2014 and during January – March 2015. This focused on: i) the institutional context in which the development and implementation of the NEP takes place; (ii) energy and electricity consumption patterns with a focus on energy poverty; (iii) perception of affordability of electricity connections and recurrent charges - with a particular focus on the new tariffs introduced in April 2014 and how these have affected different groups of consumers; and (iv) consumers' perspectives on the quality of services and understanding of pricing. The PSIA used a mixed methods approach and included quantitative research and a qualitative module to collect information on the issues outlined above.

The selection of field sites took into account the importance of understanding the different contexts, conditions of access to electricity and perceptions of consumers in rural and in urban areas.

PSIA research in 2014 (PSIA Phase 1) was undertaken in:

- for rural areas: 13 villages across Chin, Mandalay, Ayeyarwady, Magway, Shan and Rakhine, to collect information from areas with different types of access to electricity in different Regions/States and “agro-ecological zones”;
- for urban areas: Yangon, Mandalay and the capital of Chin State (Hakha).

Overall a total of 114 focus group discussions (FGDs) and 378 Key Informant Interviews (KIIs) were conducted across all research sites. The PSIA Phase 1 report was finalised in December 2014 and is available at:

[https://energypedia.info/wiki/File:WB\\_Myanmar\\_NEP\\_PSIA\\_Phase\\_I\\_Final.pdf](https://energypedia.info/wiki/File:WB_Myanmar_NEP_PSIA_Phase_I_Final.pdf)

Phase II of the PSIA analysis, undertaken early in 2015, sought to provide a more complete picture of the issues above by collecting data in additional States. It also sought to deepen the understanding of the critical issues identified in Phase I. These included: (i) key barriers to accessing electricity, namely the cost of connection to the villages and the cost of the initial connection to the home; (ii) village and ward-level self-organisation approaches and potential risk of exclusion of poor and marginalised households and of generating inter or intra village tensions/conflict over the distribution of resources; (iii) processes followed to determine the location of electricity infrastructure (including land acquisition and donation) and (iv) mechanisms in place to lodge and resolve complaints and disputes at local level; (v) quantifying the “affordability gap” and providing households’ perception of the adequate level of subsidies needed to support their connection to Government electricity services; and (vi) areas for priority capacity strengthening of the Department of Electricity Services at township level.

PSIA Phase II research was undertaken in:

- for rural areas: 15 villages across Chin, Magway, Kayin, Mon, Ayeyarwady, Rakhine, Shan, Mandalay.
- for urban areas: Yangon, Mandalay, the capital of Rakhine State (Sittwe), and in Mon State, Thaton.

### 1.3 Additional Social Assessment and Consultations

In addition to the PSIA Phase I and II research, during January – March 2015, a social assessment was undertaken including consultations with civil society, government, and some business stakeholders. This focused on obtaining insights into the potential social impacts of proposed NEP project activities, per the requirements of the World Bank’s

operational policies on environmental assessment (OP 4.01), indigenous peoples (OP 4.10) and involuntary resettlement (OP 4.12).

The social assessment and consultations considered particular issues and risks concerning ethnic minorities, in accordance with the requirements of the World Bank's operational policy on indigenous peoples (OP 4.10), and also engaged with civil society stakeholders focused on issues associated with land, gender and natural resources governance.

Field visits were made to eight villages across northern Chin State (Falam, Hakha) and southern Shan State (Taunggyi, Yatsauk), four villages per state, and included observation of examples of the type of infrastructure proposed to be funded through the NEP including.

Discussions were held with communities that have different experiences of the electrification process; for example, those that: currently receive electricity services through mini-hydro power plants (government-funded and community-funded) and solar home systems; were recently connected to the grid; and also a village that did not currently have access to government-funded electrification programs. In Shan State, the ethnic composition across the four villages visited was Bamar, Danu, Pa-O and Nepali. Chin, Shan, Pa-O and Danu speakers joined the field research team, as needed, to assist in facilitating meaningful engagement at village level.

The findings of the PSIA, social assessment and consultations undertaken to date have informed the design of the NEP Project and the present Indigenous Peoples Planning Framework (IPPF), whose aim is to enhance community engagement and address particular issues concerning ethnic minorities. This emphasis on community consultation and engagement will continue during project implementation as outlined in this IPPF and the ESMF.

This IPPF aims to provide the Ministry of Electric Power (MoEP) and Ministry of Livestock, Fisheries and Rural Development (MLFRD), through the Department of Rural Development (DRD), with the operational planning framework to avoid adverse social impacts and provide equitable and culturally appropriate project benefits to local communities, particularly poor and vulnerable population groups such as ethnic minorities. The IPPF has been developed to address the social safeguards aspects of the World Bank's operational policies on environmental assessment and indigenous peoples (or ethnic minorities in the context of Myanmar).

A key requirement of OP 4.10 is to obtain broad community support from ethnic minorities, as identified under the policy, for project activities affecting them (whether adversely or positively). However, since specific sub-projects have not been identified yet, it is premature to obtain such broad community support. As described in this IPPF, free, prior and informed consultations will be undertaken during project implementation. Similarly, the required site-

specific plans to address particular issues pertaining to ethnic minorities will be prepared during implementation for each subproject affecting ethnic minorities.

Consultations with ethnic minority organizations during project preparation have not revealed any opposition to the proposed project and improved electricity services are in demand in ethnic States as well as in the seven Regions of Myanmar.

## 2. Proposed Project Objectives and Design

### 2.1 Project Description

The Myanmar National Electrification Project (NEP), led by the MoEP and MLFRD, through DRD, focuses on helping increase access to electricity in Myanmar, in support of the Government of Myanmar's objective of achieving universal access to electricity across Myanmar by 2030.

The NEP is the first phase of an intended three-phase program of World Bank Group support, which is intended to enable expansion of electricity services in Myanmar through grid and off-grid solutions. The initial phase of the NEP Project is a five-year program: 2015-2019.

The expected results of the Project will include new household connections in urban and rural areas across the country. The proposed grid rollout program will not only improve the well-being of the affected population by better lighting, telecommunications and entertainment, but also enable income-generation opportunities and enhanced productivity. The program will prioritise connections for health clinics and schools, particularly in poor and vulnerable areas, to maximise developmental impacts.

The project includes an off-grid pre-electrification program to directly benefit the poor and vulnerable households by targeting those who reside outside the realm of the power grid and are expected to receive grid-based electricity services more than 10 years after the first phase of NEP.

The NEP intends to work with all development partners (DPs) and the private sector active in these areas. It will be designed as an open platform that DPs can also use in supporting electrification in Myanmar. Such a coordinated, sector-wide approach is considered the most effective in delivering the benefits of electrification and working together with the GoM, DPs and the private sector towards the twin goals of reducing extreme poverty and increasing shared prosperity in Myanmar.

The project falls under Environment Category B of the World Bank. Physical relocation of households or large-scale acquisition of land and/or assets is unlikely to occur. The project affected people are mostly direct project beneficiaries, although there is the potential that some people that do not receive direct project benefits may also be affected; for example, water users located downstream of micro-hydro power plants.

## 2.2 Project Components

### *Component 1: Grid rollout [up to US\$ 300 million].*

The grid component will support the purchase of equipment to extend distribution networks currently operated by the Yangon Electricity Supply Board (YESB) and Electricity Supply Enterprise (ESE) and connect communities identified in the National Electrification Plan as closest to the existing national grid and thus on the least-cost path for the grid rollout.

This component will include purchase of equipment to:

- Expand existing Medium Voltage (MV) substations and construct new MV substations;
- Construct new or rehabilitate existing MV lines, Low Voltage (LV) lines and MV/LV transformers; and
- Connect households with service lines and meters.

MOEP Project Management Office manages this component, working closely with ESE, YESB and other partners.

International Development Assistance (IDA) funding will finance procurement of goods (transformers, poles, conductors, cables, meters and auxiliary equipment), which ESE and YESB will be responsible to install. The International Finance Corporation (IFC) may support private sector participation in installation, in a manner to be determined.

### *Component 2: Off-grid pre-electrification [IDA US\$ 80 million].*

The off-grid component will target those communities located outside the reach of the existing national grid or unlikely to receive grid-based access in the next 10 years. This component will be based on application of mini-grids and household energy systems, including solar photovoltaic (PV) systems, mini-hydropower (not expected to exceed one megawatt), wind, diesel and hybrid systems (e.g. diesel/solar). MLFRD is responsible for off-grid rural electrification through its national and sub-national Department for Rural Development (DRD) offices.

### *Component 3: Capacity building and technical assistance [IDA US\$ 20 million].*

This component will provide Technical Assistance (TA), capacity building and advisory support to Government agencies at all institutional levels (union, state/ region, and district) involved in electrification planning and implementation, technical design, economic and financial analysis, environmental and social impact management, monitoring and evaluation, as well as procurement and financial management.

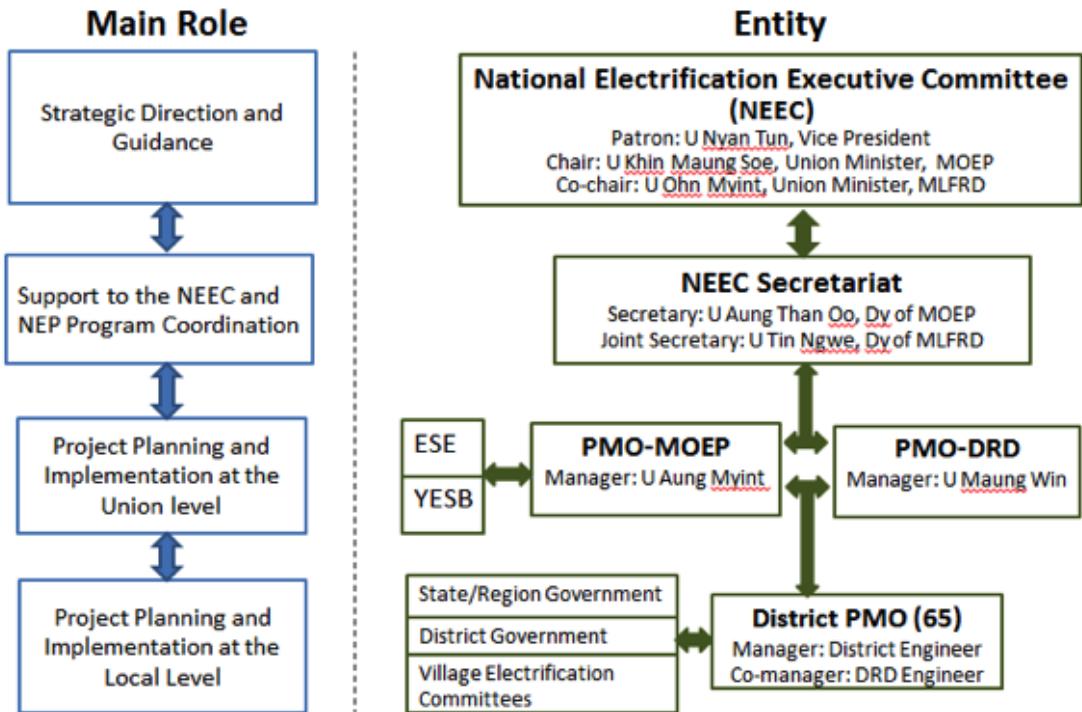
#### *2.2.1 Component 4: Contingent Emergency Response*

The objective of this “zero component” is to allow a rapid reallocation of IDA credit proceeds from other components to provide emergency recovery and reconstruction support following an adverse natural disaster event. This component would finance public and private sector expenditure on a positive list of goods and/or specific works, goods, services and emergency operation costs required for Myanmar’s emergency recovery. A Contingency Emergency Response Component (CERC) Operational Manual will apply to this component, detailing financial management, procurement, safeguard and any other necessary implementation arrangements.

#### *2.2.2 NEP Project Implementation Arrangements*

Following the NEP recommendations, the government has established a National Electrification Executive Committee (NEEC) under the patronage of the Vice President through a decree issued on August 27, 2014. NEEC is chaired by the minister of MoEP and co-chaired by the minister of MLFRD. Also, a permanent NEEC Secretariat has been established in MOEP and MLFRD, overseeing Project Management Offices (PMOs), which are responsible for the technical activities carried out by ESE, YESB and DRD. The Figure below shows the institutional implementation framework and responsibilities allocated to each level.

**Figure 4.1: NEP Institutional Implementation Framework**



The NEEC Secretariat would be informed and engaged regularly in the implementation of the ESMF as part of general reporting of project implementation. Within the MoEP and MFLRD (DRD), the Executive Committee, consisting of the MoEP and MFLRD Union Ministers and other senior officials would have overall oversight responsibility of the proposed operation, including the ESMF, and would be informed regularly about overall implementation.

The Union-level PMOs would be responsible for project planning and implementation at the union level, while local level project planning and implementation will be led by the District PMOs (see ESMF Section 4 for more details).

### 3. Applicable World Bank Safeguard Policies

The NEP triggers the following World Bank safeguard policies: Environmental Assessment (OP 4.01); Natural Habitats (OP 4.04); Physical Cultural Resources (OP 4.11); Involuntary Resettlement (OP 4.12) and Indigenous Peoples (OP 4.10). OP 4.10 applies to the project

because site-specific project activities will be implemented in areas where ethnic minorities that meet the eligibility criteria of OP 4.10 are present and because national level project activities (e.g. policy reforms, institutional strengthening and capacity building) may have implications for ethnic minorities. The OP 4.10 aims to achieve the following objectives: (i) that ethnic minorities do not suffer adverse effects, and (ii) receive culturally compatible social and economic benefits from Bank-financed activities. The policy requires the screening for the presence of ethnic minorities in project areas; ethnic minorities that fall under the policy are considered as a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- a) Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- b) Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- c) Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
- d) An indigenous language, often different from the official language of the country.

In areas with ethnic minorities, the policy requires that the borrower (i) undertakes a social assessment to assess potential impacts and identify culturally appropriate benefits; (ii) conducts free, prior and informed consultations with affected ethnic minorities leading to their broad community support for the relevant project activities; and (iii) prepares an Indigenous Peoples Plan (or Ethnic Minorities Plan) to address particular issues concerning ethnic minorities, provide culturally appropriate benefits, and ensure the avoidance or mitigation of adverse impacts.

## 4. Legal and Institutional Framework

### 4.1 Legal framework concerning ethnic minorities

#### 4.1.1 *Constitution of Myanmar*

According to Chapter 1, clause 22 of the 2008 Constitution of Myanmar, the Union Government of Myanmar is committed to assisting in developing and improving the education, health, language, literature, arts, and culture of Myanmar's "national races."

It is stated that the “Union shall assist:

- to develop language, literature, fine arts and culture of the National races;
- to promote solidarity, mutual amity and respect and mutual assistance among the National races;
- to promote socio-economic development including education, health, economy, transport and communication, [and] so forth, of less developed National races.”

The constitution provides equal rights to the various ethnic groups included in the national races and a number of laws and regulations aim to preserve their cultures and traditions. This includes the establishment of the University for the Development of the National Races of the Union which was promulgated in 1991 to, among other things, preserve and understand the culture, customs and traditions of the national races of the Union, and strengthen the Union spirit in the national races of the Union while residing in a friendly atmosphere and pursuing education at the University.<sup>12</sup>

Key principles within the Constitution that relate to National Race Affairs include:

- Section 15: For National races with suitable population, National races representatives are entitled to participate in legislature of Regions or States and Self-Administered Areas concerned.
- Section 17 (c): For National races of which representatives are so permitted to participate in legislature of Regions, States or Self-Administered Areas in accord with

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<sup>12</sup> [http://www.burmalibrary.org/docs15/1991-SLORC\\_Law1991-09-University\\_for\\_the\\_Development\\_of\\_the\\_National\\_Races\\_Law-en.pdf](http://www.burmalibrary.org/docs15/1991-SLORC_Law1991-09-University_for_the_Development_of_the_National_Races_Law-en.pdf)

Section 15, such representatives are to be permitted to participate, mainly, to undertake their National races affairs.

- Section 167 (a): The Region Hluttaw or the State Hluttaw may, if necessary, form Committee and Bodies with the Region or State Hluttaw representatives concerned to study and submit legislation, national races affairs vested by the Constitution.
- Section 262 (e): The Chief Minister of the Region or State shall submit the list of persons who are approved by the Region or State Hluttaw or Chairpersons of the Self-Administered Division or Self-Administered Zone and the list of persons who are representatives elected to undertake the affairs of National races to appoint as the Ministers of the Region or State to the President.
- Section 262 (i): The President may, in co-ordination with the Chief Minister, appoint Ministers for the Self-Administered Division or the Self-Administered Zone or Ministers for National races affairs as Ministers concurrently in charge of other Ministries.

The Constitution makes no reference to ethnic minorities or indigenous peoples. It instead uses the term “national races”. However this term is not defined by the Constitution and is generally interpreted by applying the 1982 Myanmar Citizenship Law<sup>13</sup>, which defines the 135 national races in its 1983 Procedures.<sup>14</sup>

Under the Citizenship Law, nationals of Myanmar include the “Kachin, Kayah, Karen, Chin, Bamar, Mon, Rakhine or Shan and ethnic groups as have settled in any of the territories included within the State as their permanent home from a period anterior to 1185 B.E., 1823 A.D.”<sup>15</sup> People of Chinese, Indian or Nepali heritage and many Muslims identifying themselves as Rohingya are mostly not considered full citizens because they do not automatically qualify under “national races”.

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<sup>13</sup> Myanmar Centre for Responsible Business, 2014, Myanmar Oil and Gas Sector Wide Impact Assessment (SWIA)

<sup>14</sup> Burma Library, “Burma Citizenship Law of 1982”.

<sup>15</sup> Article 3, Myanmar Citizenship Law.

#### *4.1.2 Endorsement and Ratification of Relevant International Instruments*

In September 2007, Myanmar endorsed the United Nations Declaration on the Rights of Indigenous Peoples. Article 32 discusses indigenous peoples' right to free and prior informed consent (FPIC). It says: "States shall consult and co-operate in good faith with the Indigenous Peoples concerned through their own representative institutions in order to obtain Free and Prior Informed Consent prior to approval of any project affecting their land or territories". Article 10 discusses forcible relocation of indigenous people, and the need for FPIC. Article 26 about land rights is also relevant in relation to indigenous peoples.

Myanmar has not ratified International Labour Organisation (ILO) Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries.

#### *4.1.3 Recommendations at Meeting of Ministers of National Races Affairs and Chairman of Amyotha Hluttaw (National Parliament) –2014*

In June 2014, at a meeting of Ministers of National Races Affairs and the Chairman of Amyotha Hluttaw (the national Parliament), the following recommendations were made:

- To inform completely, consult and get consent of indigenous people when implementing development processes, large projects, businesses, and extraction of natural resources in areas of indigenous people.
- To have equal job opportunities. To appoint ethnic minority people in leadership role as well as in other roles if qualified.
- To consider about Ministries of National Races Affairs in allocating the Regional/ State Level Budget and allow the Ministries to spend the budget to implement more effectively for affairs of national races, and development projects. To manage staff structures and employment for the regions.
- To add the following phrase – "National Races are people continually residing in Myanmar regarding the Union of Myanmar as their original nation – Kachin, Kayah, Karen, Chin, Bamar, Mon, Rakhine, and Shan, people living in self-administered divisions, self-administered zones, people who have their own minister of national races, and people who have their own separate language and separate culture. This does not include immigrated or foreign residents' to Clause (2), Paragraph (a) of the draft law protecting the rights of national races.

#### *4.1.4 On National Races Law. National Races Protection Law – February 2015*

A proposal to form a Union-level ethnic affairs ministry responsible for ethnic affairs was previously submitted in the Amyotha Hluttaw, but the proposal was rejected on the grounds that there were already many Union ministries and the ethnic affairs ministers could protect minority rights. In August 2013, the Pyithu Hluttaw instead proposed drafting a law for ethnic affairs.

On 24 February 2015, the new law was passed by the *Pyidaungsu Hluttaw*<sup>16</sup>. Its purpose is defined as:

- In order for ethnic minority people to have equal citizen rights.
- In order to live together forever with friendship based on the genuine union spirit.
- In order to preserve and develop ethnic minorities' language, literature, art, culture, tradition, ethnic identity and historical heritage.
- In order to develop unity, mutual respect and mutual help among national races.
- In order to develop education, health, economy and transportation of ethnic minorities in less developed areas.
- In order for national races to fully access constitutional rights.

It states that if national races do not break the prescribed laws concerning national security, rule of law, peace and development and code of conduct for the citizens,

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<sup>16</sup> Union Legislative Assembly: a joint session of upper and lower houses of parliament

- They have the right to freely adopt their language, literature, art, culture, tradition and religion.
- They have the right to teach and learn their own language and literature without affecting the National Education Policy.

#### *4.1.5 National Education Law*

Also of contextual relevance is the National Education Law, which was approved by parliament in September 2014. The Law is currently undergoing amendment. One request being considered is that ethnic minority languages – ‘mother tongues’ - are able to be used as a medium of instruction.

## 4.2 Policy and Institutional Framework for the involvement of women

### *4.2.1 Constitution of Myanmar*

Key clauses within the Constitution of Myanmar that relate to women include:

- *Clause 348:* “The Union shall not discriminate any citizen of the Republic of the Union of Myanmar, based on race, religion, official position, status, culture, sex and wealth”.
- *Clause 349:* Citizens shall enjoy equal opportunity in carrying out the following functions:(a) public employment;(b) occupation;(c) trade; (d) business; (e) technical know-how and vocation;(f) exploration of art, science and technology.

- *Clause 350:* Women shall be entitled to the same rights and salaries as that received by men in respect of similar work.<sup>17</sup>

Myanmar is a signatory to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (1997), and is committed to international policy initiatives to improve the situation of women, including the Millennium Declaration, the Beijing Declaration and Platform for Action (BPfA), and the International Conference on Population and Development (ICPD). The Association of South East Asian Nations (ASEAN) has established the ASEAN Commission on Protection and Promotion of the Rights of Women and Children (ACWC), and the ASEAN Committee on Women (ACW), of which Myanmar is a member.<sup>18</sup>

The Ministry of Social Welfare, Relief and Resettlement, through the Department of Social Welfare, carries out social welfare services through preventative, protective and rehabilitative measures, with special attention to children, youth, women, persons with disabilities, and elderly persons. The Department of Social Welfare provides welfare services to vulnerable groups on the basis of social integration strategies.<sup>19</sup>

The Myanmar National Committee for Women's Affairs (MNCWA) has prepared a *National Strategic Plan for the Advancement of Women (2013-2022)*, whose objective is that, “All women in Myanmar are empowered and able to fully enjoy their rights with the support of the Government of the Republic of the Union of Myanmar. Enabling systems, structures and practices are created for the advancement of women, gender equality, and the realization of women's rights”.<sup>20</sup> Of relevance, the 12 Priority Areas for the Plan include: women and

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<sup>17</sup> Ministry of Information, 2008, Constitution of the Republic of the Union of Myanmar pps 149-150

<sup>18</sup> Ministry of Social Welfare, Relief and Resettlement, Department of Social Welfare, 2013, National Strategic Plan for the Advancement of Women (2013-2022) p.4

<sup>19</sup> ibid.

<sup>20</sup> ibid.

livelihoods; women education and training; women and health; women and the economy; and women and the environment.

## 5. Ethnic Minorities and other Vulnerable and Under-Served Population Groups

### 5.1 Ethnic Minorities

The Government recognises 135 separate ethnic groups referred to within the Constitution as “national races”. Major groups include Burman/Bamar, Shan, Karen/Kayin, Kachin, Chin, Rakhine, Mon and Kayah. The largest ethnic group is the Bamar (Burmese) people comprising about two-thirds of the population and who reside predominantly in the central and delta (seven) regions. Other ethnic minorities account for about one third of the population and live mainly within the seven states (although not exclusively). The official population estimates of the main ethnic minority groups are roughly: Shan (9 per cent), Kayin/Karen (7 per cent), Rakhine (4.5 per cent), Chin (2 per cent), Mon (2 per cent), Kachin (1.4 per cent), and Kayah (1 per cent).<sup>21</sup> Myanmar’s ethnic minorities make up an estimated 30 – 40 per cent of the population, and ethnic states occupy around 57 per cent of the total land area along most of the country’s international borders.<sup>22</sup>

Political boundaries in Myanmar are to some extent organised according to ethnic demographics. Seven States are named after seven large ethnic minority groups – namely, Kachin, Kayah, Kayin, Chin, Mon, Rakhine, and Shan States. The Bamar are the dominant

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<sup>21</sup> Republic of the Union of Myanmar, Directorate of Water Resources and Improvement of River Systems, *Myanmar Ayeyarwady Integrated River Basin Management Project Final Environmental and Social Management Framework*.

<sup>22</sup> <http://www.tni.org/sites/www.tni.org/files/download/accesdenied-briefing11.pdf>, accessed 09 March 2015

ethnic group, especially in the seven Regions (Sagaing, Magwe, Tanintharyi, Mandalay, Yangon, Ayeyarwady, and Bago).

Aside from the 14 States and Regions, there are five self-administered zones: Naga (Sagaing Region); Danu (Shan State); Pa-O (Shan State); Pa Laung (Shan State); and Kokang (Shan State). There is also one self-administered division: Wa (Shan State). These six self-administered sub-national units are recognised in the 2008 Constitution (section 56) and are the result of earlier ceasefire agreements. Each self-administered unit is run by a Leading Body, which has at least 10 members and includes State or Region *Hluttaw* members and other members nominated by the Commander-in-Chief.<sup>23</sup>

This diversity creates variation in local norms and power structures, ranging from a system of small principalities in Shan and Kayah States to the tribal systems of the Kachin. The country is undergoing a process of profound transformation, which has significant implications for local governance structures at township and village level.

All of the main ethnic minority group areas have experienced various levels of conflict since 1962. Bamar dominance over other ethnic minorities has been the source of considerable ethnic tension and has fuelled intermittent protests and separatist rebellions including armed conflict. There has been progress in peace talks between the Government and ethnic armed groups through leadership meetings, starting in late 2013, but a National Ceasefire Accord (NCA) has not yet been realised.<sup>24</sup>

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<sup>23</sup> Adam Smith International in partnership with Myanmar Development Resources Institute (MDRI), 2015, Institutional and Regulatory Assessment of the Extractive Industries in Myanmar p. 60

<sup>24</sup> <http://documents.worldbank.org/curated/en/2014/11/23025474/myanmar-systematic-country-diagnostic-ending-poverty-boosting-shared-prosperity-time-transition>, accessed 04 March 2015

Although a large majority of the population practices Buddhism, other religions are also present within Myanmar; mainly Christianity, Islam, and Hinduism. Some estimates list the proportion of Buddhists at 90 per cent, while other sources estimate 80 per cent. Other major religions as estimated by the Pew Research Center are: 7.8 per cent Christians, 5.8 per cent folk religions, 4 per cent Muslims, and 1.8 per cent Hindus.<sup>25</sup>

## 5.2 Internally Displaced and post-disaster groups

There are a number of internally displaced populations (IDPs) within Myanmar, particularly in Kachin, Rakhine and Shan states due to civil and military conflicts. There are also many post-disaster groups in the Delta region. Given their displacement it is possible that they may not be identified in population statistics and they often lack access to basic infrastructure, including electricity.

A 2014 survey by The Border Consortium (TBC)<sup>26</sup> estimated that there were at least 110,000 IDPs spread across 23 townships (222 village tracts) in southeast Myanmar.<sup>27</sup> In December 2014, TBC verified 110,094 refugees living in refugee camps.<sup>28</sup> Migrants Members of the Muslim minority that self-identify as Rohingya in Rakhine State are not recognised as an ethnic group and are considered illegal migrants. At January 2014, it is estimated that the number of displaced persons in Rakhine had reached 140,000.<sup>29</sup>

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<sup>25</sup>Ministry of Health, Republic of the Union of Myanmar. 2014, *Myanmar Essential Health Services Access Project Indigenous Peoples Planning Framework*,

<sup>26</sup>TBC is a non-profit, non-governmental organisation, is an alliance of partners working together with displaced and conflict-affected people of Burma/Myanmar to address humanitarian needs and to support community-driven solutions in pursuit of peace and development.

<sup>27</sup>The Border Consortium, 2015, The Border Consortium Programme Report July – December 2014 p.5

<sup>28</sup>ibid.

<sup>29</sup>[http://www.worldbank.org/content/dam/Worldbank/document/EAP/Myanmar/WBG\\_SCD\\_Full\\_Report\\_English.pdf](http://www.worldbank.org/content/dam/Worldbank/document/EAP/Myanmar/WBG_SCD_Full_Report_English.pdf), accessed 04 March 2015

Post-disaster communities are prevalent in the Delta region and along the western coastline of Myanmar, which is particularly vulnerable to natural disasters, such as Cyclone Nargis in 2008, which impacted 2.4 million of the population and caused over 138,000 deaths.

### 5.3 Women

Table 1 below shows the population of Myanmar by Sex and State/Region, as included in the Provisional Results of the Myanmar Census.

*Note: the numbers in blue provide estimates of people who were not enumerated in the census. The numbers in italics provide figures on the enumerated and estimated population.*

**TABLE 1: THE POPULATION OF MYANMAR BY SEX AND STATE/REGION**

<b>State/Region</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
<i>Union</i>	<i>51,419,420</i>	<i>24,821,176</i>	<i>26,598,244</i>
Union (enumerated)	50,213,067	24,225,304	25,987,763
<i>Union (not enumerated)</i>	<i>1,206,353</i>	<i>595,872</i>	<i>610,481</i>
<i>Kachin</i>	<i>1,689,654</i>	<i>877,664</i>	<i>811,990</i>
Kachin (enumerated)	1,643,054	854,633	788,421
<i>Kachin (not enumerated)</i>	<i>46,600</i>	<i>23,031</i>	<i>23,569</i>
Kayah	286,738	143,461	143,277
<i>Kayin</i>	<i>1,572,657</i>	<i>775,375</i>	<i>797,282</i>
Kayin (enumerated)	1,502,904	739,234	763,670
<i>Kayin (not enumerated)</i>	<i>69,753</i>	<i>36,141</i>	<i>33,612</i>
Chin	478,690	230,005	248,685
Sagaing	5,320,299	2,518,155	2,802,144
Tanintharyi	1,406,434	700,403	706,031
Bago	4,863,455	2,324,214	2,539,241
Magway	3,912,711	1,814,993	2,097,718
Mandalay	6,145,588	2,919,725	3,225,863
Mon	2,050,282	986,454	1,063,828
<i>Rakhine</i>	<i>3,188,963</i>	<i>1,529,606</i>	<i>1,659,357</i>
Rakhine (enumerated)	2,098,963	992,906	1,106,057
<i>Rakhine (not enumerated)</i>	<i>1,090,000</i>	<i>536,700</i>	<i>553,300</i>
Yangon	7,355,075	3,517,486	3,837,589
Shan	5,815,384	2,908,259	2,907,125
Ayeyawady	6,175,123	3,010,195	3,164,928
Nay Pyi Taw	1,158,367	565,181	593,186

Source: Ministry of Immigration and Population, Department of Population, Republic of the Union of Myanmar.  
The Population and Housing Census of Myanmar, 2014, Summary of the Provisional Results p.4

## **6. Potential Issues and Impacts Relating to Ethnic Minorities and Other Vulnerable Groups**

### **6.1 Introduction**

The provision of electricity services supported by the project is expected to largely benefit ethnic minorities and other vulnerable groups. However, some impacts and risks are present as with most project in areas with ethnic minorities or indigenous peoples. These were assessed in the PSIA I and II research, and the consultative meetings and social assessment undertaken during project preparation. This involved an assessment of potential risks and social impacts of proposed project activities as per the Bank's operational policies on environmental assessment (OP 4.01) and involuntary resettlement (OP 4.12), and assessment of particular issues and risks concerning ethnic minorities following the requirements of the Bank's operational policy on indigenous peoples (OP 4.10). The social assessment involved limited field research, undertaken in northern Chin State (Falam, Hakha) and southern Shan State (Taunggyi, Yatsauk). The ESMF and IPPF includes provisions for more detailed consultations and social assessment (usually as part of subproject's Environmental and Social Impact Assessment) for specific sub projects during project implementation. This includes free, prior and informed consultations with ethnic minorities where they are present in a subproject's area of influence.

The NEP is a national program, to be implemented in all states and regions of Myanmar. In particular, the off-grid program plans to target about 500,000 households in the remote, less accessible villages in the Chin, Kachin, Kayah, Kayin, Shan, Tanintharyi and Sagaing states/regions.

Effectively undertaking project implementation within such a diverse cultural and linguistic context will require specific consideration in regards to:

- Language use, in particular in relation to:
  - Preparing written and visual consultation and engagement materials;
  - Undertaking consultation and engagement activities;

- Preparing IEC materials including in regards to community safety;
  - Undertaking monitoring and evaluation activities.
- Ensuring equitability, in particular in relation to:
  - engagement of ethnic minority representatives, including within villages comprised of a mix of ethnicities; and
  - targeting, sequencing and implementation of the rollout of the grid and off-grid components of the program.
- Identification and consideration of how to mitigate barriers to access electricity amongst poor and vulnerable households, including female-headed households.

Some specific potential issues and impacts identified are as follows:

## 6.2 Constraints to Accessing Electricity Services

A number of constraints or barriers have been identified that prevent people from accessing electricity services and prevent a more equitable participation of ethnic minorities and vulnerable groups:

### 6.2.1 *Affordability*

The analysis of data collected both during PSIA Phase I and II indicated that access to electricity in rural areas is limited by the current coverage of the grid but also by the fact that villages must cover the costs of the connection from the main “transmission” line to the village itself following the Self-Reliant approach to electrification. All eight villages with access to the government electricity grid were located immediately beside the main road, transmission lines, beside a sub-station or in the case of village 21 in Rakhine close to a military camp from which access to the electricity grid was extended. However, of the remaining seven villages targeted under PSIA Phase II without access to the Government grid, four were similarly located within close proximity of the transmission lines. While proximity to the grid plays an important role in determining access to electricity, the

affordability of the connection to the village (for which villages are required to raise their own funds) plays an equally determining part.

As noted during PSIA Phase I, it is the high cost of the initial connection to the government electricity grid that constitutes the biggest obstacle to access from both village and for middle-income and poor households within the targeted villages. Of the eight villages targeted in the study, those with access to electricity provided by Government services/private company were: (i) provided with access/village connection free of charge by government or by the private company supplying electricity; (ii) in the case of Village 6 in Shan were exceptionally well-off<sup>30</sup> and able to raise the necessary funds from households; or (iii) contracted heavy debt to be able to cover the cost of connection (Villages 23 and 24 in Mandalay). Respondents in the remaining villages systematically highlighted the cost to the households of establishing this initial connection as the key obstacle for their lack of access. The perception that government subsidies for these connections were not available (or were granted only in very exceptional circumstances) was reported systematically across research sites.

Similarly to what was observed during PSIA Phase I, political connections of the village administration, the linkages between religious leaders and the township and/or private contractors were key in securing additional resources as well as providing guidance and support to navigate the complex SRE process. Villages in the sample that did not have these informal connections [those with access only through private providers tended to be unsuccessful in their application, reporting lack of response from township department and particular a lack of funds for the initial investment needed. The initiative of the local administration, traditional and religious leaders and well off households and their ability to mobilize their informal networks and connections were key factors in the success of village SRE. Significantly, visits to rural areas by high level government officials (as noted during Phase I) often coincided with the allocation of discretionary funds for electrification. This was noted in three of the eight villages covered by PSIA Phase II. Without these formal sources of support or informal connections (including township endorsed contractors) respondents

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<sup>30</sup> Research team observation highlighted the quality of housing construction, infrastructure and related it to the source of income of the village/migration.

reported that their application would not receive the necessary attention and the response to their request would “take too long”.

In two of the new villages covered by Phase II of the PSIA, the research team noted that SRE had resulted in significant debts for the village. This had resulted from a combination of factors, including an under-estimation of the total cost of the investment required to complete the works. Construction work was stopped in both instances as villages ran out of funds for completion and the Village Administration borrowed for the remaining amount.

### *6.2.2 Exclusion of Poor and Marginalised Households*

The exclusion of poor and marginalised households noted during PSIA Phase I was confirmed by the analysis carried out under Phase II. None of the Village Electrification Committees (VECS) in the targeted villages included participation by poor households given the nature of the Self Reliant Electrification and lack of guidance for targeted support for poor households. All VECs in the study areas made a decision early on in the process about the households who could/could not afford to buy into the scheme. Given the high cost, those who can afford to contribute to the connection were invariably the better off households. Even in those villages with high levels of social cohesion/social capita there was no discussion/system in place to cross-subsidise the participation of poor households.

### *6.2.3 Role of Women in Electrification Process*

Women are commonly excluded from participating in the VECs, with the exception of Village 1 in Chin. In all other instances, women were not considered eligible for participation. Where communities had suggested their inclusion (notably in Village 17 in Mon and Village 15 in Kayin), the Township Electricity Department requested their names to be removed from the list as the duties of VEC members were considered to be “too much responsibility for women” and may require them to work in the evenings. The inclusion of a female member in the Chin VEC was attributed by informants to the training received by the Village Administration on gender through an externally funded (INGO supported) intervention on water resource management. The training stressed the importance of women’s involvement/leadership in the planning process of community-based interventions.

#### *6.2.4 Impact on Ethnic Minorities*

There was no significant variation noted in terms of social inclusion and community participation across regions/ethnic groups in sample villages, although a case was found in which one ethnic group was favored over another. Elite capture of the process and limited communication with the community was the overall trend observed. The PSIA Phase II villages included two mixed villages (Village 17 in Mon and Village 6 in Shan). In the Mon case, the village is made up of Palong (20 per cent), Bamar (45 per cent) and Kayin (35 per cent) farmers with all groups being represented in the VEC and in the planning of village electrification. Bamar and Kayin tended to dominate local government institutions, which did not affect the distribution of benefits from the electricity scheme. There was no ethnic dimension to the exclusion of poor households in this case. What determined household ability to access electricity was exclusively household income.

A different situation was observed in Village 6 in Shan where electricity was provided by a large private company (hydro). The village is predominantly Shan with a minority (20 per cent) Palong households. Livelihoods and household welfare tend to be divided along ethnic lines with Palong households living on the outskirts of the village and being predominantly landless farmers and daily laborers. Palong households were therefore at an economic disadvantage in terms of joining the electricity service. Importantly, however, in this case, the private company, linked to the village administration (Shan dominated), provided better conditions of access for Shan households – namely initial credit and the ability to pay connection fees in instalments. No such flexibility was provided to Palong households with the result that all those in the village currently excluded from accessing electricity are Palong.

### **6.3 Consultation and Engagement with Ethnic Minorities**

To enhance benefits and avoid adverse impacts, consultations and community engagement is generally recognized as a key element of providing infrastructure and other development investments in communities with ethnic minorities. Stakeholder consultation discussions with Indigenous CSOs during preparation of NEP identified a challenge experienced by the A-sho Chin minority group during the construction of tower stations for the Min-Bu-Sittwe power transmission line. While the NEP's support is for power distribution lines rather than power transmission lines the key issues identified related to limitations in advance consultation and engagement including regarding the possible impacts of tower stations, geography of mapping, compensation systems and grievance mechanisms is usual for NEP implementation. Amongst the construction team, there was limited awareness of the land use and ownership structures within the community, in which land was traditionally used for the purposes of

shifting cultivation. There was low awareness of the cultural value of community forests to the A-Sho Chin. Lack of transparency led to land acquisition problems.

While some labourers from within the A-Sho Chin community were employed for manual work, workers from outside the community were also brought in, mainly to work on construction activities in which local people were inexperienced. This created concerns about safety within the community, especially of women going out for shifting cultivation. During the construction period, there were increased incidences of conflicts and quarrels within the community.

#### 6.4 Potential for Social Exclusion

A key potential impact is the social exclusion of vulnerable households, either for reasons of affordability and/or for lack of access to the necessary documentation.

PSIA Phase 1 research found that a significant proportion of households in nearly all villages visited remained without access to electricity (irrespective of the source of the electricity service). Affordability of connection charges for individual households is an important barrier for the extremely poor/vulnerable. For villages with access to government services this is related to the fact that villages have to finance the cost of connection. Not only poorer villages but also poorer households within those villages are at a disadvantage – with vulnerable groups not being able to contribute to the cost of the initial connection and being left out. Interviews with vulnerable households across research sites consistently supported this conclusion. Those who could not afford to buy into village schemes for grid connections, small hydro or community-managed diesel generators usually relied on candles and kerosene as well as small rechargeable batteries for lighting.

The research team noted that poor households were excluded right from the planning stages – as village leaders/elites assumed their inability to pay and did not invite them for discussions. No instances of cross-subsidisation were observed (where the village itself put in place a

mechanism to facilitate access to poorer households). In five of the nine villages with a functioning electricity scheme, poor households did not use electricity at all, relying on batteries, candles and kerosene lamps.<sup>31</sup>

PSIA Phase 1 research also found noteworthy issues of access, particularly by informal settlers in Yangon (namely in the poorer ward visited, YGN-3).<sup>32</sup> While the costs of the connection were indicated as a barrier to access by a small minority, the most commonly mentioned reason for using these “better than nothing at all” services in Yangon (i.e. informal electricity providers) was the inability to secure the necessary documentation (including household and land registration as well as approval of the application by the ward leader) to apply for a connection.

Households considered vulnerable/marginalised within the poorer wards researched in Yangon and Mandalay reported challenges with making monthly electricity payments (both for grid connection and for small scale distributors). Overall, the main coping strategies noted were delays in payment and borrowing from neighbours. The cost of household connections in poorer wards within Yangon and Mandalay, where the government service does not yet have full coverage, was a significant barrier to access for low-income households.

## 6.5 Potential for Bypassing of Communities during the Grid Rollout

There is the potential that communities living in remote areas will be bypassed during grid rollout activities. Infrastructure could be expanded and constructed through their areas but they may not be the beneficiaries of the electricity delivered. It will be important to consider

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<sup>31</sup>Refer to Section 2.1 of the PSIA Phase 1 Report, outlining that for villages with connections to the grid, households with access to the service were usually those better off.

<sup>32</sup>Informal settlers in Yangon (YGN 3) are not included in wards records and therefore not officially “counted” in data on access to electricity (please see Table 9)

how to balance and sequence provision of off-grid electrification services to these communities if they are not able to be directly serviced as part of the grid rollout.

#### *6.5.1 Impact during Construction and Operations activities*

Construction and operations activities associated with the NEP may present possible risks in areas with ethnic minorities. Particular triggers may include the use of companies and/or labourers sourced from a different ethnic group and from outside the area of project implementation. The practice of government and/or contracted company personnel patrolling power lines to ensure their safety and/or undertake maintenance may also present risks. Local companies should be contracted for construction and operations activities wherever possible, through a transparent contracting and procurement process. Contracts should include good practices for working with local communities.<sup>33</sup>

### 6.6 Conflict and post-conflict areas

The WBG's *Country Partnership Framework (CPF) for Myanmar FY15-17* observes that Myanmar's transition is taking place in a context of continued fragility, conflict and violence, including religious violence, and an ongoing but incomplete peace process to address long-standing grievances of the country's many ethnic minorities.<sup>34</sup> It has also been noted that the

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<sup>33</sup> The principles designed by the Voluntary Principles on Security and Human Rights may be a useful guide companies in maintaining the safety and security of their operations within an operating framework that encourages respect for human rights: <http://www.voluntaryprinciples.org/what-are-the-voluntary-principles/>, accessed 27 March 2015.

<sup>34</sup> World Bank Group, 2015, Country Partnership Framework for Myanmar for the Period FY15-17 p. 23-24

lack of access to electricity was a factor for some displaced people to stay in refugee camps or longer-established EAG-run IDP settlements.<sup>35</sup>

A number of potential conflict risks identified in the CPF are relevant to NEP implementation. These include: avoiding inadvertent marginalisation of effective service delivery structures maintained by ethnic armed groups; and ensuring access to project benefits by marginalised groups.

The perceived level of equity, transparency and accountability associated with the implementation of the grid rollout and off-grid activities will be key. Considered targeting and sequencing of NEP-related activities, both grid and off-grid, underpinned by a transparent and broadly communicated rationale will be very important. Further to this, it will be critical for the NEP to be implemented using a conflict-sensitive approach underpinned by thoughtfully designed, inclusive and well-executed consultation and engagement strategies. Regular and transparent monitoring, including third party monitoring with community involvement, can play a valuable role in managing perceptions of transparency and accountability.

There is a strong potential that access by the government or private companies contracted to the government to conflict and post-conflict areas in order to implement NEP activities may be limited throughout the period of NEP implementation. This may impact the potential for the project to achieve its objective of increasing access to electricity, and in turn may exacerbate and/or trigger the potential for conflict within these areas. Some may also perceive NEP as a mechanism for incursion by the state into areas controlled by Ethnic Armed Groups (EAG).

At the same time provision of infrastructure, such as electricity, and social services may have significant potential to contribute to peacebuilding. In particular, coordination and collaboration efforts between state and service providers supported by EAGs could improve the quality of service provision, while also supporting the war-to-peace transition.<sup>36</sup> Involvement of, and consultations with, ethnic State authorities as well as ethnic non-state

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<sup>35</sup> South.A and Jolliffe, K. United Nations High Commissioner for Refugees, February 2015, New Issues in Refugee Research. Research Paper No. 274. Forced Migration and the Peace Process p.31.

<sup>36</sup> See for example Jolliffe, K. Asia Foundation, June 2014, Ethnic Conflict and Social Services in Myanmar's Contested Regions, and World Bank, November 2014, Myanmar: Developing a Framework for WBG Engagements in Conflict-Affected Areas Workshop Summary p.2

groups and communities are important for successful implementation of NEP. Supporting schools and health clinics services by government as well as non-government service providers would also be important to enhance NEP' benefits.

To mitigate the above potential risks, it will be critical for the NEP to integrate conflict-screening within the ESMF, to embrace broad-based and inclusive community-based planning processes and to have a sound and nuanced understanding of the community context ahead of project implementation at village level.<sup>37</sup>

## **7. Implementation Arrangements for the IPPF**

The project's positive impacts will depend upon the degree to which it is successful in increasing the inclusion of vulnerable groups such as ethnic minorities and women. This requires a more participatory approach to the electrification process and ways to address barriers of economic and geographical character as well as language and cultural barriers.

Component 1 concerns procurement of equipment, at Union level, to extend power distribution networks within states and regions, and related construction and operations activities, while Component 2 concerns outreach and provision of off-grid electrification services to communities unlikely to receive electricity through the national grid in the next 10 years. Both have implications for vulnerable and under-served population groups such as ethnic minorities.

A key principle of the IPPF is to build on, and improve existing mechanisms, including MOEP and MLRD (DRD) processes for local planning and engagement with communities and Village Electrification Committees (VECs). The project's Operational Manual will provide additional details on the implementation arrangements for the IPPF.

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<sup>37</sup> Lessons learned and suggested interventions from the Myanmar Peace Support Initiative might be useful in this regard; see Myanmar Peace Support Initiative, 2014, Lessons Learned from MPSI's work supporting the peace process in Myanmar: March 2012-March 2014 p. 32

Implementation of the IPPF for subprojects funded in areas with ethnic minorities involve the following key steps:

1. Screening for the presence of ethnic minorities:

A screening is undertaken to determine the presence of ethnic minorities in the subproject's area of influence (see ESMF for more details, including the screening form provide in Annex 1 of the ESMF). If such presence is confirmed OP 4.10 is triggered to the subproject and the following steps will be undertaken (see also OP 4.10).

2. Social Assessment

Generally, a social assessment (SA) is a process which provides an integrated and participatory framework for prioritizing, gathering, analyzing, and using operationally relevant social information. The scope and elements of the social assessment should be proportional to the type and level of benefits, impacts and risks of the particular subproject. This should be integrated into the subproject's Environmental and Social Impact Assessment as described in the ESMF, or undertaken as a separate exercise. It commonly involves the following objectives:<sup>38</sup>

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<sup>38</sup>For more guidance on conducting a social analysis see the World Bank's website: [www.worldbank.org/socialanalysis](http://www.worldbank.org/socialanalysis). Key documents include the World Bank's Social Analysis Sourcebook from 2003; A User's Guide to Poverty and

- identify key stakeholders and establish an appropriate framework for their participation in project selection, design, implementation, and monitoring and evaluation;
- ensure that project objectives and incentives for change are acceptable to the range of people intended to benefit, and that gender, ethnicity and other social differences are taken into account in project design;
- assess the social impact of investment projects, and where adverse impacts are identified, determine how they can be avoided, minimized, or substantially mitigated;
- provide baseline data—relevant to the project context—that can be used to measure project outcomes;
- assess and define institutional arrangements needed for participation and project delivery; and
- develop the capacity to enable participation, resolve conflict, permit service delivery, and carry out mitigation measures in ways that are socially sound.

Because the concerns and preferences of ethnic minorities are context-specific, no uniform or standardized approach to social assessment can be recommended. The elements, methodology, substance and depth of the social assessment should be proportional to the nature and scale of the proposed project's design, the circumstances of the ethnic minorities and the existing data and knowledge relevant to the country and sector context. Issues that are commonly included in subproject assessments are (see also section 8 of the ESMF):

- Identification of key stakeholders and institutional arrangements relevant to the subproject and the communities benefiting or affected.
- Gathering of baseline information on the demographic, social, cultural and political characteristics of the affected ethnic minority communities, and when relevant the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend.
- Forms of social infrastructure and services available to ethnic minorities, and analysis of the main factors affecting such access, or lack thereof.

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Social Impact Analysis from 2003; and the Participation and Social Assessment: Tools and Techniques from 1998.

- Assessment, based on free, prior, and informed consultation with the affected ethnic minorities, of the potential adverse and positive effects of the subproject.
- Assessment, based on free, prior, and informed consultation with the affected ethnic minorities, of the potential subproject design features and, if necessary, mitigation measures to ensure that the project financed activity/subproject provides culturally appropriate benefits and avoids or provides appropriate mitigation measures for project impacts.
- Identification and assessment of a culturally appropriate process for consultation and participation during preparation and implementation of the subproject financed activity/sub-project, including methodologies, technologies, principles, capacity building, empowerment, technical assistance and other support features necessary for a successful consultation and participation process.

### 3. Free, Prior and Informed Consultations

The World Bank's policy on indigenous peoples requires a process of free, prior and informed consultation leading to broad community support from ethnic minorities benefiting from, or affected by, World Bank-financed subprojects. The objectives are to facilitate the design of development interventions that are culturally appropriate from the perspective of ethnic minority communities, that are developed through a transparent and participatory approach, and that obtain broad support from affected communities. The consultations are usually done as part of the social assessment and the same set of issues should be covered, commensurate to the project design and local circumstances.

The scope of the consultations depend on the level of subproject impacts and the *methodology* depends on the type of communities affected by or benefitting from the subproject (e.g. their vulnerability, language and ongoing interactions with the dominant society or neighboring communities). The consultation process should be:

- free from coercion, intimidation and pressure from the implementing agency or other stakeholders;
- integrate customary norms of decision making in the community;
- provide reasonable and understandable information about the subproject, its potential benefits, adverse impacts and risks, to all community members;
- participatory and facilitate the participation of ethnic minorities in assessing subproject benefits, opportunities impacts and risks, using methods that are inclusive of vulnerable groups in the community, culturally appropriate, and adapted to communities' language and needs;
- allow sufficient time for information to be interpreted and discussed internally among the affected communities and time for comments and recommendations to be formulated by the communities;

- provide sufficient time for consultations and thereby allow the implementing agency to understand the views, concerns, interests and priorities of the ethnic minority communities;
- facilitate the communities' influence on the subproject design and measures based on fair and open discussions and good faith negotiations; and
- document and disclose the consultation process (who, when, where, what); including the process and methodology, issues raised, how they have been addressed, and agreements reached demonstrating that broad community support has been obtained.

The arrangements for consultations should be carefully considered and tailored to the project context and the context of the local communities and other stakeholders involved. This may include:

- community meetings, both with the community as a whole and with sub-groups;
- focus group discussions, participatory planning exercises;
- distribution of project information in both full format (project documents, assessment reports etc.) and in simplified formats such as posters and brochures, and audio-visual material using local languages;
- identification of contact persons within the communities (some training may be appropriate to enhance their ability to engage meaningfully in the consultation process);
- involvement of ethnic minority organizations where they exist and have the trust of the local communities; and
- involvement of local NGOs, research institutes, university students (it is important that these are accepted by, and have the trust of, the local communities).

Consultations should be conducted in the relevant ethnic language(s) when needed and sufficient lead time (minimum 2 weeks) should be given to ensure all affected ethnic minority communities organizations are able to participate in consultations fully informed of the draft IPP.

#### 4. Preparation of an Indigenous Peoples Plan

Based on the findings of the social assessment and free, prior and informed consultation process, the respective PMO or designated implementing partner will prepare an Indigenous Peoples Plan (IPP) for the specific subproject affecting ethnic minorities. The IPP should be prepared in a flexible and pragmatic manner, and its level of detail varies depending on the specific subproject

and the nature of effects to be addressed. In cases where the vast majority of subproject *beneficiaries* are ethnic minorities, the elements of an IPP can be integrated into the subproject proposal itself. An IPP should include the following elements, as needed:

- a) Project description and summary description of issues relating to ethnic minorities
- b) A summary of the legal and institutional framework applicable to ethnic minorities.
- c) A summary of the social assessment including baseline information on the demographic, social, cultural, and political characteristics of the affected ethnic minorities, the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend.
- d) (c) A summary of results of the free, prior, and informed consultation with the affected ethnic minorities that led to broad community support for the project.
- e) (d) A framework to ensure free, prior, and informed consultation with the affected ethnic minorities during the implementation of respective activities.
- f) (e) Measures to ensure that the affected ethnic minorities receive social and economic benefits that are culturally appropriate; and
- g) (f) Measures to avoid, minimize, mitigate, or compensate for adverse effects.
- h) (g) The cost estimates and financing plan for the IPP.
- i) (h) Grievances redress mechanisms accessible to the affected ethnic minorities.
- j) Monitoring, evaluating, and reporting on the implementation of the IPP.

The draft IPP prepared in consultation with the affected ethnic minorities will be publicly disclosed and shared with the local communities in a manner and language appropriate and understandable to the community members. The IPP should be prepared in English or Burmese, and translated into relevant ethnic minority languages if deemed necessary and constructive in providing subproject and IPP information to the ethnic minorities (in some instances only a few members of the communities may be able to read their own language and translation would not be necessary in such cases). If the IPP is prepared in Burmese it should be translated into English for Bank review, unless otherwise agreed with the Bank.

## 8. Institutional Arrangements

The NEEC Secretariat would be informed and engaged regularly in the implementation of the IPPF as part of general reporting of project implementation. Within the MoEP and MFLRD

(DRD), the Executive Committee, consisting of the MoEP and MFLRD Union Ministers and other senior officials would have overall oversight responsibility of the proposed operation, including the IPPF, and would be informed regularly about overall implementation.

The Union-level PMOs would be responsible for project planning and implementation at the union level, while local level project planning and implementation will be led by the District PMOs (see ESMF section 4 of the ESMF for additional details).

The TA component would provide support to the PMOs in implementing the IPPF, including provisions for consultations and social assessment and preparation of subproject IPPs.

**[TO BE FINALIZED]**

## **9. Capacity Building of Key Stakeholders**

As MoEP and MFLRD (DRD) have limited experience implementing World Bank-financed projects with their specific requirements such as those under the Bank's policy on indigenous peoples as they are embedded within this IPPF, the Bank will provide capacity building and operational support to the implementation of the IPPF (see Section 13 of the ESMF).

The MoEP and MFLRD (DRD), with support from the World Bank, will provide training for relevant stakeholders on the elements of the IPPF, particularly with regard to the community engagement and social assessment process, preparation and implementation of the sub-projects, including on strategies to enhance the participation of local communities and Village Electrification Committees (VECs). The MoEP and MFLRD (DRD) will also ensure that male and female staff of MoEP and MFLRD (DRD), and other stakeholders, will have equal opportunities to receive training and support under component 3. This will be included in the capacity building plan.

## **10. Monitoring and Evaluation**

The NEP Project will incorporate a strong system of monitoring and evaluation (M&E) to:

**[SECTION TO BE FINALIZED WITH FINAL PROJECT DESIGN AND  
IMPLEMENTATION ARRANGEMENTS]**

- (i) ensure effective and timely implementation according to plan and apply mid-course corrections where needed;
- (ii) measure the achievement of results envisaged in its objectives and learn lessons for future operations; and
- (iii) ensure implementation of the ESMF, with RPF and IPPF, to meet the requirements of the Bank's safeguard policies.

To evaluate project effects on development objectives, population level data in the form of household surveys will be collected. Baseline data will be drawn from the 2009 Integrated Household Living Conditions Assessment (IHLCA) data used to inform the PSIA, updated with the data from the 2014 Living Standards Measurement Study (LSMS) and the 2015 Demographic Health (DHS) Survey, with follow-up data collection planned towards the end of the project life.

Depending on the ability of the data collected to measure outcomes on vulnerable and under-served population groups, including ethnic minorities, additional surveys and/or qualitative assessments may be undertaken to assess impacts and outcomes for these population groups.

Monitoring exercises may also include other qualitative and quantitative studies to investigate social and other issues critical to reducing barriers to accessing electricity services; in particular, for vulnerable and under-served population groups. For instance, participatory research could maintain a focus on the themes of the PSIA research, which have included a focus on: barriers to access, including affordability; payment and coping strategies; quality of the service and communication with service providers; and social dimensions concerning ethnic minorities and other vulnerable communities. In line with the PSIA research approach to date, qualitative research will be used to inform the preparation of case studies that can showcase the livelihood improvements that access to the electricity provided through the NEP Project has supported, and also the local benefits that have flowed from implementation of the Project.

A priority of the NEP Project is enabling connections for health clinics and schools, particularly in poor and vulnerable areas. Quantitative and qualitative research will be undertaken to inform an assessment of positive and any negative environmental and social impacts resulting from this Project focus.

The NEP also includes a focus, in the intermediate term, on the involvement of qualified private sector operators/village cooperatives participating in the grid and off-grid pre-electrification program. At this stage, the monitoring program would need to be expanded to include a quantitative and qualitative research program that yields an assessment of how these organisations are managing the environmental and social impacts of their work, in line with the objectives and processes of the ESMF. Such research could also be used to highlight how the NEP has played a role in developing and strengthening the capability of SMEs to

participate in the social and economic development of Myanmar, including in regards to management of their environmental and social performance.

To strengthen accountability and transparency, the monitoring system could involve consumer and civil society participation in monitoring of project and sector performance. Monitoring tools could include community scorecards, social audit, citizen report card and citizen satisfaction surveys. This would be included in the project's support to States and Regions to develop appropriate community feedback mechanisms to assess satisfaction with service delivery at the village level. Development of such mechanisms would be supported by the community engagement and social analysis carried out at the township level to inform the preparation of village electrification plans.

Social accountability activities can strengthen the capacity of both local community members and civil society organizations to engage in government services and hold authorities accountable for better development results. They can also strengthen the capacity of DRD and ESE, State/Region, District and Township authorities to become more transparent, participatory and accountable, and better respond to demands and needs of local communities that they serve.

## **11. Grievance Redress Mechanism**

A grievance redress mechanism (GRM) has been prepared for the Project with the aim to allow affected communities and individuals to raise complaints to implementing entities in regards to the preparation and implementation of subprojects. It also aims to enable the PMOs to receive and facilitate resolution of the specific concerns of affected communities and project participants regarding environmental and social performance. The GRM will aim to resolve concerns promptly, in an impartial and transparent process tailored to the specific community, and at no cost and without retribution to the complainant/s. The GRM is based on the following six principles: fairness; objectiveness and independence; simplicity and accessibility; responsiveness and efficiency; speed and proportionality; participatory and social inclusion.

The GRM will be communicated to different stakeholders. It is intended that information on the GRM will be disseminated widely in meetings and through pamphlets and brochures in Myanmar language, and ethnic languages as needed/relevant. Specifically, information will be provided about how and where to lodge complaints/grievances. Villagers will be encouraged to seek clarification or remediation through the mechanism if they have any questions or complaints/ grievances.

Subproject specific safeguard instruments (ESMP, RAP, IPP) will describe the GRM in detail based on the following procedures for addressing grievances [TO BE COMPLETED]:

Stage 1: An initial stage, within the local village or township level, in which any person/s aggrieved by any aspect of the Project can lodge an oral or written complaint/grievance to the local Village Electrification Committee (VEC) or implementing partner/operator. The VEC or implementing partner/operator should keep a written record of complaints/grievances raised by villagers and their resolution; they should inform the District DRD or ESE/MOeP PMO of such complaints and resolutions.

If the complaint cannot be resolved within 15 days of receipt between the aggrieved person/s and the VEC or implementing partner/operator, it should be escalated to the second step of the process.

Stage 2: If the aggrieved person is not satisfied with the outcome of the initial stage, she/he/they can lodge the complaint to the District DRD or ESE/MOeP PMO. During the dialogue process the issues raised will be reviewed, and actions for resolution will be agreed by the parties. The dialogue will seek a resolution to the grievance as long as all the parties involved are amenable to the process. The District DRD or ESE/MOeP PMO should keep a written record of complaints/grievances raised by villagers and inform the State/Region and National PMOs of such complaints.

If the complaint cannot be resolved within 15 days of receipt between the aggrieved person/s and the District DRD or ESE/MOeP PMO it should be escalated to the third step of the process.

Stage 3: If the aggrieved person is still dissatisfied following review by the District DRD or ESE/MOeP PMO, the case should be referred to the respective State/Region and/or National PMOs. The State/Region and/or National DRD should keep a written record of complaints/grievances raised by villagers and inform the NEEC and World Bank of such complaints.

If the complaint cannot be resolved within 20 days of receipt between the aggrieved person/s and the District DRD or ESE/MOeP PMO, the aggrieved person/s may proceed to legal proceedings in accordance with the GoM's laws and procedures.

The VECs and respective PMOs will keep a record of all complaints received, including a description of issues raised and the outcome of the review process. A grievance database template will be prepared to ensure that all key information is captured. Written feedback will be provided to aggrieved persons or parties to the dispute throughout the GRM process.

Regular monitoring of the effectiveness of the NEP GRM will be included in the monitoring and evaluation (M&E) approach for the NEP Project (see Section 12 of the ESMF).

## **12. Budget**

The implementation of this IPPF is integrated into the overall budget for the NEP Project. In addition, costs of supporting the implementation of the IPPF, such as capacity building, workshops, assessments, are included in the capacity building component of the Project as described in Section 10 of the ESMF.

## **13. Consultations regarding this IPPF**

[SECTION TO BE COMPLETED SUBSEQUENT TO PUBLIC DISCLOSURE AND CONSULTATIONS IN MAY]

This draft IPPF was shared and discussed with a range of stakeholders through three public consultation meetings on May XX – XX in Yangon, Mandalay and Taunggyi. Myanmar and English copies of the PSIA and draft IPPF were provided to the invited stakeholders two weeks (**April 29**, 2015) before the consultation meetings. The documents were also made publicly available on the websites of MoEP, MFLRD (DRD) and the World Bank. See Section 11 and Annex 6 of the ESMF for details.

The key suggestions from the consultations include....XXXX

The IPPF has integrated inputs from the consultation especially....XXX

## Annex 5 Resettlement Policy Framework (RPF)

### Background

This Resettlement Policy Framework (RPF) has been prepared for the Myanmar National Electrification Project. Since subprojects are only identified during project implementation specific project impacts cannot be identified until then. The Resettlement Policy Framework (RPF) is prepared to ensure that any acquisition of land and the loss of income or private assets due to the implementation of subprojects funded by the Project would be addressed in line with the World Bank's policy on involuntary resettlement, OP 4.12. Both permanent land acquisition and temporary occupation of land are addressed. The RPF describes procedures and requirements for assessing potential impacts and preparing required safeguard plans, such as a Resettlement Action Plan (RAP) in line with OP 4.12.

### About the NEP Project

The Myanmar National Electrification Project (NEP), led by the Ministry of Electric Power (MoEP) and Ministry of Livestock, Fisheries and Rural Development (MLFRD), through its Department of Rural Development (DRD), is the first phase of an intended three-phase program of World Bank Group support. This support is intended to enable expansion of electricity services in Myanmar through grid and off-grid solutions. The NEP intends to work with all development partners (DPs) and the private sector active in these areas. It will be designed as an open platform that DPs can also use in supporting electrification in Myanmar. Such a coordinated, sector-wide approach is considered the most effective in delivering the benefits of electrification and working together with the GoM, DPs and the private sector towards the twin goals of reducing extreme poverty and increasing shared prosperity in Myanmar. The initial phase of the NEP Project is a five-year program: 2015-2019.

The four components of the NEP Project are as follows:

#### *Component 1: Grid rollout [up to US\$ 300 million].*

The grid component will support the purchase of equipment to extend distribution networks currently operated by the Yangon Electricity Supply Board (YESB) and Electricity Supply Enterprise (ESE) and connect communities identified in the National Electrification Plan as closest to the existing national grid and thus on the least-cost path for the grid rollout.

This component will include purchase of equipment to:

- Expand existing Medium Voltage (MV) substations and construct new MV substations;
- Construct new or rehabilitate existing MV lines, Low Voltage (LV) lines and MV/LV transformers; and

- Connect households with service lines and meters.

MOEP Project Management Office manages this component, working closely with ESE, YESB and other partners.

International Development Assistance (IDA) funding will finance procurement of goods (transformers, poles, conductors, cables, meters and auxiliary equipment), which ESE and YESB will be responsible to install. The International Finance Corporation (IFC) may support private sector participation in installation, in a manner to be determined.

*Component 2: Off-grid pre-electrification [IDA US\$ 80 million].*

The off-grid component will target those communities located outside the reach of the existing national grid or unlikely to receive grid-based access in the next 10 years. This component will be based on application of mini-grids and household energy systems, including solar photovoltaic (PV) systems, mini-hydropower (not expected to exceed one megawatt), wind, diesel and hybrid systems (e.g. diesel/solar). MLFRD is responsible for off-grid rural electrification through its national and sub-national Department for Rural Development (DRD) offices.

*Component 3: Capacity building and technical assistance [IDA US\$ 20 million].*

This component will provide Technical Assistance (TA), capacity building and advisory support to Government agencies at all institutional levels (union, state/ region, and district) involved in electrification planning and implementation, technical design, economic and financial analysis, environmental and social impact management, monitoring and evaluation, as well as procurement and financial management.

#### Component 4: Contingent Emergency Response

The objective of this “zero component” is to allow a rapid reallocation of IDA credit proceeds from other components to provide emergency recovery and reconstruction support following an adverse natural disaster event. This component would finance public and private sector expenditure on a positive list of goods and/or specific works, goods, services and emergency operation costs required for Myanmar’s emergency recovery. A Contingency Emergency Response Component (CERC) Operational Manual will apply to this component, detailing financial management, procurement, safeguard and any other necessary implementation arrangements.

## Scope of Potential Project Requirements of Land

Subprojects funded by the Project are expected to be designed to have generally positive social benefits. However, some investments supported by the Project may require land acquisition or impacts assets such as standing crops and trees.

For *Component 1: Grid Rollout*, the relevant infrastructure works are; expansion and/or construction of Medium Voltage (33/11 KV) substations; construction of 33 KV and 11 KV Distribution Lines, Low Voltage (LV) Lines and Medium Voltage/LV Transformers; and installation of household connections and meters. For *Component 2: Off-Grid Pre-Electrification Program*, the infrastructure works that will require

access to and/or acquisition of land will be: dual bio gas power plants; mini grids (solar photo-voltaic); diesel generators; mini hydro power plants (< 1MW); and wind energy plants. *Component 2: Off-Grid Pre-Electrification Program* also provides for the installation of solar home systems (SHS), however it is anticipated that the impact of SHS on land will be very limited.

This RPF has been prepared as part of the ESMF for the Project to provide guidance regarding situations where land use and/or land acquisition is required for the implementation of subprojects.

## **Land Acquisition and Resettlement Policy Framework**

This NEP Resettlement Policy Framework (RPF) has been prepared as part of the ESMF for the NEP to provide guidance regarding situations where land use and/or land acquisition is required for the implementation of NEP sub-projects.

The RPF articulates principles associated with involuntary resettlement, should this be required for a particular subproject. The precise details of sub-project activities are not determined at present and the locations of subprojects will not be known until project implementation. Subsequently site-specific plans to address incidences of voluntary land donation, land compensation and/or land acquisition will not be developed until the implementation phase.

The RPF has therefore been prepared to set out policies and procedures to screen all project-financed activities for land requirements and to assist the Project with the preparation of specific resettlement action plans (RAPs), as needed, to address land acquisition.

In World Bank-assisted projects, borrowers are expected to take all necessary measures to mitigate adverse social impacts, including those associated with land acquisition. Every reasonable effort is to be made in subproject design to avoid or minimise the need for land acquisition. However, if land acquisition cannot be avoided altogether, the principal objective of the RPF is to ensure that all persons displaced economically and/or physically are compensated for all lost assets at full replacement cost and for standing crops at market value. Importantly, where land acquisition affects the sustainability of their livelihoods and income streams, development interventions must be undertaken to sustainably restore, and where poverty prevails, to enhance their standard of living.

Specifically, an RPF aims to meet the objectives of the World Bank's OP 4.12 on Involuntary Resettlement, as described below:

- a) Involuntary resettlement should be avoided where feasible, or minimised, exploring all viable alternative project designs.
- b) Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.

- c) Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.

The policy covers direct economic and social impacts that both result from Bank-assisted investment projects and are caused by the involuntary taking of land resulting in: (i) relocation or loss of shelter; (ii) loss of assets or access to assets; or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location. It applies to all subproject activities that result in involuntary resettlement, regardless of the source of financing.

### **Project Principles for Involuntary Resettlement**

OP 4.12 establishes key principles to be followed in resettlement planning and implementation. Of particular relevance for this RPF are the following. Implementation of civil works that require a temporary restriction of access to farmland or any other sources of income should not occur before mitigation measures are in place.

#### **General Principles**

- a) All efforts will be made to avoid, or minimise if unavoidable, *acquisition of land and other assets*. Detailed designs will be adjusted to the degree feasible to avoid such impacts. If however land acquisition is unavoidable, a Resettlement Action Plan (RAP) will be developed following measures provided in this RPF. (If the project activity or sub-project affects less than 200 persons, an Abbreviated RAP is to be prepared).
- b) Physical relocation of households is not expected as subprojects funded by the Project have relatively small footprints and in many cases alternative sites can be found. However, should a subproject require such relocation prior approval from the World Bank should be sought and a RAP prepared.
- c) All persons displaced economically and / or physically are entitled to compensation at market or replacement value (as relevant) for land and lost assets, or to alternative but equivalent forms of assistance in lieu of compensation. Valuations must be undertaken in accordance with international valuation standards.
- d) A lack of legal title to land of customary users acquired by the project will not bar displaced persons from entitlement to such compensation or alternative forms of assistance needed to resettle and sustainably restore incomes.
- e) Squatters or those living on or using land without title or recognised customary arrangements at the time of the RAP census survey are entitled to compensation for any structures or improvements made and may be provided with assistance to shift elsewhere.

- f) Compensation rates as established in a specific RAP refer to amounts to be paid in full to the eligible owner or user of the lost asset, without depreciation or deductions for any purpose.
- g) When cultivated land is acquired, the borrower should seek to arrange land-for-land replacement if that is the preference of the displaced person.
- h) Compensation for land, standing crops and lost assets must be paid prior to the time of impact.
- i) Land to be used temporarily must be acquired in consultation with landowners or land users. Full market compensation will be paid for any standing crops. Tree crops or perennial plantations should be avoided to the extent possible. An allowance should be paid to land users for inconvenience and a negotiated rental fee should be paid to titled landowners. Leasing of land from landowners or the use of unused, unoccupied government land is the preferred method. All land used temporarily will be restored to its previous condition.
- j) Displaced persons should be consulted during the process of RAP preparation, so that their preferences regarding land acquisition and compensation arrangements are solicited and considered.
- k) The draft and final RAPs are publicly disclosed in a manner accessible and understandable to displaced persons.
- l) The previous level of community services and access to resources will be maintained or improved after land acquisition.
- m) The borrower is responsible for meeting costs associated with land acquisition and compensation. The RAP includes a budget for all costs associated with land acquisition, including contingency arrangements.
- n) Methods by which displaced persons can pursue grievances will be established and information regarding these grievance procedures will be provided to displaced persons. Grievances are cost-free and easily accessible to project-affected people.

### **Principles specifically related to Voluntary Land Donation or In Kind Assistance**

- a) Voluntary donations are an act of informed consent and affected people are not forced to donate land or other assets with coercion or under duress, or misled to believe that they are obliged to do so.
- b) Voluntary donations are allowed only if a sub-project can technically be implemented in another location than where it is planned – if a sub-project is location-specific by nature, land acquisition associated with such a sub-project cannot be considered as voluntary; rather, it is an act of eminent domain. In such cases, an abbreviated RAP or a full RAP, as applicable, is developed.
- c) Voluntary donations and in-kind contributions by villagers are allowed under the project provided that affected people: (i) are the direct beneficiaries; (ii) know that they have the right to refuse to donate land or assets or in-kind assistance; (iii) agree to donate land or assets or in-kind assistance without coercion

or under duress; (iv) the total size of productive land owned by the affected household is more than 300m<sup>2</sup>; the impact is less than five per cent of the total productive assets owned by said household; and; no one physical relocation is allowed on a voluntary basis.

- d) The affected people are fully informed that they have the right to refuse to donate land and instead receive compensation at replacement cost, and that a grievance redress mechanism is available to them through which they can express their unwillingness to donate. People are encouraged to use the grievance redress mechanism if they have questions or inquiries, either in writing or verbally. Adequate measures will be in place to protect complainants.
- e) There is no community counterpart contribution required in cash or in kind required for any sub-project, although communities are allowed to contribute if they wish to. No one should be forced to contribute any assets against their will, and principles of voluntary donations should apply. Labour services rendered by community members are remunerated based on the going village wage rate for day labour.
- f) Once the informed consent of the affected people has been confirmed in writing, the donation will be documented.
- g) Implementation of subprojects involving voluntary donation starts only once the respective PMO has approved the signed voluntary donation forms.

## **Definitions**

“Displaced persons” refers to all the people who, on account of project activities, would have their (i) standard of living adversely affected; or (ii) right, title, interest in any house, land (including premises, agricultural and grazing land) or any other fixed or movable asset acquired or possessed temporarily or permanently; (iii) access to productive assets adversely affected, temporarily or permanently; or (iv) business, occupation, work or place of residence or habitat adversely affected. The term incorporates all potential categories of persons affected by land acquisition and associated impacts; all of those adversely affected are considered “displaced” under this definition regardless of whether any relocation is necessary.

"Replacement cost" is defined as follows:

- For agricultural land, it is the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes.
- For land in urban areas, it is the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.

- For houses and other structures, it is the market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labour and contractors' fees, plus the cost of any registration and transfer taxes.
- In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset. Where domestic law does not meet the standard of compensation at full replacement cost, compensation under domestic law is supplemented by additional measures so as to meet the replacement cost standard. Such additional assistance is distinct from resettlement measures to be provided under other clauses in OP 4.12, para. 6.

## **Legal and Regulatory Framework**

The legal framework for land in Myanmar is made up of at least 73 active laws, amendments, orders, and regulations passed under different governments that often overlap, conflict with each other, or do not refer to preceding laws.<sup>39</sup> Historically, during the colonial era and after independence, many lands were leased (grant lands) for plantations or agriculture and the landholder's rights registered in a register of holding though no certificate or title was issued.<sup>40</sup>

Myanmar does not have a unitary land law but has several laws for different categories of land. All land belongs to the state under the current legal system, and land users receive certificates from the Settlement Land Records Department.

The legal framework concerning land acquisition in Myanmar is evolving. Several key pieces of legislation have been introduced over the last several years, in particular the Farmland Act (2012) and the Vacant, Fallow and Virgin Lands Management Law (2012). However neither of these accommodate practices such as shifting cultivation or collective and traditional forms of ownership and usage.

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<sup>39</sup> Land Use Policy Reform in Burma: Engaging Stakeholders and Regional Lessons", 24 March, United States Agency for International Development, <http://usaidlandtenure.net/commentary/2014/03/land-use-policy-reform-burmaengaging-stakeholders-regional-lessons>

<sup>40</sup> Grant land is granted or leased out by the government for 10 to 90 years. If the landholder wants a land record and map of land, he or she is given both.

## 2008 Constitution

Per the Constitution of the Republic of the Union of Myanmar, 2008, in principle, all land in Myanmar is owned by the nation as articulated below:

*“The Union is the ultimate owner of all lands and all natural resources above and below the ground, above and beneath the water and in the atmosphere in the Union” (Section 37, Sub-section (a), Chapter 1 Basic Principle of the Union, State Constitution 2008)*

In this context Myanmar individuals and organisations do not have proprietary rights to land but only land use/occupancy rights, which in some situations allow for inheritance and transfer of such rights.

## The Land Acquisition Act, 1894

The 1894 Land Acquisition Act remains the legal basis for land acquisition in Myanmar. After the election of the new government in 2011, land acquisition is required to be managed by the Union Government in accordance with the procedures of the Land Acquisition Act, 1894, as well as the Farmland Law and Rules, 2012. In cases of land acquisition, the Land Acquisition Act 1894 still serves as the fundamental law for land acquisition in Myanmar however different regulations apply for different types of land and there are no comprehensive as well as updated law/rules/procedures/guidelines related to land use rights/transfer of rights/land acquisition/resettlement issues.

The relevance of the Land Acquisition Act 1894 is as follows:

*The law determines that the government will acquire or occupy lands for public purpose (but also for business reasons for companies at that time). The law sets procedures for land acquisition and compensation. Section 23 determines suitable amounts of compensation to be made for affected persons when the land is acquired by the government. Detailed descriptions and procedures are mentioned in the Land Acquisition Directions.*

The Act and associated Rules (Land Acquisition Rules, 1932) further outline relevant procedures including for notice periods, objections of interested persons to acquisition, methods of valuation of land, temporary land occupation, court processes and appeals and acquisition of land for companies.

## Land Nationalisation Act, 1954

This law serves as the basis for all land (especially agricultural land) to be nationalised and distributed (also providing conditions for lands/cases to be exempted). The procedure for the transfer of agricultural land to other purposes is described in the law (La Na 39). The Act determines the extent and amount of compensation by types of agricultural land (Schedule II, in Amendment 1954). Amendments have been made to this law in 1954 (Act No. 22), 1955 (Act No. 54) and 1957 (Act No. 49). This Act was repealed by the Farmland Law in 2012, however it still applies in cases where land transfer has been initiated under this law.

## **Farmland Act, 2012**

This law determines land use rights for farmland and granting of land use rights to eligible farmers. It allows the right to sell, mortgage, lease, exchange and gift whole or a part of the right to use the farmland. The law determines the formation as well as roles/responsibilities of farmland administrative bodies at various levels. The Farmland rules determine procedures such as the application for farmland registration and obtaining land use certificates; application of transfer of farmlands for other purposes; and indemnities and compensation.

## **Vacant, Fallow and Virgin Lands Management Law, 2012**

This law determines the conditions and frameworks for usage of vacant, fallow and virgin lands. According to the law, vacant, fallow and virgin lands can be claimed and utilised by willing individuals/organisations including foreigners mainly for production activities such as agriculture, livestock, aquaculture, mining and others permitted by the government. The law determines the formation as well as the roles/responsibilities of the central committee for the management of vacant, fallow and virgin lands.

## **Ward or Village Tract Administration Law, 2012**

Of relevance to non-agricultural land in rural areas, this recently introduced law has repealed two previous acts: The Towns Act (Burma Act No. 3/1907) and The Village Act (Burma Act No. 6/1907). These two acts determined denomination, administration and revenue collection from lands within towns and village tracts, respectively. The Ward or Village Tract Administration Law determines the functions/roles of ward or village tract administrators and their selection system as follows:

- Safeguarding fundamental rights of the citizens;
- Trespassing on state owned land, town/village land, agriculture land, alluvial land, forest land pasture, communal lands;
- Administering the land of cultivation;
- Collecting land revenue.

## **National Land Use Policy (Draft)**

In October 2014 the GoM released a draft National Land Use Policy (NLUP) and plans for a subsequent National Land Law, for public consultation. GoM has been developing the draft policy since 2012 through a multi-stakeholder consultation process.

The policy emphasises strengthening the land tenure security of smallholder farmers, ethnic communities, women, and other vulnerable groups in Myanmar. The policy also includes important provisions on:

- ensuring the use of effective environmental and social safeguard mechanisms;
- improving public participation in decision-making processes related to land use planning;
- improving public access to accurate information related to land use management; and
- developing independent dispute resolution mechanisms.

The draft policy also includes guidance aimed at strengthening the government's mechanisms for handling land acquisition, compensation, relocation, and restitution.<sup>41</sup>

The current national legislation regarding compensation for loss of land and assets, as described above, include some measures similar to key principles of World Bank OP 4.12 on Involuntary Resettlement. However, OP 4.12 is more detailed and includes a number of requirements not found in national legislation, such as preparation of a RAP, consultations and public disclosure. For the Project, all requirements of OP 4.12 apply and the Government of Myanmar agrees to waive any legal or regulatory provisions in contradiction to the requirements of OP 4.12 as established in the RPF and to take actions necessary to ensure full and effective implementation of RAPs prepared in accordance with the RPF and OP 4.12. Should the draft Land Law be approved during project implementation a more detailed comparison to OP 4.12 should be undertaken and the RPF may be changed in agreement between GoM and the World Bank

## **Eligibility Criteria and Entitlements**

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<sup>41</sup> <http://usaidlandtenure.net/commentary/2014/11/burma-draft-national-land-use-policy-public-consultations>, accessed 11 March 2015

The purpose of resettlement planning is to ensure that displaced persons have sufficient opportunity to replace assets they will lose, and to improve or at least restore their incomes and living standards. To achieve these objectives, it is essential to ensure that all displaced persons are identified, and to ensure that all displaced persons are deemed eligible for appropriate mitigation measures in the RAP. With regard to minor land acquisition, displaced persons are normally eligible for compensation at replacement cost for:

- a) All land to be acquired. If agricultural land is acquired, the project should assist displaced persons in obtaining replacement land of equivalent productive value if that is their preference.
- b) The market value of any unharvested crops and estimated future value of productive trees (fruit, nut or timber).
- c) Any fixed assets or improvements on the land to be acquired.
- d) If land is temporarily acquired to facilitate project construction, temporary use compensation is required and the land must be returned to its original condition (or better) after use.

If partial land acquisition would render the remainder of the plot economically unviable, inaccessible, or unsafe for use or habitation, the project should acquire the plot in its entirety at the request of the displaced persons.

For minor land acquisition involving communal or collective land, compensation at replacement cost normally is provided to the community or collective ownership. Displaced persons directly affected by loss of communal or collective land will be compensated for unharvested crops, productive trees and other fixed assets or improvements they have established on the land they use.

Affected persons who have no recognisable legal right or claim to the land they are occupying, e.g. informal users or encroachers on public land, may not be entitled to land compensation, but are compensated at replacement cost for unharvested crops, productive trees, and other assets or improvements they have established on the land they use.

The project design process is intended to identify and mitigate any project-caused obstructions or restrictions on access to lands, water, or other natural resources. Any persons subjected to unmitigated obstructions or restrictions on access are eligible for appropriate project mitigation assistance.

### **Entitlements:**

The following generic Entitlement Matrix provides the principles that will be used during implementation. The Entitlement Matrix may be developed in more detail during project implementation in agreement between the World Bank and GoM.

**TABLE XX: ENTITLEMENT MATRIX**

Type of Losses	Entitled Persons	Entitlements	Implementation Issues
Loss of land	Legal owners or occupants identified during census	Cash compensation at replacement cost which is equivalent to the current market value of land within the village, of similar type, category and productive capacity, free from transaction costs (taxes, administration fees)	
	Affected persons who have no recognisable legal right or claim to the land they are occupying	At minimum, rehabilitation assistance to achieve the policy objective (to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher)	
Loss of trees,	Owners of affected	Cash compensation at replacement	If remaining parts of

structures and other private trees	structures, regardless of tenure status	cost Salvage materials will be handed over to affected people	the structures are not sufficient for use, compensation will be paid for the entire affected buildings  Transportation of salvage materials will be assisted by the project
Temporary land use occupation	Legal owners or occupants identified during census	Cash compensation for loss of income or assets on a net basis  Reinstitute land to the original state after the completion of civil works	Responsible PMOs will monitor implementation

## Project Procedures

Responsibility for implementation of this RPF and for preparation and implementation of RAPs for specific activities and sub-projects (including responsibility for meeting all associated costs) rests with the Government of Myanmar. The agencies with overall responsibility in this project are MoEP, for on-grid sub-projects, and MLFRD (DRD) for off-grid sub-projects. As necessary, MoEP and MLFRD will exercise their authority to coordinate actions with any other agencies involved to ensure timely and effective implementation.

District level PMOs, which are in charge of reviewing detailed designs and hiring contractors for civil works, will determine if any land acquisition or asset loss is necessary. A Land Acquisition Checklist will be developed and attached to the project Operational Manual. The checklist will include the following, at a minimum:

**TABLE XX: GENERIC CHECK LIST**

<u>Screen/Check for</u>	<u>Yes/No</u>	<u>Requirements</u>
Will the implementation of project-financed activities require temporary or permanent land acquisition or result in loss of private assets (e.g. trees, fences, standing crops, etc) that are owned or used by private individuals?		If yes, apply OP 4.12 as described in this RPF. Assess type and scope of impacts to determine appropriate preparation process and mitigation measures
Has it been clearly explained to affected people that they are entitled to compensation at replacement cost?		If no, ensure efforts are made to inform and consult with affected communities; disclose RPF in a manner and language understandable to local communities
Have alternative technical solutions or design adjustments been explored to avoid or minimise impacts?		If no, assess if alternatives are available to avoid or minimise impacts
Has land been acquired before Bank intervention?		If yes, undertake a due diligence assessment and report to assess if land acquisition has followed national requirements and is

		consistent with the objectives of OP 4.12. Prepare an action plan to address gaps identified in the due diligence process
Are there any conflicts over land and/or titling of land?		If yes, undertake process to resolve issues before financing

If land acquisition or asset loss is unavoidable, after efforts have been made for avoidance, the relevant PMO will, in consultation with the Bank, develop a RAP or an abbreviated RAP based on the requirements set out below and in OP 4.12.

Preparation of the RAP begins once it is determined that land acquisition is necessary to complete any of the project activities, and once siting criteria has established the land area to be acquired. The relevant PMO will carry out, or cause to be carried out, a census survey to identify and enumerate displaced persons and to identify and inventory land and other assets to be required. The census survey must cover all of the displaced persons and identify all of their assets affected.

If a RAP is to be prepared, it must be based on the principles, planning procedures and implementation arrangements established in this RPF. The scope and level of detail of the resettlement instruments vary with the magnitude and complexity of resettlement. In preparing the resettlement component, the borrower draws on appropriate social, technical, and legal expertise and on relevant community-based organisations and

NGOs. The borrower informs potentially displaced persons at an early stage about the resettlement aspects of the project and takes their views into account in project design.

A RAP normally includes the following contents<sup>42</sup>:

- a. Description of the project and identification of affected project areas;
- b. Identification of the project components or activities that give rise to resettlement; the zone of impact of such component or activities; the alternatives considered to avoid or minimise resettlement; and the mechanisms established to minimise resettlement, to the extent possible, during project implementation;
- c. Objectives of RAP;
- d. Socioeconomic studies: baseline information of affected persons (e.g. general characteristics, economic and cultural conditions, existing incomes and use of natural resources, vulnerable groups);
- e. Census/survey results: identification and enumeration of all affected persons, identification and inventories of all lost land, structures and other assets (including temporary impacts) through a 100 per cent census and survey;
- f. Legal and institutional framework;
- g. Eligibility criteria for compensation and all other forms of assistance;
- h. Valuation of and compensation for losses, in kind or in cash, at replacement cost;
- i. Site selection (including environmental assessment of proposed sites), site preparation, and relocation;
- j. Replacement or restoration of public infrastructure and social services, if needed;
- k. Detailed arrangements for livelihood improvement (or restoration);

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<sup>42</sup> See OP 4.12. See also the Bank's Involuntary Resettlement Sourcebook for more guidance on the preparation and content of a RAP and abbreviated RAP.

- l. Identification of vulnerable households, and full description of planning measures for which they are eligible;
- m. Consultation and participation arrangements, including mechanism for grievance redress;
- n. A detailed implementation schedule, corresponding as appropriate to the timetable for construction of civil works;
- o. Costs and budget, identifying all unit rates for compensation, and including contingencies for price escalation and unanticipated expenses;
- p. Arrangements for monitoring and evaluation, including external monitoring if considered necessary by the Bank; and
- q. Entitlement Matrix, listing by column all categories of adverse impact including categories of land or other assets lost, eligibility criteria, and entitlements (specified by unit rate, allowance amount, or other measure) for each category.

An abbreviated RAP normally includes the following elements:

- a) a census survey of displaced persons and inventory of affected land and assets;
- b) description of asset valuation and compensation procedures;
- c) eligibility criteria for compensation and any other forms of assistance;
- d) compensation rates for all categories of land and other assets;
- e) consultation and disclosure arrangements;
- f) organisational arrangements for implementation
- g) timetable and budget; and
- h) arrangements for monitoring and implementation, including grievance procedures.

## **Implementation Arrangements**

MoEP and MLFRD (DRD) Union level PMOs have overall responsibility for safeguard compliance under the Project, but day-to-day implementation will be delegated to District PMOs that will implement this RPF for their components. Each District PMO will be headed by a PMO Director and include designated staff in charge of RPF.

## **Funding Arrangement**

MoEP and MFLRD (DRD), respectively, bear responsibility for meeting all costs associated with land acquisition, although financing may come from implementing partners. Any RAP prepared in accordance with this RPF requires a budget with estimated costs for all aspects of RAP implementation. All persons adversely affected by land acquisition are entitled to compensation or other appropriate mitigation measures, regardless of whether these persons have been identified at the time of resettlement planning, and regardless of whether sufficient mitigation funds have been allocated. For this reason, and to meet any other unanticipated costs that may arise, the RAP budget includes contingency funds, typically 10 per cent of estimated total costs.

Compensation rates included in the RAP provide the basis for calculating compensation amounts due to displaced persons. Compensation must be paid in full to the displaced person or persons losing land or other assets. No deductions from compensation will occur for any reason. The RAP should describe the procedures by which compensation funds will flow from MoEP or MFLRD (DRD), or implementing partner, to the displaced persons.

## **Consultations and Disclosure Arrangements**

Affected people will be consulted during the preparation of the RAP. Affected people should be consulted about the contents of the draft RAP and their inputs should be incorporated in the final RAP. The final RAP should be prepared in Bamar and the relevant local language/s if affected people are ethnic minorities. Consultations should be conducted in a local language and sufficient lead time (minimum 2 weeks) should be given to ensure all affected people are able to participate in consultations and be fully informed of the RAP.

The RAP must describe measures taken to consult with displaced persons regarding proposed land acquisition and other arrangements, and summarise the results of those consultations. The MoEP and MFLRD (DRD), in relation to their respective Project component, also ensures public disclosure of the RAP, in draft and final stages, to the displaced persons and the general public in the project area, in a language and location accessible and understandable to them. Disclosure of the draft RAP should occur at least one month prior to Bank review and approval. Disclosure of the final RAP occurs following Bank approval.

## **Monitoring and Grievance Procedures**

MoEP and MFLRD (DRD) will monitor the implementation of the RPF and report this monitoring to the Bank on a regular basis. Each required RAP will include detailed monitoring arrangements for the project financed activity / subproject and its RAP measures.

To ensure that displaced persons have avenues for raising complaints relating to land acquisition, compensation payment, construction-related damages, or other aspects of project implementation, a multi-step grievance procedure will be established in the RAP, aligned with the requirements of the NEP Project

level Grievance Redress Procedure. Each required RAP will detail the procedures for that particular project activity or subproject.

A grievance redress mechanism (GRM) has been prepared for the Project with the aim to allow affected communities and individuals to raise complaints to implementing entities in regards to the preparation and implementation of subprojects. It also aims to enable the PMOs to receive and facilitate resolution of the specific concerns of affected communities and project participants regarding environmental and social performance. The GRM will aim to resolve concerns promptly, in an impartial and transparent process tailored to the specific community, and at no cost and without retribution to the complainant/s. The GRM is based on the following six principles: fairness; objectiveness and independence; simplicity and accessibility; responsiveness and efficiency; speed and proportionality; participatory and social inclusion.

The GRM will be communicated to different stakeholders. It is intended that information on the GRM will be disseminated widely in meetings and through pamphlets and brochures in Myanmar language, and ethnic languages as needed/relevant. Specifically, information will be provided about how and where to lodge complaints/grievances. Villagers will be encouraged to seek clarification or remediation through the mechanism if they have any questions or complaints/ grievances.

Subproject specific safeguard instruments (ESMP, RAP, IPP) will describe the GRM in detail based on the following procedures for addressing grievances [TO BE COMPLETED]:

Stage 1: An initial stage, within the local village or township level, in which any person/s aggrieved by any aspect of the Project can lodge an oral or written complaint/grievance to the local Village Electrification Committee (VEC) or implementing partner/operator. The VEC or implementing partner/operator should keep a written record of complaints/grievances raised by villagers and their resolution; they should inform the District DRD or ESE/MOeP PMO of such complaints and resolutions.

If the complaint cannot be resolved within 15 days of receipt between the aggrieved person/s and the VEC or implementing partner/operator, it should be escalated to the second step of the process.

Stage 2: If the aggrieved person is not satisfied with the outcome of the initial stage, she/he/they can lodge the complaint to the District DRD or ESE/MOeP PMO. During the dialogue process the issues raised will be reviewed, and actions for resolution will be agreed by the parties. The dialogue will seek a resolution to the grievance as long as all the parties involved are amenable to the process. The District DRD or ESE/MOeP PMO should keep a written record of complaints/grievances raised by villagers and inform the State/Region and National PMOs of such complaints.

If the complaint cannot be resolved within 15 days of receipt between the aggrieved person/s and the District DRD or ESE/MOeP PMO it should be escalated to the third step of the process.

Stage 3: If the aggrieved person is still dissatisfied following review by the District DRD or ESE/MOeP PMO, the case should be referred to the respective State/Region and/or National PMOs. The State/Region and/or National DRD should keep a written record of complaints/grievances raised by villagers and inform the NEEC and World Bank of such complaints.

If the complaint cannot be resolved within 20 days of receipt between the aggrieved person/s and the District DRD or ESE/MOeP PMO, the aggrieved person/s may proceed to legal proceedings in accordance with the GoM's laws and procedures.

The VECs and respective PMOs will keep a record of all complaints received, including a description of issues raised and the outcome of the review process. A grievance database template will be prepared to ensure that all key information is captured. Written feedback will be provided to aggrieved persons or parties to the dispute throughout the GRM process.

Regular monitoring of the effectiveness of the GRM will be included in the monitoring and evaluation (M&E) approach for the Project (see Section 12 of the ESMF).

## ANNEX 6: Public consultations record

[TO BE COMPLETED AFTER PUBLIC DISCLOSURE AND CONSULTATIONS IN MAY]

An initial Public Consultative Meeting for the Project was held in Yangon on 30 January 2015. This provided a progress update on the development of the Myanmar National Electrification Plan and proposed Myanmar National Electrification Project. It provided a summary of the WBG's Safeguard Assessment of the Project and the proposed role and composition of the ESMF, which would be used to guide project implementation. The Meeting summarised the initial findings of the Poverty and Social Impact Analysis (PSIA) Phase 1 research that had been undertaken in 2014 and outlined the scope of the Phase II research that would take place during January – March 2015. Presentations prepared for the meeting were provided in Myanmar and English languages in advance of the meeting. All documentation related to the concept and preparation of the project is published at the following URL:

[https://energypedia.info/wiki/Achieving\\_Universal\\_Access\\_to\\_Electricity\\_in\\_Myanmar](https://energypedia.info/wiki/Achieving_Universal_Access_to_Electricity_in_Myanmar)

The World Bank procedures require that an ESMF be prepared and publicly disclosed prior to project appraisal. This allows the public and other stakeholders to comment on the possible environmental and social impacts of the project, and the appraisal team to strengthen the document as necessary, particularly measures and plans to prevent or mitigate any adverse environmental and social impacts.

Public Consultation Meetings on the draft ESMF and preliminary PSIA to inform the ESMF are scheduled to be held in mid-May 2015. Invitations will be issued and documents circulated and posted on the ESE and DRD websites in both Myanmar and English languages two weeks in advance of the meeting. The documents will be made available in English in Infoshop in compliance with the World Bank's Public Consultation and Disclosure Policy. The final documents will reflect any comments and/or suggestions provided during public consultation.