

Consulting Services for **Environmental and Social Assessment for Ywama Combined Cycle Gas Turbine (CCGT) Power Plant Upgrade** in Yangon, Myanmar

Project Proponent:
Electric Power Generation Enterprise

Power System Efficiency and Resilience Project

Component B: Improving Resilience and Capacity of the Power Network



Final Updated Environment & Social Management Framework (ESMF)

Project Consultant:
GreenIndia Consulting Private Limited
NCR, Ghaziabad, India

February 2020

Consulting Services for Environmental and Social
Assessment for Ywama Combined Cycle Gas
Turbine (CCGT) Power Plant Upgrade in Yangon,
Myanmar

February 2020

Consulting Services **for Environmental and Social
Assessment for Ywama Combined Cycle Gas
Turbine (CCGT) Power Plant Upgrade** in Yangon,
Myanmar

Project Proponent:

Department of Power Transmission and
Systems Control
Ministry of Electricity and Energy

**Power System Efficiency and Resilience Project
Component B: Improving Resilience and
Capacity of the Power Network**

**Final Updated Environment & Social
Management Framework**

Project Consultant:

February 2020

Consulting Services **for Environmental and Social
Assessment for Ywama Combined Cycle Gas
Turbine (CCGT) Power Plant Upgrade** in Yangon,
Myanmar

GreencIndia Consulting Private Limited
NCR, Ghaziabad, India

February 2020

TABLE OF CONTENT

		Page No.
EXECUTIVE SUMMARY		E.1-E.10
CHAPTER 1	INTRODUCTION	1-5
1.1.	The Context	1
1.2.	Project Proponent	1
1.3.	Need of Project	2
1.4.	Requirement of ESMF	3
1.5.	Plan Of The Report	4
CHAPTER 2	PROJECT DESCRIPTION	6-31
2.1.	Project Objective	6
2.2.	Importance of The Project	6
2.2.1.	Power Generation	6
2.2.2.	Power Supply	6
2.3.	Project Components	7
2.4.	Project Features of Component B	10
2.4.1.	Prioritization of Sub-stations	10
2.4.2.	Equipment to be Installed	12
2.5.	Project Baseline Data	13
2.5.1.	Ecological Sensitive Areas Eco-regions	13
2.5.2.	Relevant Socio-economic aspects	13
2.6.	Seismicity	31
CHAPTER 3	LEGAL AND POLICY FRAMEWORK	32-38
3.1.	Regulatory Framework	32
3.1.1.	Constitutional Provision	32
3.1.2.	Environment Conservation Law, 2012	32
3.1.3.	EIA Procedure, 2015	33
3.1.4.	General Environmental Impact Assessment Guideline, 2017	33
3.1.5.	National Energy Policy 2014	33
3.1.6.	Other Applicable Legal Provisions	34
3.2.	World Bank Environment & Social Safeguard Policies	34
3.2.1.	Applicability of WB Safeguard Policies	35
3.2.2.	The EHS General Guidelines	36
3.2.3.	EHS Guidelines for Electric Power Transmission and Distribution	37
3.3.	Gap Analysis Between Myanmar Provisions & World Bank Policies	37
CHAPTER 4	POTENTIAL IMPACTS & MITIGATION MEASURES	39-53
4.1.	Potential Negative Environmental And Social Impacts	39
4.1.1.	Water Pollution	39
4.1.2.	Air Pollution	41
4.1.3.	Noise and Vibration	41

	Page No.	
4.1.4.	Impacts on Biodiversity	41
4.1.5.	Impact on Road Traffic	42
4.1.6.	Impact from Solid Waste	42
4.1.7.	Impact from Hazardous Waste	43
4.1.8.	Workers' Safety	43
4.1.9.	Social Impact	44
4.2.	Mitigation Measures	45
4.2.1.	Prevention from Water and Soil Pollution	45
4.2.2.	Prevention of Air Pollution and Minimizing Dust	45
4.2.3.	Management of Solid Waste	45
4.2.4.	Management of Hazardous Wastes	45
4.2.5.	Safety of Traffic and Pedestrians	48
4.2.6.	Reducing the Impact on Vegetation	48
4.2.7.	Social Mitigation	48
4.2.8.	Displacement	48
4.2.9.	Occupational Safety	49
4.2.10.	Monitoring	52
CHAPTER 5	PROCEDURES FOR REVIEW, CLEARANCE & IMPLEMENTATION OF SUB-PROJECTS	54-60
5.1.	Objectives of ESMF	54
5.2.	Approach of ESMF	54
5.2.1.	Step-1: Eligibility of Screening	55
5.2.2.	Step 2: Technical Screening for Environmental and Social Aspects	55
5.2.3.	Step 3: Mitigation Measures and Public Consultation	56
5.2.4.	Step 4: Development of Safeguard Instruments and Disclosure	57
5.2.5.	Step 5: Implementation, Supervision, Monitoring and Reporting	57
CHAPTER 6	IMPLEMENTATION ARRANGEMENT FOR ESMF	61-64
6.1.	Project Implementation & EA Responsibilities	61
6.2.	Reporting Arrangements	64
CHAPTER 7	CAPACITY BUILDING, TRAINING & TECHNICAL ASSISTANCE	65-66
7.1.	Technical Assistance And Capacity Building	66
CHAPTER 8	ESMF IMPLEMENTATION BUDGET	67
CHAPTER 9	GRIEVANCE REDRESS MECHANISM	68-70
9.1.	Process of Grievance Redress	68
9.2.	Composition of GRC	70
CHAPTER 10	CONSULTATION AND DISCLOSURE	71-75
10.1.	Consultation Process	71
10.2.	Consultation at Sub-Stations	72
10.3.	Consultation on the Communities Participation Planning Framework	76

LIST OF TABLES

	Page No.	
Table 1-1	Organization Structure of MOEE	1
Table 2-1	Name of Sub-stations and Activities	11
Table 3-1	Applicability of Safeguard Policies	35
Table 3-2	Gap Analysis for Legal Provisions applicable to Sub-Station Projects	37
Table 4-1	Alternating Current - Minimum Working Distances for Trained Employees ^a	50
Table 4-2	The synopsis of the expected impact and the mitigation measures to be adopted	51
Table 6-1	Responsibilities for implementation of ESMF	61
Table 6-2	Reporting Procedures	64
Table 8-1	Estimated Budget (in million USD)	67
Table 10-1	Consultation Dates	72
Table 10-2	Locations for Informal Discussions with Locals	74
Table 10-3	Response of Project Owners	74

LIST OF FIGURES

	Page no	
Figure 2.1	Location of Sub-stations	13
Figure 2.2	Ecoregions of Myanmar	14
Figure 2.3	Protected Areas of Myanmar	15
Figure 2.4	Key Biodiversity Areas	16
Figure 2.5	Major Vegetation Types of Myanmar	17

		Page no
Figure 2.6	Ecologically Sensitive Reaches of River Basin in Myanmar	18
Figure 2.7	Seismic Zone of Project Area	31
Figure 5.1	Safeguard Actions for New Projects During Project Implementation	60
Figure 10.1	Consultation with Employees of DPTSC	73
Figure 10.2	Consultation on the CPPF	82

LIST OF ANNEX

		Page no
Annex 1	Eligibility Screening Format	86
Annex 2	Environment Screening Format	87
Annex 3	Social Screening	91
Annex 4	Scope for EMP Preparation	93
Annex 5	Resettlement Policy Framework	98
Annex 6:	Community Participation Planning Framework	123
Annex 7:	Grievance Redress Format	132

LIST OF ABBREVIATIONS

AIS	: Air Insulated Sub-Station
AHP	: ASEAN Heritage Parks
ASEAN	: Association of Southeast Asian Nations
CCGT	: Combined Cycle Gas Turbine
CPPF	: Community Participation Planning Framework
CT	: Current transformers
DEPP	: Department of Electric Power Planning
DHPI	: Department of Hydropower Implementation
DPTSC	: Department of Power Transmission and System Control
E&S	: Environmental and Social
ECC	: Environment Conservation Committee/Environment Compliance Certification
ECD	: Environment Conservation Department
ECOP	: Environment Code of Practice
ECR	: Environment Conservation Rules
EHS	: Environment Health and Safety
EIA	: Environment Impact Assessment
EIA	: Environment Impact Assessment
EM	: Emergency Manager
EMDP	: Ethnic Minority Development Plan
EMF	: Electric and Magnetic Fields
EMP	: Environment Management Plan
EMPF	: Ethnic Minority Policy Framework
EPGE	: Electric Power Generation Enterprise
EPP	: Ethnic Peoples Plan
ERC	: Emergency Response Cell
ERP	: Emergency Response Plan
ESE	: Electricity Supply Enterprise
ESIA	: Environment and Social Impact Assessment
ESMF	: Environment and Social Management Framework
ESMP	: Environment and Social Management Plan
FPIC	: Free, Prior and Informed Consultation
GAD	: General Administration Department
GCPL	: Greencindia Consulting Private Limited
GIS	: Gas Insulated Substation
GRC	: Grievance Redressal Cell
GRM	: Grievance Redressal Mechanism

HO	: Head Office
HRSG	: Heat Recovery Steam Generators
IEE	: Initial Environment Examination
IP	: Indigenous People
KBA	: Key Biodiversity Areas
LTSA	: Long Term Service Agreement
MESC	: Mandalay Electricity Supply Corporation
MMCFD	: Million Cubic Feet Per Day
MOE	: Ministry of Energy
MOEE	: Ministry of Electricity and Energy
MOEP	: Ministry of Electric Power
MOGE	: Myanmar Oil and Gas Enterprise
MONREC	: Ministry of Natural Resources and Environmental Conservation
MPE	: Myanmar Petrochemical Enterprise
MPPE	: Myanmar Petrochemical Enterprise
MSCFD	: Million Standard Cubic Feet Per day
NGO	: Non-Government Organisation
NTP	: Notice to Proceed
PAP	: Project Affected Person
PCB	: Polychlorinated Bi-Phenyl
PIA	: Project Implication Agency
PIU	: Project Implication Unit
RP	: Resettlement Plans
RPF	: Resettlement Policy Framework
RoUM	: Republic of the Union of Myanmar
SC	: Shunt Capacitor
SEMP	: Site Specific Environmental Management Plan
SEO	: Safety and Environment Officer
SHR	: Shunt Reactors
TA	: Technical assistance
VT	: Voltage Transformers
WCA	: Wildlife Conservation Society
YESC	: Yangon Electricity Supply Corporation

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Power System Energy Efficiency Improvement Project has been conceived by the World Bank for the Republic of the Union of Myanmar to increase capacity and efficiency of electricity generation and transmission system in the country. The implementing agencies for the project is Electric Power Generation Enterprise (EPGE), Department of Electric Power Transmission and System Control (DPTSC), Ministry of Electricity and Energy (MoEE), Govt. of Myanmar.

The project includes two components: Component A: Upgrading Ywama Power Generation Units; and Component B: Improving Resilience and Capacity of the Power Network. The present Environment and Social Management Framework (ESMF) document has been prepared for Component B of the project.

This Environmental and Social Management Framework (ESMF) refers to the project's Component B. The purpose of the Component B is to include critical investments and upgrading measures in existing substations to improve the power system's transfer capacity, in addition to its ability to respond to climate events. By doing this, the proposed project will not only support the country's efforts to enhance the system's resilience to the adverse effects of climate but also improve the quality of electricity services delivered to existing and new consumers in the surrounding areas of the substations, which are often undeserved and poor.

THE PROJECT

The Component B of the project will help improve the systems' emergency response to substation failures by providing high-voltage mobile substations in key points of the transmission network.

These sub-stations mainly include power transformers, current transformers, switch gears and control and protection systems. The project would also finance high-voltage equipment to contribute to further improve the reliability of the network. Such equipment could include, but not be limited to, power and current transformers, power and shunt reactors, switch bays, protection and control devices.

NEED OF THE PROJECT

Rapid demand growth, fuelled by economic growth and increased electrification, has put additional strain on the system's network. Power demand is growing at an average rate of 12 percent over the past five years. Transmission infrastructure has been unable to keep up with

demand and as a result, many of the transmission lines are overloaded. Efforts have so far focused in expanding the 230KV network, including adding and upgrading substations and in building the first 500kV transmission line north-to-south, which is now under implementation.

Overall, the transmission system is unreliable and quality of power supplies delivered to consumers is low. In 2016, there were 16 country-wide black-outs and consumers install regulators to avoid damage to electric appliances due to large voltage fluctuations. Thus, it is of immediate importance to strengthen and modernize the capacity of the transmission lines and sub-stations.

OBJECTIVES OF THE ESMF

An Environment and Social Management Framework (ESMF) is an instrument that examines the issues and impacts associated when a project consists of a program and/or series of sub-projects, and the impacts cannot be determined until the program or sub-project details have been identified. This instrument is used for projects which are at the conceptualization or planning stage, and where specific impacts cannot be determined due to lack of detailed information.

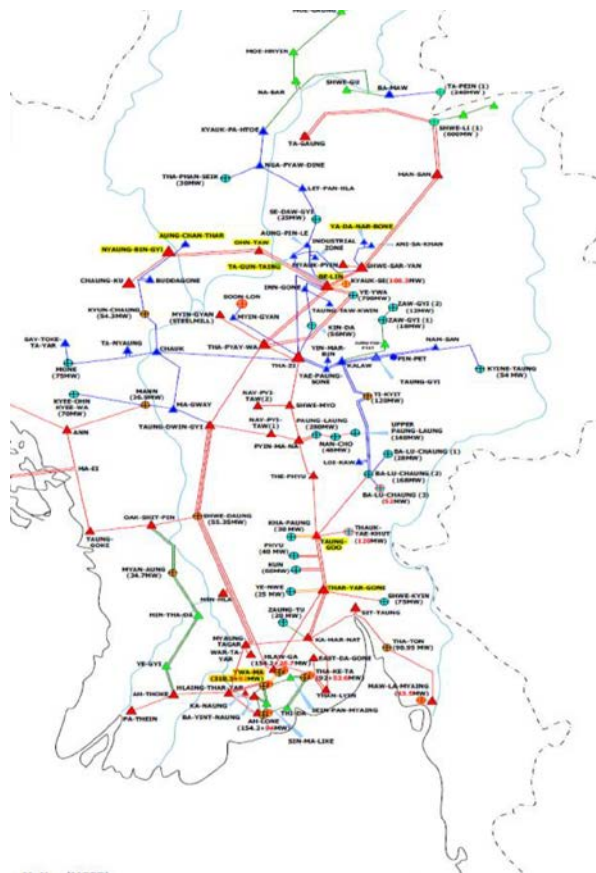
Key objectives of this ESMF are:

- To assess the potential environmental and social impacts of the proposed project, whether positive or negative and propose mitigation measures which will effectively address these impacts;
- To establish clear procedures for the environmental and social planning, review, approval and implementation of sub-projects to be financed under the project;
- To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to sub-projects; and
- To consider different alternatives, options, and relevant mitigation measures during project preparation and implementation.

LOCATION OF THE PROJECT

Investments and measures will be implemented in existing substations to be determined based on the results of ongoing climate risks assessments. The map of existing high voltage substations (230KV and 132KV marked in red and blue triangles) in Myanmar is presented in the figure below.

Works in the substations for the installation of the equipment and other resilience measures will be implemented to the large extent within the existing footprint of the existing facilities.



POTENTIAL IMPACTS MITIGATION MEASURES

The project design of Component B will support multiple sub-projects, the detailed designs of which are not known at appraisal. The ESMF will therefore serve as the appropriate EA instrument to identify and provide guidance on mitigating potential environmental and social risks.

All proposed sub-projects will be screened (using a checklist) to ensure that the potential environmental and social risks can be adequately addressed through the application of a typical Environmental and Social Management Plan.

The proposed project activities under this component will be limited to removal of existing transformers, installation of new transformers and construction of new switch bays. There will be no installation of new transmission lines. The component activities have the possibility to generate environmental impacts associated with noise, dust, air and water pollution, solid and hazardous waste management, health hazards and labour safety issues, etc. The environmental

risks are expected to be typical for small scale construction/rehabilitation works or for various energy supply or energy efficiency activities, temporary by nature and site specific and can be easily mitigated by applying best construction and/or energy supply or energy efficiency practices and relevant mitigation measures.

Key potential negative environmental and social impacts of the sub-projects financed by Component B are the following:

- **Water pollution.** During the construction phase, leakage of fuel and lubricant from construction machinery and stored waste, petroleum products and chemicals can pollute the soil, penetrate into ground-water or drain into surface water bodies. Risk of leakage of oil during dismantling of the old transformers, which may contaminate the soil and subsequently leach to the ground water if not properly managed;
- **Air pollution.** Dust will be generated as a result of site clearance, construction work, transportation of construction materials / waste and traffic of freight vehicles. As most of the sub-stations have large areas, the impacts from construction activities will be localized and mainly restricted within the construction site;
- **Noise and vibration.** Increase of noise level is expected during construction, material transportation, construction equipment operation, in particular, during excavation, pneumatic drilling, and work of construction cranes;
- **Biodiversity.** During construction, the necessary earthwork for construction can damage the vegetation cover and lead to cutting down of green plantations. Heavy vehicles carrying building materials and waste material can disturb the animal world, including affecting the natural habitat. However, since all works will be performed mainly on the developed territory, significant damage is unlikely;
- **Impact on Road Traffic.** During construction phase, there will be movement of heavy and oversized vehicles carrying construction materials and machineries such as transformers. In some of the sub-stations there may be problem of entering the sub-station which may lead to bottle necks in front of the sub-station. The access to the sub-station has to be modified to allow entry of the over-sized vehicles without any land acquisition;
- **Impact from Solid and Hazardous Waste.** The following types of solid waste will be generated during the construction phase: (1) Construction debris, transportation, handling, compressor works, jackhammers and other construction equipment, soil surpluses and stones, cut trees, bushes, household waste, obsolete equipment and materials, and; (2) Hazardous waste - construction debris containing mineral wool and rubberoid, worn tires, filters and oils from construction equipment and transformer sub-stations. Asbestos products were extensively used in the manufacture of electrical components due to its fire resistance and insulation properties. ACMs in transformer rooms and sub-stations are a common occurrence for old installations. So while dismantling old machineries, there is risk of asbestos fibres polluting the air. Asbestos, if not handled and stored properly may have negative impact on the health of the personnel handling them;
- **Impact due to Natural Calamities.** The sub-stations fall in the active seismic zone of the country and will have high risks of earthquakes. Power transmission and substations are considered as the most vulnerable and also the most risky nodes of power network experienced at the time of earthquakes. Seismic vulnerability of equipment increases with substations voltage due to the fact that higher voltage in substation leads to higher isolation distances and then higher height of substations equipment. It was found that the locations of the sub-stations planned for the Component B of the project are not near to any water bodies or rivers and thus there is no risk of flooding due to inflow of water during rains;

- **Worker's Safety.** Direct impact on safety and health of people in civil works can be caused by various factors, for example, high-altitude work, the work of cranes and bulldozers, welding, etc. The potential impact on the safety and health of workers is also associated with occupational injuries during construction (falling structures, etc.). Electric current injury may result from contact with electric chain with voltage and/or current sources able to induce electric flow through a part of the body that came into a contact with electric current;
- **Involuntary Resettlement.** As the sub-projects are expected to be constructed within existing areas of the sub-station and no additional land is planned to be acquired for the sub-project, there will be no issues of involuntary resettlement. However, as the lands are not yet finalized, there is a chance that some installation may exceed the existing footprint or that installations on existing footprints have temporary land use impacts during construction. The project will determine during preparation the likelihood of these impacts and ask the project management unit to prepare a Resettlement Action Plan, if necessary;
- **Ethnic Peoples.** The targeted high voltage sub-stations for installation of new equipment are located country wide. Various ethnic groups live in different parts of the country, so it is possible that some of the improved sub-stations will be located in areas where Ethnic Peoples live or work. Although the expected negative impacts caused sub-station equipment installation are expected to be negligible, the project will make sure ensure that they are meaningfully consulted.
- **Labor Influx.** It has been estimated that during construction approximately 60 semi skilled and unskilled labors will be required for each sub-station. During interaction with sub-stations in-charges, it came to the knowledge that all workers will be recruited locally and thus there is no scope of influx of outside people. Only technical persons will come from outside, who will be mainly DPTSC employees and will be accommodated in the residential colonies of DPTSC.

Most of the impacts due to the project is envisaged during the construction phase. As the sub-projects are restricted to construction activities within the sub-stations and do not involve transmission line components, the project will have low risk of pollution to the environment.

Key mitigation measures for each of the potential negative environmental and social impacts of the sub-projects financed by Component B have been included in the ESMF, they will need to be implemented and monitored during project implementation.

PROCEDURES FOR REVIEW, CLEARANCE AND IMPLEMENTATION OF SUB-PROJECTS

This ESMF provides general policies, guidelines and procedures to ensure that the project will be implemented in an environmentally and socially sustainable manner. Specifically, the ESMF aims to achieve the following:

- Minimize potential negative environmental and social impacts;
- Enhance positive environmental and social impacts wherever possible;
- Ensure that all stake-holders, including ethnic minorities and other vulnerable people are meaningfully consulted and that they receive project benefits in a culturally appropriate manner;

- Prevent and, where unavoidable, fully compensate loss in livelihood associated with or caused by the project; and
- Develop the capacity of the implementation agencies to manage environmental and social impacts in partnership with the affected communities.

The ESMF provides guidance to environment and social safeguard planning and compliance during implementation of investments to be financed under the project (“sub-projects”). As sub-projects will be identified and proposed for financing in a continuous manner during the project implementation period, screening for potential environmental and social impacts will be conducted and mitigation and management measures will be developed in line with this ESMF.

Environmental and social impact screening, mitigation and management measures development and implementation will follow these steps:

- Step 1: Eligibility screening of sub-projects as per World Bank Policies;
- Step 2: Technical screening for potential environmental and social safeguard impacts and determination of safeguards instruments for each Sub-project, including the potential need of preparing a subproject specific Environmental Impact Assessment (EIA), Environmental and Social Management Plan (ESMP), Resettlement Action Plan (RAP) or Ethnic Peoples Plan (EPP);
- Step 3: Development of mitigation measures and public consultation;
- Step 4: Development of safeguard instruments and disclosure; and
- Step 5: Implementation, Supervision, Monitoring and Reporting.

IMPLEMENTATION ARRANGEMENT FOR ESMF

The ESMF implementation will follow the project implementation arrangements. At the Union level, the MoEE will have oversight over all the sub-projects.

The responsibility of preparation of the sub-project specific EIA/ESMP or Resettlement Action Plan -RAP- or Ethnic Peoples Plan -EPP- documents, plus carrying out consultations with project-affected stakeholders, is with DPTSC. They will review the documents to ensure compliance with National Environmental Guidelines and the World Bank's relevant Safeguard Policies.

CAPACITY BUILDING, TRAINING AND TECHNICAL ASSISTANCE FOR ESMF

EPGE and DPTSC will integrate environmental and social safeguard provisions in order to enhance the potential positive impacts for component B activities which aligns with the Safeguard Policies to Technical Assistance Activities in Bank-financed Projects.

Although MoEE has got experiences in working with International Financial Institutions, including World Bank, the key staffs responsible for implementing the safeguard instruments has to be provided proper training.

DPTSC will procure the services of implementing partner NGOs, including engineers and/or specialists with experience in environmental impacts, safeguards, mitigating measures. These specialists will assist MoEE/ individual local to implement ESMF instruments, and build capacity on environmental management issues and possible mitigating measures.

ESMF IMPLEMENTATION BUDGET

MoEE will be responsible for overall coordination of the sub-project implementation, including the budget for coordination of safeguards implementation and safeguard training for the sub-project staff.

The cost for implementation of mitigation measures during construction, including consultation with local communities, environmental monitoring by contractors and compensation for damage (if any) will be part of the sub-project construction cost. The cost for supervision of contractor performance will be part of the sub-project supervision cost. The budget for safeguard training of staff will be part of the project management cost and ESMP implementation cost.

The estimated budget for five years period is calculated to be 0.211 Million USD.

RESETTLEMENT POLICY FRAMEWORK

Although the present projects are not expected to involve any involuntary resettlement, a Resettlement Policy Framework (RPF) has been developed to ensure that in case of land donation or impact on settlements, negative impacts are avoided, minimized and properly managed.

The main criteria applied for the RPF are the following:

- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs;
- 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; and

- 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.

In some projects, communities may agree to voluntarily provide land in exchange for desired community benefits. Voluntary donations will be only acceptable in case they are not expected to involve no physical displacement or significant adverse impacts on incomes (or they are expected to include community-devised mitigatory mechanisms acceptable to those affected). For voluntary donation, both spouses and all adult children must give their consent.

If the safeguard screening finds that land acquisition or loss of private assets is unavoidable and if voluntary donation does not apply, the Village Committee will prepare a resettlement instrument (an abbreviated Resettlement Action Plan -RAP- or a full RAP). As in the present case, the affected population in no aspect will cross 200, an abbreviated RAP will be required.

Compensation for lost land and other assets should be paid at full replacement cost. Replacement cost is defined as a method of valuation yielding compensation sufficient to replace assets, plus necessary transaction costs associated with asset replacement. Replacement cost is the market value as established through independent and competent real estate valuation, plus transaction costs.

Budget for implementing RPF will be part of the subproject budget.

The resettlement and compensation plans will indicate parameters to be monitored, institute monitoring milestones and provide resources necessary to carry out the monitoring activities. The objective will be to make a final evaluation in order to determine;

- If affected people have been paid in full and before implementation of the project; and
- If the people who were affected by the project have been affected in such a way that they are now living at a higher standard than before, living at the same standard as before, or they are actually poorer than before.

The World Bank will also review the use of safeguards screening forms, voluntary donations, abbreviated/full RAPs to verify safeguard compliance in line with this RPF and ESMF and other relevant project documents.

COMMUNITY PARTICIPATION PLANNING FRAMEWORK

The Project is expected to have generally positive social benefits. It is expected that the sub-projects will not impact in any way to the Ethnic Peoples. This Community Participation Planning

Framework (CPPF) has been prepared for Component B to avoid potentially adverse effects on the Ethnic Peoples' communities and make sure that the project is designed in a way that the Ethnic Peoples receive social and economic benefits that are culturally appropriate and gender and intergenerationally inclusive.

The MoEE will adopt full consultation and stakeholder participation for all its sub-project financed under Component B. During project screening (sub-project selection process), ethnic groups living/working near the sub-project area will be meaningfully consulted about benefits and potential impacts. At least two public consultation meetings will be conducted. The proposed sub-project, expected sub-project impacts and mitigation measures will be presented during the first meeting. Then, the second public consultation meeting will be conducted to determine whether there is support for the project activities and potential mitigation plans, if needed.

In the process, free, prior and informed consultations will be undertaken in a language spoken by, and location convenient to, potentially affected ethnic peoples. The views of ethnic peoples are to be taken into account during implementation of the sub-project, while respecting their current practices, beliefs and cultural preferences.

An Ethnic Peoples Plan (EPP) in line with WB's OP 4.10 para 12 and Annex B, including a brief Social Assessment, will be developed only for those proposed sub-projects which -during the environmental and social screening process- it is assessed that ethnic peoples are present in the project area. Consultations with and participation of ethnic peoples, their leaders and local government officials will be an integral part of the overall EPP and the brief Social Assessment, which should be prepared along with other required project reports.

The responsibility of preparation and implementation of the required consultations with Ethnic Peoples and EPPs is with DPTSC.

Budget for implementing CPPF and potential EPPs will be part of the Project budget. For the preparation, implementation and monitoring of the EPPs, a lump sum estimate for each of them is US\$7,500.

GRIEVANCE REDRESS MECHANISM

Component B will have a Grievance Redress Mechanism (GRM) which will be accessible to a broad range of project stakeholders who are likely to be affected directly or indirectly by the sub-project. These will include beneficiaries, community members, project implementers/contractors,

civil society, media—all of whom will be encouraged to refer their grievances and feedback to the GRM. The GRM will handle issues such as:

- Mismanagement, misuse of Project Funds or corrupt practices;
- Violation of project policies, guidelines or procedures, including those related to child labour, health and safety of community/contract workers and gender violence;
- Disputes relating to resource use restrictions that may arise between or among affected communities;
- Grievances that may arise from members of communities who are dissatisfied with the eligibility criteria, community planning measures, or actual implementation of community energy investments or socio-economic infrastructure.

An affected household/individual/worker is to take his/her complaint to the GRC, through the local representative/ward member or directly to the GRC, in written or oral form. The GRC at the plant level will be headed by the Sub-station and all grievances will be addressed to him. The details of the GRC contacts will be displayed publicly in all strategic places in and around the plant. The GRC will work directly in person with the said affected household and will decide on the settlement of the complaint 5 days after receiving such complaint. The Secretariat of the GRC is responsible for documenting and recording all the complaints that it is handling. The GRC will inform ward member and EPGE on the complaint and resolution reached.

CONSULTATIONS TO DISCUSS THIS ESMF

The following consultation meetings have been carried out to discuss this ESMF:

- Consultation with Government Officials were organized with EPGE and DPTSC officials on 25th January 2019. 9 officials attended the meetings;
- Consultation with the employees at the sub-stations of Taungoo, Tharyargone and Belin during different days of February 2019; and
- Consultations with 30 people from CSOs representing various ethnic groups coming from diverse states and regions to present, discuss and comment the project's Communities Participation Planning Framework (CPPF), This activity was carried out in Yangon on January 28, 2020.

At least before the beginning of construction works for the sub-projects, additional consultations will be carried out with project-affected communities. Those consultations will be carried out by the contractors under the supervision of the Implementing Agency. All the consultation activities must be properly documented.

The purposes of the consultation activities during the implementation of the subprojects will introduce the proposed project to stakeholders, inform them as it develops, and identify their views and concerns.

CHAPTER 1

INTRODUCTION

1. Introduction

1.1 THE CONTEXT

The Power System Energy Efficiency Improvement Project has been conceived by the World Bank for the Republic of the Union of Myanmar to increase capacity and efficiency of electricity generation and transmission system in the country. The implementing agencies for the project is Electric Power Generation Enterprise (EPGE), Department of Electric Power Transmission and System Control (DPTSC), Ministry of Electricity and Energy (MoEE), Govt. of Myanmar.

The project includes two components: **Component A:** Upgrading Ywama Power Generation Units; and **Component B:** Improving Resilience and Capacity of the Power Network. The present Environment and Social Management Framework (ESMF) document has been prepared for Component B of the project.

This Environmental and Social Management Framework (ESMF) refers to the project's Component B. The purpose of the Component B is to include critical investments and upgrading measures in existing substations to improve the power system's transfer capacity, in addition to its ability to respond to climate events. By doing this, the proposed project will not only support the country's efforts to enhance the system's resilience to the adverse effects of climate but also improve the quality of electricity services delivered to existing and new consumers in the surrounding areas of the substations, which are often undeserved and poor.

1.2 PROJECT PROPONENT

The proposed project is to be implemented by MoEE. Myanmar's power sector is organized under the MoEE, which oversees all operational functions of the generation and transmission sub-sectors, in addition to policy making and regulatory functions. MoEE was formed by amalgamation of Ministry of Electric Power ("MoEP") and Ministry of Energy ("MoE") in 2016. The Electric Power sector has functions of policy planning, designing, construction, operation and management of power plants (thermal and hydel) as well as transmission and distribution network. The present project will be supervised by Department of Power Transmission and System Control (DPTSC) under the aegis of MoEE.

1.3 THE PROJECT

The Component B of the project will help improve the systems' emergency response to substation failures by providing high-voltage mobile substations in key points of the transmission network.

These sub-stations mainly include power transformers, current transformers, switch gears and control and protection systems. The project would also finance high-voltage equipment to contribute to further improve the reliability of the network. Such equipment could include, but not be limited to, power and current transformers, power and shunt reactors, switch bays, protection and control devices.

To ensure the security of supply, adequate power transfer capacity from generated power to loads, and improvement of quality, the project mainly focus will be on 230KV sub-stations which are the highest voltage in the transmission system.

The various components of the sub-projects will include as given below

- Equipment to Increase Transfer Capacity and Contingencies such as Current transformers (CT), Switch Bays
- Equipment to Improve Service Quality such as Voltage Transformers (VT), Shunt Reactors (ShR) and Shunt Capacitor (SC)
- Equipment to Improve Protection Systems such as Circuit Breaker, Disconnecter, Earthing Switch, Surge Arresters and Protection Relays

1.4 NEED OF PROJECT

The transmission system of Myanmar comprises a network of 230kV, 132kV, and 66kV transmission lines and sub-stations. Most of the transmission lines are designed to transport electricity from the northern part to the main consumption centre in Yangon in the south. The main hydropower plants and a few thermal power plants are in the northern part of the country, including the Mandalay region. In 2016/17, demand in Yangon was 1,220MW (about 42% of country's demand) while available generation capacity in the area is only 526MW.

Decades of under-investment resulted in an underdeveloped transmission system. Transmission constraints do not allow for an efficient dispatch of power plants. This led to unnecessary spillage of water from hydro power facilities and required the use of higher-cost gas fired power plants to meet demand. In addition, there is lack of adequate redundancy for effective power system operation and management. There are few high-voltage 230kV line, most of which are single circuit; substations have only one power transformer bank, and they are not well equipped with reactive power facilities. As a result, a single fault can lead to cascade tripping of many facilities causing country wide black outs.

Rapid demand growth, fuelled by economic growth and increased electrification, has put additional strain on the system's network. Power demand is growing at an average rate of 12

percent over the past five years. Transmission infrastructure has been unable to keep up with demand and as a result, many of the transmission lines are overloaded. Efforts have so far focused in expanding the 230KV network, including adding and upgrading substations and in building the first 500kV transmission line north-to-south, which is now under implementation.

Overall, the transmission system is unreliable and quality of power supplies delivered to consumers is low. In 2016, there were 16 country-wide black-outs and consumers install regulators to avoid damage to electric appliances due to large voltage fluctuations. The key sector challenges include:

- Capacity constraints in transmission network to evacuate power from generation facilities to main consumption centres, leading to unnecessary spilled water and use of higher-cost gas fired power plants to meet demand;
- Lack of adequate contingency in transmission network resulting in the poor security and reliability of supply and sometime country wide blackouts; and
- Overloaded transmission network due to rapidly increasing demand resulting in low quality electricity delivered to households and industries customers

Thus, it is of immediate importance to strengthen and modernize the capacity of the transmission lines and sub-stations. It is with this background that the proposed project has been conceptualized.

1.5 REQUIREMENT OF ESMF

An Environment and Social Management Framework (ESMF) is an instrument that examines the issues and impacts associated when a project consists of a program and/or series of sub-projects, and the impacts cannot be determined until the program or sub-project details have been identified. This instrument is used for projects which are at the conceptualization or planning stage, and where specific impacts cannot be determined due to lack of detailed information.

The overall objective of an Environment and Social Management Framework is to ensure that World Bank safeguards requirements are met. It will guide the implementing agencies EPGE and DTPSC to adequately screen and address environmental and social impacts of the sub-project thereby determining the appropriate environmental category. Specifically, the objectives of this ESMF are:

- To assess the potential environmental and social impacts of the proposed project, whether positive or negative and propose mitigation measures which will effectively address these impacts;
- To establish clear procedures for the environmental and social planning, review, approval

and implementation of sub-projects to be financed under the project;

- To specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social concerns related to sub-projects;
- To consider different alternatives, options, and relevant mitigation measures during project preparation and implementation;
- To determine the training, capacity building and technical assistance needed to successfully implement the provisions of the ESMF;
- To address mechanisms for public consultation and disclosure of project documents as well as redress of possible grievances; and
- To establish the project funding required implementing the ESMF requirements.

Since not all sub-project under Component B were identified during project preparation, the present Environmental and Social Management Framework (ESMF) document has been prepared to ensure that the sub-projects and activities to be financed under the Project would not create adverse impacts on the local environment and local communities and the residual and/or unavoidable impacts will be adequately mitigated in line with the WB's safeguard policy.

1.6 PLAN OF THE REPORT

The document has been divided into the following sections:

Section 2 - Project Description: It briefly outlines the project description, anticipated sub-project types and project baseline data.

Section 3 - Legal and Policy Framework outlines the project requirements as per the World Bank safeguard policies, national legislations and gap analysis between World Bank and National requirements.

Section 4 - Potential Impacts and Mitigation Measures: The section summarizes the potential impacts and key mitigation measures to address the impact for the transmission project.

Section 5 - Procedures for Review, Clearance and Implementation of Sub-Projects: The section describes the ESMF process for the sub-projects comprising procedures for review, clearance, and implementation of safeguards instruments.

Section 6 - Implementation Arrangements for ESMF: It provides the guidance on ESMF implementation and reporting requirements. The responsibility matrix is also provided in this section

Section 7 - Capacity Building, Training and Technical Assistance: This section includes capacity building, training and assistance for the Implementing Agency to ensure effective implementation of ESMF.

Section 8 - Implementation Budget: This section presents the estimated budget required for implementation of the ESMF by the Project Management Unit.

Section 9 - Grievance Redress Mechanism: The mechanism to address the complaints and concerns of all stakeholders about the project implementation including environmental and social concerns has been given in this section.

Section 10 - Consultation and Disclosure: The section provides information about the consultation process and method used for this project during preparation of the ESMF.

Power System Efficiency and Resilience Project
**Component B: Improving Resilience and Capacity of the Power
Network**

CHAPTER 2
PROJECT DESCRIPTION

**Final Environment & Social
Management Framework**

2. Project Description

2.1 PROJECT OBJECTIVE

The project development objective is to increase the capacity and efficiency of generation and reliability of transmission in the project area. The project includes three components: **Component A:** Upgrading Ywama Power Generation Units; and **Component B:** Improving Reliability of Transmission Infrastructure. A separate Environmental and Social Impact Assessment has been prepared for Component A of the project. The ESMF document has been prepared for Component B of the project.

The component will finance investments aiming at improving the reliability, of the transmission network, and supporting implementation capacity of Department of Electric Power Transmission and System Control (DPTSC).

2.2 IMPORTANCE OF THE PROJECT

2.2.1 Power Generation

There is a constraint to increased private sector participation in power generation including capacity bottle-necks in existing sub-stations to evacuate power of generators, including independent power producers (IPPs) and rental plants, to the electricity grid. To address this constraint, the project will implement investments in high voltage equipment including current transformers replacement to larger nominal current and power transformer expansion in key transmission lines and sub-stations to improve the evacuation capacity from generation units in the north to the main consumption areas in Mandalay and Yangon.

2.2.2 Power Supply

Currently, increased private sector investment in main industrial zones is hampered by capacity constraints in sub-stations and adequate supply. Industrial investors are reportedly being disconnected frequently due to capacity constraints and voltage drop in substations. Investments including power transformers, switch bays, and reactive power equipment in serving industrial zones, Yangon, and Mandalay areas will improve the availability, reliability, and quality of electricity supply to customers.

2.3 PROJECT COMPONENTS

The proposed project would encompass the following three main components.

2.3.1 Component A: Upgrading Ywama Power Generation Units (US\$290 million)

Ywama existing installations - Within an area of 8.9 ha, Ywama power plant counts on the following power generation units installed in the site: (i) two John Brown turbines of 18.45 MW capacity each, commissioned in 1980, (ii) one Hitachi gas turbine of 24MW capacity in combined cycle with a Shin Nippon steam turbine of 9.4 MW capacity decommissioned in 2014, and (iii) two Mitsubishi gas turbines of 120 MW each, installed in 2014 with after 16 years of operative life in another site. In addition, the site hosts 13 gas engines of 4 MW capacities each, which are not owned nor operated by EPGE. The existing sub-station at Ywama power plant has 3 switchyards of 33, 66 and 230 kV levels. Both, Ywama sub-station and the 230kV line have a capacity of 380 MW. The 66kV line consumes 94 MW, at a maximum, and is connected through underground cables to a 100MVA 230/66kV step-down transformer. The 33kV switchyard is separated from the others.

Upgrade of obsolete generation units-The component will finance the replacement of the 2 John Brown turbines, the Hitachi gas turbine and the Shin Nippon steam turbine with a highly-efficient CCGT, which will not exceed Ywama's current gas allocation (roughly 95 million cubic feet per day, MMcfd). To avoid power output reduction in interim periods during implementation, the existing two Mitsubishi turbines would operate until the new CCGT operates. In this regard, the new CCGT will be designed to meet early operation requirements. This is, to operate one or the two gas turbines in open cycle, while the steam cycle is under construction. After construction, the Mitsubishi turbines will remain at the site in stand-by to meet demand at peak times in the absence of gas shortages.

Highly-efficient CCGT with optimized Capacity-Given the increasing unmet electricity demand in Myanmar, the project will install the highest CCGT output capacity possible. Considering the country's declining gas supply forecast, the CCGT with highest efficiency is also pursued. The feasibility studies conducted to analyze the new CCGT's optimal design estimate that, after demolition of the existing units, an area of roughly 2.4 ha will be available for the new CCGT. The studies indicate that such area is sufficient to host two different CCGT arrangements: (i) two gas turbines, two heat recovery steam generators (HRSG) and one common steam turbine (2-2-1 arrangement) with by-pass stack between each gas turbine and HRSG to allow open cycle operation, or (ii) one gas turbine, one HRSG and one steam turbine (1-1-1 arrangement). According to the study, other configurations would require more space per MW installed, becoming unsuitable for the area available. Based on the capacity of existing high-voltage switchyards and transmission lines, the space available and the CCGT arrangement, the

technical feasibility studies indicate that commercially available CCGTs could provide Ywama with up to 300 MW of capacity installed reaching efficiencies of over 54-55 percent.

Footprint-The layout of the new CCGT has been optimized considering not only the highest capacity and efficiencies possible and the constraints in gas availability, but also: (i) the accessibility to the site to ensure that goods can be delivered to the site through existing ports and roads, (ii) maintenance requirements to ensure that spare parts are procured, EPGE operators can conduct routine maintenance and long-term service agreements (LTSA) are in place for non-routine maintenance and (iii) applicable social and environmental safeguards. In this respect, the feasibility study analyzed the new CCGT's footprint on key interfaces, such as the river and nearby habitations and further information is detailed in section IV.C Safeguards. The layout optimization considers also connections of the new CCGT to the gas supply size, the 230kV infrastructure and other auxiliary systems and facilities.

Use of existing gas and electrical grid connections-The new CCGT will use independent auxiliary systems and facilities from those existing in EPGE Ywama facility, with exception of the gas pipeline (input) and the 230kV network (output). While the project will finance such auxiliary systems and facilities, the new CCGT will not modify these input and output connections. The existing gas pipe that supplies the plant from the Zawtika and Yadana offshore fields has capacity to transport 120 million standard cubic feet per day (MScfd) out of which, 100 MScfd are available for the new CCGT plant. The feasibility study estimates the new CCGT's gas consumption in 80 MScfd. Similarly, the new CCGT will use the existing 230kV network to evacuate the electricity generated. The new CCGT will generate power at about 11kV voltage level, which will be stepped-up with new transformers to 230kV level and transmitted to a new 230kV gas insulated switchyard (GIS). While the transformers will be financed under the project, EPGE has recently commissioned the GIS and thus, the project will only finance the extension of 3 additional bays. The new GIS will be then connected to the existing air insulated switchyard (AIS) through underground cables and the electricity will be dispatched through the existing 230kV transmission lines.

This component will include on-site training on thermal power generation to MOEE female engineers and women with technical staff positions. The training will be provided by the contractor or developer hired to conduct the construction and commissioning works of this component. This training will be endorsed through the necessary contractual language in the contract between EPGE and the developer.

Technical assistance will be provided to EPGE for project implementation and contract management.

2.3.2 Component B: Improving Resilience and Capacity of the Power Network (US\$60 million)

In this context, Component B will finance investments and measures aimed at improving the resilience of the power network. Investments will support resilience solutions in existing system-critical substations covering the following aspects: a) improving network flexibility and adaptability through investments in high-voltage equipment to meet at least the single-element reliability criteria (N-1) and increase the system's capacity to meet demand due to climate events such as extreme heat; b) enhancing emergency preparedness and management capacity through investments in adaption measures to protect and harden equipment against impacts on asset functionality; and c) enabling quick and effective recovery of the power system by procuring specialized equipment and spare parts.

Specific investments include transmission network equipment and activities will include, but not be limited to, mobile substations, power and current transformers, power and shunt reactors, switch bays, protection and control devices. In addition, technical assistance would be financed under the project to provide technical support to DTPSC in the implementation of these investments, including consultancy services to support in the preparation of technical specifications and contract oversight.

Technical assistance will help strengthen the capacity of DPTSC on climate resilience aspects and support project implementation.

2.4 PROJECT FEATURES OF COMPONENT B

This component will finance investments and measures in existing substations aimed at reducing system constraints and strengthening the resilience of the power network against climate change and disasters. Investments will include transmission related equipment, mobile substations, and the implementation of adaption measures to protect existing assets functionality against the impact of climate change and emergencies. Activities under this component will cover the following aspects: a) re-enforcement of high-voltage equipment at substations and/or substation rehabilitation to reduce system constraints, increase system capacity, and improve network reliability to meet at least N-1 redundancy criteria; b) enhance emergency preparedness and management capacity through investments in adaption measures to protect and harden equipment against impacts of climate change and disasters such as heat waves, flooding, hurricanes, earthquakes, and landslides; and c) enable quick and effective recovery of the power system by procuring specialized equipment and spare parts. Transmission network equipment to be financed under this component will include, but not be limited to, mobile substations, power and current transformers, power and shunt reactors, switch bays, protection and control devices.

In addition, the component will finance 'no-regret' measures to increase resilience of transmission system against natural disasters. These will include anchoring power transformers on the base foundation to reduce damages during earthquakes giving priority to the anchorage of power transformers and reactors, which contain large volumes of oil.

High voltage equipment and related low voltage equipment will be installed in existing sub-stations. Mainly, power transformers, current transformers, shunt capacitors and reactors, switch gears, and control and protection systems. In addition, the component will finance 'no-regret' measures to increase resilience of transmission system against natural disasters. These will include anchoring power transformers on the base foundation to reduce damages during earthquakes and procuring mobile substations to increase the response capability against natural disasters. Finally, capacity building through consultancy services to DPTSC on project-related activities will be implemented during project implementation.

Technical assistance will help strengthen the capacity of DPTSC on climate resilience aspects and support project implementation. Technical assistance will be provided to develop and implement policies, strategies, and measures to increase climate change and disaster resilience of the power system. Additional consultancy services will support DTPSC in the implementation of the project activities, including in the preparation of technical specifications, contract oversight, and safeguards monitoring.

2.4.1 Prioritization of Sub-stations

As it is important to ensure the security of supply, adequate power transfer capacity from generated power to loads, and improvement of quality, the project mainly focus on 230KV sub-stations which are the highest voltage in the transmission system. Targeted sub-stations will be selected based on their importance in:

- ensuring the system stability and security of supply; and
- improving the system capability to transfer generated power from power plants to customers.

Equipment will also be upgraded and expanded in sub-stations which supply large load centres and/or will supply areas where demand is expected to grow in the future, such as industrial zones, large residential areas, and electrification areas.

2.4.2 Equipment to be Installed

Equipment to Increase Transfer Capacity and Contingencies: The details of the equipment to be installed for increasing transfer capacity of present transmission network are given below.

- **Current transformers (CT):** It is used to provide current for metering, controlling, and protection applications to convert large current to low and measurable values that are

isolated from the high voltage system; part of a switch bays and busbar system. Current transformers will be installed in existing substations to increase capacity of critical transmission lines.

- **Switch Bay:** This connects an incoming circuit (power line, transformer, etc.) to a busbar assembly. Each bay typically comprises CB, DS, ES, VT, CT, and SA; may also include wire conductors, insulators, supporting structures, steel gantries, and civil structures.

Equipment to Improve Service Quality: Good power quality can be defined as a steady supply voltage that stays within the prescribed range, steady A C frequency close to the rated value, and smooth voltage curve wave-form. The equipment suggested for providing uniform power quality is as given below.

- **Voltage Transformers (VT):** They are used to provide voltage for metering, controlling, and protection applications to convert high voltage to low and measurable values that are isolated from the high voltage system; part of a switch bays and busbar system.
- **Shunt Reactors (ShR):** These are intended for shunt connection in a power system to compensate for capacitive current incurred by transmission line to improve transmission capacity and to maintain system voltage at light load periods.
- **Shunt Capacitor (SC):** These are intended for shunt connection in a power system to compensate for inductive current incurred by industrial load (e.g. electric motor) to improve load factor, and to maintain system voltage at heavy load periods.

Equipment to Improve Protection Systems: Power protection scheme is to keep the power system stable by isolating only the components that are under fault, whilst leaving as much of the network as possible, still in operation.

- **Circuit Breaker:** It is a mechanical switching device which can make, carry and break currents under normal circuit conditions and abnormal conditions such as those of short-circuit fault.
- **Disconnecter:** It is also a mechanical switching device which disconnects all poles of an electric circuit in the open position. DS is also used for no-load closing and opening operations.
- **Earthing Switch:** It is a mechanical switching device which earth parts of an electric circuit.
- **Surge Arresters:** They are designed to protect electrical equipment from high transient overvoltage caused by lightning strikes or switching operations. They are also called Lightning Arrester.
- **Protection Relays:** It is an automatic device which senses an abnormal condition of electric circuits and closes its contacts. These contacts in turns close and complete the CB trip coil circuit hence make CB tripped for disconnecting a faulty portion of the electric circuit from rest of the healthy

circuit. Current Digital Protection Relay also has control function to some extent.

2.5 PROJECT BASELINE DATA

Investments and measures will be implemented in existing substations to be determined based on the results of ongoing climate risks assessments. The map of existing high voltage substations (230KV and 132KV marked in red and blue triangles) in Myanmar is presented in Figure 2.1.

Works in the substations for the installation of the equipment and other resilience measures will be implemented to the large extent within the existing footprint of the existing facilities.

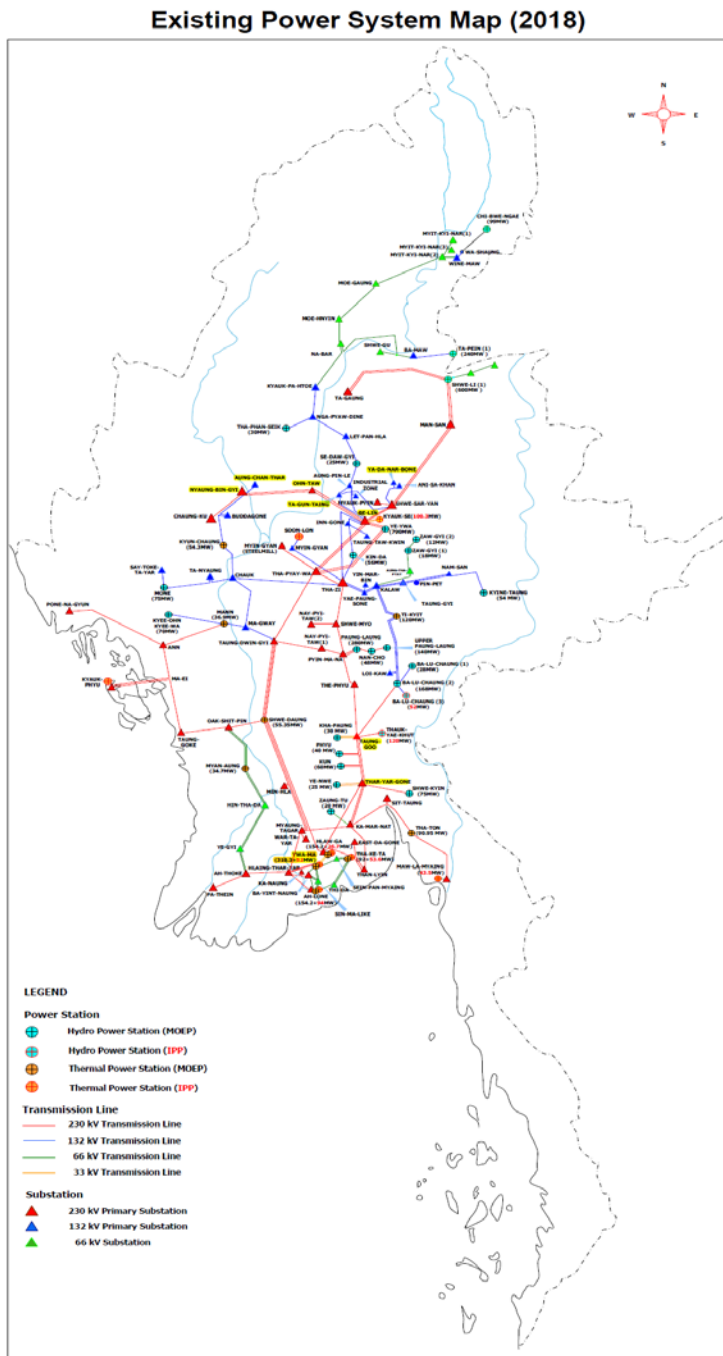


Figure 2.1: Existing Power System Map

2.5.1 Ecological Sensitive Areas

Eco-regions: Myanmar has 14 major eco-regions, or relatively large areas of land or water which each contain characteristic, geographically distinct assemblages of plants and animals (Figure 2.2). More than half the country is covered by 3 of the 14 eco-regions - Irrawaddy moist deciduous forest (20.6%), Northern Indochina subtropical forest (20.5%) and Mizoram-Manipur-Kachin rain

forests (10.5%). Overall, 8 of the forest eco-regions (and 72% of Myanmar’s forest areas) were classified as either vulnerable or critically endangered some years ago. In this context, the 4 eco-regions classed as vulnerable (61%) are likely to become endangered unless the factors threatening their survival improve. The 4 eco-regions classified as "critically endangered" (11%) are facing an extremely high risk of extinction, as these habitats are extremely fragmented and continue to decline in area and quality. Less than 1% of these eco-regions are within Protected Areas.

The sub-projects of Component B mostly fall in the Irrawaddy moist deciduous forest and thus are not in any vulnerable or critically endangered regions.

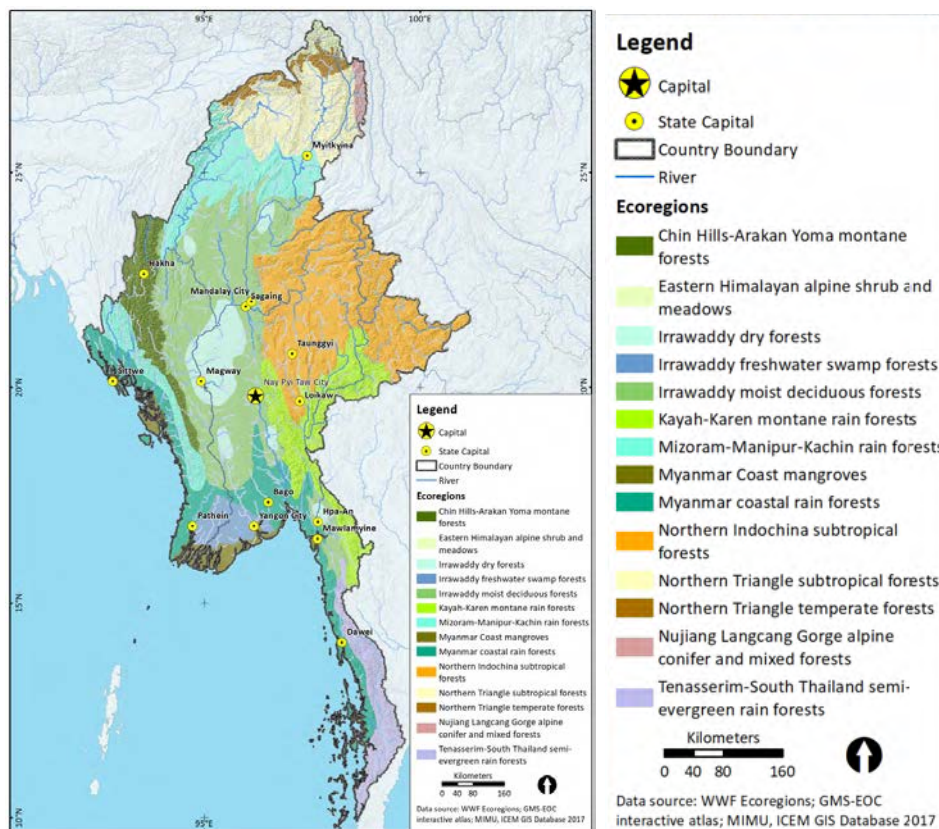


Figure 2.2: Eco-regions of Myanmar

[Source: IFC (2017a). Baseline Report - Strategic Environmental Assessment of the Hydropower Sector in Myanmar, International Finance Corporation, Washington, D.C, Ministry of Electricity and Energy (MOEE), Ministry of Natural Resources and Environmental Conservation (MONREC)]

Protected Areas: Protected Areas are one of the most important tools for biodiversity conservation, safeguarding ecosystems services and preserving cultural landscapes. As of 2018, Myanmar has 42 Protected Areas (Figure 2.3). Seven of the Protected Areas are ASEAN Heritage Parks (AHPs) recognised for their biodiversity value within ASEAN countries; and five are Ramsar Sites (wetlands of international importance).

ENVIRONMENT & SOCIAL MANAGEMENT FRAMEWORK

Power System Efficiency and Resilience Project

Component B: Improving Resilience and Capacity of the Power Network

However none of the protected areas such as bio-diversity parks or wetlands fall in the study areas of the sub-projects

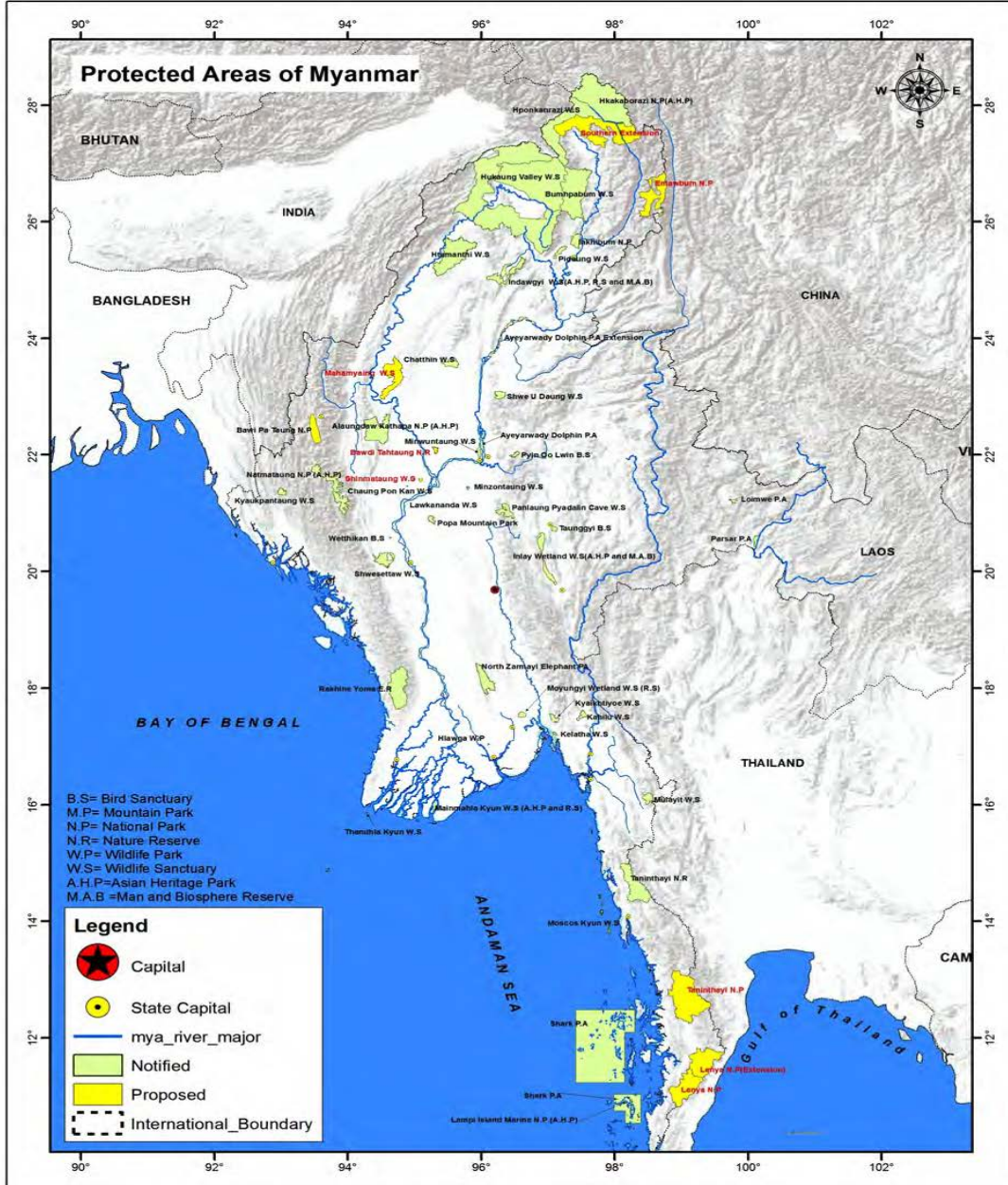


Figure 2.3: Protected Areas of Myanmar [Source: WCS, Protected Areas, 2017.]

Key Biodiversity Areas (KBAs): KBA sites are of global significance for biodiversity and are identified using standardized criteria. They represent the most important sites for Biodiversity Conservation Worldwide. Myanmar has 132 KBAs. However, KBAs (Figure 2.4) have no legal standing as an official form of land tenure in Myanmar except where they overlap with formally established Protected Areas. Of these 132 KBAs, 35 are existing Protected Areas and a further six are proposed Protected Areas, but the majority have no legal status. Nevertheless, KBA designation assists countries in identifying priority areas for future conservation efforts and protection; and supports development planning by highlighting the value of areas so that impacts on biodiversity can be avoided. KBAs are also being increasingly being targeted as potential areas for offset sites. Currently, KBAs cover 17% of the country.

It was found that although there are no KBAs in the footprint of the sub-stations, some stretches of transmission line connecting these sub-stations fall in low Priority KBAs. However transmission lines are beyond the scope of this project.

Forest Cover: Rainfall and elevation strongly influence the distribution of different vegetation types. Tropical lowland evergreen rain forest occurs largely in the south in Tanintharyi and the southern Bago Yoma. In the east, north and west there is tropical hill evergreen rain forest (often without dipterocarp species) and temperate rain forest; semi-evergreen rain forest borders the arid central plain particularly in southern Bago Yoma. Myanmar has two types of teak forest: wet deciduous forest present in Northern Tanintharyi, Bago Yoma, Bhamo and Mogok; and dry deciduous forest which occurs in northern Bago Yoma. Dry forest occurs where rainfall is usually less than 400mm a

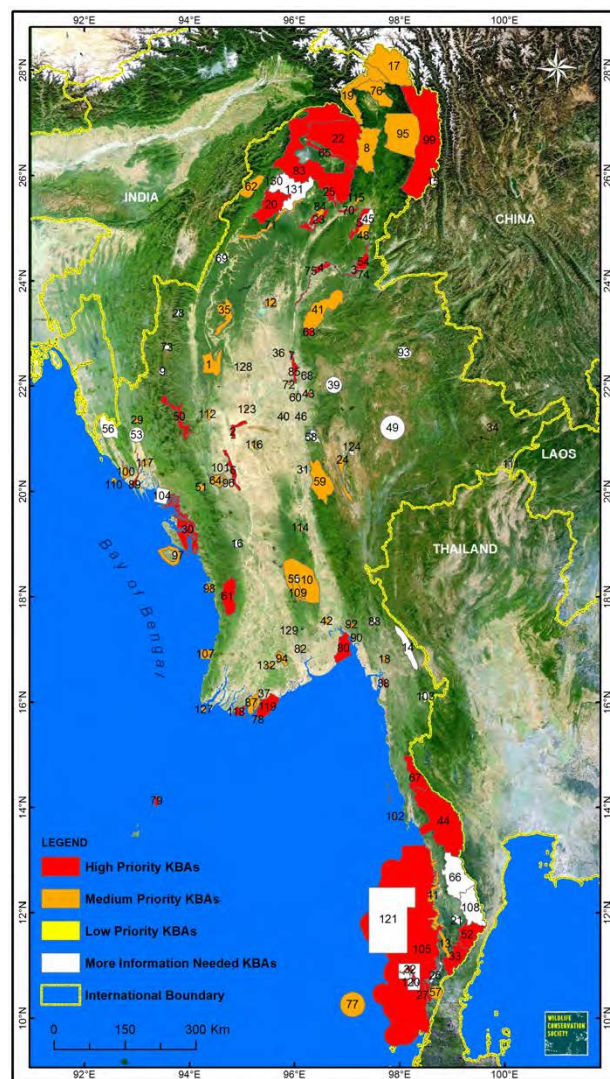


Figure 2.4: Key Biodiversity Areas [Source: WCS, Key Biodiversity Areas, 2013.]

year and support xerophytic types of vegetation such as semi-desert Euphorbia scrub and Acacia thorn type scrub forests.

Landsat satellite imagery from the 1990s and 2000s was used to develop a countrywide forest map and estimate deforestation. The country has retained much of its forest cover, but forests have declined by 0.3% annually. Deforestation varied considerably among administrative units, with central and more populated states and divisions showing the highest losses.

Forest cover changes varied considerably across the country. Clearing rates were highest in Ayeyarwady, Mandalay and Sagaing Divisions, ranging from 0.4% to 1.2% a year. All three Divisions encompass significant areas in the central dry zone, where the majority of Myanmar's people live. The Ayeyarwady delta region in particular had experienced unprecedented levels of forest cover change, losing about 12% of its remaining forest cover in only 10 years.

The Ayeyarwady and Mandalay Divisions were also among only four of the country's Divisions and States that had less than 35% forest cover. Half of the Divisions and States had over 70% forest cover and annual losses in these areas were frequently well below the annual rates estimated for the whole country (Figure 2.5).

The vegetations throughout the sub-project areas mainly fall in the deciduous forest category. However, neither of the sub-stations falls in forest lands nor is adjacent to forests.

Freshwater Ecosystems, Wetlands & Species: Myanmar has eight major river

catchments: The Ayeyarwady, Chindwin, Thanlwin, Sittaung, Myit Ma Hka, Bago and several

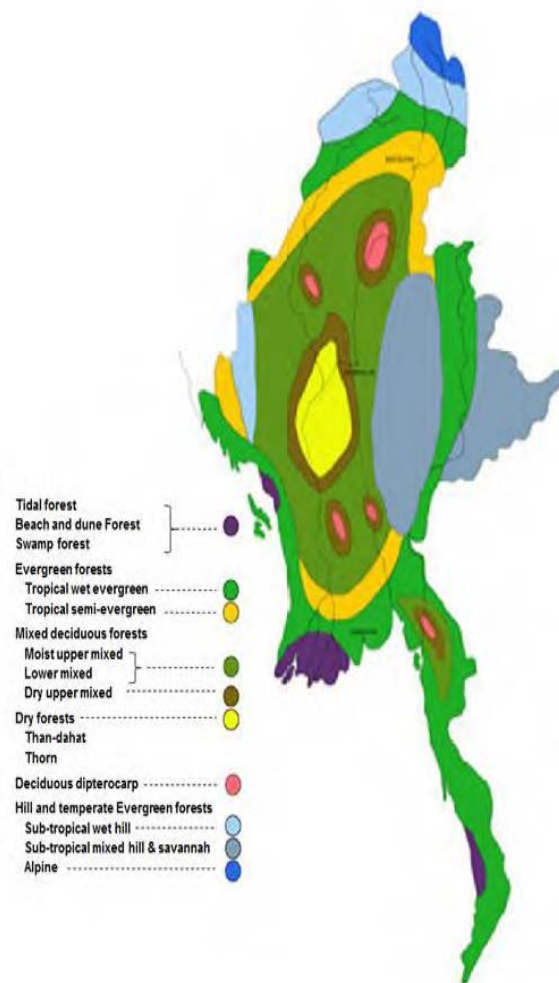


Figure 2.5: Major Vegetation Types of Myanmar

[Source: Kress, J. et.al (2013) A Checklist of the Trees, Shrubs, Herbs, and Climbers of Myanmar. Smithsonian Institution]

shorter rivers from the Rakhine Yoma, Chin Hills and the Tanintharyi coastal region. In terms of lakes the most notable are Inle Lake and one of the largest lakes in Asia, Indawgyi Lake.

One of the more important stretches is the Ayeyarwady River Corridor (ARC), which has been proposed as a World Heritage Site. It stretches from north of Mandalay to Bhamo and supports the Critically Endangered (CR) freshwater sub-population of the Irrawaddy Dolphin, other threatened birds and turtles such as Northern River Terrapin, the Burmese Eyed Turtle, the White-bellied Heron and valuable riparian habitat. Inle Lake was designated as a Man and Biosphere Reserve (MAB) in 2015 and became a Ramsar Site in 2018. The Lake is important for biodiversity by virtue of its restricted range snails (gastropods) and fish, 32 with a total of 13 species restricted to the lake or very near the lake. However, Inle Lake is also suffering a range of impacts from pollution, sedimentation, agriculture, tourism development and deforestation within the catchment.

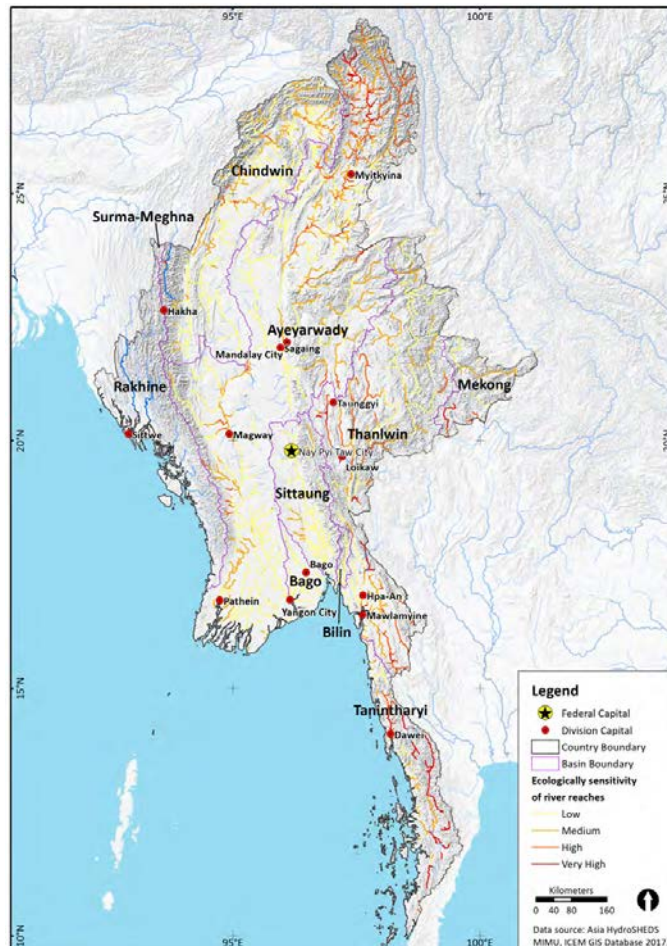


Figure 2.6: Ecologically Sensitive Reaches of River Basin in Myanmar

[Source: IFC (2017a). Baseline Report - Strategic Environmental Assessment of the Hydropower Sector in Myanmar, International Finance Corporation, Washington, D.C, Ministry of Electricity and Energy (MOEE), Ministry of Natural Resources and Environmental Conservation (MONREC).]

Myanmar has no reliable fisheries statistical system to assess inland fisheries capture. However, Myanmar’s freshwater fisheries are estimated to be the largest in Southeast Asia with 1.5 million tonnes of freshwater fish caught in 2015.

2.5.2 Relevant Socio-economic aspects

General socio-economic context: Myanmar is one of the poorest countries in the South East Asian region. In 2017, the country's GDP was estimated at US\$329.8 billion. Based on the preliminary population figure of 51.4 million, the country's per capita income is therefore around US\$6,300, one of the lowest in the East Asian region. The low level of development can be traced to Myanmar's long history of isolation, conflict, and military control of political and economic life.

Based on its abundant natural resources and young labour force. Burma's economic growth rate recovered from a low growth under 6% in 2011 but has been volatile between 6% and 7.2% during the past few years. Despite these improvements, analysis of the nationwide Integrated Household Living Conditions Assessment (IHLCA) conducted in 2009/10, found that 26 percent of the population was living below the poverty line.

Political system: The Constitution of the Republic of the Union of Myanmar (2008) is the overriding law within Myanmar. The Constitution describes the different legislative functions at union, state/region, and self-administered zone levels, and the principles by which Myanmar is governed. Myanmar is divided into 14 states and regions, as well as 6 self-administered zones or divisions and the Capital Territory. The Assembly of the Union, the Pyidaungsu Hluttaw, is the national-level, bi-cameral legislature established under the Constitution.

The July 2015 amendments to the Constitution widened the range of legislative and taxation powers devolved to states and regions. It also added the right to regulate and provide permits (without union-level approval) and to tax certain investment activities and development projects, including tourism investment; small-scale mining and oil/gas; and some fisheries, agriculture, and forestry investments. In addition, states and regions were encouraged to take measures for environmental conservation without union-level approval, provided these are "in accordance with the law enacted by the Union".

The Myanmar Government is engaged in peace negotiations with various armed groups in ethnic states and regions. Key demands by ethnic peoples and organizations in the peace negotiations centre around increased local autonomy and revenue sharing in development projects and natural resource management in their respective states and regions.

Ethnic Groups: There are no Myanmar laws specifically on ethnic people (indigenous peoples, used the WB's terminology). While Myanmar has signed the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), no laws have been ratified to maintain economic, social, and cultural well-being of ethnic people specifically. Although the 2008 Constitution grants some rights to ethnic nationalities, Myanmar does not recognize the term "indigenous people" in law, policy, or practice. The Constitution refers to "tain-yin-tha", which translates to "national races" or

“ethnic nationalities” so for this project we will use the term “ethnic people” as equivalent to the WB’s “indigenous people”.

According to the 2014 census, Myanmar has a population of 51.4 million. While ethnically disaggregated data from the census are not yet available, estimates suggest that the Bamar are the largest ethnic group, comprising around two-thirds of the population, with a large number of ethnic groups accounting for about one-third. The majority Bamar population mainly lives in the central and delta parts of the country (divided into seven administrative Regions) while the ethnic groups live mainly, though not exclusively, in the mountainous border areas (roughly corresponding to the country’s seven States: Kayah, Kayin, Kachin, Chin, Mon, Rakhine, and Shan). Main minority groups include Shan, Kayin, Rakhine, Chin, Mon, Kachin, and Kayah. These eight “ethnic races,” including the majority Bamar, are subdivided into 135 officially recognized ethnic groups and belong to five linguistic families (Tibeto-Burman, Mon-Khmer, Tai-Kadai, Hmong-Mien, and Malayo-Polynesian); there are no population figures for ethnic group.

2.6 SEISMICITY

One peculiar feature of this project is that the alignment of the high voltage system and main sub-stations falls in the destructive and severe seismic zones. Myanmar, lying in the Alpide earthquake belt, is quite earthquake prone. There had been at least 16 major earthquakes (M 7.0 – 7.9) and a great earthquake (M 8.0, 1912) in the past 175 years, some of which were quite destructive. As the earthquake sources, the major active faults which have been seismically very hazardous for Myanmar are Sagaing fault, Kyaukkyan fault, Nan Pon fault, Kabaw fault, Myauk U fault, Dawei fault, Gwegyo Thrust, and some major thrusts in north – west Myanmar (Figure 2.7). Major earthquakes have been experienced in the regions near Taungoo and Bago in 1930's.

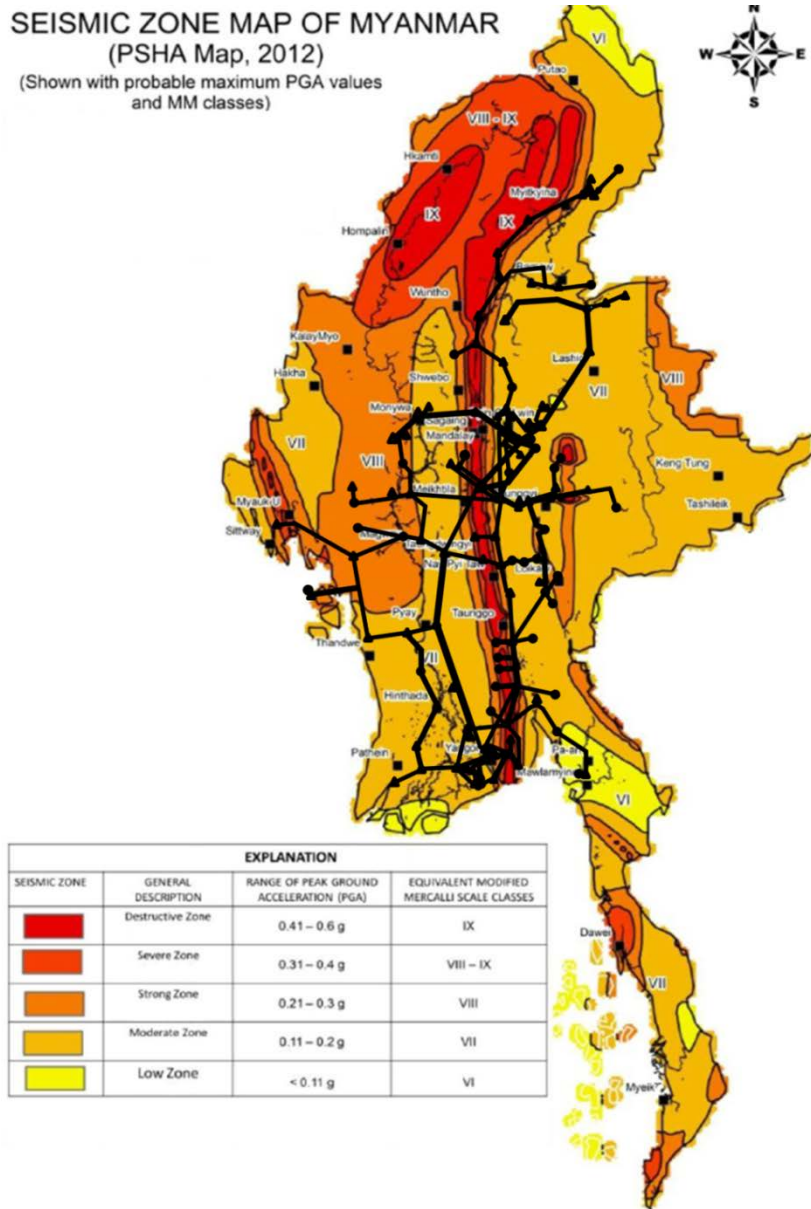


Figure: 2.7: Seismic Zone of Project Area

Power System Efficiency and Resilience Project
**Component B: Increasing resilience and capacity of the Power
Network**

CHAPTER 3
Legal & Policy Framework

**Final Environment & Social
Management Framework**

3. Legal and Policy Framework

3.1 REGULATORY FRAMEWORK

3.1.1 Constitutional Provision

The 2008 Myanmar Constitution provides several important references to environmental conservation and sustainable development. Section 390 states that “Every citizen has the duty to assist the Union in carrying out the following matters”:

- Preservation and safeguarding of cultural heritage;
- Environmental conservation;
- Striving for development of human resources;
- Protection and preservation of public property.

Importantly from the point of dealing with environmental and social (E&S) impacts of development, the Constitution also limits the granted rights to own and use property (Section 372). According to Article 37(a) of the Constitution of the Government of the Union of Myanmar, “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.” As the owner of all lands and natural resources, the Constitution further stipulates in Article 45 that: “The Union shall protect and conserve the natural environment.”

From the social aspect, Chapter 8 of the Constitution contains 55 articles stipulating the fundamental rights and duties of citizens. Article 354, in particular, stipulates the right to freedom of expression, to assemble peacefully, and practice religion freely; though with the caveat that these rights are only guaranteed so long as they are “not contrary to the laws enacted for Union Security”. Article 348 states that the rights contained in the Constitution are guaranteed to all Myanmar citizens regardless of race, birth, religion, official position, status, culture, sex or wealth. In doing so, Article 348 implies rights for minority groups.

3.1.2 Environment Conservation Law, 2012

The first initiative towards a separate environmental legislation is the formulation of the Environmental Conservation Law 2012 followed by the Environmental Conservation Rules (2014) and EIA Procedures (2015).

The objectives of the law are as follows:

- to enable implementation of the Myanmar National Environmental Policy.
- to lay down the basic principles and give guidance for systematic integration of the matters of environmental conservation in the sustainable development process.
- to enable a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generation.

The law also lays down the rules for creation of a central level Environment Conservation Committee (ECC) under the Ministry of Natural Resources and Environmental Conservation (MONREC). The roles and responsibilities of the ECC and MONREC are also prescribed in the law.

3.1.3 EIA Procedure, 2015

The EIA Procedures (2015) elaborate on the details of the environmental assessment system and how government organizations and private companies may obtain an Environmental Compliance Certification (ECC). The EIA Procedures (2015) also establish an EIA and IEE screening process, and about which projects require EIA or IEE. Section 13 (a) and (b) of the EIA Procedures (2015) stipulate that the project implementing agency must disclose relevant information about the project to the public at all phases of the EIA and IEE and to conduct consultation meetings.

3.1.4 General Environmental Impact Assessment Guideline, 2017

The document is to guide Project Proponents and their EIA consultants in the conduct of both IEE and EIA, and to ensure that these assessments include adequate Project descriptions, assessment of potential impact significance, and mitigation measures using sound, professional and scientific tools and methods. The Guideline particularly focuses on preparation of easily understandable IEE and EIA reports, and EMP. The Guideline additionally serves as a reference document for MONREC's Environmental Conservation Department (ECD) for use in reviewing IEE and EIA reports and EMP and ensuring that the aforementioned content is satisfactorily covered.

3.1.5 National Energy Policy 2014

The main objective of the Myanmar Energy Sector Policy is to ensure energy security for the sustainable economic development in the country; and to provide affordable and reliable energy supply to all categories of consumers, especially to those living in the remote areas that are

currently without electricity. The policy aims to achieve the Government's overarching objective of poverty reduction and improvement in the quality of life of its people. The policy also aims to increase foreign exchange earnings through energy exports after meeting the national demand. The government will encourage deploying green technologies in a range of sectors including energy and enact policies for clean energy development for low carbon economy. Special emphasis is placed on community –based renewable energy development projects in the remote areas of the country to help expand the rural development program, and to provide livelihood opportunities to the rural poor. Provision of community-level energy infrastructure development activities, with special provisions for women participation, is also intended to help improve children education, health, clean water supply, and reduce exposure to indoor air pollution, as well as overall rural environmental improvement.

As per the policy document, Myanmar needs to increase the electrification rate from the current level of 26% to 75% by the end of year 2021/2022. In order to achieve the target of 75 % electrification rate, the country must increase its generation capacity during the next 10 years at the rate between 500 MW to 1,000 MW on the yearly basis reaching a total of about 16,665 MW at the end of the 10 year period.

The Government strategy for new electric power generation plants to be constructed in the next 2030-2031 will be based on energy mix of 38% (8896 MW) hydropower, 20% (4758 MW) of natural gas, 33% (7940 MW) of coal and 9% (2000 MW) of renewable sources.

3.1.6 Other Applicable Legal Provisions

Other Acts/Provisions which may be applicable to the project are given below:

- Forest Law 1992
- Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law, 1994
- Conservation of Water Resources and Rivers Law, 2006
- Land Acquisition Act 1894;
- Farmland Law 2012;
- The Health Law 1972;
- Occupational Safety and Health Law (Law No 8 of 2019) 15 March 2019

3.2 WORLD BANK ENVIRONMENT & SOCIAL SAFEGUARD POLICIES

The World Bank's environmental and social safeguard policies are a cornerstone of its support for programmes aimed at sustainable poverty reduction. The objective of these policies is to

prevent and mitigate undue harm to people and their environment in the development process. These policies provide guidelines for lenders (including banks) and borrower staff in the identification, preparation, and implementation of programmes and projects. Safeguard policies have often provided a platform for the participation of stakeholders in the project design, and have been an important instrument for building a sense of project “ownership” among local populations.

3.2.1 Categorization

The initial environmental and social screening of the activities to be implemented under component B have been conducted to identify the environmental and social risks and impacts. The physical works under component B are expected to take place within the existing brown-field locations of selected substations. The positive impact of the project will be increased efficiency of the power system. The main potential negative impacts would be associated with, worker safety and generation of wastes during construction, and worker health hazards due to exposure to electric magnetic fields and fire and explosion during operation. However, these impacts are of moderate magnitude, short-term, localized, and can be mitigated with readily designed mitigation measures. Therefore, the subprojects under this component can be classified as Category B subprojects.

As all the sub-project areas have not yet been firmed up, the screening of specific activities/investments will be conducted during project implementation. However, the following sub-projects will not be eligible for funding under the project.

- The subproject that involve the significant conversion or degradation of critical natural habitats.
- The sub-project that would involve significant conversion or degradation of critical forest areas.
- The sub-project that contravenes applicable international environmental agreements.
- The sub-project that would be located in a physical cultural resources site recognized at the national or provincial level.
- The sub-project that would be an equivalent to a Category A project.

3.2.2 Applicability of WB Safeguard Policies

For Component B of the project, the applicability of safeguard policies is given in Table 3.1.

Table 3.1: Applicability of Safeguard Policies

Safeguard Policy	Triggered (Y/N)	Remark
Environmental Assessment (OP/BP 4.01): The overarching objective of this policy is to ensure that Bank-financed projects are environmentally sound and sustainable, and that decision-making is improved through appropriate analysis of actions and of their likely environment impacts.	Yes	Physical works under component B are expected to take place within the existing brown-field locations of selected substations. The positive impact of the project will be increased efficiency of the power system. The main potential negative impacts would be associated with, worker safety and generation of wastes during construction, and worker health hazards due to exposure to electric magnetic fields and fire and explosion during operation. However, these impacts are of moderate magnitude, short-term, localized, and can be mitigated with readily designed mitigation measures. An Environmental and Social Management Framework for potential activities at other locations (of power system) to be prepared by an international consultant.
Natural Habitats (OP/BP 4.04) It is intended to prohibit Bank financing of projects that degrade or convert critical habitats.	No	Project is not likely to have impacts on natural habitats as the potential locations are existing sub-stations and other elements of the existing distribution system infrastructure which are not expected to constitute or be located in new areas. Thus, there will be no effect on natural habitats.
Pest Management (OP 4.09)	No	The Project does not involve procurement or use of pesticides and neither does it result in an increase in pesticides.
Forests (OP/BP 4.36) This Policy is intended to support sustainable and conservation-oriented forest management. The Bank helps borrowers harness potential of forests to reduce poverty in a sustainable manner, integrate forests into sustainable economic development, and protect vital local and	No	As the refurbishment will be done within existing sub-stations, there will be no impact on forests

Safeguard Policy	Triggered (Y/N)	Remark
global environmental services and values of forests.		
Physical Cultural Resources (OP/BP 4.11) This policy is intended to ensure that projects identify and inventory cultural resources that are potentially affected by the project.	No	Project locations and project activities are not likely to affect physical cultural resources; for the unlikely accidental finds, procedure will be included in the ESMF.
Indigenous Peoples (OP/BP 4.10) This policy is designed to ensure that the development process fully respects the dignity, human rights, economies and cultures of Indigenous Peoples. The policy requires projects to identify impacts on indigenous peoples and develop a plan to address the impacts, both positive and adverse.	Yes	Although this project is not expected to negatively impact any Ethnic Peoples, some of the sub-stations may be located in areas where there are IPs living or working. Because of that, OP 4.10 has been triggered on a precautionary basis, mainly to ensure that they are meaningfully consulted. A Community Participation Planning Framework (CPPF), equivalent to a WB's Indigenous Peoples Framework, was prepared and included as a stand-alone section of the project's ESMF.
Involuntary Resettlement (OP/BP 4.12) This policy seeks to prevent severe long-term hardship, impoverishment, and environmental damage to the affected peoples during involuntary resettlement.	Yes	All of the high voltage sub-station equipment installation will take place on the existing physical footprint of the sub-stations. However, OP 4.12 is triggered on a precautionary basis, in case, for additional high voltage substations that will be identified small strips of land may be required for enlarging the footprint of the sub-stations to accommodate the new equipment. A Resettlement Policy Framework is included in Annex 5.
Safety of Dams (OP/BP 4.37)	No	The project does not involve the construction of dams nor are the project activities vulnerable in any way to any upstream dam. Therefore, the policy is not triggered.
Projects on International Waterways (OP/BP 7.50)	No	None of the project activities are to be carried out on an international waterway.
Projects in Disputed Areas (OP/BP 7.60)	No	No project activities are to be conducted in a disputed area.

3.2.3 The EHS General Guidelines¹

These guidelines are designed to be used together with the relevant Industry Sector Guidelines. The chapter on environment addresses air emissions and ambient air quality, energy conservation, waste water and ambient water quality, water conservation, hazardous materials management, waste management, noise and contaminated land. The chapter on occupational health and safety provides guidance and examples of reasonable precautions to be implemented in managing principal risks to workers. The community health and safety chapter complement the guidance provided in the preceding environmental and occupational health and safety sections, specifically addressing some aspects of project activities taking place outside of the traditional project boundaries, but nonetheless related to the project operations, as may be applicable on a project basis. The Guidelines also cover construction and decommissioning of the projects.

3.2.4 EHS Guidelines for Electric Power Transmission and Distribution²

The EHS Guidelines for Electric Power Transmission and Distribution include information relevant to power transmission between a generation facility and a substation located within an electricity grid, in addition to power distribution from a sub-station to consumers located in residential, commercial and industrial areas. This document provides impacts and mitigation measures for issues specific to transmission lines such as terrestrial habitat alteration, aquatic habitat alteration, electric and magnetic fields and hazardous materials.

3.3 GAP ANALYSIS BETWEEN MYANMAR PROVISIONS & WORLD BANK POLICIES

The following section provides the gap analyses on Republic of the Union of Myanmar (RoUM) laws and regulations relative to the World Bank OPs 4.01 that have been triggered by the project. The analysis of the gaps is given in Table 3-2.

Table 3.2: Gap Analysis for Legal Provisions applicable to Sub-Station Projects

Aspect	World Bank Provisions	RoUM Provisions	Gaps/Project Measures
WBG OP 4.01			
Environment Assessment Process			

¹<http://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES>

²<http://www.ifc.org/wps/wcm/connect/7b65ce6b-129d-4634-99dc-12f85-c0674b3/Final%2B-%2BElectric%2BTransmission%2BAnd%2BDistribution.pdf?MOD=AJPERES>

Aspect	World Bank Provisions	RoUM Provisions	Gaps/Project Measures
An EA considers natural and social aspects in an integrated manner that considers national & international obligations, treaties and agreements.	Assess the adequacies of applicable legal and institutional framework and ensure that no projects contravening international obligations are financed.	EIA Procedures (2015) Article 7: Projects that involve involuntary resettlement or have adverse impact on Ethnic People shall comply with specific procedures separately issued by the responsible ministries. Prior to that, all such Projects shall adhere to international good practice accepted by international financial institutions on Involuntary Resettlement and Ethnic Peoples	OP 4.01 Policy Procedures will be applied to ensure the projects do not contravene any obligations, treaties or agreements whether or not an EA is a requirement under national regulations.
Analysis of Alternatives	Provide for assessment of feasible investment, technical and siting alternatives, including the "no action" alternative, potential impacts, feasibility of mitigating these impacts, their capital and recurrent costs, their suitability under local conditions, and their institutional, training and monitoring requirements associated with them.	Not included	OP 4.01 Policy Procedures will be implemented to ensure that the assessment of the potential project impacts review possible alternatives including the option of "no action". However, site alternatives are not required for this project.
Screening	Under the Bank's OP 4.01 projects are classified as Category A, B, C, and FI. It has been found that the present sub-projects, which are all brownfield projects, does not have significant adverse impact on the neighbouring receptors.	Stand-alone high voltage transformer substations in area over 4ha expected to prepare IEE	It may be required to prepare IEE for the substations in the project

Aspect	World Bank Provisions	RoJM Provisions	Gaps/Project Measures
	Issues such as particulate and gaseous emission, higher noise level will be negligible. Concerns such as involuntary resettlement, disturbance of natural habitats, etc will not be of any significance as no land will be acquired. Thus, the present project has been categorized as a Category B project as per World Bank screening guidelines.		
Information Disclosure and Public Consultation			
There is requirement of information disclosure and public consultation	There is requirement of information disclosure and consultation with affected population and local NGOs.	As per the EIA Procedure 2015, information disclosure through web-site, press and media and public consultation at all stages of EIA and IEE is required.	OP 4.01 Policy Procedures (2015) Article 13 will be implemented to provide guidance on public consultation and disclosure such that project affected groups and local NGOs are informed both during the scoping stage and ESIA stage
Monitoring & Evaluation			
Internal and external Independent monitoring are required	Compliance required with measures agreed with the Bank on the basis of the findings and results of EA, including implementation of any EMP.	EIA Procedures (2015) Self-monitoring compliance reports to be submitted by proponent every 6 months. MONREC has the right to monitor and inspect the plant/ project to ensure compliance	OP 4.01 Policy Procedures and EIA Procedures (2015): EPGE will be providing 6 monthly compliance reports for ESMP implementation

CHAPTER 4

Potential Impacts & Mitigation Measures

4. Potential Impacts & Mitigation Measures

The project design of Component B will support multiple sub-projects, the detailed designs of which are not known at appraisal. The Environmental and Social Management Framework (ESMF) will therefore serve as the appropriate EA instrument to identify and provide guidance on mitigating potential environmental and social risks.

All proposed sub-projects will be screened (using the checklists in Annex 2) to ensure that the potential environmental and social risks can be adequately addressed through the application of a typical Environmental and Social Management Plan.

The proposed project activities under this component will be limited to removal of existing transformers, installation of new transformers and construction of new switch bays. There will be no installation of new transmission lines. The above-mentioned activities have the possibility to generate environmental impacts associated with noise, dust, air and water pollution, solid and hazardous waste management, health hazards and labour safety issues, etc. The environmental risks are expected to be typical for small scale construction/rehabilitation works or for various energy supply or energy efficiency activities, temporary by nature and site specific and can be easily mitigated by applying best construction and/or energy supply or energy efficiency practices and relevant mitigation measures. The sections below present the details of the project environmental and social impacts.

4.1 POTENTIAL NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS

For this component of the project, the main impact will be during the construction and operation phases. However, these impacts are expected to be low to moderate, temporary, site-specific and mostly reversible and mitigation measures can readily be designed in most cases. The main potential negative environmental impacts that may occur are described below.

4.1.1 Water Pollution

Construction Phase: During the construction phase, leakage of fuel and lubricant from construction machinery and stored waste, petroleum products and chemicals can pollute the soil, penetrate into ground-water or drain into surface water bodies. Maintenance and cleaning of construction machinery and mechanisms near natural streams can lead to water pollution.

Polychlorinated Biphenyls (PCBs) were widely used as a dielectric fluid to provide electrical insulation in transformers, although their use has been largely discontinued due to potential harmful effects on human health and the environment (Box 4.1). The transformers to be replaced are old and there is possibility that the transformer oil will contain PCB. Thus there is a risk of leakage of oil during dismantling of the old transformers, which may contaminate the soil and subsequently leach to the ground water if not properly managed. This may have a long-term impact on the ground water quality and consequently on health of the ground water users.

Box 4.1: Polychlorinated Bi-Phenyl (PCB)

Polychlorinated biphenyl (PCB) is an organic chlorine compound with the formula $C_{12}H_{10-x}Cl_x$. Polychlorinated biphenyls were once widely deployed as dielectric and coolant fluids in electrical apparatus, carbonless copy paper and in heat transfer fluids. Some PCBs are considered to be human carcinogens and are known to be transported through water and soil.

If temporary worker camps are developed at construction site, pollution of the environment can be caused from sewage and other domestic waste water.

During monsoon or after rain there will be risk of run-off from stock-piles and excessive sedimentations in drains and water bodies.

Operation Phase: During operation phase, no pollution to water sources, surface or ground, is expected. As the new transformers will not contain PCBs, no impact is expected.

A transformer failure of one or more of the transformers could result in a fire or spillage of the purified mineral oil used for insulation and coolant. If this mineral oil is not burnt as a result of the failure, there is a low possibility that this oil could get into the drainage and enter the environment beyond the substation fences to mitigate against oil contamination of streams as a result of an accident during the operational phase of the substation, the sub-station complex will have banded detention ponds to contain an oil spill.

As the man-power requirement in the sub-stations will be less, the quantum of sewage generated will be low and will be treated in existing septic tanks.

4.1.2 Air Pollution

Construction Phase: Dust will be generated as a result of site clearance, construction work, transportation of construction materials / waste and traffic of freight vehicles. As most of the sub-stations have large areas, the impacts from construction activities will be localized and mainly restricted within the construction site. Transportation will also be done through paved roads and

thus no fugitive emission from traffic is expected. Thus it can be concluded that impact due to dust emission will be short-term and reversible, and there will be no dust emission after completion of construction activities.

Operation Phase: As there will be no fuel combustion or movement of raw materials in the projects, no potential adverse impact is envisaged during the operation phase.

4.1.3 Noise and Vibration

Construction Phase: Increase of noise level is expected during construction, material transportation, construction equipment operation, in particular, during excavation, pneumatic drilling, and work of construction cranes. Noise and vibration will cause concern to local residents if the work is carried out in the vicinity of residential areas.

Operation Phase: During the operation phase, there will be no machineries with moving parts that will emit noise or vibration. Thus no potential adverse impact is envisaged during the operation of the sub-stations.

4.1.4 Impacts on Biodiversity

Construction Phase: During construction, the necessary earthwork for construction can damage the vegetation cover and lead to cutting down of green plantations. Heavy vehicles carrying building materials and waste material can disturb the animal world, including affecting the natural habitat. However, since all works will be performed mainly on the developed territory, significant damage is unlikely.

Operation Phase: As there will be no gaseous or dust emission during operation, there is no risk of any impact on the flora of the area. Also there will be no incremental noise during operation and will remain at the present ambient noise level. Thus there will be no disturbances on animals and birds in the vicinity of the sub-stations.

4.1.5 Impact on Road Traffic

Construction Phase: During construction phase, there will be movement of heavy and oversized vehicles carrying construction materials and machineries such as transformers. It has been found that in cases of most of the sub-stations, they are on or near the main road (mostly AH-1). However, the access to the sub-station may have physical restrictions. It was found that the materials and machineries will be transported either from Yangon or Mandalay, through the AH1. The traffic density and width of AH-1 will pose no problem to the movement of oversized vehicles. Thus, no adverse impact is expected other than the moment when the vehicles are passing when

normal traffic may have to be regulated, which is a temporary phase. However, in some of the sub-stations there may be problem of entering the sub-station which may lead to bottle necks in front of the sub-station. The access to the sub-station has to be modified to allow entry of the over-sized vehicles without any land acquisition.

Some of the mitigation measures to be taken to ensure smooth and safe movement of traffic are as follows.

- Prior to construction, conduct consultation with local authorities and traffic police.
- Impacts on traffic flow needs to be considered in the construction plan before approval. Traffic routes, particularly those with heavy duty vehicles need to consider high risk area such as schools, hospitals or markets.
- It is necessary to provide sufficient lighting system for night time to ensure proper traffic conditions.
- Arrange indication signs at the construction site to inform public people, provide instructions to different components and instructions and safety directions
- Take proper traffic safety measures including sign posts and flags to indicate danger
- Avoid transporting construction materials during peak hours.

Operation Phase: No increase in traffic is expected during operation of the sub-stations as most of the staff resides within the campus of the sub-station

4.1.6 Impact from Solid Waste

Construction Phase: The following types of solid waste will be generated during the construction phase

- Construction debris, transportation, handling, compressor works, jackhammers and other construction equipment, soil surpluses and stones, cut trees, bushes, household waste, obsolete equipment and materials, and;
- Hazardous waste - construction debris containing mineral wool and ruberoid, worn tires, filters and oils from construction equipment and transformer sub-stations.

Asbestos products were extensively used in the manufacture of electrical components due to its fire resistance and insulation properties. ACMs in transformer rooms and sub-stations are a common occurrence for old installations. So while dismantling old machineries, there is risk of asbestos fibres polluting the air. Asbestos, if not handled and stored properly may have negative impact on the health of the personnel handling them.

Operation Phase: During the operation phase solid wastes which can be generated include oil drums, electrical cables, etc. Among hazardous wastes, spent oils, exhausted lead acid and nickel-cadmium batteries, will be generated, although frequency is very less to identify it as an impact on environment. However, whenever these wastes are generated, it has to be ensured that they are properly disposed.

4.1.7 Impact from Hazardous Waste

Hazardous wastes expected from the site will be polychlorinated biphenyl (PCB) from transformer oils during de-commissioning of old transformers. PCBs are widely deployed as dielectric and coolant fluids in electrical apparatus, and are expected to be present as coolants in most of the transformers to be replaced in the project. Thus there is a risk of leakage of oil during dismantling of the old transformers, which may contaminate the soil and subsequently leach to the ground water if not properly managed.

Some of the old structures/equipment to be removed from the sub-stations may contain asbestos. Asbestos has been linked to *mesothelioma* and other asbestos-related diseases. Inhaled or ingested, the microscopic asbestos fibers work their way into the lining of the lungs, abdomen or heart. Over a period of 10 to upwards of 50 years, the fibers can cause inflammation and scarring, which can eventually develop into *mesothelioma* tumours or other related conditions. Thus while handling asbestos containing materials, proper mitigation measures have to be taken to reduce the impact of asbestos fibres on human health.

4.1.8 Impact due to Natural Calamities

As mentioned before, the sub-stations fall in the active seismic zone of the country and will have high risks of earthquakes. Power transmission and substations are considered as the most vulnerable and also the most risky nodes of power network experienced at the time of earthquakes. Seismic vulnerability of equipment increases with substations voltage due to the fact that higher voltage in substation leads to higher isolation distances and then higher height of substations equipment. The different types of damages in sub-stations observed from earthquake are as given below

- Leaking or breaking of bushing,
- Falling of inadequately anchored rail-supported transformers from the elevated platforms,
- Damage of bushings and post insulators,
- Failure of cast-aluminium hardware,
- Failure of porcelain insulator,
- Tilting of lightning arresters, and
- Tilting of dead end transmission tower

It was found that the locations of the sub-stations planned for the Component B of the project are not near to any water bodies or rivers and thus there is no risk of flooding due to inflow of water during rains.

4.1.9 Workers' Safety

The types of issues related to workers' safety during both construction and operation phase are similar. They are mainly working at height, working with live wires and working in electric and magnetic fields.

Dangerous Activities during Civil Works: Direct impact on safety and health of people in civil works can be caused by various factors, for example, high-altitude work, the work of cranes and bulldozers, welding, etc. The potential impact on the safety and health of workers is also associated with occupational injuries during construction (falling structures, etc.).

Electric Shock Injury: Electric current injury may result from contact with electric chain with voltage and/or current sources able to induce electric flow through a part of the body that came into a contact with electric current. Usually the sensitive current flow for a human is more than 1 mA. Besides, when working with high voltage installations an electric shock may result without

contacting current conducting elements, but due to leak of current or air gap breakage with electric arc generation. Due to high electric resistance of human tissues they are heated rather fast which may cause injuries. Even a relatively low voltage, around 110 - 230 V, upon short-time contact with chest may cause a disruption to cardiac muscle work (60 mA for alternate current, 300 – 500 mA for permanent current). An electric shock may cause a nervous system disorder, for example, random muscle contraction. Repeated electric shocks may cause a neuropathy. In case of head electric injury loss of consciousness is potential.

4.1.10 Social Impact

As the sub-projects are expected to be constructed within existing areas of the sub-station and no additional land is planned to be acquired for the sub-project, there will be no issues of involuntary resettlement. However, as the lands are not yet finalized, there is a chance that some installation may exceed the existing footprint or that installations on existing footprints have temporary land use impacts during construction. The team will determine during preparation the likelihood of these impacts and ask the project management unit to prepare a Resettlement Action Plan, if necessary.

The targeted high voltage sub-stations for installation of new equipment are located country wide. Various ethnic groups live in different parts of the country, so it is possible that some of the improved sub-stations will be located in areas where Ethnic Peoples live or work. Although the expected negative impacts caused sub-station equipment installation are expected to be negligible, the project will trigger OP 4.10 on a precautionary basis, mainly to ensure that they are meaningfully consulted. .

Labour Influx: It has been estimated that during construction approximately 60 semi skilled and unskilled labours will be required for each sub-station. During interaction with sub-stations in-charges, it came to the knowledge that all workers will be recruited locally and thus there is no scope of influx of outside people. Only technical persons will come from outside, who will be mainly DPTSC employees and will be accommodated in the residential colonies of DPTSC. It can be concluded that there will be no large labour influx, thus reducing the risk of any cultural conflict with the local residents. Also the construction activity in each sub-station is not expected to be more than one year, further reducing the risk of any social disequilibrium due to construction.

4.2 MITIGATION MEASURES

As mentioned above, most of the impacts due to the project is envisaged during the construction phase. As the sub-projects are restricted to construction activities within the sub-stations and do not involve transmission line components, the project will have low risk of pollution to the environment.

4.2.1 Prevention from Water and Soil Pollution

- Maintenance and refuelling of construction machinery and equipment must be performed in service centres located away from the site. In case of performing these works at site, it is necessary to provide an impervious surface such as concrete platform for fuelling and to have a stock of absorbing substances if an emergency spill occurs.
- Washing of machines should be prohibited near surface water bodies.
- A specific area should be designated for storage of building materials, so that there is no risk of run-off to neighbouring areas. Otherwise, the building material should be stored on the construction site, and protected from atmospheric effects.
- If residential buildings for workers are located in construction camps, septic tanks or toilets with a pit should be provided, and during their operation, direct discharge of water without treatment into surface water bodies and deterioration of sanitary conditions should not be permitted
- Soil compaction, improvement and restoration of excavated areas should be carried out immediately after completion of work in selected sites of the affected area, rather than postpone such work until the work is completed.
- Sawing or planting of vegetation should be undertaken as necessary to prevent soil erosion and run-off. The top soil should be removed from the sites and stored separately during excavation so that it can then be used to restore the site and restore natural vegetation as much as possible.
- Used oil, supplies of combustive-lubricating materials and other dangerous substances should be stored also on an impermeable surface, preferably under a canopy, and should be protected from fire. This is applicable for construction and operation phase.

To address the risk of leakage/spillage of transformer oils getting into the drains of the sub-station. Some mitigation measures are given below.

- Internal drains to be provided so that water during rains is properly channelized and there is no flooding inside or outside the sub-station.
- Regular maintenance of drains
- Sedimentation tanks to be constructed to prevent run-off from stock-piles entering the natural drainage of the area. The sedimentation tanks should be connected to the main drainage system

already existing in the sub-station.

- Provision of oil and grease traps at the inlet of all drains in the impervious areas of the sub-station and especially near to the transformers
- The contractor will be responsible for complying with applicable regulations related to waste water treatment and discharge
- Regular monitoring of discharge water quality from the sub-station.
- Handling of PCBs should be done by professionals so as to avoid accidental spillage and leakage from storage areas. Details of PCB handling is provided in Section 4.2.4 Management of Hazardous Wastes.

4.2.2 Prevention of Air Pollution and Minimizing Dust

- During construction activities, it is necessary to store demolition wastes in the controlled area, sprayed with water to reduce dust generation.
- During operation of the pneumatic equipment / destruction of walls, the dust generation should be suppressed by constantly spraying water and / or installing anti-dust barrier screens on the site.
- No open burning of construction / waste materials at the site. Reduction of work on loading / unloading of bulk materials.
- When transporting any dust-forming materials to the site of restoration work, goods must be sprayed or covered.

4.2.3 Management of Noise and Vibration

During the construction activities, there will be high level of noise due to noise emitted from heavy machines and vehicles. These noise may impact the population residing near to the sub-stations unless proper mitigation measures are taken. The mitigation measures suggested are as follows:

- Workers that operate noisy machines and nearby workers should be supplied with ear-muffs and should be instructed to put them on when they get into noisy zones.
- Contractors should be responsible to instruct their workers to abide to this role and the site supervisor should make sure the Contractor is compliant with this role
- Working hours for workers exposed to noise equipment should be designed so that noise exposure periods do not exceed the safe limits
- Coordinate and Inform inhabitants/employees at the nearby sensitive receptors about the peak time and hours for construction activities.
- Avoid construction activities and transportation of machines and raw materials at night.

However, no increase in noise level is expected during operation phase and thus no mitigation measures have been suggested

4.2.4 Management of Solid Waste

- Waste should be minimized, segregated at source and handled appropriately. The burning in the open air and the illegal dumping of any waste will be strictly prohibited.
- Non-hazardous waste such as demolition waste and others, as well as wastes containing asbestos, will be disposed at specially designated landfills in consultation with local authorities. Excess of the excavated soil will be returned to the officially designated sites. The construction contractor will receive a permit to export the waste.
- Maintenance of construction equipment and machines will be carried out in specialized service centres, which also accept worn tires, filters and waste oil.
- Containers for waste disposal will be placed to collect household waste from the construction site. The issue of regular removal of household waste will be coordinated with local authorities.

4.2.5 Management of Hazardous Wastes

As mentioned above, the two hazardous wastes expected to be generated during the construction phase are polychlorinated biphenyl (PCB) from transformer oil and asbestos containing materials from electrical insulations. The management methods of these two wastes are discussed below.

Management of PCB: The risk of spillage/leakage of PCB is possible when the transformer oils are drained out from the transformers before dismantling. The oils will be stored in drums which will be sealed after filling. Even after draining out the oil, there are still be some oil present in the passive part of the transformer due to the leaching in the days and week after the draining. Depending on the size of the transformer, the leaching from the solid parts of the device (wood, insulation paper etc.) can leave a few litres of oil at the bottom of the transformer. Thus the drained out transformers will also have to be handled carefully.

In absence of any guidelines for disposal of hazardous waste in Myanmar, good practices will have to be followed. The guidelines provided by UNEP³ shall be used to develop a PCB Management Plan before removal of old transformers. In no case liquid wastes containing PCBs will be allowed to be discharged into water or sewer systems.

The broad steps for management of PCB containing liquids of contaminated equipment are as follows:

³https://wedocs.unep.org/bitstream/handle/20.500.11822/13668/PCB%20Management%20Guidance_Final.pdf?sequence=1&isAllowed=y

- **Identification and management of transformers prior to testing for PCBs:** If there is reason to suspect that a transformer is potentially contaminated by PCB, all appropriate precautionary measures for handling it must be considered
- **Preliminary sampling and testing:** The methods commonly used methods in the field and 'in situ' (i.e. on-site) to detect PCB in dielectric oil samples are the Chlor-N-Oil test kits and the L2000DX Analyser. These can be used to detect chlorine content in the sample. It is important to note that a positive result does not necessarily confirm the presence of PCB.
- **Laboratory analysis:** One of the most recommended and applied analyses to confirm the presence of PCB is by gas chromatography using electron capture detector.
- **Isolation and storage of equipment:** All of the equipment being replaced and liquid waste containing PCBs shall be stored in areas that meet the following requirements:
 - ✓ Adequately roof and walls to prevent rainwater from reaching the stored PCBs.
 - ✓ Adequate flooring made of an impervious material such as cement concrete with a continuous, 6-inch high minimum curbing. The floor and curbing must provide containment volume of at least two times or 25 percent of the internal volume of the largest PCBs item or container stored, whichever is greater.
 - ✓ Garland drains with settlement tank will be constructed around the concrete containment area so as to prevent any seepage or flow of contaminated water to nearby water sources
 - ✓ Warning signs shall be placed at storage area to prevent leakage or spillage.
 - ✓ No drain valves, floor drains, expansion joints, sewer lines, or other open areas that would permit liquids to flow from the curbed area.
 - ✓ PCBs items and containers in the storage area must be inspected for leaks at least once every 30 days.
 - ✓ Removal of the equipment from the storage is not allowed unless test results confirm that PCB concentration is below 5 ppm.
 - ✓ Handling should be done by trained personnel.
- **Handling and disposal:** All solid and liquid wastes contaminated with PCB need to be shipped for environmentally sound treatment
- **Training:** The basis for protecting the personnel working with (potentially) contaminated equipment and containers is to keep them well informed and trained about the significance of PCB, including their health effects and their potential impacts on the environment; relevant domestic and international regulations and guidelines; and environmentally sound handling and related precautionary and safety measures, including labelling, transport and storage.

- **Disclosure to Public:** Communities should be informed about PCB and their potential health effects, environmental impacts, actual exposure risks, what to do and who to call in case of encountering a suspicion on the presence of PCB.

In cases where PCB leakage occurs, the following procedures shall be applied:

- Any leaking PCBs items must be transferred to non-leaking containers.
- Any spills or leaks must be cleaned up immediately using sorbents like sand.
- PCBs contaminated area needs to be cleaned by using suitable solvents such as kerosene and turpentine.

Management of Asbestos: The most probable hazardous waste to be found while dismantling is asbestos. Asbestos fumes are carcinogenic and causes many diseases. As already mentioned, the concern is limited to dismantling and packaging.

It has been confirmed by the Station Managers, that there will be no presence of asbestos in any of the machineries to be dismantled in the sub-stations. However, in case of chance find of any asbestos, proper management measures will be taken to ensure proper handling

The mitigation measures to be taken are:

- Only authorized personnel should be allowed to handle
- Before handling the asbestos, it should be sprayed with water so that it does not crumble.
- Workers handling asbestos should be provided with proper PPEs
- Shower room to be provided for the workers so that they can immediately shower after handling asbestos
- The pipes containing asbestos should be immediately packed and sealed. The asbestos should be packed in plastic sheets of at least 500 gauge.
- After packaging they should be immediately dispatched to the destination. If temporary storage is required, then the area should be isolated and proper warning notices put up.

4.2.6 Safety of Traffic and Pedestrians

Storage sites for waste and materials, work camps and access roads should be clearly marked. Work should be planned and undertaken in such a way as to minimize traffic disturbance and risk to local residents. Efforts will be made to minimize the time spent by construction vehicles and trucks on the roads, in order to prevent any incidents or damage to property. Drivers will be warned that they should move with caution. Speed restriction in work areas and road traffic with heavy machinery will also be regulated. The proper organization of traffic will also prevent a

negative impact on traffic, as far as possible. The personnel operating the machinery and heavy vehicles must have the appropriate licenses and be trained.

4.2.7 Mitigation measures against Earthquakes

As the sub-stations are located in seismic active zones, certain mitigation measures will be taken to avoid damage to property and life in case of occurrence of earthquakes. These will include anchoring power transformers on the base foundation to reduce damages during earthquakes and procuring mobile substations to increase the response capability against natural disasters. In addition to this, training will be provided to the employees on disaster management and regular mock drills will be conducted to develop emergency preparedness.

4.2.8 Reducing the Impact on Vegetation

Construction workers should work in such a way as to minimize the "environmental footprint" on the site. The movement of vehicles and construction equipment will be allowed only along the designated access roads to prevent damage to grass cover and other vegetation cover along the site. If cutting trees is necessary within the right-of-way to provide space or to ensure the operation of construction equipment, strict control measures should be taken to prevent cutting down excessive trees and causing damage to other trees growing near. If cutting trees and bushes is unavoidable, damage must be compensated by planting trees / bushes in places coordinated with local authorities.

4.2.9 Social Mitigation

Local communities should be notified of the timing and scope of the planned work. If work is carried out near or in close proximity to residential areas, then working hours should be strictly limited to daylight and the site should be sprayed with water to prevent dust formation. Special signs and, possibly, fencing, passages should be used if the work is carried out near children's institutions. Speed limit of traffic in residential areas should be observed. Temporary storage of construction materials and garbage, as well as parking of construction equipment, should not block or restrict access of local residents to their property and public places or, if unavoidable, alternative temporary routes should be organized.

4.2.10 Displacement

As per the present situation and as informed by the project authorities, there is no requirement of additional land for any of the sub-projects. There is enough land in all the sub-stations to accommodate additional transformers and switch-bays. However, in case there is any

requirement to increase the project footprint at a later stage and resettlement is unavoidable, the affected people will be adequately compensated in line with the World Bank Safeguard Policy. A RPF has been developed in close consultation with local agencies and affected people, and specific policy and procedures will be finalized.

4.2.11 Meaningfully consult Ethnic Peoples

Although if the negative impacts caused sub-station equipment installation are expected to be negligible for local ethnic groups/Indigenous Peoples, in those sub-projects where there are living or working groups who can fall under the definition IP included in OP 4.10, then meaningful consultations will be carried out in line with the project's Community Participation Planning Framework.

4.2.12 Occupational Safety

As mentioned before, the risks will be mainly working at height and working with live wires. Prior to commencement of civil works, workers must be instructed on safety rules. In addition, it is necessary to constantly check machinery and equipment for the purpose of identifying and repairing mal-functions, to observe periods of equipment repair, to conduct training and instructing workers who carry out maintenance of mechanical equipment, tools and devices and safe methods and tools of work.

Working at Heights: During construction activities and O&M work, there will be regular requirement of working on poles and tall electrical towers, which increases the risk of accidents and fatalities. The safety measures to be taken are given below.

- Construction workers should wear protective helmets, protective glasses, safety belts and protective shoes.
- Installation of fixtures on tower components to facilitate the use of fall protection systems.
- Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others;
- Safety belts and harnesses should be of not less than 16mm two-in-one nylon or material of equivalent strength.
- When operating power tools at height, workers should use a second (back-up) safety strap.
- Signs and other obstructions should be removed from poles or structures prior to undertaking work.

Working with Live Wires: At sub-stations it is quite common to work with live wires while repairing electrical equipment and in LT/HT towers. The precautions to be taken are given below.

- Only trained and certified workers are allowed to install, maintain or repair electrical equipment.
- Deactivating and properly grounding live power distribution lines before work is performed on, or in close proximity, to the lines.
- Ensuring that live-wire work is conducted by trained workers with strict adherence to specific safety and insulation standards. The workers should have understanding of preventive measures to be taken to work in specific live line voltages, identify live parts and their voltage and ensure proper use of special safety equipment.
- The minimum safe working distances for trained employees are given in the table below and should be complied in Table 4.1

Table 4.1 Alternating Current - Minimum Working Distances for Trained Employees^a

Voltage Range (phase to phase – Kilovolts)	Minimum Working and Clear Hot Stick Distance (meters)
2.1 to 15	0.6
15.1 to 35	0.71
35.1 to 46	0.76
46.1 to 72.5	0.91
72.6 to 121	1.01
138 to 145	1.06
161 to 169	1.11
230 to 242	1.5
345 to 362	2.13b
500 to 552	3.35b
700 to 765	4.5b

a) OSHA
 b) Note: From 345-362kv, 500-552kv, and 700-765kv, the minimum working distance and the minimum clear hot stick distance may be reduced provided that such distances are not less than the shortest distance between the energized part and a grounded surface.

Working in Electric and Magnetic Fields (EMF): Occupational EMF exposure should be prevented or minimized through the preparation and implementation of an EMF safety program including the following components:

- Identification of potential exposure levels in the workplace.
- Training of workers in the identification of occupational EMF levels and hazards.
- Establishment and identification of safety zones to differentiate between work areas with expected elevated EMF levels compared to those acceptable for public exposure, limiting access to high risk zones.
- Personal exposure monitoring equipment should be set to warn of exposure levels that are

below occupational exposure reference levels (e.g. 50 percent). Action plans to address occupational exposure may include limiting exposure time through work rotation, increasing the distance between the source and the worker, when feasible, or the use of shielding materials.

During the construction works and operation of equipment, activities will be carried out ensuring a secure manufacturing job. When operating the electric installations, personal protective equipment will be used. In the course of works, the sites will be fenced and taped off. The access to the site of work for unauthorized persons will be prohibited. Only workers who completed trainings on working with electric equipment and safety techniques when operating electric installations will be allowed to the site of work. The synopsis of the expected impact and the mitigation measures to be adopted is given in Table 4.2.

Table 4.2 The synopsis of the expected impact and the mitigation measures to be adopted

SI No	Project Activity	Type of impacts	Scale of impact (local/ regional; temporary/ permanent)	Mitigation measures
1	Replacement of existing supply-level transformers	<ul style="list-style-type: none"> Spilling of transformers' oil containing PCBs; Removal of ACMs from electrical equipment Health and labour safety impacts 	Local and temporary	<ul style="list-style-type: none"> Recommended measure is an express analysis of oil sampling on PCBs and applying safety measures while handling them, if identified. In case of positive results, an action plan on storage and disposal of these substances will be developed. Proper usage of PPEs for workers Proper storage and transportation of ACMs
2	Installation of new supply-level transformers	<ul style="list-style-type: none"> Construction-related impacts (safety of workers and neighbour-hood residents, loss of 	Local and temporary	During the transformers' installation, environment, health and safety (EHS) issues will be included in the contract provisions and

SI No	Project Activity	Type of impacts	Scale of impact (local/ regional; temporary/ permanent)	Mitigation measures
		access to public facilities) • Pollution of land and ground water by oil products.		would include proper organization of works, labour safety requirements, and proper clean-up and re-cultivation in the case of incidental spills.
3	Installing new lines and poles and replacing old ones inside the sub-station	Construction-related impacts (dust, noise, safety, loss of access to public facilities)	Local and temporary	During the construction stage EHS issues will be managed based on the mitigation measures set up in the ESMP checklist (like operations during normal working hours only; access roads will be watered during dry periods, during planning phase ensure that local people are aware of restrictions during construction and alternative arrangements for access are provided; ensure construction workers are given safety instruction; ensure safety officers on site; ensure effective signage for the public and ensure that all exposed construction areas are barricaded from public access)
4	Construction/rehabilitation of Sub-station equipment such as transformers/ disconnectors, relay protection, telecommunication devices, etc)	<ul style="list-style-type: none"> • Health impacts • Labour safety • Solid waste management • Noise • Air and water pollution 	Local and temporary	<ul style="list-style-type: none"> • Segregation of all wastes from dismantling of equipment and construction units and their disposal to land fill sites; • Strict control over the use of motor vehicles and

SI No	Project Activity	Type of impacts	Scale of impact (local/ regional; temporary/ permanent)	Mitigation measures
				construction equipment in accordance with established standards; <ul style="list-style-type: none"> • Labour safety rules; • Personnel training on occupational safety and measures towards compliance with occupational safety requirements; • Providing of workers with PPEs, etc.

Child labor: Since child labor remains pervasive in Myanmar, during construction phase a system will need to be in place to ensure that no person of 14 years old or less will be employed or engaged in connection project. In addition, it will not be allowed that a child over the minimum age and under the age of 18 will not be employed or engaged in connection with the project in a manner that is likely to be hazardous or interfere with the child's education or be harmful to the child's health or physical, mental, spiritual, moral or social development

4.2.13 Monitoring

Monitoring of environmental quality during construction and operation phase can be useful in ensuring adequacy of the mitigation measures being implemented by contractor. However, the monitoring parameters, locations, and timing should be designed in line with the sub-project activities, locations, and nearby water uses. The ESMP will clearly define the need for environmental quality monitoring with specific locations, monitoring parameters, frequency and an estimated cost.

A tentative Environment Monitoring Plan during construction phase is given in **Table 4.3**. The monitoring program during the O&M stage, including number and location of monitoring stations, frequency of sampling and parameters to be tested is summarized and presented in **Table 4.4**. The responsibility for monitoring for both the phases will be with DPTSC.

Table 4.3: Environment Monitoring Program during Construction Phase

Aspect	Parameters	Frequency	Location
Waste-water Quality	Physical, chemical and biological parameters including heavy metals	Quarterly	Discharge point outside sub-station
Water Quality	Physical, chemical and biological parameters including heavy metals	Quarterly	Nearest water body and Kha Paung River
Noise Level	Equivalent noise pressure level	Once a fortnight	Inside construction site, and nearest residential area
Air quality	PM ₁₀ , PM _{2.5} , SO ₂ and NO ₂ , CO, HC	Twice in a week	Inside construction site, and nearest residential area

Table 4.4: Environment Monitoring Program during O&M Phase

Aspect	Parameter	Frequency	Locations
Surface water quality	Physical, chemical and biological parameters including heavy metals	Monthly	Nearest water body and Kha Paung River
Ground water quality	Physical, chemical and biological parameters including heavy metals	Quarterly	2 locations from nearby bore-hole
Drainage and effluent Management	Visual inspection of internal drains	Periodic during operation phase	On-site
Soil	Physical and chemical parameters with organic content and heavy metals	Once every six months	On-site near to waste disposal area
Noise level	Noise	Once a fortnight	On-site and nearest residential area
Waste Management	Records of solid waste generation, treatment and disposal	Periodic during operation phase	Plant site

CHAPTER 5

Procedures for Review, Clearance & Implementation of Sub- Projects

5. Procedures for Review, Clearance & Implementation of Sub-Projects

5.1 OBJECTIVES OF ESMF

This ESMF provides general policies, guidelines and procedures to ensure that the project will be implemented in an environmentally and socially sustainable manner and in line with the applicable World Bank safeguard policies. Specifically, the ESMF aims to achieve the following:

- Minimize potential negative environmental and social impacts;
- Enhance positive environmental and social impacts wherever possible;
- Ensure that all stake-holders, including ethnic minorities and other vulnerable people are meaningfully consulted and that they receive project benefits in a culturally appropriate manner;
- Prevent and, where unavoidable, fully compensate loss in livelihood associated with or caused by the project; and
- Develop the capacity of the implementation agencies to manage environmental and social impacts in partnership with the affected communities.

The ESMF provides guidance to environment and social safeguard planning and compliance during implementation of investments to be financed under the project ("sub-projects"). As sub-projects will be identified and proposed for financing in a continuous manner during the project implementation period, screening for potential environmental and social impacts will be conducted and mitigation and management measures will be developed in line with this ESMF (Figure 5.1).

5.2 APPROACH OF ESMF

Environmental and social impact screening, mitigation and management measures development and implementation will follow these steps:

- **Step 1:** Eligibility screening of sub-projects as per World Bank Policies;
- **Step 2:** Technical screening for potential environmental and social safeguard impacts and determination of safeguards instruments for each Sub-project;
- **Step 3:** Development of mitigation measures and public consultation;
- **Step 4:** Development of safeguard instruments and disclosure;

- Step 5: Implementation, Supervision, Monitoring and Reporting

5.2.1 Step-1: Eligibility of Screening

The eligibility screening is conducted to ascertain whether the sub-project can be funded under the project and whether the sub-project fulfils all the environmental and social criteria of World Bank. The sub-projects that potentially adversely affect areas of biological importance, conversion of site with valuable landscape, removal of objects with historical/religious appreciation, or encroachment on mangrove forest regardless of the size will not be eligible for financing. In the proposed project, there will be no construction of new sub-stations, which may pose major or significant irreversible environmental impacts that would be equivalent to a Category A project as described in World Bank safeguard guidelines. Thus the sub-projects under this project are not expected to have any adverse, irreversible and major impact on the environment and thus will be eligible for funding under the project. The responsibility of carrying out the screening procedure will be with EPGE in coordination with DPTSC. The checklist for eligibility is provided in Annex 1.

5.2.2 Step 2: Technical Screening for Environmental and Social Aspects

For activities which are eligible for the project financing, a technical screening will be carried out to identify key potential impacts of the sub-project. The technical environmental and social screening of each proposed sub-project will be done to determine the appropriate extent and type of EA to be conducted and the safeguard instruments to be prepared. The outcome of this screening is used to classify the sub-projects into one of three categories (A, B or C), depending on the type, location, sensitivity, and scale of the sub-project and the nature and magnitude of its potential environmental impacts (OP 4.01, paragraph 8). No subprojects that fall under Category A will be financed. The responsibility of carrying out the technical screening will be with EPGE in coordination with DPTSC.

Environmental Screening and Assessment: Key potential negative impacts on local environment and community will mainly occur during land clearance and construction. During the operation phase, not much impact is envisaged. Scope and extent of the impacts during construction, however would depend on type and nature of civil works and locations of the sub-projects. The sub-project will therefore be screened for the extent of the potential impacts on air quality, noise level, vibration; soil and water quality; waste generation including hazardous wastes; natural habitats; livelihoods and local resident disturbance; and other aspects such as

localized flooding, public safety. Off-site impacts including sub-project area of influence⁴; risks due to exposure to electrical magnetic field and fire hazards during operation, etc. If the screening results in a Category B sub-project, preparation a separate EMP is required. Data collection, field survey, and consultation with local communities and affected population will be carried out. The environment screening criteria and check list is provided in **Annex 2**.

If an EIA/IEE for the sub-project is required by the Government's EA regulations, appropriate actions and documents will be prepared accordingly. Regardless of the government EA requirements on EA types, if the impacts screening results in a Category B sub-project, preparation of a separate EMP is required.

Social Screening and Assessment: The sub-project will be screened for the nature and extent of potential negative impacts on local people related to land acquisition, resettlement, land donation plus negative impacts on Ethnic People. If the land-related impacts exist, Resettlement Action Plans (RAPs) will be prepared in line with the Resettlement Policy Framework (RPF) developed for the Project. In addition, the project's Community Participation Planning Framework (CPPF) will be applied when there are IPs nearby any of the sub-projects. During the preparation of RAPs, consultation with affected population, local authorities, local communities, and interested mass organizations and/or NGOs will be required. Due attention should also be given to address the issues related to gender and other disadvantaged groups. Social screening should take into consideration vulnerable and disadvantaged groups like women-headed households, work participation of women in the area, livelihood and income loss of women, elderly, disable people, SOGI, etc. Ethnic people should also be identified and special impact assessment done for their livelihood and property loss. WB clearance of the RAPs and reports related with the application of the CPPF will be mandatory. During the application of the CPPF, special attention will be paid to make sure that consultations are properly recorded plus follow the WB's criteria of Free, Prior and Informed Consultation (FPIC). The social screening check-list is given in **Annex 3**.

⁴ Annex A of OP 4.01 defines the *Project area of influence*: The area likely to be affected by the project, including all its ancillary aspects, such as power transmission corridors, pipelines, canals, tunnels, relocation and access roads, borrow and disposal areas, and construction camps, as well as unplanned developments induced by the project (e.g., spontaneous settlement, logging, or shifting agriculture along access roads). The area of influence may include, for example, (a) the watershed within which the project is located; (b) any affected estuary and coastal zone; (c) off-site areas required for resettlement or compensatory tracts; (d) the airshed (e.g., where airborne pollution such as smoke or dust may enter or leave the area of influence; (e) migratory routes of humans, wildlife, or fish, particularly where they relate to public health, economic activities, or environmental conservation; and (f) areas used for livelihood activities (hunting, fishing, grazing, gathering, agriculture, etc.) or religious or ceremonial purposes of a customary nature.

5.2.3 Step 3: Mitigation Measures and Public Consultation

Environmental & Social Management Plan (ESMP): Appropriate mitigation measures should be identified according to the nature and extent of the potential negative impacts. This section focuses on the preparation of an ESMP describing the basic principles and activities to be carried out to mitigate the potential negative impacts. The ESMP will briefly describe the sub-project description; environmental and social background of the sub-project areas, including maps showing locations of the sub-project and site specific activities and/or process as appropriate; the potential impacts and proposed mitigation measures; and the implementation and monitoring arrangement and budget. Public consultation is to be carried out as part of the ESMP preparation.

At a minimum the ESMP will include the standard Environment Code of Practice (ECOP) and actions identified, including environmental monitoring program. **Annex 4** provides a sample content of the ESMP as well as technical guidelines for EMP preparation, consultation and information disclosure. In addition, the framework for Resettlement Plan is given in **Annex 5**.

Specific Guidance for Public Consultation and Information Disclosure: The Bank's safeguard policies require the DTPSC to facilitate public consultation and information disclosure. Accordingly, consultation with project affected people (PAPs) and local NGOs is required for this project and its sub-projects.

Public consultation must be carried out in line with the Bank's requirements in a form convenient to the local people (e.g. meeting, leaflet, signboard, etc.) and information on the main findings of environmental and social impacts and proposed mitigation measures must be provided in the local language understandable for the majority of the affected people. Records of feedback from public consultation should be attached to final draft ESMP while the main EMP should include a section summarizing public concerns and suggestions. The ESMP should clearly state that environmental concerns and suggestions for environmental improvement made by the public have been incorporated. It is required that ESMPs include a summary table (see **Annex 4**) to show the number of meetings, the place, the number of PAPs attended meetings.

5.2.4 Step 4: Development of Safeguard Instruments and Disclosure

Before commencement of implementation of a sub-project, the ESMP will be submitted to the World Bank for disclosure on the Bank's websites and WB safeguard clearance. Public disclosure of the ESMP in Myanmar and the project areas will also be required.

Government's Approval: All the sub-projects associated with electric sub-station in Myanmar require preparation of Initial Environment Examination (IEE) and approval from Ministry of Natural

Resources and Environmental Conservation (MoNREC). If the sub-project requires Government approval according to the EIA and/or other regulations, the sub-project owner will prepare and submit the report as required by the Government and secure their approvals and clearances. The EIA as well as the approval conditions will be provided to the Bank for information. The EIA report and approval condition will also be disclosed to the public.

5.2.5 Step 5: Implementation, Supervision, Monitoring and Reporting

After completion of the EIA/ESMP, in order to ensure effective implementation of the ESMP, the following actions will be carried out during the implementation of the Project:

- Include specific mitigation measures described in the ESMP into the detailed design as appropriate.
- In preparing the bidding and contract documents, environmental specifications and the standard ECOPs as appropriate in the bidding and contract documents and make an effort to ensure that the contractors are aware of the safeguard obligation and commit to comply.
- Ensure that all safeguard activities and documentation have been completed and disclosed.
- Secure Government approval of the IEE/EIA for the subprojects as required by the Government regulations. The sub-project ESMPs should be submitted to the relevant authority for review and comment.

Construction: During construction, DPTSC will assign a field engineer to be responsible for supervision of safeguard performance of contractors and sub-contractors on a daily basis. The field engineers will carry out the following tasks, although not limited to only them:

- Before the launch of the construction, confirm that (a) if any land acquisition has occurred, all compensation have been paid and relocation completed; (b) the sub-project EIA/ESMP/IEE and/or mitigation measures for specific site are approved by Government; and (c) the above-mentioned environmental plan have been approved by concerned parties.
- During construction, closely supervise the implementation of safeguard measures throughout the construction period.
- At the completion of the construction, confirm the compliance with the agreed environmental plan and inspect any damages incurred by the contractor. If necessary, prepare an order to compensate/restore the construction sites as specified in the contracts. Contractor safeguard performance will be included in the sub-project progress report.

The contractor will recruit a national level environment consultant to assist in the planning and implementation of safeguard measures to be carried out by the contractor, including preparation of the Site Specific Environmental Management Plan (SEMP) and communication with local

authorities and local communities. The environment consultant will carry out the following tasks, although not limited to only them:

- Prepare a SEMP in compliance with the ECOP giving due attention to reduce potential negative impacts on safety of resident and general public, dust/noise suppression, waste management, and traffic congestion.
- Efforts should be made to identify sensitive areas that may be affected by and/or issues that may arise from the construction activities due to large number of local population and/or important use of land and water.
- During construction stage, monitor the compliance with the agreed environmental plan, and maintain close consultation with the community residents, and information disclosure and timely responsive to any possible complaints from residents and general public throughout the construction duration.
- At the completion of the construction, confirm the compliance with the agreed environmental plan and inspect any damages incurred to be paid by the contractor, including preparation of an order to compensate/restore the construction sites as specified in the contracts.
- Prepare a periodical report to project owner as agreed in the SEMP.

Sub-project Level: During Project implementation, the sub-station manager will be responsible for each sub-project and will ensure effective implementation of safeguard measures (IEE/ESMP/ECOP, RPs) in close consultation with local authorities and communities. DPTSC will assign at least one full time staff (as the safeguard focal point) to be responsible for enforcing effective implementation of the ESMPs/ECOPs of the sub-project.

During construction, PMB will assign the field engineer to be responsible for monitoring and supervision of contractor performance on a daily basis. The results will be part of the sub-project progress report and the safeguard focal point will be responsible for ensuring proper documentation of safeguard activities.

Project level: DTPSC will take the lead in overseeing and monitoring of the implementation of sub-project will periodically supervise and monitor the safeguard implementation performance and include the progress/results in the Project progress report.

The World Bank will conduct regular safeguard supervision, monitoring, and post review both at the sub-project and Project levels.

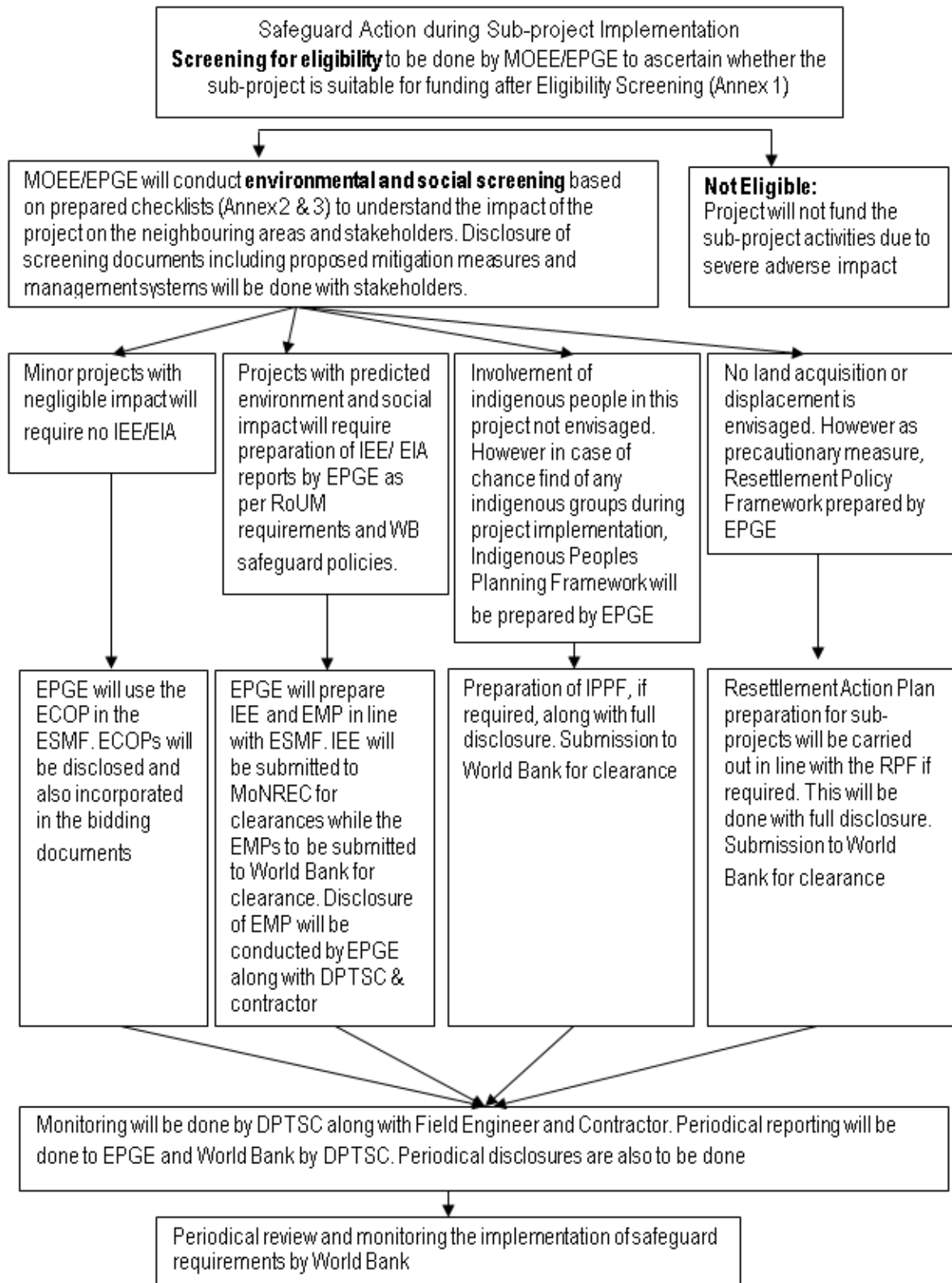


Figure 5-1: Safeguard Actions for New Projects During Project Implementation

CHAPTER 6

Implementation Arrangement for ESMF

6. Implementation Arrangement for ESMF

6.1 PROJECT IMPLEMENTATION & EA RESPONSIBILITIES

The ESMF implementation will follow the project implementation arrangements. At the Union level, the MoEE will have oversight over all the sub-projects.

The responsibility of preparation of the sub-project specific EIA/ESMP or IEE documents is with DPTSC. They will review the documents to ensure compliance with National Environmental Guidelines and the World Bank's relevant Safeguard Policies. Thereafter, the ESMP will be forwarded to the World Bank for review and clearance. DPTSC will be also responsible for ensuring close coordination with MoNREC during project preparation. DPTSC will supervise the preparation of IEE/ESMP report until written approval by relevant environmental management authority is granted.

Each sub-project will be stand-alone, and will therefore require separate review of the safeguards issues through preparation of EIAs/ESMPs. The sub-projects will have ESMPs prepared according to the guidelines in the ESMF, and will be individually appraised by the DPTSC before being accepted for financing with provisions for random review by the Bank. During its supervision for implementation of the sub-projects the Bank will check sub-project compliance with environmental safeguard policies and randomly review ESMPs for their completeness as required by the ESMF (Table 6.1).

Table 6.1: Responsibilities for implementation of ESMF

Agencies	Responsibilities
Project Owner: MoEE	DPTSC will be responsible for overseeing the project implementation including ESMF implementation and environmental performance of the project.
Project Implementing Agency (PIA): DPTSC	<ul style="list-style-type: none"> • DPTSC will be responsible for monitoring the sub-project implementation, including environmental compliance of the project. It will have the final responsibility for ESMF implementation and environmental performance of the sub-project during both the construction and operational phases. • DPTSC will be responsible for fostering effective coordination and cooperation between contractor, local authorities, and local

Agencies	Responsibilities
	<p>communities during construction phase. The PIA will be assisted by the environmental staff, and field engineer.</p> <ul style="list-style-type: none"> • Specifically DPTSC will: <ul style="list-style-type: none"> ✓ closely coordinate with local authorities in the participation of the community during subproject preparation and implementation; ✓ monitor and supervise ESMP implementation including incorporation of ESMP into the detailed technical designs and bidding and contractual documents; ✓ ensure that an environmental management system is set up and functions properly; ✓ be in charge of reporting on ESMP implementation to NPT and the World Bank. • In order to be effective in the implementation process, DPTSC will establish an Environmental Unit with at least an environmental staff to help with the environmental aspects of the project. The environment staff will have the responsibility of visiting all the sub-stations (sub-projects) to ensure proper implementation of ESMF.
<p>Environmental Unit EU (EU) under DPTSC</p>	<p>The EU is responsible for monitoring the implementation of WB's environmental safeguard policies and national regulations in all stages and process of the sub-project. Specifically, this unit will be responsible for:</p> <ul style="list-style-type: none"> ✓ hiring and supervising EA consultant to prepare safeguards documents; ✓ reviewing the sub-project environment documents prepared by consultants to ensure that they follow the project ESMF and meet the government and the Bank requirements; ✓ helping the PIA incorporate Environmental, Social, Health and Safety (ESHS) and ESMP requirements into the detailed technical designs and civil works bidding and contractual documents; ✓ helping the PIA incorporate responsibilities for ESHS and ESMP monitoring and supervision into the TORs, bidding and contractual documents for technical consultant/ Field Engineer; ✓ providing relevant inputs to the consultant selection process; ✓ reviewing reports submitted by the technical consultant/Field Engineer;

Agencies	Responsibilities
	<ul style="list-style-type: none"> ✓ conducting periodic site checks; ✓ advising PIA on solutions to environmental issues of the project; and ✓ Preparing environmental performance section on the progress and review reports to be submitted to MoEE, the Bank, MoNREC and the local authorities if requested.
Compensation Unit under DPTSC	This unit will be responsible for preparation and supervision of RPs if applicable
Field Engineer	<ul style="list-style-type: none"> • The Field Engineer will be responsible for routine supervising and monitoring all construction activities and for ensuring that Contractors comply with the requirements of the contracts and the ESMP. • The Field Engineer shall engage qualified staff (e.g. Environmental Engineers) with adequate knowledge on environmental protection and construction project management to perform the required duties and to supervise the Contractor’s performance. • The Field Engineer will also assists PIA in reporting and maintaining close coordination with the local community.
Contractor	<ul style="list-style-type: none"> • Based on the approved ESMP and environmental specifications/ requirements in the bidding and contractual documents, the Contractor is responsible for establishing a site-specific ESMP for each construction site area, submit the plan to the PIA for review and approval before commencement of construction. In addition, it is required that the Contractor get all permissions for construction (traffic control and diversion, excavation, labour safety, etc. before civil works) following current regulations. • The contractor is required to appoint a competent individual as the contractor’s on-site Safety and Environment Officer (SEO) who will be responsible for monitoring the contractor’s compliance with the EMP requirements and the environmental specifications. • Take actions to mitigate all potential negative impacts in line with the objective described in the ESMP. • Actively communicate with local residents and take actions to prevent disturbance during construction.

Agencies	Responsibilities
	<ul style="list-style-type: none"> • Ensure that all staff and workers understand the procedure and their tasks in the environmental management program. • Report to the PIA on any difficulties and their solutions. • Report to local authority and PIA if environmental accidents occur and coordinate with agencies and keys stakeholders to resolve these issues.
NGOs	<ul style="list-style-type: none"> • These organizations could play a role as a bridge between the GAD or village wards, communities, contractors, and PIA by assisting in community monitoring. • Mobilizing communities' participation in the sub-project, providing training to communities. • Participating in solving environmental problems if any.
General Administration Department (towns) and Ward or Village-Tract Administration Offices	<ul style="list-style-type: none"> • Oversee implementation of sub-projects under recommendations of DONRE and PIA to ensure compliance of Government policy and regulations. • DONRE is responsible for monitoring the compliance with the Government environmental requirements.

6.2 REPORTING ARRANGEMENTS

The safeguard performance will be included in the subproject and Project progress reports. PIAs with assistance from the CSC will include safeguard performance at subproject level to PIAs periodically. At the project level, NPT will prepare safeguard performance report twice per year for submission to the World Bank describing the Project progress and compliance with the ESMF and other safeguard requirements. The reporting requirement is described in Table 6.2.

Table 6.2: Reporting Procedures

Sl. No.	Report Prepared by	Submitted to	Frequency of Reporting
1	Contractor to the Employer	DPTSC	Once before construction commences and monthly thereafter
2	Field Engineer	DPTSC	Weekly and monthly
4	Community Monitoring	DPTSC	When the community has any complaint about the subproject safeguards implementation

ENVIRONMENT & SOCIAL MANAGEMENT FRAMEWORK

Power System Efficiency and Reliability Project

Component B: Improving Resilience and Capacity of the Power Network

6

Sl. No.	Report Prepared by	Submitted to	Frequency of Reporting
5	DPTSC	MOEE	Six-monthly
6	MoEE	World Bank	Six-monthly
7	MoEE	MoNREC	Six-monthly

CHAPTER 7

Capacity Building, Training & Technical Assistance

7. Capacity Building, Training & Technical Assistance

It is imperative that institutional and capacity development are provided for environmental and social safeguards guidelines, safeguards frameworks, capacity building trainings, coordination between different government departments and organizations, awareness-raising campaign(s), and other measures for ensuring the knowledge gaps are addressed as expeditiously as possible for development of the sub-project and, subsequently, at feasibility and design stages and beyond. EPGE and DPTSC will integrate environmental and social safeguard provisions in order to enhance the potential positive impacts for component B activities which aligns with the Safeguard Policies to Technical Assistance Activities in Bank-financed Projects.

Although MoEE has got experiences in working with International Financial Institutions, including World Bank, the key staffs responsible for implementing the safeguard instruments has to be provided proper training. Given that most of the key mitigation measures are good engineering practices, the safeguard training should focus on increasing knowledge on

- Safeguard policy and procedures to implement the safeguard instruments (RP/RPF, ESMP/ESMF) designed for the Project and subproject
- Procedural aspects of ESA (stages, key actors, main responsibilities etc.);
- Specific training on supervision and monitoring of contractor performance, including forms and reporting process,
- Preparing ESMP Checklist;
- Knowledge on good construction practices for reducing potential impacts on local environment and safety aspects. and
- Conducting field supervision and preparing progress reports.

Given the large number of the sub-projects and diverse locations, it is anticipated that at least two safeguard training courses should be provided during the first two years of the project implementation. The training should first focus on the knowledge, policies, and procedures related to land acquisition and resettlement and consultations with ethnic minority groups and/or other social aspect so that the implementation of the activities related with land acquisition and/or Ethnic Peoples could be completed before initiation of construction. All key staff responsible for the activities should participate in the training. The supervision of contractor training should be

conducted at least one month before the construction. The key participants should include PIA staff and its consultants, and representatives from local agencies, local communities, and/or mass organizations, responsible for supervision of contractor.

7.1 TECHNICAL ASSISTANCE AND CAPACITY BUILDING

DPTSC will procure the services of implementing partner NGOs, including engineers and/or specialists with experience in environmental impacts, safeguards, mitigating measures. These specialists will assist MoEE/ individual local to implement ESMF instruments, and build capacity on environmental management issues and possible mitigating measures.

Moreover, a training program will be organized through the ES PMU/NSIFT to develop and expand professional skills and capacity in environmental management issues. This training will reinforce existing capacity within BT, the ES PMU/NSIFT and district level CEPs by providing specialized instruction to conduct environmental assessments and manage and monitor safeguards issues. The program will also support outreach and consultations with local authorities and beneficiaries of sub-projects in the target areas to encourage local ownership and continued maintenance of newly established and rehabilitated community facilities.

CHAPTER 8

ESMF Implementation Budget

8. ESMF Implementation Budget

MoEE will be responsible for overall coordination of the sub-project implementation, including the budget for coordination of safeguards implementation and safeguard training for the sub-project staff.

The cost for implementation of mitigation measures during construction, including consultation with local communities, environmental monitoring by contractors and compensation for damage (if any) will be part of the sub-project construction cost. The cost for supervision of contractor performance will be part of the sub-project supervision cost. The budget for safeguard training of staff will be part of the project management cost and ESMP implementation cost.

The estimated budget for five years period is calculated to be 0.211 Million USD and the break-up are provided in Table 8.1.

Table 8.1: Estimated Budget (in million USD)

A. Environmental and Social Instruments based on investment Planning Costs	
1% of estimated investment USD 10 million	0.10
Sub-total (A)	0.10
B. Specialized Safeguard Staff	
International Advisor (3 months) @ USD 96,000/year	0.024
Sub-total (B)	0.024
C. Training	
Safeguard Capacity Building (3 workshops first year)	0.02
Safeguard Refresher (1 workshop remaining 4 years)	0.02
Specific training for local staff/contractors (4 workshop per year)	0.02
Sub-total (C)	0.06
Total (A +B +C)	0.184
Contingency 15%	0.027
GRAND TOTAL	0.211

CHAPTER 9

Grievance Redress Mechanism

9. Grievance Redress Mechanism

Grievance may be raised by stakeholders due to various reasons such as failure to fulfil commitments, poor management of construction activities, inappropriate planning of vehicle movement, and conflicts between workers and local communities. The salient objectives of the Grievance Redress Mechanism are as given below.

- Allow for the identification and impartial, timely and effective resolution of issues affecting the project.
- Strengthen accountability to beneficiaries, including project affected people, and provide channels for project stakeholders and citizens at all levels to provide feedback and raise concerns.

Having an effective Grievance Redress Mechanism in place will also serve the objectives of reducing conflicts and risks such as land acquisition and rehabilitation, external interference, corruption, social exclusion or mismanagement, improving the quality of project activities and results, gender-based violence issues, to report cases of child labor as well as serving as an important feedback and learning mechanism for project management regarding the strengths and weaknesses of project procedures and implementation processes.

The GRM/BFM will be accessible to a broad range of project stakeholders who are likely to be affected directly or indirectly by the project. These will include beneficiaries, community members, project implementers/contractors, civil society, media—all of whom will be encouraged to refer their grievances and feedback to the GRM. The GRM will handle issues such as:

- Mismanagement, misuse of Project Funds or corrupt practices.
- Violation of project policies, guidelines or procedures, including those related to child labour, health and safety of community/contract workers and gender violence.
- Disputes relating to resource use restrictions that may arise between or among affected communities.
- Grievances that may arise from members of communities who are dissatisfied with the eligibility criteria, community planning measures, or actual implementation of community energy investments or socio-economic infrastructure.

9.1 PROCESS OF GRIEVANCE REDRESS

An affected household/individual/worker is to take his/her complaint to the GRC, through the local representative/ward member or directly to the GRC, in written or oral form. The GRC at the plant level will be headed by the Sub-station and all grievances will be addressed to him. The details

of the GRC contacts will be displayed publicly in all strategic places in and around the plant. The GRC will work directly in person with the said affected household and will decide on the settlement of the complaint 5 days after receiving such complaint. The Secretariat of the GRC is responsible for documenting and recording all the complaints that it is handling. The GRC will inform ward member and EPGE on the complaint and resolution reached.

Once identified as a safeguards complaint, the overall process for the GRM/BFM will be comprised of 6 steps: (1) uptake, (2) sorting and processing, (3) acknowledgment and follow up, (4) verification, investigation and action, (5) monitoring and evaluation, and (6) feedback.

Step 1 - Uptake: Project stakeholders will have the opportunity to provide feedback and report complaints through several channels (in-person, mail, telephone, project website) at different levels (village, Project Implementing Agency (DPTSC) offices/sub-stations and HO, Nay Pyi Taw).

Step 2 - Sorting and Processing: To consolidate, monitor and report on information related to grievances, complaints and feedback related to the project/sub-project will be documented upon receipt/communication at each level of the GRM, and will be classified and prioritized in order to manage the grievance redress process more effectively. Feedback/complaints regarding environmental or social issues related to the construction of the sub-stations will be referred to the GRM established for the project. Annex 7 depicts an example of the types of information that is to be compiled, tracked and reported in a GRM log.

Step 3 - Acknowledgement and Follow-Up: The complainant will be informed within seven days of receiving complaint/feedback, by the GRM about the time-frame and the likely course of action. At the 30-day mark, if a complaint/question is still pending, the GFP in charge of the complaint at that point should provide an update about the status of complaint/question to the person who submitted it and provide an estimate of how long it will take to resolve the grievance or respond to the query.

Step 4 - Verification, Investigation & Action: Verification and investigation involves gathering information about the grievance to determine its validity and to generate a clear picture of the circumstances surrounding the issue under consideration. This process normally includes site visits, document reviews, a meeting with the complainant (if known and willing to engage) and meetings with individuals and/or entities who can assist with resolving the issue. Potential actions include responding to a query or comment, providing users with a status update, imposing sanctions, or referring the grievance to another level of the system for further action.

Step 5 - Monitoring & Evaluation: Monitoring refers to the process of tracking grievances and assessing the extent to which progress is being made to resolve them. Ultimately, the PIU will be responsible for consolidating, monitoring and reporting on the total number of complaints, enquiries and other feedback for the project that has been received, resolved and that is pending at the village and district levels, as well as feedback pertaining to the PMI. Information compiled will be essential for reporting on progress on grievance indicators included in annual reporting to the World Bank.

Step 6 - Providing Feedback: This step entails informing GRM users and the public at large about the results of investigations and the actions taken. GFPs will provide feedback by contacting the complainant directly within a 45-day period of receiving the feedback/complaint. The PIU will make quarterly reports available to the World Bank team on the implementation of the Project GRM. In addition, data on grievances and/or original grievance logs will be made available to World Bank missions on request.

9.2 COMPOSITION OF GRC

It is suggested to have two levels of grievance redress mechanism for the project, viz. Grievance Redress Cell (GRC) at the project level and another at Head Office (HO) level. The aim of having two levels of grievance redress mechanism is to provide a higher forum to the aggrieved party, if the same is not satisfied with the decision of GRC.

The GRC will be formed with members at the sub-station level while the Head Office GRC will have members drawn from EPGE, Nay Pyi Taw and MOEE. The GRC will have officials from the sub-stations, local representative of nearby residential areas, local political leaders, etc. The Cell at sub-stations and HO will essentially have women members also to deal with cases related to gender-related violence.

The normal route to be followed for any grievance shall be GRC, and in case not satisfied then to HO GRC; however, the grievances can be directly taken to HO GRC too. The HO GRC shall be empowered to take a decision which is binding on MPCL and considered final. However, the decision of HO GRC is not binding on aggrieved person; he or she can take the legal course if not satisfied with the outcome of GRC decision.

CHAPTER 10

Consultation and Disclosure

10. Consultation and Disclosure

10.1 CONSULTATION PROCESS

It is a basic requirement of the World Bank OP 4.01 (Environmental Assessment) to have adequate consultation and participation from the stakeholders, records of which will need to be part of the EA documentation. The objectives of consultation are to:

- ensure that people are made aware of a project and have the opportunity to comment on it,
- improve responsiveness, accountability and transparency on the part of project management,
- promote better decision-making, and
- increase cooperation of community and government partners during project implementation and local ownership after handover.

Identification of Stakeholders: As a first step, stakeholders need to be identified. Stakeholders are classified into two categories: (i) Direct stakeholders who are directly affected by the project, i.e. different groups within communities, especially vulnerable groups including women and landless through land acquisition, displacement, loss of livelihood, etc, and (ii) Indirect stakeholders who have an interest in the project, or who could influence its outcome, e.g. national and local government agencies, donors and NGOs.

For the proposed sub-projects, there will be no land acquisition or issues related to displacement. All future activities will be restricted within the existing premises of the sub-stations. Further, it was found that there are no settlements within 1-km of the sub-stations, which were studied. All the adjacent lands are either agricultural or fallow lands. Thus there are no direct stakeholders for this component of the project.

Following stakeholder identification, participatory methods such as focus group discussions and semi-structured interviews will be used to conduct meetings with representatives from each group both to inform the development of safeguards instruments and to consult stakeholders through the lifetime of the project. A written record of main points discussed in all meetings must be made and filed for easy retrieval. Meetings will be arranged at times to ensure the maximum participation of stakeholders. Separate meetings will also be organized with women groups.

Consultation with indirect stakeholders may be conducted in parallel to those with communities. These will include meetings with representatives from relevant line government departments and

agencies etc. Meetings will also be held with NGOs working in sub-project localities to inform them about the project and explore opportunities for cooperation to lever the impact of the sub-project activities.

10.2 CONSULTATIONS CONDUCTED

10.2.1 Consultation with Government Officials

Meetings were organized with EPGE and DPTSC officials on 25th January 2019 to discuss about the Component B of the project and disclose to them the Draft ESMF Report. About 9 officials attended the meeting. The report was circulated to them before-hand to get their comments. The main issues that emerged from the consultation are as follows:

- All the sub-projects will be implemented in existing sub-stations and thus there are no issues of land acquisition or involuntary displacement. All the sub-stations have enough space for expansion.
- The transformers being of high capacity are not manufactured in Myanmar and thus have to be imported. Thus all transportations will be by road in trailers either from the port at Yangon or from Mandalay.
- No issues related to transportation was envisaged as the sub-stations are located on main roads
- The participants were informed about the risk of the transformer oils of the old machines containing PCBs as they were not aware of the means of its handling or disposal. They agreed to consult with ECD regarding this issue. Presently there are no statutory provisions for handling or disposal of hazardous materials.
- It was told by the DPTSC officials that here are no asbestos based materials in the machines to be replaced as part of the project.

10.2.2 Consultation with Sub-station Officials

Consultation was organized with the employees at the sub-stations of Taungoo, Tharyargone and Belin. The ESMF report and its objectives were initially discussed with the participants as part of disclosure. The project features and the alternatives were discussed with the management. The various technological options and probable environment and social impacts were discussed with them as part of the consultation process. As the proposed expansion is proposed to be done within existing sub-stations, and no additional land is required, the impact outside the sub-stations is anticipated to be negligible. Thus consultation was only organized with the employees. The time and schedule of the meetings are given below.

Table 10.1: Consultation Dates

SI No	Place	Date	No. of Participants
1	Taungoo Sub Station	28.1.19	11
2	Tharyargone Sub Station	29.1.19	9
3	Belin Sub Station	30.1.19	12



Figure 10.1: Consultation with Employees of DPTSC

The issues that emerged during the sessions include

- The sub-station employees were of the opinion that there would be no problem of installation of new transformers in terms of logistics and space, even for installation of new switch bays.
- The concern of the staff was the transportation of 100MVA transformers to the site. They said that there will have to be minor modifications done to the approach road and the entrance of the station for easy manoeuvrability of the over-sized vehicles carrying the transformers. The main entrance of most of the sub-stations is to the administration block and control room and the switch-yards are beyond the buildings. However, no land from outside the sub-station will be taken for this purpose.
- The staff were well aware of the risk related to transformer oils and that they contain hazardous materials, although they were not specifically aware of PCBs. It was told to them how to handle the transformer oils during de-commissioning of the old transformers and ways of storing the drums containing transformer oil.
- It was informed that the present staff did not have any knowledge about presence of asbestos in the equipment as the machines were installed long back.
- It was told that there will be no issues of disposal of transformer oils, as they will be re-cycled and sent along with the transformers to their new installation place.
- They were of the opinion that they should be provided with better fire-fighting equipment after refurbishment of the sub-station.
- They felt that there will be no impact of the construction on the local population as the settlements nearby were all occupied by employees of the sub-station.

10.2.3 Informal Discussions with Community

During the study, informal discussions were held with the residents near to the sub-project sites. As there are no direct stakeholders involved in this component, formal consultation was not required. These informal interactions were held from 28th to 30th January 2019 at the major sub-stations to be refurbished at Taungoo, Tharyargone and Belin. The locations of the consultation were at the nearest settlement to the project sites. The locations were so selected so that they are nearest to the project sites and also on the transport route of the machineries to be installed. The details are provided below in Table 10.2.

Table 10.2: Locations for Informal Discussions with Locals

SI No	Location	Date	Type of Participants	No. of Participants
1	Ooindaw Village	28.1.19	Farmers, women, youth	14
2	Tharyarkone Village	29.1.19	Farmers, women	12
3	Belin Village	30.1.19	Workers, residents	15

The issues raised are summarized as follows:

- There was concern related to air and noise pollution during construction activities. The participants at Belin village were particularly concerned about air pollution as they said they are already experiencing lots of hardship due to construction of industries in the area. They were of the opinion that plants are also dying due to dust in the area.
- The people were of the perception that there will be disturbance due to excessive traffic on the roads during construction. It was again the people of Belin who were more perceptive about the problem of traffic as they said they suffered due to blockage of their village roads due to movement of heavy vehicles.
- The people were also concerned about lands being acquired due to the new constructions. They said they had no information regarding the new project and most of the people were hearing about it for the first time.

The clarifications provided by the proponent are as follows:

Table 10.3: Response of Project Owners

SI No	Issues	Response of Project Owner
1	Hindrance of traffic due to movement of heavy construction materials	It was informed the all the major movements near to the project site will be made during night, thus keeping traffic congestion to the minimum. Also the main arterial roads have enough capacity to

SI No	Issues	Response of Project Owner
		handle the traffic without causing any problems to traffic movements.
2	Concern raised regarding air and water pollution during construction stage	The mitigation measures presented in the ESMF document will be implemented. The mitigation measures will be incorporated in the tender documents that the contractor must comply and the contractor shall submit an organizational chart of the construction site, construction methods and mitigation measures for investors to approve the bidding results.
3	Land Acquisition	It was assured that no additional land will be acquired for any of the sub-projects. It was also told that all development in the projects will be communicated to the people.

10.3 CONSULTATIONS TO BE CARRIED DURING PROJECT IMPLEMENTATION

At least before the beginning of construction works for the sub-projects, additional consultations will be carried out with project-affected communities. Those consultations will be carried out by the contractors under the supervision of the Implementing Agency. All the consultation activities must be properly documented.

The purposes of the consultation activities during the implementation of the subprojects will introduce the proposed project to stakeholders, inform them as it develops, and identify their views and concerns.

The consultation activities will aim to:

- Identify problems, concerns and needs
- Inform stakeholders about the project
- Obtain feedback
- Learn from local knowledge and understanding
- Evaluate alternatives

- Promote ownership and enhance social acceptability
- Avoid or resolve conflicts
- Demonstrate commitment of the project proponent in addressing issues raised during consultations

The consultation process will involve, but will not be limited to:

- Formal meetings with government authorities, institutions, individuals, specialists and any NGOs identified.
- Meetings with community representatives

10.3.1 Consultation with communities on the Communities Participation Planning Framework

A consultation meeting was carried out on the project's Communities Participation Planning Framework (CPPF) at the Royal Center, Room 221 Pyae Road Yangon on 28th January 2020. The two objectives of consultation workshop were:

- Present and discuss the project (Power System Energy Efficiency Improvement Project), and Component B (Improving Reliability of Transmission Infrastructure) to relevant Ethnic CSO/NGO, and
- Present, discuss and meaningfully consult the Component B's Communities Participation Planning Framework

Below is a summary of the organization of the consultation, a transcript of the question's answers, and comments, and the key recommendations from the meeting.

Planning

- Sending the invitation letter two weeks in advance of the consultation meeting;
- Organizing meaning consultation with relevant Ethnic CSO/NGO. Some of them came from different states and regions of the country;
- Presenting the project description and project's ESMF;
- Using an interactive method;
- Reporting the discussion points.

Meeting Attendance

A total of 28 participants from CSO / NGO attended, including 12 women, making up 43% of female participation. Women also participated in discussions. The participant's list is shown in Table (1). Seven officials from DTPSC attended.

Table (1) Participants' Attendance list

No	Name	M/F	Organization
1	Daw Aye San	F	Mittamon /Myanmar Consortium for Disaster Risk Reduction MCDRR
2	Daw San Yin Tint	F	Compass Community Development Organization/Myanmar Consortium for Disaster Risk Reduction MCDRR
3	Daw War War Lin Htun	F	Friendly Child
4	U San Hla	M	Myanmar Professional Social Workers Association(MPSWA)
5	U Maung Maung Oo	M	Sein Young So-Activities Mandalay
6	U Maung Maung Lwin	M	Sein Young So-Activities Mandalay
7	Daw Thida San	F	United Women
8	Daw Sandi So Oo	F	United Women
9	U Saw Junip	M	Kayin CSO Network
10	U Man Than Zaw Lin /Man Thein Zaw	M	Kayin CSO Network
11	U Cin Khen Pau	M	Agency for Basic Community Development (ABC)
12	U Aung Din	M	MEET
13	U San Htay	M	Mon CSO network
14	U Kaung Myat Thu	M	Mon CSO network
15	U Than Win	M	Green Ramar Development Association
16	Daw J Dau Nan.	F	Young Chi Thit
17	Daw Nang Keing Ngin	F	Women Economic Development Association of South Shan State (WEDESS)
18	Daw Myo Wint Wint Han	F	Women Economic Development Association of South Shan State (WEDESS)
19	U Aung Myint	M	Renewable Energy Association Myanmar (REAM)

20	Daw Sane Sane	F	Renewable Energy Association Myanmar (REAM)
21	U Pyae Phyo Hein	M	CDA
22	Daw Khin Khin Swe	F	Yadanar
23	Daw Soe Soe Oo	F	Action for Dignity Development (ADD)
24	Leon Aung THEIK	M	THIKE Law Firm
25	U Naing Lin Oo	M	GOLD Myanmar
26	U Nyi (Bawdwin)	M	Green Network
27	Daw Pyae Pyae Thant	F	HBS
28	U Aung Min	M	MNGO Coordination

Discussion points of Consultation Meeting

Abbreviation: Q – question, A - Answer, C- comment

Q: Will this framework focus on 66 kV or higher voltages?

A: Since this project is focusing on already existing systems, more likely 230kV or 130kV lines will be involved.

Q: Will this project focus on building new stations or improving the existing stations?

A: The plan is to improve the existing stations, and it does not involve establishing new power stations.

Q: Shan government just established a set of laws, and one of them promotes the generation of renewable energy. It allows producers to sell the power from renewable sources to the National grid. I would like to understand the specification or requirements for this.

A: This is out of scope from this discussion. The regional law is supposed to set in line with the national law.

Q: I would like to highlight this example: in Magway a grid was constructed. However, I was informed that the network needed to wait for additional two years to be operational.

A: We would need to know the exact reason behind this. This project is not linked to that project.

Q: In the future, would you encourage and allow self-develop/community electricity provider (possibly with solar or renewable energy)? Eg. Shan State Parliament has approved the Electricity Law, which would enable local businesses to produce Renewable Energy, which would be allowed to be sold in connection with the Government's power grid since Similar laws could be drafted in other states and regions as well, whether MOEE has plan for any preparations to comply with the Electricity Law of States and regions.

A: This will depend on different ministries and regional authorities. However, from our side, we do promote and encourage solar power generation.

Q: It is pleased to thank you for conducting public consultations with CSO/NGO for this project funded by the World Bank. Instead of having these consultation sessions as a requirement from World Bank guidelines, the Government needs to do this sort of consultations for other projects as well. It is suggested that not to translate "Timeyintha Lu Myo Su Nge" for " Ethnic People". This translation makes the ethnic people feel unpleasant. It is better to translate as "Timeyintha Lu Myo Su".

The concerned state and region authorities should take steps to change the laws in consultation with relevant ethnic groups, NGO and CSO.

A: The Ministry also does consultation sessions for their own projects. For this one, we followed the World Bank's guidelines.

Q: Different organizations are using different guidelines. It is better to have a National Guideline that can be applied for any projects, rather than having different types of guidelines such as ADB, World Bank, AFD's Guideline, etc. Instead of using different guidelines, won't it be easier and better to use one specific guideline for your department?

A: When we are using the government budget, then we will use our own guidelines. However, if we are working with our development partners, then we are also using the partner's guidelines. No matter what guidelines we are using, the objective is to carry out the plan that was laid out by the national Government.

Q: The guidelines set out are very good, but they are not followed correctly. Due to the lack of accountability and transparency, there are many problems during project implementation. Each region and state have its own policy framework. It is understandable that investments should focus on long-term development. We agree that this project is necessary for the country, but one concern is that the implementing departments and funded agencies like World Bank and ADB are not doing too well when applying their guidelines in practice, especially on resettlement (the participant present a case of an ADB-funded project).

A: It is explained that if there is land acquisition in this project, it will follow the Safeguard policy of the World Bank for compensation. However, this project is not expecting to involve any resettlement as its focus is on improving the current electrical systems. Though, all the facts will be taken into consideration for future projects.

Q: It is suggested, on behalf of Karen CSO Network, that when state government implement development projects in Kayin state, it is important to take into account the peace process .

A: Agree that the peace process will need to be considered in projects where project locations are in a conflict area.

Q: Since this is a loan, this is directly concerning all the citizens. No matter who carries out the plan or who gives the loan, this project concerns all the citizens since the country will have to pay back the loan. Also, this involves two parts: generation and distribution. How the project's activities on production and distribution will overlap?

A: This project will be \$ 240 million for upgrading the Ywarma plant and \$ 60 million for upgrading the distribution facility. Although the Government is aware of the difficulties of implementing loan projects, the state and regional governments are engaged to work together with the meaningful participation of beneficiaries at the local level.

Q: Regarding the electricity efficiency, REAM and other experienced people discussed with relevant departments several times. Moreover, Rangoon Electrical Department has also been advised many times what to do to improve electricity efficiency. In Yangon, underground power transmission pipelines are reliable for 15 years, but they remain in use for nearly 60 years. Maintenance and improvements in power transmission networks is important to improve power efficiency.

Myanmar have its own law on EIA, and it states that public participation is needed when implementing development projects. What is it going to be done to ensure public participation for this project?

A: At the community consultations, the project description needs to be clearly explained to the public, and the assessments must be able to understand the main social issues at community level. In Myanmar, Nationally Determined Contributions (NDCs) are being implemented. This project reduces carbon emissions, so it also needs to be linked with the existing NDCs. Although the Government and the people are aware of the difficulties to implement a loan project, the state and regional Government have agreed to work together consulting meaningfully the people at local level.

C: Many women work are business owners; thus, in places like Shan State, power shortages cause troubles to their business, including the production of tea leaf value-added products, hotels, and so on. Thus, this project will have advantages that would improve businesses in Shan State.

Q: As this project is very beneficial to the country's development, it is appreciated. Will the electricity bill increase again because of all these plans and loans? If there is a plan to increase the unit cost, the public's economic situation will be worsened.

A: This project is not expected to increase the electricity bill.

Q: We need to build trust. The Government doesn't trust the public, and the public doesn't trust the Government either. For trust building, you need to have maximum participation, maximum transparency. The public should be allowed to check the meters regarding the collecting meter bills.

A: We tried to reach out as many people as possible.

Q: There are two types of efficiency: technical efficiency and administrative efficiency. Corruption also includes ignoring to read the meter of some houses or cheating (no paying the electricity bill). Please, don't charge more to the user who is already paying their electricity bills.

A: Technical efficiency needs to be improved as much as possible. We need to reduce electricity losses as much as possible, especially the line losses. There is a Government plan to distribute a standardized electricity bill for all the users. This will help to improve administrative efficiency.

Q: For the Grievance Mechanism: Who will receipt the complaints? Who will handle the cases? Will the Government or World Bank be handling the complaints?

A: The project's Grievance Mechanism will be available at the project sites. Depending on each case, the Government (technical or political) or World Bank will handle it.

Q: When developing site-specific Plans: Who will report and take into consideration all the discussed points? Sometimes regional authorities abuse their authority, and they do not inform the public. Often, they only inform the public something positive happens. The GRM was not organized as discussed by local and civil society organizations but was organized with the people of the Union Government concerned. The current GRM systems in projects are not considering the problems of the bottom population; thus, this system is not effective at the township level. It is questionable how CSOs should be involved in project implementation without transparency and accountability. Before project preparation, a survey should be undertaken carefully by consultants who understand the local situation. When designing a project, all contextual aspects at the local level need to be taken into account.

A: The Government is going to do it, and the World Bank will have to monitor compliance. When subprojects are decided, all aspects relevant to the social and environmental context need to be considered. Before project preparation, an assessment will need to be carried out carefully, considering the specifics of each local situation. If there is not a good understanding of the local matters, then there are going to be problems when implementing the projects.

C: During the scouting or surveying for the potential project sites, please gather local insights as much as possible and form a committee with local CSOs.

Q: How will this project benefit the rural population?

A: Since the generation and distribution will be improved, it will also benefit the rural population. Improving, maintaining, and upgrading the existing electric system is the main goal of this project.

Q: Improve the national grid is very important. I want to request MOEE to apply a holistic approach to the national grid line and to be transparent with the public. Sometimes locals have no idea why or what has been carrying out in their region because of communication breakdown. Especially in conflict areas, project activities need to be transparent with residents.

A: Thanks for the suggestion which will be reported.

Figure 10.2 Documented photos of the CPPF consultations





Founder and Executive of Central Committee of Renewable Energy Association Myanmar (REAM) discussed




Participant of Kayin CSO Network discussed



Participant of Kayin CSO Network discussed



Participant of Myanmar Green Network discussed

	
Program Coordinator of HEINRICH BOLL STIFTUNG (HBS) discussed	Participant of Mon CSO Network discussed

Findings and Suggestions

- Participants agreed with the proposed project, component and the Communities Participation Planning Framework;
- Participants showed high levels of interest, and they discussed very actively;
- They appreciated the opportunity to have such a discussion;
- They were able to consider not only technical but also management aspects;
- They suggested to amend the translation of the term "Ethnic people" to Myanmar language;
- They discussed potential challenges of project implementation on the ground;
- They suggested how to overcome the challenges, especially engaging Ethnic groups: improving transparency and communication with the local stakeholders, getting a good knowledge of the subproject's local context, and considering sensitive areas like the ones under conflict.

Power System Efficiency and Reliability Project
**Component B: Improving Resilience and Capacity of the Power
Network**

ANNEX

Annex-1: Eligibility Screening Format		
Sub-project Name	:	
Sub-project Location (e.g. region, district, etc.)	:	
Type of activity (e.g. new construction, expansion, rehabilitation, periodic maintenance, any other)	:	
Is there requirement of additional land for the project	:	
Scope of Activity: (e.g. Building, road/ bridge/ jetty, water supply, electrification, irrigation, Sanitation)	:	
Brief Description of Activity	:	The type of activities including technical details, resource requirements, probable impacts, mitigation measures will be briefly provided
Sub-project Owner and Address	:	
<p>Environmental Category of the Main Project (e.g., A, B or C):</p> <p>Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works.</p> <p>Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas--including wetlands, forests, grasslands, and other natural habitats--are less adverse than those of Category A projects. These impacts are site-specific; few if any of them are irreversible; and in most cases mitigatory measures can be designed more readily than for Category A projects.</p> <p>Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts.</p> <p>The present sub-project will be a 'B' category project as potential impacts will be less adverse & more limited as compared to 'A' category projects. Further the impacts will be site-specific and likely reversible. The mitigation measures can be more easily designed/implemented than a 'A' Category project</p>		
<p>Note:</p> <p>The following sub-projects will not be eligible for funding under the project.</p> <ul style="list-style-type: none"> • The subproject that involve the significant conversion or degradation of critical natural habitats. • The sub-project that would involve significant conversion or degradation of critical forest areas. • The sub-project that contravenes applicable international environmental agreements. • The sub-project that would be located in a physical cultural resources site recognized at the national or provincial level. • The sub-project that would trigger OP 4.10 on Indigenous Peoples because it is located in an area where ethnic communities that would fulfil the criteria for indigenous peoples have collective attachment to land. 		
<p>(Please note that the owner of the sub-project is expected to comply with all national legislation and standards and with obligations (standards, restrictions or similar) of the country under international conventions, treaties, agreements and protocols.)</p>		

Annex-2: Environment Screening Format

Sub-project Name :
 Sub-project Location (e.g. region, district, etc.) :
 Type of activity (e.g. new construction, expansion, rehabilitation, periodic maintenance, any other) :
 Scope of Activity: (e.g. Building, road/bridge/jetty, water supply, electrification, irrigation, Sanitation) :
 Brief Description of Activity :
 Sub-project Owner and Address :

Environmental Category of the Main Project (e.g., A or B)

Screening list is prepared for all subprojects. If any subproject falls under Category A, it is not eligible for financing.

Environment Screening Checklist

Checklist Questions	Yes	No	Remarks
Natural or Critically Natural Habitat			
Is there any vegetation/trees in/adjacent to the sub-project area?			Indicate location and type of natural habitat and the kind of impacts that could occur, e.g, loss of habitat and how much, loss of eco-system services, effects on the quality of the habitat. State why these impacts are or are not significant.
Is there any vegetation/trees that might need to be cleared?			
Is the project located in any critical natural habitat?			
Are there any environmentally sensitive areas or threatened species (specify below) that could be adversely affected by the sub-project? <ul style="list-style-type: none"> • Natural forests: • National parks: • Rivers: • Lakes: • Wet-lands (swamps, polder areas, seasonally inundated areas): • Natural habitats of endangered species for which protection is 			Indicate location and type of critical natural habitat and state why they are or are not significant List out flora, fauna that are classified as rare, vulnerable, migratory, or endangered species as per World Conservation Union [IUCN] classifications.

Checklist Questions	Yes	No	Remarks
required under Myanmar laws and/or international agreements: <ul style="list-style-type: none"> Others (specify): 			
Physical Cultural Resources			
Does the sub-project have the potential to cause significant adverse impacts to physical cultural resources? <ul style="list-style-type: none"> Site of archaeological importance Any UNESCO heritage site Site of architectural importance Site of religious importance Site of paleontological importance Site of cultural significance Important tourist site 			Describe location and type of cultural resources and the kind of impacts that could occur. State the level of protection. Are any of these sites considered important to preserve in situ, and not be removed from their current location? State why impacts are or are not significant.
Ethnic Groups			
Are ethnic minorities (following WB's definition under OP 4.10) present nearby the project area?			Describe the type and extent of impacts and the significance of alterations to the resources of the affected minorities. Note: If there is presence of Ethnic Peoples in the project areas, then the project's Community Participation Planning Framework will need to be applied
Does the sub-project have the potential to cause significant adverse impacts on the lands and related natural resources used by ethnic minorities?			
Will the project affect livelihood of ethnic groups who are dependent on natural resources and forest produce?			
Will there be risk of impact on the cultural and spiritual values/practices of the ethnic minorities attributed to such lands which may be affected by the project?			
Physical Displacement			
Does the sub-project have the potential to cause significant adverse effects to populations subject to physical displacement?			Indicate the numbers of households affected and the resources that will be difficult to replace in order to achieve livelihood restoration. Note: If there is displacement, a Resettlement Action Plan will need to be prepared in accordance with the Resettlement Policy Framework.
Will the people losing livelihood have to change the occupation or the same will be restored?			
Will there be permanent loss of livelihood?			
Environment Damage			

Checklist Questions	Yes	No	Remarks
Will the sub-project affect drinking water sources and their catchment areas?			Name the water bodies affected and describe magnitude of impacts.
Is there any permanent and high severity damage to environment due to sub-project over a large geographical area?			Describe any impacts considered to be permanent, affecting a large geographic area (define) and high intensity impacts.
Will the sub-project have risk to pollute ground/surface water or air quality?			Name the sources of pollution and the impact on receptors
Will there be any use or disposal of hazardous materials in the sub-project and is there any risk of environmental pollution from them?			Give list of hazardous materials and the intensity of impact
Broad Diversity of Significant Adverse Impacts			
Will multiple sites in different locations be affected, each of which could cause significant losses of habitat, resources, land or deterioration of the quality of resources.			Identify and describe all affected Locations along with impact
Are the potential, significant adverse impacts likely to extend beyond the sites or facilities for the physical works?			Identify and describe the types of impacts extending beyond the sites or facilities of the physical works.
Is there need for new access roads, tunnels, canals, power transmission corridors, pipelines, or borrow and disposal areas in currently undeveloped areas.			Describe all activities that are new that are required for the main activity to function.
Is the project highly contentious and likely to attract the attention of NGOs or civil society nationally or internationally			
Considered risky or likely to have highly controversial aspects.			Describe perceived risks and controversial aspects
Likely to lead to protests or people wanting to demonstrate or prevent its construction.			Describe the reasons that sub-project is resisted by people

If the answer is yes to any of the above screening questions, the sub-project is likely to be considered a Category A and an EIA meeting World Bank standards, including an EMP, will be required. The PMB is advised to discuss the results of this screening with the TTL, before starting environmental and social studies of the sub-project. There are some differences in the Bank and the government requirements

for a Bank category A project in terms of preparation of TORs, consultation, content and structures of the EIA report. Two separate EIAs to satisfy the Bank and the government requirements will be needed.

NB: If the main project has not been categorized as a Category A, then any sub-project where the answer is yes to the screening questions cannot be done.

Annex-3: Social Screening

Social Screening will be done in case there will be displacement of people due to the sub-projects

SI No	Activities	Yes	No	Remarks
1	Does the sub- project require land acquisition?		√	If "Yes", and answers other questions "No", provide relevant documents, available for the final sales transaction
2	Will the sub-project involve relocation of home-owners, renters, formal and informal assets user		√	If there is displacement, a Resettlement Action Plan will need to be prepared in accordance with World Bank OP 4.12.
3	Acquisition of assets, which will cause the loss of access of people or a particular community/ groups, especially ethnic minorities to: <ul style="list-style-type: none"> • Natural resources • Traditional habitat • Traditional activities • Communal utilities 		√	If yes, the sub-project will not be eligible for financing
4	Will there be permanent or temporary loss of shelter and residential land due to land acquisition?		√	If there is displacement, a Resettlement Action Plan will need to be prepared in accordance with World Bank OP 4.12.
6	Will there be permanent or temporary loss of agricultural and other productive assets due to land acquisition?		√	If yes, details of quantum of loss of livelihood due to loss of production.
7	Will there be losses of crops, trees, and fixed assets due to land acquisition?		√	If yes, details of trees to be cut to be provided in RAP
8	Will there be permanent or temporary loss of businesses or enterprises due to land acquisition?		√	If yes, details to be provided in RAP

SI No	Activities	Yes	No	Remarks
9	Will there be permanent or temporary loss of income sources and means of livelihoods due to land acquisition?		√	If yes, details to be provided in RAP
10	Will the project involve any permanent or temporary restrictions in land use or access to legally designated parks or protected areas and cause people or any community to lose access to natural resources, traditional habitats, communal land, or communal facilities?		√	

Annex-4: Scope for ESMP Preparation

1. Executive summary

2. Introduction

Brief and concise information on

- The ESMP context: describe how the ESMP fits into the overall planning process of the project, listing project/sub-project environmental studies such as EIAs/IEEs, approval documentation.
- The ESMP's connection with the ESMF (if relevant) and the Project
- The objectives of the ESMP: describe what the ESMP is trying to achieve. The objective should be project specific, not broad policy statements. The project-specific ESMP shall form part of the project contract specifications.

3. Policy, Legal and Administrative Framework

- Myanmar's environmental, social and safety regulations: provide brief description of Republic of the Union of Myanmar's regulations related to EIA and technical regulations and standards applied to the sub-project.
- WB's safeguard policy – list of WB safeguard policies triggered.

4. Project Description

Project/sub-project objective and description should be provided in enough details to define the nature and scope of the project. These include:

- Project location: site location should be described with location of the activities provided including location maps showing location in the project area as well as details at the subproject level.
- Construction/operation activities: the description may include a brief description of construction and operation processes; working or operating hours, including details of any activities required to be undertaken outside the hours; employment numbers and type; the plant and equipment to be used; the location and site facilities and worker camps; bill of quantities for civil works.
- Timing and scheduling: anticipated commencement and completion dates should be indicated. If the project is to be completed in stages then separate dates for each stage should be provided.

4. Baseline Data

Baseline section should provide key information on the environmental background of the subproject as well as its connection with the project area, including maps. Focus should be given to provide clear data on topography, major land use and water uses, soil types, flow of water, and water quality/pollution. Brief description on socioeconomic condition and EM (if relevant) should also be provided. Photos showing existing conditions of project sites should be included.

5. Potential Impacts and Mitigation Measures

This section summarizes the predicted positive and negative impacts associated with the proposed project/sub-project, particularly those presenting impacts of medium to high significance. A summary should be provided of the predicted positive and negative impacts associated with the proposed project that require management actions (i.e. mitigation of negative impacts or enhancement of positive impacts).

The impacts should be described for pre-construction, construction, and operation phases. While commonly-known social and environmental impacts and risks of construction activities can be addressed through Environmental Codes of Practices (ECOP), specific mitigation measures should also be proposed to address sub-project specific impacts predicted based on site-specific conditions and typology of investments. Some measures can be proposed for incorporation into engineering design to address potential impacts/risks and/or bring about added values of the works provided.

Mitigation measures should include communication program and grievance redress mechanism to address social impacts. This section will also include appropriate suggestions and address the issues and concerns raised by communities as recorded in the consultation.

Phase	Issues	Mitigation measures	Location of Mitigation Measures	Applicable Standards	Responsibility
Pre-construction					
Construction					
Operation					
De-commissioning					

6. Monitoring

Monitoring of ESMP implementation would encompass environmental compliance monitoring and environmental monitoring during project implementation. Environmental compliance monitoring includes a system for tracking environmental compliance of contractors such as checking the performance of contractors or government institutions against commitments expressed in formal documents, such as contract specifications or loan agreements.

The objectives of environmental monitoring are:

a) to measure the effectiveness of mitigating actions (e.g. if there is a mitigating action to control noise during construction, the monitoring plan should include noise measurements during construction);

b) To meet Borrower’s environmental requirement; and c) to respond to concerns which may arise during public consultation (e.g. noise, heat, odour, etc.), even if the monitoring is not associated with a real environmental issue (it would show good faith by the Borrower).

The monitoring program should clearly indicate the linkages between impacts identified in the EA report, indicators to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions, and so forth. The cost of environmental monitoring should be estimated and included in sub-project’s total investment costs.

The monitoring schedule will be structured as follows:

Phase	Aspect	Parameters	Frequency	Location	Equipment used	Cost (in USD)
Pre-Construction						
Construction						
Operation						
De-commission						

7. ESMP Implementation Arrangements

i) **Responsibility for ESMP implementation:** This section will describe how the implementing agency plans to assign responsibilities to assure proper flow and use of environmental information for efficient and effective environmental management. For a Bank financed project, the stakeholders involved in ESMP implementation and monitoring usually include the project implementing agency, DPTSC, construction contractors, independent environmental monitoring consultant (IEMC), local environmental management authorities, NGOs, and communities. Each player should be assigned with practical responsibilities. Good coordination among these actors ensures effective implementation of the ESMP.

(ii) **Incorporation of ESMP into technical design and bidding/ contractual document:** The bidding and contractual documents should include ESMP requirements documents to ensure that obligations are clearly communicated to contractors. The bidding documents might also include environmental criteria as part of the basis for selecting contractors. Contractors should also be

obliged to follow appropriate environmental, health, and safety standards to reduce associated risks during construction and operation.

(iii) **Environmental compliance framework:** During project implementation, the borrower reports on compliance with environmental commitments, the status of mitigative measures, and the findings of monitoring programs as specified in the project documents. The Bank bases supervision of the project's environmental aspects on the ESMP as set out in the legal agreements for the project. This subsection elaborates on the environmental duties of the contractor and its safety and environment officer, compliance with legal and contractual requirements, and environmental supervision during construction supervision, and a penalty framework.

(iv) **Reporting procedures:** Procedures to provide information on the progress and results of mitigation and monitoring measures should be clearly specified. As a minimum, the recipients of such information should include those with responsibility for ensuring timely implementation of mitigation measures, and for undertaking remedial actions in response to breaches of monitoring thresholds. In addition, the structure, content and timing of reporting to the Bank should be designed to facilitate supervision. Responsibility of different actors for reporting and the type of reports should also be clearly indicated.

8. Estimated Budget for ESMP Implementation

These should be specified for both the initial investment and recurring expenses for implementing all measures contained in the ESMP, integrated into the total project costs, and factored into loan negotiations. It is important to capture all costs - including administrative, training, environmental monitoring and supervision, costs for mitigation measures to be implemented by contractors, costs for additional environmental studies, and operational and maintenance costs.

9. Consultation and Disclosure

Consultation with affected people and NGOs should be integral to all Category A and B projects in order to understand the acceptability of proposed mitigation measures to affected groups. In some situations, the development of environmental awareness amongst stakeholders is important to ensuring effective consultation on the ESMP. Where projects involve land acquisition or resettlement, these issues should be fully addressed in resettlement action plan (RAP). It is remotely possible that land will be acquired in these sub-projects.

This section provides summary on consultation activities to stakeholders, particularly affected households, on the final draft ESMP at project/subproject level. This summary should indicate

the date and location where consultation meeting took place, the number of participants from affected households/the numbers of female and ethnic minority participants, and suggestions, concerns raised and responses. Locations and dates of ESMP to be disclosed should be provided.

A summary public consultation table should be documented as indicated below:

Sub-Project	Date, time and Location	Number of Participants	List of Local authority attended	Summary of Issues or concerns discussed/ raised	Action Plan

Annex-5: Resettlement Policy Framework

This Resettlement Policy Framework (RPF) has been prepared for Component B of the World Bank funded Power System Energy Efficiency Improvement Project. Since details of sub-projects will be 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 sub-projects funded by the Project would be addressed in line with the World Bank's policy on involuntary resettlement, OP 4.12. The RPF describes principles, processes and procedures for assessing potential impacts and preparing required safeguard plans, such as a Resettlement Action Plan (RAP) in line with OP 4.12.

Although the present projects are not expected to involve any involuntary resettlement, the RPF has been developed to ensure that in case of land donation or impact on settlements, negative impacts are avoided, minimized and properly managed. This RPF was developed based on the Environmental and Social Screening and Assessment Framework (ESSAF) which was developed when the original project was prepared, taking into account the experience gained during implementation of the original project.

1. Project Description

High voltage equipment and related low voltage equipment will be installed in existing sub-stations. Mainly, power transformers, current transformers, shunt capacitors and reactors, switch gears, and control and protection systems. In addition, the component will finance 'no-regret' measures to increase resilience of transmission system against natural disasters. These will include anchoring power transformers on the base foundation to reduce damages during earthquakes and procuring mobile substations to increase the response capability against natural disasters. Finally, capacity building through consultancy services to DPTSC on project-related activities will be implemented during project implementation.

10.4 PRIORITIZATION OF SUB-STATIONS

As it is important to ensure the security of supply, adequate power transfer capacity from generated power to loads, and improvement of quality, the project mainly focus on 230KV sub-stations which are the highest voltage in the transmission system. Targeted sub-stations will be selected based on their importance in:

- ensuring the system stability and security of supply; and
- improving the system capability to transfer generated power from power plants to customers.

Equipment will also be upgraded and expanded in sub-stations which supply large load centres and/or will supply areas where demand is expected to grow in the future, such as industrial zones, large residential areas, and electrification areas.

2. Scope of Project Impact

The Project is expected to have generally positive social benefits. It is expected that most sub-projects will not involve land acquisition or other impacts covered by OP 4.12 given their small scale and limited footprint. However, some sub-projects may require land acquisition or impacts assets such as trees. 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 sub-projects.

3. Objective of the Resettlement Policy Framework

This RPF aims to achieve the following objectives:

- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
- 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.
- 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.

4. Legal Framework

Significant social and environmental impacts are not anticipated from the sub-projects. However, if sub-projects require land acquisition and resettlement, these will be guided by safeguards documents that will take into account applicable national laws, including:

- Constitution of Myanmar (2008);
- Farmland Law (2012);
- Law Amending the Vacant, Fallow and Virgin Lands Management Law, 2018
- Land Acquisition Act (1894);
- National Land Use Policy (2016).

Constitution of Myanmar

- As 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 organizations 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.

Farmland Law 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.

LAW AMENDING THE Vacant, Fallow and Virgin Lands Management Law, 2018 : 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 utilized by willing individuals/organizations 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. The new law stipulates that the people using the lands categorized as vacant, fallow or virgin, will have to get registered to use these lands within 6 months from implementation of the law. Otherwise the land may be allotted to others for use. Lands under customary tenure is excluded from this law.

The Land Acquisition Act (1894): The Land Acquisition Act (1894) has provisions for land acquisition for public purposes. Section 6 states that *"that any particular land is needed for a public purpose, or for a company, a declaration shall be made to that effect"*. Section 23, sub-section 1 states that compensation will be determined by a number of factors including "the market value of the land at the date of the publication of the notification". Though vulnerable

groups are not specifically mentioned, Section 32 of the Constitution of Myanmar (2008) states that the Union will “*care for mothers and children, orphans, fallen Defense Services personnel’s children, the aged and the disabled*”. Section 356 of the Constitution of Myanmar (2008) further states that “*The Union shall protect according to law movable and immovable properties of every citizen that are lawfully acquired*”.

The Act provides principles, mechanisms, and procedures of expropriation, and defines fair and just compensation for the construction, rehabilitation, or expansion of public physical infrastructure that are deemed to be in the public and national interests. The Act also describes processes and procedures of resettlement induced by public physical infrastructure expansion projects.

The World Bank Involuntary Resettlement Policy (OP 4.12): This policy aims to achieve the following objectives:

- Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.
- 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.
- 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:

a) Involuntary taking of land resulting in

- relocation or loss of shelter;
- loss of assets or access to assets; or
- loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or

b) The involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

The policy applies to all components of the project that result in involuntary resettlement, regardless of the source of financing, and to other activities resulting in involuntary resettlement, that in the judgment of the Bank, are (a) directly and significantly related to the Bank-assisted project, (b) necessary to achieve its objectives as set forth in the project documents; and (c) carried out, or planned to be carried out, contemporaneously with the project.

If the policy is triggered, the borrower prepares a resettlement plan or a resettlement policy framework that covers the following: (a) The resettlement plan or resettlement policy framework

Gap Analysis between ROUM Provisions and OP 4.12: The Land Acquisition Act (1894) has some consistency with the main principles of the Bank’s *Involuntary Resettlement* (OP/BP 4.12) policy and the OP/BP 4.12 will be adopted by the Myanmar sub-projects for required land acquisition and resettlement. However, there are some gaps between the national regulatory framework and the Bank’s policy on Involuntary Resettlement (OP 4.12), which are given below.

Subjects	OP 4.12	Myanmar Law	Gap/Project Measures
1. Policy Objective – Livelihood Restoration			
Policy objectives / livelihood restoration	PAPs (Project Affected 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	EIA Procedures (2015) Section 102(b): The Project Proponent shall bear full legal and financial responsibility for: PAPs until they have achieved socio-economic stability at a level not lower than that in effect prior to the commencement of the Project, and shall support programs for livelihood restoration and resettlement in consultation with the PAPs, related government agencies, and organizations and other concerned persons for all adverse impacts.	The Project will ensure that in cases where there is land acquisition and resettlement compensation provided by communities will restore livelihoods of affected persons to pre-project level. Provisions of OP 4.12 will complement the Myanmar legal framework.
2. Eligibility – Land Tenure			
Support for affected households who have no recognizable legal right or claim to the land they are occupying	Compensation for the loss of structures and other assets on land, plus resettlement assistance to all project affected persons to achieve the policy objective (to improve their livelihoods and standards of living or at least to restore	National Land Use Policy (2016) Chapter 3, Section 16: In carrying out land information management: <ul style="list-style-type: none"> Legitimate land tenure rights recognized by the local community, including individual household, collective and communal, whether or not they have been registered, recorded and mapped, shall be recognized, protected, and 	Persons who have legitimate land tenure rights recognized by the local community will be entitled to (i) compensation for the loss of assets other than land and (ii) resettlement assistance (such as place to occupy, employment, and so on) to improve their

Subjects	OP 4.12	Myanmar Law	Gap/Project Measures
	<p>them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher)</p>	<p>registered in accordance with laws.</p> <ul style="list-style-type: none"> ▪ National Land Use Policy (2016) Part VIII, Section 66: When preparing and revising customary land use maps and records of ethnic nationalities, the responsible government departments and organizations shall do the following: <ul style="list-style-type: none"> ▪ Formally recognize and protect the customary land tenure rights and related local customary land management practices of ethnic groups, whether or not existing land use is registered, recorded or mapped. 	<p>livelihoods or at least to restore them to pre-displacement levels. These will be provided by the community and monitored under the CDD Project. Vulnerable PAPs may be eligible to receive special assistance.</p> <p>Provisions of OP 4.12 will complement the Myanmar legal framework.</p>
3. Compensation			
<p>Methods for determining compensation rates</p>	<p>Compensation for lost land and other assets should be paid at full replacement cost</p>	<p>Land Acquisition Act (1894), Section 23: In determining the amount of compensation to be awarded for land acquired under this Act, the Court shall take into consideration:</p> <ul style="list-style-type: none"> ▪ the market value of the land at the date of the publication of the notification under section 4, sub-section (1); ▪ the damage sustained by the person interested by reason of the taking of any standing crops or trees which may be on the land at the time of the Collector's taking possession thereof; ▪ the damage (if any) sustained by the person interested, at the time of the Collector's taking possession of the land, by reason of severing such land from his other land; ▪ the damage (if any) sustained by the person interested, at the time of the Collector's taking possession of the land, by reason of the acquisition 	<p>Community and the affected person will calculate the value of all types of assets affected in order to establish the compensation rate. The compensation for properties that can be replaced in the market will be equal to its market value plus transaction costs.</p> <p>Provisions of OP 4.12 will complement the Myanmar legal framework.</p>

Subjects	OP 4.12	Myanmar Law	Gap/Project Measures
		injuriously affecting his other property, moveable or immoveable, in any other manner, or his earnings	
4. Consultation & Disclosure			
Consultation and disclosure	Participation in planning and implementation, specially confirming the eligibility criteria for compensation and assistance, and access to Grievances Redress Mechanisms	<p>EIA Procedures (2015) Article 13: The Project Proponent shall:</p> <ul style="list-style-type: none"> a) arrange for appropriate public consultation through all phases of the IEE and EIA process as required by Articles 34, 50, and 61; and b) disclose to the public in a timely manner all relevant Project-related information in accordance with this Procedure except that which may relate to National Security concerns as informed by the Ministry. <p>EIA Procedures (2015) Article 34: The Project Proponent shall undertake the following public consultation process in regard to an IEE Type Project:</p> <ul style="list-style-type: none"> a) Immediately upon commencement of the IEE, disclose relevant information about the proposed Project to the public and civil society through the Project or Project Proponent's website(s) and local media, including by means of the prominent posting of legible sign boards at the Project site which are visible to the public, and comply with technical guidelines issued by the Ministry; and b) arrange the required complement of consultation meetings as advised by the Ministry, with local communities, potential PAPs, local authorities, community based organizations, and civil society, and provide appropriate and timely explanations in press conferences and media interviews. 	Extensive consultation and participation to be conducted at every stage of the project

Subjects	OP 4.12	Myanmar Law	Gap/Project Measures
5. Grievance Redress Mechanism			
Procedures for recording and processing grievances	Grievance redress mechanism should be under Government Officials Responsibilities for handling grievances with clear procedures for recording and processing grievances	<ul style="list-style-type: none"> Myanmar has taken actions recently to provide non-judicial grievance mechanisms to the public however it is of limited applicability 	<ul style="list-style-type: none"> Grievances from PAPs (in connection with the implementation of the RPF, as well as general project implementation) will be handled by an accessible and functioning existing grievance mechanism at the community, township, region/state and union level.
6. Monitoring & Evaluation			
Monitoring and evaluation	Internal and external monitoring are required	Not included.	The project management unit conducts internal monitoring on land acquisition and reporting requirements for the ESMP/ Resettlement implementation. The monitoring includes progress reports, status of land acquisition, information on location and numbers of people affected, compensation amounts paid by item, and assistance provided to PAPs. The report of monitoring results is prepared and submitted on a quarterly basis.

5. Institutional Arrangement

The first step will be clearance of the RAP by the World Bank, before any implementation starts on the ground. Responsibility for implementation of this RPF and for preparation and implementation of RAPs/ abbreviated RAPs for specific activities and sub-projects (including responsibility for meeting all associated costs) rests with the MOEE. As necessary, MOEE will exercise their authority to coordinate actions with any other agencies involved to ensure timely and effective implementation.

6. Voluntary Donation of Land

In some projects, communities may agree to voluntarily provide land in exchange for desired community benefits. The OP does not apply if people or communities make voluntary land donations in exchange for benefits or services related to the project. Land donations can be voluntary only if the infrastructure is not location specific. That is, a school or clinic can be sited in a different location if the landowner objects. But in case of location specific infrastructure, such as a dam or reservoir, voluntary donation is precluded, since objectors can be coerced into acceptance. Thus, if the location of the proposed infrastructure cannot be changed, OP 4.12 would generally apply. Further, arrangements for voluntary resettlement are expected to involve no physical displacement or significant adverse impacts on incomes (or they are expected to include community-devised mitigatory mechanisms acceptable to those affected). OP 4.12 defines "minor impacts" as loss of less than 10 percent of an individual's holdings. For voluntary donation, both spouses and all adult children must give their consent.

Because determining informed consent can be difficult, the following criteria are suggested as guidelines:

1. The infrastructure must not be site specific.
2. The impacts must be minor, that is, involve no more than 10 percent of the area of any holding and require no physical relocation.
3. The land required to meet technical project criteria must be identified by the affected community, not by line agencies or project authorities (nonetheless, technical authorities can help ensure that the land is appropriate for project purposes and that the project will produce no health or environmental safety hazards).
4. The land in question must be free of squatters, encroachers, or other claims or encumbrances.
5. Verification (for example, notarized or witnessed statements) of the voluntary nature of land donations must be obtained from each person donating land.
6. If any loss of income or physical displacement is envisaged, verification of voluntary acceptance of community-devised mitigatory measures must be obtained from those expected to be adversely affected.
7. If community services are to be provided under the project, land title must be vested in the community, or appropriate guarantees of public access to services must be given by the private titleholder.
8. Grievance mechanisms must be available.

Definitions

"Replacement cost" is defined as a method of valuation yielding compensation sufficient to replace assets, plus necessary transaction costs associated with asset replacement. Where functioning markets

exist, replacement cost is the market value as established through independent and competent real estate valuation, plus transaction costs. Where functioning markets do not exist, replacement cost may be determined through alternative means, such as calculation of output value for land or productive assets, or the undepreciated value of replacement material and labor for construction of structures or other fixed assets, plus transaction costs. In all instances where physical displacement results in loss of shelter, replacement cost must at least be sufficient to enable purchase or construction of housing that meets acceptable minimum community standards of quality and safety. The valuation method for determining replacement cost should be documented and included in relevant resettlement planning documents. Transaction costs include administrative charges, registration or title fees, reasonable moving expenses, and any similar costs imposed on affected persons. To ensure compensation at replacement cost, planned compensation rates may require updating in project areas where inflation is high or the period of time between calculation of compensation rates and delivery of compensation is extensive.

Cut-of Date is the date to establish eligibility

Process of VLD

District PMOs will oversee and ensure that the voluntary land donations (VLD) process is followed and appropriately implemented. Union PMOs will be responsible for monitoring the processes used by District PMOs.

The process of VLD will include the following protocols:

Step 1: Determining and documenting the appropriateness of VLD for the Sub-project In considering the relevance of VLD for the specific subproject, the District PMO will document:

- What the land will be used for;
- How much land the project will require on both a permanent and temporary basis;
- How much of the land will be donated;
- What alternatives to donation exist (e.g., right of use, right of way);
- The terms of the donation;
- The identities of the parties who intend to donate;
- The beneficiary of the donation; and
- Any other details that are relevant to why donation of land may be appropriate.

Step 2: Official Notification to Landowners regarding the Option for VLD If it is determined that VLD could be relevant for a subproject, the District PMO will provide:

In urban areas, the Township General Administration Department (GAD), Ward Administrator and landowners with official written notification of the proposed construction of electricity infrastructure within their area and the associated opportunity for voluntary donation of land.

In rural areas, the Township GAD, Village Tract Administrator, Village Head, and land-owners with official written notification of the proposed construction of electricity infrastructure within their area and the associated opportunity for voluntary donation of land.

Step 3: Briefing to Interested Landowners of the Process of VLD

In urban areas, if a landowner indicates to the Ward Administrator that he or she is interested in VLD, the District PMO should brief the landowner/villager in the presence of the Ward Administrator about the process of VLD and explain the VLD form that would be required to be completed and signed by the landowner/villager and his/her spouse, as relevant.

Similarly, in rural areas, if the landowner indicates to the Village Head or Village Tract Administrator that he or she is interested in VLD, the District PMO should brief the landowner/village in the presence of the Village Tract Administrator and Village Head about the process of VLD and explain the VLD form that would be required to be completed and signed by the landowner/villager and his/her spouse, as relevant.

Prior to briefing the interested landowner, the Ward Administrator and/or Village Head or Village Tract Administrator should confirm to the District PMO; that:

- The interested landholder/villager would not lose more than five per cent of his/her total productive assets.
- The total land holding of the affected person is 200m² or more.
- No physical relocation of the interested landowner/villager and/or his/her family would be necessary.

Step 4: Due Diligence Verification Process to Confirm Land Ownership and Use If the Interested Landowner and his/her spouse confirm that they would like to proceed with VLD, the next step is to verify the ownership and use of the land proposed to be donated. This verification process would include consultation with the local Settlement and Land Records Department (SLRD) and General Administration Department (GAD). The verification process should review available information and documentation regarding:

- The owner or owners of the land;
- The users of the land, or any parties that occupy the land (either physically or through ownership of an asset or conduct of livelihood or business activities on the land);
- Any competing claims of ownership or use;
- Structures and assets on the land;
- Trees or crops on the land;
- Any encumbrances on the land.

It is important to: (i) identify the right that is being transferred (an ownership right, a use right, a right of way, etc.); and (ii) check whether the transferee actually has the right s/he claims to have. In many circumstances where careful due diligence has not been carried out, significant conflict has arisen at a later stage when another party claims that they have the same or a competing right. In some circumstances – but not all – the transferee will have documentary evidence of such right. Where no such evidence exists, the due diligence can establish rights by speaking with local community officials and neighbours.

Step 5: Public Consultations and Disclosure

The decision to voluntarily donate land must be taken on the basis of a full understanding of the specific subproject and the consequences of agreeing to donate land. Accordingly, the parties that will be affected by the donation (the owners and users of the land, and the neighbours to the land as appropriate) must be provided with accurate and accessible information regarding what the land will be used for, for how long, and the impact the donation may have on them and their families. Prior written notification indicating the location and amount of land that is sought must be provided and its intended use must be disclosed.

Where the intention is to deprive the parties affected by the donation of the land permanently, or for a significant length of time, this must be made clear. It should be noted that in many communities the concept of alienation of land is uncommon and difficult to understand, and care needs to be taken to ensure that the implications of this are fully understood. It is also important to decide who else, within direct and extended families, should be consulted about the proposed donation of land in advance of it taking place; for example, older children.

Further to this, there should be a clear agreement as to which party/ies will pay the costs associated with the donated land. This could include measurement costs, documentation and notarial fees, transfer taxes, registration fees. It should also include the costs of re-measuring/re-titling the transferee's remaining land and any new documentation relating to it.

Step 6: Establishing Informed Consent

District PMOs in coordination with the village administration would verify the informed consent or power of choice by landholders who had selected to donate land. In particular, the following would be verified and documented in the voluntary land donation form:

- What the land is going to be used for, by whom and for how long;
- That the landowner donating the land would be deprived of the ownership or right to use the land, and what this really means;

- That the landowner has a right to refuse to donate the land;
- Whether there are alternatives to using the land;
- The process that would need to be followed to donate the land (e.g., execute documents, get spousal consents, pay taxes);
- The effect of the donation on the land donor's family, and what they can do if they (or their family or heirs) decide they want the land back.

The right to refuse must be a legitimate right, unconditional, and the potential transferee must be capable of exercising it in the local community and political context. For this reason, it is important to be sure that the decision to donate is undertaken without coercion, manipulation, or any form of pressure on the part of public or traditional authorities. For collective or communal land, donation must be based upon the informed consent of all individuals using or occupying the land.

Step 7: Preparation of Clear and Appropriate Documentation

While it is important to have evidence of an intention and agreement to donate land, it is equally important to ensure, where required and appropriate, that the land is legally transferred. While the process relating to the legal transfer of the land is frequently complicated and time consuming, it must be addressed. In specific circumstances, for example where the land is being transferred to the community, it may not be necessary to legally transfer the land. However, experience indicates that lack of formal transfer can create significant uncertainty in the future, which impacts on the sustainability of the infrastructure and services, and can have a negative effect on community relations.

Both the District and Union PMOs should maintain a record with documentation for each parcel of land donated. Such documentation must be available for World Bank review, and for review in relation to any grievances that may arise.

Step 8: Grievance Redress Arrangements

The project specifies the means by which donors (and, potentially, persons whose use or occupancy was not recognized in the transfer of land) may raise grievances, and measures to ensure consideration of, and timely response to, grievances raised. The grievance process includes participation of reviewers not directly affiliated with the District PMOs. The grievance process imposes no cost upon those raising grievances, and participation in the grievance process does not preclude pursuit of legal remedies under the laws of the country.

7. Principles and Procedures for Compensation

If affected people are unwilling to donate assets without compensation, or if a condition of voluntary donations mentioned above cannot be met, the Village Committee will, with the support of the CF, develop an abbreviated RAP. In an exceptional case where more than 200 people are affected by a sub-project, a full RAP will be developed. The following principles will apply for the land or asset loss against compensations:

- Land acquisition should be avoided or minimized if unavoidable, and should not result in persons losing their home or suffering any decline in income, livelihood, or living standards. No physical relocation of households is allowed under the project.
- No one should lose more than 10 percent of their productive assets as a result of subproject implementation. If, based on the survey conducted by Technical Facilitator (TF) with the participation of affected people find that more than 10 percent of productive assets would likely be affected, designs should be adjusted and/ or alternative locations be sought so that impact would be reduced to below 10 percent.
- Subprojects involving land acquisition based on eminent domain are on the list of non-eligible activities for community investments (negative list). Under the Project, only beneficiary communities themselves are able to acquire land or assets of other community members based on mutual agreements and consent on terms of compensation.
- Affected people are eligible for in-kind compensation that is sufficient to restore pre-project income streams. The Village Committee and affected households, under the guidance of the CF and the TF, will jointly assess the scale of impact and identify in-kind compensation that is at least sufficient to restore pre-project level livelihoods and income streams. In-kind compensation should be provided by beneficiary communities themselves from their own assets, or if communities have difficulties identifying sufficient assets that can be made available to affected people to fully restore their livelihood, the Village Committee will allocate resources from its own budget. Proceeds from the World Bank financing cannot be used for compensation.
 - Loss of agricultural land: replacement land of similar type, category and productive capacity, free from transaction costs, which is acceptable to the affected people; or full compensation at replacement value if land is not available.
 - Loss of residential land: replacement land of similar type, category and quality, free from transaction costs, which is acceptable to the affected people; or full compensation at replacement value if land is not available.
 - Loss of trees, structures and other private assets: cash or in-kind compensation at replacement cost. Salvage materials will be handed over to affected people.
 - Loss of income and standing crops: civil works will be adjusted to avoid loss of income/ standing crops.

- An abbreviated RAP and a full RAP will be prepared by VTPSC under the support of the Community Facilitator and Technical Facilitator (see below for the contents of the RAP).
- Community infrastructure, if affected by subproject, must be restored or replaced.
- Implementation of civil works will commence only after all entitlements are delivered to affected households.

8. Preparation of the Abbreviated Resettlement Action Plan (RAP)

If the safeguard screening finds that land acquisition or loss of private assets is unavoidable and if voluntary donation does not apply, the Village Committee, with technical inputs from the PIA and the support of the TF, will prepare a resettlement instrument (an abbreviated RAP or a full RAP). As in the present case, the affected population in no aspect will cross 200, an abbreviated RAP will be required. All village representatives will receive safeguards training. Also, basic processes and procedures with regard to social and environmental safeguards will be displayed at a notice board in all project villages

The abbreviated RAP will be developed which should include, at minimum, (i) the names of affected people, (ii) baseline census and socioeconomic data of affected people; (iii) the inventory of impacts, (iv) mitigation measures including the types and the scale of in-kind compensation, (v) implementation arrangements including participatory processes to ensure participation of affected people in the RAP implementation; (vi) implementation schedule to ensure that in-kind compensation will be provided before civil works start, and (vii) the estimated cost of compensation and the sources of funds where compensation is provided in cash. The VPSC, under the oversight of VTPSC and with the support of the Community Facilitators and the Technical Facilitators, will be assisted to identify in-kind compensation including the provision of alternative land that is sufficient to restore the income streams of the affected people.

The abbreviated RAP should address the following at minimum.

Introduction

- General description of subprojects including type of infrastructure, scale and scope of civil works.
- Name of the village and township, location, major ethnic background, number of population, etc

Baseline census and socioeconomic data of affected people

- The number and names of affected households
- General description of livelihoods, economic conditions and vulnerability of affected households

- Separate demographic and socio-economic profile for all vulnerable groups in the project affected area

Detailed inventory of loss

- Types of impact (loss of land, fences, barns, etc)
- Level of severity (% of loss)
- Number of affected households for each type
- Rough valuation of impact (measured by scale of loss in livelihood, which may or may not be expressed in monetary terms)

Detailed plan for impact mitigation

- In-kind compensation to be provided and valuation methodology used
- Other support to fully restore livelihood

Policy entitlements related to any additional impacts identified under census or survey

- Steps to identify any unidentified impacts
- Provisions to address such unintended impacts

Implementation Procedure

- Subproject implementation schedule
- Provision of entitlement (which should precede the start of civil works)

Detailed cost estimate and source of resources

- Costs for provision of each entitlement types
- Community resources used to provide such entitlements
- Village tract resources to be used, if any

When sub-project documents and applicable resettlement instruments are drafted, members of the Village Committee including the representatives from the beneficiary village, PIA and the TF will carry out a half-day consultation with the village implementation committee and affected people. During the consultation meeting, the final sub-project documentation is presented together with the draft detailed design, and the draft RAP (abbreviated or full) and voluntary donation forms, as applicable. Inputs from the village implementation committee and affected people will be sought regarding whether or not all potential impacts are adequately covered and mitigated, and whether adequate measures are incorporated in the design to meet the special needs of affected people and disadvantaged groups. The final sub-project documentation that is submitted to the Village Committee for approval should incorporate the inputs from affected people and the result of the meeting will be documented.

The resettlement instruments developed for a sub-project will be reviewed against the provisions of this RPF and the ESMF and, if they are found to have addressed all requirements, will be

approved by the Village Committee prior to its implementation. In particular, the following will be assessed:

- Are potential adverse impacts clearly identified?
- Are mitigation measures proposed sufficient to fully restore income streams of affected people?
- Are all conditions of voluntary donations met?
- Are implementation arrangements and grievance mechanisms adequate?
- Is the budget estimated sufficient?

Copies of approved abbreviated RAP or a full RAP will be made available at the village tract office and in easily accessible places in the villages where the sub-project is implemented, with a summary translated into the local language(s).

9. Entitlement Matrix

Type of Losses	Entitled Persons	Entitlements	Implementation Issues
Loss of private land	Legal owners or occupants	Replacement land (land for land compensation) of similar type, category and productive capacity, free from transaction costs (taxes, administration fees)	
	Affected persons without a legally recognizable right or claim to the land they are occupying	Replacement land (land for land compensation) of similar type, category and productive capacity, free from transaction costs (taxes, administration fees)	
	Vulnerable groups and ethnic groups	Implementation of the CPP for the groups with special provisions Replacement land (land for land compensation) of similar type, category and productive capacity, free from transaction costs (taxes, administration fees)	
Loss of trees, structures and other private assets	All affected persons regardless of tenure status	Cash or in-kind compensation at replacement cost Salvage materials will be handed over to affected people	If remaining parts of the structures are not sufficient for use, compensation will be provided for the entire affected buildings

Type of Losses	Entitled Persons	Entitlements	Implementation Issues
			The project will help salvage material transportation
Loss of income and standing crops	All affected persons regardless of tenure status	Civil works will be adjusted to avoid loss of income/ standing crops	
Temporary land occupation	Legal owners or occupants	In-kind compensation for loss of income or assets on a net basis Reinstitute land to the original state after the completion of civil works	PIC, under the support of third party service provider, will monitor implementation

10. Resettlement Budget and Costs

Budget for implementing RPF will be part of the subproject budget. It uses to cover costs of project staff allowances and consultant to prepare compliance reports including supervising and monitoring reports, data collection, and preparation of ARAP/RAP etc.

In case of ARAP/RAP preparation, each ARAP/RAP will include detailed cost of compensation and other rehabilitation entitlements as part of the process to compensate project affected peoples and households. Arrangements will be made for project affected peoples and household’s property and assets segregated on the basis of agricultural land, residential land, business land, houses, business assets and other holdings. The detailed budgetary estimates will make adequate provision for contingencies and the RAP will explicitly establish sources for all funds required. The RAP will ensure that fund flows are compatible with the timetable for payment of compensation and provision of all other assistance. The budget will cover land acquisition, relocation site development, compensation costs, allowances and administration costs, and contingency. Resettlement costs will be part of the Government’s counterpart fund, not the Project. The Government of Myanmar will ensure timely provision of counterpart funds for resettlement to meet any unforeseen obligations in excess of the resettlement budget estimates in order to satisfy resettlement requirements and objective. The cost of compensation and other rehabilitation entitlements costs will be calculated during implementation when the exact footprint of the works for which detailed designs have yet to be prepared are known. These costs will be financed the budget of the Government of Myanmar, and IDA credit funds will not be used for this purpose.

Assuming that preparation, implementation and monitoring of an ARAP will require project staff input of 25 days per target area, 14 days of consultant input 9 days of transport. Lump sum amount will be used for data collection and other expenses. Total budget to prepare and implementing an ARAP is estimated in US\$15,000. The budget for the preparation of a full RAP cannot be estimated at this stage, since it varies a lot based on the size and nature of the expected impacts.

11. Monitoring

The resettlement and compensation plans will indicate parameters to be monitored, institute monitoring milestones and provide resources necessary to carry out the monitoring activities. The objective will be to make a final evaluation in order to determine;

- If affected people have been paid in full and before implementation of the project.
- If the people who were affected by the project have been affected in such a way that they are now living at a higher standard than before, living at the same standard as before, or they are actually poorer than before.

Monitoring will be done both through internal and external mechanisms. There will be an external monitoring process that will include internal field monitoring by the Compensation Unit under DPTSC while the Project Implementing Agency (PIA) will undertake internal monitoring. They will keep track of individual compensations made as well as pending cases and reasons for the same. It will be responsible for undertaking a baseline, mid-term and end of project evaluation focusing on various issues related to rehabilitation and restoration of income.

Internal Monitoring: The PIA in close coordination with EPGE/DPTSC will conduct internal monitoring on resettlement implementation. The monitoring will include progress reports, status of the ARAP/RAP implementation, information on location and numbers of people affected, compensation amounts paid by item, and assistance provided to PAHs. The report of monitoring results will be prepared by PIA and submitted to EPGE/DPTSC and the World Bank on a quarterly basis.

External Monitoring: The external monitor has the specific responsibility of studying and reporting on ARAP/RAP implementation and on social and economic situations of project affected peoples or households relocated and/or disrupted by the construction works, including all households whose houses or shops and stalls are relocated. The external monitor also has the responsibility of reviewing potentials for job opportunities for project affected households,

including women and youth, which would be assisted by State authorities. The external monitoring will be done by an independent agency having experience in land acquisition, R&R, consultation, community development will be engaged to supervise the implementing of R&R and oversee the performance and provide guidance. This agency will provide quarterly reports to EPGE/DPTSC based on the outcome of consultations and feedback with affected people who have received assistance and compensation and other implementation activities. The status of land acquisition and compensation along with social audit report will be submitted by EPGE to World Bank on six-monthly basis. The post evaluation will be conducted within six-months after all resettlement activities are completed.

A framework listing indicative resettlement performance indicators for monitoring purposes will be developed. A schedule of when monitoring will be carried out will be developed and shall run for a minimum of three years after completion of the ARAP/RAP.

The suggested indicators for monitoring are given in Table below.

Subject	Indicator	Variable
Land	Acquisition of land	<ul style="list-style-type: none"> • Area of cultivation land acquired • Area of community land acquired • Area of private land acquired • Area of government land acquired
Buildings/Structures	Acquisition of buildings	<ul style="list-style-type: none"> • Number, type and size of private buildings acquired • Number, type and size of community buildings acquired • Number, type and size of government buildings acquired
Trees and crops	Trees cut and crops destroyed	<ul style="list-style-type: none"> • Number and type of trees cut • Crops destroyed by area, type and ownership
Status of compensation	Compensation and re-establishment of affected owners/ individuals	<ul style="list-style-type: none"> • Number of owners compensated by type of loss • Amount compensated by type and owner • Number of replacement houses constructed • Size, construction, durability and environmental suitability of replacement houses • Possession of latrines

Subject	Indicator	Variable
		<ul style="list-style-type: none"> • Water supply access • Number of alternate livelihood options developed
Social Aspects	Access to social facilities	Distance/travel time to nearest market centre, monasteries, health centre, market place, etc
	Change in Health status	<ul style="list-style-type: none"> • Nutritional status of resettled homestead members • Number of people with disease, by type (STDs, diarrhoea, malaria, malnutrition conditions) • Access to health care services (distance to nearest facility, cost of services, quality of services) • Utilization of health care services • Disease prevention strategies • Extent of awareness programmes • Latrine provision at schools • Access to clean water sources
	Change to status of women	<ul style="list-style-type: none"> • Participation in training programmes for women activities • Use of credit facilities • Landholding status • Participation in project-related activities and enterprises
	Livelihood	<ul style="list-style-type: none"> • Ownership of capital assets • Landholding size, area cultivated and production volume/value, by crop (cash and subsistence crops) • Landholding status (tenure) • Changes to livestock ownership: pre- and post disturbance • Value of livestock sales, and imputed value of barter transactions • Employment status of economically active members • Skill training provided to homestead members

Subject	Indicator	Variable
		<ul style="list-style-type: none"> • Changes to income-earning activities (agriculture) – pre- and post disturbance • Changes to income-earning activities (off-farm) – pre- and post disturbance • Amount and balance of income and expenditure • Access to income-generating natural resource base (wood, grass, sand, stones)
Training	Operation of training programme	<ul style="list-style-type: none"> • Number of local committee members trained • Number of affected population trained in Project related training courses
Management	Procedures in operation	<ul style="list-style-type: none"> • Number of implementing agencies by function • Number of DPTSC officials involved by function • Effectiveness of compensation delivery system • Co-ordination between local community structures, sub-station and DPTSC employees

The World Bank will also review the use of safeguards screening forms, voluntary donations, abbreviated RAPs on a random basis and carry out field trips as part of supervision missions to verify safeguard compliance in line with this RPF and ESMF and other relevant project documents.

12. Contents of a full RAP

I. Introduction

- Description of project components
- Summary Description of adverse impacts and assets acquisition
- Identification of principal stakeholders including social groups vulnerable to impoverishment or debilitation
- Indicate measures taken to minimize adverse impacts

II. Census and Socioeconomic Survey Results

- Review socio-economic characteristics of Project Affected Persons (PAPs), including spatial distribution, household size and composition; age-sex structure; income levels, including primary occupation, supplementary sources of income, and subsistence activities; tenure and ownership status (land and structures); characteristics of collective land holdings, including area and qualitative characteristics; characteristics of structures, including construction types.
- Information should be provided disaggregated by ethnic groups, if any and gender
- Categories and numbers of PAPs by type and degree of impacts such as:
 - a) Severely affected households due to loss of productive assets and required to relocate
 - b) Severely affected households due to loss of residence, business premises
 - c) Partially affected households likely to be marginalized due to the loss of land, house, or business premises but not required to relocate
 - d) Households affected by minor impacts, receiving only easement compensation or “moving back” assistance
 - e) Tenants, laborers, employees, or other non-landed persons adversely affected by the project

III. Compensation Entitlement Criteria

- Description of objectives of compensation policy
- Eligibility criteria for PAPs, including “cut-off date”, if necessary
- Description of compensation entitlements and other forms of assistance for each category of PAPs
- Description of specific measures to mitigate adverse impacts on vulnerable groups (if relevant)
- Entitlement Matrix

IV. Resettlement Action Plan (if necessary)

- Review of suitability of alternative relocation sites
- Site selection criteria

- Review of environmental protection and management at resettlement sites
 - Preliminary relocation options of PAPs
 - Review of options for provision of shelter, infrastructure and social services
 - Review of consultation procedures with PAPs in selection of resettlement alternatives during implementation
 - Socioeconomic data gathering host population, if applicable
- V. Income Restoration Measures (as necessary)
- Description of eligibility criteria for income restoration measures
 - Feasibility analysis of any alternative income restoration programs including use of collective land compensation, training needs of PAPs in the context of employment opportunities and market demand, access to credit and micro-enterprise support for PAPs interested in small business development
 - Institutional arrangements to finance and manage income restoration programs
- VI. Public Participation, Consultation, Disclosure and Grievance Redress Mechanism
- Public Consultation exercises conducted during the RAP preparation (provide details), including gender-specific consultation and information disclosure. This would include special attention to guarantee women's assets, property, and land use rights and to ensure the restoration of their income and living standards
 - Description of opportunities for PAPs to participate in resettlement planning and implementation
 - Procedures adopted for filing complaints, review and decision-making
 - Procedures for disclosing RAP and resettlement information on compensation and resettlement options to PAPs in a form and language that they can understand
- VII. Organizational set-up
- Administrative set-up and plans for training and capacity building as needed
- VIII. Monitoring and Supervision
- Listing of performance monitoring indicators
 - Institutional responsibilities and procedures for internal project monitoring
-

- Discussion of role, if any, of Community based organization and non-benefit organizations

- Content and frequency of monitoring reports

IX. Cost Estimates and Budget

- Estimate of aggregate costs for each type of asset loss
- Estimated costs for income restoration programs, administration, supervision and monitoring
- Statement of financial responsibility for all resettlement-related costs
- Physical and Price Contingencies

X. Implementation Arrangement

- Timetable for implementation of all resettlement activities, tied to overall subproject timetable
- Procedures for implementation or delivery of key elements, as relevant:
 - a) Review of land-for-land arrangements, including timetable and funding for development of relocation sites and necessary services or other inputs
 - b) Review of procedures for payment of compensation
 - c) Procedures for assessing adequacy of compensation
 - d) Operational procedures for job placement, microfinance, or other income restoration

Annex-6: Community Participation Planning Framework

1. Introduction

This Community Participation Planning Framework (CPPF) has been prepared for Component B of the World Bank funded Power System Efficiency and Resilience Project. Since details of sub-projects will be only identified during project implementation, specific project impacts cannot be identified until then.

This document is considered a living document and shall be modified and updated in line with the changing situation or scope of the activities. Consultations and detailed Ethnic Peoples Plans (EPP) will be developed in case it is necessary, in close consultation with stakeholders and the World Bank. Clearance of future EPPs by the World Bank will be necessary.

High voltage equipment and related low voltage equipment will be installed in existing substations. Mainly, power transformers, current transformers, shunt capacitors and reactors, switch gears, and control and protection systems. In addition, the component will finance 'no-regret' measures to increase resilience of transmission system against natural disasters. These will include anchoring power transformers on the base foundation to reduce damages during earthquakes and procuring mobile substations to increase the response capability against natural disasters. Finally, capacity building through consultancy services to DPTSC on project-related activities will be implemented during project implementation.

The Project is expected to have generally positive social benefits. It is expected that the sub-projects will not impact in any way to the Ethnic Peoples. This CPPF has been prepared as part of the ESMF for Component B to avoid potentially adverse effects on the Ethnic Peoples' communities and make sure that the project is designed in a way that the Ethnic Peoples receive social and economic benefits that are culturally appropriate and gender and intergenerationally inclusive.

Based in the Myanmar's context, this CPPF will use the term "ethnic people" as an equivalent to the term "indigenous people" used by the WB.

Following WB's OP 4.10, the term "Indigenous Peoples" ("Ethnic Peoples" in the context of Myanmar) is used in a generic sense in this CPPF to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:

- (a) self-identification as members of a distinct ethnic 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 Ethnic language, often different from the official language of the country or region.

Although this project is not expected to negatively impact any Ethnic Peoples, some of the sub-station improvements may be located in areas where there are IPs living or working. Because of that, OP 4.10 is triggered on a precautionary basis, mainly to ensure that they are meaningfully consulted.

This CPPF will apply only for those sub-projects which there is presence of Ethnic Peoples near the funded sub-projects. Meaningful consultations will apply in all the cases there there are Ethnic Peoples near the sub-projects. However, an Ethnic Peoples Plan (EPP) in line World Bank's OP 4.10 para 12 and Annex B, including a brief Social Assessment. The Plan should be prepared when Ethnic Peoples are present in the project area not only when there an negative impact, but to also ensure benefits and mitigation measures are culturally appropriate.

2. Overview of Ethnic Peoples in Myanmar

Myanmar is one of the most culturally diverse countries in the region, and ethnicity is a complex, contested and politically sensitive issue. Myanmar's ethnic minorities make up an estimated 30 - 40% of the population, and ethnic states occupy some 57% of the total land area along most of the country's international borders.

The numerical breakdown for each ethnic group in Myanmar is not known but an estimation of non-Bamar ethnic nationalities are estimated at 30%-40% of the population and the seven ethnic states occupy 57% of the total land area. These States are named after the largest ethnic group in them (Rakhine, Chin, Kachin, Shan, Kayah, Kayin and Mon). However, there are also many ethnic minority groups without named States, including the Pa' O, Wa, Naga and Palaung as well as a number of other smaller ethnic groups.

There are dozens of dialects and over 130 languages within the main linguistic groupings. However, some ethnic minorities, particularly younger people in urban areas, may not speak a minority language. Moreover, many people are increasingly of mixed ethnic heritage and are likely to speak Burmese as their first language.

3. Relevant Legal Framework

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; and
- to promote socio-economic development including education, health, economy, transport and communication, [and] so forth, of less-developed National races."

The Ethnic Rights Protection Law (The Comprising of Pyi Thu Hluttaw and Amotha Hluttaw (Pyi daung su Hluttaw) Law No.8, 2015), 24th February 2015. This law provides definitions of ethnic groups, Ministry, Union minister, Ministry of State or Region, State or Region minister, roles and responsibilities of the Ministry of Ethnic Affairs in ethnic affairs which means to promote sustainable socio-economic development that is including language, literature, fine arts, culture, customs and traditions of the national races, religious, historical heritages, peace and the included opportunities in 2008 Constitution of Myanmar. 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. However, the list of recognized ethnic groups has not been updated since 1982.

Since independence, there have been recurring conflicts between the Government and a number of ethnic armed groups over a range of issues, including relating to greater autonomy, recognition of cultural rights, and governance of natural resources. The Government's peace initiative, launched in 2011, has seen the conclusion or renewal of a number of ceasefire agreements with some ethnic armed groups, although conflict continues in several areas, including in Kachin State, northern Shan State, and Rakhine State. Following a number of bilateral ceasefire agreements between the Government and ethnic armed groups, some ethnic groups have been

granted authority over political and economic affairs in their areas, which in some cases are sizeable. Social and other public services were developed by ethnic authorities, often with support from NGOs, and are still operating in several areas. Under the current government, a free media is developing, and ethnic parties and associations are politically active. CSOs also play an active role.

4. Key issues and application of the CPPF

Free, Prior and Informed Consultation: Participation is a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them. The decision to participate is the start of the whole participatory process in the project cycle. Participation is an active and continuous process of interaction among the key stakeholders, including the communities directly affected (whether positively or adversely), national agencies and line ministries, the project consultants, civil society and international donor agencies. Participation as a generic term usually encompasses two distinct dimensions: information exchange (i.e., dissemination and consultation) and varying forms of joint decision-making (i.e., collaboration or participation).

Meaningful consultation prior and during project implementation: The MoEE will adopt full consultation and stakeholder participation for all its sub-project financed under Component B. During project screening (sub-project selection process), ethnic groups living/working near the sub-project area will be meaningfully consulted about benefits and potential impacts. At least two public consultation meetings will be conducted. The proposed sub-project, expected sub-project impacts and mitigation measures will be presented during the first meeting. Then, the second public consultation meeting will be conducted to determine whether there is support for the project activities and potential mitigation plans, if needed.

Prior to consultations, MoEE will send notice to the affected ethnic communities informing their leaders that they will be visited by the respective focal person and local authorities and that consultation will be conducted to seek support of the project intervention and to determine potential adverse impacts as well as possible support from the project in order to address the potential impact. The notice will request that the communities shall invite to the meeting representatives of farmers, women association and village leaders and/or others as necessary. During the consultation, the community leaders and other participants will present their views with regards to the proposed activities.

During the consultation, detailed procedures would be determined on a village-by- village basis to determine the potential impact and possible support for the proposed sub-component. Further,

a conflict resolution system, through established grievance mechanism, would be defined to ensure reflection of voices of the affected people (particularly for land acquisition, which would also need to be in line with the RPF if necessary). If a beneficiary community includes ethnic minority communities that do not belong to the majority ethnic group of the community, their representatives will be included in the conflict resolution mechanisms. This will ensure cultural appropriateness, and community involvement particularly of the ethnic groups in decision-making processes.

In the process, free, prior and informed consultations will be undertaken in a language spoken by, and location convenient to, potentially affected ethnic peoples. The views of ethnic peoples are to be taken into account during implementation of the sub-project, while respecting their current practices, beliefs and cultural preferences. The outcome of the consultations will be documented into the periodical reports and submitted to the World Bank for review.

Cases where an Ethnic Plan for a proposed sub-project is required: An Ethnic Peoples Plan (EPP) in line with WB's OP 4.10 para 12 and Annex B, including a brief Social Assessment, will be developed only for those proposed sub-projects which -during the environmental and social screening process- it is assessed that ethnic peoples (following WB's criteria to define IPs) are present in the project area. Consultations with and participation of ethnic peoples, their leaders and local government officials will be an integral part of the overall EPP and the brief Social Assessment, which should be prepared along with other required project reports.

5. Technical guidelines for consultations with ethnic groups

Consultations will be designed to help to ensure that ethnic peoples are well informed, consulted and mobilized in case the live/work close to one of the proposed sub-projects. Their participation will not only make project activities more sustainable but also provide benefits with more certainty, or protect them from any potential adverse impacts of the sub-projects to be financed by the project.

All target areas that have ethnic people communities and are candidates for sub-project support will be visited (at the time of first consultation with communities) by the Project team including social safeguard focal person and relevant local authorities, including personnel with appropriate social science training or experience. Prior to the visit, the Project will send notice to the communities informing their leaders that they will be visited by the respective focal person and local authorities and that consultation will be conducted to seek support of the project intervention and to determine potential adverse risks of causing any negative impact to ethnic people's

communities who have collective attachment to lands as well as possible support from the project in order to address the potential impact. The notice will request that the communities shall invite to the meeting representatives of farmers, women association and village leaders, or others as appropriate. During the visit, the community leaders and other participants will present their views with regards to the proposed activities.

The MoEE will identify and utilize the existing community grievance mechanism to take into account specific cultural attributes as well as traditional-cultural mechanisms for raising and resolving issues— to ensure that the concerns of different ethnic groups are received and addressed during project preparation, implementation and beyond project completion. To achieve this, projects would (a) identify and determine culturally acceptable ways to address grievances from significantly different ethnic groups within affected communities, including different ethnic or cultural groups within the project-affected area; (b) understand cultural attributes, customs, and traditions that may influence or impede their ability to express their grievances, including differences in the roles and responsibilities of subgroups (especially women) and cultural sensitivities and taboos; and (c) agree on the best way to access grievance mechanisms, taking into consideration the ways communities express and deal with grievances.

At this visit, the Project focal person or relevant official with social expertise will undertake a screening for Ethnic peoples with the help of Ethnic people leaders and local authorities. The screening will check for the following:

- Names of ethnic groups in the affected villages/commune;
- Total number of ethnic groups in the affected villages/commune
- Percentage of ethnic people in affected villages/communes; and
- Number and percentage of ethnic households within a described zone of influence of the proposed sub-project. (The zone of influence should include all areas in which investments-related benefits and adverse impacts are likely to be relevant.)

Once target areas have been selected by the MoEE through screening process and Ethnic peoples are identified for any of the sub-projects, a brief social assessment will be conducted to take note of the potential impacts on the local ethnic communities. Free, prior and informed consultations will be carried out for each of the beneficiary/affected communities/villages and the respective communes, ascertaining their broad community support and determining the potential impacts and possible support under the proposed sub-project.

On the basis of the brief social assessment and in consultation with the affected Ethnic Peoples' communities, the Project will prepare an Ethnic Peoples Plan (EPP), in line with WB's para 12 and Annex B, that sets out the measures through which the MoEE will ensure that the potential adverse effects of the sub-project on Ethnic Peoples are avoided, minimized, mitigated, or compensated for. The EPP will be prepared in a flexible and pragmatic manner and its level of detail varies depending on the specific project and the nature of effects to be addressed. The borrower integrates the EPP into the project design. When Ethnic Peoples are the sole or the overwhelming majority of direct project beneficiaries, the elements of an EPP should be included in the overall project design, and a separate EPP is not required.

The EPP includes the following elements, as needed:

- A summary of the information about (a) legal and institutional framework applicable to Ethnic Peoples and (b) baseline information on the demographic, social, cultural, and political characteristics of the affected Ethnic Peoples' communities, the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend.
- A summary of the social assessment.
- A summary of results of the free, prior, and informed consultation with the affected Ethnic Peoples' communities that was carried out during project preparation and that led to broad community support for the project.
- A framework for ensuring free, prior, and informed consultation with the affected Ethnic Peoples' communities during project implementation.
- An action plan of measures to ensure that the Ethnic Peoples receive social and economic benefits that are culturally appropriate, including, if necessary, measures to enhance the capacity of the project implementing agencies.
- When potential adverse effects on Ethnic Peoples are identified, an appropriate action plan of measures to avoid, minimize, mitigate, or compensate for these adverse effects.
- The cost estimates and financing plan for the EPP.
- Accessible procedures appropriate to the project to address grievances by the affected Ethnic Peoples' communities arising from project implementation. When designing the grievance procedures, the borrower takes into account the availability of judicial recourse and customary dispute settlement mechanisms among the Ethnic Peoples.

- Mechanisms and benchmarks appropriate to the project for monitoring, evaluating, and reporting on the implementation of the EPP. The monitoring and evaluation mechanisms should include arrangements for the free, prior, and informed consultation with the affected Ethnic Peoples' communities.

To prepare EPP the information below is required:

- The basic census, socio-economic data and inventory of affected assets
- Household ownership of economic and productive assets
- Annual income from primary and secondary employment opportunities
- Economic information of community (e.g. brief information on economic and natural resources, production and livelihood systems, tenure systems)
- Social information of community (e.g. description of kinship, value system, types of social organizations of formal and informal groups)
- Potential impact of proposed project activities on basic social services (e.g. water supply, clinics and schools)
- Potential impact of project activities on the social and economic livelihood.

6. Institutional arrangement of implementation of the CPPF

The CPPF implementation will follow the Project Implementation arrangement, described in chapter 6 of this ESMF. The responsibility of preparation and implementation of the required consultations with Ethnic Peoples and EPPs is with DPTSC.. They will review the documents to ensure compliance the contents of this CPPF. Thereafter, the consultation reports with Ethnic Groups and EPPs will be forwarded to the World Bank for review and clearance.

DPTSC will be also responsible for ensuring close coordination with line agencies at National and State levels during subproject preparation.

7. Monitoring and reporting

Public consultations with affected Ethnic Groups will be a relevant way to monitor compliance when applying the agreements reached at the EPPs. This project will therefore seek to strengthen the self-monitoring and problem resolution capacity of local communities, including but not limited to ethnic communities. Participatory Monitoring and Evaluation (M&E) will be carried out during implementation to allow affected population to assess project effects and identify measures to broaden positive benefits and address negative impacts. This will take the form of regular (quarterly/monthly) meetings between the community, the contractor and DPTSC department facilitated by the safeguards consultant or focal points. Also, whether conflicts involving ethnic groups have occurred and been resolved in compliance with this document will be monitored and reported by project focal person/social safeguards consultant.

The PIU through its safeguards focal persons will conduct regular internal monitoring and evaluation of the consultations with Ethnic Groups and EPPs including review of monthly progress report submitted by site engineer.

8. Budgeting of preparation, implementation and monitoring of the CPPF and EPP

Budget for implementing CPPF and potential EPPs will be part of the Project budget. It uses to cover costs of project staff allowances and consultants to prepare compliance reports including supervising and monitoring reports, data collection, and preparation of EPP etc. Below is a rough budget estimate for CPPF implementation.

Assuming that EPP will require project staff input of 10 days per target area, 5 days of consultant input 5 days of transport. Lump sum amount will be used for data collection and other expenses. Total budget for implementing this CPPF is estimated at US\$5,000.

For the preparation, implementation and monitoring of the EPPs, a lump sum estimate for each of them is US\$7,500, since it will require recurrent field visits and support during consultations with the Ethnic Groups.

Annex-7: Grievance Redress Format

S.no	Priority	Date Feedback Received	Feedback Channel	Category of feedback	Summary Description	Anonymous (Yes/No)	Person assigned to address feedback	Status (resolved, pending, escalated)	Date of resolution of feedback	Communication about resolution