THE REPUBLIC OF THE UNION OF MYANMAR

Myanmar National Electrification Project
Environmental and Social Management Framework

Volume 2: Annexes

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Annex 1: Screening Forms for Potential Environmental & Social Safeguards Issues for the Grid Extension Program under MOEE

Screening forms have been prepared for each type of expected subproject under NEP.

For the **Grid Extension Component**, two screening forms have been prepared:

1. Grid Extension Screening Form: to be completed by the MOEE utility township engineers, with assistance from the MOEE safeguards team
2. Community LV Network Screening Form: to be completed if an MOEE utility does the village network. This is to be completed by MOEE utility township engineers

Screening Form for Grid Extension of MV Lines

Region / State		
Township		
Village Tract		
Village		
GPS Point		Can be entered later
Project Name		
MOEE Utility Township Engineer Name		To be completed by township engineer conducting the survey
MOEE Utility Township Engineer Signature and Date		
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders

	YES	NO	
1. Community Support and Consultation			
a. Are there communities along the grid extension that might be affected by the project, either during construction or operation?			If "Yes", name the communities
b. Are there nearby communities that might be affected by the project, either during construction or operation?			If "Yes", name the communities
c. Has there been public consultation about the project in communities along or near the grid extension activity?			If "Yes", list the date(s)
d. What are the ethnic groups in the communities?			List the ethnic groups and note which is the majority group
e. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
f. Do most people in the community support the project?			If "Yes", percent supporting
g. Do any people or groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
h. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			
i. Were there any explosive related accidents near the project area?			This question is only asked in specific regions If 'Yes', how many accidents were there and how close is it from the

			project area?
2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the communities have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of those ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent of the group supports the project?
3. Land Acquisition / Land Use			
a. Permanent Infrastructure			
a.1. Is any of the land where the permanent infrastructure is to be located on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
a.2. If the permanent infrastructure is to be built on public lands, is any part of those public lands being used by any person or groups of people for any purposes (either agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b. Temporary Infrastructure			
b.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b.2. If any temporary structure is built on public lands, is any part of those public lands being used by any person or groups of people for any purposes (either agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or

			minimize impacts.
6. Vegetative Clearing			
a. Is significant vegetative clearing required for any parts of the project?			If "Yes", describe vegetation (bush, grassland, bamboo, etc.) and the areas where clearing is needed.
b. Is removal / trimming of trees required?			If "Yes", approximately how many trees need to be totally removed? Approximately how many trees need to be partially trimmed?
6. Water Bodies			
a. Will any construction be near water bodies?			
b. Will the flow of any waterways (rivers, streams) be affected by the project construction activities, including any temporary infrastructure?			If "Yes", explain how.
c. Will the flow of any waterways (rivers, streams) be affected by the project permanent infrastructure?			If "Yes", explain how.
7. Wildlife			
a. Will the project significantly disturb any wildlife or harm their habitat, whether directly disturbing the habitat or from air pollution, dust or noise?			If "Yes", what animals
8. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", please mention name of the park(s), area and / or habitat
b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.
d. Were there any natural disasters at the project site within the past 10 years?			If "Yes", indicate the type of disaster(s) and their frequency
e. Will the project significantly disturb any natural views or beauty in the area?			
9. Waste Management			

a. Is there an existing waste management system in the project area for installation contractors to properly dispose construction waste during construction?			
10. Health and Safety			
a. Have the communities been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
11. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, by VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If "Yes", provide the person's name, address and phone number
d. Has the community been informed of contact persons for questions, comments or complaints?			If "Yes", how were they informed?

Screening Form for Community LV Networks

Region / State		
Township		
Village Tract		
Villages		
GPS Point		Can be entered later
Project Name		
MOEE Utility Township Engineer Name		Form to be completed by township engineer conducting the survey

MOEE Utility Township Engineer Signature and Date		
VEC Members (or other villagers) Consulted		

	YES	NO	
1. Community Description			
a. How many households are in the community?			Give number (an estimate is acceptable if more accurate data are not available)
b. Has the community been informed about the programme?			If "Yes", list the date(s)
c. Have most people agreed to participate in the programme?			If "Yes", percent participating
d. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in discussions about the programme?			If "No", list those that did not participate
e. Do any groups in the community object to or have doubts about the programme?			If "Yes", what are those objections or doubts?
f. Has the community been informed about plans for installation, including possible timing?			If "No", give the reason (such as, no installation plans yet)
2. Public Lighting			
a. Are there schools or other educational buildings in the community?			If "Yes", how many are there, and which of them will be provided with electricity?
b. Are there health centres or other health facilities in the community?			If "Yes", how many are there, and which of them will be provided with electricity?
d. Are there religious buildings (temples, churches, mosques) in the community?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Will public streetlights be installed, and has the community been consulted about their placement?			
f. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will <u>not</u> receive street lights.
3. Ethnic Minority Groups			
a. Are there any ethnic minorities in the village?			If "Yes", give the name of each ethnic group and the approximate

			number of households of each group.
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of those ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Will the majority of the people in the ethnic minority group or groups participate in the programme?			If "Yes", approximately what percent of the group supports the programme.
d. Did representatives of the ethnic minority groups participate in discussions about public street lighting and lighting of public buildings?			
4. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and where in the community.
5. Physical and Environmental Aspects			
a. Are there any topographical features that should be considered when installing the network?			If "Yes", describe
b. Would access to the community be difficult for trucks bringing the materials and installation equipment?			If "Yes", describe, and suggest how to solve
c. Are there any other logistical matters that should be considered by the installation team?			If "Yes", describe
d. Are there any other environmental aspects that should be considered by the installation team?			If "Yes", describe
6. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			

c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If “Yes”, who
d. Has the community been informed of other contact persons for questions, comments or complaints?			If “Yes”, give the name and contact information

Annex 2: Screening Forms for Potential Environmental & Social Safeguards Issues for Solar Home Systems

Screening forms have been prepared for each type of expected subproject under NEP.

For the **Off-Grid Component**, screening forms have been prepared according to the level of intervention in the communities and the type of sub-project technologies.

Two screening forms have been prepared for SHS sub-projects:

1. SHS Township Screening Form: to be completed by DRD Township engineers for the regular SHS programme of the NEP
2. RBF Off-Grid Solar Screening Form: to be completed by participating companies or social enterprises for the RBF funded Off-Grid Solar subproject

Screening Form for Solar Home Systems (by DRD)

Region / State		
Township		
Village Tract		
Village		
Pcode		Can be entered later
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders
Township Engineer Name		
Date		

	YES	NO	
1. Community Description			
a. How many households are in the community?			Give number (an estimate is acceptable if more accurate data are not available)
b. Has the community been informed about the programme?			If "Yes", list the date(s)
c. Have most people agreed to participate in the programme?			If "Yes", percent participating
d. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in discussions about the programme?			If "No", list those that did not participate
e. Do any groups in the community object to or have doubts about the programme?			If "Yes", what are those objections or doubts?
f. Has the community been informed about plans for installation, including possible timing?			If "No", give the reason (such as, no installation plans yet)
2. Public Solar Lighting			
a. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
b. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?

d. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Has the community been consulted about the placement of public streetlights?			
f. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will <u>not</u> receive streetlights.
3. Ethnic Minority Groups			
a. Are there any ethnic minorities in the village?			If "Yes", give the name of each ethnic group and the approximate number of households of each group.
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of those ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Will the majority of the people in the ethnic minority groups participate in the programme?			If "Yes", approximately what percent of the group supports the programme.
d. Did representatives of the ethnic minority groups participate in discussions about public street lighting and lighting of public buildings?			
4. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and where in the community.
5. Physical and Environmental Aspects			
a. Are there any topographical features that should be considered when placing the SHS? (For example, mountains blocking sun for part of the day)			If "Yes", describe
b. Would access to the community be difficult for trucks bringing the SHS and installation equipment?			If "Yes", describe, and suggest how to solve
c. Are there transportation difficulties that should be considered by the installation team?			If "Yes", describe

6. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If "Yes", describe how this done-
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If "Yes", describe the focal person of name and phone number.
d. Has the community been informed of other contact persons for questions, comments or complaints?			If "Yes", how were they informed and describe the names and phone numbers of the respective departments to contact

Screening Form for Solar Home Systems (in the RBF Off-Grid Solar Program)

Region / State		
Township		
Village Tract		
Village		
Pcode		Can be entered later
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders when completing the form
Company Representative Name		
Company Representative Signature and Date		

	YES	NO	
1. Community Description			
a. How many households are in the community?			Give number (an estimate is acceptable if more accurate data are not available)
b. How many have been informed about the programme?			
c. How many households are interested in buying the Lighting Global Systems?			
d. Did women, members of all the ethnic minorities, and other vulnerable groups (such as the poor, elderly, disabled) participate in discussions about the programme?			If "Yes", list those that did participated
e. Did members of the community have any comments about the programme, (positive or negative)?			If "Yes", what were their comments?
f. Has a time been set for installation for those who plan to purchase the systems?			
2. Ethnic Minorities and Other Vulnerable Groups			
a. Are there any ethnic minorities in the village?			If "Yes", give the name of each ethnic group and the approximate number of households of each group.
b.1. Do most people in any of the ethnic groups in the community understand only their language?			

b.2. If so, were members of those ethnic minorities informed about the programme **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Will any households of the ethnic minority groups participate in the programme?			If "Yes", approximately how many households of each ethnic minority.
d. Will any households of other vulnerable group or groups participate in the programme?			If "Yes", approximately how many households of each vulnerable group.
3. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that should be avoided?			If "Yes", describe what and where in the community.
4. Physical and Environmental Aspects			
a. Are there any topographical features that should be considered when placing the SHS? (For example, mountains blocking sun for part of the day)			If "Yes", describe
b. Would access to the community be difficult for trucks bringing the SHS and installation equipment?			If "Yes", describe, and suggest how to solve
c. Are there transportation difficulties that should be considered by the installation team?			If "Yes", describe
5. Grievance Redress Mechanism			
a. Does the community know who they should contact for questions, comments or complaints?			If "Yes", give the name and contact information
b. Has the community been informed of another contact person (such as the DRD Township Engineer) for questions, comments or complaints?			If "Yes", give the name and contact information

Annex 3: Screening Forms for Potential Environmental & Social Safeguards Issues for Off-Grid Mini-Grid Projects

Screening forms have been prepared for each type of expected subproject under NEP.

For the **Off-Grid Component**, screening forms have been prepared according to the level of intervention in the communities and the type of sub-project technologies.

Six screening forms have been prepared for various types of mini-grid technologies that have been or are expected to be proposed. If a new technology or another hybrid is introduced, the DRD safeguards team can prepare a new screening form.

As all the NEP mini-grids are being implemented by private developers, the forms are to be completed by the developer and reviewed and approved by the DRD Township Officer before being submitted to the DRD PMO safeguards team for review:

1. Solar Mini-Grid Screening Form: for mini-grids using only solar power. A few were among earlier subprojects
2. Biomass Mini-Grid Screening Form: for mini-grids using only biomass
3. Hydropower Mini-Grid Screening Form: for mini-hydro power subprojects
4. Solar-Diesel Mini-Grid Screening Form: solar power mini-grids in future will all have back-up diesel generation
5. Wind-Diesel Mini-Grid Screening Form: though no wind power systems have been proposed, there has been some discussion of potential wind-diesel hybrid systems
6. Biomass-Diesel Mini-Grid Screening Form: while not common, at least one such hybrid has been proposed and others may follow

Screening Form for Solar (only) Mini-Grids

Region / State		
Township		
Village		
Pcode		Can be entered later
Project Name		
Developer Representative Name		Form to be completed by developer
Developer Representative Signature and Date		
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders when completing the form
DRD Township Officer Name		
DRD Township Officer Signature and Date		

	YES	NO	
1. Community Support and Consultation			
a. Has there been public consultation about the project in the community?			If "Yes", List the date(s) and public consultation places.
b. What are the ethnic groups in the community?			List the ethnic groups and note which is the majority group
c. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
d. Do most people in the community support the project?			If "Yes", percent supporting
e. Do any groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
f. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			If "Yes", List the informed method about plans.
g.1. Are there neighboring or other nearby communities that might be affected by the project, either during construction or operation?			Impacts could be construction of an access road, noise, dust, water pollution or changes in water flow, loss of access to resources.
g.2. Have these neighboring or other nearby communities been informed about the project?			If "Yes", how have they been informed (meeting, letter, other communication), and when.

2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the community have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of these ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent of the group supports the project?
3. Land Acquisition / Land Use			
a. Solar Panels / Batteries			
a.1. Will any of the infrastructure for solar panels and storage batteries be built on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
a.2. Will any infrastructure for solar panels and storage batteries be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b. Batteries Storage			
b.1. Will any land used for storage of replacement batteries or other materials needed during operation be located on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b.2. Will any of the facilities for storage of replacement batteries or other materials needed during operation be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
c. Other Permanent Infrastructure			
c.1. Will any other permanent infrastructure such electric poles, transformers, be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.

c.2. Will any other permanent infrastructure such as electric poles, transformers, be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d. Temporary Infrastructure			
d.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d.2. Will any temporary infrastructure be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
4. Access to Mini-Grid			
a.1. Are there any households in the community that are not covered by the mini-grid?			If "Yes", list the households and their reasons not to join the grid in Form 4.
a.2. Are any of these households are from minority ethnic groups?			If "Yes", what group(s) and how many people in each group.
b. Is any physical section of the community not covered by the mini-grid?			If "Yes", what groups or types of people live in the area not covered by the mini-grid?
c. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will not receive streetlights.
d. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
f. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or minimize impacts.
6. Vegetative Clearing			

a. Is it required to remove or clean the branches of the trees or trees along the distribution line and in the project site?			If "Yes", describe the types of trees, number of trees and the area where clearing is needed. (Also describe how they would be removed / cleaned- e.g. only branches or trees?)
b. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.
7. Wildlife			
a. Will the project significantly disturb any wildlife or disturb or destroy their habitat, whether directly or from air pollution, dust or noise?			If "Yes", what animals
8. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", what park, area or habitat
b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the project in an area susceptible to earthquakes?			
d. Will the project significantly disturb any natural views or beauty in the area?			
9. Waste Management			
a. Is there a plan for proper waste management system (waste segregation, collection and disposal) of construction waste?			If "Yes", explain how.
b. Is there a plan for proper waste management system (waste segregation, collection and disposal) of waste (garbage, sewage) in the workers' housing?			If "Yes", explain how.
10. Noise / Dust / Emissions			
a. Does the contractor have a plan to control noise during construction?			If "Yes", explain how.
a. Does the contractor have a plan to control dust during construction?			If "Yes", explain how.

b. Does the contractor have a plan to control emissions from machinery during construction?			If "Yes", explain how.
11. Health and Safety			
a. Has the contractor been instructed about the applicable health and safety procedures, including **proper safety equipment** for workers?			If "Yes", how has the contractor been instructed
b. Has the contractor been instructed about the NEP Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
c. Has the contractor prepared a plan for worker housing, and their water and sanitation needs, according to the Environmental and Social Code of Practice?			If "Yes", List the contractor prepared plan.
d. Does the contractor have plans for fires, explosions, or other emergencies during construction?			If "Yes", List the contractor prepared plan.
e. Has the contractor prepared plans for fires, explosions, or other emergencies during operation?			If "Yes", List the contractor prepared plan.
f. Has the community been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
g. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
12. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If "Yes", describe how this is done
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If "Yes", describe the focal person of name and phone number.
d. Has the community been informed of other contact persons for questions, comments or complaints?			If "Yes", how were they informed and describe the names and phone numbers of the respective departments to contact.

Screening Form for Biomass Mini-Grids

Region / State			
Township			
Village			
Pcode			Can be entered later
Project Name			
Developer Representative Name			Form to be completed by developer
Developer Representative Signature and Date			
VEC Members (or other villagers) Consulted			Should consult with one or more VEC members or other village leaders when completing the form
DRD Township Officer Name			
DRD Township Officer Signature and Date			
	YES	**NO**	
1. Community Support and Consultation			
a. Has there been public consultation about the project in the community?			If "Yes", list the date(s) and public consultation places.
b. What are the ethnic groups in the community?			List the ethnic groups and note which is the majority group
c. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
d. Do most people in the community support the project?			If "Yes", percent supporting
e. Do any groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
f. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			If "Yes", list the informed method about plans.
g.1. Are there neighboring or other nearby communities that might be affected by the project, either during construction or operation?			Impacts could be construction of an access road, noise, dust, water pollution, changes in water flow, loss of access to some resources.
g.2. Have these neighboring or other nearby communities been informed about the project?			If "Yes", how have they been informed (meeting, letter, other communication), and when.

2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the community have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of these ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent of the group supports the project?
3. Land Acquisition / Land Use			
a. Gasification / Power Generation Infrastructure			
a.1. Will any part of the gasification or the power generation infrastructure be built on privately owned land?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
a.2. Will any of the gasification or the power generation infrastructure be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b. Storage Facilities			
b.1. Will any part of the facilities used to store raw materials be located on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b.2. Will any part of the facilities used to store raw materials be on public lands currently being used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
c. Other Permanent Infrastructure			
c.1. Will any other permanent infrastructure such electric poles, transformers, be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
c.2. Will any other permanent infrastructure such as electric poles, transformers, be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.

d. Temporary Infrastructure			
d.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
d.2. Will any temporary infrastructure be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
4. Access to Mini-Grid			
a.1. Are there any households in the community that will not be covered by the mini-grid?			If "Yes", list the households and their reasons not to join the grid in Form 4.
a.2. Are any of these households are from minority ethnic groups?			If "Yes", what group(s) and how many people in each group.
b. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will <u>not</u> receive streetlights.
c. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
d. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or minimize impacts.
6. Vegetative Clearing			
a. Is it required to remove or clean the branches of the trees or trees along the distribution line and in the project site?			If "Yes", describe the types of trees, number of trees and the area where clearing is needed. (Also describe how they would be cleared- e.g. only branches or trees?)
b. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.

7. Wildlife			
a. Will the project produce any runoff into a waterway that could significantly disturb fish or other aquatic life?			
b. Will the project significantly disturb any wildlife or disturb or destroy their habitat, whether directly or from air pollution, dust or noise?			If "Yes", what animals
8. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", what park, area or habitat
b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the project in an area susceptible to earthquakes?			
d. Will the project significantly disturbs any natural views or beauty in the area?			
9. Waste Management			
a. Is there a plan for proper collection and disposal of construction waste?			If "Yes", how has the contractor been instructed
b. Is there a plan for proper collection and disposal of waste (garbage, sewage) in the workers' housing?			If "Yes", how has the contractor been instructed
c. Is there a plan for proper collection and disposal of any waste from gasification or power generation?			If "Yes", how has the contractor been instructed
10. Noise / Dust / Emissions			
a. Does the contractor have a plan to control noise during construction?			If "Yes", how has the contractor been instructed
b. Does the contractor have a plan to control dust during construction?			If "Yes", how has the contractor been instructed
c. Does the contractor have a plan to control emissions from machinery during construction?			If "Yes", how has the contractor been instructed
d. Does the contractor have a plan to control noise during operation?			If "Yes", how has the contractor been instructed
e. Does the contractor have a plan to control emissions during operation?			If "Yes", how has the contractor been instructed

11. Health and Safety			
a. Has the contractor been instructed about the applicable health and safety procedures, including **proper safety equipment** for workers?			If "Yes", how has the contractor been instructed
b. Has the contractor been instructed about the NEP Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
c. Has the contractor prepared a plan for worker housing, and their water and sanitation needs, according to the Environmental and Social Code of Practice?			If "Yes", List the contractor prepared plan.
d. Does the contractor have plans for fires, explosions, or other emergencies during construction?			If "Yes", List the contractor prepared plan.
e. Has the contractor prepared plans for fires, explosions, or other emergencies during operation?			If "Yes", List the contractor prepared plan.
f. Has the community been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
g. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
12. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, by VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If "Yes", describe how this is done-
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If "Yes", describe the focal person of name and phone number.
d. Has the community been informed of other contact persons for questions, comments or complaints?			If "Yes", how were they informed and describe the names and phone numbers of the respective departments to contact.

Screening Form for Hydropower Mini-Grids

Region / State		
Township		
Village		
Pcode		Can be entered later
Project Name		
Developer Representative Name		Form to be completed by developer
Developer Representative Signature and Date		
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders when completing the form
DRD Township Officer Name		
DRD Township Officer Signature and Date		

	YES	NO	
1. Community Support and Consultation			
a. Has there been public consultation about the project in the community?			If "Yes", List the date(s) and public consultation places.
b. What are the ethnic groups in the community?			List the ethnic groups and note which is the majority group
c. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
d. Do most people in the community support the project?			If "Yes", percent supporting
e. Do any groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
f. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			If "Yes", List the informed method about plans.
g.1. Are there neighboring or other nearby communities that might be affected by the project, either during construction or operation?			Impacts could be the construction of an access road, noise, dust, water pollution, changes in water flow, loss of access to resources.

g.2. Have these neighboring or other nearby communities been informed about the project?			If "Yes", how have they been informed (meeting, letter, other communication), and when.
2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the community have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of these ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent group supports the project?
3. Land Acquisition / Land Use			
a. Powerhouse			
a.1. Will any part of the powerhouse infrastructure be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
a.2. Will any part of the powerhouse infrastructure be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
b. Reservoir			
b.1. If a dam and reservoir are planned, is any of the land that will be flooded by the reservoir privately owned?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
b.2. If there is to be a dam and reservoir, is any of the area to be flooded by the reservoir public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
c. Other Permanent Infrastructure			
c.1. Will any other permanent infrastructure such as the dam or weir, power canal, penstock, electric poles, transformers, be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.

c.2. Will any other permanent infrastructure such as the dam or weir, power canal, penstock, electric poles, transformers, be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d. Temporary Infrastructure			
d.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d.2. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
4. Access to Mini-Grid			
a.1. Are there any households in the community that are not covered by the mini-grid?			If "Yes", list the households and their reasons not to join the grid in Form 4.
a.2. Are any of these households are from minority ethnic groups?			If "Yes", what group(s) and how many people in each group.
b. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will not receive streetlights.
c. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
d. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or minimize impacts.
6. Water Diversion or Damming of Waterways			
a. Will any waterways be diverted or dammed?			

b. If the waterway is to be diverted or dammed, has the *Minimum Environmental Flow* been determined?			If "Yes", how many times, at what frequency (for example, 1 time each month for 12 months.
c. If the waterway is to be dammed, has the maximum area to be flooded by the reservoir been determined?			If "Yes", what is the maximum area that will be flooded?
d. If there is a dam with reservoir, has the contractor prepared a plan to minimize erosion and siltation into the reservoir?			If "Yes", describe the prepare plans.
7. Vegetative Clearing			
a. Is any of the area that will be flooded presently covered by trees or other natural growth?			If "Yes", describe the types of vegetation, such as bush, grassland, bamboo, scattered trees.
b. Are there plans to remove trees or vegetation in that area before the dam is completed?			
c. Is it required to remove or clean the branches of the trees or trees along the distribution line and in the project site?			If "Yes", describe the types of trees, number of trees and the area where clearing is needed. (Also describe how they would be cleared – e.g. only branches or trees?)
d. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.
8. Aquatic Life			
a. Do the local people obtain fish or other food from the waterway that will be used for the project?			If "Yes", how often do people in the community eat fish or other aquatic food (daily, frequent, occasional)
b. Has the *Minimum Environmental Flow* been calculated to minimize or avoid significant changes to the aquatic habitat?			
9. Other Wildlife			
b. Will the project significantly disturb any wildlife or disturb or destroy their habitat, whether directly or from air pollution, dust or noise?			If "Yes", what animals
10. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", what park, area or habitat

b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the project in an area susceptible to earthquakes?			
d. Will the project significantly disturb any natural views or beauty in the area?			
11. Waste Management			
a. Is there a plan for proper collection and disposal of construction waste?			If "Yes", explain how.
b. Is there a plan for proper collection and disposal of waste (garbage, sewage) in the workers' housing?			If "Yes", explain how.
12. Noise / Dust / Emissions			
a. Does the contractor have a plan to control noise during construction?			If "Yes", explain how.
b. Does the contractor have a plan to control dust during construction?			If "Yes", explain how.
c. Does the contractor have a plan to control emissions from machinery during construction?			If "Yes", explain how.
d. Does the contractor have a plan to control noise during operation?			If "Yes", explain how.
13. Health and Safety			
a. Has the contractor been instructed about the applicable health and safety procedures, including **proper safety equipment** for workers?			If "Yes", how has the contractor been instructed
b. Has the contractor been instructed about the NEP Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
c. Has the contractor prepared a plan for worker housing, and their water and sanitation needs, according to the Environmental and Social Code of Practice?			If "Yes", list the contractor prepared plan.
d. Does the contractor have plans for fires, explosions, or other emergencies during construction?			If "Yes", list the contractor prepared plan.
e. Has the contractor prepared plans for fires, explosions, or other emergencies during operation?			If "Yes", list the contractor prepared plan.

f. Has the community been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
g. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
14. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If "Yes " , describe how this done
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If "Yes", describe the focal person of name and phone number
d. Has the community been informed of other contact persons for questions, comments or complaints?			If "Yes", how were they informed and describe the names and phone number of the respective department to contact

Screening Form for Solar-Diesel Mini-Grids

Region / State		
Township		
Village		
Pcode		Can be entered later
Project Name		
Developer Representative Name		Form to be completed by developer
Developer Representative Signature and Date		
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders when completing the form
DRD Township Officer Name		
DRD Township Officer Signature and Date		

	YES	NO	
1. Community Support and Consultation			
a. Has there been public consultation about the project in the community?			If "Yes", list the date(s) and public consultation places
b. What are the ethnic groups in the community?			List the ethnic groups and note which is the majority group
c. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
d. Do most people in the community support the project?			If "Yes", percent supporting
e. Do any groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
f. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			If "Yes", list the informed method about plans.
g.1. Are there neighboring or other nearby communities that might be affected by the project, either during construction or operation?			Impacts could be the construction of an access road, noise, dust water pollution, changes in water flow, loss of access to some resources.

g.2. Have these neighboring or other nearby communities been informed about the project?			If "Yes", how have they been informed (meeting, letter, other communication), and when.
2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the community have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of these ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent of the group supports the project?
3. Land Acquisition / Land Use			
a. Solar Panels / Diesel Generators / Batteries			
a.1. Will any of the infrastructure for solar panels, diesel generators, and storage batteries be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
a.2. Will any of the infrastructure for solar panels, diesel generators, and storage batteries be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b. Batteries / Diesel Storage			
b.1. Will any of the facilities used to store diesel fuel, replacement batteries, or other materials needed during operation be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b.2. Will any of the facilities used to store diesel fuel, replacement batteries, or other materials needed during operation be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
c. Other Permanent Infrastructure			
c.1. Will any other permanent infrastructure such electric poles, transformers, be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.

c.2. Will any other permanent infrastructure such electric poles, transformers, be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d. Temporary Infrastructure			
d.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d.2. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
4. Access to Mini-Grid			
a.1. Are there any households in the community that are not covered by the mini-grid?			If "Yes", list the households and their reasons not to join the grid in Form 4.
a.2. Are any of these households are from minority ethnic groups?			If "Yes", what group(s) and how many people in each group.
b. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will not receive streetlights.
c. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
d. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or minimize impacts.
6. Vegetative Clearing			
a. Is it required to remove or clean the branches of the tree or trees along the distribution line and in the project site?			If "Yes", describe the types of trees, number of trees and the area where clearing is needed. (Also describe

			how they are cleared –e.g. only branches or trees?)
b. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.
7. Wildlife			
a. Will the project produce any runoff, including accidental spills, into a waterway that could significantly disturb fish or other aquatic life?			
b. Will the project significantly disturb any wildlife or disturb or destroy their habitat, whether directly or from air pollution, dust or noise?			If "Yes", what animals
8. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", what park, area or habitat
b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the project in an area susceptible to earthquakes?			
d. Will the project significantly disturbs any natural views or beauty in the area?			
9. Waste Management			
a. Is there a plan for proper collection and disposal of construction waste?			If "Yes", explain how.
b. Is there a plan for proper collection and disposal of waste (garbage, sewage) in the workers' housing?			If "Yes", explain how.
10. Noise / Dust / Emissions			
a. Does the contractor have a plan to control noise during construction?			If "Yes", explain how.
b. Does the contractor have a plan to control dust during construction?			If "Yes", explain how.

c. Does the contractor have a plan to control emissions from machinery during construction?			If "Yes", explain how.
d. Does the contractor have a plan to control noise of diesel engines during operation?			If "Yes", explain how.
e. Does the contractor have a plan to control emissions during operation?			If "Yes", explain how.
11. Health and Safety			
a. Has the contractor been instructed about the applicable health and safety procedures, including **proper safety equipment** for workers?			If "Yes", how has the contractor been instructed
b. Has the contractor been instructed about the NEP Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
c. Has the contractor prepared a plan for worker housing, and their water and sanitation needs, according to the Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
d. Does the contractor have plans for fires, explosions, accidental fuel spills, or other emergencies during construction?			If "Yes", how has the contractor been instructed
e. Has the contractor prepared plans for fires, explosions, accidental fuel spills, or other emergencies during operation?			If "Yes", how has the contractor been instructed
f. Has the community been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
g. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
12. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If "Yes", describe how this done

c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If “Yes”, describe the focal person of name and phone number
d. Has the community been informed of other contact persons for questions, comments or complaints?			If “Yes”, how were they informed and describe the names and phone number of the respective department to contact

Screening Form for Wind-Diesel Mini-Grids

Region / State		
Township		
Village		
Pcode		Can be entered later
Project Name		
Developer Representative Name		Form to be completed by developer
Developer Representative Signature and Date		
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders
DRD Township Officer Name		
DRD Township Officer Signature and Date		

	YES	NO	
1. Community Support and Consultation			
a. Has there been public consultation about the project in the community?			If "Yes", List the date(s) and public consultation places.
b. What are the ethnic groups in the community?			List the ethnic groups and note which is the majority group
c. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
d. Do most people in the community support the project?			If "Yes", percent supporting
e. Do any groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
f. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			If "Yes", List the informed method about plans.
g.1. Are there neighboring or other nearby communities that might be affected by the project, either during construction or operation?			Impacts could be the construction of an access road, noise, water pollution, changes in water flow, loss of access to some resources.

g.2. Have these neighboring or other nearby communities been informed about the project?			If "Yes", how have they been informed (meeting, letter, other communication), and when.
2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the community have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of these ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent of the group supports the project?
3. Land Acquisition / Land Use			
a. Wind Turbines / Diesel Generators / Batteries			
a.1. Will any part of the infrastructure for wind turbines, diesel generators, and storage batteries be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
a.2. Will any part of the infrastructure for wind turbines, diesel generators, and storage batteries be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
b. Batteries / Diesel Storage			
b.1. Will any of the facilities to be used to store diesel fuel, replacement batteries, or other materials needed during operation be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
b.2. Will any of the facilities to be used to store diesel fuel, replacement batteries, or other materials needed during operation be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
c. Other Permanent Infrastructure			

c.1. Will any other permanent infrastructure such electric poles, transformers, be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
c.2. Will any other permanent infrastructure such electric poles, transformers, be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d. Temporary Infrastructure			
d.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d.2. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
4. Access to Mini-Grid			
a.1. Are there any households in the community that are not covered by the mini-grid?			If "Yes", list the households and their reasons not to join the grid in Form 4.
a.2. Are any of these households are from minority ethnic groups?			If "Yes", what group(s) and how many people in each group.
b. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will not receive streetlights.
c. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
d. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or minimise impacts.
6. Vegetative Clearing			

a. Is it required to remove or clean the branches of the trees or trees along the distribution line and in the project site?			If "Yes", describe the types of trees, number of trees and the area where clearing is needed. (Also describe how they would be cleared- e.g. only branches or trees?)
b. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.
7. Wildlife			
a. Has the selection of the site for the wind turbines included an assessment of bird or bat deaths that might be caused by the wind turbine blades?			
b. Is the site of the wind turbines near a wetland (swamp or marsh) or a coastal mangrove forest?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands or mangrove forest, as these are common habitats for birds.
c. Will the project produce any runoff, including accidental spills, into a waterway that could significantly disturb fish or other aquatic life?			
d. Will the project significantly disturb any wildlife or disturb or destroy their habitat, whether directly or from air pollution, dust or noise?			If "Yes", what animals
8. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", what park, area or habitat
b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the project in an area susceptible to earthquakes?			
d. Will the project significantly disturb any natural views or beauty in the area?			
9. Waste Management			
a. Is there a plan for proper collection and disposal of construction waste?			If "Yes", explain how.

b. Is there a plan for proper collection and disposal of waste (garbage, sewage) in the workers' housing?			If "Yes", explain how.
10. Noise / Dust / Emissions			
a. Does the contractor have a plan to control noise during construction?			If "Yes", explain how.
b. Does the contractor have a plan to control dust during construction?			If "Yes", explain how.
c. Does the contractor have a plan to control emissions from machinery during construction?			If "Yes", explain how.
d. Does the contractor have a plan to protect nearby houses from noise of the wind turbines?			If "Yes", explain how.
e. Does the contractor have a plan to control noise of diesel engines during operation?			If "Yes", explain how.
f. Does the contractor have a plan to control emissions during operation?			If "Yes", explain how.
11. Health and Safety			
a. Has the contractor been instructed about the applicable health and safety procedures, including **proper safety equipment** for workers?			If "Yes", how has the contractor been instructed
b. Has the contractor been instructed about the NEP Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
c. Has the contractor prepared a plan for worker housing, and their water and sanitation needs, according to the Environmental and Social Code of Practice?			
d. Does the contractor have plans for fires, explosions, accidental fuel spills, or other emergencies during construction?			If "Yes", how has the contractor been instructed
e. Has the contractor prepared plans for fires, explosions, accidental fuel spills, or other emergencies during operation?			If "Yes", how has the contractor been instructed
f. Has the community been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)

g. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
12. Grievance Redress Mechanism			
a. Has the Grievance Redress Mechanism been explained to the community?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If "Yes", describe how this done
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If "Yes", describe the focal person of name and phone number
d. Has the community been informed of other contact persons for questions, comments or complaints?			If "Yes", how were they informed and describe the names and phone number of the respective department to contact

Screening Form for Biomass-Diesel Mini-Grids

Region / State		
Township		
Village		
Pcode		Can be entered later
Project Name		
Developer Representative Name		Form to be completed by developer
Developer Representative Signature and Date		
VEC Members (or other villagers) Consulted		Should consult with one or more VEC members or other village leaders
DRD Township Officer Name		
DRD Township Officer Signature and Date		

	YES	NO	
1. Community Support and Consultation			
a. Has there been public consultation about the project in the community?			If "Yes", list the date(s) and public consultation places
b. What are the ethnic groups in the community?			List the ethnic groups and note which is the majority group
c. Did women, all the ethnic groups, and other vulnerable groups (such as the poor, elderly, disabled) participate in public consultations?			If "No", list those that did not participate
d. Do most people in the community support the project?			If "Yes", percent supporting
e. Do any groups in the community object to or have doubts about the project?			If "Yes", what are those objections or doubts?
f. Was the community informed about plans for construction, including location of structures and infrastructure (both permanent and temporary), workers housing, and other impacts (noise, dust, etc.)?			If "Yes", List the informed method about plans
g.1. Are there neighboring or other nearby communities that might be affected by the project, either during construction or operation?			Impacts could be the construction of an access road, noise, dust, water pollution, changes in water flow, loss of access to resources.
g.2. Have these neighboring or other nearby communities been informed about the project?			If "Yes", how have they been informed (meeting, letter, other

			communication), and when.
2. Ethnic Minority Groups			
a. Do any of the ethnic groups in the community have a long-term and traditional attachment (for generations) to the land or resources in the area?			If "Yes", contact Project Safeguards Unit and the World Bank to determine if additional consultations are needed under the safeguards policy
b.1. Do most people in any of the ethnic groups in the community understand only their language?			
b.2. If so, were members of these ethnic minorities informed about the project and its possible environmental and social impacts **in their language**?			If "Yes", how (in meeting, documents, etc.) and when
c. Do the majority of the people in the ethnic group or groups support the project?			If "Yes", approximately what percent supports the project?
3. Land Acquisition / Land Use			
a. Gasification / Biomass Power Generation Infrastructure / Diesel Generators			
a.1. Will any of the infrastructure for gasification, biomass power generation, and diesel generation be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
a.2. Will any of the infrastructure for gasification, biomass power generation, and diesel generation be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b. Biomass and Diesel Storage Facilities			
b.1. Will any of the facilities used to store raw materials or diesel fuel be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
b.2. Will any of the facilities used to store raw materials or diesel fuel be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.
c. Other Permanent Infrastructure			
c.1. Will any other permanent infrastructure such electric poles, transformers, be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, <u>after</u> completing this Basic Screening Form 1.

c.2. Will any other permanent infrastructure such electric poles, transformers, be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d. Temporary Infrastructure			
d.1. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on privately owned lands?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
d.2. Will any temporary infrastructure such as access roads, workers housing, or other temporary construction uses (such as storage), be on public lands currently used by any person or groups of people for any purposes (agricultural or non-agricultural)?			If "Yes", follow the land protocol for each plot in Form 2, after completing this Basic Screening Form 1.
4. Access to Mini-Grid			
a.1. Are there any households in the community that are not connected with the mini-grid?			If "Yes", list the households and their reasons not to join the grid in Form 4.
a.2. Do the household of minority ethnic groups and vulnerable groups include in the household which is not connected with mini-grid?			If "Yes", what group(s) and how many people in each group.
b. Will the public streetlights be placed evenly and fairly throughout the community?			If "No", what parts of the community will not receive streetlights.
c. Are there schools or other educational buildings in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
d. Are there health centers or other health facilities in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
e. Are there religious buildings (temples, churches, mosques, etc.) in the project village?			If "Yes", how many are there, and which of them will be provided with electricity?
5. Physical Cultural Resources			
a. Are there any shrines, sacred trees, sacred groves, graves, or other cultural or spiritual or religious sites or structures that might be affected by the project?			If "Yes", describe what and how. If the sites or structures will be significantly disturbed, the design should be changed to avoid or minimise impacts.
6. Vegetative Clearing			

a. Is it required to remove or clean the branches of the trees or trees along the distribution line and in the project site?			If "Yes", describe the types of trees, number of trees and the area where clearing is needed(Also describe how they are cleaned- e.g. only branches or trees?)
b. Is the draining or filling of wetlands (swamps) required?			If "Yes", **stop and change the location** of infrastructure or alignment of project to avoid these wetlands.
7. Wildlife			
a. Will the project produce any runoff into a waterway that could significantly disturb fish or other aquatic life?			
b. Will the project significantly disturb any wildlife or disturb or destroy their habitat, whether directly or from air pollution, dust or noise?			If "Yes", what animals
8. Natural Habitats, Aesthetics or Vistas			
a. Is the project near a National Park, protected area, or similar important natural habitat; and will it have a significant impact on that park or area?			If "Yes", what park, area or habitat
b. Is any part of the project in an area vulnerable to landslides or erosion?			If "Yes", what part, where.
c. Is the project in an area susceptible to earthquakes?			
d. Will the project significantly disturb any natural views or beauty in the area?			
9. Waste Management			
a. Is there a plan for proper collection and disposal of construction waste?			If "Yes", explain how
b. Is there a plan for proper collection and disposal of waste (garbage, sewage) in the workers' housing?			If "Yes", explain how
c. Is there a plan for proper collection and disposal of any waste from gasification or power generation?			If "Yes", explain how
10. Noise / Dust / Emissions			

a. Does the contractor have a plan to control noise during construction?			If "Yes", explain how
b. Does the contractor have a plan to control dust during construction?			If "Yes", explain how
c. Does the contractor have a plan to control emissions from machinery during construction?			If "Yes", explain how
d. Does the contractor have a plan to control noise from biomass generation during operation?			If "Yes", explain how
e. Does the contractor have a plan to control emissions from biomass generation during operation?			If "Yes", explain how
d. Does the contractor have a plan to control noise from diesel generation during operation?			If "Yes", explain how
e. Does the contractor have a plan to control from emissions from diesel generation during operation?			If "Yes", explain how
11. Health and Safety			
a. Has the contractor been instructed about the applicable health and safety procedures, including **proper safety equipment** for workers?			If "Yes", how has the contractor been instructed
b. Has the contractor been instructed about the NEP Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
c. Has the contractor prepared a plan for worker housing, and their water and sanitation needs, according to the Environmental and Social Code of Practice?			If "Yes", how has the contractor been instructed
d. Does the contractor have plans for fires, explosions, or other emergencies during construction?			If "Yes", how has the contractor been instructed
e. Has the contractor prepared plans for fires, explosions, or other emergencies during operation?			If "Yes", how has the contractor been instructed
f. Has the community been informed of health and safety issues that may affect them during construction?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
g. Has the community been informed of health and safety issues in operation and maintenance of the project, and in household use?			If "Yes", how has the community been informed (meetings, brochures, posters, through VEC, etc.)
12. Grievance Redress Mechanism			

a. Has the Grievance Redress Mechanism been explained to the community?			If “Yes”, how has the community been informed (meetings, brochures, posters, through VEC, etc.)
b. Have brochures or posters about the Grievance Redress Mechanism been posted in public places (such as a community board) where all can see them?			If “Yes”, describe how this done
c. Has a member of the Village Electrification Committee (VEC) been selected as focal person to receive comments and grievances?			If “Yes”, describe the focal person of name and phone number
d. Has the community been informed of other contact persons for questions, comments or complaints?			If “Yes”, how were they informed and describe the names and phone number of the respective departments to contact

ANNEX 4: Expected Key Environmental Impacts, mitigation measures and corresponding expected environmental safeguard instruments

Expected Key Environmental Impacts	**Mitigation Measures**	**Expected Environmental Safeguard Instrument (ESCOP, ESMP, IEE)**
Subproject 1 – Grid Extension Distribution and Power Lines		
Construction Stage		
Impact 1: Change in land cover	Measure 1: • Route survey and analysis of alternative routes for finalizing alignments of distribution lies for least impact to land cover and encroachment of private land • Clear vegetation, cutting / trimming trees for ROW of Power line only for relevant areas.	ESCOP
Impact 2: Electrocution	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights	ESCOP / ESMP
Impact 3: Occupational Health and Safety	Measure 3: • Adherence to good engineering practice of hoisting poles and towers and preventive measure to prevent accidents and mishaps • Equip workers with relevant PPE and provide health and safety measures while working at	ESCOP / ESMP

	heights.	
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Clearing of ROW by cutting / trimming trees where necessary especially before the onset of monsoon • Regular Patrolling along the power lines to identify immediate maintenance operation. • Timely repair / replacement of faulty lines and accessories • Ensure proper placement of dustbins or trash containers that are along power line ROW • Prohibit placing trash container that would attract undesirable pests or dogs under the H-pole.	ESCOP / ESMP
Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require IEE preparation:		"Medium" Impact Significance for BPC/SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental Critical Areas),

		• "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).
Subproject 2 – Grid Extension Household Connections and Meters		
Construction Stage		
Impact 1: Change in land cover	Measure 1: • Route survey and analysis of alternative routes for finalizing alignments of distribution lines to household • Clear vegetation, cutting / trimming trees for ROW of Power line only for relevant areas.	ESCOP
Impact 2: Risk of Electrocution	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights	ESCOP
Impact 3: Occupational Health and Safety	Measure 3: • Adherence to good engineering practice of hoisting poles and towers and preventive measure to prevent accidents and mishaps • Equip workers with relevant PPE and provide health and safety measures while working at heights.	ESCOP / ESMP

Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Clearing of ROW by cutting / trimming trees where necessary especially before the onset of monsoon • Regular Patrolling along the power lines to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure undisturbed electrification • Ensure proper placement of dustbins or trash containers that are along power line ROW, household premises. • Prohibit placing trash container that would attract undesirable pests or dogs under the H-pole. • Check for quality assurance of material and equipment, including procurement of meter box, distribution panel, main switch, fuse, circuit breaker, internal switches, cables, bulbs , lamps, concrete poles for power lines and other relevant accessories to household connections • Prevent electricity pilferage (losses) by supply check / counter check the meter box seal (cover, terminal, box) • Law enforcement according to Order 504/2009 if breeching of electrical consumption without a household meter box installed at household level.	ESCOP / ESMP

Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental Critical Areas), • "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).
Subproject 3 – Off-Grid Bio Gas Power Plant		
Construction Stage		
Impact 1: Change in land cover	Measure 1: • Route survey and analysis of alternative site for subproject land acquisition and for finalizing	ESCOP

	alignments of distribution lines to household • Clear vegetation, cutting / trimming trees for ROW of Power line only for relevant areas.	
Impact 2: Occupational Health and Safety	Measure 2: • Adherence to good engineering practice of hoisting poles and towers and preventive measure to prevent accidents and mishaps • Equip workers with relevant PPE and provide health and safety measures while working on heights or handling wastes	ESCOP / ESMP
Impact 3: Noise Level	Measure 3: • Check for noise level during construction • Use noise suppressors and mufflers in heavy construction equipment. Avoid prolonged exposure to noise (produced by equipment) by workers. • Limit the use of construction equipment producing excessive noise from 9:00 a.m. to 5:00 p.m.	ESCOP / ESMP
Impact 4: Air pollution	Measure 4: • Check for dust during construction work of sub project: ensure all project vehicles are in good operating condition: spray water on dry surfaces / unpaved roads regularly, maintain adequate moisture content of soil during transportation, compaction and handling. • Avoid use of equipment such as stone crusher at site, which produce significant amount of particulate matter	ESCOP / ESMP

	• Provide relevant PPE to workers • Ensure technically sound installation procedures for a Bio Gas Power Plant and checking for environmental performance during commissioning of plant.	
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Regular Patrolling along the power lines to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure undisturbed electrification • Ensure proper placement of dustbins or trash containers that are along power line ROW, household premises. • Monitoring and surveillance for safety measure to prevent fire hazard	ESCOP / ESMP
Impact 2: Occupational Health and Safety	• Equip workers with relevant PPE and provide health and safety measures while working on heights or handling wastes • Supervision for avoidance for improper waste handling during operation • Check for methane pressure, noise and smell • Monitor the environmental performance of subproject and equipment including manometer, water trap, Sulpher cleaner, engine, dynamo and	ESCOP / ESMP

	power lines to household connections	
Impact 4: Soil / water pollution from spills and leaks of oil, toxic chemicals	Measure 4: • Good housekeeping, proper handling of lubricating oil and fuel • Collection, proper treatment and disposal of spills • Provide grease / oil traps	ESCOP / ESMP
Impact 5: Noise Level	Measure 5: • Provide relevant PPE (Personal protection equipment) such as ear plugs, gloves, boots, masks, etc. should be provided to the worker(s) in operation.	ESCOP / ESMP
Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental

		Critical Areas), • "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1).
Subproject 4 – Off-Grid Solar Home System		
Construction Stage		
Impact 1: Electrocution / Occupational Health of workers	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights and electrification work • Tree cutting to allow sunlight on solar panel • Ensure technically sound installation of the solar panel and its accessories for SHS Electrification and check for its environmental performance during commissioning.	ESCOP / ESMP
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Regular Patrolling of public lighting systems to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure	ESCOP / ESMP

	undisturbed electrification • Monitoring and surveillance for safety measure to prevent fire hazard	
Impact 2: Health impact from batteries	Measure 2: Explore options for recycling of used batteries. • Collection of used batteries and plan for proper disposal • Proper disposal of used batteries (lead acid or nickel-cadmium) if acid batteries utilized • Use dry cell batteries instead of acid / lead batteries for SHS. • Use of old lead batteries under the subproject is not allowed. • The central PMOs will set up a mechanism to take back old or non-functional lead acid batteries and centrally take care of adequate disposal to a reputable recycling firm. Under this scheme the return of those batteries will be incentivized to avoid sales to informal recyclers in Myanmar.	ESCOP/ESMP
Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC

		issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental Critical Areas), • "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).
Subproject 5 – Mini Grid Solar Photovoltaic (PV) System		
Pre-Construction Stage		
Impact 1: Health and Safety Hazards related to use (transportation, installation and maintenance) of battery	Measure 1: • Observe the manufactures procedures during the installation, commissioning, operation, taking out of service, and disposal of batteries • Ensure safe protection of battery transportation for off-road conditions	ESCOP / ESMP

	• Regular inspection of the condition of the battery. Particular care should be taken while handling unpacked batteries. • Observe and record warning and faculty for maintenance of batteries. • Storage of batteries: control for appropriate environmental temperature and procedures of cleaning the surface to be applied and monitored	
Construction Stage		
Impact 1: Change in land cover	Measure 1: • Route survey and analysis of alternative site for subproject land acquisition for mini grid solar panel (50'x 60') and surrounding areas and for finalizing alignments of distribution lines to household • Supervision of vegetation clearance for installation of the mini grid solar panel for maximum sunlight absorption	ESCOP
Impact 2: Construction of power house (if applicable)	Measure 2: • Construction of powerhouse need to have detailed layout/sketch on battery installation • Must have a well-ventilated enclosure, especially nearby battery installation • Limit access especially to the battery room to people trained in maintenance and shut-down procedures	ESCOP / ESMP
Impact 3: Electrocution / Occupational Health of workers	Measure 3: • Equip workers with relevant PPE and provide	ESCOP / ESMP

	health and safety measures while working on heights and electrification work • Ensure technically sound installation of the mini grid solar panel and its accessories for electrification and check for its environmental performance during commissioning.	
Impact 4: Health impact from batteries	Measure 4: • Explore options for recycling of used batteries • Proper disposal of used batteries (lead acid or nickel-cadmium) if acid batteries utilized, through central PMOs facility to take back old lead-acid batteries. • Use dry cell batteries instead of acid / lead batteries	
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Regular Patrolling along the power lines to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure undisturbed electrification • Ensure proper placement of dustbins or trash containers that are along power line ROW, household premises. • Monitoring and surveillance for safety measure to prevent fire hazard	ESCOP / ESMP

Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental Critical Areas), • "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).
Subproject 6 – Off-Grid Diesel Generator		
Construction Stage		
Impact 1: Change in land cover	Measure 1: • Route survey and analysis of alternative site for subproject land acquisition and for finalizing	ESCOP

	alignments of distribution lines to household • Clear vegetation, cutting / trimming trees for ROW of Power line only for relevant areas.	
Impact 2: Electrocution / Occupational Health of workers	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights or handling wastes	ESCOP / ESMP
Impact 3: Noise Level	Measure 3: • Check for noise level during construction • Use noise suppressors and mufflers in heavy construction equipment. Avoid prolonged exposure to noise (produced by equipment) by workers. • Limit the use of construction equipment producing excessive noise from 9:00 a.m. to 5:00 p.m.	ESCOP / ESMP
Impact 4: Air pollution	Measure 4: • Check for dust during construction work of sub project: ensure all project vehicles are in good operating condition: spray water on dry surfaces / unpaved roads regularly, maintain adequate moisture content of soil during transportation, compaction and handling. • Avoid use of equipment such as stone crusher at site, which produce significant amount of particulate matter • Provide relevant PPE to workers • Ensure technically sound installation procedures for a Diesel Generator Plant and choice of	ESCOP/ESMP

	generator equipment; checking for environmental performance during commissioning of plant.	
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Regular Patrolling along the power lines to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure undisturbed electrification • Ensure proper placement of dustbins or trash containers that are along power line ROW, household premises. • Monitoring and surveillance for safety measure to prevent fire hazard	ESCOP / ESMP
Impact 2: Occupational Health and Safety	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights or handling wastes • Supervision for avoidance for improper waste handling during operation • Check for methane pressure, noise and smell • Monitor the environmental performance of subproject and equipment including air fan, engine, battery, fuel tank, dynamo, exhaust pipe, and wiring system.	ESCOP / ESMP

Impact 3: Noise Level	Measure 3: • Provide PPE to workers in operation • Noise mitigation measure such as acoustic system / sound proof system in plant / generator, engine room	ESCOP / ESMP
Impact 4: Air pollution from exhaust emission, vapor, etc.	Measure 4: • Grow trees within subproject compound and environs to absorb GHG (Green House Gas) emission and Particulate Matter • Ensure exhaust pipe height according to technical specification	ESCOP / ESMP
Impact 5: Soil / water pollution from spills and leaks of oil, toxic chemicals	Measure 5: • Good housekeeping, proper handling of lubricating oil and fuel • Collection, proper treatment and disposal of spills • Provide grease / oil traps	ESCOP / ESMP
Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA

		(Environmental Critical Areas), • "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).
Subproject 7 – Off-Grid Mini Hydro Power Plant (< 1 MW)		
Construction Stage		
Impact 1: Change in land cover	Measure 1: • Route survey and analysis of alternative site for subproject land acquisition and for finalizing alignments of distribution lines to household • Clear vegetation, cutting / trimming trees for ROW of Power line only for relevant areas.	ESCOP
Impact 2: Electrocution / Occupational Health of workers	Measure 2: • Adherence to good engineering practice of hoisting poles and towers, constructing infrastructure for a mini hydro power plant and preventive measure to prevent accidents and mishaps • Equip workers with relevant PPE and provide health and safety measures while working on heights.	ESCOP / ESMP
Impact 3: Noise Level	Measure 3:	ESCOP / ESMP

	• Check for noise level during construction • Use noise suppressors and mufflers in heavy construction equipment. Avoid prolonged exposure to noise (produced by equipment) by workers. • Limit the use of construction equipment producing excessive noise from 9:00 a.m. to 5:00 p.m.	
Impact 4: Air Pollution	Measure 4: • Check for dust during construction work of sub project: ensure all project vehicles are in good operating condition: spray water on dry surfaces / unpaved roads regularly, maintain adequate moisture content of soil during transportation, compaction and handling. • Avoid use of equipment such as stone crusher at site, which produce significant amount of particulate matter • Provide relevant PPE to workers • Ensure technically sound installation procedures for a Mini Hydro Power Plant and choice of turbine, generator equipment; checking for environmental performance during commissioning of plant.	ESCOP / ESMP
Impact 5: Water Pollution	Measure 5: • Prevent discharge of fuel, lubricants, chemicals, and waste (solid / liquid) into river, stream from which hydro power is extracted	ESCOP / ESMP
Impact 6: Destruction of Aquatic Habitat	Measure 6:	ESCOP / ESMP

	• Install sediment basins or trap sediments in storm water prior to discharge to surface water • Keep noise level (e.g. from equipment) to a minimum level, as certain fauna are very sensitive to loud noise • Provide trash capture mesh / screen at intake / entrance gate of penstock before entering turbine	
Impact 7: Erosion and Siltation	Measure 7: • Develop landscaping and erosion control work • Technically sound engineering design and practice for construction of a mini hydro power plant • Provide stone pitching or masonry work at banks of intake structure • Provide de-silting basin before forebay at inlet of infrastructure and de-silt regularly	ESCOP / ESMP
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Regular Patrolling along the power lines to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure undisturbed electrification • Ensure proper placement of dustbins or trash containers that are along power line ROW, household premises. • Monitoring and surveillance for safety measure to	ESCOP / ESMP

	prevent fire hazard	
Impact 2: Occupational Health and Safety	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights or handling wastes • Supervision for avoidance for improper waste handling during operation • Check for methane pressure, noise and smell • Monitor the environmental performance of subproject and equipment including air fan, engine, battery, fuel tank, dynamo, exhaust pipe, and wiring system.	ESCOP / ESMP
Impact 3: Noise Level	Measure 3: • Provide relevant PPE (Personal protection equipment) such as ear plugs, gloves, boots, masks, etc. should be provided to the worker(s) in operation. • If noise level exceed 80 dB, measures for providing acoustic (sound proof) system should be seriously considered.	ESCOP / ESMP
Impact 4: Soil / water pollution from spills and leaks of oil, toxic chemicals	Measure 4: • Good housekeeping, proper handling of lubricating oil and fuel • Collection, proper treatment and disposal of spills • Provide grease / oil traps	ESCOP / ESMP

Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental Critical Areas), • "High" impact Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).
Subproject 8 – Wind Energy for Electrification		
Construction Stage		
Impact 1: Change in land cover	Measure 1:	ESCOP

	• Route survey and analysis of alternative site for subproject land acquisition and for finalizing alignments of distribution lines to household • Clear vegetation, cutting / trimming trees for ROW of Power line only for relevant areas.	
Impact 2: Electrocution / Occupational Health of workers	Measure 2: • Equip workers with relevant PPE and provide health and safety measures while working on heights. • Provide safety measures while installing the wind blades and hoisting the system • Adherence to good engineering practice of hoisting poles and towers, rotor blades, constructing infrastructure for a Wind Energy Plant and preventive measure to prevent accidents and mishaps • Source of risk related to workers operating under hazardous conditions involving blade ejection, overheating of generators, tower collapse, hazardous weather conditions, handling heavy equipment, lightning strikes causing fires should be considered and safeguard measures such as good engineering design / manufacturing, professional site supervision and monitoring during construction and installing of relevant lighting protection and earthing measures to the sub project.	ESCOP / ESMP

Impact 3: Noise Level	Measure 3: • Check for noise level during construction • Use noise suppressors and mufflers in heavy construction equipment. Avoid prolonged exposure to noise (produced by equipment) by workers. • Limit the use of construction equipment producing excessive noise from 9:00 a.m. to 5:00 p.m.	ESCOP / ESMP
Impact 4: Air pollution	Measure 4: • Check for dust emitted from construction machinery during construction work of sub project: ensure all project vehicles are in good operating condition: spray water on dry surfaces / unpaved roads regularly, maintain adequate moisture content of soil during transportation, compaction and handling. • Avoid use of equipment such as stone crusher at site, which produce significant amount of particulate matter • Provide relevant PPE to workers • Ensure technically sound installation procedures for a Wind Energy Plant and choice of generator equipment; checking for environmental performance during commissioning of plant.	ESCOP / ESMP
Impact 5: Destruction of Avian Population	Measure 5: • Safeguard measures such as prevention system for potential birds / bats or avian population being	ESCOP / ESMP

	accidentally trapped by the rotor blades should be seriously considered during the construction of the sub project. • Site selection to account for known migration pathways or areas where birds and bats are highly concentrated such as wet lands, should be avoided in siting for a wind farm. • Configuring turbine arrays to avoid avian mortality (e.g. group turbines parallel to known bird movement) should be considered during design considerations.	
Operational Stage		
Impact 1: Risk of fire hazard and electrocution	Measure 1: • Regular Patrolling along the power lines to identify immediate maintenance operation. • Maintenance work to household electrification such as bulb / lamp replacement, repair of fuse, and other wiring connections to ensure undisturbed electrification • Ensure proper placement of dustbins or trash containers that are along power line ROW, household premises. • Monitoring and surveillance for safety measure to prevent fire hazard	ESCOP / ESMP
Impact 2: Occupational Health and Safety	Measure 2:	ESCOP / ESMP

	• Equip workers with relevant PPE and provide health and safety measures while working on heights and handling equipment	
Impact 3: Noise Level	Measure 3: • Provide PPE to workers in operation	ESCOP / ESMP
Impact 4: Soil / water pollution from spills and leaks of oil, toxic chemicals	Measure 4: • Good housekeeping, proper handling of lubricating oil and fuel • Collection, proper treatment and disposal of spills • Provide grease / oil traps	ESCOP / ESMP
Overall subproject characterization:		*Category B*
--'Typical (most common) safeguard instrument for total subproject		ESCOP / ESMP (IEE)
--'Possible significant impacts that could require full IEE preparation:		"Medium" Impact Significance for BPC / SEC issue of change in land cover, drainage, water, air, noise, resettlement private land, change in habitat, socio economic status such as livelihood, health, and economy.
--'Impacts that may trigger Category A classification (and therefore not eligible)		• Subproject in ECA (Environmental Critical Areas), • "High" impact

	Significance for each scored BPC/SEC issue for overall four parameters of extent, duration, magnitude and probability (Refer ESMF Table 8.1/8.2).

Annex 5: Description of Potential Social Impacts

The table below provides a list of potential social impacts to the NEP

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

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

Annex 6: Indicative Outline for Reporting Environmental and Social Issues for the Pre-Feasibility Proposals of NEP Mini-Grid Sub-Projects

After completion of the screening forms, mini-grid sub-project developers should include the expected environmental and social issues in their prefeasibility proposals.

1. Description of Communities and Population

- Brief description of the communities directly or indirectly affected by the project, including, number of households, number of people, main economic activities

- Describe the ethnic composition of the communities: which ethnic groups, and approximate percent of each ethnic group in each community

- Identify any other vulnerable groups or individuals (religious minorities, the poor, disabled, elderly, female-headed households), for whom special attention may be needed.

2. Environmental and Social Issues in the Sub-Project

- Provide a list of the environmental and social issues that have been identified in the screening form.

3. Potential Environmental Impacts

- For each of the environmental issues listed above, provide:
    - A description of the expected impact
    - The area affected by that impact
    - People to be affected by that impact
    - How that impact might be avoided, reduced, mitigated, or compensated

4. Potential Social Impacts

- For each of the social issues listed above, provide:
    - A description of the expected impact
    - The area affected by that impact
    - People to be affected by that impact
    - How that impact might be avoided, reduced, mitigated, or compensated

5. Ethnic Minorities

- Identify the ethnic minorities who will benefit from the project, and/or who will be affected by the potential environmental or social impacts

- Briefly describe if any members of the ethnic minorities can communicate only in their language.

- Briefly describe any special arrangements that will be made to discuss the project with the ethnic minorities and to obtain their broad community support for the sub-project

- Identify key leaders or representatives of the ethnic minority groups

6. Consultation and Disclosure

- Present a plan for consulting with the community, including both men and women, during planning and design of the sub-project.

- Describe how other vulnerable people will be included in the consultations.

- Describe plans for free, prior and informed consultations with the ethnic minorities.

- Present a plan for disclosure of information about the sub-project, including where and how that information will be provided.

7. Initial Identification of Land Acquisition

Provide a list of all lands and assets that may need to be acquired for the sub-projects

Provide the Land Acquisition Screening Form for every plot that may be acquired (provided in Annex 9)

Provide the Voluntary Land Donation Form for every plot that may be donated by the landowner or land user (provided in Annex 9)

8. Identification of Non-Participants

Provide the list of villagers who do not participating in the sub-project, using" Form 4: NEP Households Not Participating in the Mini-Grid Programme" below

Form 4: NEP Households Not Participating in the Mini-grid Project

Project Name_____ Village_____ Pcode_____ Township _____ District _____ State/Region _____

Householder Details					Reason for not signing up						
Name	Signature	Address	Phone	Status[1]	Too long to wait	Too expensive	Prefer candles or kerosene	Already have diesel generator	Already have SHS	Service is not good enough	Other (describe)

[1] Household Status: Put in the following codes if the household is **1** Ethnic minority in village (not part of ethnic majority group in the village) **2** Poor household **3** All adults in household are elderly **4** Disabled person in household **5** Religious minority in village

Township Engineer Name _____ Signature and date_____

Developer Representative Name_____ Signature and date_____

Note: Form 3 needs to be submitted in Feasibility Study Stage

[3 copies: 1 for VEC, 1 for Township Engineer, 1 for DRD-NEP Safeguards Team] 10 May 2018

Annex 7: Guidelines for Physical Cultural Resources

As stated in the World Bank Physical Cultural Resources (PCS) Safeguard Policy Guidebook, The PCR policy applies to projects having any one or more of the following three features: (i) Subprojects involving significant excavations, demolition, movement of earth, flooding or other major environmental changes; (ii) Subprojects located within or in the vicinity of a recognized PCR conservation area or heritage site; and (iii) Subprojects designed to support the management or conservation of PCR.

The subprojects under the proposed project will involve some excavation works, movement of earth and could potentially be located in the vicinity of Physical or Cultural Resources. A generic impact assessment of Physical Cultural Resources is outlined below.

Guidance on identification of PCR

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

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

Assessment of probable impacts due to activities

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

Construction phase:

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

2. Excavation, construction and soil compaction:
   - Direct physical damage to natural, manmade and buried PCR on site
   - Construction traffic,
   - Vibration, soil, air and water pollution causing damage to natural or manmade PCR on site.
   - Noise pollution can interfere with the use and enjoyment of PCR such as tourist destinations, historic buildings, religious establishments and cemeteries.

3. Mobilization of heavy construction equipment:

- Damage to natural or manmade PCR on site
- Soil compaction, damaging buried PCR (archaeological) onsite, and damaging pipelines and drains serving built PCR in the vicinity.

4. Flooding and Inundation:
   - Submergence or destruction of human-made, natural or buried PCR.
   - Barrier to access of all types of PCR.
   - Raised water table can lead to damage to all types of PCR.
   - Damage to aesthetics of scenic landscapes.

5. Waste disposal or landfill:
   -Burial or damage to natural, buried or underwater PCR.

Operational phase:

1. New and upgraded Roads:

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

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

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

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

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

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

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

2. Induced development:

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

3. Urban development:

- Changes in demography or settlement patterns leading to decay of inner cities and abandonment and neglect of older residential areas containing built PCR such as vernacular architecture.

- Developments which are out-of-character with their surroundings diminishing the aesthetic value of the townscape, decline in property values and ultimately, neglect of built PCR in the area.

- Damage to the aesthetics of scenic landscapes and townscapes.

Annex 8: Chance Find Procedures

"Chance find" procedures apply when NEP subprojects are identified as potentially impacting Physical or Cultural Resources either during the screening phase or during the actual construction period.

(1) Cultural property includes monuments, structures, works of art, or sites of significant points of view, and are defined as sites and structures having archaeological, historical, architectural, or religious significance, and natural sites with cultural values. This includes cemeteries, graveyards and graves.

(2) The list of negative subproject attributes which would make a subproject ineligible for support includes any activity that would adversely impact physical or cultural property.

(3) In the event of finding of properties of cultural value during construction, the following procedures for identification, protection from theft, and treatment of discovered sites or artifacts should be followed and included in standard bidding document.

(a) Stop the construction activities in the area of the chance find;

(b) Delineate the discovered site or area;

(c) Secure the site to prevent any damage or loss of removable objects.

(d) Notify the supervisory Engineer who in turn will notify the responsible local authorities;

(e) Responsible local authorities and the relevant Ministry would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures.

(f) Decisions on how to handle the finding shall be taken by the responsible authorities and the relevant Ministry. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance), conservation, restoration and salvage.

(g) Implementation of the authority decision concerning the management of the finding shall be communicated in writing by the relevant Ministry.

(h) Construction work could resume only after permission is given from the responsible local authorities and the relevant Ministry concerning safeguard of the heritage.

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

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

Annex 9: Indigenous Peoples Planning Framework[1]

NOTE:

The Indigenous Peoples Planning Framework from the original ESMF of May 2015 has been retained here. Although some aspects of project organization have changed (such as the grid-extension component now in the Ministry of Electricity and Energy instead of the Ministry of Electric Power, and the DRD now being in the Ministry of Agriculture, Livestock and Irrigation) and a few other modifications to the project been made since it commenced, the requirements and processes to obtain the free, prior, and informed consent of ethnic minorities affected by the project, as stipulated in the World Bank's OP/BP 4.10 on Indigenous People, remains unchanged.

1. Introduction

1.1 Project Objective

The proposed World Bank-financed Myanmar National Electrification Project (NEP) aims to support the Government of the Republic of the Union of Myanmar in increasing access to electricity services and achieving its goal of *universal access to electricity* by 2030.

1.2 Poverty and Social Impact Analysis (PSIA) Research

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

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

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

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

Overall a total of 114 focus group discussions (FGDs) and 378 Key Informant Interviews (KIIs) were conducted across all research sites. The PSIA Phase 1 report was finalised in December 2014.[2]

Phase II of the PSIA analysis, undertaken early in 2015, sought to provide a more complete picture of the issues above by collecting data in additional States and Regions. It also sought to deepen the understanding of the critical issues identified in Phase I. These included: (i) key barriers to accessing

[1] The Indigenous Peoples Planning Framework from the original ESMF of May 2015 has been retained here. Although some aspects of project organization has changed (such as DRD now being in the Ministry of Agriculture, Livestock and Irrigation) and a few other modifications to the project since it commenced, the requirements and processes to obtain the free, prior, and informed consent of ethnic minorities affected by the project, as stipulated in the World Bank's OP/BP 4.10 on Indigenous People, remains unchanged.

[2] The PSIA Phase 1 Report, as well as the draft Preliminary PSIA for ESMF Report (which included initial Phase 2 research findings), is available at: https://energypedia.info/wiki/File:WB_Myanmar_NEP_PSIA_Phase_I_Final.pdf.

electricity, namely the cost of connection to villages and cost of initial connection to the home; (ii) village and ward-level self-organisation approaches, the potential risk of exclusion of poor and marginalised households and of generating inter or intra village tensions/conflict over distribution of resources; (iii) processes followed to determine the location of electricity infrastructure (including land acquisition and donation); (iv) mechanisms in place to lodge and resolve complaints and disputes at local level; (v) quantifying the "affordability gap" and providing households' perception of the level of subsidies needed to support their connection to Government electricity services; and (vi) areas for priority capacity strengthening of the Department of Electricity Services at township level.

PSIA Phase II research was undertaken in:

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

1.3 Additional Social Assessment and Consultations

In addition to the PSIA Phase I and II research, during January – March 2015, a social assessment was undertaken including consultations with local communities, civil society, government and some business stakeholders. This focused on obtaining insights into potential social impacts of proposed project activities, per the requirements of the World Bank's operational policies on environmental assessment (OP 4.01), indigenous peoples (OP 4.10) and involuntary resettlement (OP 4.12).

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

Field visits were made to 10 villages across northern Chin State (Falam, Hakha) and southern Shan State (Taunggyi, Yatsauk); four villages in Chin State and six villages in Shan State. Field research included observation of examples of the type of infrastructure proposed to be funded through the NEP.

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

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

This IPPF aims to provide the implementing agencies—the Ministry of Electricity and Energy (MOEE) and Ministry of Agriculture, Livestock and Irrigation (MOALI), through the Department of Rural Development (DRD)—with the operational planning framework to avoid adverse social impacts and provide equitable and culturally appropriate project benefits to local ethnic minority communities and

other vulnerable population groups. The IPPF has been developed to address the social safeguards aspects of the World Bank's operational policy on indigenous peoples (or ethnic minorities in the context of Myanmar).

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

Consultations with ethnic minority organizations during project preparation have not revealed any opposition to the proposed project[3] and improved electricity services are in demand in ethnic States as well as in the seven Regions of Myanmar (see section on consultations).

2. Proposed Project Objectives and Design

2.1 Project Description

The proposed Myanmar National Electrification Project (the Project), funded by the World Bank through a loan of US$ 400 million and implemented by the Ministry of Electricity and Energy (MOEE) and the Ministry of Agriculture, Livestock and Irrigation (MOALI), will aim to: *help increase access to electricity in Myanmar*.

The expected results of the Project include new household connections in urban and rural areas across the country. Also, the project will help establish and support a coordinated sector-wide institutional framework for the implementation of national electrification program, and strengthen institutional capacity of implementing agencies, including both public and private sector active in the grid rollout and off-grid pre-electrification.

The proposed grid roll-out program will not only improve the well-being of the affected population by better lighting, telecommunications and entertainment, but also enable income-generation opportunities and enhanced productivity. Importantly, the program will prioritize connections for health clinics and schools, particularly in poor and vulnerable areas, to maximize developmental impacts.

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

2.2 Project Components

Component 1: Grid extension [IDA US$ 286 million].

This component supports Myanmar's utilities to extend distribution networks and connect communities and households closest to the existing national grid, in line with the National Electrification Plan. The component includes: (a) expansion of existing medium voltage (MV) line, and 977 MVA of MV/LV transformers; and (b) provision of 11,600 community connections (health clinics, schools and other public buildings), 1,084,345 household connections for 9,080 villages, and 132,000

[3] Key concerns were raised by ethnic minority and civil society organizations regarding the source of electricity for the grid extension component of the NEP. Particular concerns were expressed regarding the proposed construction of new large-scale hydropower projects, which originate in ethnic States. Concerns were also raised regarding coal-fired power stations. Such activities are not financed by the Project.

public lights. This component will provide International Development Assistance (IDA) financing for power distribution goods and materials (transformers, poles, conductors, insulators, switchgear, materials etc.) and installation.

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

This component will target communities located far beyond the existing national grid and, thus, unlikely to receive grid-based access in the next 10 or more years. The Project funding will be directed to the peripheral States/Regions with social and ethnic tension and conflicts where access to electricity services for all is essential for enhancing social/ethnic cohesion and peace building. Off-grid electrification will be technology neutral, depending on a technology assessment that will be undertaken for target communities. Technologies include solar photovoltaic (PV), mini-hydropower, wind, diesel, and hybrid (e.g. diesel/solar). The Project will support: development of mini-grids based on renewable energy or a hybrid of diesel and renewable energy technologies; and deployment of household solar PV systems in target communities, including households, public institutions (schools, health clinics and other community buildings) as well as public street lighting with cost sharing from villages, IDA grant and government grant. Disbursement of the IDA grant will be results-based and take place after the installation and required services have been delivered and verified in accordance with the guidelines to be detailed in the operational manual.

Component 3: Technical assistance and project management [IDA US$ 20 million].

This component will support: (a) strengthening of institutional capacity to implement the National Electrification Plan, including capacity building and training of the National Electrification Executive Committee and its Secretariat, capacity building at the Union, State/Region, district, township and village levels and for the private sector; (b) improving the policy and regulatory framework related to electrification; (c) development of an integrated, geographic information system (GIS)-based framework for electrification planning, results monitoring and impact evaluation of the project, building on the existing GIS platform for geospatial least-cost electrification planning; (d) securing technical advice and consulting services on standards, technology assessment and technical design, economic and financial analysis, environmental and social impact management, procurement and financial management; and (e) project management

Component 4: Contingent Emergency Response [IDA US$ 14 million].

At the initial stage, it was a "zero component" that allows a rapid reallocation of IDA Credit from other components for emergency recovery and reconstruction support in the event of a declared disaster. This component was to finance public and private sector expenditure on a positive list of goods and/or specific works, goods, services and emergency operation costs required for emergency recovery. An Operational Manual for this component was to detail financial management, procurement, safeguard and any other necessary implementation arrangements, to be submitted to and accepted by the WBG prior to the disbursement of IDA funds.

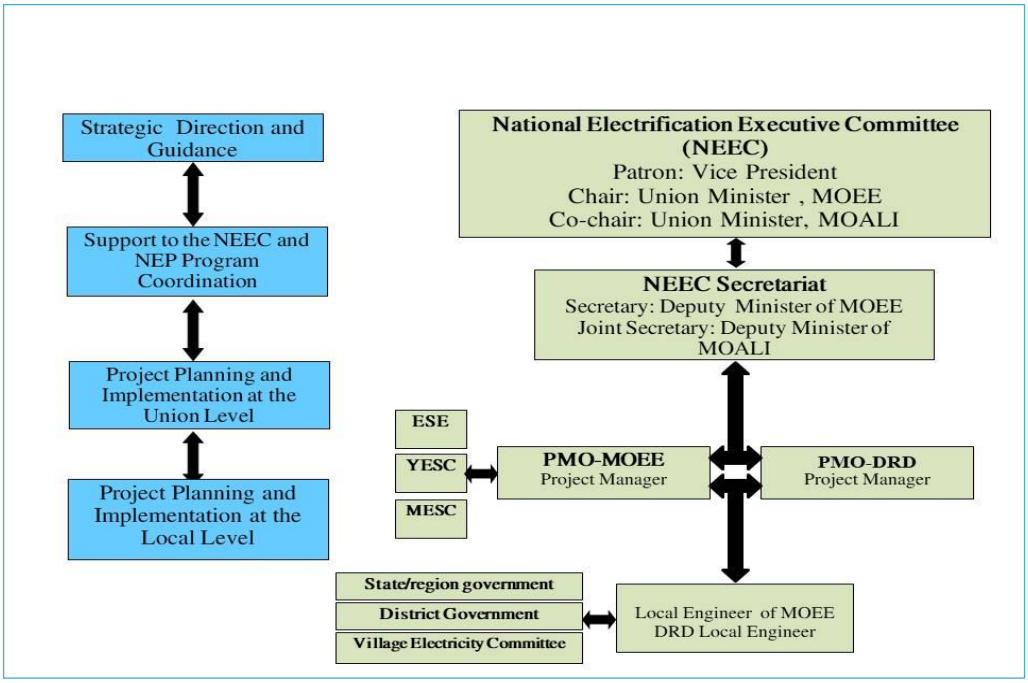
The Financing Agreement has been amended for Immediate Response Mechanism (IRM) to support the country's recovery dated on 24th August 2017, between the Republic of the Union of Myanmar and the International Development Association (IDA). The objective of the project is to help increase access to electricity in Myanmar, and to provide immediate and effective response in case of an Eligible Crisis or Emergency.

2.2.1 NEP Project Implementation Arrangements

Following the National Electrification Program recommendations, the government has established a National Electrification Executive Committee (NEEC) under the patronage of the Vice President through a decree issued on August 27, 2014. The NEEC is chaired by the minister of MOEE and co-

chaired by the minister of MOALI. A permanent NEEC Secretariat has been established in MOEE and MOALI, aimed at overseeing NEP Project Management Offices (PMOs), which are responsible for the technical activities carried out by ESE, YESC, MESC and DRD under the Project. The Union-level PMOs would be responsible for project planning and implementation at the union level, while local level project planning and implementation will be led by the District PMOs. Within the MOEE and MOALI (DRD), the Executive Committee, consisting of the MOEE and MOALI Union Ministers and other senior officials, would have overall oversight responsibility of the proposed operation, including the ESMF, and would be informed regularly about overall implementation.

NEP Institutional Implementation Framework



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

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

Applicable World Bank Safeguard Policies

The NEP triggers the following World Bank safeguard policies: Environmental Assessment (OP 4.01); Natural Habitats (OP 4.04); Physical Cultural Resources (OP 4.11); Involuntary Resettlement (OP 4.12) and Indigenous Peoples (OP 4.10). OP 4.10 applies to the project because site-specific project activities will be implemented in areas where ethnic minorities that meet the eligibility criteria of OP 4.10 are present and because national level project activities (e.g. policy reforms, institutional strengthening and capacity building) may have implications for ethnic minorities.

The OP 4.10 aims to ensure that ethnic minorities (i) do not suffer adverse effects, and (ii) receive culturally compatible social and economic benefits from Bank-financed activities. The policy requires screening for the presence of ethnic minorities in project areas.

Ethnic minorities that fall under the OP4.10 policy are considered as distinct, vulnerable, social and cultural groups that possess the following characteristics in varying degrees:

a) Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;

b) Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;

c) Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and

d) An indigenous language, often different from the official language of the country.

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

3. Legal and Institutional Framework

3.1 Legal framework concerning ethnic minorities

3.1.1 Constitution of Myanmar

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

It is stated that the "Union shall assist:

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

The constitution provides equal rights to the various ethnic groups included in the national races and a number of laws and regulations aim to preserve their cultures and traditions. This includes the establishment of the University for the Development of the National Races of the Union which was promulgated in 1991 to, amongst 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.[4]

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

[4] http://www.burmalibrary.org/docs15/1991-SLORC_Law1991-09-University_for_the_Development_of_the_National_Races_Law-en.pdf

- Section 15: For National races with suitable population, National races representatives are entitled to participate in legislature of Regions or States and Self-Administered Areas concerned.
- Section 17 (c): For National races of which representatives are so permitted to participate in legislature of Regions, States or Self-Administered Areas in accordance with Section 15, such representatives are to be permitted to participate, mainly, to undertake their National races affairs.
- Section 167 (a): The Region Hluttaw or the State Hluttaw may, if necessary, form Committees and Bodies with the Region or State Hluttaw representatives concerned to study and submit legislation in relation to national races affairs vested by the Constitution.
- Section 262 (e): The Chief Minister of the Region or State shall submit the list of persons who are approved by the Region or State Hluttaw or Chairpersons of the Self-Administered Division or Self-Administered Zone and the list of persons who are representatives elected to undertake the affairs of National races to appoint as the Ministers of the Region or State to the President.
- Section 262 (i): The President may, in co-ordination with the Chief Minister, appoint Ministers for the Self-Administered Division or the Self-Administered Zone or Ministers for National races affairs as Ministers concurrently in charge of other Ministries.

The Constitution makes no reference to ethnic minorities or indigenous peoples. It instead uses the term "national races". This term is not defined by the Constitution however is generally interpreted by applying the 1982 Myanmar Citizenship Law[5], which, in its 1983 Procedures, defines 135 national races.[6]

Under the Citizenship Law, nationals of Myanmar include the "Kachin, Kayah, Karen, Chin, Bamar, Mon, Rakhine or Shan and ethnic groups as have settled in any of the territories included within the State as their permanent home from a period anterior to 1185 B.E., 1823 A.D."[7]

3.1.2 Endorsement and Ratification of Relevant International Instruments

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

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

3.1.3 On National Races Law. National Races Protection Law – February 2015

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

[5] Myanmar Centre for Responsible Business, 2014, Myanmar Oil and Gas Sector Wide Impact Assessment (SWIA)
[6] Burma Library, "Burma Citizenship Law of 1982".
[7] Article 3, Myanmar Citizenship Law.

2013, the Pyithu Hluttaw instead proposed drafting a law for ethnic affairs. On 24 February 2015, the new law was passed by the *Pyidaungsu Hluttaw*[8]. Its purpose is defined as:

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

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

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

3.1.4 National Education Law

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

4. Ethnic Minorities and other Vulnerable and Under-Served Population Groups

4.1 Ethnic Minorities

The Government recognises 135 separate ethnic groups referred to within the Constitution as "national races". Major groups include Burman/Bamar, Shan, Karen/Kayin, Kachin, Chin, Rakhine, Mon and Kayah. The largest ethnic group is the Bamar (Burmese) people comprising about two-thirds of the population and who reside predominantly in the central and delta (seven) regions. Other ethnic minorities account for about one third of the population and live mainly within the seven states (although not exclusively). The official population estimates of the main ethnic minority groups are roughly: Shan (9 per cent), Kayin/Karen (7 per cent), Rakhine (4.5 per cent), Chin (2 per cent), Mon (2 per cent), Kachin (1.4 per cent), and Kayah (1 per cent).[9] Myanmar's ethnic minorities make up an estimated 30 – 40 per cent of the population, and ethnic states occupy around 57 per cent of the total land area along most of the country's international borders.[10]

Political boundaries in Myanmar are to some extent organised according to ethnic demographics. Seven States are named after seven large ethnic minority groups – namely, Kachin, Kayah, Kayin, Chin, Mon, Rakhine, and Shan States. The Bamar are the dominant ethnic group, especially in the seven Regions (Sagaing, Magwe, Tanintharyi, Mandalay, Yangon, Ayeyarwady, and Bago).

[8] Union Legislative Assembly: a joint session of upper and lower houses of parliament

[9] Republic of the Union of Myanmar, Directorate of Water Resources and Improvement of River Systems, *Myanmar Ayeyarwady Integrated River Basin Management Project Final Environmental and Social Management Framework*.

[10] http://www.tni.org/sites/www.tni.org/files/download/accesdenied-briefing11.pdf, accessed 09 March 2015

Aside from the 14 States and Regions, there are five self-administered zones: Naga (Sagaing Region); Danu (Shan State); Pa-O (Shan State); Pa Laung (Shan State); and Kokang (Shan State). There is also one self-administered division: Wa (Shan State). These six self-administered sub-national units are recognised in the 2008 Constitution (section 56) and are the result of earlier ceasefire agreements. Each self-administered unit is run by a Leading Body, which has at least 10 members and includes State or Region *Hluttaw* members and other members nominated by the Commander-in-Chief.[11]

Myanmar's ethnic diversity creates variations in traditional norms and power structures, ranging from a system of small principalities in Shan and Kayah States to the tribal systems of the Kachin. However, in addition to this, Bamar dominance over other ethnic minorities has been the source of considerable ethnic tension and has fuelled intermittent protests and separatist rebellions including armed conflict, which has affected traditional structures. Armed ethnic groups have established systems of administration separate either to the Government system or to traditional systems. All the main ethnic minority group areas have experienced various levels of conflict since 1962. There has been progress in peace talks between the Government and ethnic armed groups through leadership meetings, starting in late 2013, but a National Ceasefire Accord (NCA) has not yet been realised.[12] Nonetheless, the country is undergoing a process of profound transformation, including but not limited to the peace process, which has significant implications for local governance structures at township and village level.

Although a large majority of the population practices Buddhism, other religions are also present; mainly Christianity, Islam, Hinduism. Some estimates list the proportion of Buddhists at 90 per cent; other sources estimate 80 per cent. Other major religions, as estimated by the Pew Research Center, are: 7.8 per cent Christians, 5.8 per cent folk religions, 4 per cent Muslims, and 1.8 per cent Hindus.[13]

4.2 Internally Displaced and post-disaster groups

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

A 2018 survey by The Border Consortium (TBC)[14] estimated that there were at least 162,000 IDPs spread across 26 townships across southeast Myanmar.[15] This represents around half of the IDPs estimated in these townships during the last full survey conducted in 2012.[16] Overall, the average annual rate of annual displacement appears to have decreased from 75,000 people per year between

[11] Adam Smith International in partnership with Myanmar Development Resources Institute (MDRI), 2015, Institutional and Regulatory Assessment of the Extractive Industries in Myanmar p. 60

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

[13] Ministry of Health, Republic of the Union of Myanmar. 2014, *Myanmar Essential Health Services Access Project Indigenous Peoples Planning Framework*,

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

[15] TBC, 2018, *Human Security in South Eastern Myanmar* p.16

[16] TBC. 2012, *Changing the Realities, Poverty and Displacement in South East Burma/Myanmar* p.16-18

2003 and 2011 to approximately 10,000 people per year between 2012 and 2018[17]. In 2019, an estimated 130,000 persons displaced are living in 23 IDP camps in Rakhine State. [18]

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

4.3 Women

Table 1 below shows the population of Myanmar by Sex and State/Region, as included in the Provisional Results of the Myanmar Census. The full results of the Myanmar Census are expected to be available in May 2015.

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

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

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

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

5. Potential Issues and Impacts Relating to Ethnic Minorities and Other Vulnerable Groups

5.1 Introduction

The provision of electricity services supported by the project is expected to largely benefit ethnic minorities and other vulnerable groups. However, some impacts and risks are present as with most

[17] ibid.
[18] http://documents.worldbank.org/curated/en/734311557488220009/Concept-Project-Information-Document-PID-Rakhine-Recovery-and-Development-Support-Project-P168797, accessed 5 October 2019

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

The NEP is a national program, to be implemented in all states and regions of Myanmar. In particular, the off-grid program plans to target approximately 492,000 households in the remote, less accessible villages. Geographic areas of focus include the remote areas of Chin, Kachin, Kayin, and Shan States, and may also include Rakhine, Tanintharyi and Sagaing States/Regions.

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

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

5.2 Constraints to Accessing Electricity Services

A number of constraints or barriers were identified that prevent people from accessing electricity services and prevent a more equitable participation of ethnic minorities and vulnerable groups. These are described in the sub-sections below.

5.2.1 Affordability

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

Government grid, four were similarly located within close proximity of the transmission lines. While proximity to the grid plays an important role in determining access to electricity, the affordability of the connection to the village (for which villages are required to raise their own funds) plays an equally determining part.

As noted during PSIA Phase I, it is the high cost of the initial connection to the government electricity grid that constitutes the biggest obstacle to access from both villages and for middle-income and poor households within the targeted villages. Of the eight villages targeted in the study, those with access to electricity provided by Government services/private company were: (i) provided with access/village connection free of charge by the government or by the private company supplying electricity; (ii) in the case of Village 6 in Shan were exceptionally well-off [19] and able to raise the necessary funds from households; or (iii) contracted heavy debt to be able to cover the cost of connection (Villages 23 and 24 in Mandalay). Respondents in the remaining villages systematically highlighted the cost to the households of establishing this initial connection as the key obstacle for their lack of access. The perception that government subsidies for these connections were not available (or were granted only in very exceptional circumstances) was reported systematically across research sites.

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

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

5.2.2 Exclusion of Poor and Marginalized Households

The exclusion of poor and marginalised households noted during PSIA Phase I was confirmed by the analysis carried out under Phase II. None of the Village Electrification Committees (VECS) in the targeted villages included participation by poor households given the nature of the Self Reliant Electrification and lack of guidance for targeted support for poor households. All VECs in the study areas made a decision early on in the process about the households who could/could not afford to buy into the scheme. Given the high cost, those who could afford to contribute to the connection were invariably the better off households. Even in those villages with high levels of social

[19] Research team observation highlighted the quality of housing construction, infrastructure and related it to the source of income of the village/migration.

cohesion/social capital there was no discussion/system in place to cross-subsidise the participation of poor households.

5.2.3 Role of Women in Electrification Process

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

5.2.4 Impact on Ethnic Minorities

There was no significant variation noted in terms of social inclusion and community participation across regions/ethnic groups in sample villages, although a case was found in which one ethnic group was favored over another. Elite capture of the process and limited communication with the community was the overall trend observed.

The PSIA Phase II villages included two mixed villages (Village 17 in Mon and Village 6 in Shan). In the Mon case, the village was made up of Palong (20 per cent), Bamar (45 per cent) and Kayin (35 per cent) farmers with all groups being represented in the VEC and in the planning of village electrification. Bamar and Kayin tended to dominate local government institutions, which did not affect the distribution of benefits from the electricity scheme. There was no ethnic dimension to the exclusion of poor households in this case. What determined household ability to access electricity was exclusively household income.

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

5.3 Consultation and Engagement with Ethnic Minorities

To enhance benefits and avoid adverse impacts, consultations and meaningful community engagement is generally recognized as a key element of providing infrastructure and other development investments in communities with ethnic minorities. Stakeholder consultation discussions with ethnic minorities and Indigenous CSOs during preparation of the NEP identified a challenge experienced by the A-sho Chin minority group during the construction of tower stations for the Min-Bu-Sittwe power transmission line. While the NEP's support is for power distribution lines rather than power transmission lines, the key issues identified relate to limitations in the consultation and engagement activities undertaken. These limitations included lack of provision of information

regarding the possible impacts of tower stations, the processes used to map the locations of the tower stations, compensation frameworks and the grievance mechanism. Amongst the construction team, there was limited awareness of the land use and ownership structures within the community, in which land was traditionally used for the purposes of shifting cultivation. There was low awareness of the cultural value of community forests to the A-Sho Chin. Lack of transparency led to land acquisition problems.

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

5.4 Potential for Social Exclusion

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

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

The research team noted that poor households were excluded right from the planning stages – as village leaders/elites assumed their inability to pay and did not invite them for discussions. No instances of cross-subsidisation were observed (where the village itself put in place a mechanism to facilitate access to poorer households). In five of the nine villages with a functioning electricity scheme, poor households did not use electricity at all, relying on batteries, candles and kerosene lamps.[20]

PSIA Phase 1 research also found noteworthy issues of access, particularly by informal settlers in Yangon (namely in the poorer ward visited, YGN-3).[21] While the costs of the connection were indicated as a barrier to access by a small minority, the most commonly mentioned reason for using these "better than nothing at all" services in Yangon (i.e. informal electricity providers) was the inability to secure the necessary documentation (including household and land registration as well as approval of the application by the ward leader) to apply for a connection.

Households considered vulnerable/marginalised within the poorer wards researched in Yangon and Mandalay reported challenges with making monthly electricity payments (both for grid connection and for small scale distributors). Overall, the main coping strategies noted were delays in payment and borrowing from neighbours. The cost of household connections in poorer wards within Yangon

[20]Refer to Section 2.1 of the PSIA Phase 1 Report, outlining that for villages with connections to the grid, households with access to the service were usually those better off.

[21]Informal settlers in Yangon (YGN 3) are not included in wards records and therefore not officially "counted" in data on access to electricity (please see Table 9)

and Mandalay, where the government service does not yet have full coverage, was a significant barrier to access for low-income households.

5.5 Potential for Bypassing of Communities during the Grid Rollout

There is the potential that communities living in remote areas will be bypassed during grid rollout activities. Infrastructure could be expanded and constructed through their areas but they may not be the beneficiaries of the electricity delivered. It will be important to consider how to balance and sequence provision of off-grid electrification services to these communities if they are not able to be directly serviced as part of the grid rollout.

5.6 Impacts during Construction and Operations activities

Construction and operations activities associated with the NEP may present possible risks in areas with ethnic minorities. Particular triggers may include the use of companies and/or workers sourced from a different ethnic group and from outside the area of project implementation. The practice of government and/or contracted company personnel patrolling power lines to ensure their safety and/or undertake maintenance may also present risks. Local companies should be contracted for construction and operations activities wherever possible, through a transparent contracting and procurement process. Contracts should include good practices for working with local communities.[22]

5.7 Conflict and post-conflict areas

The WBG's *Country Partnership Framework (CPF) for Myanmar FY15-17* observes that Myanmar's transition is taking place in a context of continued fragility, conflict and violence, including religious violence, and an ongoing but incomplete peace process to address long-standing grievances of the country's many ethnic minorities.[23] It has also been noted that the lack of access to electricity was a factor for some displaced people to stay in refugee camps or longer-established Ethnic Armed Group (EAG)-run IDP settlements.[24]

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

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

There is a strong potential that access by the government or private companies contracted to the government to conflict and post-conflict areas to implement NEP activities may be limited. This may impact the potential for the project to achieve its objective of increasing access to electricity and in

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

[23] World Bank Group, 2015, Country Partnership Framework for Myanmar for the Period FY15-17 p. 23-24

[24] South. A and Jolliffe. K. United Nations High Commissioner for Refugees, February 2015, New Issues in Refugee Research. Research Paper No. 274. Forced Migration and the Peace Process p.31.

turn may exacerbate and/or trigger the potential for conflict within these areas. Some may also perceive the NEP as a mechanism for incursion by the state into areas controlled by EAGs.

At the same time, provision of infrastructure such as electricity and social services may have significant potential to contribute to peacebuilding. In particular, coordination and collaboration efforts between state and service providers supported by EAGs could improve the quality of service provision, while also supporting the war-to-peace transition.[25] Involvement of, and consultation with, ethnic State authorities as well as ethnic non-state groups and communities will be important for the successful implementation of the NEP. Supporting schools and health clinic services managed by non-government service providers as well as those managed by government will be important to enhance the intended benefits of the NEP.

To mitigate the above potential risks, it will be critical for the NEP to integrate conflict-screening within the ESMF, to embrace broad-based and inclusive community-based planning processes and to have a sound and nuanced understanding of the specific community context ahead of project implementation at village level.[26]

6. Implementation Arrangements for the IPPF

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

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

A key principle of the IPPF is to build on, and improve existing mechanisms, including MOEE and MOALI (DRD) processes for local planning and engagement with communities and Village Electrification Committees (VECs).

Using a least-cost approach, the Project has identified initial target areas for both the grid and off-grid components. Based on the initial lists, the district engineers of MOEE and MOALI (District PMOs) will identify priority investments needed in each district. In addition to the least cost principle, the proposed priorities at the district level will take into account other criteria, such as imminent risk of power shortage in the district and potential congestion of the upstream substation in supplying more residential customers, and environmental and social criteria such as the presence of health and education facilities, affordability and the inclusion of ethnic minorities, vulnerable and poor people through explicit selection criteria. The priority investments ('subprojects') by district will be aggregated at the Union level after consultations with the district and the state/ regional authorities to ensure a strong support and ownership of the electrification program at all levels. Off-grid subprojects will be demand-driven and will only take place where community members wish and support such subprojects, which will involve some upfront cash contributions, agreement to receive

[25] See for example Joliffe, K. Asia Foundation, June 2014, Ethnic Conflict and Social Services in Myanmar's Contested Regions, and World Bank, November 2014, Myanmar: Developing a Framework for WBG Engagements in Conflict-Affected Areas Workshop Summary p.2

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

training and willingness to take responsibility for O&M. Selection criteria will also involve equity concerns among different types of infrastructure projects with government support (i.e. one village receiving roads this year may not receive support for electrification or water supply), etc. The ESMF describes these selection criteria and the Operational Manuals will provide additional details.

Implementation of the IPPF for subprojects funded in areas where ethnic minorities reside involves the following key steps:

1. Screening for the presence of ethnic minorities:

Screening is undertaken by the PMOs, with support from the TA/consultant teams, to determine the presence of ethnic minorities in the subproject's area of influence (see ESMF for more details, including the screening form provided in Annex 1 of the ESMF). If their presence is confirmed, OP 4.10 is triggered to the subproject and the following steps will be undertaken (see also OP 4.10). Based on OP 4.10's definition of indigenous peoples / ethnic minorities, the policy is triggered to the officially recognized ethnic minorities, or *ethnic races* (except the Bamar). The Bank will provide guidance to the PMOs during the screening process and will review the screening outcomes during its implementation support.

If a subproject's area of influence is in an area with ethnic minorities OP 4.10 is triggered and the procedures described in this IPPF will be followed. This includes the undertaken of an assessment of potential social issues, impacts and risks, free, prior and informed consultations, and the preparation of an IPP in consultation with the ethnic minorities affected.

2. Social Assessment

Generally, a social assessment (SA) is a process which provides an integrated and participatory framework for prioritizing, gathering, analyzing, and using operationally relevant social information. The scope and elements of the social assessment should be proportional to the type and level of benefits, impacts and risks of the particular subproject. The SA should be integrated into the subproject's Environmental and Social Impact Assessment (IEE) as described in the ESMF or undertaken as a separate exercise.[27]

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

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

[27]For more guidance on conducting a social analysis see the World Bank's website: www.worldbank.org/socialanalysis. Key documents include the World Bank's Social Analysis Sourcebook from 2003; A User's Guide to Poverty and Social Impact Analysis from 2003; and the Participation and Social Assessment: Tools and Techniques from 1998.

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

3. Free, Prior and Informed Consultations

The World Bank's policy on indigenous peoples requires a process of free, prior and informed consultation leading to broad community support from ethnic minorities benefiting from, or affected by, World Bank-financed subprojects.

The objectives are to facilitate the design of development interventions that are: culturally appropriate from the perspective of ethnic minority communities; developed through a transparent and participatory approach; and obtain broad support from affected communities.

Consultations are usually undertaken as part of the SA. The scope of the consultations required depends on the level of subproject impacts and the *methodology* depends on the type of communities affected by the subproject (e.g. their vulnerability, language and ongoing interactions with the dominant society or neighboring communities).

The consultation process should:

- be free from coercion, intimidation and pressure from the implementing agency or other stakeholders;
- integrate customary norms of decision making in the community;
- provide reasonable and understandable information about the subproject, its potential benefits, adverse impacts and risks, to all community members;
- participatory and facilitate the participation of ethnic minorities in assessing subproject benefits, opportunities, impacts and risks;
- use methods that are inclusive of vulnerable groups in the community, culturally appropriate, and that are adapted to communities' language and needs;
- allow sufficient time for information to be interpreted and discussed internally within the affected communities and for comments and recommendations to be formulated by the communities;
- provide sufficient time for consultations and thereby allow the implementing agency to understand the views, concerns, interests and priorities of the ethnic minority communities;
- facilitate the communities' influence on the subproject design and measures based on fair and open discussions and good faith negotiations; and
- document and disclose the consultation process (who, when, where, what); including the process and methodology, issues raised, how they have been addressed and the agreements reached. Documentation of the process is an important factor in demonstrating that broad community support has been obtained.

Arrangements for consultations should be carefully considered and tailored to the subproject context, the anticipated impacts and the context of the local communities. Consultation approaches may include:

- community meetings, both with the community as a whole and with sub-groups;
- focus group discussions and participatory planning exercises;

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

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

The consultations undertaken under the IPPF in areas with ethnic minorities follow the general community engagement and consultation process embedded in the Project as a strategic part of its Results Framework. As part of the citizen engagement (CE) approach embedded within the Project, the PMOs will consider the number of consultations, the average number of beneficiaries and proportion of vulnerable people participating in each public consultation as an indicator of Project success. This is the case for both the grid and off grid components of the Project.

In the Project's Results Framework, the "number of villages with at least one public consultation held" is a key indicator. However, for many subprojects, more than one public consultation is expected to be required. The CE approach is designed to enhance project performance as well as help address several important issues, including gender, inclusion, and achievement of maximum connections (for grid and mini-grid, and maximum adoption of SHS for the off-grid).

4. Preparation of an Indigenous Peoples Plan

Based on the findings of the social assessment and free, prior and informed consultation process, the responsible PMO or designated implementing partner will prepare an Indigenous Peoples Plan (IPP) for the specific subproject affecting ethnic minorities. The IPP should be prepared in a flexible and pragmatic manner, and its level of detail will vary depending on the specific subproject and the nature of impacts to be addressed. In cases where the vast majority of subproject *beneficiaries* are ethnic minorities, the elements of an IPP can be integrated into the subproject proposal itself.

Where required, an IPP should include the following elements, as needed (proportional to the scope, benefits, impacts and risks of the subproject):

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

j) Monitoring, evaluating and reporting on the implementation of the IPP.

The draft IPP prepared in consultation with the affected ethnic minorities will be publicly disclosed and shared with local communities in a manner and language appropriate and understandable to the community members. The IPP should be prepared in English or Myanmar language, and translated into relevant ethnic minority languages if deemed necessary and constructive in providing subproject and IPP information to the ethnic minorities.[28] If the IPP is prepared in Myanmar language, it should be translated into English for Bank review, unless otherwise agreed with the Bank.

7. Institutional Arrangements

The two implementing agencies—MOEE and MOALI (DRD), through their respective PMOs—will be responsible for the environmental and social performance of the NEP and its subprojects. The PMOs will be adequately staffed for this purpose with environmental and social safeguards officers (four officers have been on-board since January 2015). Once each subproject has been identified, the responsible PMO (under MOEE or DRD) will clarify tasks and responsibilities regarding implementation of the specific subproject (e.g. operators, ESE/YESB or villages). The PMOs will be responsible for creating a screening report and draft TOR for ESMP or IEE and to prepare an Indigenous Peoples Plan (IPP) as needed. The PMOs will be responsible for disclosing subproject safeguard instruments and for consulting with local communities and other relevant stakeholders.

Safeguard consultants will be hired to assist the two PMOs to implement the ESMF. Consultants will be supporting the both PMOs at Union and local levels. It is expected that this will involve at last two international consultants at Union level for each PMO, covering environmental and social safeguards respectively (a total of 4). The consultant team will include consultants for both areas of expertise to cover each Region/State for both PMOs (DRD PMO will only be present in four States for the first year). In addition, consultants and NGOs/CSOs will be contracted to support the development of safeguard instruments.

In relation to off-grid (Component 2) subprojects, the consultants will coordinate, as appropriate, with the Technical Support Unit (TSU) at the Union level, which includes international and national expertise hired under Component 3 on Technical Assistance and Project Management. Local Technical Advisors will support project implementation at township and village levels and may comprise local CSOs and consultants collaborating with local governments. The consultant team will include expertise in social safeguards, community engagement and ethnic minorities.

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

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

The Bank's implementation support will include the relevant expertise and resources to support the PMOs in implementing the ESMF.

8. Capacity Building of Key Stakeholders

As MOEE and MOALI (DRD) have limited experience implementing World Bank-financed projects and the Bank's safeguard policies, the Project provides capacity building and technical assistance and the

[28] It is expected that relevant documents, or summaries, will be translated into the main ethnic minority languages with a written language and a population group able to read in the local language; for instance, Shan, Palaung, Hakha, and Chin languages.

Bank will provide capacity building and operational support to the implementation of the IPPF (see Section 13 of the ESMF).

Training and capacity building will include areas such as community engagement and consultation, social assessment, cultural awareness of issues related to ethnicity, religion and marginalization.

The safeguard consultants hired to assist the two PMOs will provide on-the-job and formal capacity building and training for the two PMOs. As PMO capacities improve during the first two years of the Project they will gradually take over safeguard tasks from the consultants, at first the review tasks, later also where possible tasks of preparing safeguard documents (including IPPs).

The MOEE and MOALI (DRD), with support from the World Bank, will also provide training for relevant stakeholders on the elements of the IPPF, particularly in regards to the community engagement and social assessment process and preparation and implementation of the subprojects. The MOEE and DRD will ensure that male and female staff of their Ministries, and other stakeholders, will have equal opportunities to receive training and support under Component 3.

9. Monitoring and Evaluation

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

(i) ensure effective and timely implementation according to plan and apply mid-course corrections where needed;

(ii) measure the achievement of results envisaged in its objectives and learn lessons for future operations; and

(iii) ensure implementation of the ESMF, with IPPF, to meet the requirements of the Bank's safeguard policies.

The PMOs will be responsible to monitoring the implementation of IPPs for subprojects. Given the large number of subprojects that will be financed in areas with ethnic minorities, efforts will be made to build capacity at local PMO level to undertake such monitoring. The TA/consultant teams will assist the PMOs in subproject monitoring and local NGOs and CSOs will also be used to support the preparation, implementation and monitoring of subprojects. Qualitative monitoring and beneficiary assessments will be included in the M&E, focusing primarily upon societal dynamics and ethnic groups, women, and the most vulnerable, using focus group discussions, key informant interviews and other participatory methods.

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

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

Monitoring exercises may also include other qualitative and quantitative studies to investigate social and other issues critical to reducing barriers to accessing electricity services; in particular, for vulnerable and under-served population groups. For instance, participatory research could maintain a focus on the themes of the PSIA research, which have included a focus on: barriers to access, including affordability; payment and coping strategies; quality of the service and communication with service

providers; and social dimensions concerning ethnic minorities and other vulnerable communities. In line with the PSIA research approach to date, qualitative research could be used to inform preparation of case studies that can showcase the livelihood improvements that access to electricity provided through the NEP has supported, and other local benefits that have flowed from project implementation.

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

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

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

10. Grievance Redress Mechanism

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

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

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

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

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

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

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

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

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

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

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

Note: the NEP recognises that in the case of ethnic minorities and indigenous peoples, the standard GRM for the NEP may need to be modified to align with alternate governance structures. Any such modifications should be documented in the IPP for the relevant subproject.

11. Budget

The implementation of this IPPF is integrated into the overall NEP budget. The costs of supporting the implementation of the IPPF - such as capacity building and preparation of IPPs- are included in the ESMF budget described in Section 10.

12. Consultations regarding this IPPF

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

The first draft of the IPPF was disclosed with the ESMF and Preliminary PSIA in English and Myanmar on May 5, 2015 prior to public consultations. Public consultations were held in Mandalay on May 14,

in Taunggyi (Shan State) on May 16 and Yangon on May 18. See Annex 7 for more details on the consultation process during preparation of the Project and the ESMF.

The final documents will reflect any comments and/or suggestions provided during the public consultations. The IPPF has been revised to reflect the outcome of the consultations, which for instance suggested more emphasis on the cooperation with NGOs and CSOs and the participatory planning methods of the Project. The final IPPF will be publicly disclosed in Myanmar and English language versions on the MOALI and MOEE websites, and in English language in the Bank's InfoShop in compliance with the World Bank's Public Consultation and Disclosure Policy. For project implementation, the PMOs will prepare project information and briefing material that explains the objectives and requirements of the ESMF and IPPF in a manner understandable to local communities. It will be translated into key ethnic minority languages with a proportional population group that can read in those languages.

Annex 10: Indicative Outline for an Indigenous Peoples Plan for the NEP Project

I. Description of the Project and Project Area

Describe the subproject for which this IPP is required

Describe the area and resources affected by the subproject (including indirect effects), indicating those that are used by the ethnic minority. If more than one ethnic minority is in the subproject area, indicate the project affected lands and resources used by each ethnic minority group separately.

II. Issues relating to the ethnic minorities in the project area

Describe the environmental and social effects of the project - both negative and positive - on the ethnic minority groups in the project area.

Describe how the expected social and environmental issues are expected to affect the ethnic minority groups.

III. Summary of legal and institutional framework applicable to ethnic minorities

Summarize the national laws and regulations concerning ethnic minority rights, the international agreements and other instruments on ethnic minorities to which GOM is a party, and the World Bank Indigenous Peoples Policy OP4.10 in effect at the time the NEP commenced.

IV. Summary of the social assessment of the ethnic minorities in the subproject area

- Background information about each ethnic minority in the project affected area, such as historical patterns of settlement, traditional ways of life, cultural practices that may be relevant to the impact of the subproject on the group.

- Baseline information on ethnic minority groups in the subproject area, including demographic, social, cultural, and political characteristics of these particular groups.

- Land and territories in or near the project affected area that have been traditionally owned or customarily used by each of the ethnic minority groups

- Other natural resources in or near the project affected area on which each of the ethnic minority groups depend for their livelihoods

V. Free, prior, and informed consultations leading to broad community support

Provide a summary of the free, prior, and informed consultations that led to broad community support. This should include all relevant documentation or reference to any other materials such as audio or video recordings of the consultations.

Provide a summary of the results of the consultations and how broad community support was indicated by each of the minority groups.

VI. Framework for continued free, prior, and informed consultations during implementation

Describe how the process of consultations with the ethnic communities will continue through implementation, including progress with the subproject, progress with the IPP and any other relevant environmental or social instruments.

Describe how the ethnic minority groups will be informed of any changes to the subproject, changes to the expected environmental or social impacts, and/or changes to mitigation measures, and how broad community support will be sought for any such changes.

VII. Measures to ensure culturally appropriate social and economic benefits

Describe the measures being taken by the subproject to ensure that the ethnic minorities receive the social and economic benefits from the subproject in ways that are culturally appropriate to them.

For the most part, the benefits of NEP would be provision of electricity. There may be some specific cultural factors to consider, for example, in providing electricity, in locating power points in the houses, in including women in decisions about the system, and in helping the households understand how to gain the most benefits from the system.

VIII. Mitigation measures for expected adverse effects

Describe the expected adverse environmental and social effects, and the measures to avoid, minimize, mitigate, or compensate for each of those effects

IX. Timetable and estimated budget

Provide a timetable to implement the IPP, with scheduling of each of the mitigation measures, and any budget required to implement the plan.

X. Grievance redress mechanism

Describe the grievance redress mechanism and how it is accessible to the ethnic minorities in ways that are culturally appropriate to each of the ethnic minority groups in the subproject.

XI. Monitoring, evaluation, and reporting

Describe the procedures for monitoring and evaluation of the IPP implementation.

Describe the reporting requirements for the IPP implementation, such as progress reports, monitoring reports, financial reports and evaluations as necessary.

Annex 11: Resettlement Policy Framework (RPF)[29]

NOTE:

The Resettlement Policy Framework from the original ESMF of May 2015 has been retained here, with the addition of relevant information from the Law Amending the Vacant, Fallow and Virgin Land Management Law, 2018. Although some aspects of project organisation have changed (such as the grid-extension component now in the Ministry of Electricity and Energy instead of the Ministry of Electric Power, and the DRD now being in the Ministry of Agriculture, Livestock and Irrigation) and a few other modifications to the project been made since it commenced, the requirements and processes for resettlement and compensation under the project, as stipulated in the World Bank's OP/BP 4.12 on Involuntary Resettlement, remains unchanged.

Background

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

Project Description

The proposed Myanmar National Electrification Project (the Project), funded by the World Bank through a loan of US$ 400 million and implemented by the Ministry of Electricity and Energy (MOEE) and the Ministry of Agriculture, Livestock and Irrigation (MOALI), will aim to: help increase access to electricity in Myanmar.

The expected results of the Project include new household connections in urban and rural areas across the country. Also, the project will help establish and support a coordinated sector-wide institutional framework for the implementation of national electrification program, and strengthen institutional capacity of implementing agencies, including both public and private sector active in the grid rollout and off-grid pre-electrification.

The proposed grid roll-out program will not only improve the well-being of the affected population by better lighting, telecommunications and entertainment, but also enable income-generation opportunities and enhanced productivity. Importantly, the program will prioritize connections for health clinics and schools, particularly in poor and vulnerable areas, to maximize developmental impacts.

The project will include an off-grid pre-electrification program to directly benefit the poor and vulnerable households by targeting those who reside outside the realm of power grid and are

[29] The Resettlement Policy Framework from the original ESMF of May 2015 has been retained here. Although some aspects of project organisation has changed (such as DRD now being in the Ministry of Agriculture, Livestock and Irrigation) and a few other modifications made to the project since it commenced, the requirements and processes to for resettlement and compensation under the World Bank's OP/BP 4.12 on Involuntary Resettlement remains unchanged.

expected to receive grid-based electricity services more than 10 years after the first phase of NEP. The four components of the NEP Project are as follows:

Component 1: Grid extension rollout [IDA US$ 286 million].

This component supports Myanmar's utilities to extend distribution networks and connect communities and households closest to the existing national grid, in line with the National Electrification Plan. The component includes: (a) expansion of existing medium voltage (MV) line, and 977 MVA of MV/LV transformers; and (b) provision of 11,600 community connections (health clinics, schools and other public buildings), 1,084,345 household connections for 9,080 villages, and 132,000 public lights. This component will provide International Development Assistance (IDA) financing for power distribution goods and materials (transformers, poles, conductors, insulators, switchgear, materials etc.) and installation.

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

This component will target communities located far beyond the existing national grid and, thus, unlikely to receive grid-based access in the next 10 or more years. The Project funding will be directed to the peripheral States/Regions with social and ethnic tension and conflicts where access to electricity services for all is essential for enhancing social/ethnic cohesion and peace building. Off-grid electrification will be technology neutral, depending on a technology assessment that will be undertaken for target communities. Technologies include solar photovoltaic (PV), mini-hydropower, wind, diesel, and hybrid (e.g. diesel/solar). The Project will support: development of mini-grids based on renewable energy or a hybrid of diesel and renewable energy technologies; and deployment of household solar PV systems in target communities, including households, public institutions (schools, health clinics and other community buildings) as well as public street lighting with cost sharing from villages, IDA grant and government grant. Disbursement of the IDA grant will be results-based and take place after the installation and required services have been delivered and verified in accordance with the guidelines to be detailed in the operational manual.

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

This component will support: (a) strengthening of institutional capacity to implement the National Electrification Plan, including capacity building and training of the National Electrification Executive Committee and its Secretariat, capacity building at the Union, State/Region, district, township and village levels and for the private sector; (b) improving the policy and regulatory framework related to electrification; (c) development of an integrated, geographic information system (GIS)-based framework for electrification planning, results monitoring and impact evaluation of the project, building on the existing GIS platform for geospatial least-cost electrification planning; (d) securing technical advice and consulting services on standards, technology assessment and technical design, economic and financial analysis, environmental and social impact management, procurement and financial management; and (e) project management

Component 4: Contingent Emergency Response [IDA US$ 14 million].

At the initial stage, it was a "zero component" that allows a rapid reallocation of IDA Credit from other components for emergency recovery and reconstruction support in the event of a declared disaster. This component was to finance public and private sector expenditure on a positive list of goods and/or specific works, goods, services and emergency operation costs required for emergency recovery. An Operational Manual for this component was to detail financial management, procurement, safeguard and any other necessary implementation arrangements, to be submitted to and accepted by the WBG prior to the disbursement of IDA funds.

The Financing Agreement has been amended for Immediate Response Mechanism (IRM) to support the country's recovery dated on 24th August 2017, between the Republic of the Union of Myanmar and the International Development Association (IDA). The objective of the project is to help increase access to electricity in Myanmar, and to provide immediate and effective response in case of an Eligible Crisis or Emergency.

Scope of Potential Project Requirements of Land

Subprojects funded by the Project are expected to be designed to have generally positive social benefits. It is expected that most subprojects will not involve land acquisition or other impacts covered by OP 4.12 given their small scale and limited footprint. However, some subprojects may require land acquisition or impacts assets such as standing crops and tress. It is not possible to estimate the potential number of people affected or the extent of impacts at this point.

For *Component 1: Grid Rollout*, the relevant infrastructure works are; construction of 33 KV and 11 KV Distribution Lines, Low Voltage (LV) Lines and Medium Voltage/LV Transformers; and installation of household connections and meters. Most of these activities are not expected to involve land acquisition. Some subprojects may impact standing crops or fruit trees during construction. For *Component 2: Off-Grid Pre-Electrification Program*, the infrastructure works that may require access to and/or acquisition of land will be: dual bio gas power plants; mini grids (solar photo-voltaic); diesel generators; mini hydro power plants (< 1MW); and wind energy plants. Component 2 also provides for the installation of solar home systems (SHS), however it is anticipated that the impact of SHS on land will be very limited and limited to the owners of the SHS and land acquisition will therefore not be required.

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

Land Acquisition and Resettlement Policy Framework

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

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

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

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

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

a) Involuntary resettlement should be avoided where feasible, or minimised, exploring all viable alternative project designs.

b) Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.

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

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

Project Principles for Involuntary Resettlement

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

General Principles

a) All efforts will be made to avoid, or minimise if unavoidable, *acquisition of land and other assets.* Detailed designs will be adjusted to the degree feasible to avoid such impacts. If however land acquisition is unavoidable, a Resettlement Action Plan (RAP) will be developed following measures provided in this RPF. (If the project activity or sub-project affects less than 200 persons, an Abbreviated RAP is to be prepared).

b) Physical relocation of households is not expected as subprojects funded by the Project have relatively small footprints and in many cases alternative sites can be found. However, should a subproject require such relocation prior approval from the World Bank should be sought and a RAP prepared.

c) All persons displaced economically and / or physically are entitled to compensation at market or replacement value (as relevant) for land and lost assets, or to alternative but equivalent forms of assistance in lieu of compensation. Valuations must be undertaken in accordance with international valuation standards.

d) A lack of legal title to land of customary users acquired by the project will not bar displaced persons from entitlement to such compensation or alternative forms of assistance needed to resettle and sustainably restore incomes.

e) Squatters or those living on or using land without title or recognised customary arrangements at the time of the RAP census survey are entitled to compensation for any structures or improvements made and may be provided with assistance to shift elsewhere.

f) Compensation rates as established in a specific RAP refer to amounts to be paid in full to the eligible owner or user of the lost asset, without depreciation or deductions for any purpose.

g) When cultivated land is acquired, the borrower should seek to arrange land-for-land replacement if that is the preference of the displaced person.

h) Compensation for land, standing crops and lost assets must be paid prior to the time of impact.

i) Land to be used temporarily must be acquired in consultation with landowners or land users. Full market compensation will be paid for any standing crops. Tree crops or perennial plantations should be avoided to the extent possible. An allowance should be paid to land users for inconvenience and a negotiated rental fee should be paid to titled landowners. Leasing of land from landowners or the use of unused, unoccupied government land is the preferred method. All land used temporarily will be restored to its previous condition.

j) Displaced persons should be consulted during the process of RAP preparation, so that their preferences regarding land acquisition and compensation arrangements are solicited and considered.

k) The draft and final RAPs are publicly disclosed in a manner accessible and understandable to displaced persons.

l) The previous level of community services and access to resources will be maintained or improved after land acquisition.

m) The borrower is responsible for meeting costs associated with land acquisition and compensation. The RAP includes a budget for all costs associated with land acquisition, including contingency arrangements.

n) Methods by which displaced persons can pursue grievances will be established and information regarding these grievance procedures will be provided to displaced persons. Grievances are cost-free and easily accessible to project-affected people.

Principles specifically related to Voluntary Land Donation (see protocol below)

a) Voluntary donations are an act of informed consent and affected people are not forced to donate land or other assets with coercion or under duress, or misled to believe that they are obliged to do so.

b) Voluntary donations are allowed only if a sub-project can technically be implemented in another location than where it is planned – if a sub-project is location-specific by nature, land acquisition associated with such a sub-project cannot be considered as voluntary; rather, it is an act of eminent domain. In such cases, an abbreviated RAP or a full RAP, as applicable, is developed.

c) Voluntary donations by villagers are allowed under the project provided that affected people: (i) are the direct beneficiaries; (ii) know that they have the right to refuse to donate land or assets; (iii) agree to donate land or assets without coercion or under duress; (iv) the total size of productive land owned by the affected household is more than 200m^2; (v) the impact is less than five per cent of the total productive assets owned by said household. No physical relocation is allowed on a voluntary basis.

d) The affected people are fully informed that they have the right to refuse to donate land and instead receive compensation at replacement cost, and that a grievance redress mechanism is available to them through which they can express their unwillingness to donate. People are encouraged to use the grievance redress mechanism if they have questions or inquiries, either in writing or verbally. Adequate measures will be in place to protect complainants.

e) There is no community counterpart contribution required in cash or in kind required for any sub-project, although communities are allowed to contribute if they wish to. No one should be forced to contribute any assets against their will, and principles of voluntary donations should apply. Labour services rendered by community members are remunerated based on the going village wage rate for day labour.

f) Once the informed consent of the affected people has been confirmed in writing, the donation will be documented.

g) Implementation of subprojects involving voluntary donation starts only once the respective PMO has approved the signed voluntary donation forms.

Definitions

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

"Replacement cost" is defined as follows:

- For agricultural land, it is the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes.
- For land in urban areas, it is the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.
- For houses and other structures, it is the market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labour and contractors' fees, plus the cost of any registration and transfer taxes.
- In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset. Where domestic law does not meet the standard of compensation at full replacement cost, compensation under domestic law is supplemented by additional measures so as to meet the replacement cost standard. Such

additional assistance is distinct from resettlement measures to be provided under other clauses in OP 4.12, para. 6.

Legal and Regulatory Framework

The legal framework for land in Myanmar is made up of at least 73 active laws, amendments, orders, and regulations passed under different governments that often overlap, conflict with each other, or do not refer to preceding laws.[30] Historically, during the colonial era and after independence, many lands were leased (grant lands) for plantations or agriculture and the landholder's rights registered in a register of holding though no certificate or title was issued.[31]

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

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

2008 Constitution

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

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

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

The Land Acquisition Act, 1894

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

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

The law determines that the government will acquire or occupy lands for public purpose (but also for business reasons for companies at that time). The law sets procedures for land acquisition and compensation. Section 23 determines suitable amounts of compensation to be made for affected

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

[31] Grant land is granted or leased out by the government for 10 to 90 years. If the landholder wants a land record and map of land, he or she is given both.

persons when the land is acquired by the government. Detailed descriptions and procedures are mentioned in the Land Acquisition Directions.

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

Land Nationalization Act, 1954

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

Farmland Act, 2012

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

Vacant, Fallow and Virgin Lands Management Law, 2012

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

The Law Amending the Vacant, Fallow and Virgin Land Management Law, 2018

The amended law, enacted on September 11, requires all those occupying land classified as vacant, fallow or virgin to apply for a land use permit from a management committee made up of government departments, or risk falling foul of a new trespassing offence. The permits are designed mainly for commercial concessions; they typically need to be renewed every 30 years and cannot be sold or transferred, even to family members, without government permission. Those who fail to submit applications with “detailed information” about the extent and use of the land, or have their applications rejected, will be served summary eviction notices, without a stated right of appeal. If convicted of trespassing they face a maximum penalty of two years in prison and a fine of K500,000. The Vacant, Fallow and Virgin Lands Management Central Committee, the permit-granting body chaired by the Ministry of Agriculture, Livestock and Irrigation, issued a notice on October 30 that stipulated a six-month deadline from the law’s enactment for permit applications, and reiterated the penalties for trespassing.

Ward or Village Tract Administration Law, 2012

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

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

National Land Use Policy (Draft)

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

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

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

The draft policy also includes guidance aimed at strengthening the government's mechanisms for handling land acquisition, compensation, relocation, and restitution.[32]

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

[32] http://usaidlandtenure.net/commentary/2014/11/burma-draft-national-land-use-policy-public-consultations, accessed 11 March 2015

Eligibility Criteria and Entitlements

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

a) All land to be acquired. If agricultural land is acquired, the project should assist displaced persons in obtaining replacement land of equivalent productive value if that is their preference.

b) The market value of any unharvested crops and estimated future value of productive trees (fruit, nut or timber).

c) Any fixed assets or improvements on the land to be acquired.

d) If land is temporarily acquired to facilitate project construction, temporary use compensation is required and the land must be returned to its original condition (or better) after use.

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

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

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

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

Entitlements:

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

TABLE - ENTITLEMENT MATRIX

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

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

Valuation Methods

Land markets are not fully developed in Myanmar and varies depending on the location in the country, particularly between urban and rural areas to implement this RPF, valuation of land and assets will be done prior to preparing subproject RAPs. Valuation methods may vary depending on the local context and the scope and impact of the subproject, but would normally include:

1. An independent land price survey in the project area based on current land use and market value of land to help the affected households be able to afford a replacement land equivalent in terms of quantity and quality. The market value of an asset is the estimated cost at which the asset is purchased and sold on the market at the time of appraisal between a willing buyer and a willing seller in an independent activity and in a normal exchange condition. The survey will use comparison and construction cost methods:

i. Comparison method: Land prices will be based on the prices of land plots, similar to the affected land, have been successfully purchased/sold in the market in the recent transactions. This method will estimate the actual value of the land to be acquired by the subproject.

ii. Construction cost method: This method is based on the estimated average cost per square meter to build different kinds of houses in recent months in consultation with the Township General Administration Department (GAD).

iii. The experts who conduct the replacement cost survey may use the following tasks:

- Present the methodology for replacement cost survey;

- Conduct survey of construction materials and interviews with contractors and builders in the affected districts and communes to determine the current costs of materials and labor;
- Interview local officials and residents to find the current market price of land in the project area based on the recent transaction documents; or if there is no market, based on actual observations, such as productivity and location attributes, and the availability of replacement land.
- Conduct in-depth interviews and discussions with the parties involved in setting the unit prices as stipulated by law, compensation for affected land, houses and other structures, all kinds of crops and annual plants to have a better understanding of the methods used in determining the unit prices to be issued.

Project Procedures

Responsibility for implementation of this RPF and for preparation and implementation of RAPs for specific activities and sub-projects (including responsibility for meeting all associated costs) rests with the Government of Myanmar. The agencies with overall responsibility in this project are MOEE, for on-grid sub-projects, and MOALI (DRD) for off-grid sub-projects. As necessary, MOEE and MOALI will exercise their authority to coordinate actions with any other agencies involved to ensure timely and effective implementation, particularly the respective General Administration Department at State/Region, District and Township levels.

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

Table – Generic Checklist

Screen/Check for	**Yes/No**	**Requirements**
Will the implementation of project-financed activities require temporary or permanent land acquisition or result in loss of private assets (e.g. trees, fences, standing crops, etc.) that are owned or used by private individuals?		If yes, apply OP 4.12 as described in this RPF. Assess type and scope of impacts to determine appropriate preparation process and mitigation measures

Has there been a history of land confiscation by Government (or others) in the area?		If yes, a due diligence assessment should be undertaken to assess, in consultations held with affected communities and households, previous impacts and unresolved claims. The due diligence should recommend measures to address such impacts and unresolved claims and seek the support of affected communities and households for the proposed subproject. The due diligence report is submitted for World Bank review before subproject approval.
Has it been clearly explained to affected people that they are entitled to compensation at replacement cost?		If no, ensure efforts are made to inform and consult with affected communities; disclose RPF in a manner and language understandable to local communities
Have alternative technical solutions or design adjustments been explored to avoid or minimise impacts?		If no, assess if alternatives are available to avoid or minimise impacts
Has land been acquired before Bank intervention?		If yes, undertake a due diligence assessment and report to assess if land acquisition has followed national requirements and is consistent with the objectives of OP 4.12. Prepare an action plan to address gaps identified in the due diligence process

Are there any conflicts over land and/or titling of land?		If yes, undertake process to resolve issues before financing

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

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

If a RAP is to be prepared, it must be based on the principles, planning procedures and implementation arrangements established in this RPF. The scope and level of detail of the resettlement instruments vary with the magnitude and complexity of resettlement. In preparing the resettlement component, the borrower draws on appropriate social, technical, and legal expertise and on relevant community-based organisations and NGOs. The borrower informs potentially displaced persons at an early stage about the resettlement aspects of the project and takes their views into account in project design.

A RAP normally includes the following contents[33]:

a. Description of the project and identification of affected project areas;

b. Identification of the project components or activities that give rise to resettlement; the zone of impact of such component or activities; the alternatives considered to avoid or minimize resettlement; and the mechanisms established to minimize resettlement, to the extent possible, during project implementation;

c. Objectives of RAP;

d. Socioeconomic studies: baseline information of affected persons (e.g. general characteristics, economic and cultural conditions, existing incomes and use of natural resources, vulnerable groups);

e. Census/survey results: identification and enumeration of all affected persons, identification and inventories of all lost land, structures and other assets (including temporary impacts) through a 100 per cent census and survey;

f. Legal and institutional framework;

g. Eligibility criteria for compensation and all other forms of assistance;

h. Valuation of and compensation for losses, in kind or in cash, at replacement cost;

[33] See OP 4.12. See also the Bank's Involuntary Resettlement Sourcebook for more guidance on the preparation and content of a RAP and abbreviated RAP.

i. Site selection (including environmental assessment of proposed sites), site preparation, and relocation;

j. Replacement or restoration of public infrastructure and social services, if needed;

k. Detailed arrangements for livelihood improvement (or restoration);

l. Identification of vulnerable households, and full description of planning measures for which they are eligible;

m. Consultation and participation arrangements, including mechanism for grievance redress;

n. A detailed implementation schedule, corresponding as appropriate to the timetable for construction of civil works;

o. Costs and budget, identifying all unit rates for compensation, and including contingencies for price escalation and unanticipated expenses;

p. Arrangements for monitoring and evaluation, including external monitoring if considered necessary by the Bank; and

q. Entitlement Matrix, listing by column all categories of adverse impact including categories of land or other assets lost, eligibility criteria, and entitlements (specified by unit rate, allowance amount, or other measure) for each category.

An abbreviated RAP normally includes the following elements:

a) a census survey of displaced persons and inventory of affected land and assets;

b) description of asset valuation and compensation procedures;

c) eligibility criteria for compensation and any other forms of assistance;

d) compensation rates for all categories of land and other assets;

e) consultation and disclosure arrangements;

f) organisational arrangements for implementation

g) timetable and budget; and

h) arrangements for monitoring and implementation, including grievance procedures.

Implementation Arrangements

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

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

The two PMOs will be responsible for the environmental and social performance of the Project and its subprojects. The PMOs will be adequately staffed for this purpose with environmental and social safeguards officers (four officers have been on-board since January 2015). For each subproject, once it has been identified, the responsible PMO (under MOEE or DRD) will clarify tasks and responsibilities regarding implementation of the specific subproject (e.g. operators, ESE/YESC or villages). The PMOs will be responsible for creating a screening report and draft TOR for ESMP or IEE and requirements to

prepare a Resettlement Action Plan (RAP) and/or Indigenous Peoples Plan (IPP), as needed. The PMOs will be responsible for disclosing subproject safeguard instruments and to consult with local communities and other relevant stakeholders.

Safeguard consultants will be hired to assist the two PMOs implement the ESMF. The consultants will coordinate, as appropriate, with the Technical Support Unit (TSU) at the Union level, which includes international and national expertise hired under Component 3 on Capacity Building and Technical Assistance to provide technical backstopping to the local technical advisors (LTAs). LTAs will provide support to project implementation at township and village levels, and may comprise local CSOs and consultants collaborating with local governments The consultant team will include expertise in social safeguard, community engagement and ethnic minorities.

Two sets of consultant teams will be contracted. One to support the Union level PMOs in the overall management of safeguards and the screening of subprojects. Another consultant team will be contracted to assist local PMOs, and relevant subproject partners, in the preparation of safeguard instruments, including RAPs and Voluntary Land Donation Forms and agreements as needed (see Section 12 of the ESMF for additional details). While the Project will finance a large number of subprojects, it is expected that the vast number of these will not involve land acquisition of other impacts covered by the RPF.

If land acquisition is required for a sub-project, the Union level PMO informs the State/Region Government who will convene a Committee of relevant government departments to liaise with the land owner/s regarding land acquisition and compensation arrangements. This Committee includes the Township Development Committee, Land Records Department, and General Administration Department (GAD). Other departments are included as needed and depending on the context; this may include representatives from the Departments of Agriculture and/or Forestry or Ministry of Construction. The role of the Committee would be to discuss and decide compensation arrangements in consultation with the land owner/s. Once approved at Committee level, the State/Region would send a formal letter to the Union Ministry confirming the agreed payment to be made. The Union PMO informs the State/Region Committee of the agreements with the World Bank to implement its policy on involuntary resettlement as described in this RPF.

The District level PMO prepares the final RAP, with assistance from the consultant team responsible for assisting in the preparation of safeguard instruments. It is submitted to the respective Union PMO who reviews and clears the RAP for World Bank approval; the consultant team responsible for overall assistance to Union PMOs will assist in the review of safeguard instruments. The Union PMO submits the RAP for World Bank review and approval. The World Bank will review and clear all RAPs for the first-year subprojects. Upon assessment of performance and quality of the preparation of RAPs, the Bank may resort to reviewing a sample of RAPs prepared during the second year of implementation.

Funding Arrangement

MOEE and MOALI (DRD), respectively, bear responsibility for meeting all costs associated with land acquisition, although financing may come from implementing partners. Given the varied character and implementing entities for the different types of subprojects financed by the Project, the source and arrangements of funding cannot be prescribed in this RPF. In most cases, funding will come from the State/Region under the auspices of the State/Region Land Acquisition Committee, which includes the State/Region General Administration Department (GAD), MOEE/DRD, District and Township level GADs and other relevant entities. Funding will flow from the State/Region – or other entity determined to provide the source of land acquisition financing – to the District GAD. The District GAD

will be responsible for compensation payment to affected people. The subproject RAP will describe these arrangements in detail.

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

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

Consultations and Disclosure Arrangements

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

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

Monitoring and Grievance Procedures

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

To ensure that displaced persons have avenues for raising complaints relating to land acquisition, compensation payment, construction-related damages, or other aspects of project implementation, a multi-step grievance procedure will be established in the RAP, aligned with the requirements of the NEP Project level Grievance Redress Procedure. Each required RAP will detail the procedures for that particular project activity or subproject.

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

objectiveness and independence; simplicity and accessibility; responsiveness and efficiency; speed and proportionality; participatory and social inclusion.

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

Subproject specific safeguard instruments (ESMP, RAP, IPP) will describe the GRM in detail based on the following procedures for addressing grievances

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

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

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

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

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

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

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

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

Protocol for Voluntary Land Donation:

Voluntary land donation will be allowed. Community members who benefit from a sub-project may donate land to the sub-project voluntarily and without compensation. Voluntary donation is an act of informed consent and affected people must not be forced to donate land through coercion or under duress, or be misled to believe they are obliged to do so.

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 Subproject

In considering the relevance of VLD for the specific subproject, the District PMO will document:

- How much land the subproject would require on both a permanent and temporary basis;
- What the land would be used for;
- What alternatives to donation exist (e.g., right of use, right of way);
- The proposed terms of any donation of land;
- 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 landowners 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 200m^2 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.] (See form 1 VLD, for reference)

The District PMO should:

- Identify the appropriate documentation, including the agreement to make the land transfer and any legal documentation that may be required;
- Ensure that the agreement:
    - Refers to the consultation has taken place;
    - Sets out the terms of the transfer;
    - Confirms that the decision to transfer was freely made, and was not subject to coercion, manipulation, or any form of pressure;
    - Attaches an accurate map of the land being transferred (boundaries, coordinates);
    - Sets out who will bear the costs of the transfer (e.g., notarial fees, taxes, title issues) and documents the residual land rights;
- Ensure that all necessary parties sign the documents, including obtaining consent from spouses and children of legal age;
- Ensure that the transfer and title is registered or recorded; and
- Ensure that the land remaining after the donated land is excised is properly titled, registered or recorded.

It is also important to maintain a record of the process that has been followed. Such documents could include the following:

- The notification indicating the location and amount of land that was sought and its intended use for the project, with a record of when and where this was made public;
- Records of the consultations that were held and what was discussed;
- A copy of the due diligence that was conducted;
- Copies of each of the formal statements of donation, establishing informed consent as described above, and signed by each owner or user involved;
- Copies of all documents, registrations or records evidencing the legal transfer of the land;

- A map, showing each parcel of land.

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.

Annex 12: Forms for Initial Identification of Land Acquisition and Voluntary Land Donations

The NEP allows for voluntary land donations. However, these are done under strict conditions presented in Annex 11 “Resettlement Policy Framework”.

Two forms have been prepared for initial screening of land acquisition, to determine if the lands are eligible for voluntary donation or not. These are presented in this Annex.

Form 2: NEP Land Acquisition Protocol

Complete the Basic Screening Form (Form 1) before starting this form		
Follow this protocol for <u>each plot</u> of land that is <u>affected by the project</u>		
Affected lands or property are those that are:		
- Privately owned		
- Privately rented or used, even if on public land		
This can include non-agricultural uses and private structures, even if on public land		
Examples:		
If a farmer has crops planted on the right of way of a road, this land is considered "affected", as it is privately used by the farmer and will affect the family's livelihood		
If a person has a tea shop on public land, this tea shop will still be considered "affected" property		
This is to be used for both:		
(1) <u>permanent land acquisition</u> (land where project infrastructure will be built		
(2) <u>temporary land use</u> (land used during construction for storage, worker housing, etc.)		
Region / State		
Township		Village Tract
Village		Pcode or GPS Point
Project Name		
Township Engineer Name		Signature and Date:
Name of Land Owner / User		
Is there an alternative site that could be used instead of this one? (not including any site that has been rejected when completing Form 2 with another land owner / user)	☐ Yes ☐ No	If the answer is "No", inform the NEP Safeguards Team and World Bank that ***"Land Acquisition is Needed"***
		If the answer is "Yes", continue to the next question
Is the land owner or land user donating the land voluntarily?	☐ Yes ☐ No	If the answer is "No", <u>use an alternative site</u> for the infrastructure or temporary use, and fill out another copy of this Form 2 for the land owner / user of the alternative site.
		If the answer is "Yes", Fill out ***Form 3: NEP Voluntary Donation Form* <u>when completing the Feasibility Study</u>**

Form 3: NEP - Voluntary Donation Form

Region / State		
Township		Village Tract
Village		Pcode or GPS Point
Project Name		
Township Engineer Name		Signature and Date:

1. Information about Land Owner:			
Name of Land Owner: Address:	NRC Number:	Beneficiary of the sub-project? ☐ Yes ☐ No	
Sex: ☐ Male ☐ Female	Age:	Occupation:	
2. Information about Land Donated			
1. Description of Land that will be donated to the project: Why is the land needed?	2. Area being donated (sq. ft.): Length (ft): Width (ft): (if told in local measures, convert to sq. ft.)	3. Total landholding area of donor (sq ft)	% of Total land being donated: (2.2. / 2.3 x 100)
4. Were any other sites considered for this infrastructure? ☐ Yes ☐ No	Where are those other sites?	Why was this site selected?	
5. Will any fruit trees be cut down? ☐Yes ☐ No	Types of trees and number of each type:		
6. Will other economic trees be cut down? ☐Yes ☐ No	Types of trees and number of each type:		
8. Is any of the land used to grow rice? ☐Yes ☐ No	Area used to grow rice (sq ft):		
9. Were other field crops grown on the land? ☐Yes ☐ No	Type of crops and area used (sq ft):		
10. Is the land used for any other purposes? ☐Yes ☐ No	What purposes, and what area (sq ft):		

11. Are there any buildings, other structures or assets that will be destroyed or moved? ☐Yes ☐ No	List the buildings and structures, and if they will be destroyed or moved:	
12. Will the person donating the land need to be physically relocated (moved to another site)? ☐Yes ☐ No		
13. Is this land owned by more than one person (such as other family members)? ☐Yes ☐ No	If "Yes", list their names:	
14. Do any other people have claims to own or use the land? (including renting, cattle grazing, etc.) ☐Yes ☐ No	If "Yes", list their names and their claims:	
3. Valuation		
1. Value of land		
2. Value of fruit trees (by each type of tree)		
3. Value of other economic trees (by each type of tree)		
4. Value of crops grown (average price or yield per year)	By type of crop.	
5. Value of buildings, structures, or other assets that will be destroyed or need to be moved (by each item)		
By signing or providing a thumbprint on this form, the land owner or user agrees to donate the assets described above to the project. The donation is **voluntary**. If the land owner or user is not certain or does not want to donate his or her land or assets to the project, he or she should not sign or provide his or her thumbprint. In that case, the electricity infrastructure will NOT be placed on his or her land. It will be moved to another location. If there is more than one owner or user of the land, in 3.13 and 3.14 above, their signature or thumbprint should also be provided. If others use the land, in 3.l. above, agreement for compensation for any loss of livelihood should be determined before the land is donated.		
Village Electrification Committee representative	Name:	Signature and Date:
Land Owner or User	Name:	Signature (or thumbprint) and Date:
Spouse (Wife or Husband of Land Owner or User)	Name:	Signature (or thumbprint) and Date:
Other land owner or user (identified in 3.13 or 3.14 above) [Use back of sheet if necessary}	Name:	Signature (or thumbprint) and Date:

Annex 13: Indicative Outline for an Abbreviated Resettlement Action Plan for the NEP Project

I. Description of the Project Area

Description of the area affected by the project

Description of the locations of infrastructure, temporary land uses, and other project components where land or personal assets may be affected

Description of other project activities that may interfere with livelihoods (such as permanent or temporary loss of access to land, waters or other resources; restrictions to use of lands or other resources; interruptions to businesses; etc.)

II. Census Survey of Affected Persons, Inventory of Lands, Other Assets, and/or Losses of Livelihood

List of all households, including all members of the households, who will lose land and/or assets and/or a portion of their livelihoods

Each household is assigned an identification number for use in all documents relating to compensation and/or provision of other entitlements

A picture should be taken of the household head and spouse, if married, at the land or with the assets that will be acquired by the project. The household head should hold a sign with the household identification number clearly visible. If the household is losing land or assets at more than one site, pictures should be taken of the household head with the identification number at all the sites.

The losses of land and/or assets of each household is listed in sufficient detail to determine value of the lands or assets.

Any loss of income or livelihood that cannot be shown visually (such as loss of access to fishing, restriction on types of crops to be grown, or a business interruption) should be described in sufficient detail to determine value of the losses.

III. Description of Asset Valuation and Compensation Procedures

Describe the process by which the lands, assets, and losses of livelihoods are valued.

- Lands and assets are to be valued at replacement cost, that is, what a similar size and quality land would cost to buy, or what a similar building or other asset would cost to replace or build.

- In areas with limited and undeveloped land markets, valuation methods will vary depending upon the local context. If there have been purchases of land plots in or near the project area, those market transactions can be used to calculate land values, taking into account location, fertility, and other factors. The Township General Administration Department may also have information on land values.

- Replacement costs of buildings and other assets can take into account costs of similar building materials and labour costs in nearby markets.

Describe other entitlements that may be provided. The project may agree with the affected household to provide land of equal size and quality, or replacements for lost assets, or job training and support for a new business, in lieu of cash compensation

Describe the step-by-step procedures for determining, negotiating, settling upon, formalising agreements on, and providing compensation and / or other entitlements. If the household head is married, payments should be made to the husband and wife together, with signatures or markings of both required.

IV. Eligibility Criteria for Compensation and Other Entitlements

Describe what criteria are used to determine who receives what types of compensation and / or other entitlements.

- For example, a cut-off date is agreed upon with the community and announced together with the area covered by the project. Any claims by people starting to use lands in that area after the cut off date, or people moving into the community after the cut off date are either not considered or given lower compensation.

- Entitlements such as job training, provision of materials and equipment to start a new business, and other support, may be offered to people within a certain age range or to people with a particular social or economic status.

V. Compensation Rates for All Categories of Land and Assets and for Losses of Livelihood

Provide a list of the compensation rates (or other entitlements) for every category of land, for all the types of buildings, structures, and other assets, and for every type of loss of livelihood compensated by the project.

- Different types of land uses will have different compensation rates: for example, in agricultural areas paddy land is usually considered more valuable than land for field crops or grazing areas. The value of lands in villages or towns can vary by location, such as access to roads, proximity to the market, etc.

- The value of buildings and structures can vary by materials used, size, and function.

- Values of other assets will vary by criteria particular to those assets. For example, the value of trees will vary by type and age of the tree: a mango tree at full maturity will be more valuable than a young tree that does not yet bear much fruit (and so can be more easily replaced) or than an old tree that has few productive years left.

VI. Consultation and Disclosure Arrangements

Provide a summary of the consultations and disclosures relating to the compensations.

Provide copies of the agreements with those being compensated.

VII. Organisational Arrangements for Implementation

Describe which persons or organizations (or units within organizations) are responsible for carrying out the different tasks in the process. Who, for example, is responsible for

- calculating the compensation rates and entitlements,
- conducting the census of affected households,
- negotiating with affected people,
- reviewing and approving the compensation packages,
- preparing the final agreement with the affected people, and signing that agreement,
- making the compensation payments and how are the payments made,
- providing various entitlements,
- monitoring the process, and
- handling grievances.

VIII. Timetable and Budget

Provide a timetable for the compensation procedure, as it has occurred and as it will continue.

Provide the budget for all aspects of the resettlement action plan, including the compensation packages, costs of any entitlements, and staff salaries and other expenses relating to implementing the plan

IX. Arrangements for Monitoring and Evaluation

Describe how the compensation process will be monitored and evaluated, including any external monitoring if considered necessary by the World Bank.

X. Grievance Procedures

Describe the grievance redress mechanism for affected people. It can either be the same process as for the project in general, or it may require a more stringent and regulated process.

Annex 14: Public Consultations

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

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

Public consultations on the draft ESMF and Preliminary PSIA were held in Mandalay on May 14 in Taunggyi, Shan State, on May 16 in Mandalay and on May 18 in Yangon. The two documents were disclosed in Myanmar and English languages on May 5, 2015 on MFLRD's website and on May 7 on MOEE's website. The documentation are also available at the joint MOEE and World Bank wiki site:
https://energypedia.info/wiki/Achieving_Universal_Access_to_Electricity_in_Myanmar

A total of 129 stakeholders participated in the three public consultations from government agencies, civil society (21) and non-governmental (15) organizations. In addition PMO and World Bank staff and consultants attended the consultations.

The consultations were led by Mr. U Aung Myint, National Electrification Project Manager, MOEE in Mandalay and Taunggyi. The consultation in Yangon was opened by Mr. U Yan Linn, CEO of YESC and led by Dr. Soe Soe Ohn, Director at DRD. On behalf of MOEE and DRD they encouraged participants to provide feedback and input to the ESMF, also after the public consultations. They welcomed CSOs and NGOs to support the implementation of the Project and help inform and educate the public of the Project and the ESMF.

The key issues and comments raised at the public consultations are described in below table. These have been addressed in the ESMF, including providing more description of the community engagement and consultation process to be undertaken during preparation and implementation of subprojects.

ISSUES/COMMENTS	RESPONSE
Project Specific	
How can the project speed up the roll-out of electrification? Should solicit support from private sector and other donors.	Reaching universal coverage by 2030 is an ambitious goal. The Project has set realistic goals in a context of increasing demand for electricity. Moreover, environmental and social impacts should be considered which implies that short-cuts that can have environmental and social impacts should not be used. The Project will involve private sector financing for off-grid subprojects.
The off-grid component should receive the same amount of funding as the grid component.	Grid extension is a long term solution which is more efficient and therefore prioritized. Only remote areas will be covered by the off-grid component; e.g. in Chin, Kachin, Shan and Kayin States.
Cooperation with other ministries on rural electrification is needed for successful off-grid development. There should also be a clear role of the public.	The DRD PMO will cooperate with other government entities at Township level. National Electrification Executive Committee (NEEC) will oversee cooperation with other government entities and other stakeholders at Union level.
Transparency is key in the selection and implementation of subprojects, including for	The project includes a consultation and community engagement strategy. The ESMF

safeguard issues and particular for land acquisition and land use impacts and their compensation measures.	includes procedures for public disclosure and consultation regarding subprojects, including for the preparation of subproject safeguard instruments, such as ESMPs, RAPs and IPPs.
Inclusive project implementation is important, including for ethnic minorities.	The project is nation-wide and includes off-grid electrification subprojects for remote areas that will not be reached by the grid roll-out for 10 or more years. ESMF includes an IPPF which includes measures to enhance benefits to ethnic minorities.
Safeguards / ESMF	
Asides from the IEE, a Health Impact Assessment should be conducted for subprojects.	Health impact is mainly linked to power generation, while the Project supports power distribution and small-scale off-grid subprojects. An assessment of potential health impacts, however, is included in the provisions for IEE for subprojects
PMOs should solicit the support from CSOs/NGOs for implementation. CSOs/NGOs can support preparation of safeguard instruments.	The PMOs welcome support from CSOs/NGOs. The potential involvement of CSOs will be further stressed in the ESMF.
Need to identify and avoid impacts on physical cultural resources such as tombs.	Provisions to identify physical cultural resources, and avoiding adverse impacts on these, are included in the ESMF.

GoM has limited experience with public consultation and safeguards. How can the PMOs meet international standards?	The Project includes financing for technical assistance and training for general project implementation, and specifically for safeguards. Consultants, and possible CSOs will be hired to support implementation of the ESMF. The World Bank will prepare a country-wide technical capacity program for safeguards in Myanmar with other donors.
Land issues for hydro, coal and turbine should be carefully considered.	The Project will not finance coal and turbine power generation. The Project may finance mini-hydro schemes up to 1MW. Land issues for subprojects financed by the Project will be assessed for all subprojects and the RPF of the ESMF describes procedures and requirements for addressing land acquisition and related impacts.

Annex 15: Environmental and Social Codes of Practice for the Grid Extension Component of NEP

Environmental and Social Codes of Practice (ESCOP) have been prepared for the Grid Extension Component of the NEP and for the various types of sub-projects under the Off-Grid Electrification Component.

This Annex presents the ESCOP for the Grid Extension Activities carried out by MOEE and its utilities.

Environmental and Social Code of Practice (ESCOP) for MV lines and Transformers

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice provides guidelines to follow for the preparation, construction, and operation of Grid Extension Component sub-projects (On-grid system) under the National Electrification Project (NEP) of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The installation contractor shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the On-grid system.

1.3. Consultation and Disclosure

The installation contractor shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the On-grid system

1.4. Language

Communication with affected people should be in a language they understand clearly and easily. If the contractor and / or responsible authority cannot communicate in that language, a translator must be engaged to provide the oral or written information as needed.

1.5. Reporting

The installation contractor shall submit a check survey report to the MOEE PMO of the NEP within two months after contract signing including data for affected households and affected trees, all the measures and plan to carry out environmental, social, health and safety requirements as specified in the sections below.

The installation contractor shall submit periodic progress report (every 4 weeks), which the template shall be provided by the PMO within 2 weeks after the contract signing, to PMO including safeguard issues, safeguard measures taken and all other matters stated in this ESCOP.

2. Planning and Design Phases

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The check survey report shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The check survey report shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the check survey report will be subject to review and approval by the PMO of the above-mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.1.4. The installation contractor shall follow the traffic rules and ensure installation work will not adversely affect traffic safety. In addition, the installation contractor shall check to ensure that the selected sites for poles should not be placed or obstruct the road or potentially cause issue on traffic safety.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on site selection / route selection and other project plans

2.2.1.1. The communities (and any isolated households) potentially affected by the project are to be identified, and consultations will be held, including both men and women, on the proposed plans.

2.2.1.2. If the project sites, routes, or other project infrastructure are to be located in or near the communities, or in or near any lands used by members of the communities, those location of those sites, lines, or other infrastructure will be determined in consultation with VEC members and/or other village representatives.

2.2.1.3. The check survey report must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.1.4. If there are ethnic minorities in the communities, consultations must include them and must show evidences in the check survey report.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. Consultations must also be held with communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.3. Informing about the implementation schedule

2.2.3.1. The communities will be informed through the village leaders and/or VEC members of the implementation schedule sufficiently in advance to prepare for any disruptions caused by those activities.

2.2.3.2. The communities will be informed of any changes in schedule sufficiently in advance to alter their plans or preparations.

2.3. Waste Management

2.3.1. Activities during construction that have the potential to generate waste shall be identified, and measures prepared to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

2.3.2. The measures must abide by the laws and regulations concerning waste management of the Ministry of Natural Resources and Environmental Conservation, Government of Myanmar.

2.3.3. The waste management measures adopted by the installation contractor will be reviewed by the PMO.

2.4. Plans for Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.4.1. Installation contractor should consider the needs for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or workers' camps are needed.

2.4.2. As part of the check survey report ,installation contractor should point out how they accommodate the for the needed housing for workers (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.

2.4.3. As part of the check survey report, installation contractor should prepare checklist on where to store the facilities of construction materials, how to protect these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.

2.4.4. The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.

2.4.5. The land used for these sites shall be acquired according to Section 2.5

2.5. Land Acquisition and Compensation

2.5.1. Installation contractor should include the assessment of land acquisition at the project site during the check survey and should report to PMO if any land acquisition is necessary.

2.5.2. PMO will take the necessary measures based on the Resettlement Policy Framework

2.5.3. All land acquisition and compensation must be completed by PMO before electrification

2.6. Water Bodies / Drainage

2.6.1. If water bodies will be affected during construction, the potential impact on the use of those water bodies by local residents shall be determined.

2.6.2. Construction works should be scheduled based on the nature of water flow and the times of peak water use by local residents

2.6.3. If there should be any restrictions on use of those waters during construction, such as risks of pollution or diversion of waters, the communities should be informed during the consultation process in Section 2.2.3. above

2.6.4. If access to the water bodies is interrupted, the project will provide alternatives to the communities.

2.6.5. If the water bodies are sources of drinking water or water for domestic uses, the project will provide alternative sources of drinking water and water for domestic use.

2.7. Water Quality

2.7.1. If water bodies are to be affected by the project, baseline measurements of water quality should be taken by township engineer

2.7.2. Measures should be planned to assure sufficient water flow even during the dry season.

2.8. Vegetative Management

2.8.1. For all vegetative clearing under the project, only ground cover trees and shrubs that impinge directly on the permanent works shall be removed.

2.8.2. Minimal loss of existing tree cover should be considered when planning the alignment of MV and LV lines and construction of other infrastructure.

2.8.3. Should require any tree cutting or falling at the project site, installation contractor should report to township engineer or VEC and proceed with adequate guidance.

2.9. Natural Habitats

2.9.1. Design of MV lines or other infrastructure in natural habitats needs to be discussed with PMO

2.9.2. No works are allowed that will affect wetlands (swamps, marshes, etc.), as these are habitats with high concentrations of birds and other wildlife.

2.9.3. Construction in natural habitats or MV lines crossing those habitats should only be considered only if there are no viable alternatives.

2.9.4. If the natural habitat to be affected is considered to be of high value and if there are no viable alternatives, those civil works may need to be cancelled

2.9.5. No construction camps, storage facilities, stockyards, concrete batching, or concrete mixer will be located within the natural habitat or within 500 meters from its boundary

2.10. Physical Cultural Resources

2.10.1. The Department of Archaeology, National Museum and Library will be consulted to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.10.2. VEC members and other village leaders should be consulted to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.11. Visual Impacts

2.11.1. To mitigate the visual impact of the power projects, local communities and other concerned stakeholders will be consulted to avoid areas with aesthetic landscape views and other important environmental or community features.

2.11.2. If such areas cannot be avoided, plans will include measures to minimize the visual impacts.

2.12. Scheduling of Works

2.12.1. The schedules and methods for the various operations will be submitted to the responsible PMO for approval

2.12.2. All regulatory clearances shall be obtained before actual start of work

2.12.3. Significant changes in schedule will be reported to the responsible PMO.

2.12.4. As noted in 2.2.3 above, communities will be informed of scheduling of activities that affect them and of any changes in schedule sufficiently in advance.

2.12.5. Communities both downstream and upstream of waterways will be informed of works affecting those waters at least one month in advance of the start of construction.

2.12.6. Construction work will be scheduled so as not to interfere with:

- 2.12.6.1. Sowing of crops
- 2.12.6.2. Harvesting of crops
- 2.12.6.3. Festivals or other cultural activities
- 2.12.6.4. Availability of labour, if using local labour

3. Construction

3.1. Workers' Housing and Facilities

3.1.1. If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.

3.1.2. The housing should be on sites free from flooding and other natural hazards.

3.1.3. The housing should be kept free from rubbish and other refuse.

3.1.4. The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.

3.1.5. The site should have adequate drainage to avoid stagnant water.

3.1.6. Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.

3.1.7. Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.

3.1.8. A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.

3.1.9. Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.

3.1.10. Areas should be provided for workers' rest and recreation.

3.1.11. First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.

3.1.12. Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1. Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.

3.2.2. The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.

3.2.3. The code should include, but not be limited to:

- 3.2.3.1. instructions on waste disposal and hygiene
- 3.2.3.2. prohibition on use of illegal drugs
- 3.2.3.3. prohibition on theft of personal or community property
- 3.2.3.4. prohibition on hunting, fishing, or other activities causing harm to the natural environment
- 3.2.3.5. restrictions on drinking or gambling with members of the community
- 3.2.3.6. prohibition on making any unwanted verbal or sexual advances to those in the community
- 3.2.3.7. prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.10 above
- 3.2.3.8. prohibition on making any interactions, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society
- 3.2.3.9. prohibition on interactions with minors in the local communities
- 3.2.3.10. awareness of religious practices or social customs of the community if different from that of the workers

3.3. General Occupational Health and Safety

3.3.1. Only trained and certified workers should be allowed to install, maintain, or repair electrical equipment

3.3.2. Personal Protective Equipment

3.3.2.1. Workers must use personal protective equipment (PPE) and protective clothing

3.3.2.2. The PPE should be checked and tested regularly

3.3.2.3. Detailed safety measures and PPE for high-risk tasks, such as working with live lines or energized equipment, working at heights, or working near electro-magnetic fields, are presented in the following sections.

3.3.3. Any project staff not involved with any particular activity should stay safely away from the worksites of that activity.

3.4. Live Power Lines

3.4.1. Before work is performed on or in close proximity to live power lines, those lines must be deactivated and properly grounded

3.4.2. All live-wire work is to be conducted by trained workers in strict adherence to safety and insulation standards. These workers must be able to:

- Distinguish live parts from other parts of the electrical system
- Determine the voltage of live parts
- Understand minimum approach distances for specific live line voltages
- Ensure proper use of special safety equipment and procedures when working near or on energized parts of the system

3.4.3. Workers should not approach an exposed energized or conductive part, even if trained, unless:

- The worker is properly insulated from the energized part with gloves or other approved insulation, or
- The energized part is properly insulated from the worker and any other conductive objects, or
- The worker is properly isolated and insulated from any other conductive object (during live-line work).

3.4.4. Where maintenance and operation are required within minimum setback distances, specific training, safety measures, personal safety devices, and other precautions should be defined in a health and safety plan.

Recommended minimum safety setbacks for workers are as below:

2-15 kV: 0.6 m
15.1-35kV: 0.71 m

3.4.5. Workers not directly associated with power transmission and distribution activities who are operating around power lines should adhere to safety standards and guidelines of MOEE and its utilities relating to minimum approach distances for excavations, tools, vehicles, pruning, and other activities.

3.5. Working at height

Prevention and control measures for working at height include:

3.5.1. Testing structures for integrity prior to undertaking work

3.5.2. 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

3.5.3. Establishment of criteria for use of 100% fall protection (typically when working over 2 meters above the working surface, but sometimes extended to 7 meters, depending on the activity). The fall protection system should be appropriate for the tower structure and necessary movements, including ascent, descent, and moving from point to point

3.5.4. Installation of fixtures on pole & tower components to facilitate the use of fall protection systems

3.5.5. Provision of an adequate work-positioning device system for workers. Connectors on positioning systems should be compatible with the pole & tower components to which they are attached

3.5.6. Hoisting equipment should be properly rated and maintained and hoist operators properly trained

3.5.7. Safety belts should be of not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. Rope safety belts should be replaced before signs of aging or fraying of fibers become evident

3.5.8. When operating power tools at height, worker should use a second (backup) safety strap

3.5.9. Signs and other obstructions should be removed from poles or structures prior to undertaking work

3.5.10. An approved tool bag should be used for raising or lowering tools or materials to workers on structures.

3.6. Community Health, Public Health and Safety

3.6.1. The community should be informed of the potential risks to health and safety during construction. These include risks of:

- electrocution
- road accidents
- communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases
- other undesirable contact from the workers, as noted in 3.2.3 above.

3.6.2. The community should be informed of potential environmental impacts caused by the project, such as

- dust, pollution, and noise during construction
- risks of and emergency procedures for fuel spills
- risks of and emergency procedures for accidents

3.6.3. Proper safety and warning signs will be installed to inform the public of potential hazards during construction

3.6.4. Construction activities should not interfere with important community activities, such as sowing of crops, harvesting, festivals, etc. Although scheduling around these should be taken account of in the work plan, if any such community activity is found to occur during construction, those construction works should be postponed until after the community activity has ended

3.7. Tower and Pole Erection

3.7.1. To minimize the adverse impact on flora and vegetation, only ground cover shrubs that impinge directly on the permanent works shall be removed

3.7.2. In locations where erosion or sedimentation is likely to be a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion and sedimentation control features can follow immediately, if the project condition permit

3.7.3. For river / stream crossings of towers, all regulatory clearance shall be obtained before actual start of work

3.7.4. When working on the banks of rivers/streams or other water bodies, proper protective measures are required to prevent bank collapse.

- Foundations should be checked for damages or uneven settlement following construction.
- The work plan should be submitted by the contractor / engineer prior to commencement of the erection work; providing detail steps of foundation works in the river / stream.
- Proper protective measures should be adopted to prevent or minimize river water pollution.
- Use of vibratory hammer for pile work is preferable to reduce impact on aquatic habitat and installation of underwater enclosures minimize sound.
- Sheet-piling or shore protection measures should be ensured while laying the foundation of the tower near a river / stream bank or bed.
- Pre-cast piles should be driven in with extreme care so as to expose the workers to the least possible danger.

3.8. Installation of Transformers on H-Pole and Single Pole

3.8.1. To minimize the adverse impact on flora and vegetation, only ground cover shrubs that impinge directly on the permanent works shall be removed

3.8.2. All regulatory clearances shall be obtained before start of work

3.9. Topsoil Salvage, Storage and Replacement

3.9.1. The stockpiles for storing the topsoil shall be designed such that the slope does not exceed 1:2 (vertical to horizontal), and the height of the pile is restricted to 2 m.

3.9.2. In cases where the topsoil has to be preserved for more than a month, the stockpile is to be stabilized within 7 days. The stabilization shall be carried out

through temporary seeding. It consists of planting rapid-growing annual grass or small grains, to provide initial, temporary cover for erosion control.

3.9.3. During construction, if erosion occurs from stockpiles due to their location in small drainage paths, the sediment-laden runoff should be prevented from entering nearby watercourses.

3.9.4. The contractor shall preserve the stockpile material for later use on slopes or shoulders.

3.10. Borrow Areas

3.10.1. Borrow pits situated less than 0.5km (if unavoidable) from villages and settlements should not be dug for more than 30 cm after removing 15 cm of topsoil and should be drained.

3.10.2. Erosion and drainage control shall be maintained in the vicinity of all borrow pits and make sure that surface drains do not affect the adjacent land or future reclamation.

3.10.3. In case the borrow pit is on agricultural land, the depth of borrow pits shall not exceed 45 cm and may be dug out to a depth of not more than 30 cm after stripping the 15 cm top soil aside.

3.10.4. In case a borrow pit is near a water body, the borrow pit should be located not less than 15 m from the toe of the bank, with the distance depending on the magnitude and duration of any flood that may need to be withstood.

3.11. Slope Stability and Erosion Control

3.11.1. Measures should be taken to minimize adverse environmental impacts on slope stability and soil erosion due to construction on slopes or embankments.

3.11.2. Interceptor ditches should be constructed in hill areas to protect the road bench and hillside slope from erosion due to heavy rainfall and runoff

3.11.3. The vegetative cover should be planted in the region where the soil has the capacity to support the plants and where there is sufficient moisture year-round to favor vegetative growth.

3.11.4. On side slopes in hills, immediately after cutting is completed and debris is removed, vegetative growth has to be initiated by planting fast growing and preferably deep-rooted species of grass, such vetiver.

3.11.5. In regions of intensive rainfall, on steep slopes, in areas where the potential of soil erosion is high, and in regions with short growing seasons, erosion control matting should be provided.

3.11.6. Adequate drainage for erosion control should be provided.

3.12. Waste Management

3.12.1. The workforce shall be educated on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.12.2. During construction, the installation contractor will handle and dispose of waste according to the Waste Management Plan approved by the MOEE, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.12.3. Discarded conductors should be recycled under the guidance of MOEE or its utilities.

3.12.4. Discarded transformers should be properly disposed as per the guideline of MOEE so as to minimize environmental pollution.

3.12.5. As the old transformers may contain hazardous chemicals such as PCB (Polychlorinated biphenyl), these should be handled according to national / international hazardous waste management guidelines.

3.12.6. The project should assure that PCB is discarded following available and internationally accepted technologies such as super critical oxidation, electrochemical oxidation, solvated electron technology, chemical reduction method, dehalogenation process, and thermal desorption using pyrolysis, catalized dehalogenation and vitrification.

3.12.7. The waste generated from the discarded switchgears, bus-bars, tec. following rehabilitation process should be handled as per the relevant guidelines from MOEE or its utilities

3.13. Water Bodies

3.13.1. The contractor should ensure that the runoff from the construction site entering the water body is generally free from sediment

3.13.2. Silt / sediment should be collected and stockpiled for possible reuse as surfacing of slopes where they have to be re-vegetated.

3.13.3. Cutting of embankments can weaken and reduce water retention capacity. Any such weakening decrease in water retention should not lead to flooding of the construction site and surroundings and subsequent interruption to construction activities.

3.13.4. Any perceived risks of embankment failure and consequent loss / damage to the property shall be assessed and necessary precautions taken, such as provision of toe protection, erosion protection, sealing of cracks in embankments.

3.13.5. Failure to do so and the consequences of embankment failure shall be the responsibility of the contractor or of the agency carrying out the work.

3.13.6. Alternate drain inlets and outlets shall be provided in the event of closure of existing drainage channels of the water body.

3.13.7. Movement of workforce shall be restricted around the water body, and no waste from construction sites shall be disposed into it.

3.14. Water Quality

3.14.1. Measures will be taken to prevent improper disposal of solid and liquid waste including excreta generated from sites that can pollute waters.

3.14.2. Proper attention should be given to wastewater and toxic chemical disposal, proper installation and maintenance of latrines and other sanitation facilities, and of cooking facilities, to prevent pollution of ground, ground water, and nearby waters.

3.14.3. Water bodies should be protected from sediment loads by silt screen or bubble curtains or other barriers.

3.14.4. Domestic wastewater from workers daily activities under the contract are not allowed to discharge directly to water sources. Excavated materials and constructions materials shall not be placed near water sources. Disposal of waste into water stream shall be prevented.

3.14.5. If water quality is found to decrease during construction, the problem should be corrected as soon as possible.

3.15. Drainage

3.15.1. Temporary drainage should be providing at the construction site at the earliest to ensure proper compaction

3.15.2. If slopes are cut to form a roadbed for an access road in hill areas, sub-surface drains should be provided as necessary

3.15.3. Safety devices and flood warning signs should be provided while working over waterways and other water bodies.

3.16. Natural Habitats and Forests

3.16.1. Infrastructure projects near the natural habitat will be declared a silence zone

3.16.2. If any construction is done in or near a natural habitat or forest, collection of any kind of materials for construction is strictly prohibited

3.16.3. Temporary fencing or flagged off areas will be set up to restrict travel to construction zones, rights of way, and workspaces.

3.16.4. When removing vegetation from right of ways, workspace, etc., feather edge the cut to ensure that line of site and cover (both security and thermal protection) issues are addressed.

3.16.5. Disposal of construction waste in the natural habitat is strictly prohibited. All construction waste must be removed on a daily basis from the construction sites in the natural habitat.

3.16.6. No water resources within the natural habitat shall be disturbed

3.16.7. Fishing and hunting are strictly prohibited

3.16.8. Removal of any plant or animal life or of any physical objects is strictly prohibited.

3.16.9. If any concentration of wildlife is found in or near the proposed construction area, any construction or maintenance activities should be postponed until most or all of wildlife in those concentrations have left of their own accord. Forced removal of the wildlife is strictly prohibited.

4. Post-Construction

4.1. Topsoil Salvage, Storage and Replacement

4.1.1. Topsoil should be re-laid on the area after taking the borrow earth to maintain fertility of agricultural lands. It should be finished to the required levels and satisfaction of the land owner/user.

4.1.2. All temporary arrangements for stockpile preservation and erosion control are to be removed after the stockpile material is used.

4.1.3. The area of the stockpile should be returned to its original condition.

4.2. Slope Stability and Erosion Control

4.2.1. All exposed slopes should be covered with vegetation using grass, bushes, etc. Locally available species should be used that have good growth, dense ground cover, and deep roots for stabilization.

4.2.2. If local species with those characteristics are not available, use of vetiver grass (Chrysopogon zizanioides) should be considered.

4.3. Vegetative Management

4.3.1. Local MOEE or utilities staff should trim trees along the power line route regularly, to prevent accidents caused by overgrowth into the power lines.

4.3.2. The trimming should cause with minimal damage to existing vegetation

4.4. Waste Management

4.4.1. After each construction site is decommissioned, all debris and waste will be cleared. If a contractor has carried out the work, the site can be handed over to the MOEE or its utilities only after such clearance.

4.4.2. If waste was disposed temporarily on private land, a certificate of completion of reclamation should be given by the land owner to show that the land has been restored to the owner's satisfaction.

4.5. Water Bodies

4.5.1. The areas around and near the water bodies affected by the construction should be left clean and tidy after construction.

4.5.2. MOEE township engineers will check if drainage channels of adequate capacity have been provided for the water body

4.6. Water Quality

4.6.1. The water bodies affected by the construction will be monitored to assure water quality.

4.7. Drainage

4.7.1. Drains will be inspected and cleaned to remove debris or vegetative growth that can interrupt flow

4.7.2. All temporary structures will be removed after construction to ensure free flow through the channels.

4.8. Public Health and Safety

4.8.1. Adequate signage along with barriers (fences with doors, danger sign board and locks on doors) will help prevent contact with potentially dangerous equipment

4.8.2. Public education and outreach activities will be used to teach local residents about safety and help prevent contact with potentially dangerous or equipment

4.9. Natural Habitats

4.9.1. Trees and shrubs that reach heights of 4-5 metres should be allowed to grow within the ROW, to control trespassing and vandalism in the natural habitat

Annex 16: Environmental and Social Codes of Practice for the Off-Grid SHS Sub-Projects

Environmental and Social Codes of Practice (ESCOP) have been prepared for the Grid Extension Component of the NEP and for the various types of sub-projects under the Off-Grid Electrification Component.

The ESCOPs for Off-Grid SHS Sub-Projects are presented in this annex.

The ESCOP for the DRD SHS Programme is to be a part of every contract for the SHS program.

The ESCOP for the RBF Solar Programme is to be included as part of the agreement with private companies or social enterprises selected to participate in the programme.

Environmental and Social Code of Practice for Solar Home Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice provides guidelines to follow when preparing and installing Solar Home Systems (SHS) under the National Electrification Project of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The bid document shall include all applicable clearances pertaining to environmental management and shall contain the necessary procedures for compliance of the same.

1.3. Consultation and Disclosure

1.3.1. The contractor and/or responsible authority (such as the DRD township engineer) should consult with and provide adequate and timely information to people affected by the project, including men and women.

1.3.2. Affected people include people benefiting from the project as well as people adversely affected by any project activities.

1.4. Language

1.4.1. Communication should be in languages clearly and easily understood by the affected people..

1.4.2. If the contractor and / or responsible authority cannot communicate in any of those languages, a translator must be engaged to provide the oral or written information as needed.

1.5. Working in / Visiting the Communities

The communities will be visited several times during preparation, installation, monitoring and maintenance. To avoid possible social conflicts or difficulties for the residents, the following should be practiced:

1.5.1. Informing Community of Work Schedule

1.5.1.1. The VEC members or other village leaders should be informed of the expected number of visits under the project, and for what purposes, to allow them to be adequately prepared for those visits.

1.5.1.2. For each visit or work activity, the VEC focal persons or other village focal person should be informed sufficiently in advance, to allow them to inform other members of the community.

1.5.1.3. If there is any change in the schedule of a visit or work activity, the VEC focal persons or other village focal person should be informed sufficiently in advance.

1.5.2.Payments to Communities for Food and Other Goods and Services

1.5.2.1.With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.

1.5.2.2.Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

1.5.2.3.The contractor must not either directly or indirectly exploit local community in any other way to prevent unnecessary social issues.

1.5.2.4.The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation in case the contractor has to pay some cost to the community.

2. Preparation and Planning

2.1. Site Selection for Public Lighting

2.1.1.VEC members and other village representatives, including men and women, should be consulted on the selection of sites for the public streetlights.

2.1.2.The contractor should assure that the streetlights are distributed equitably through the community, including any neighbourhoods of ethnic or religious minorities or of poor households.

2.1.3.Public lighting should be provided for all religious buildings in a community (temples, churches and mosques)

2.1.4.Public lighting should be provided for all educational and health centres.

2.2. Storage Site for Equipment and Materials

2.2.1.Materials and equipment brought to the community before installation should be stored at a site selected in consultation with the VEC members and village leaders.

2.2.2.Preferably, the site should be on public or community land. If on private land or on public lands being used by any persons, the contractor should obtain written permission from the land owner / land user for its use as a voluntary temporary donation (using the attached form for voluntary land donations) or if not granted voluntarily, provide the land owner / land user compensation for the temporary use of the land.

2.2.3.The storage site(s) should be free of risk from erosion or runoff into any waterways.

2.2.4.Upon completing installation in the community, the storage site should be cleared and restored to its original condition, and all waste removed (according to the procedures presented in Section 7 on Waste Management below).

3. Installation in Households

3.1. Removal of Trees

3.1.1.If any tree needs to be removed for the installation of the SHS, member(s) of the household should be consulted to assure the tree is not of value to the household.

3.1.2.If the tree is of value to the household and they do not want it removed, alternative sites for the solar panel should be suggested for the household member(s) to select.

3.1.3.If an alternative site for the solar panel is not possible, the contractor should explain why the tree needs to be cut down and obtain permission from the household member(s)

3.1.4.If the contractor cannot communicate directly and easily in a language understood by the household member(s), a translator should be engaged by the contractor.

3.2. Wiring

3.2.1. The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.2.2.All wiring of the SHS must be done by the contractor only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.2.3.If the household already has wiring, the contractor should replace it with the wiring and materials provided under the SHS.

3.3. Location of Battery and Other Equipment

3.3.1.The battery should be placed within a locked box and in a safe location out of reach and inaccessible to young children.

3.3.2.If Lithium-ion batteries are used, to avoid improper use and thermal runaway, the battery cells and charge controller should be encased in one common housing that cannot be opened with commonly available tools such as screwdrivers. The housing should clearly indicate the type of battery enclosed.

3.3.3.Warning signs must be visible on the housing, in English and the local language(s), to prevent any tampering or attempts to alter the system, clearly stating the risks of electric shock, fire, and explosion.

3.3.4.Other equipment of the SHS should be placed in safe locations out of reach and inaccessible to young children.

3.4. Training Household Members in Use of SHS

3.4.1.After installing the SHS, the contractor must provide training to household members on the proper use and care of the system, and on safety measures.

3.4.2.The training must include adequate warnings of the risks of tampering with the SHS, including electric shock, fire, and explosion.

3.4.3.At least one adult male and one adult female in the household should be trained.

3.4.4.This should be done as group training on the operation and maintenance of SHS after work in a village or group of villages is completed. VEC members and the Township DRD representative should be present.

3.5. Instructions Booklet and Safety Poster

3.5.1.The contractor must place a safety poster close to the battery for each SHS

3.5.2.The contractor must provide an instructions booklet in the local language for each SHS

3.5.3.Extra copies of the instruction booklet and safety poster should be provided to the VEC, as replacements for any lost or damaged booklets or posters

4. Installation of Public Systems

4.1. Removal of Trees

4.1.1.If any tree needs to be removed for the installation of the public solar system, staff of the public institution, VEC members or other village leaders should be consulted to assure no valuable trees are removed.

4.1.2.If the tree is of value to the community and they do not want it removed, alternative sites for the solar panel should be suggested for the community to select.

4.2. Wiring

4.2.1. The decision for position of the battery box and rooms to wire lies with the public facility authorities, but the contractor has to evaluate the suggested position according to the safety of the equipment, the safety of people, and the location of the solar PV array, which should normally be installed facing south and not be shaded.

4.2.2.All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

4.2.3.If the site already has wiring, the contractor should replace it with the wiring and materials provided under the SHS program.

4.3. Location of Battery

4.3.1.The battery should be placed in a safe location that is out of reach and inaccessible to young children.

4.3.2.If Lithium-ion batteries are used, to avoid improper use and thermal runaway, the battery cells and charge controller should be encased in one common housing that cannot be opened with commonly available tools such as screwdrivers. The housing should clearly indicate the type of battery enclosed.

4.3.3.Warning signs must be visible on the housing, in English and the local language(s), to prevent any tampering or attempts to alter the system, clearly stating the risks of electric shock, fire, and explosion.

4.3.4.Other equipment of the public system should be placed in safe locations out of reach and inaccessible to young children.

4.4. Training Community Members in Use of the Public Systems

4.4.1.After installing the public system, the contractor must provide training to staff at the public institution, VEC members or other village leaders on the proper use and care of the system.

4.4.2.The training must include adequate warnings of the risks of tampering with the SHS, including electric shock, fire, and explosion.

4.4.3.There should be an advance level technical training to the operation and maintenance staff of public facilities and VEC for the future technical support.

4.5. Instructions Booklet and Safety Poster

4.5.1. The contractor must place a safety poster close to the battery for each of the public systems.

4.5.2. The contractor must provide an operation manual and maintenance manual in the local language for each of the public systems.

5. Occupational Health and Safety

5.1. Personal Protective Equipment

5.1.1. Workers must use personal protective equipment (PPE) and protective clothing

5.1.2. People not involved with installation, including members of the households, should be kept safely away from the worksites.

5.2. Working at height

5.2.1. If working at heights, sufficient protection against falls must be in place.

5.2.2. Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

6. Public Health and Safety

6.1. Workers will endeavour to keep dust and other potential hazards to a minimum.

6.2. Workers' Code of Conduct

6.2.1. Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.

6.2.2. The code of conduct should be provided in writing to all workers.

6.2.3. The code should include, but not be limited to:

- instructions on waste disposal and hygiene
- not using illegal drugs
- prohibition on theft of personal or community property
- not causing damage to personal or community property
- prohibition on hunting, fishing, or other activities causing harm to the natural environment
- restrictions on drinking or gambling with members of the community
- not making any unwanted verbal or sexual advances to those in the community
- not exploiting local residents in any other way (such as demanding free transport)
- awareness of religious practices or social customs of the community if different from that of the workers
- prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

7. Waste Management

7.1. The contractor shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.
7.2. The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation.
7.3. The waste management measures adopted by the contractor will be reviewed by the PMO of the DRD.
7.4. The contractor shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.
7.5. After installation of SHS in the communities, the contractor shall clear all storage and construction sites of debris and waste

8. Post-Installation

8.1. Repairs and Maintenance

8.1.1. The contractor shall follow all relevant environmental measures above when carrying out any maintenance or repair work for the SHS during the guarantee period.
8.1.2. The contractor shall dispose of any defective or used batteries according to the measures for battery disposal and recycling set by the DRD
8.1.3. The contractor shall dispose of any defective solar panels or other equipment according to measures set by the DRD.

Environmental and Social Code of Practice for RBF Off-Grid Solar

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice provides guidelines to follow when preparing and installing Solar Home Systems (SHS) under the National Electrification Project of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The bid document shall include all applicable clearances pertaining to environmental management and shall contain the necessary procedures for compliance of the same.

1.3. Consultation and Disclosure

1.3.1. The company or enterprise consult with and provide adequate and timely information to people affected by the project, including men and women.

1.3.2. Affected people include people benefiting from the project as well as people adversely affected by any project activities.

1.4. Language

1.4.1. Communication with affected people should be in a language they understand clearly and easily.

1.4.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.5. Working in / Visiting the Communities

The communities will be visited several times during preparation, installation, monitoring and maintenance. To avoid possible social conflicts or difficulties for the residents, the following should be practiced:

1.5.1. Informing Community of Work Schedule

1.5.1.1. The VEC members or other village leaders should be informed of the expected number of visits under the project, and for what purposes, to allow them to be adequately prepared for those visits.

1.5.1.2. For each visit or work activity, the VEC focal persons or other village focal person should be informed sufficiently in advance, to allow them to inform other members of the community.

1.5.1.3. If there is any change in the schedule of a visit or work activity, the VEC focal persons or other village focal person should be informed sufficiently in advance.

1.5.2.Payments to Communities for Food and Other Goods and Services

1.5.2.1.With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost

1.5.2.2.Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

1.5.2.3.The contractor must not either directly or indirectly exploit local community in any other way to prevent unnecessary social issues.

1.5.2.4.The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation in case the contractor has to pay some cost to the community.

2. Preparation and Planning

2.1. Storage Site for Equipment and Materials

2.1.1.If the workers installing the systems need to bring any materials and equipment to the community before installation, those materials and equipment should be stored at a site selected in consultation with the VEC members and village leaders.

2.1.2.Preferably, the site should be on public or community land. If on private land or public lands being used by any persons, the company or its agents should obtain written permission from the landowner / land user for its use as a voluntary temporary donation (using the attached form for voluntary land donations) or if not granted voluntarily, provide the land owner / land user compensation for the temporary use of the land.

2.1.3.The storage site(s) should be free of risk from erosion or runoff into any waterways.

2.1.4.Upon completing installation in the community, the storage site should be cleared and restored to its original condition, and all waste removed (according to the procedures presented in Section 6 on Waste Management below).

3. Installation in Households

3.1. Removal of Trees

3.1.1.If any tree needs to be removed for the installation of the SHS, member(s) of the household should be consulted to assure the tree is not of value to the household.

3.1.2.If the tree is of value to the household and they do not want it removed, alternative sites for the solar panel should be suggested for the household member(s) to select.

3.1.3.If an alternative site for the solar panel is not possible, the workers installing the system should explain why the tree needs to be cut down and obtain permission from the household member(s)

3.1.4.If the workers installing the system cannot communicate directly and easily in a language understood by the household member(s), the company should engage a translator.

3.2. Wiring

3.2.1. The position of the light points (bulbs) should be decided only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.2.2. Only the workers installing the SHS should do the household wiring, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.2.3. If the household already has wiring, the workers installing the system should replace it with the wiring and materials provided under the SHS.

3.3. Location of Battery and Other Equipment

3.3.1. The battery should be placed within a locked box and in a safe location out of reach and inaccessible to young children.

3.3.2. If Lithium-ion batteries are used, to avoid improper use and thermal runaway, the battery cells and charge controller should be encased in one common housing that cannot be opened with commonly available tools such as screwdrivers. The housing should clearly indicate the type of battery enclosed.

3.3.3. Warning signs must be visible on the housing, in English and the local language(s), to prevent any tampering or attempts to alter the system, clearly stating the risks of electric shock, fire, and explosion.

3.3.4. Other equipment of the SHS should be placed in safe locations out of reach and inaccessible to young children.

3.4. Training Household Members in Use of SHS

3.4.1. After installing the SHS, the company must provide training to household members on the proper use and care of the system, and on safety measures.

3.4.2. The training must include adequate warnings of the risks of tampering with the SHS, including electric shock, fire, and explosion.

3.4.3. At least one adult male and one adult female in the household should be trained.

3.4.4. This can be done as group training on the operation and maintenance of SHS, after work in a village or group of villages is completed. VEC members and the Township DRD representative should be present.

3.5. Instructions Booklet and Safety Poster

3.5.1. The company must place a safety poster close to the battery for each SHS

3.5.2. The company must provide an instructions booklet in the local language for each SHS

3.5.3. Extra copies of the instruction booklet and safety poster should be provided to the VEC, as replacements for any lost or damaged booklets or posters

4. Occupational Health and Safety

4.1. Personal Protective Equipment

4.1.1. Workers must use personal protective equipment (PPE) and protective clothing

4.1.2. People not involved with installation, including members of the households, should be kept safely away from the worksites.

4.2. Working at height

4.2.1. If working at heights, sufficient protection against falls must be in place.

4.2.2. Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

5. Public Health and Safety

5.1. Workers will endeavour to keep dust and other potential hazards to a minimum

5.2. Workers' Code of Conduct

5.2.1. Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.

5.2.2. The code of conduct should be provided in writing to all workers.

5.2.3. The code should include, but not be limited to:

- instructions on waste disposal and hygiene
- not using illegal drugs
- prohibition on theft of personal or community property
- not causing damage to personal or community property
- prohibition on hunting, fishing, or other activities causing harm to the natural environment
- restrictions on drinking or gambling with members of the community
- not making any unwanted verbal or sexual advances to those in the community
- not exploiting local residents in any other way (such as demanding free transport0
- awareness of religious practices or social customs of the community if different from that of the workers.
- prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

6. Waste Management

6.1. The company shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

6.2. The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..

6.3. The company shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

6.4. After installation of SHS in the communities, the workers installing the systems shall clear all storage and construction sites of debris and waste

7. Post-Installation

7.1. Repairs and Maintenance

7.1.1. The company shall follow all relevant environmental measures above when carrying out any maintenance or repair work for the SHS during the guarantee period.

7.1.2. The company shall dispose of any defective or used batteries according to the measures for battery disposal and recycling set by the DRD

7.1.3. The company shall dispose of any defective solar panels or other equipment according to measures set by the DRD.

Annex 17: Environmental and Social Codes of Practice for Off-Grid Mini-Grid Subprojects

Environmental and Social Codes of Practice (ESCOP) have been prepared for the Grid Extension Component of the NEP and for the various types of sub-projects under the Off-Grid Electrification Component.

These ESCOPs presented in this annex are for the various off-grid mini-grid technologies being used or expected in the program.

- Solar Mini-Grids
- Biomass Power Mini-Grids
- Mini-Hydro Mini-Grids
- Solar-Diesel Hybrid Mini-Grids
- Biomass-Diesel Hybrid Mini-Grids
- Wind-Diesel Hybrid Mini-Grids

As with the screening forms for the mini-grids, each of the ESCOP has been tailored for the expected environmental and social impacts of the particular technologies being used.

Environmental and Social Code of Practice for Solar (only) Mini-grid Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice (ECoP) provides guidelines to follow for the preparation, construction, and operation of small-scale solar (only) mini-grid sub-projects under the National Electrification Project (NEP) of the Union of Myanmar.[34] These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The developer shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.3. Consultation and Disclosure

The developer shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.4. Ethical Clause of the Contractor

1.4.1. The contractor must not either directly or indirectly exploit the local community in any other way to prevent unnecessary social issues.

1.4.2. The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation.

1.5. Language

1.5.1. Communication with affected people should be in a language they understand clearly and easily

1.5.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.6. Payments to Communities for Food and Other Goods and Services

1.6.1. With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.

[34] Another ESCOP is applied to small-scale solar-diesel mini-grid sub-projects.

1.6.2. Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

2. Project Planning and Preparation

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The project proposal documents shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The project proposal documents shall include the environmental and social safeguards screening form and shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the projects will be subject to review and approval by the DRD Safeguards Team for the NEP of the above-mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on project plans

2.2.1.1. The developer shall consult with the communities, both men and women, to be served by the mini-grid on the proposed plans for the project.

2.2.1.2. The sub-project proposal documents must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. The developer shall also consult with the communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.2.2. The project proposal documents must show evidence of agreement by the communities and other affected people to the selection of the site for the array of solar panels and storage batteries, and of any other infrastructure of the project.

2.3. Site Selection for Infrastructure and Grid Route

2.3.1. VEC members and other village representatives, both men and women, shall be consulted on selection of the sites for solar panels and power station and any related infrastructure; the proposed route of the grid; and lighting for public buildings and street lights.

2.3.2. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.3.3. The land used for the infrastructure shall be acquired according to Section 2.6

2.4. Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.4.1. If workers need to be in the community for more than 4 to 5 days, the developer will assess the need for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or a workers' camp is needed.

2.4.2. If in the community for only 4 to 5 days, arrangements can be made for the workers to stay at a community building, or in temporary housing (tents) arranged by the contractor, or accommodated by local residents at the invitation of and arranged by the VEC and other community leaders and compensated as specified in Section 1.5 above on Payments to Communities.

2.4.3. If workers' housing is required, the project proposal will include plans for that housing (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.

2.4.4. The project proposal will include plans for storage facilities of construction materials, the protection of these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.

2.4.5. VEC members and other village representatives shall be consulted on the selection of the sites for workers' housing and facilities, storage spaces, and other temporary facilities.

2.4.6. The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.

2.4.7. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.4.8. The land used for these sites shall be acquired according to Section 2.6

2.5. Waste Management

2.5.1. The developer shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

2.5.2. The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..

2.5.3. The waste management measures adopted by the developer will be reviewed by the PMO of the DRD.

2.6. Land Acquisition and Compensation

2.6.1. All permanent and temporary land acquisition required by the project must be completed prior to construction in accordance with the Resettlement Policy Framework.

2.6.2. Any permanent or temporary loss of livelihood aside from loss of land caused by the project must be compensated prior to construction in accordance with the Resettlement Policy Framework.

2.6.3. Adequate documentation must be provided for review by the DRD-NEP Safeguards Team for all land acquisition and compensation under the Resettlement Policy Framework

2.7. Physical Cultural Resources

2.7.1. The developer shall consult with the Department of Archaeology, National Museum and Library to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.7.2. The developer shall consult with VEC members and other village leaders to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.8. Preparation of an Environmental and Social Management Plan, Resettlement Action Plan, and/or Indigenous Peoples Plan

2.8.1. If the screening forms and assessments indicate any environmental and/or social issues that need to be mitigated or avoided, the DRD safeguards team may request the developer prepare an Environmental Management Plan (ESMP), a Resettlement Action Plan (RAP), and/or and Indigenous Peoples Plan as needed.

2.8.2. The ESMP will indicate how the developer will manage those environmental and/or social issues during construction and operation of the sub-project and be included in the project plans (proposal or feasibility study)

2.8.3. The RAP will indicate how the developer will handle and compensation required for land acquisitions, loss of assets, or loss of livelihoods, and provide evidence of that compensation.

2.8.4. The IPP will detail the procedures in conducting free, prior and informed consultations with ethnic minorities in order to obtain their broad community support.

2.8.5. If no ESMP, RAP, or IPP is required, this ESCOP will serve as the framework for managing environmental and/or social issues during construction and operation of the sub-project.

2.9. Requirements for Initial Environmental Evaluation

2.9.1. If the sub-project is 5 Mw or greater, an Initial Environmental Evaluation (IEE) is required and must be approved by the Environmental Conservation Department

2.9.2. An IEE may be requested by the DRD Safeguards Team if the sub-project is expected to have any significant environmental or social impacts.

3. Construction

3.1. Workers' Housing and Facilities

3.1.1. If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.

3.1.2. The housing should be on sites free from flooding and other natural hazards.

3.1.3. The housing should be kept free from rubbish and other refuse.

3.1.4. The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.

3.1.5.The site should have adequate drainage to avoid stagnant water.
3.1.6.Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.
3.1.7.Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.
3.1.8.A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.
3.1.9.Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.
3.1.10.First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.
3.1.11.Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1.Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.
3.2.2.The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.
3.2.3.The code should include, but not be limited to:
3.2.3.1.instructions on waste disposal and hygiene
3.2.3.2.prohibition on use of illegal drugs
3.2.3.3.prohibition on theft of personal or community property
3.2.3.4.prohibition on hunting, fishing, or other activities causing harm to the natural environment
3.2.3.5.restrictions on drinking or gambling with members of the community
3.2.3.6.prohibition on making any unwanted verbal or sexual advances to those in the community
3.2.3.7.prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.7 above
3.2.3.8.awareness of religious practices or social customs of the community if different from that of the workers
3.2.3.9.prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

3.3. Occupational Health and Safety

3.3.1.Personal Protective Equipment
3.3.1.1.Workers must use personal protective equipment (PPE) and protective clothing
3.3.1.2.People not involved with installation should be kept safely away from the worksites.
3.3.2.Working at height
3.3.2.1.If working at heights, sufficient protection against falls must be in place.

3.3.2.2.Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

3.4. Community Health and Safety

3.4.1.The community should be informed of the potential risks to health and safety during construction. These include risks of:
3.4.1.1.road accidents
3.4.1.2.communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases
3.4.1.3.other undesirable contact from the workers, as noted in 3.2.3 above.
3.4.2.The community should be informed of potential environmental impacts caused by the project, such as
3.4.2.1.dust, pollution, and noise during construction
3.4.2.2.risks of and emergency procedures for accidents
3.4.3.The developer will install proper safety and warning signs to inform the public of potential hazards during construction

3.5. Construction Near Waters

3.5.1.Runoff from construction entering any water body should be free of pollutants and generally free of sediments
3.5.2.No wastewater, sewage or other drainage from construction or from the workers' housing should flow into the water bodies.
3.5.3.Dirt, silt, or sediment should be collected and stockpiles for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.
3.5.4.Cutting of embankments of water bodies should be avoided or if necessary kept to a minimum to avoid flooding of surrounding areas.
3.5.5.Alternative drain inlets and outlets should be provided in the event existing drainage channels of the water body are closed.
3.5.6.No waste from the construction sites or from the workers' housing should be disposed in the water bodies.

3.6. Solar Panels, Power Station and Related Infrastructure

3.6.1.If removal of any large trees is unavoidable at the sites for the solar panels, the power station, and any related infrastructure, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.
3.6.2.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.
3.6.3.The solar panels, power station, and any related infrastructure should be adequately protected from theft or other interference during construction.
3.6.4.If Lithium-ion batteries are used, to avoid improper use and thermal runaway, the battery cells and charge controller should be encased in one common housing that cannot be opened with commonly available tools such as screwdrivers. The housing should clearly indicate the type of battery enclosed.

3.6.5.Construction of power house (If applicable): Power house typically has three separate rooms: battery room, electronic component room, and generator room. The house should be well ventilated especially battery room, safe from moisture well-lit and safe from intrusion and vandalism. Batteries emit a corrosive and explosive mix of hydrogen and oxygen gases during the final stage of charging, which can ignite if exposed to flame or spark.

3.6.6.Construction of powerhouse need to have detailed layout/sketch on battery installation.

3.6.7. Power house must have a well--ventilated enclosure, especially nearby battery installation.

3.6.8.Limit access to the battery room to people trained in maintenance and shut-down procedures.

3.6.9.Warning signs must be visible on the housing, in English and the local language(s), to prevent any tampering or attempts to alter the system, clearly stating the risks of electric shock, fire, and explosion.

3.7. Plant Clearance Along Mini-Grid

3.7.1.Final alignment of the mini-grid should try to minimise the loss of existing tree cover.

3.7.2.If removal of any large trees is unavoidable, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of ten (10) saplings of species of equal or greater value, such as fruit trees.

3.8. Physical Cultural Resources

3.8.1.If at any time during construction the developer or its workers comes across a “chance find,” that is, finds an item or site that appears to be archaeologically, historically, or culturally important, either nationally or locally, work on that site should be stopped immediately, the site protected, and the Chance Find Procedures in the ESMF be followed.

3.8.2.Project design should then be immediately altered to avoid the site.

3.9. Installation in Households

3.9.1.The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.9.2.All connections and wiring in households must be done by the developer only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.9.3.If the household already has wiring, the developer should replace it with the wiring and materials provided under the sub-project.

3.9.4.The connections, meters and fuses should be placed out of reach and inaccessible to young children.

3.10. Installation of Public Lighting

3.10.1.The decision for location of light points (bulbs) should be decided by the contractor only after detailed discussion with the public facility authorities, but the contractor has to evaluate the safety of the suggested positions.

3.10.2.All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

3.10.3.If the site already has wiring, the contractor should replace it with the wiring and materials provided under the sub-project.

3.11. Waste Management

3.11.1.The developer shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.11.2.During construction, the developer will handle and dispose of waste according to the Waste Management Plan approved by the DRD, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.11.3.After construction, the developer shall clear all construction and storage sites and the workers' housing site of all debris and waste.

3.11.4.The developer shall restore those sites to as near the original condition as possible.

3.12. Reporting

3.12.1.The developer shall include sections in its monthly reports on compliance with environmental and social safeguards, including the EMP, Waste Management Plan, and other issues covered in this ECoP.

4. Operations

4.1. Protection and Safety of Infrastructure and Equipment During Operation

4.1.1.Proper protection of vulnerable points in the system will be put in place (such as fencing, cages, locks, etc.), regularly inspected by the developer and the VEC, and maintained.

4.1.2.If replacement batteries are stored on site, they should be in a site free from erosion, runoff, or potential threats, to avoid damage to the batteries and risk of toxic pollution.

4.2. Repairs and Maintenance

4.2.1.The developer shall follow all relevant environmental measures above when carrying out any maintenance or repair work.

4.2.2.The practices detailed in Section 3 on Construction should be complied with for all repair and maintenance work.

4.3. Disposal of Used/Damaged Equipment and Waste Management

4.3.1.The developer shall dispose of any defective or used batteries according to the measures for battery disposal and recycling set by the DRD

4.3.2.The developer shall dispose of any defective solar panels or other equipment according to measures set by the DRD

4.3.3.Recyclable or toxic materials should be disposed according to the arrangements set in the Waste Management Plan for construction, or according to measures set by the DRD, whichever is stricter.

4.3.4.All other waste should be disposed according to the arrangements set in the Waste Management Plan for construction.

4.4. Community Health and Safety

4.4.1.The community will be informed through posters, brochures, and other means, of the risks and dangers of tampering with any part of the system

4.4.2.The developer will install proper safety and warning signs to inform the public of potential hazards

Environmental and Social Code of Practice for Biomass Mini-grid Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice (ESCOP) provides guidelines to follow for the preparation, construction, and operation of small-scale biomass mini-grid sub-projects under the National Electrification Project (NEP) of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The developer shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.3. Consultation and Disclosure

The developer shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.4. Ethical Clause of the Contractor

1.4.1. The contractor must not either directly or indirectly exploit the local community in any other way to prevent unnecessary social issues.

1.4.2. The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation.

1.5. Language

1.5.1. Communication with affected people should be in a language they understand clearly and easily

1.5.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.6. Payments to Communities for Food and Other Goods and Services

1.6.1. With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.

1.6.2. Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

2. Project Planning and Preparation

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The project proposal documents shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The project proposal documents shall include the environmental and social safeguards screening form and shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the projects will be subject to review and approval by the DRD Safeguards Team for the NEP of the above-mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on project plans

2.2.1.1. The developer shall consult with the communities, both men and women, to be served by the mini-grid on the proposed plans for the project.

2.2.1.2. The sub-project proposal documents must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. The developer shall also consult with the communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.2.2. The project proposal documents must show evidence of agreement by the communities and other affected people to the selection of the site for the biomass generator, biomass storage facilities, and of any other infrastructure of the project.

2.3. Site Selection for Infrastructure and Grid Route

2.3.1. VEC members and other village representatives, both men and women, shall be consulted on selection of the sites for biomass generator, biomass storage facilities, and any related infrastructure; the proposed route of the grid; and lighting for public buildings and street lights.

2.3.2. The sites selected for the biomass generator, biomass storage facilities must be free from risk of erosion or other damage that may cause runoff into waterways, agricultural areas, residential areas or other sites used by the community.

2.3.3. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.3.4. The land used for the infrastructure shall be acquired according to Section 2.6

2.4. Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.4.1. If workers need to be in the community for more than 4 to 5 days, the developer will assess the need for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or a workers' camp is needed.

2.4.2. If in the community for only 4 to 5 days, arrangements can be made for the workers to stay at a community building, or in temporary housing (tents) arranged by the contractor, or accommodated by local residents at the invitation of and arranged by the VEC and other community leaders and compensated as specified in Section 1.5 above on Payments to Communities.

2.4.3. If workers' housing is required, the project proposal will include plans for that housing (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.

2.4.4. The project proposal will include plans for storage facilities of construction materials, the protection of these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.

2.4.5. VEC members and other village representatives shall be consulted on the selection of the sites for workers' housing and facilities, storage spaces, and other temporary facilities.

2.4.6. The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.

2.4.7. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.4.8. The land used for these sites shall be acquired according to Section 2.6

2.5. Waste Management

2.5.1. The developer shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

2.5.2. The developer will prepare plans for management and disposal of any ash created from biomass combustion and gasification during operation.

2.5.3. The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..

2.5.4. The waste management measures adopted by the developer will be reviewed by the PMO of the DRD.

2.6. Land Acquisition and Compensation

2.6.1. All permanent and temporary land acquisition required by the project must be completed prior to construction in accordance with the Resettlement Policy Framework.

2.6.2. Any permanent or temporary loss of livelihood aside from loss of land caused by the project must be compensated prior to construction in accordance with the Resettlement Policy Framework.

2.6.3. Adequate documentation must be provided for review by the DRD-NEP Safeguards Team for all land acquisition and compensation under the Resettlement Policy Framework

2.6.4. All land acquisition and compensation must be completed before construction can start.

2.7. Physical Cultural Resources

2.7.1. The developer shall consult with the Department of Archaeology, National Museum and Library to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.7.2. The developer shall consult with VEC members and other village leaders to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.8. Preparation of an Environmental and Social Management Plan, Resettlement Action Plan, and/or Indigenous Peoples Plan

2.8.1. If the screening forms and assessments indicate any environmental and/or social issues that need to be mitigated or avoided, the PMO may request the developer prepare an Environmental and Social Management Plan (ESMP), a Resettlement Action Plan (RAP), and/or an Indigenous Peoples Plan as needed.

2.8.2. The ESMP will indicate how the developer will manage those environmental and/or social issues during construction and operation of the sub-project and be included in the project plans (proposal or feasibility study)

2.8.3. The RAP will indicate how the developer will handle any compensation required for land acquisitions, loss of assets, or loss of livelihoods, and provide evidence of that compensation.

2.8.4. The IPP will detail the procedures in conducting free, prior and informed consultations with ethnic minorities in order to obtain their broad community support.

2.8.5. If no ESMP, RAP, or IPP is required, this ESCOP will serve as the framework for managing environmental and/or social issues during construction and operation of the sub-project.

2.9. Requirements for Initial Environmental Evaluation

2.9.1. If the sub-project is 5 Mw or greater, an Initial Environmental Evaluation (IEE) is required and must be approved by the Environmental Conservation Department

2.9.2. An IEE may be requested by the DRD Safeguards Team if the sub-project is expected to have any significant environmental or social impacts.

3. Construction

3.1. Workers' Housing and Facilities

3.1.1. If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.

3.1.2.The housing should be on sites free from flooding and other natural hazards.
3.1.3.The housing should be kept free from rubbish and other refuse.
3.1.4.The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.
3.1.5.The site should have adequate drainage to avoid stagnant water.
3.1.6.Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.
3.1.7.Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.
3.1.8.A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.
3.1.9.Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.
3.1.10.First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.
3.1.11.Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1.Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.
3.2.2.The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.
3.2.3.The code should include, but not be limited to:
3.2.3.1.instructions on waste disposal and hygiene
3.2.3.2.prohibition on use of illegal drugs
3.2.3.3.prohibition on theft of personal or community property
3.2.3.4.prohibition on hunting, fishing, or other activities causing harm to the natural environment
3.2.3.5.restrictions on drinking or gambling with members of the community
3.2.3.6.prohibition on making any unwanted verbal or sexual advances to those in the community
3.2.3.7.prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.7 above.
3.2.3.8.awareness of religious practices or social customs of the community if different from that of the workers.
3.2.3.9.prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

3.3. Occupational Health and Safety

3.3.1.Personal Protective Equipment
3.3.1.1.Workers must use personal protective equipment (PPE) and protective clothing

3.3.1.2.People not involved with installation should be kept safely away from the worksites.

3.3.2.Working at height

3.3.2.1.If working at heights, sufficient protection against falls must be in place.

3.3.2.2.Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

3.4. Community Health and Safety

3.4.1.The community should be informed of the potential risks to health and safety during construction. These include risks of:

3.4.1.1.road accidents

3.4.1.2.communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases

3.4.1.3.other undesirable contact from the workers, as noted in 3.2.3 above.

3.4.2.The community should be informed of potential environmental impacts caused by the project, such as

3.4.2.1.dust, pollution, and noise during construction

3.4.2.2.pollution and noise during operation

3.4.2.3.risks of and emergency procedures for accidents

3.4.3.The developer will install proper safety and warning signs to inform the public of potential hazards during construction

3.5. Construction Near Waters

3.5.1.Runoff from construction entering any water body should be free of pollutants and generally free of sediments

3.5.2.No wastewater, sewage or other drainage from construction or from the workers' housing should flow into the water bodies.

3.5.3.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.5.4.Cutting of embankments of water bodies should be avoided or if necessary kept to a minimum to avoid flooding of surrounding areas.

3.5.5.Alternative drain inlets and outlets should be provided in the event existing drainage channels of the water body are closed.

3.5.6.No waste from the construction sites or from the workers' housing should be disposed in the water bodies.

3.6. Biomass Generator, Biomass Storage Facilities, and Related Infrastructure

3.6.1.If removal of any large trees is unavoidable at the sites for the biomass generator and biomass storage facilities, and any related infrastructure, the wood from those trees removed by the developer will be given to the community or, if built on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.

3.6.2.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.6.3.The biomass generator, biomass storage facilities, and any related infrastructure should be adequately protected from theft or other interference during construction.

3.7. Plant Clearance Along Mini-Grid

3.7.1.Final alignment of the mini-grid should try to minimise the loss of existing tree cover.

3.7.2.If removal of any large trees is unavoidable, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of ten (10) saplings of species of equal or greater value, such as fruit trees.

3.8. Physical Cultural Resources

3.8.1.If at any time during construction the developer or its workers comes across a "chance find," that is, finds an item or site that appears to be archaeologically, historically, or culturally important, either nationally or locally, work on that site should be stopped immediately, the site protected, and the Chance Find Procedures in Annex 8 of this ESMF be followed.

3.8.2.Project design should then be immediately altered to avoid the site.

3.9. Installation in Households

3.9.1.The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.9.2.All connections and wiring in households must be done by the developer only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.9.3.If the household already has wiring, the developer should replace it with the wiring and materials provided under the sub-project.

3.9.4.The connections, meters and fuses should be placed out of reach and inaccessible to young children.

3.10. Installation of Public Lighting

3.10.1.The decision for location of light points (bulbs) should be decided by the contractor only after detailed discussion with the public facility authorities, but the contractor has to evaluate the safety of the suggested positions.

3.10.2.All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

3.10.3.If the site already has wiring, the contractor should replace it with the wiring and materials provided under the sub-project.

3.11. Waste Management

3.11.1.The developer shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.11.2.During construction, the developer will handle and dispose of waste according to the Waste Management Plan approved by the DRD, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.11.3.After construction, the developer shall clear all construction and storage sites and the workers' housing site of all debris and waste.

3.11.4.The developer shall restore those sites to as near the original condition as possible.

3.12. Reporting

3.12.1.The developer shall include sections in its monthly reports on compliance with environmental and social safeguards, including the ESMP, Waste Management Plan, and other issues covered in this ESCOP.

4. Operations

4.1. Protection and Safety During Operation

4.1.1.Proper protection of vulnerable points in the system will be put in place (such as fencing, cages, locks, etc.), regularly inspected by the developer and the VEC, and maintained.

4.1.2.Safeguard measures such as pressure gauges (manometers), water traps, and sulphur cleaners and outlet pipes, as necessary, should be installed and maintained.

4.1.3.Operators should adhere to conventional safe handling practices, including use of safety equipment or personal protection equipment (PPE), such as gloves, boots, masks, etc.

4.1.4.The biomass should be stored in a site free from erosion, runoff, or potential threats, to avoid damage and risk of polluting nearby areas. The storage facilities should also minimise degradation of the biomass and the production and release of harmful gases and unpleasant odours.

4.1.5.The operator shall assure that the water required for cooling the biomass plants does not deplete the availability of water for domestic use, agriculture, or other uses.

4.2. Repairs and Maintenance

4.2.1.The developer shall follow all relevant environmental measures above when carrying out any maintenance or repair work.

4.2.2.The practices detailed in Section 3 on Construction should be complied with for all repair and maintenance work.

4.3. Disposal of Used/Damaged Equipment and Waste Management

4.3.1.The developer shall dispose of any defective or used equipment according the arrangements set in the Waste Management Plan for construction

4.3.2.Recyclable or toxic materials should be disposed according to the arrangements set in the Waste Management Plan for construction, or according to measures set by the DRD, whichever is stricter.

4.3.3.All other waste should be disposed according to the arrangements set in the Waste Management Plan for construction.

4.4. Disposal of Ash from Biomass Combustion and Gasification

4.4.1.Ash from the biomass generator should be disposed of in a safe and sustainable manner.
4.4.2.If the ash can be used in fertiliser, it should be given to the community, and the community shown how best to mix the ash with other compost.
4.4.3.If the ash cannot be used in fertiliser, it should be disposed in a safe manner, to avoid pollution, according to the plans developed under 2.5.2 above.

4.5. Community Health and Safety

4.5.1.The community will be informed through posters, brochures, and other means, of the risks and dangers of tampering with any part of the system
4.5.2.The developer will install proper safety and warning signs to inform the public of potential hazards

Environmental and Social Code of Practice for Hydropower Mini-grid Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice provides guidelines to follow for the preparation, construction, and operation of small-scale hydropower mini-grid sub-projects under the National Electrification Project (NEP) of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The developer shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.3. Consultation and Disclosure

The developer shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.4. Ethical Clause of the Contractor

1.4.1. The contractor must not either directly or indirectly exploit the local community in any other way to prevent unnecessary social issues.
1.4.2. The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation.

1.5. Language

1.5.1. Communication with affected people should be in a language they understand clearly and easily
1.5.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.6. Payments to Communities for Food and Other Goods and Services

1.6.1. With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.
1.6.2. Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

2. Project Planning and Preparation

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The project proposal documents shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The project proposal documents shall include the environmental and social safeguards screening form and shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the projects will be subject to review and approval by the DRD Safeguards Team for the NEP of the above mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on project plans

2.2.1.1. The developer shall consult with the communities, both men and women, to be served by the mini-grid on the proposed plans for the project.

2.2.1.2. The sub-project proposal documents must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. The developer shall also consult with the communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.2.2. The project proposal documents must show evidence of agreement by the communities and other affected people to the selection of the site for the dam and the extent of impact of the reservoir.

2.3. Environmental Assessment of Water Uses and Quality

2.3.1. The developer should assess any competing water uses (irrigation, domestic use, industrial use, etc.) and the potential impact of the project on those uses

2.3.2. The developer should measure the water quality as a baseline for later monitoring. Measurements should be taken during high flow and low flow and should include temperature, acidity (pH), colour, dissolved oxygen (DO), and turbidity.

2.4. Environmental Assessment of Dam or Weir

2.4.1. If a dam is to be built, the Minimum Environmental Flow is to be measured, incorporated in project design, and reported in the project proposal

2.4.2.The expected impact of the dam or weir on aquatic life is to be assessed, incorporated in project design, and reported in the project proposal

2.4.3.The vegetative cover of the area to be flooded by the reservoir is to be described in the project proposal, with plans and measures for clearance of the area before flooding.

2.5. Site Selection for Infrastructure and Grid Route

2.5.1.VEC members and other village representatives, both men and women, shall be consulted on the selection of the sites for the weir or dam and informed of the maximum area to be flooded by a reservoir; the route of the power canal and penstock; the site of the powerhouse and any related infrastructure; the proposed route of the grid; and lighting for public buildings and street lights.

2.5.2.The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.5.3.The land used for the infrastructure shall be acquired according to Section 2.8

2.6. Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.6.1.If workers need to be in the community for more than 4 to 5 days, the developer will assess the need for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or a workers' camp is needed.

2.6.2.If in the community for only 4 to 5 days, arrangements can be made for the workers to stay at a community building, or in temporary housing (tents) arranged by the contractor, or accommodated by local residents at the invitation of and arranged by the VEC and other community leaders and compensated as specified in Section 1.5 above on Payments to Communities.

2.6.3.If workers' housing is required, the project proposal will include plans for that housing (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.

2.6.4.The project proposal will include plans for storage facilities of construction materials, the protection of these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.

2.6.5.VEC members and other village representatives shall be consulted on the selection of the sites for workers' housing and facilities, storage spaces, and other temporary facilities.

2.6.6.The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.

2.6.7.The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.6.8.The land used for these sites shall be acquired according to Section 2.8

2.7. Waste Management

2.7.1.The developer shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

2.7.2.The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..

2.7.3.The waste management measures adopted by the developer will be reviewed by the PMO of the DRD.

2.8. Land Acquisition and Compensation

2.8.1.All permanent and temporary land acquisition required by the project must be completed prior to construction in accordance with the Resettlement Policy Framework.

2.8.2.Any permanent or temporary loss of livelihood aside from loss of land caused by the project must be compensated prior to construction in accordance with the Resettlement Policy Framework.

2.8.3.Adequate documentation must be provided for review by the DRD-NEP Safeguards Team for all land acquisition and compensation under the Resettlement Policy Framework

2.8.4.All land acquisition and compensation must be completed before construction can start.

2.9. Physical Cultural Resources

2.9.1.The developer shall consult with the Department of Archaeology, National Museum and Library to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.9.2.The developer shall consult with VEC members and other village leaders to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.10. Preparation of an Environmental and Social Management Plan, Resettlement Action Plan, and/or Indigenous Peoples Plan

2.10.1.If the screening forms and assessments indicate any environmental and/or social issues that need to be mitigated or avoided, the PMO may request the developer prepare an Environmental and Social Management Plan (ESMP), a Resettlement Action Plan (RAP), and/or an Indigenous Peoples Plan as needed.

2.10.2.The ESMP will indicate how the developer will manage those environmental and/or social issues during construction and operation of the sub-project and be included in the project plans (proposal or feasibility study)

2.10.3.The RAP will indicate how the developer will handle any compensation required for land acquisitions, loss of assets, or loss of livelihoods, and provide evidence of that compensation.

2.10.4.The IPP will detail the procedures in conducting free, prior and informed consultations with ethnic minorities in order to obtain their broad community support.

2.10.5.If no ESMP, RAP, or IPP is required, this ESCOP will serve as the framework for managing environmental and/or social issues during construction and operation of the sub-project.

2.11. Requirements for Initial Environmental Evaluation

2.11.1. If the sub-project is 1 Mw or greater, an Initial Environmental Evaluation (IEE) is required under the Environmental Impact Assessment Procedure of the Myanmar government.

2.11.2. An IEE may also be requested by the DRD Safeguards Team if the sub-project is expected to have any other significant environmental or social impacts.

2.11.3. The IEE must be approved by the Environmental Conservation Department before construction can begin

3. Construction

3.1. Workers' Housing and Facilities

3.1.1. If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.

3.1.2. The housing should be on sites free from flooding and other natural hazards.

3.1.3. The housing should be kept free from rubbish and other refuse.

3.1.4. The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.

3.1.5. The site should have adequate drainage to avoid stagnant water.

3.1.6. Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.

3.1.7. Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.

3.1.8. A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.

3.1.9. Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.

3.1.10. First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.

3.1.11. Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1. Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.

3.2.2. The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.

3.2.3. The code should include, but not be limited to:

- 3.2.3.1. instructions on waste disposal and hygiene
- 3.2.3.2. prohibition on use of illegal drugs
- 3.2.3.3. prohibition on theft of personal or community property
- 3.2.3.4. prohibition on hunting, fishing, or other activities causing harm to the natural environment
- 3.2.3.5. restrictions on drinking or gambling with members of the community

3.2.3.6.prohibition on making any unwanted verbal or sexual advances to those in the community

3.2.3.7.prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.9 above.

3.2.3.8.awareness of religious practices or social customs of the community if different from that of the workers.

3.2.3.9.prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

3.3. Occupational Health and Safety

3.3.1.Personal Protective Equipment

3.3.1.1.Workers must use personal protective equipment (PPE) and protective clothing

3.3.1.2.People not involved with installation should be kept safely away from the worksites.

3.3.2.Working at height

3.3.2.1.If working at heights, sufficient protection against falls must be in place.

3.3.2.2.Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

3.4. Community Health and Safety

3.4.1.The community should be informed of the potential risks to health and safety during construction. These include risks of:

3.4.1.1.road accidents

3.4.1.2.communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases

3.4.1.3.other undesirable contact from the workers, as noted in 3.2.3 above.

3.4.2.The community should be informed of potential environmental impacts caused by the project, including:

3.4.2.1.impact on water flow and water quality during and after construction

3.4.2.2.impact on aquatic life, in particular any fish or other aquatic animals used for food by the community, during and after construction

3.4.2.3.dust, pollution, and noise

3.4.3.The developer will install proper safety and warning signs to inform the public of potential hazards during construction

3.5. Construction Near Waters

3.5.1.Runoff from construction entering the water body should be free of pollutants and generally free of sediments

3.5.2.No wastewater, sewage or other drainage from construction or from the workers' housing should flow into the water bodies.

3.5.3.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.5.4.Cutting of embankments of water bodies should be avoided or if necessary kept to a minimum to avoid flooding of surrounding areas.

3.5.5. Alternative drain inlets and outlets should be provided in the event existing drainage channels of the water body are closed.
3.5.6. No waste from the construction sites or from the workers' housing should be disposed in the water bodies.

3.6. Water Flow

3.6.1. Water flow should be monitored weekly during construction of the powerhouse and any other structures near the waterway.
3.6.2. Any serious disruption to water flow below Minimum Environmental Flow should be corrected as soon as possible.
3.6.3. If the project has a reservoir, water flow should be maintained at Minimum Environmental Flow while the reservoir is being filled.

3.7. Water Quality

3.7.1. Water quality should be monitored weekly during construction, to assure there are no harmful impacts from construction or the workers' housing.
3.7.2. The water should be tested for temperature, acidity (pH), colour, dissolved oxygen (DO), and turbidity.
3.7.3. If water quality is found to decrease during construction, the problem should be corrected as soon as possible and water quality should be monitored once every two days until it returns to normal.
3.7.4. If the project has a reservoir, the water quality of the reservoir, in particular the DO, should be measured before operations begin, to assess and minimise impacts downstream during the initial release.

3.8. Weir and Power Canal / Penstock or Dam

3.8.1. If removal of any large trees is unavoidable when constructing the power canal and penstock, the weir or dam, and any related infrastructure, wood from trees removed by the developer will be given to the community, or if on private land to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.
3.8.2. Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.
3.8.3. Trash racks should be installed to prevent fish and other aquatic life from entering the canal.

3.9. Power House and Related Infrastructure

3.9.1. If removal of any large trees is unavoidable at the sites for power house and any related infrastructure, the wood from those trees removed by the developer will be given to the community, or if on private land to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.
3.9.2. The construction site for the power house and any related infrastructure should be adequately protected from theft or other interference during construction.

3.10. Clearance of Area to be Inundated

3.10.1. To minimise potential deoxygenation of the water caused by anaerobic biodegradation of the remaining organic matter after impoundment, the developer will clear some of the biomass in the area to be inundated.

3.10.2. Large trees will be felled and removed by the developer, and the wood from those trees given to the community, or if the tree is on private land to the land owner.

3.10.3. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value to the community (such as fruit trees.

3.10.4. Small trees, bushes, and other biomass that could be used for fuelwood, charcoal, compost, etc., can be removed and the material either used by the community, or if on private land the land owner, or finally the developer if neither the owner no community want the material.

3.10.5. Other biomass does not need to be removed, as the impacts from impoundment will be minimal.

3.11. Plant Clearance Along Mini-Grid

3.11.1. Final alignment of the mini-grid should try to minimise the loss of existing tree cover.

3.11.2. If removal of any large trees is unavoidable, the wood from those trees removed by the developer will be given to the community, or if on private land to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of ten (10) saplings of species of equal or greater value, such as fruit trees.

3.12. Physical Cultural Resources

3.12.1. If at any time during construction the developer or its workers comes across a "chance find," that is, finds an item or site that appears to be archaeologically, historically, or culturally important, either nationally or locally, work on that site should be stopped immediately, the site protected, and the Chance Find Procedures in Annex 8 of this ESMF be followed.

3.12.2. Project design should then be immediately altered to avoid the site.

3.13. Installation in Households

3.13.1. The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.13.2. All connections and wiring in households must be done by the developer only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.13.3. If the household already has wiring, the developer should replace it with the wiring and materials provided under the sub-project.

3.13.4. The connections, meters and fuses should be placed out of reach and inaccessible to young children.

3.14. Installation of Public Lighting

3.14.1. The decision for location of light points (bulbs) should be decided by the contractor only after detailed discussion with the public facility authorities, but the contractor has to evaluate the safety of the suggested positions.

3.14.2. All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

3.14.3. If the site already has wiring, the contractor should replace it with the wiring and materials provided under the sub-project.

3.15. Waste Management

3.15.1. The developer shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.15.2. During construction, the developer will handle and dispose of waste according to the Waste Management Plan approved by the DRD, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.15.3. After construction, the developer shall clear all construction and storage sites and the workers' housing site of all debris and waste.

3.15.4. The developer shall restore those sites to as near the original condition as possible.

3.16. Reporting

3.16.1. The developer shall include sections in its monthly reports on compliance with environmental and social safeguards, including the ESMP, Waste Management Plan, and other issues covered in this ESCOP.

4. Operations

4.1. Protection and Safety of Infrastructure and Equipment During Operation

4.1.1. Proper protection of vulnerable points in the system will be put in place (such as fencing, cages, locks, etc.), regularly inspected by the developer and the VEC, and maintained.

4.2. Water Flow and Quality

4.2.1. During operations no less than Minimum Environmental Flow should be maintained

4.2.2. Excess flow should be regulated to avoid flooding to downstream areas

4.2.3. Water quality should be measured periodically according to a schedule set by the PMO.

4.3. Repairs and Maintenance

4.3.1. The contractor shall follow all relevant environmental measures above when carrying out any maintenance or repair work.

4.3.2.The practices detailed in Section 3 on Construction should be complied with for all repair and maintenance work.

4.4. Waste Management

4.4.1.Any equipment or materials that need to be replaced should be disposed according to measures set by the DRD.

4.4.2.Recyclable or toxic materials should be disposed according to the arrangements set in the Waste Management Plan for construction, or according to measures set by the DRD, whichever is stricter.

4.4.3.Debris from the trash racks should be separated into organic and inorganic matter, with the organic matter used for compost and the inorganic matter disposed according to arrangements set in the Waste Management Plan.

4.5. Community Health and Safety

4.5.1.The community will be informed through posters, brochures, and other means, of the risks and dangers of tampering with any part of the system

4.5.2.The developer will install proper safety and warning signs to inform the public of potential hazards

Environmental and Social Code of Practice for Solar-Diesel Mini-grid Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice (ESCOP) provides guidelines to follow for the preparation, construction, and operation of small-scale solar-diesel mini-grid sub-projects under the National Electrification Project (NEP) of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The developer shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.3. Consultation and Disclosure

The developer shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.4. Ethical Clause of the Contractor

1.4.1. The contractor must not either directly or indirectly exploit the local community in any other way to prevent unnecessary social issues.

1.4.2. The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation.

1.5. Language

1.5.1. Communication with affected people should be in a language they understand clearly and easily

1.5.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.6. Payments to Communities for Food and Other Goods and Services

1.6.1. With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.

1.6.2. Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

2. Project Planning and Preparation

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The project proposal documents shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The project proposal documents shall include the environmental and social safeguards screening form and shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the projects will be subject to review and approval by the DRD Safeguards Team for the NEP of the above-mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on project plans

2.2.1.1. The developer shall consult with the communities, both men and women, to be served by the mini-grid on the proposed plans for the project.

2.2.1.2. The sub-project proposal documents must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. The developer shall also consult with the communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.2.2. The project proposal documents must show evidence of agreement by the communities and other affected people to the selection of the site for the array of solar panels and storage batteries, the diesel generator, fuel storage facilities, and of any other infrastructure of the project.

2.3. Site Selection for Infrastructure and Grid Route

2.3.1. VEC members and other village representatives, both men and women, shall be consulted on selection of the sites for solar panels and power station, the diesel generator, fuel storage facilities, and any related infrastructure; the proposed route of the grid; and lighting for public buildings and street lights.

2.3.2. The sites selected for the diesel generator and fuel storage facilities must be free from risk of erosion or other damage that may cause runoff into waterways, agricultural areas, residential areas or other sites used by the community. The project proposal should include plans to limit any spill and for cleaning up and rehabilitation of areas affected by a spill.

2.3.3. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.3.4.The land used for the infrastructure shall be acquired according to Section 2.6

2.4. Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.4.1.If workers need to be in the community for more than 4 to 5 days, the developer will assess the need for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or a workers' camp is needed.

2.4.2.If in the community for only 4 to 5 days, arrangements can be made for the workers to stay at a community building, or in temporary housing (tents) arranged by the contractor, or accommodated by local residents at the invitation of and arranged by the VEC and other community leaders and compensated as specified in Section 1.5 above on Payments to Communities.

2.4.3.If workers' housing is required, the project proposal will include plans for that housing (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.

2.4.4.The project proposal will include plans for storage facilities of construction materials, the protection of these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.

2.4.5.VEC members and other village representatives shall be consulted on the selection of the sites for workers' housing and facilities, storage spaces, and other temporary facilities.

2.4.6.The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.

2.4.7.The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.4.8.The land used for these sites shall be acquired according to Section 2.6

2.5. Waste Management

2.5.1.The developer shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

2.5.2.The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..

2.5.3.The waste management measures adopted by the developer will be reviewed by the PMO of the DRD.

2.6. Land Acquisition and Compensation

2.6.1.All permanent and temporary land acquisition required by the project must be completed prior to construction in accordance with the Resettlement Policy Framework.

2.6.2.Any permanent or temporary loss of livelihood aside from loss of land caused by the project must be compensated prior to construction in accordance with the Resettlement Policy Framework.

2.6.3. Adequate documentation must be provided for review by the DRD-NEP Safeguards Team for all land acquisition and compensation under the Resettlement Policy Framework

2.6.4. All land acquisition and compensation must be completed before construction can start.

2.7. Physical Cultural Resources

2.7.1. The developer shall consult with the Department of Archaeology, National Museum and Library to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.7.2. The developer shall consult with VEC members and other village leaders to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.8. Preparation of an Environmental and Social Management Plan, Resettlement Action Plan, and/or Indigenous Peoples Plan

2.8.1. If the screening forms and assessments indicate any environmental and/or social issues that need to be mitigated or avoided, the PMO may request the developer prepare an Environmental and Social Management Plan (ESMP), a Resettlement Action Plan (RAP), and/or an Indigenous Peoples Plan as needed.

2.8.2. The ESMP will indicate how the developer will manage those environmental and/or social issues during construction and operation of the sub-project and be included in the project plans (proposal or feasibility study)

2.8.3. The RAP will indicate how the developer will handle any compensation required for land acquisitions, loss of assets, or loss of livelihoods, and provide evidence of that compensation.

2.8.4. The IPP will detail the procedures in conducting free, prior and informed consultations with ethnic minorities in order to obtain their broad community support.

2.8.5. If no ESMP, RAP, or IPP is required, this ESCOP will serve as the framework for managing environmental and/or social issues during construction and operation of the sub-project.

2.9. Requirements for Initial Environmental Evaluation

2.9.1. If the sub-project is 5 Mw or greater, an Initial Environmental Evaluation (IEE) is required and must be approved by the Environmental Conservation Department

2.9.2. An IEE may be requested by the DRD Safeguards Team if the sub-project is expected to have any significant environmental or social impacts.

3. Construction

3.1. Workers' Housing and Facilities

3.1.1. If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.

3.1.2.The housing should be on sites free from flooding and other natural hazards.
3.1.3.The housing should be kept free from rubbish and other refuse.
3.1.4.The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.
3.1.5.The site should have adequate drainage to avoid stagnant water.
3.1.6.Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.
3.1.7.Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.
3.1.8.A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.
3.1.9.Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.
3.1.10.First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.
3.1.11.Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1.Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.
3.2.2.The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.
3.2.3.The code should include, but not be limited to:
3.2.3.1.instructions on waste disposal and hygiene
3.2.3.2.prohibition on use of illegal drugs
3.2.3.3.prohibition on theft of personal or community property
3.2.3.4.prohibition on hunting, fishing, or other activities causing harm to the natural environment
3.2.3.5.restrictions on drinking or gambling with members of the community
3.2.3.6.prohibition on making any unwanted verbal or sexual advances to those in the community
3.2.3.7.prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.7 above.
3.2.3.8.awareness of religious practices or social customs of the community if different from that of the workers.
3.2.3.9.prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

3.3. Occupational Health and Safety

3.3.1.Personal Protective Equipment
3.3.1.1.Workers must use personal protective equipment (PPE) and protective clothing

3.3.1.2.People not involved with installation should be kept safely away from the worksites.

3.3.2.Working at height

3.3.2.1.If working at heights, sufficient protection against falls must be in place.

3.3.2.2.Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

3.4. Community Health and Safety

3.4.1.The community should be informed of the potential risks to health and safety during construction. These include risks of:

3.4.1.1.road accidents

3.4.1.2.communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases

3.4.1.3.other undesirable contact from the workers, as noted in 3.2.3 above.

3.4.2.The community should be informed of potential environmental impacts caused by the project, such as

3.4.2.1.dust, pollution, and noise during construction

3.4.2.2.pollution and noise during operation

3.4.2.3.risks of and emergency procedures for fuel spills

3.4.2.4.risks of and emergency procedures for accidents

3.4.3.The developer will install proper safety and warning signs to inform the public of potential hazards during construction

3.5. Construction Near Waters

3.5.1.Runoff from construction entering any water body should be free of pollutants and generally free of sediments

3.5.2.No wastewater, sewage or other drainage from construction or from the workers' housing should flow into the water bodies.

3.5.3.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.5.4.Cutting of embankments of water bodies should be avoided or if necessary kept to a minimum to avoid flooding of surrounding areas.

3.5.5.Alternative drain inlets and outlets should be provided in the event existing drainage channels of the water body are closed.

3.5.6.No waste from the construction sites or from the workers' housing should be disposed in the water bodies.

3.6. Solar Panels, Power Station, Diesel Generator, Fuel Storage Facilities, and Related Infrastructure

3.6.1.If removal of any large trees is unavoidable at the sites for the solar panels, the power station, the diesel generator, fuel storage facilities, and any related infrastructure, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.

3.6.2. Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.6.3. Grease traps or containers should be used to capture potential oil spillage from the diesel engine. The exhaust pipe from the diesel engine should be checked for its height according to relevant technical specifications.

3.6.4. The solar panels, power station, the diesel generator, fuel storage facilities, and any related infrastructure should be adequately protected from theft or other interference during construction.

3.6.5. If Lithium-ion batteries are used, to avoid improper use and thermal runaway, the battery cells and charge controller should be encased in one common housing that cannot be opened with commonly available tools such as screwdrivers. The housing should clearly indicate the type of battery enclosed.

3.6.6. Construction of power house (If applicable): Power house typically has three separate rooms: battery room, electronic component room, and generator room. The house should be well ventilated especially battery room, safe from moisture well-lit and safe from intrusion and vandalism. Batteries emit a corrosive and explosive mix of hydrogen and oxygen gases during the final stage of charging, which can ignite if exposed to flame or spark.

3.6.7. Construction of powerhouse need to have detailed layout/sketch on battery installation.

3.6.8. Power house must have a well-ventilated enclosure, especially nearby battery installation.

3.6.9. Limit access to the battery room to people trained in maintenance and shut-down procedures.

3.6.10. Warning signs must be visible on the housing, in English and the local language(s), to prevent any tampering or attempts to alter the system, clearly stating the risks of electric shock, fire, and explosion.

3.6.11. Trees should be planted in the compound of the diesel generator (but not blocking the solar panels) to absorb some of the emissions and particular matter.

3.7. Plant Clearance Along Mini-Grid

3.7.1. Final alignment of the mini-grid should try to minimise the loss of existing tree cover.

3.7.2. If removal of any large trees is unavoidable, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of ten (10) saplings of species of equal or greater value, such as fruit trees.

3.8. Physical Cultural Resources

3.8.1. If at any time during construction the developer or its workers comes across a “chance find,” that is, finds an item or site that appears to be archaeologically, historically, or culturally important, either nationally or locally, work on that site should be stopped immediately, the site protected, and the Chance Find Procedures in Annex 8 of this ESMF be followed.

3.8.2. Project design should then be immediately altered to avoid the site.

3.9. Installation in Households

3.9.1.The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.9.2.All connections and wiring in households must be done by the developer only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.9.3.If the household already has wiring, the developer should replace it with the wiring and materials provided under the sub-project.

3.9.4.The connections, meters and fuses should be placed out of reach and inaccessible to young children.

3.10. Installation of Public Lighting

3.10.1.The decision for location of light points (bulbs) should be decided by the contractor only after detailed discussion with the public facility authorities, but the contractor has to evaluate the safety of the suggested positions.

3.10.2.All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

3.10.3.If the site already has wiring, the contractor should replace it with the wiring and materials provided under the sub-project.

3.11. Waste Management

3.11.1.The developer shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.11.2.During construction, the developer will handle and dispose of waste according to the Waste Management Plan approved by the DRD, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.11.3.After construction, the developer shall clear all construction and storage sites and the workers' housing site of all debris and waste.

3.11.4.The developer shall restore those sites to as near the original condition as possible.

3.12. Reporting

3.12.1.The developer shall include sections in its monthly reports on compliance with environmental and social safeguards, including the ESMP, Waste Management Plan, and other issues covered in this ESCOP.

4. Operations

4.1. Protection and Safety of Infrastructure and Equipment During Operation

4.1.1.Proper protection of vulnerable points in the system will be put in place (such as fencing, cages, locks, etc.), regularly inspected by the developer and the VEC, and maintained.

4.1.2. If replacement batteries are stored on site, they should be in a site free from erosion, runoff, or potential threats, to avoid damage to the batteries and risk of toxic pollution.

4.1.3. Diesel fuel should be stored in a site free from erosion, runoff, or potential threats, to avoid damage and risk of spillage.

4.2. Occupational Safety

4.2.1. Personal protective equipment (such as ear plugs for noise, proper clothing) should be provided.

4.2.2. If noise is found to exceed 80 dB (WHO Guidelines value), soundproofing should be seriously considered.

4.3. Repairs and Maintenance

4.3.1. The developer shall follow all relevant environmental measures above when carrying out any maintenance or repair work.

4.3.2. The practices detailed in Section 3 on Construction should be complied with for all repair and maintenance work.

4.4. Disposal of Used/Damaged Equipment and Waste Management

4.4.1. The developer shall dispose of any defective or used batteries according to the measures for battery disposal and recycling set by the DRD

4.4.2. The developer shall dispose of any defective solar panels or other equipment according to measures set by the DRD

4.4.3. Recyclable or toxic materials should be disposed according to the arrangements set in the Waste Management Plan for construction, or according to measures set by the DRD, whichever is stricter.

4.4.4. All other waste should be disposed according to the arrangements set in the Waste Management Plan for construction.

4.5. Community Health and Safety

4.5.1. The community will be informed through posters, brochures, and other means, of the risks and dangers of tampering with any part of the system

4.5.2. The developer will install proper safety and warning signs to inform the public of potential hazards

4.5.3. To protect local residents from excessive noise from the wind turbines or diesel generator, trees will be planted by the developer as necessary to create sound barriers.

Environmental and Social Code of Practice for Biomass-Diesel Mini-grid Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice (ESCOP) provides guidelines to follow for the preparation, construction, and operation of small-scale biomass mini-grid sub-projects under the National Electrification Project (NEP) of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The developer shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.3. Consultation and Disclosure

The developer shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.4. Ethical Clause of the Contractor

1.4.1. The contractor must not either directly or indirectly exploit the local community in any other way to prevent unnecessary social issues.

1.4.2. The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation.

1.5. Language

1.5.1. Communication with affected people should be in a language they understand clearly and easily

1.5.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.6. Payments to Communities for Food and Other Goods and Services

1.6.1. With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.

1.6.2. Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

2. Project Planning and Preparation

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The project proposal documents shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The project proposal documents shall include the environmental and social safeguards screening form and shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the projects will be subject to review and approval by the DRD Safeguards Team for the NEP of the above-mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on project plans

2.2.1.1. The developer shall consult with the communities, both men and women, to be served by the mini-grid on the proposed plans for the project.

2.2.1.2. The sub-project proposal documents must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. The developer shall also consult with the communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.2.2. The project proposal documents must show evidence of agreement by the communities and other affected people to the selection of the site for the biomass generator, biomass storage facilities, the diesel generator, fuel storage facilities, and of any other infrastructure of the project.

2.3. Site Selection for Infrastructure and Grid Route

2.3.1. VEC members and other village representatives, both men and women, shall be consulted on selection of the sites for biomass generator, biomass storage facilities, the diesel generator, fuel storage facilities, and any related infrastructure; the proposed route of the grid; and lighting for public buildings and street lights.

2.3.2. The sites selected for the biomass generator, biomass storage facilities, diesel generator, and fuel storage facilities must be free from risk of erosion or other damage that may cause runoff into waterways, agricultural areas, residential areas or other sites used by the community. The project proposal should include plans to limit any spill and for cleaning up and rehabilitation of areas affected by a spill.

2.3.3.The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.
2.3.4.The land used for the infrastructure shall be acquired according to Section 2.6

2.4. Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.4.1.If workers need to be in the community for more than 4 to 5 days, the developer will assess the need for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or a workers' camp is needed.
2.4.2.If in the community for only 4 to 5 days, arrangements can be made for the workers to stay at a community building, or in temporary housing (tents) arranged by the contractor, or accommodated by local residents at the invitation of and arranged by the VEC and other community leaders and compensated as specified in Section 1.5 above on Payments to Communities.
2.4.3.If workers' housing is required, the project proposal will include plans for that housing (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.
2.4.4.The project proposal will include plans for storage facilities of construction materials, the protection of these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.
2.4.5.VEC members and other village representatives shall be consulted on the selection of the sites for workers' housing and facilities, storage spaces, and other temporary facilities.
2.4.6.The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.
2.4.7.The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.
2.4.8.The land used for these sites shall be acquired according to Section 2.6

2.5. Waste Management

2.5.1.The developer shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.
2.5.2.The developer will prepare plans for management and disposal of any ash created from biomass combustion and gasification during operation.
2.5.3.The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..
2.5.4.The waste management measures adopted by the developer will be reviewed by the PMO of the DRD.

2.6. Land Acquisition and Compensation

2.6.1.All permanent and temporary land acquisition required by the project must be completed prior to construction in accordance with the Resettlement Policy Framework.

2.6.2. Any permanent or temporary loss of livelihood aside from loss of land caused by the project must be compensated prior to construction in accordance with the Resettlement Policy Framework.

2.6.3. Adequate documentation must be provided for review by the DRD-NEP Safeguards Team for all land acquisition and compensation under the Resettlement Policy Framework

2.6.4. All land acquisition and compensation must be completed before construction can start.

2.7. Physical Cultural Resources

2.7.1. The developer shall consult with the Department of Archaeology, National Museum and Library to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.7.2. The developer shall consult with VEC members and other village leaders to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.8. Preparation of an Environmental and Social Management Plan, Resettlement Action Plan, and/or Indigenous Peoples Plan

2.8.1. If the screening forms and assessments indicate any environmental and/or social issues that need to be mitigated or avoided, the PMO may request the developer prepare an Environmental and Social Management Plan (ESMP), a Resettlement Action Plan (RAP), and/or an Indigenous Peoples Plan as needed.

2.8.2. The ESMP will indicate how the developer will manage those environmental and/or social issues during construction and operation of the sub-project and be included in the project plans (proposal or feasibility study)

2.8.3. The RAP will indicate how the developer will handle any compensation required for land acquisitions, loss of assets, or loss of livelihoods, and provide evidence of that compensation.

2.8.4. The IPP will detail the procedures in conducting free, prior and informed consultations with ethnic minorities in order to obtain their broad community support.

2.8.5. If no ESMP, RAP, or IPP is required, this ESCOP will serve as the framework for managing environmental and/or social issues during construction and operation of the sub-project.

2.9. Requirements for Initial Environmental Evaluation

2.9.1. If the sub-project is 5 Mw or greater, an Initial Environmental Evaluation (IEE) is required and must be approved bu the Environmental Conservation Department

2.9.2. An IEE may be requested by the DRD Safeguards Team if the sub-project is expected to have any significant environmental or social impacts.

3. Construction

3.1. Workers' Housing and Facilities

3.1.1.If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.
3.1.2.The housing should be on sites free from flooding and other natural hazards.
3.1.3.The housing should be kept free from rubbish and other refuse.
3.1.4.The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.
3.1.5.The site should have adequate drainage to avoid stagnant water.
3.1.6.Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.
3.1.7.Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.
3.1.8.A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.
3.1.9.Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.
3.1.10.First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.
3.1.11.Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1.Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.
3.2.2.The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.
3.2.3.The code should include, but not be limited to:
3.2.3.1.instructions on waste disposal and hygiene
3.2.3.2.prohibition on use of illegal drugs
3.2.3.3.prohibition on theft of personal or community property
3.2.3.4.prohibition on hunting, fishing, or other activities causing harm to the natural environment
3.2.3.5.restrictions on drinking or gambling with members of the community
3.2.3.6.prohibition on making any unwanted verbal or sexual advances to those in the community
3.2.3.7.prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.7 above.
3.2.3.8.awareness of religious practices or social customs of the community if different from that of the workers.
3.2.3.9.prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

3.3. Occupational Health and Safety

3.3.1.Personal Protective Equipment

3.3.1.1.Workers must use personal protective equipment (PPE) and protective clothing

3.3.1.2.People not involved with installation should be kept safely away from the worksites.

3.3.2.Working at height

3.3.2.1.If working at heights, sufficient protection against falls must be in place.

3.3.2.2.Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

3.4. Community Health and Safety

3.4.1.The community should be informed of the potential risks to health and safety during construction. These include risks of:

3.4.1.1.road accidents

3.4.1.2.communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases

3.4.1.3.other undesirable contact from the workers, as noted in 3.2.3 above.

3.4.2.The community should be informed of potential environmental impacts caused by the project, such as

3.4.2.1.dust, pollution, and noise during construction

3.4.2.2.pollution and noise during operation

3.4.2.3.risks of and emergency procedures for accidents

3.4.3.The developer will install proper safety and warning signs to inform the public of potential hazards during construction

3.5. Construction Near Waters

3.5.1.Runoff from construction entering any water body should be free of pollutants and generally free of sediments

3.5.2.No wastewater, sewage or other drainage from construction or from the workers' housing should flow into the water bodies.

3.5.3.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.5.4.Cutting of embankments of water bodies should be avoided or if necessary kept to a minimum to avoid flooding of surrounding areas.

3.5.5.Alternative drain inlets and outlets should be provided in the event existing drainage channels of the water body are closed.

3.5.6.No waste from the construction sites or from the workers' housing should be disposed in the water bodies.

3.6. Biomass Generator, Biomass Storage Facilities, Diesel Generator, Fuel Storage Facilities, and Related Infrastructure

3.6.1.If removal of any large trees is unavoidable at the sites for the biomass generator and biomass storage facilities, and any related infrastructure, the wood from those trees removed by the developer will be given to the community or, if built on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.

3.6.2.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.6.3.Grease traps or containers should be used to capture potential oil spillage from the diesel engine. The exhaust pipe from the diesel engine should be checked for its height according to relevant technical specifications.

3.6.4.The biomass generator, biomass storage facilities, diesel generator, fuel storage facilities, and any related infrastructure should be adequately protected from theft or other interference during construction.

3.6.5.Trees should be planted in the compound of the diesel generator to absorb some of the emissions and particular matter.

3.7. Plant Clearance Along Mini-Grid

3.7.1.Final alignment of the mini-grid should try to minimise the loss of existing tree cover.

3.7.2.If removal of any large trees is unavoidable, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of ten (10) saplings of species of equal or greater value, such as fruit trees.

3.8. Physical Cultural Resources

3.8.1.If at any time during construction the developer or its workers comes across a "chance find," that is, finds an item or site that appears to be archaeologically, historically, or culturally important, either nationally or locally, work on that site should be stopped immediately, the site protected, and the Chance Find Procedures in Annex 8 of this ESMF be followed.

3.8.2.Project design should then be immediately altered to avoid the site.

3.9. Installation in Households

3.9.1.The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.9.2.All connections and wiring in households must be done by the developer only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.9.3.If the household already has wiring, the developer should replace it with the wiring and materials provided under the sub-project.

3.9.4.The connections, meters and fuses should be placed out of reach and inaccessible to young children.

3.10. Installation of Public Lighting

3.9.5.The decision for location of light points (bulbs) should be decided by the contractor only after detailed discussion with the public facility authorities, but the contractor has to evaluate the safety of the suggested positions.

3.9.6.All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

3.9.7.If the site already has wiring, the contractor should replace it with the wiring and materials provided under the sub-project.

3.11. Waste Management

3.9.8.The developer shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.9.9.During construction, the developer will handle and dispose of waste according to the Waste Management Plan approved by the DRD, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.9.10.After construction, the developer shall clear all construction and storage sites and the workers' housing site of all debris and waste.

3.9.11.The developer shall restore those sites to as near the original condition as possible.

3.12. Reporting

3.9.12.The developer shall include sections in its monthly reports on compliance with environmental and social safeguards, including the ESMP, Waste Management Plan, and other issues covered in this ESCOP.

4. Operations

4.1. Protection and Safety During Operation

4.1.1.Proper protection of vulnerable points in the system will be put in place (such as fencing, cages, locks, etc.), regularly inspected by the developer and the VEC, and maintained.

4.1.2.Safeguard measures such as pressure gauges (manometers), water traps, and sulphur cleaners and outlet pipes, as necessary, should be installed and maintained.

4.1.3.Operators should adhere to conventional safe handling practices, including use of safety equipment or personal protection equipment (PPE), such as gloves, boots, masks, etc.

4.1.4.The biomass should be stored in a site free from erosion, runoff, or potential threats, to avoid damage and risk of polluting nearby areas. The storage facilities should also minimise degradation of the biomass and the production and release of harmful gases and unpleasant odours.

4.1.5.The operator shall assure that the water required for cooling the biomass plants does not deplete the availability of water for domestic use, agriculture, or other uses.

4.1.6.Diesel fuel should be stored in a site free from erosion, runoff, or potential threats, to avoid damage and risk of spillage.

4.2. Occupational Safety

4.2.1.Personal protective equipment (such as ear plugs for noise, proper clothing) should be provided.

4.2.2.If noise is found to exceed 80 dB (WHO Guidelines value), soundproofing should be seriously considered.

4.3. Repairs and Maintenance

4.3.1. The developer shall follow all relevant environmental measures above when carrying out any maintenance or repair work.
4.3.2. The practices detailed in Section 3 on Construction should be complied with for all repair and maintenance work.

4.4. Disposal of Used/Damaged Equipment and Waste Management

4.4.1. The developer shall dispose of any defective or used equipment according the arrangements set in the Waste Management Plan for construction
4.4.2. Recyclable or toxic materials should be disposed according to the arrangements set in the Waste Management Plan for construction, or according to measures set by the DRD, whichever is stricter.
4.4.3. All other waste should be disposed according to the arrangements set in the Waste Management Plan for construction.

4.5. Disposal of Ash from Biomass Combustion and Gasification

4.5.1. Ash from the biomass generator should be disposed of in a safe and sustainable manner.
4.5.2. If the ash can be used in fertiliser, it should be given to the community, and the community shown how best to mix the ash with other compost.
4.5.3. If the ash cannot be used in fertiliser, it should be disposed in a safe manner, to avoid pollution, according to the plans developed under 2.5.2 above.

4.6. Community Health and Safety

4.6.1. The community will be informed through posters, brochures, and other means, of the risks and dangers of tampering with any part of the system
4.6.2. The developer will install proper safety and warning signs to inform the public of potential hazards
4.6.3. To protect local residents from excessive noise from diesel generator, trees will be planted by the developer as necessary to create sound barriers.

Environmental and Social Code of Practice for Wind-Diesel Mini-grid Systems

1. General

1.1. Purpose of the Environmental and Social Code of Practice

This Environmental and Social Code of Practice (ESCOP) provides guidelines to follow for the preparation, construction, and operation of small-scale wind-diesel mini-grid sub-projects under the National Electrification Project (NEP) of the Union of Myanmar. These guidelines are intended to avoid environmental and social problems whenever possible or to mitigate those problems if they cannot be avoided.

1.2. Compliance to Legal Requirements

The developer shall comply with all relevant national laws and regulations on environmental conservation and management and with all applicable World Bank environmental and social safeguards throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.3. Consultation and Disclosure

The developer shall consult with and provide adequate and timely information to the communities and other people affected by the project throughout project planning, preparation and construction, and during operation of the mini-grid system.

1.4. Ethical Clause of the Contractor

1.4.1. The contractor must not either directly or indirectly exploit the local community in any other way to prevent unnecessary social issues.

1.4.2. The contractor must completely disburse the necessary payment (eg: land issues, labour hiring cost and etc.) to community in project implementation.

1.5. Language

1.5.1. Communication with affected people should be in a language they understand clearly and easily

1.5.2. If the company or its agents cannot communicate in any of those languages, translators must be engaged to provide the oral or written information as needed.

1.6. Payments to Communities for Food and Other Goods and Services

1.6.1. With several teams visiting the communities, providing meals to these teams on these numerous occasions can cause undue financial stress to the communities. To avoid this, food should be brought in by those visiting the community or if the community provides the food or meals, these should be paid for at replacement cost.

1.6.2. Other goods and services (including accommodation) provided by the communities at the request of the teams surveying, installing, or conducting follow-up for the NEP project should be paid for at market cost.

2. Project Planning and Preparation

2.1. Evidence of Compliance with Environmental Laws and World Bank Safeguards Policies

2.1.1. The project proposal documents shall include all applicable clearances pertaining to environmental protection and management under the laws and regulations of the Government of Myanmar and shall contain the necessary plans and procedures for compliance of the same

2.1.2. The project proposal documents shall include the environmental and social safeguards screening form and shall contain the necessary plans and procedures for compliance to any safeguards triggered by the sub-project

2.1.3. Approval of the projects will be subject to review and approval by the DRD Safeguards Team for the NEP of the above-mentioned plans and procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2. Consultation with Communities and Other Affected People

2.2.1. Consultation on project plans

2.2.1.1. The developer shall consult with the communities, both men and women, to be served by the mini-grid on the proposed plans for the project.

2.2.1.2. The sub-project proposal documents must show evidence of these consultations, including any concerns and recommendations that have been raised, and show evidence of agreement by the communities and other affected people to the project plans.

2.2.2. Consultation on compliance with safeguards and environmental laws and regulations

2.2.2.1. The developer shall also consult with the communities and other affected people, both men and women, on the procedures to comply with national environmental laws and regulations and with World Bank environmental and social safeguards.

2.2.2.2. The project proposal documents must show evidence of agreement by the communities and other affected people to the selection of the site for the array of wind turbines and storage batteries, the diesel generator, fuel storage facilities, and of any other infrastructure of the project.

2.3. Site Selection for Infrastructure and Grid Route

2.3.1. VEC members and other village representatives, both men and women, shall be consulted on selection of the sites for wind turbines and power station, the diesel generator, fuel storage facilities, and any related infrastructure; the proposed route of the grid; and lighting for public buildings and street lights.

2.3.2. VEC members and other village representatives, both men and women, shall be consulted about bird or bat habitats and migration patterns in the area that should be avoided when selecting the site of the wind turbines.

2.3.3. The sites selected for the diesel generator and fuel storage facilities must be free from risk of erosion or other damage that may cause runoff into waterways, agricultural areas, residential areas or other sites used by the community. The

project proposal should include plans to limit any spill and for cleaning up and rehabilitation of areas affected by a spill.

2.3.4. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.3.5. The land used for the infrastructure shall be acquired according to Section 2.6

2.4. Workers' Housing, Storage Spaces, and Other Temporary Facilities

2.4.1. If workers need to be in the community for more than 4 to 5 days, the developer will assess the need for workers' housing, to determine if there is sufficient existing housing available or if temporary housing or a workers' camp is needed.

2.4.2. If in the community for only 4 to 5 days, arrangements can be made for the workers to stay at a community building, or in temporary housing (tents) arranged by the contractor, or accommodated by local residents at the invitation of and arranged by the VEC and other community leaders and compensated as specified in Section 1.5 above on Payments to Communities.

2.4.3. If workers' housing is required, the project proposal will include plans for that housing (even if in existing structures), including water supply, sanitation, health care, provision of meals, security, solid and liquid waste management, and the impact on the local communities.

2.4.4. The project proposal will include plans for storage facilities of construction materials, the protection of these sites, borrow areas, access roads, and/or any other temporary structures or facilities required during construction.

2.4.5. VEC members and other village representatives shall be consulted on the selection of the sites for workers' housing and facilities, storage spaces, and other temporary facilities.

2.4.6. The workers' housing and related facilities, the storage facilities, and other temporary facilities should be located on sites free of risk from erosion or runoff into any waterways.

2.4.7. The proposed sites are to be presented to the community and other affected people for their consideration and agreement under Section 2.2 above.

2.4.8. The land used for these sites shall be acquired according to Section 2.6

2.5. Waste Management

2.5.1. The developer shall identify activities during construction that have the potential to generate waste, and prepare measures to manage and dispose of waste in the construction schedule, including management of materials that can be recycled and management of hazardous waste.

2.5.2. The measures must abide by the laws and regulations concerning waste management of the Government of Myanmar and of the Ministry of Natural Resources and Environmental Conservation..

2.5.3. The waste management measures adopted by the developer will be reviewed by the PMO of the DRD.

2.6. Land Acquisition and Compensation

2.6.1. All permanent and temporary land acquisition required by the project must be completed prior to construction in accordance with the Resettlement Policy Framework.

2.6.2. Any permanent or temporary loss of livelihood aside from loss of land caused by the project must be compensated prior to construction in accordance with the Resettlement Policy Framework.

2.6.3. Adequate documentation must be provided for review by the DRD-NEP Safeguards Team for all land acquisition and compensation under the Resettlement Policy Framework

2.6.4. All land acquisition and compensation must be completed before construction can start.

2.7. Physical Cultural Resources

2.7.1. The developer shall consult with the Department of Archaeology, National Museum and Library to determine if there is any site of cultural significance in or near the project area that should be avoided.

2.7.2. The developer shall consult with VEC members and other village leaders to determine if there are any sites in the project area that are of cultural or religious significance to members of the community, including any ethnic or religious minorities in the community, and project design should be altered to avoid any such sites.

2.8. Preparation of an Environmental and Social Management Plan, Resettlement Action Plan, and/or Indigenous Peoples Plan

2.8.1. If the screening forms and assessments indicate any environmental and/or social issues that need to be mitigated or avoided, the PMO may request the developer prepare an Environmental and Social Management Plan (ESMP), a Resettlement Action Plan (RAP), and/or an Indigenous Peoples Plan as needed.

2.8.2. The ESMP will indicate how the developer will manage those environmental and/or social issues during construction and operation of the sub-project and be included in the project plans (proposal or feasibility study)

2.8.3. The RAP will indicate how the developer will handle any compensation required for land acquisitions, loss of assets, or loss of livelihoods, and provide evidence of that compensation.

2.8.4. The IPP will detail the procedures in conducting free, prior and informed consultations with ethnic minorities in order to obtain their broad community support.

2.8.5. If no ESMP, RAP, or IPP is required, this ESCOP will serve as the framework for managing environmental and/or social issues during construction and operation of the sub-project.

2.9. Requirements for Initial Environmental Evaluation

2.9.1. If the sub-project is 5 Mw or greater, an Initial Environmental Evaluation (IEE) is required and must be approved by the Environmental Conservation Department

2.9.2. An IEE may be requested by the DRD Safeguards Team if the sub-project is expected to have any significant environmental or social impacts.

3. Construction

3.1. Workers' Housing and Facilities

3.1.1.If temporary housing is built or provided, it should be built with adequate and safe materials, and with adequate ventilation, natural and artificial lighting, and protection from rain and storms.
3.1.2.The housing should be on sites free from flooding and other natural hazards.
3.1.3.The housing should be kept free from rubbish and other refuse.
3.1.4.The site should have an adequate supply of clean water for consumption, personal hygiene and other domestic uses.
3.1.5.The site should have adequate drainage to avoid stagnant water.
3.1.6.Facilities must be available for adequate removal or disposal of waste water, sewage, and solid waste. Containers should be available for rubbish collection.
3.1.7.Toilets, showers, and other sanitary facilities should be clean, safe, and adequate number for the work force. Separate facilities should be available for females in the workforce.
3.1.8.A canteen where food is prepared for the workers and/or cooking facilities where the workers prepare their own food should be provided, with the facilities adequately furnished and designed for good hygiene.
3.1.9.Clean, safe, and adequate facilities for workers to wash and dry clothes should be provided.
3.1.10.First aid kits and facilities should be provided, with separate space available for any sick or injured workers. A sufficient number of workers should be provided training in administering first aid.
3.1.11.Adequate security should be provided at the workers' housing.

3.2. Workers' Code of Conduct

3.2.1.Workers must be provided with and given training on a code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community.
3.2.2.The code of conduct should be provided in writing and on posters in the workers' housing and at construction sites.
3.2.3.The code should include, but not be limited to:
3.2.3.1.instructions on waste disposal and hygiene
3.2.3.2.prohibition on use of illegal drugs
3.2.3.3.prohibition on theft of personal or community property
3.2.3.4.prohibition on hunting, fishing, or other activities causing harm to the natural environment
3.2.3.5.restrictions on drinking or gambling with members of the community
3.2.3.6.prohibition on making any unwanted verbal or sexual advances to those in the community
3.2.3.7.prohibition on vandalism, theft, desecration, or otherwise damage to items or sites considered physical cultural resources in 2.7 above.
3.2.3.8.awareness of religious practices or social customs of the community if different from that of the workers.
3.2.3.9.prohibition on making any interactions with minors in the local communities, glorification of violence, incitement of hate against minority groups of society such as ethnic, national or religious minorities, or any segments of society

3.3. Occupational Health and Safety

3.3.1.Personal Protective Equipment

3.3.1.1.Workers must use personal protective equipment (PPE) and protective clothing

3.3.1.2.People not involved with installation should be kept safely away from the worksites.

3.3.2.Working at height

3.3.2.1.If working at heights, sufficient protection against falls must be in place.

3.3.2.2.Equipment used to work at heights including safety belts and straps must be tested for integrity before use.

3.4. Community Health and Safety

3.4.1.The community should be informed of the potential risks to health and safety during construction. These include risks of:

3.4.1.1.road accidents

3.4.1.2.communicable diseases from the workers, including HIV/AIDs and other sexually transmitted diseases

3.4.1.3.other undesirable contact from the workers, as noted in 3.2.3 above.

3.4.2.The community should be informed of potential environmental impacts caused by the project, such as

3.4.2.1.dust, pollution, and noise during construction

3.4.2.2.pollution and noise during operation

3.4.2.3.risks of and emergency procedures for fuel spills

3.4.2.4.risks of and emergency procedures for accidents

3.4.3.The developer will install proper safety and warning signs to inform the public of potential hazards during construction

3.5. Construction Near Waters

3.5.1.Runoff from construction entering any water body should be free of pollutants and generally free of sediments

3.5.2.No wastewater, sewage or other drainage from construction or from the workers' housing should flow into the water bodies.

3.5.3.Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.5.4.Cutting of embankments of water bodies should be avoided or if necessary kept to a minimum to avoid flooding of surrounding areas.

3.5.5.Alternative drain inlets and outlets should be provided in the event existing drainage channels of the water body are closed.

3.5.6.No waste from the construction sites or from the workers' housing should be disposed in the water bodies.

3.6. Wind Turbines, Power Station, Diesel Generator, Fuel Storage Facilities, and Related Infrastructure

3.6.1.If removal of any large trees is unavoidable at the sites for the wind turbines, the power station, the diesel generator, fuel storage facilities, and any related infrastructure, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of two (2) saplings of species of equal or greater value, such as fruit trees.

3.6.2. Dirt, silt, or sediment should be collected and stockpiled for possible reuse, for example surfacing of slopes that need to be re-vegetated. Those stockpiles need to be protected from runoff.

3.6.3. Grease traps or containers should be used to capture potential oil spillage from the diesel engine. The exhaust pipe from the diesel engine should be checked for its height according to relevant technical specifications.

3.6.4. The wind turbines, power station, the diesel generator, fuel storage facilities, and any related infrastructure should be adequately protected from theft or other interference during construction.

3.6.5. If Lithium-ion batteries are used, to avoid improper use and thermal runaway, the battery cells and charge controller should be encased in one common housing that cannot be opened with commonly available tools such as screwdrivers. The housing should clearly indicate the type of battery enclosed.

3.6.6. Warning signs must be visible on the housing, in English and the local language(s), to prevent any tampering or attempts to alter the system, clearly stating the risks of electric shock, fire, and explosion.

3.6.7. Trees should be planted in the compound of the diesel generator (but not blocking the wind turbines) to absorb some of the emissions and particular matter.

3.7. Plant Clearance Along Mini-Grid

3.7.1. Final alignment of the mini-grid should try to minimise the loss of existing tree cover.

3.7.2. If removal of any large trees is unavoidable, the wood from those trees removed by the developer will be given to the community or, if on private land, to the land owner. For every tree felled, the developer will do compensatory planting, at sites selected by the community, of ten (10) saplings of species of equal or greater value, such as fruit trees.

3.8. Physical Cultural Resources

3.8.1. If at any time during construction the developer or its workers comes across a “chance find,” that is, finds an item or site that appears to be archaeologically, historically, or culturally important, either nationally or locally, work on that site should be stopped immediately, the site protected, and the Chance Find Procedures in Annex 8 of this ESMF be followed.

3.8.2. Project design should then be immediately altered to avoid the site.

3.9. Installation in Households

3.9.1. The position of the light points (bulbs) should be decided by the contractor only after detailed discussion with both men and women of the house; and the house wiring should be done accordingly. There must be a light point in the kitchen or cooking area and in the area where children read or study.

3.9.2. All connections and wiring in households must be done by the developer only, to assure the wiring is adequately safe. Wiring by the household or by a third party is not permitted.

3.9.3. If the household already has wiring, the developer should replace it with the wiring and materials provided under the sub-project.

3.9.4.The connections, meters and fuses should be placed out of reach and inaccessible to young children.

3.10. Installation of Public Lighting

3.10.1.The decision for location of light points (bulbs) should be decided by the contractor only after detailed discussion with the public facility authorities, but the contractor has to evaluate the safety of the suggested positions.

3.10.2.All wiring must be done by the contractor only, to assure the wiring is adequately safe. Wiring by members of the community or a third party is not permitted.

3.10.3.If the site already has wiring, the contractor should replace it with the wiring and materials provided under the sub-project.

3.11. Waste Management

3.11.1.The developer shall educate the workforce on the proper disposal of waste, the location of disposal sites, and other requirements and measure in waste disposal.

3.11.2.During construction, the developer will handle and dispose of waste according to the Waste Management Plan approved by the DRD, including arrangements for recyclable materials and toxic waste, so that debris and waste do not accumulate.

3.11.3.After construction, the developer shall clear all construction and storage sites and the workers' housing site of all debris and waste.

3.11.4.The developer shall restore those sites to as near the original condition as possible.

3.12. Reporting

3.12.1.The developer shall include sections in its monthly reports on compliance with environmental and social safeguards, including the ESMP, Waste Management Plan, and other issues covered in this ESCOP.

4. Operations

4.1. Protection and Safety of Infrastructure and Equipment During Operation

4.1.1.Proper protection of vulnerable points in the system will be put in place (such as fencing, cages, locks, etc.), regularly inspected by the developer and the VEC, and maintained.

4.1.2.If replacement batteries are stored on site, they should be in a site free from erosion, runoff, or potential threats, to avoid damage to the batteries and risk of toxic pollution.

4.1.3.Diesel fuel should be stored in a site free from erosion, runoff, or potential threats, to avoid damage and risk of spillage.

4.2. Occupational Safety

4.2.1.Personal protective equipment (such as ear plugs for noise, proper clothing) should be provided.

4.2.2.If noise is found to exceed 80 dB (WHO Guidelines value), soundproofing should be seriously considered.

4.3. Repairs and Maintenance

4.3.1. The developer shall follow all relevant environmental measures above when carrying out any maintenance or repair work.
4.3.2. The practices detailed in Section 3 on Construction should be complied with for all repair and maintenance work.

4.4. Disposal of Used/Damaged Equipment and Waste Management

4.4.1. The developer shall dispose of any defective or used batteries according to the measures for battery disposal and recycling set by the DRD
4.4.2. The developer shall dispose of any defective components of the wind turbines or other equipment according to measures set by the DRD
4.4.3. Recyclable or toxic materials should be disposed according to the arrangements set in the Waste Management Plan for construction, or according to measures set by the DRD, whichever is stricter.
4.4.4. All other waste should be disposed according to the arrangements set in the Waste Management Plan for construction.

4.5. Community Health and Safety

4.5.1. The community will be informed through posters, brochures, and other means, of the risks and dangers of tampering with any part of the system
4.5.2. The developer will install proper safety and warning signs to inform the public of potential hazards
4.5.3. To protect local residents from excessive noise from the wind turbines or diesel generator, trees will be planted by the developer as necessary to create sound barriers.