SFG1016

POWER GRID IMPROVEMENT PROJECT

(Project ID: P149599)

Final Report

ENVIRONMENTAL and SOCIAL MANAGEMENT PLAN (ESMP)

Electricité du Laos

The World Bank

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ABBREVIATIONS

EA	Environmental Assessment
ECoP	Environmental Codes of Practice
EDL	Electricité du Laos
EDL-Gen	EDL-Generation
ESMP	Environmental and Social Management Plan
EST	Environmental and Social Team
EHS	Environmental, Health and Safety
FVAP	Financial Viability Action Plan
GIS	Geographic Information System
GMS	Greater Mekong Subregion
GOL/GoL	Government of Lao PDR
IDA	International Development Agency
IFC	International Finance Corporation
IPPs	Independent Power Producers
Lao PDR	Lao People's Democratic Republic
LHSE	Lao Holding State Enterprise
MEM	Ministry of Energy and Mines
NT2	Nam Theun2 Hydropower Project
PCBs	Polychlorinated Biphenyls
PGI	Power Grid Improvement Project
PO	Project Office of Electricité du Laos
PSE	Project Supervising Engineer
RAP	Resettlement Action Plan
SE	Site Engineer
SIA	Social Impact Assessment
TOR	Terms of Reference
WB	World Bank
WBG	World Bank Group

UNITS:

MW	Megawatt
GWh	Gigawatt hour
kWh	Kilowatt hour
kV	Kilovolt
kW	Kilowatt

PART I. INTRODUCTION

I.1 COUNTRY CONTEXT

I.1.1 Sectoral Context

Demand for electricity in Laos has grown significantly in recent years along with rising electrification rate in the country. The electricity peak load demand within Laos rose from about 209 MW in 2003 to 649 MW in 2013, growing on average 12 percent annually. This demand increase has been driven by the commercial and the industrial sectors and by rising rate of electrification in the country, which grew from 39 percent of the total number of households in 2002 to around 87 percent in 2013.

The rising demand was met by dedicated domestic hydropower stations wholly owned by the state- owned power utility Electricité du Laos (EDL) and its subsidiary EDL-Generation (EDL-Gen), totaling 392 MW, Laos' share in and purchases from export-oriented IPPs (independent power producers), and electric interconnections with Thailand, China, and Vietnam. To supplement domestic power generation, in 2012 Laos imported about one-third of required electric energy (1,127 GWh), of which 87 percent came from Thailand, 10 percent from China and 3 percent from Vietnam. The cost of import reached US$ 57.2 million, or about 0.6 percent of estimated 2012 GDP.

By 2013, the total electric energy sales through the national power grid reached 3,381 GWh with residential customers accounted for 38 percent, followed by the industrial sector at 33 percent and the commercial sector at 22 percent.

In parallel, export-oriented power projects continue to expand. By end 2013 the installed capacity of export-oriented hydropower projects reached 2,580 MW, including the IDA-supported Nam Theun2 hydropower project (NT2) that was approved in 2005 and commissioned in 2010. Another 2,400 MW plus of export-oriented power projects are currently under construction, such as the 1,653 MW Hongsa thermal power project, the 410 MW Xepian-Xenamnoy hydropower project, the 280 MW Nam Ngiep1 hydropower project, and the 180 MW Nam Ngiep 2 hydropower project. The drivers of development in the hydropower sector in the country have remained fundamentally unchanged in the past decade. A number of export-oriented projects include dedicated power generation capacity for Lao PDR to help meet the domestic demand for electricity, such as the 75 MW under NT2, 60 MW under Theun Hinboun hydropower project, 175 MW under Hongsa thermal power project, and 40 MW under Xepian-Xenamnoy hydropower project.

I.1.2 Institutional Context

The energy sector institutional framework is well defined. The Ministry of Energy and Mines (MEM) is the focal point for overall energy policy.

Under MEM, the state-owned utility EDL is responsible for the electricity transmission and distribution network and acts as a single-buyer of electricity for the domestic market. EDL's majority-owned subsidiary EDL-Gen is responsible for hydropower generation, with an installed capacity of 387 MW by 2013. In addition, the Lao Holding State Enterprise (LHSE) is the government's investment vehicle in export-oriented power projects where it holds government's equity stakes in projects such as NT2 and the Hongsa thermal power project.

I.1.3 Challenges

The main challenges facing the Lao electricity sector include: **(i)** inadequate available power generation capacity for domestic consumption especially in the dry season months (November–April); **(ii)** inadequate transmission/distribution margin causing financial losses; **(iii)** end-user tariffs averaged around 9US cents per kWh in 2012, providing limited room for further increase due to affordability constraints. Specifically the highest residential tariff is already at 12US cents per kWh (for more than 150 kWh consumption per month); **(iv)** costlier electricity imports. In 2012 the cost of imported electricity averaged about 5.1US cents per kWh; however, this included costlier sources exceeding 6 and 11US cents per kWh.

The power sector development in Lao PDR has entered a new "post-electrification" phase which brings new challenges and requires sustained improvements in the sector. The development of Lao power sector has achieved a major success by increasing the electrification rate from about 15 percent in mid 1990s to around 90 percent in 2014. While the electrification program nears its completion, the power grid is increasingly facing new challenges related to the fast growth of electricity demand. The main challenges are persistently high distribution losses (averaging about 16 percent in 2012, with some areas experiencing losses of over 20 percent) and sub-standard electricity services, including low reliability of electricity supply due to overloading of the distribution grid particularly in major load centers such as Vientiane, Savannakhet, Thakhek, and Pakse.

According to the record of distribution losses are available at country level, the following table represents the recent numbers of distribution losses in Vientiane Capital and each district including Xaythany.

Table 2-1: Percentage Distribution Losses in Vientiane Capital

No.	District/Region	Losses (%)	
		2013	2014
1	4 Central districts	8.05	13.23
2	Hadxayfong	14.31	12.18
3	Naxaythong	21.17	22.08
4	Xaythany	23.02	24.27
5	Pakngeum	17.81	18.35
6	Sangthong	9.70	9.19
7	Vientiane Capital	13.26	15.78
8	Lao PDR	12.02	13.49

Source: Record from EDL, February 2015

I.2 BACKGROUND

By focusing on these new challenges in the power distribution sector, the proposed Power Grid Improvement (PGI) Project will complement the Bank's on-going assistance and help support sustainable development of the power sector in Lao PDR.

Building on the achievement of electricity access projects of the past years, the proposed project thus shifts the focus of WBG engagement towards efficiency and reliability of

electricity supply, which are crucial for the Lao power sector in the years to come. In addition to providing support for the power infrastructure, the proposed project also targets building institutional capacity in EDL, including upgrading the corporate financial management, billing and collection systems. Furthermore, the proposed project is closely linked to the implementation of the Financial Viability Action Plan (FVAP) developed by EDL with support from the Bank and IFC, and was endorsed by the MEM under REP II. Also, the PGI Project has a strong synergy with the Additional Financing for HMTA project which will help create power market and regulatory conditions favorable for the financial recovery of EDL and its future strengthening as a major power market operator in the GMS region. Finally, improvements in the power sector under the proposed project will help create a favorable environment for scaling-up private sector participation which the Bank and IFC jointly promote in Lao PDR.

I.3 OBJECTIVES

The project development objective is to help improve efficiency and reliability of power distribution in the selected load areas served by EDL.

Electricity du Laos (EDL) is preparing a Power Grid Improvement Project intended for financing support from the World Bank. The project involves rehabilitating the electric distribution network in Xaythany District of Vientiane Capital and related activities. The World Bank group safeguards policy including the Environmental, Health and Safety (EHS) Guidelines for Power Transmission and Distribution and national EHS requirements will be followed during project implementation, including provisions for beneficiaries and worker health and safety.

The main proposes project components include:

i. Smart metering, distribution improvement and distribution losses reduction (US$19 million): This component will introduce advance metering infrastructure (AMI) technology and digital meters in the project area to help reduce distribution losses and improve metering, billing and collection system. In addition, this component will help improve reliability of power supply and reduce losses in selected parts of the distribution network through strengthening of power distribution infrastructure and distribution automation (upgrading of conductors, increasing transformer capacity, placement of capacitors for reactive power and voltage control, installing load break switches and recloses, etc.). The upgrading of conductors involves the rehabilitation of an estimated 366km of distribution power lines, including 127 km of medium voltage (22kV) power lines.

ii. Electric Utility information system (US$ 6 million). There are three subcomponents: (i) Supply and installation of optical fiber communication links to support advanced metering and distribution automation in the project area; (ii) Extension of Geographic Information System (GIS) to support power distribution operation and maintenance; and (iii) Supply and installation of an updated corporate financial management information system (FMIS). This sub-component will focus on modernization of financial management in EDL, including through the improvement of billing and collection system and its integration with another functions in the modern corporate- wide financial management system. This can be subsequently scaled up to a full enterprise resources planning system or be dis aggregated according to EDL corporate structure.

iii. Institutional capacity building, consultancy, trainings, implementation support (US$ 5 million). This component will include: (i) financing for EDL's distribution materials and equipment testers and related trainings, (ii) applications of advanced metering infrastructure, (iii) applications of energy balancing and power flow software, and (iv) consultancy for electric utility information system, (v) support to measure distribution system performance indicators, and (vi) project implementation support and incremental operating cost. This component will enhance EDL institutional capacity to utilize new technologies to address distribution loss and improve power grid efficiency.

iv. Contingent emergency response (US$ 0 million). The objective of this component is to allow a rapid reallocation of IDA proceeds from other components to provide emergency recovery and reconstruction support following an adverse natural disaster event. This component would finance public and private sector expenditures on a positive list of goods and/or specific works, goods, services and emergency operation costs required for emergency recovery. An Emergency Response Manual (ERM) will apply to this component, detailing financial management, procurement, safeguard and any other necessary implementation arrangements.

I.4 POLICIES, LEGISLATIVE REQUIREMENT AND COMMITMENT

1.4.1 EDL Policies

EDL has developed environmental and resettlement policy frameworks, including consultation protocols with the aims to mitigate potential environmental and social impacts associated with EDL development projects. These frameworks are in line with the World Bank standards and are summarized as below:

Environmental Policy Framework:

Environmental Policy Framework has been prepared in consistence with the World Bank Environmental Assessment Policies and Procedures as specified in the World Bank Operations Policy Number 4.01 for a "category B" project. The EA procedure consists of the following elements:

- Design/construction phase,
- Project screening,
- EA documentation,
- Consultation,
- EA review and approval,
- Disclosure,
- Conditionality/Implementation obligation,
- Environmental standards/guidelines,
- Licensing and permitting.

Resettlement Policy Framework:

The EDL's Resettlement Policy Framework consists of the following elements:

- Involuntary resettlement should be avoided or minimized through design efforts,
- Where involuntary resettlement is unavoidable, resettlement activities should be

conceived and executed as sustainable development program, providing sufficient compensation, assistance and rehabilitation to the displaced people so that they would be at least as well off as they would have been in the absence of the project,

- Ensure that displaced people are benefit from the project,
- Ensure that project stakeholders, including the displaced people are consulted and given opportunity to participate, as practicable, in the design, implementation and operation of the project,
- Assist the displaced people in their effort to improve their livelihoods and standard of living or at least to restore their livelihood to pre-displacement levels.

Resettlement policy has been design to apply to all components under the energy sector project funded by the World Bank and directly related projects funded by other sources. It also applies to all displace people regardless of the total number affected or the severity of impacts. EDL has made commitment to pay more attention to the needs of vulnerable groups among the displaced people especially that below the poverty line, the elderly, women and children and ethnic minorities.

1.4.2 EDL Experiences on WB Safeguard policies

The EDL has extensive experience in working with the Bank on a Power Project and is familiar with the Bank's environmental and social safeguard policies including the relevant safeguards environmental and social instruments. Currently, one Bank financed project with EDL is under implementation phase (Rural Electrification Phase II). For this project, in order to comply with the Bank requirement as well as the Government of Lao PDR, the project's safeguard policy on the Environmental, Social and Ethnic people issues were prepared, namely the Environmental Assessment Framework, the Resettlement Policy Framework and the Ethnic People's Development Plan. As for the additional component funded by the Australian Government's overseas Aid program (AusAID), the Environmental and Social Safeguard Frameworks (ESSF) has been applied since 2009.

Those frameworks were prepared by Environmental Office (EO) in the EDL Headquarter and referred and implemented by Environmental Management Unit (EMU) at local levels. EMUs have been established at EDL Branch in the 7 Provinces targeted by the Rural Electrification Project (REP1) project. They are responsible for coordinating with local authorities regarding implementation of safeguard policies.

The ESSF was prepared for the sub-project under the REP 2 base on the REP1 experience. The content of the framework was basically the same as that of for the REP1, however, the assessment procedure were more simplified in order to reduce the paper work of the EMU. Under this framework, a screening check approach has been introduced. In this approach, if the result indicate low negative impact, the Environmental Management Plan (EMP) is not required. Instead, a housekeeping measures in the Safeguard Operation Manual (SOM) shall applied from design, construction to operation phase.

1.4.3 World Bank Operational Policies and Safeguards

During project design; it was identified that the activities involved in PGI project would include small scale installation works pertain to the rehabilitation of distribution medium voltage (127 km of 22 kV MV) and low voltage (239 km of 0.4 kV LV) lines and the

installation of electronic meters, replacement of capacitors (LV line), upgrading of conductors (on LV and MV lines) and replacement and upgrading of transformers and power poles (for MV). Given the nature of the rehabilitation works, the project is proposed as category B and triggered Environmental Assessment OP/BP 4.01 as certain mitigation measures and monitoring actions will have to be implemented during the civil works both during the construction and operation and maintenance phase in order to minimize, prevent and reduce possible temporary and site specific impacts on the environment.

The social issues associated with the project are expected to be limited. EDL has already established procedures and communication methods to inform its customers of upcoming power cuts necessary for the project implementation. OP/BP 4.12 is triggered and it is expected that under this project no involuntary land acquisition, physical relocation of households, or commercial entities due to construction work will occur as all the work will be done on existing power distribution infrastructure. About 50 new power poles would be installed/replaced on private land under the existing right of way (ROW) along a nine-kilometer section of provincial public road and located in the field paddies. Impact will be minor since each pole will require only around one square foot of land. Such minor loss of land will be addressed through voluntary donations in line with the protocols provided in the Resettlement Policy Framework (RPF). In addition, minor impacts on structures and standing crops and trees may occur during construction and maintenance. The RPF provides principles and procedures to ensure that such impacts will be fully compensated at replacement value.

An Environmental and Social Management Plan (ESMP), Environmental Codes of Practices (ECoP), Protocol for Voluntary Land Donation (P-VLD) and Resettlement Policy Framework (RPF) have been prepared as part of the ESMP; all in line with the World bank's Safeguard policies and requirements, the WBG Environmental, Health and Safety (EHS) Guidelines for Power Transmission and Distribution and the National applicable legislation that appropriately addressed the environmental and social issues identified from E&S due diligence was prepared by EDL and reviewed by the Bank

Relevant World Bank Safeguard Policies, include:

Environmental Assessment (OP 4.01)

The Bank requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA should evaluate a project's potential environmental risks and impacts in its area of influence; examine project alternatives; identify ways of improving project selection, siting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and include the process of mitigating and managing adverse environmental impacts throughout project implementation.

For this project, OP 4.01 is triggered as there are potential environmental and social impacts that will require the implementation of mitigation measures and monitoring actions during project construction, operation and maintenance to reduce and prevent the adverse impact.

An ESMP was prepared to conduct project-specific environmental and social impact analysis to address the environmental and social issues caused by the project activities.

Natural Habitats (OP/BP4.04)

There is no natural habitats along the project area. Therefore this policy is not triggered.

Forest ***(OP/BP 4.36)***

There is no forest in project right of way and no project activities are involved with forest management of the forest. Therefore, this policy is not triggered.

Pest management ***(OP/BP4.36)***

The project does not involve the purchase or increase use of pesticides. Therefore, this policy is not triggered.

Physical Cultural Resources ***(OP/BP 4.11)***

This policy addresses physical cultural resources, which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.

Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.

From the site visit of the project right-of-way, no physical cultural resources were found within the existing 22kV distribution right-of –way. However, this policy is triggered as precautionary measure to avoid impacts to stupas, pagodas or other cultural and historical resources. A chance find procedure was prepared as part of this ESMP.

Indigenous Peoples ***(OP/BP 4.10)***

Indigenous peoples communities presence are not known in the project area, this policy is not triggered.

Involuntary Resettlement ***(OP/BP 4.12)***

This policy instrument outline the principles required of World Bank funded projects to ensure that impoverishment risks due to involuntary resettlement are addresses and minimized. The policy has the objectives to:

- Avoid resettlement where possible, and otherwise minimized through alternative project designs;
- Resettlement should be conceived and executed as a sustainable development program;
- Affected people should be meaningfully consulted, and be facilitated to participate in planning and implementing resettlement plans;
- Displaced people should be assisted to improve, or at least restore their livelihoods and standards of living.

As result of the project-specific impact analysis; this project triggers OP4.12 Involuntary Resettlement, and protocols for voluntary land donation (P-VLD) and a Resettlement Policy Framework (RPF) have been prepared and disclosed in order to address project impacts in compliance with both GOL and World Bank's policies.

No involuntary land acquisition is expected as the small land plots for new poles required are commonly provided through voluntary donations. However, during construction and maintenance minor impacts on structures and standing crops and trees (trimming) cannot be ruled out. At this stage of the project design the location of the poles is not yet decided by

EDL. A Resettlement Policy Framework (RPF) was therefore developed which provides principles and procedures to ensure that such impacts will be fully compensated at replacement value.

The Protocols for VLD include detailed documentation indicating the appropriateness of the VLD, description on owners and users of land donated, procedures for consultation and disclosure, informed consent of the person donating the land, legal documentation indicating the transference of land donated, and grievance redress procedure and mechanism. In the unlikely event, that involuntary resettlement will occur in the form of impacts on structures or standing crops and trees, the RPF that was prepared by EDL will be applied. The Bank has reviewed the P-VLD and RPF drafted by EDL.

Safety of Dams (OP/BP4.37)

The project will not support construction/rehabilitation of dams nor will support other investments that rely on the services of existing dams. Therefore, this policy is not triggered.

Projects on International Waterways (OP/BP7.50)

No project activities are involved in international waterways. Therefore, this policy is not triggered.

Projects in Disputed Areas (OP/BP 7.60)

No project activities are involved in disputed areas. Therefore, this policy is not triggered.

1.4.4 Lao PDR Legislation and Regulation

A program of legislative reform has been in progress in Lao PDR for more than two decades, aimed at creating amongst other things a legal environment that encourages investment in the country. The following legislations now in force, and supporting regulations (promulgated or in draft) in Lao PDR are relevant to ensuring environmental and socio-economic issues are addressed during design, construction, and operation of the projects:

The table as below lists the main Lao Laws and Decrees in relation to the preparation of environmental assessment (EA), including social issues related to land acquisition and land donation; and other related resettlement issues. There are 17 main laws and decrees and 9 guidelines that are active. Some advanced laws and guidelines were recently promulgated after 2000; most of these laws and guidelines meet the requirements of the World Bank Policies; including consultation aspects.

Laws & Decrees:

1) *The Amended Electricity Law, No. 03/NA, dated 20 December 2011;*
2) *The Amended Law on Environmental Protection, No. 29/NA, dated 18 December 2012;*
3) *The Water and Water Resources Law, No 02-96/NA, dated 11 October 1996 and the Presidential Decree promulgating the law, No126/PDR, dated 2 November 1996;*
4) *The Amended Forestry Law, No 06/NA, dated 24 December 2008;*
5) *The Wildlife and Aquatic Law, No 07/NA, dated 24 December 2008;*
6) *The Land Law, No 04/NA, dated 21 October 2003;*
7) *The Decree on the Compensation and Resettlement of Development Projects, No 192/PM, dated 7 July 2005;*
8) *Regulations for Implementing Decree 192/PM on Compensation and Resettlement of People Affected by Development Projects, No 24322/PMO, dated 11 November 2005;*
9) *The Decree on Environmental Impact Assessment, No 112/PM dated 16 February 2010;*
10) *Decision on the Management of Quality Standards for Drinking Water and Household Water*

Supply No 1371/MoH, dated 4 October 2005;

11) *Agreement on National Environmental Standards, No 2734/PMO.WREA dated 7 December 2009;*
12) *National Policy on Heath Impact Assessment, No. 54/PM, dated 23 March 2006;*
13) *Amended Regulation on the Management of National Biodiversity Conversation Areas (NBCAs), Wildlife and Aquatic Animals (No. 0360/AF.2003, dated 8 December 2003);*
14) *Amended Labour Law (No. 06/NA, dated 27 December 2006);*
15) *Law on Urban Plans (No. 03-99/NA, dated 3 April 1999);*
16) *Law on National Heritage (No. 08/NA, dated 9 November 2005);*
17) *Road Law (No.04/99/NA, dated 3 April 1999).*

Government Guidelines:

1) *Environmental Impact Assessment Guidelines, October 2012;*
2) *Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, Regulation 699/PMO, WREA March 2010;*
3) *Technical Guidelines on Public Consultation For EIA Procedure, No. 707/MONRE, dated 05 February 2013;*
4) *Step-by-Step Environmental Guidelines for Biomass Removal from Hydropower Reservoirs in Lao PDR, SEM II and EMSP-WREA December 2012;*
5) *Environmental and Social Operational Manual for the Road Sector, Ministry of Public Works and Transport, March 2009;*
6) *National Policy on Environmental and Social Sustainability of the Hydropower Sector in Lao PDR, No. 561/IPC, dated7th June 2005;*
7) *Health Impact Assessment Guidelines, Ministry of Public Health, 2010;*
8) *Decree and its Technical Guidelines on IEE Process for Development Projects, No. 8029/ MONRE, dated 17 December 2013;*
9) *Decree and its Technical Guidelines on EIA Process for Development Projects, No. 8030/ MONRE, dated 17 December 2013.*

1.4.5 Comparison of National Legislation and Regulation to World Bank Safeguard Policies

A national program of legislation and regulation reform has been in progress in Lao PDR, the national legislation related to compensation and resettlement in development represents a significant improvement in the rights of citizens when their livelihoods, possessions and society are affected by development projects. The Decree on Compensation and resettlement of people affected by development projects, ref. no. 192/PM, issued on 7 July 2005;whilst the Technical guidelines on compensation and resettlement of people affected by development projects, ref. no. 699/PMO.WREA, issued in March 2010 and the Amended Environmental Protection Law, ref. no. 29/NA, issued on 18 December 2012.

In terms of Physical cultural resources, the Law on National Heritage, ref. no. 08/NA, dated 9 November 2005. The Law on National Heritage determines the principles, regulations and measures for the administration, use, protection, conservation, restoration, [and] rehabilitation of the national heritage, and also determines the rights and duties of the State, social organizations and individuals to preserve the value of the national cultural, historical and natural heritage, with the aims of educating citizens with a conscious love for their nation and fine national traditions that is deeply embedded in their hearts or "conceptual basis".and of assuring the elements for prosper sustainability of the nation. In Article 33: Seen and

Discovered Individuals or Organizations states that, during the conduct of any activities, see any national heritage shall immediately report to the local administrations and the concerned information and culture sector, and shall suspend such activities until approval for continuation is granted. Individuals or organizations that have discovered sites, received information on existing sites, or suspect that any [item of] national heritage or holy relic exists, shall immediately report to the local administrations and the information and culture sector, and shall be prohibited from exploring them prior to obtaining the approval of the information and culture sector.

Both Lao PDR's related laws and World Bank policies entitle affected people to compensation for land and non-land assets at replacement cost, and for livelihood restoration support. Lao legislation defines such livelihood restoration measures as being applicable only to severely affected people, defined as those with more than 20 percent of their income generating assets affected, whilst World Bank policy does not differentiate. Decree 192/PM (Article 6) also entitles all affected people to economic rehabilitation assistance to ensure they are not made worse off due to the Project. The legal framework does therefore provide the potential for parity with WB social safeguards on resettlement.

PART II. PROJECT DESCRIPTION

II.1 PROJECT LOCATION

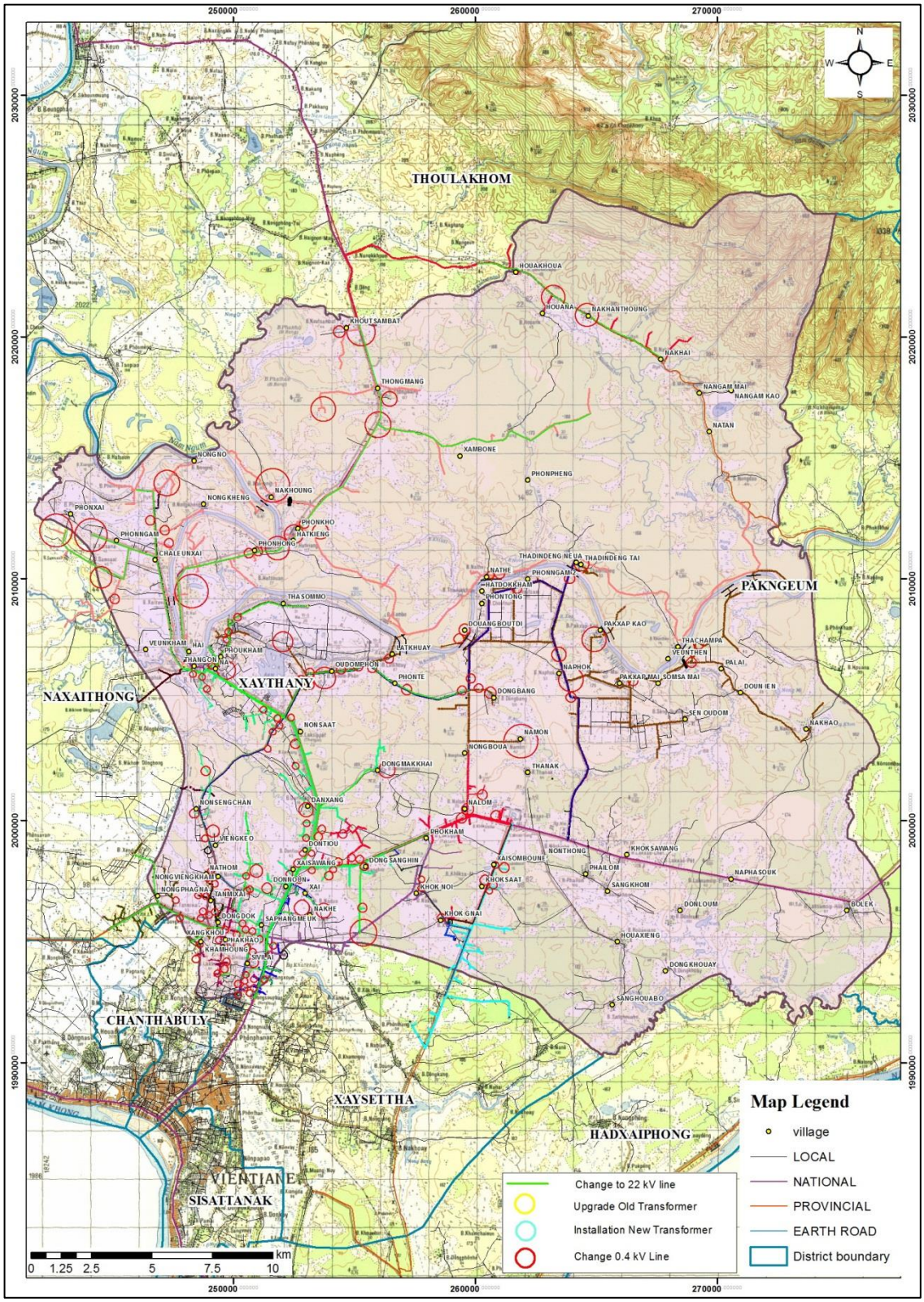


Figure 2-1: Project Location Map

The geographical scope of the project is limited to the urban and suburban area of Vientiane. Specifically, the intended project area is located in Xaythany district of Vientiane capital, about 10 kilometers north of Vientiane city center, with a distribution loss of around 24 percent in 2014 (higher than national average of 13 percent). The Vientiane capital area accounts for about 40 percent of the country's demand for electricity. The Xaythany district comprises low- and high-income residential customers, commercial, and industrial customers. There are currently about 46,000 residential and 1,100 non-residential customers in Xaythany.

According to the initial surveying and due diligence environmental and social safeguards report. No involuntary land acquisition or physical relocation of existing residences is expected as construction work will be done on the existing power distribution infrastructure. However, a due diligence work is required to review in situ the power lines identified for rehabilitation, including access routes to associated facilities such as sub-stations, as relevant, for encroachments or other types of land use or informal land occupation which may hinder access to a safe working space or pose a safety risk to people living or working in the right-of-way. EDL will notify affected customers for any power cut requirements during project implementation in accordance with its established procedure.

II.2 PROJECT TECHNICAL BACKGROUND INFORMATION

The number of kilometers of power lines to be rehabilitated is about 366 (of which 127 for medium- voltage). Small-scale works linked primarily to installation of meters, capacitors, upgraded medium voltage transformers and conductors of low and medium voltage lines are linked to the proposed rehabilitation of existing medium and low voltage distribution lines and reinforcement of selected electricity networks. The planned activities within the project do not include construction of new transmission or distribution electrical lines. The physical installations of meters, power distribution equipment, communication links, computing hardware, testing equipment are expected to be done on existing power poles, power lines, and buildings owned by EDL or by electricity customers.

1) **Technical Loss Reduction for Low Voltage (LV 0.4kV) lines and Medium Voltage (MV 22kV) lines:**
   - Upgrading conductors of LV and MV lines: 239km of LV line and 127km MV line, to install of insulation cable, increase capacity and provide high reliability of electricity supply in selected area ;
   - Upgrading/Replacing of 56 MV transformers and adding of 94 MV transformers: in total 150 units, the new transformers will be none PCB transformers, 56 units of old MV transformers will be disposed by keeping in the Phontong storage facility.
   - Capacitor placement of LV and MV systems: 36 sets of MV capacitor and 300 sets of MV capacitor;
   - Upgrading power poles: estimated 50 poles to be replaced/added along existing 22kV power line routes.

2) **Commercial Loss Reduction:**
   - Introduction of Advanced Metering Infrastructure (AMI) and Electronic Meter:
     - Residential Meter: 25,000 units,

- Smart Meter for large customers: 1,500 units

- Recloser & Load break switches:
  - Recloser: 63 units;
  - Load break switches: 84 units;

3) Information and Communication Infrastructure:
Introduction of optical fiber network for AMI and communication link between Vientiane Capital and Xaythany district (127km).

II.3 SCOPE OF ENVIRONMENTAL AND SOCIAL SAFEGUARD CONSULTANCY

To fulfill the above E&S policy requirements as well as the World Bank Group safeguard policies applicable to the proposed project investments, the detailed tasks include:

a) Carry out environmental and social (E&S) screening and due diligence in the project target area to identify potential E&S impact that can result from the project implementation and propose feasible mitigation measures. The safeguard screening and due diligence was undertaken in an inclusive and gender sensitive manner, including the analysis of presence or not of ethnic minorities in the project area.

b) Prepare E&S management plan (ESMP) including environmental codes of practice (ECoP) to be applied by contractors and supervised by EDL during works.

c) Carry out free, prior and informed consultation to establish community broad support for the project, specifically the consultant will:
   i. Design and organize the community consultation in randomly selected communities of the project;
   ii. Employ participatory approaches to promote equal participation by all groups of affected people and beneficiaries in the E&S consultation;
   iii. Based on the outcome from the public consultation, assist EDL to update the existing ESMP or associated safeguard document as deemed necessary.

d) Administer safeguard compliance on Behalf of EDL and assist EDL to prepare E&S implementation status Report during project implementation.

II.4 ENVIRONMENTAL AND SOCIO-ECONOMIC DUE DILIGENCE

As part of project preparation, an Environmental and Social Due-Diligence (ESD-D) has been conducted by EDL since February 2015 to identify the potential environmental and social issues and provide timely information on the preparation of the ESMP. The due diligence report was submitted to the Bank on March 19, 2015. The content of the ESD-D report include project baseline information for power distribution, including project location, existing equipment and power distribution infrastructure and proposed new/upgraded infrastructure/equipment. Additionally, the due diligence report highlight an overview of: (i) EDL normal practices on safety aspect and waste management, (ii) internal organization within the EDL responsible for project implementation, monitoring and reporting, and (iii) summary project potential environmental and social impact, analyse and confirm if the proposed project is likely to involve involuntary resettlement, specifically economic, temporary or permanent and assess the magnitude of the likely displacement are also

included. Environmental and Social (E&S) mitigation measures for the project and estimated budget for the E&S mitigation measures are included in this ESMP.

2.4.1 Scope of Due Diligence

The environmental and social due diligence report has been prepared based on the data collected, site visit and assessment of proposed environmental and social safeguard measures being implemented by the project. The report also review the compliance of the project activities with respect to applicable environmental and social regulations of Lao PDR as well as the environmental and social safeguard requirements of the World Bank.

2.4.2 Environmental Due Diligence Observation

Relevant review was conducted to the proposed project activities, specifically; it was observed that the key impact of the project during project construction and operation phase may include soil and surface water pollution due to disposal of fuel oils and disposal of construction debris and waste materials from installations to be replaced in particular old PCB based transformer, and physical hazard to workers. In addition, trimming of trees and bushes during project construction for additional poles and regular maintenance of vegetation within the 22 kV distribution right-of way which is necessary to avoid disruption to overhead power lines and poles will have minor impact to biological resources in the project right of way. The below table illustrates Environmental Due Diligence Observation.

Table 2-1: Environmental Due Diligence Observation

 	**1). Biological-Agriculture Resources in the Project Area:** The planned activities within the project do not include construction of new transmission or distribution electrical lines. The physical installations of meters, power distribution equipment, communication links, computing hardware, testing equipment are expected to be done on existing power poles, power lines, and buildings owned by EDL or by electricity customers. Maximum requirement for the right-of-way (ROW) of 22 kV distribution lines is 8 meters, where the project activities will be on the existing distribution ROW which located along or within the existing road ROW. From the site visit, it was observed that there are trees along the power distribution line in particular in Xaythany town. As EDL normal practices, regular maintenance of vegetation (trimming/pruning of tree) within the 22kV distribution ROW is necessary to avoid disruption to overhead power lines and poles. The additional of 50 power poles (12-14 m concrete poles) for the medium voltage line along the 9 km section are expected to be added/replaced. This 9 km section is along the provincial public road and located in the paddy filed where belong to sub-urban and rural area with low density population or in less populated areas. Less tree along this 9 km section was observed. Normally the land area required for new poles is around one square foot per pole Therefore, the impact from tree pruning of a 22 kV transmission line ROW and additional poles will likely to only have a minor impact.

Reuse Transformers at EDL workshop

2). Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase and disposal of waste materials generated from maintenance activities during project operation phase:

It is anticipated that generation of waste materials by the project result from replacement activities and maintenance during project operation (i.e. electrical equipment replacement, broken meters and packaging materials)

In addition, vegetation waste generated by trimming of trees and clearing of bushes of the ROW.

EDL normal practices in handling waste that will be use under this project are as follows:

- Recycle packaging wastes from electrical equipment as much as possible otherwise dispose of in designated waste disposal areas,
- Remove all surplus materials and left in a clean and tidy condition after erection,
- Install garbage bins at construction site and make arrangement to dispose of recyclable waste such as paper, cans, tins, bottles cardboard and polythene as appropriate,
- Make arrangement to waste collecting points and disposed of complying with local authority's regulations,
- The project will identify disposal site with District Authority and/or EDL-Vientiane Branch Office for wastes that can have adverse effects on human health and environment,
- Solid waste remaining from power distribution line improvement activities will be collected on site and transported off-site for disposal and/or reuse/recycling. Recycling and reuse of waste material will be maximized where possible,
- Landfill area at Km32 located in Xaythany district is the only one landfill in Vientiane Capital where almost waste collecting companies could share this landfill for waste disposal. From the observation, it is expected that capacity of this landfill is sufficient to accept wastes from project activities,
- All replaced electrical equipment (conductors, meters, capacitors, etc.) will firstly keep at the existing warehouse of EDL's Substation Maintenance Office where located nearby Phontong Substation,
- The EDL's Substation Maintenance Office are responsible to maintain, reuse, and recycle of replaced electrical equipment. For this project, EDL will use Phonetong Sub-station of which include Maintenance shop and storage facility as a waste management and disposal facility,
- Old meters that were broken will be sold out for recycle waste shops.

2.1) Due Diligence Observation: Retired transformers and New transformers.

Retired PCB based transformers that will be stored at HQ storage facility. For this project, the PCB based transformers that were replaced will be checked at Phonetong maintenance workshop before reuse it. If it can not be reused, it will be stored at the Phone Tong Storage facility.

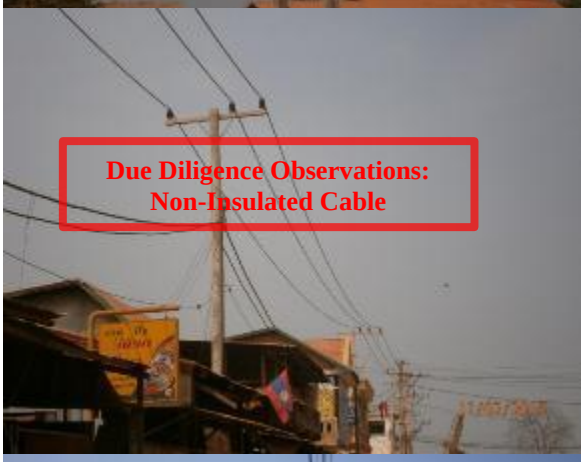
Sample of non PCB based transformers from other project. This project will also replace the old transformers with non PCB based transformers.

2.1) Due Diligence Observation: Existing Meters,

2.2) Due Diligence Observation: New Meters, (digital)

Smart Meters

2.3) Due Diligence Observation: Non-Insulated and Insulated Cables,



This project will improve the distribution power line from non-insulated cable to insulated cable which is safer.

3.) Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials:

The project identified spoil disposal sites of fuel oil and other chemical wastes including 56 units of possible PCBs based old transformers at the existing EDL closed type storage located nearby Phonetong Substation.

EDL normal practices in handling PCB based transformers are as follows:

- Label hazardous materials with appropriate signage in both English and Lao,
- Maintain an inventory of all hazardous materials on site and update regularly,
- Install suitable sign boards to make people aware about hazardous substance that store in the storage facility,
- Proper management of hazardous electrical waste (oil, lubricant, old transformer) including handling, transportation and final disposal of materials contaminated by PCBs including store retired transformers and equipment containing PCB on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked,
- The storage area should have a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCB,
- For this project, EDL identified disposal site of fuel oil and other chemical wastes (including 56 units of possible PCBs based old transformers) at the existing warehouse and storage located nearby Phonetong Substation;
- The existing EDL storage located nearby Phontong Substation is roof type storage, with proper fence, heavy steel gate, only authorized person can enter, the storage building was equipped with roof and with concrete wall. The assessment of storage capacity is provided in Part III.3 item 3.3.3 of this ESMP ,
- Record and keep the record of the replaced transformers, will follow Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution, and Environmental, Health, and Safety General Guidelines, IFC and The World Bank Group,
- Maintenance shops and other facilities, and activities may involve potential contact with PCB or PCB-contaminated machinery, therefore the officers who work in the maintenance workshop must wear personnel protective device while working,
- Provide training and appropriate personal protection equipment for Contractor's employ under the project.

4). Health, safety and security:

The project activities may cause health, safety and security issues as follows:

- Injury and sickness of workers,
- Construction hazard,
- Road accident,
- Electrocution,
- Fire Hazard and safety of household under transmission line.

There are about 30 households that their additional house structures are around power poles, need to be taken care of on the safety aspect during replace of old cable and installation of new insulated cable.

Most occupational health and safety issues during the construction, operation, maintenance, and decommissioning of electric power distribution projects are common to EDL. These impacts include, among others, exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; exposure to dust and noise; falling objects; exposure to hazardous material; and exposure to electrical hazards from the use of tools and machinery.

Occupational health and safety hazards specific to electric power transmission and distribution projects primarily include:

- Live power lines;
- Working at height;
- Electric and magnetic fields;
- Exposure to chemicals (including PCBs) and hazardous materials.

Additional, Community health and safety impacts during the construction and decommissioning of distribution power lines are common to EDL, these impacts include, among others, dust, noise, and vibration from construction vehicle transit. The operation of live power distribution lines may generate the following industry-specific impacts:

- Electrocution;
- Electromagnetic interference.

The appropriate mitigation measures were proposed in. Table 4-1 of ESMP and ECoP.

2.4.3 Social Due Diligence Observation

Potential social impacts can result during the installation of additional of 12-14 m concrete poles for the low-medium voltage line (0.4-22 kV) under 22 kV distribution ROW while almost is the existing distribution ROW along the existing roads. About 50 poles along the

9 km section are expected to be replaced/added or replaced along the provincial public road and located in the field paddy where belong to sub-urban and rural area with low density population or in less populated areas.

Table 2-2: Social Due Diligence Observation

	**1). Land donations and land use change due to installation of new or upgraded poles (no involuntary land acquisition/resettlement):** - Permanent structures for the upgraded 22 kV power poles will require small land donation (about 30cm x 30cm) from residential owners. The additional of 12-14 m concrete poles for the low-medium voltage line (0.4-22 kV) under 22 kV distribution ROW while almost is the existing distribution ROW along the existing roads. About 50 poles along the 9 km section are expected to be replaced/added or replaced along the provincial public road and located in the field paddy where belong to sub-urban and rural area with low density population or in less populated areas. The exact location of the new poles is not yet decided by EDL. Therefore, no land acquisition or physical relocation of existing residences is expected as construction work will be done on the existing power distribution infrastructure. For Land Donation, under this project community contributions are voluntary and frequent as standard practice of EDL. Protocols for Voluntary Land donation (P-VLD) will be followed by EDL during line upgrading and new poles instalment includes a planning and verification framework to ensure that any land is well-documented both in terms of its voluntary nature and the lack of any significant economic impact on villagers. Several approaches will be used to be obtain information: a) Information will be disseminated to community members on applicable rules and consultations will be conducted at key stages of the sub-project planning process, b) Check willingness for donations and provide written documentation, Train project staff how to conduct effective consultations during the proposed works planning process.

2). Interference on local villagers activities, including temporary economic displacement.

Disconnection of power lines, interruption of service, temporary economic displacement to beneficiaries during installation works:

- Erect danger and warning signs on every poles as well as conductors where the line is crossing a road or river,
- Disconnection of power lines shall be noticed on newspaper and inform to local villagers 1 week before starting of installation works,
- Disconnection of power lines and interruption of service to beneficiaries during installation works shall be allowed only on daytime (between 8.00 am to 17.00 pm).

3.) Gender impacts, increased role of women in decision making, empowerment of women.

For women headed households, interruption of service, and temporary economic displacement to this group of people.

Possible temporary disruption on daily income (days of installations) for both male and female-owned businesses (retail shops, laundries, ricemill, etc...) along the road that are affected by the installation activities.

II.5 PROJECT IMPACTS and BENEFITS

2.5.1 Project Benefits

The Project development will also create a range of positive impacts or benefits as listed as follow.

- Improve efficiency and reliability of power distribution;
- Improve voltage drop and reduction of distribution losses;
- Introduce advance metering technology, improve metering, billing and collection system;
- Strengthening of power distribution infrastructure (upgrading of conductors, increasing transformer capacity, placement of capacitors for reactive power and voltage control, installing load break switches and recloses, etc);
- Potential expansion of residential customers, commercial, and industrial customers.

PART III. IDENTIFICATION OF ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS AND MITIGATION MEASURES

III.1 INTRODUCTION OF IMPACT MATRIX

Potential environment and social impacts that may result from the construction or operation of the proposed PGI project are summarized in Table as below. Project action and impact duration is also provided.

Table 3-1: Environmental and Social Impacts Matrix

Issue Concerned	Potential Impacts	Initiating Project Action	Impact Duration
Environmental Issues			
1.) Trimming of trees and bushes under 22kV distribution line/ROW to avoid disruption to overhead power lines and poles	Resulting in vegetation debris from trees and bushes trimming	Burning of vegetation waste will not be permitted.	Permanent
2.) Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase and disposal of waste materials generated from maintenance activities during project operation phase	Resulting impacts on the surrounding villages from packaging wastes from electrical equipment.	Replaced electrical equipment (conductors, meters, capacitors, etc. will be taken to EDL Warehouse and Storage or substations or branch offices and sort for reuse/recycling or discard. The rest that cannot recycle will be disposed at landfill at 32 km.	Temporary
3.) Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials	Resulting impacts on human and animal health	The project identified disposal sites for fuel oil and other chemical wastes (including hazardous material such as PCBs) at Phonetong storage facility nearby Phonetong Sub-station	Temporary
4.) Health, safety and security	Injury and sickness of workers	Construction, electrical equipment installation and maintenance activities follow EDL-ECoP. Provide safe working space for workers.	Temporary
	Construction hazard	Construction, installation and maintenance activities and transportation of material and equipment should be	Temporary

		conducted by well trained workers, officers and drivers	
	Road accident	Road accident caused by traffic congestion and divert of traffic flow out of the working space of the workers, officers and drivers. Proper traffic management and warning sign will be provided.	Temporary
	Electrocution	Installation of electrical equipment activities	Temporary
	Fire Hazard and safety of household under transmission line	Construction, electrical equipment installation and maintenance activities will follow EDL-ECoP and emergency response in case of fire hazard. EDL will consult with concerned agencies to avoid construction of infrastructure in the transmission line right of way in the future.	
Social Issues			
5.) Land donation for additional poles (no involuntary land acquisition/ resettlement)	Permanent one square meter will be required for new or upgraded power poles	Installation of new or upgraded power poles	Permanent
6.) Interference on local villagers activities, including temporary economic displacement	Disconnection of power lines, interruption of service, temporary economic displacement to beneficiaries during installation works	Construction, installation activities of material and equipment	Temporary
7.) Gender impacts, increased role of women in decision making, empowerment of women	For women headed households, interruption of service, and temporary economic displacement to this group of people. Possible temporary disruption on daily income (days of installations) for both male and female-owned businesses	Distribution line structures	Temporary

	along the road that are affected by the installation activities.		
8.) Physical culture resources such stupas pagodas or other cultural and historical resources	Damage of physical cultural resources	Digging for and installing of additional poles	Permanent

III.2 MITIGATION MEASURES

As impacts from project development are unavoidable, all approaches of mitigation measures are essential and needed in order to protect the affected environmental and social quality. Thus, this part's structure aiming to specified necessary mitigation measures that impacts are potentially contributed from project implementation during design, planning, construction and operation periods. The specific measures have been proposed according to each project component of PGI project.

Environmental and social protection measures are designed to:

- Mitigate environmental and social impacts,
- Achieve compliance with national environmental and social regulations, and World Bank operational policies,
- Provide compensation for lost environmental and social resources (if any), and
- Enhance environmental and social resources.

The matrix of impacts supplemented with management and monitoring activities and assigned responsibilities for implementing those activities, forms the core of the Summary of the Project Environmental Mitigation Plan.

III.3 ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

3.3.1 Biological-Agriculture Resources in the Project Area

Issues and finding:

The activities involved in PGI project would include small scale installation works pertain to the rehabilitation of distribution of medium voltage (127 km of 22kV MV system) and low-voltage (239 km of 0.4 kV LV system) lines and the installation of electronic meters, replacement of capacitors (LV line), upgrading of conductors (on LV and MV lines) and replacement and upgrading of transformers (for MV). The planned activities within the project do not include construction of new transmission or distribution electrical lines. The physical installations of meters, power distribution equipment, communication links, computing hardware, testing equipment are expected to be done on existing power poles, power lines, and buildings owned by EDL or by electricity customers.

Given the nature of the rehabilitation works the project is proposed as category B as certain mitigation measures and monitoring actions will have to be implemented during the civil works in order to minimize, prevent and reduce possible temporary impacts on the environment.

Maximum requirement for the right-of-way (ROW) of 22 kV distribution lines is 8 meters, where most of the distribution lines is the existing distribution ROW and located along or within the existing road ROW. Regular maintenance of vegetation (trimming trees) within the 22kV distribution ROW is necessary to avoid disruption to overhead power lines and poles.

The additional impact of the upgrading and install additional poles will likely to only have a minor impact. Only one square feet will be required for each pole. It is anticipated that there is no clearing of trees but some bushes for the installation of additional power poles. Therefore no significant impact on biological-agriculture resources along the 22 kV distribution ROW which is along the existing roads (e.g. National Road 13South).

Figure 3-1: Existing 22 kV Distribution ROW

3.3.2 Disposal of Construction Debris and Wastes

Issues and finding:

The generation of waste materials by the project result from replacement activities and maintenance during project operation.

In addition, vegetation waste generated by trimming of trees and clearing of bushes of the ROW. Burning of vegetation waste will not be permitted. Waste will be piled and provided opportunity to use the vegetation waste for firewood or other use (e.g. making fences).

In addition to above wastes, there could be an increase in the generation of packaging wastes from electrical equipment.

All the wastes are likely to include:

- Electrical equipment replacement;
- Vegetation waste;
- Packaging materials.

Solid waste remaining from project activities will be collected on site and transported off-site for disposal and/or reuse/recycling. Recycling and reuse of waste material will be maximized where possible.

3.3.3 Disposal of Replaced Electrical Equipment, Fuel Oil and Other Chemical Wastes (including PCBs) and Hazardous Materials

Issues and finding:

Pollution due to disposal of replaced electrical equipment, fuel oils and other chemicals related to works and disposal of waste materials from installations to be replaced, and physical hazards to workers. Special attention will be given to management of hazardous electrical waste (old transformers) including handling, transportation and final disposal of materials contaminated by Polychlorinated Biphenyls (PCBs), as well as to impacts from disconnection of power lines and interruption of service to beneficiaries during works. These potential impacts could be managed through clear environmental due diligence obligations of contractors (which will be stipulated in the ESMP) and use of adequate

technical construction standards.

Polychlorinated Biphenyls (PCB) were widely used as a dielectric fluid to provide electrical insulation, although their use has been largely discontinued due to potential harmful effects on human health and the environment. Recommendations for the management of PCB include:

- Replacing existing transformers and other electrical equipment containing PCB, and ensuring appropriate storage, decontamination, and disposal of contaminated units;
- Prior to final disposal, retired transformers and equipment containing PCB should be stored on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked. The storage area should also have a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCB;
- Surrounding soil exposed to PCB leakage from equipment should be assessed, and appropriate removal and/or remediation measures should be implemented.

Figure 3-2: EDL Warehouse for Replaced Electrical Equipment

The project identified spoil disposal sites of fuel oil and other chemical wastes (including PCBs) and hazardous materials (PCB based transformer). The existing warehouse and storage located nearby Phonetong Substation are proposed as disposal of these hazardous wastes which include 56 units of possible PCBs Based Old Transformers and other chemical wastes. For the normal practice, EDL will transfer replaced equipment and PCB transformers to Phonetong maintenance facility. After maintenance/overhauling, some PCB transformers (about 80% of replaced transformers) will be reused. The rest of the transformers that cannot be reused will be stored at HQ storage facility and sale as metal waste. UNIDO is conducting the feasibility study on the alternative options to manage and dispose of the unused PCB based transformers. From the due diligence assessment of the capacity of the Phonetong storage facility, it is appropriate to be a storage facility for the project replaced PCB transformers that cannot be reused. The two storage facilities were equipped with roof, concrete floor, and four concrete walls with one steel gate for each storage facility. The size of the storage facility is 40x25 m. each. The storage buildings were locked and only authorized officer can enter the buildings. Currently, no replaced transformer was stored at this facility. Only new transformers were stored outside the two storage buildings within the storage facility premise. There are concrete fences around the

storage facility with two metal gates and surveillance equipments. EDL will keep the unused PCB transformers at this facility until the alternative measures from UNIDO study are recommended.

Figure 3-3: Proposed EDL Storage for PCBs Based Old Transformers

3.3.4 Health, Safety and Security

The objective of Health, Safety and Security management is to prevent nuisance, health and safety effects on the community and impacts on the natural environment, particularly during project construction.

Most occupational health and safety issues during the construction, operation, maintenance, and decommissioning of electric power distribution projects are common to EDL. These impacts include, among others, exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; exposure to dust and noise; falling objects; exposure to hazardous materials; and exposure to electrical hazards from the use of tools and machinery.

Occupational health and safety hazards specific to electric power transmission and distribution projects primarily include:

- Live power lines;

- Working at height;
- Electric and magnetic fields;
- Exposure to chemicals (including PCBs) and hazardous materials.

The operation of live power distribution lines may generate the following industry-specific impacts:

- Electrocution;
- Electromagnetic interference.

Provide appropriate driver training and careful planning of haulage routes and times to minimize risks to the local community.

The WBG Environmental, Health and Safety (EHS) Guidelines for Power Transmission and Distribution will be followed during project implementation, including provisions for beneficiaries and worker health and safety. The ECoP includes specifications for the proper disposal of excess/discarded electric materials, lubricants, etc. In addition, proper dissemination of service disruption, traffic management, etc. would be required of all contractors.

III.4 SOCIAL IMPACT AND MITIGATION MEASURES

3.4.1 Land Donation for Additional Poles

The additional of 12-14 m concrete poles for the medium voltage line under 22 kV distribution ROW along the existing roads. About 50 poles along the 9 km section are expected to be replaced/added or replaced along the provincial public road and located in the field paddy where belong to sub-urban and rural area with low density population or in less populated areas.

Initial surveying indicated that construction, installation activities are under the existing 22 kV distribution ROW where located in conjunction or alongside with existing national and provincial roads (e.g. National Road 13 South), meanwhile the existing 22 kV distribution ROW is within the rights-of-way of existing national and provincial roads to minimize both costs and disturbance to ecological, socio-economic and cultural resources. Other factors, the existing 22 kV distribution ROW is located in the urban and sub-urban area where closed to the district town.

According to Article 20, Law on Public Road, the road limit (right-of-way) refers to the total area of the road, which includes the road surface, the road shoulder, footpaths, drainage channels, the road slope and the delimitation area for public roads. The width of the road limit for each kind of public road is as follows:

1. National public road: 25 meters on each side, measured from the centre line of the road;
2. Provincial public road: 15 meters on each side, measured from the centre line of the road;
3. District public road: 10 meters on each side, measured from the centre line of the road;
4. Rural road: 5 meters on each side, measured from the centre line of the road;
5. Municipal road: in compliance with the master urban plan;
6. Specific road: in compliance with technical standards specifically imposed for such road.

Figure 3-4: Requirement of Land Donation for Additional 12-14 m Concrete Poles

Therefore, no involuntary land acquisition or physical relocation of existing residences is expected as construction work will be done on the existing power distribution infrastructure. Permanent structures for the 22 kV distribution line poles will require the land donation (about 30cm x 30cm per pole in maximum) from residential owners; for this process specific procedures will be applied based on the Protocols for VLD (See Annex 4), summarized as follows:

1. **Official information and initial assessment. Determining the appropriateness of VLD in the circumstances of the project**. For the installation and replacement of new poles; EDL will inform the village head and villagers or land owners through official notification on where additional poles will be installed. Record and document the reasons why donation of land is appropriate for the project.

2. **Verification of voluntary donations.** The following conditions will be confirmed by the Committee including the village chief.

3. **Initial Village Consultation.** Under the village head leadership, a consultation process will be launched to invite different interest parties, including land owners to discuss and ratify the appropriateness of the voluntary basis of land donation.

4. **Transferring and formalizing the land.** EDL process for land donation includes very clear procedures that explain the process that should be followed to transfer the land, and appropriate ways to formalize the respective transfer.

5. **Verification process (surveys) to identify land ownership and use.** EDL will carry out specific surveys to understand the type of land rights that exist in the project area, and to identify any particular issues relating to land ownership and use.

6. **Public consultations and disclosure.** The decision to donate must be taken on the basis of a full understanding of the project and the consequences of agreeing to donate the land.

7. **Establishing informed consent.** EDL in coordination with the Committee will verify the *informed consent or power of choice* by the people who would donate land

or asset. For collective or communal land, donation must be based upon the informed consent of all individuals using or occupying the land.

8. **Proper documentation.** (see form 1 VLD, for reference)

9. **Grievance redress arrangements.** The project specifies 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 project implementing agency. 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.

3.4.2 Interference on Households Structures and other Infrastructures and on Local Villagers Activities

Initial surveying indicated that construction, installation activities and transportation of material and equipment will interfere on household structures and other infrastructures due to encroach to household structures/properties. In addition, disconnection of power lines and interruption of service to beneficiaries during installation works. In general, EDL notifies villagers well in advance of upcoming power cut. This provides time for villagers to plan their household or commercial activities to minimize temporary economic displacement accordingly. In addition, EDL also plans to minimize the duration of each power cut through routing electricity through alternative distribution lines that are available in Xaythany district. Although there will be temporary disruption from power cuts, the benefits of having more reliable power supply in the longer term for households and businesses are expected.

Figure 3-4: Encroachment of Household Structures to Distribution ROW

3.4.3 Physical Cultural Resources

From initial surveying indicated that construction, installation activities where almost are under the existing 22 kV distribution ROW and located along the existing roads (e.g. National Road 13 South). Otherwise, the project is located in the urban and sub-urban area

where closed to the district town.

At the present, the potential impacts on stupas, pagodas or other cultural and historical resources were not found. As mentioned in section 3.4.1 above, detail survey to identify the location of additional poles will be done before project commencement. In case of there are historical place or physical cultural resources along the right of way, digging for new poles will be suspended and will be reported to the Provincial Culture and Tourism Directorate for further instruction in case anything with archaeological value found. A chance find procedures was included in the ESMP, (See Annex 5).

PART IV. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MITIGATION PLAN

IV.1 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The Environmental and Social Management Plan (ESMP) covers all phases of the Project from preparation through commissioning and operation, and it aims to ensure the monitoring of environmental and social impacts and implementation of environmental and social mitigation measures including guidance for independent monitoring when this will be required. Relevant parts of the ESMP will be incorporated into the construction, operation, and management of the Project.

Environmental and social monitoring programs will be carried out and the results will be used to evaluate:

1) The extent and severity of actual environmental impacts against the predicted impacts,
2) The performance of the environmental protection measures or compliance with related rules and regulations, and
3) Trends of impacts.

Environmental protection measures are designed to:

- Mitigate environmental and social impacts,
- Achieve compliance with national environmental regulations, World Bank operational policy,
- Provide compensation for lost environmental resources (if any), and
- Enhance environmental resources.

The matrix of impacts supplemented with management and mitigation activities and assigned responsibilities for implementing those activities, forms the core of the Project.

The Environmental and Social Management and Mitigation Plan for the Power Grid Improvement Project which will be implemented throughout all phases of the Project from preparation through commissioning and operation periods is provided in the Table 4-1 as below.

IV.2 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MITIGATION PLAN

Environmental and social management and mitigation plan will consist of routine systematic checking that all mitigations specified in the ESMP and Environmental Codes of Practice (ECoP) are effectively implemented during the relevant periods of the project.

Detailed environmental and social management and mitigation plan is shown in Table 4-1 for relevant periods of the project.

Table 4-1: Environmental and Social Management and Mitigation Plan

Issue Concerned / Potential Impacts	Mitigation Measures	Significant of Mitigation	Responsibility	Start Date	End Date
Design, Planning, and Construction Phases					
Environmental Issues					
1.) Trimming/Pruning of trees and bushes under 22kV distribution line/ROW to avoid disruption to overhead power lines and poles	- Vegetation waste shall be disposed only to areas permitted by Authorities concerned, - Ensure that vegetation is not cleared beyond predefined project boundaries. Prohibit herbicides and incineration for the ROW clearing, - Made felled trees and other cleared or pruned vegetation available to the owner (individual or village) or removed if requested by the owner, - Stacked vegetation debris from the ROW will be outside the ROW, - Burning of vegetation debris will not be permitted,	Minor	Contractor	Before construction is started	After construction activities are completed
2.) Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase and disposal of waste materials generated from maintenance activities during project operation phase	- Recycle packaging wastes from electrical equipment as much as possible otherwise dispose of in designated waste disposal areas, - Remove all surplus materials and left in a clean and tidy condition after erection, - Identify disposal site at Phonetong Storage facility for wastes that can cause adverse effects on human health and environment.	Minor	Contractor	Before construction is started	After construction activities are completed
3.) Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials	- Install garbage bins at construction site and make arrangement to dispose of recyclable waste such as paper, cans, tins, bottles cardboard and polythene as appropriate, - Make arrangement to waste collecting points and disposed of complying with local authority's regulations, - On completion of the works, left clean and tidy the site - Label hazardous materials with appropriate signage in both English and Lao,	Minor	Contractor	Before construction is started	After construction activities are completed

		- Maintain an inventory of all hazardous materials on site and update regularly, - Install suitable sign boards to make people aware about potential construction hazard at construction site, - Remove all surplus material, and left in a clean and tidy condition after completion of the works, - Proper management of hazardous electrical waste (oil, lubricant, old PCB transformer) including handling, transportation and final disposal of materials contaminated by PCBs, as specified in ECoP including store retired transformers and equipment containing PCB on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked. The storage area will be equipped with a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCB, - Identify disposal site of fuel oil and other chemical wastes (including 56 units of PCBs based old transformers) at the existing maintenance shop and warehouse and storage located nearby Phonetong Substation; - Maintenance shops and other facilities, and activities may involve potential contact with PCB or PCB-contaminated machinery, training and personal protective device will be provided to technician at the maintenance workshop, - Provide training and appropriate personal protection equipment for Contractor's employ.				
4.) Health, safety and security	Injury and sickness of workers	- Elaboration and enforcement of safety regulation,	Minor	Contractor	Before construction is started	After construction activities are completed
	Construction hazard	- Install suitable sign boards to make people aware about potential construction hazard at construction site. And place the warning barriers around the construction/installation areas. Inform households that might have elderly people				

		and children to be extra careful around the installation time, - Provide training and appropriate personal protection equipment for Contractor's employ, - Maintain construction equipment in good condition, - Testing structures for integrity prior to undertaking work, - 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; among others, - Hoisting equipment should be properly rated and maintained and hoist operators properly trained, - Safety belts should be of not less than 16 millimeters (5/8inch) 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, - When operating power tools at height, workers should use a second (backup) safety strap, - Signs and other obstructions should be removed from poles or structures prior to undertaking work. - Provide safety working space for workers when working at the house with additional structure around the power poles.				
	Road accident	- Minimize transportation activities from 7:00 pm to 6:00 am, - Vehicles to be maintained in good condition to minimize exhaust emissions, - A speed limit of 20km/hour imposed on construction traffic through the villages; - Share knowledge on regulations of traffic and traffic police directives among drivers; - Provide appropriate driver training and careful planning of haulage routes and times to minimize risks to the local community.				
	Electrocution	- Implement regular inspection of the distribution line for clearing vegetation/obstructions, - Install appropriate warning signs on facilities, - Carry out electricity safety awareness raising in project				

		areas. Coverage of households with men, women, elderly people. - Only allowing trained and certified workers to install, maintain, or repair electrical equipment.				
	Fire Hazard and safety of household under transmission line	- Construction, electrical equipment installation and maintenance activities will follow EDL-ECoP and emergency response in case of fire hazard. EDL will consult with concerned agencies to avoid construction of infrastructure in the distribution line right of way in the future.				
Social Issues						
5.) Land donations and land use change due to installation of new or upgraded poles (no involuntary land acquisition/ resettlement)		- Permanent structures for the upgraded 22 kV power poles will require small land donation (about 30cm x 30cm) from residential owners. For Land Donation, under this project community contributions are voluntary and frequent as standard practice of EDL. Protocols for Voluntary Land Donation (P-VLD) will be applied during new poles instalment includes a planning and verification framework to ensure that any land acquisition is well-documented both in terms of its voluntary nature and the lack of any significant economic impact on villagers. Several approaches will be used to be obtain information: a) Information will be disseminated to community members on applicable rules and consultations will be conducted at key stages of the sub-project planning process, b) Check willingness for donations and provide written documentation, c) Train project staff how to conduct effective consultations during the proposed works planning process, d) EdL would install new supporter poles in different	Minor	EDL	Before construction is started	After construction activities are completed

	locations which at this stage of project design the location of the new poles is not yet decided by EDL. It is expected that no one would lose land or assets involuntarily or in such a scale that would create a significant and irreversible impact on the income stream of affected people. Such a change in locations to install poles is possible since the new, heavier conductors can technically be installed from among multiple potential locations along the existing alignment. e) The construction schedule would be adjusted so as to avoid any impact on standing crops.				
6.) Interference on local villagers' activities (temporary economic displacement)	- Erect danger and warning signs on every poles as well as conductors where the line is crossing a road or river, - Disconnection of power lines shall be noticed on newspaper and inform to local villagers 1 week before starting of installation works, - Disconnection of power lines and interruption of service to beneficiaries during installation works shall be allowed only on daytime (between 8.00 am to 17.00 pm).	Minor	Contractor	Before construction is started	After construction activities are completed
7.) Gender impacts, increased role of women in decision making, empowerment of women	- Disconnection of power lines shall be noticed on newspaper and inform to local villagers 1 week before starting of installation works, - Disconnection of power lines and interruption of service shall be allowed only on daytime (between 8.00 am to 17.00 pm), which is gender-sensitive to the household responsibilities of women.	Minor	Contractor	Before construction is started	After construction activities are completed
8.) Physical culture resources such stupas pagodas or other cultural and historical resources	- In case of there are historical place or physical cultural resources along the right of way, digging for new poles will be suspended; - Reported to the Provincial Culture and Tourism Directorate for further instruction in case anything with archaeological value found	Minor	Contractor	Before construction is started	After construction activities are completed

Operation Phase					
Environmental Issues					
9.) Right-of-way maintenance	- Regular maintenance of vegetation within the rights-of-way is necessary to avoid disruption to overhead power distribution lines and poles, - No herbicides used in the control of vegetation within the rights-of-way, - Tree plantation and crops with higher than 3 metres will not be allowed, - Rather, local people living along the distribution line route also will be participated under mutual contract to trim or cut vegetation along right-of-way, - Scheduling activities for right-of-way maintenance.	Minor	EDL (Xaythany Branch Office)	After construction activities are completed	During Project Life
10.) Safety maintenance of distribution power lines, meters, capacitors, transformers and other electrical equipment	- Ensuring that live-wire maintenance works are conducted by trained workers with strict adherence to specific safety and insulation standards, - Where maintenance and operation is required within minimum set back distances, specific training, safety measures, personal safety devices, and other precautions should be defined in a health and safety plan, - Scheduling for maintenance activities.	Minor	EDL (Xaythany Branch Office)	After construction activities are completed	During Project Life
Social Issues					
11.) Community health and safety	- Use of signs, dangerous warning signs, barriers, and education/public outreach to prevent public contact with potentially dangerous equipment particularly with households that have little children; - Grounding conducting objects (e.g. fences or other metallic structures) installed near power lines, to prevent shock.	Minor	EDL (Xaythany Branch Office)	After construction activities are completed	During Project Life

Table 4-2: Environmental and Social Monitoring Plan For Design, Planning and Construction Phases

Phase	Issue Concerned	What Parameter to be Monitored	Where Parameter to be Monitored	How Parameter to be Monitored	When Parameter to be Monitored	Responsible Agencies	Start Date	End Date
DESIGN PLANNING AND CONSTRUCTION PHASES	**Environmental Issues**							
	1.) Trimming/Pruning of trees and bushes under 22kV distribution line/ROW	Trimming/pruning of trees and bushes under 22kV distribution line ROW	22kV distribution line ROW	Visual observation and interview with contractor	Monthly	PO Office/EDL	Start of Construction	End of Construction
	2.) Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase	Way of disposal of conductors, meters, capacitors, etc. Repair and recycle and reuse of such electrical equipment above	At construction site and warehouse nearby Phonetong substation	Visual observation and interview with warehouse manager	Monthly	PO Office/EDL	Start of Construction	End of Construction
	3.) Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials	Way of disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials	At construction site and storage nearby Phonetong substation	Visual observation and interview with storage manager	Monthly	PO Office/EDL	Start of Construction	End of Construction
	4.) Health, safety and security	EHSS plan by contractor; Use of protection equipment and vehicles. Injury of workers and public record	At construction site	Visual observation and interview with contractor	Monthly	PO Office/EDL	Start of Construction	End of Construction
	Social Issues							

Table 4-2: Environmental and Social Monitoring Plan For Design, Planning and Construction Phases

Phase	Issue Concerned	What Parameter to be Monitored	Where Parameter to be Monitored	How Parameter to be Monitored	When Parameter to be Monitored	Responsible Agencies	Start Date	End Date
	5.) Land donations and land use change due to installation of new or upgraded poles (no involuntary land acquisition/ resettlement)	Evident of land donation from residential owners, Land rehabilitation after completion of works	At construction site (additional pole location)	Visual observation and interview with contractor/ residential owners	Monthly	PO Office/EDL	Start of Construction	End of Construction
	6.) Interference on local villagers' activities (temporary economic displacement)	Temporary economic displacement by disconnecting of power lines; Villager complaints; Traffic control measures	At construction site where to be affected by disconnecting of power line	Visual observation and interview with villagers	Monthly	PO Office/EDL	Start of Construction	End of Construction
	7.) Gender impacts, increased role of women in decision making, empowerment of women	Interruption of service, temporary economic displacement to group of women headed households	Group of women headed households which to be affected by disconnecting of power line	Visual observation and interview with women headed household	Monthly	PO Office/EDL	Start of Construction	End of Construction
	8.) Physical culture resources such stupas pagodas or other cultural and historical resources	Historical place or physical cultural resources at the additional pole sitting	Additional pole sitting	Visual observation and interview with contractor/ residential owners	Monthly	PO Office/EDL	Start of Construction	End of Construction

Table 4-3: Environmental and Social Monitoring Plan For Operation Phase

Phase	Issue Concerned	What Parameter to be Monitored	Where Parameter to be Monitored	How Parameter to be Monitored	When Parameter to be Monitored	Responsible Agencies	Start Date	End Date
OPERATION PHASE	**Environmental Issues**							
	9.) Right-of-way maintenance	Pruning/trimming of trees and bushes under 22kV distribution line ROW	22kV distribution line ROW	Visual observation	As per Scheduling activities for right-of-way maintenance	PO Office/EDL	End of Construction	End of Project life
	10.) Safety maintenance of distribution power lines, meters, capacitors, transformers and other electrical equipment	Use of protection equipment and vehicles. Injury of workers and public	Placement of maintenance activities	Visual observation	As per scheduling for maintenance activities	PO Office/EDL	End of Construction	End of Project life
	Social Issues							
	11.) Community health and safety	Use of signs, dangerous warning signs, to prevent public contact with potentially dangerous equipment	At every distribution poles and replaced/added electrical equipment	Visual observation	Quarterly	PO Office/EDL	End of Construction	End of Project life

IV.3 INTERNAL MONITORING SCHEDULES

Detailed environmental and social monitoring programme are shown in Table 4-2 and 4-3 as mentioned above, for relevant periods of the project. The programme considers the scope of monitoring, monitoring parameters and frequency, data processing, and quality control requirements.

The monitoring on implementation status of mitigation measures by the Contractor is to be monitored. EDL contain an Environmental and Social Monitoring Team (EST) that will perform environmental and social monitoring activities during project implementation. The ESU will report to EDL's Project Manager. The EST of EDL shall support the monitoring activities at site. The type of monitoring and brief content for each monitoring activities will be based on the specific action plan highlighted in different phases (see below):

A database of environmental and social monitoring information regarding the PGI project would be maintained and updated every three months, the database can be established with assistance from the environmental and social safeguards consultant. Monitoring reports will be forwarded to EDL Management, PEMC members, the WB and concerned parties as part of regular Project reporting.

4.3.1 Monitoring During Design, Planning and Construction Phases

1) Monthly Monitoring

An agreed time schedule would be arranged once a month, which the EDL's EST will send their staff to project site to monitor and evaluate the state of mitigation measures implemented by Contractors based on the ESMP. The main tasks of monthly monitoring include:

a) Conducting visual inspection with of construction contractor's mitigation activities at construction site based on the items addressed in the ESMP;
b) Consulting with the EDL-Vientiane Capital Branch Liaison Officer and the PEMC to see if the ESMP is working as expected or not;
c) Conducting some interviews with the Project Affected Persons/villagers on compensation (if any) and mitigation of the project; including contracting independent monitoring when it is required;
d) Preparing field report for PO to analyze and prepare monthly report.

2) Quarterly Monitoring

An agreed time schedule, a joint monitoring and evaluation team between the EST of PO/EDL and PEMC will come to project site every 3 months with the main tasks of:

a) Reviewing of the work progress and to see if the ESMP is affective and carry on according to time frame allowance;
b) Conducting visual inspection of construction contractor's mitigation activities at construction site based on the items addressed in the ESMP;
c) Recording on the possibility of the adjustment to the ESMP if there is any requirement with the aims to make the ESMP more effective;

d) Consulting with villages' representative and Project Affected Persons on suggestions and/or opinions for improvement of the compensation (if any) and mitigation measures;
e) Preparing the field report to the EDL Managing Director and all PEMC members;
f) Submitting the monitoring result of past three months with respect to environmental and social considerations as a part of quarterly progress report to World Bank and concerned parties.

3) Semi-Annual Monitoring

A joint monitoring and evaluation team comprises of the EDL's EST, PEMC will come to the project site in every 6 months. The main tasks include:

Reviewing the entire recommendations made by the monthly and 3 months monitoring reports;

Consulting with the liaison officer, the PEMC for their opinions;

a) Consulting with the project affected persons/villagers;
b) Considering and make changes to the ESMP as necessary to reflect the findings from the monitoring;
c) Preparing a field inspection report with recommendation for EDL Managing Director, all PEMC members and concerned parties.

4) Completion Monitoring

At the end of project construction phase, a joint monitoring and evaluation team comprises of the EDL's EST, PEMC will undertake a final project site evaluation with the main tasks of:

a) Summary all monitoring activities during the project construction phase compared with relevant guidelines;
b) Conclude and analysis of all significant environmental and social incidents;
c) Preparing a final monitoring and evaluation of the PGI project;
d) Review of effectiveness of the ESMP, ECoP and recommended improvements to ESMP, ECoP.

4.3.2 Monitoring During Operational Phase

Monitoring during operation in order to maintain the distribution ROW, ensure safety maintenance of distribution power lines, meters, capacitors, transformers and other electrical equipment as well as community health and safety are also necessary. Based on the previous best practices, EDL shall conduct inspection of recommended.

IV.4 REPORTING

The reporting programme must satisfy 3 objectives:

- To provide a regular distribution of information through the several parties involved in the project;
- To set up a formal framework for performance achievement evaluation;
- To assist in a fast decision making procedure in order to implement within the shortest time any decision taken by concerned parties.

The reporting system will be based on the following (4) types of reports:

- Monthly report,
- Quarterly report,
- Semi-annual report,
- Completion report.

From EDL to World Bank, one annual E&S report is needed. Other reports are up to EDL. Perhaps semi-annual report is adequate.

4.4.1 Monthly Reporting

At the end of each month, the PO/EDL supervisor will analyze and prepare monthly report, concerning the implementation of the ESMP and ECoP. The monthly report will include:

(i) an account of site inspection with of construction contractor's mitigation activities at construction site based on the items addressed in the ESMP;

(ii) the results of environmental and community monitoring, including any significant project impacts detected and an outline of management response;

(iii) Significant environmental and social issues encountered and an outline of management response.

4.4.2 Quarterly Reporting

At the end of every 3 months, after a joint monitoring and evaluation team between the EST of PO/EDL and PEMC; the PO/EDL supervisor will analyze and prepare monthly report, concerning the implementation of the ESMP and ECoP of the past three months. The quarterly report will include:

(i) progress and success of the site management and monitoring plan,

(ii) the results of environmental and social monitoring, including any significant project impacts detected and an outline of management response during six months period,

(iii) possibility of the adjustment to the ESMP if there is any requirement with the aims to make the ESMP more effective,

(iv) Significant environmental and social issues encountered and an outline of management response.

The quarterly report will be copied to EDL Managing Director, all PEMC members and concerned parties.

4.4.3 Semi-Annual Reporting

At the end of every six months, after a joint monitoring and evaluation team between the EST of PO/EDL and PEMC; the PO/EDL supervisor will analyze and prepare semi-annual report, concerning the implementation of the ESMP and ECoP of the past six months. The semi-annual report will include:

(i) Progress and success of the site management and monitoring plan during the period;
(ii) Results of environmental and social monitoring, including any significant project impacts detected and an outline of management response during six months period;
(iii) Possibility of the adjustment to the ESMP if there is any requirement with the aims to make the ESMP and ECoP more effective;
(iv) Significant environmental and social issues encountered and an outline of management response during the period.

The semi-annual report will be copied to EDL Managing Director, all PEMC members, the World Bank and concerned parties.

4.4.4 Completion Reporting

At the end of project construction phase, a joint monitoring and evaluation team comprises of the EDL's EST, PEMC will undertake a Project completion report. The Project completion report will include:

a) Result from all monitoring activities during the project construction phase compared with relevant guidelines;
b) Explanation of any breach of compliance requirements, including the cause of the breach, and the corresponding corrective measures planned or underway to prevent future occurrences;
c) A record and analysis of all significant environmental and social incidents;
d) A review of effectiveness of the ESMP, ECoP and recommended improvements to ESMP, ECoP.

The Project completion report will be copied to EDL Managing Director, all PEMC members, the World Bank and concerned parties.

IV.5 BUDGET SUPPORT FOR ESMP PLAN

To implement this ESMP plan, the budget support is required and will be considered in 5 categories:

1. Administration, tools (monitoring forms and check lists, etc...), equipment and transport needs,
2. Implementation and monitoring of environmental and social management plan,
3. Support for PEMC activities,
4. Capacity building support programme to PO/EDL, EDL-Vientiane Capital and Xaythany District Branches and District authorities in monitoring of environmental and social impact management,
5. Capacity building on environmental and safeguards (solid waste management, fuel oil and other hazardous chemical wastes including PCBs based transformer) and hazardous materials) support to PO/EDL,

The ESMP schedule and budget estimated are summarized in the Table below:

Table 4-4: ESMP Schedule and Budget Estimated for PGI Project

No	Items	Construction and Installation Phase						Commis-sioning	Operation and Maintenance Phase				Budget Estimated (Lao Kip)	Budget Estimated (USD)	Responsibility Agencies
		Year 1				Year 2			Year 2		Year 3				
		Q1	Q2	Q3	Q4	Q5	Q6		Q7	Q8	Q9	Q10			
I	**Monitoring during Construction Phase**												**68,500,000**	**8,478**	PO/EDL, PEMC
1	Monthly Monitoring (5 members and gasoline, 3days, 18 times)												18,900,000	2,339.11	PO/EDL
2	Quarterly Monitoring (5 members and gasoline, 3days, 6 times)												6,300,000	779.70	PO/EDL
3	Semi-Annual Monitoring (15 members and gasoline, 3days, 3 times)												21,650,000	2,679.46	PO/EDL, PEMC
4	Completion Monitoring (15 members and gasoline, 3days, 3 times)												21,650,000	2,679.46	PO/EDL, PEMC
II	**Monitoring During Operation Phase**												**4,200,000**	**519.80**	EDL-Vientiane Branch
5	Quarterly Monitoring												4,200,000	519.80	EDL-Vientiane
III	**Support for District PEMC Activities**												**44,305,000**	**5,483**	PO/EDL, PEMC
6	Monitoring and Evaluation												9,800,000	1,212.87	PO/EDL, PEMC
7	District PEMC Semi-Annual Meeting												4,910,000	607.67	PO/EDL, PEMC
8	Support of District PEMC Meetings												29,595,000	3,662.75	PO/EDL, PEMC
IV	**Activities**												**44,545,000**	**5,513**	PO/EDL, PEMC
9	Monitoring and Evaluation												9,800,000	1,212.87	PO/EDL, PEMC
10	Vientiane Capital PEMC Semi-Annual Meeting												5,150,000	637.38	PO/EDL, PEMC
11	Support of Vientiane PEMC Meetings												29,595,000	3,662.75	PO/EDL, PEMC
V	**Capacity Building Programme for EO/EDL and Concerned Agencies**												**202,000,000**	**25,000**	EO/EDL, Consultant
12	Capacity Building on Application of tools (monitoring forms and check lists, etc…)												40,400,000	5,000	PO/EDL
13	Capacity Building on Environmental and Social Management, Solid Waste Management												40,400,000	5,000	PO/EDL
14	Capacity Building on Chemical Wastes (including PCBs based transformer) and other Hazardous Materials												80,800,000	10,000	PO/EDL
15	Capacity Building on EHS Programme												40,400,000	5,000	PO/EDL
VI	**Total**												**363,550,000**	**44,993.81**	
16	Contingencies (5%)												18,177,500	2,249.69	
	Grand Total												***381,727,500***	***47,243.50***	

PART V. INSTITUTIONAL ARRANGEMENT

V.1 INSTITUTIONAL RESPONSIBILITY AND ARRANGEMENTS

EDL, especially the project EST, will be responsible for implementation of the proposed mitigation measures to minimize any adverse impacts which could occur during the development. EDL will be responsible for ensuring, on a day-to-day basis, that the mitigation measures and monitoring activities identified in this ESMP and the associated ECoP are implemented.

An individual safeguard monitor, with experience in monitoring and supervision of environmental aspects of electricity projects, will be contracted to provide oversight and advice to EDL. In essence, the safeguard monitor will provide an environmental audit service to ensure Environmental Management and Monitoring is effectively implemented.

EDL will be responsible for the following activities:

- Providing environmental training to Contractors involved in constructing the Project. Training will be focused on: environmental protection laws and regulations; environmental management practices for erosion control, waste disposal, health and safety, and stop work authority.
- Conducting regular monitoring of the Contractors construction activities to ensure that work is carried out in full compliance with the environmental specifications and provisions set out in the construction contract.
- Holding monthly on-site meetings with the Contractor to review work performance relative to environmental objectives of the project; identify areas of satisfaction and shortcomings in the Contractor's work and provide guidance to resolve areas where the work is deficient.

An environmental and social safeguard monitor must be experienced in environmental assessment and monitoring of power distribution/transmission lines and substation construction projects. This service will be provided by national Consultants familiar with environmental conditions in Lao PDR. The safeguard monitor will assist EDL with the following tasks:

- Ensuring that the Environmental and Social Team (EST) has been established for the project and is functioning as designed.
- Developing monitoring guidelines to be used on the project.
- Providing environmental training on best environmental management practices, monitoring techniques, data gathering methods, health and safety, etc.
- Carrying out periodic environmental audits of Project construction works (both those completed and in progress) to identify potential problems that should be corrected, and providing guidance on how problems might be resolved.
- Providing post-audit briefings to the Project Manager, EDL, PO and EST staff and the Contractor's environmental representative.

The Contractor will be required to have a full time environmental monitor on site and prepare a monthly environmental management report to PO/EDL, which identifies the work

undertaken over this period and documents the environmental protection measures that have been implemented, the problems encountered, and follow-up actions that were taken (or will be taken) to correct the problems.

V.2 ROLES AND RESPONSIBILITIES

All Contractors and EDL employees have an inherent responsibility for the protection of environmental, socio-economic and heritage values during their work. Members of the EDL Project team and those identified within each Contractor's organization have professional responsibilities for environmental management.

This section of the ESMP and the ECoP describes the roles and responsibilities of EDL, EDL's Environmental Liaison Officer(s), the Contractor, the Contractor's Environmental Monitor(s) and various Committees for implementing, inspecting, managing and reporting on the effectiveness of environmental protection and mitigation measures. This section also identifies what reports or documents must be written and the parties responsible for writing the reports.

A schematic showing the organizational lines of communication and reporting for the environmental aspects of the Project is provided in Figure 5.1 below.

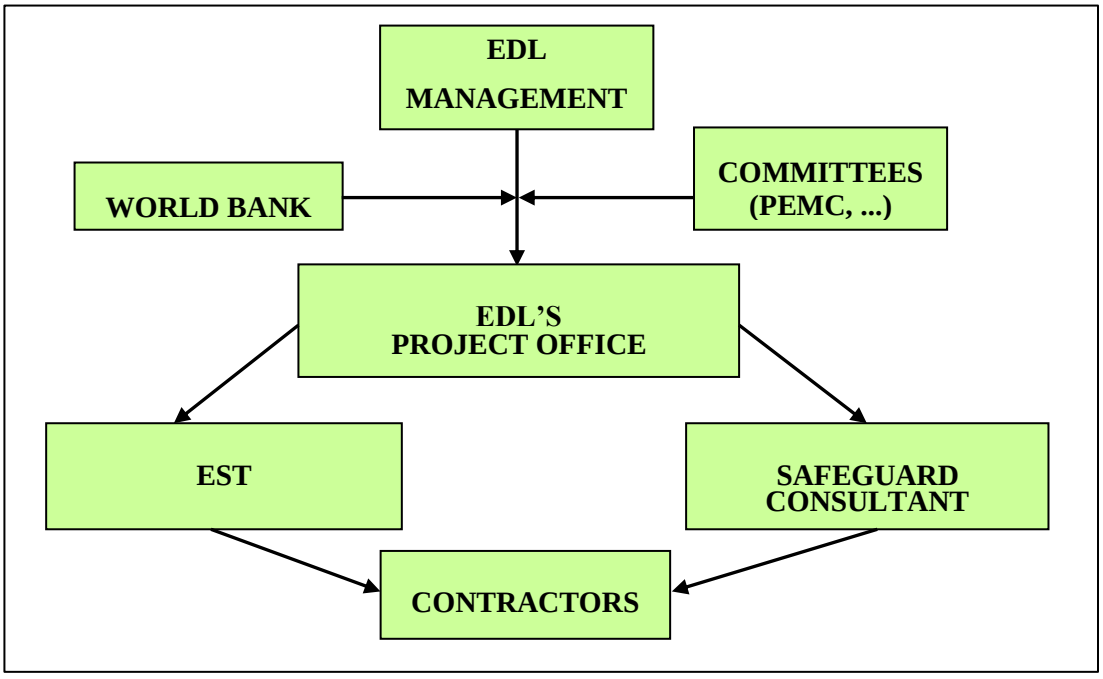


Figure 5-1: PGI Project Organization

V.3 ROLES AND RESPONSIBILITIES

The numerous committees involved in the project are identified in (Table 5-1).

Table 5-1: Project Committees Representatives

Committee Name	Members	Tasks
Vientiane Capital's Project Environmental Management Committee	1) Vice Capital Governor 2) Vientiane Capital Cabinet 3) Energy and Mines Department 4) National Resources and Environmental Department 5) EDL Vientiane Branch	1) Project Public Consultation at Vientiane Capital level 2) Monitoring of environmental and social issues

	6) Agriculture and Forestry Department 7) Public Works and Transport Department 8) Vientiane Capital Public Security	
District's Project Environmental Management Committee	1) Vice District Governor 2) District Cabinet 3) Energy and Mines Office 4) Natural Resources and Environmental Office 5) EDL Branch Office 6) Agriculture and Forestry Office 7) Public Works and Transport Office 8) District Public Security 9) Villages Heads	1) Project Public Consultation at Village and District levels 2) Monitoring of environmental and social issues
Project Compensation and Grievance Redress Committee	1) Vice District Governor 2) District Cabinet 3) Energy and Mines Office 4) Natural Resources and Environmental Office 5) EDL Branch Office 6) Agriculture and Forestry Office 7) Villages Heads	1) Settlement of complaints about compensation payments (if any) or other issues 2) Determination of value of land 3) Preparation of compensation guidelines 4) Monitoring of disbursement of compensation payments

V.4 REQUIRED DOCUMENTS

Below are the documents that need to be prepared before and during project construction, the group responsible for writing them and when they should be submitted.

Table 5-2: Required Documents

5-2-1 Documents Required from EDL	
Document Names	**Submission Period**
Due Diligence Environmental and Social Report which includes at least the followings: • Site Visit Observation • Environmental Due Diligence • Social Due Diligence	March 2015
Environmental and Social Management Plan (ESMP) which includes at least the followings: • Environmental and Social Impact Matrix • Environmental and social Management Plan • Environmental and social Monitoring Plan • PEMC Monitoring and Evaluation Plan	March 2015
Environmental Code of Practices (ECoP) which includes at least the followings: • Environmental and Social Rules of Practices • Disposal of Construction Waste • Disposal of Transformer and other Electrical Wastes Occupation Health and Safety	March 2015
Healthy, Safety and Security Plan	Before project construction begins (prepared jointly with Contractor)
Monthly Field Monitoring Report to the PO/EDL Manager concerning Environmental Monitoring	Monthly during construction Phase

Quarterly Field Monitoring Report to the EDL Manager, PEMC, WB and concerned Parties	Quarterly during construction Phase
Semi-Annual Monitoring Report to the EDL Manager, PEMC Committee, WB and concerned Parties	Every six months during construction Phase
ECoP Review Report for EST/PO Office	Quarterly during construction Phase
ECoP Effectiveness Review Report for EDL Manager, PEMC, WB and concerned Parties	Every six months during Construction Phase
5-2-2 Documents Required from Contractor	
Document Names	**Submission Period**
Environmental, Health, Safety and Security Plan (EHSS Plan) as defined in the ESMP and ECoP	With Bid
Environmental Incident Report (EIR)	Construction Phase when there is and Environmental incident.
Workers' Health Safety and Security Plan	Construction Phase
Fire Emergency Action Plan	Construction Phase (prepared jointly with EDL)
The Environmental Pre-Work Orientation Record (EPOR)	Construction Phase
Hazardous Waste Materials Disposal log	Construction Phase
Spill Reporting Matrix	Construction Phase
Emergency Contact List	Construction Phase
Clearing Prescriptions	Construction Phase
Monthly Environmental and Monitoring Report	Construction Phase

V.5 EDL

EDL will be responsible for ensuring that the overall project is implemented in accordance with the conditions of the World Bank loan agreement including World Bank safeguards, and guidelines and GoL environmental regulations. The following sections identify the responsible personnel and outline their roles.

V.6 ENVIRONMENTAL AND SOCIAL TEAM (EST)

The EST will be responsible for ensuring, on a day-to-day basis, that the Project Environmental and Social Management Plan, the RPF and the Construction ECoP are properly implemented. This includes the following activities:

- Ensuring that:
  - environmental clearance or approval is secured from PO/EDL prior to site works,
  - bidding documents include the ECoP as guidance for preparation and implementation of the EHSS by contractors,
  - Project ESMP, ECoP and EHSS implementation are monitored and the results shall be reported regularly

- Providing environmental training to contractors involved in constructing the Project. Topics include environmental protection laws and regulations, environmental best management practices for fuel handling and spill clean-up measures, waste disposal, health and safety, and stop work authority.

- Carrying out regular monitoring of the contractor's construction activities to ensure that work is carried out in full compliance with the ESMP, ECoP and EHSS and provisions set out in the construction contracts.

- Holding monthly on-site meetings with the Contractors to review work performance relative to mitigation of environmental and social impacts; identify areas of satisfaction and shortcomings in the Contractor's work and provide guidance to resolve related issues.

V.7 ENVIRONMENTAL AND SOCIAL SAFEGUARDS CONSULTANT

An individual consultant required to assist EDL to fulfill the above E&S policy requirements as well as the World Bank Group safeguard policies applicable to the proposed project investments. The detailed tasks include:

a. Carry out environmental and social (E&S) screening and diligence in the project target area to identify potential E&S impact that can result from the project implementation and propose feasible mitigation measures. The safeguard screening and due diligence should be undertaken in an inclusive and gender sensitive manner, including the analysis of presence or not of ethnic minorities in the project area;
b. Prepare environmental and social management plan (ESMP) including environmental codes of practice (ECoP) to be applied by contractors and supervised by EDL during works;
c. Carry out free, prior and informed consultation to establish community broad support for the project, specifically the consultant will:
    i. Design and organize the community consultation in randomly selected communities of the project,
    ii. Employ participatory approaches to promote equal participation by all groups of effected people and beneficiaries in the Environmental and social consultation,
    iii. Based on the outcome from the public consultation, assist EDL to update the existing ESMP or associated safeguard document as deemed necessary,
    iv. Administer safeguard compliance on behalf of EDL and assist EDL to prepare Environmental and social implementation status report during project implementation.

V.8 CONTRACTOR

The Contractor shall have overall responsibility for ensuring that the work adheres to GoL guidelines and standards, WB safeguards, this ESMP and the ECoP. Each Contractor prior to commencing work will undertake the following:

- Develop site- and/or activity-specific EHSS consistent with the requirements established in the ECoP and include these in the bid document,
- Identify qualified specialists to undertake pre-construction surveys as specified in the ECoP and include their resumes in the bid documents,
- Develop an Access Plan for the Project which minimizes the environmental impacts of access required for clearing the transmission line corridor based on the preliminary line design,
- Develop Clearing Prescriptions for the Project based on the preliminary line design minimizes environmental impacts,

- Identify qualified Environmental Monitors to evaluate and report on compliance of the Contractor's work procedures and practices with the environmental requirements established by the GoL guidelines and standards WB safeguards and the ECoP. Include their resumes in the bid documents,
- Verify that field crews and subcontractors are aware of the environmental requirements of the work, and are trained and competent to implement them.

V.9 PROJECT ENVIRONMENTAL MANAGEMENT COMMITTEE (PEMC)

The Project Environmental Management Committee (PEMC) is required for project development soon after the commencement of implementation which will include environmental and social responsibilities. The PEMC consist of members who are representatives from the different authorities concerned such as Vientiane Capital Departments and District Offices (e.g. Cabinet, Energy and Mines, Natural Resources and Environmental, Agriculture and Forestry, Public Works and Transport), Deputy General Manager of EDL, EDL-Vientiane and EDL-Xaythany branches, Vice Governor (concerned Capital and District) and Villages Head men (concerned villages). The Committee will have subcommittees such as Environmental management Committee, Compensation and Grievance Redress Committee.

The PO office will act as the secretariat of the PEMC and prepare all relevant project implementation policies and directions for approval by PEMC.

V.10 PROJECT GRIEVANCE REDRESS COMMITTEE (PGRC)

The grievance redress mechanism (GRM) has been agreed and established in EDL for the project. The GRM includes three levels with clear process and procedures for processing and monitoring any complaint.

Grievance Procedures:

- **Step 1** – At the village level, a householder or group of householders can be approached to the Grievance Committee through village chief and present the grievance, and then allows its consideration at the lowest level of claimant hierarchy. The issues can be resolved through discussions and mediation. If the village level cannot resolve the complaints or if the claimants are not satisfied with the decision, the next step can be used – either by the claimants or the village committees on behalf of the matters.

- **Step 2** – At the District level – an official grievance committee has to look after the issues within 15 days to resolve it to: respond the claimant grievance in terms of prior activities to be undertaken; and to ensure that the claims are reviewed within the context of the existing policy, regulations procedures and entitlement limits.

- **Step 3** – At the Provincial Court - This is the last assistance to be urgently solved by the developer's company before reaching to the court. At this level, the justice authority at the district also included to clarify for resolving such problems. Presented below is the proposed grievance redress procedure for the Project**.**

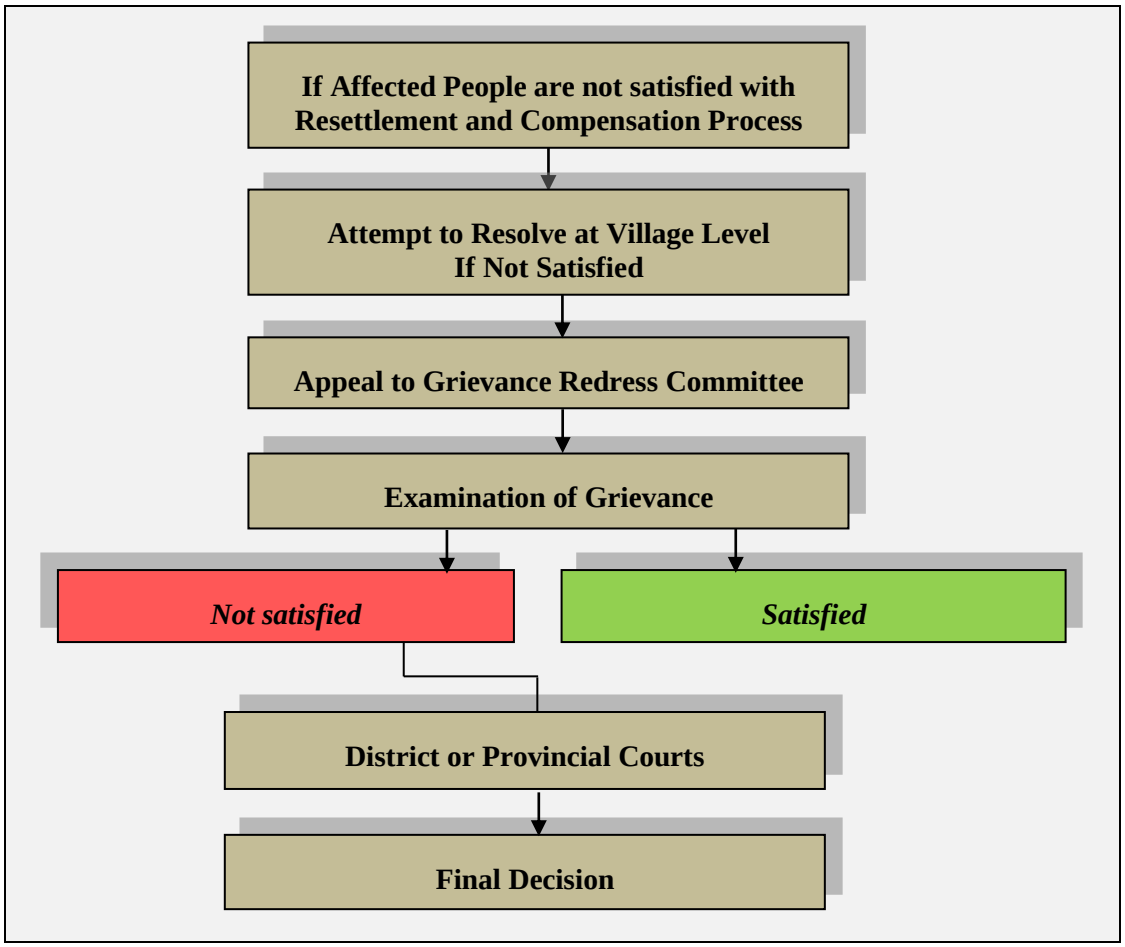


Figure 5-2: Grievance Redress Procedure for the PGI Project

The figure as below illustrates overall Project Institutional Environmental Arrangements for PGI.

The PGRC is part of the PO office and PO will assign a Grievance Redress Coordinator to follow up the relevant processing and monitoring any complaint.

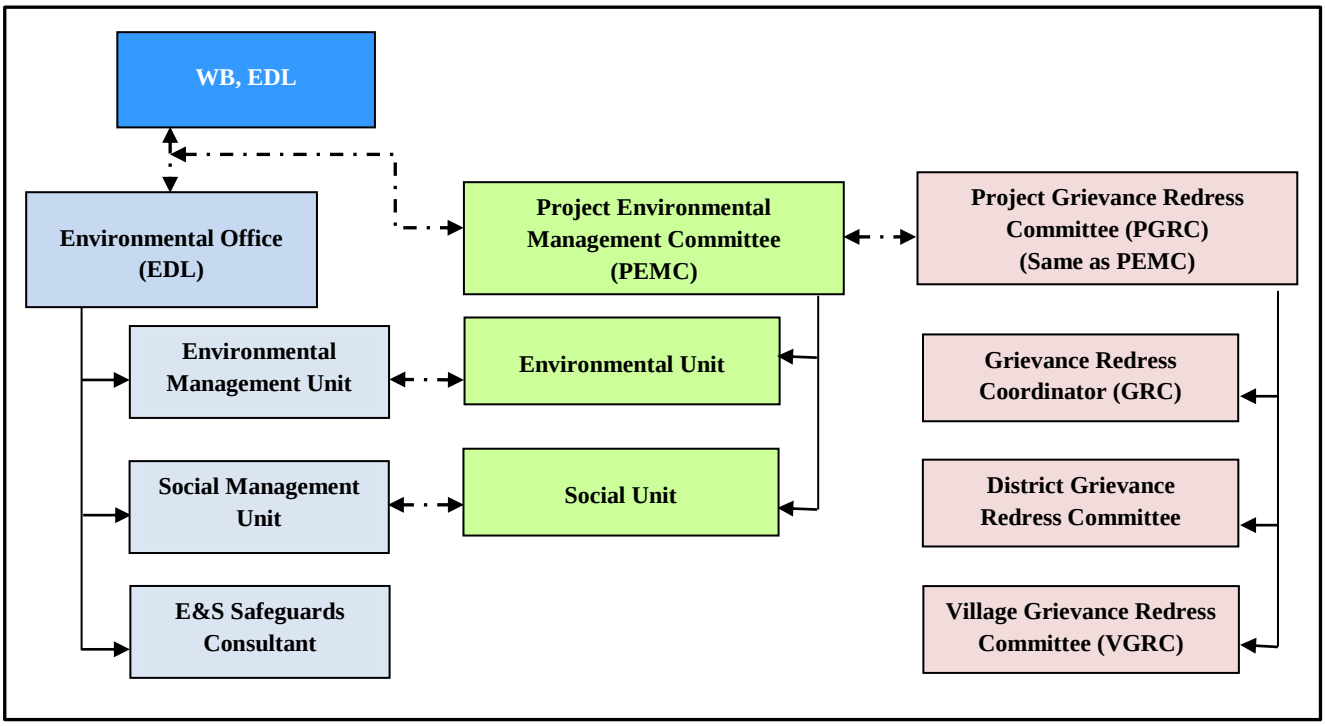


Figure 5-3: Project Institutional Environmental Arrangements for PGI Project

PART VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

VI.1 RATIONALE, OBJECTIVE & SCOPE

There are a number of national regulations and guidelines which provide guidance for participation and consultation with project-related beneficiaries and affected people. These include:

- Prime Minister's Decree on Environmental Impact Assessment in the Lao PDR (No: 112/PM dated 16 February 2010);
- Decree 192 and its Technical Guidelines on Compensation and Resettlement for Development Projects (November 2005), which in Chapter 11 sets out the minimum requirements for consultation and participation of affected communities;
- Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, Regulation 699/PMO, WREA March 2010;
- Technical Guidelines on Public Consultation For EIA Procedure, No. 707/MONRE, dated 05 February 2013;
- Decree and its Technical Guidelines on EIA Process for Development Projects, No. 8030/ MONRE, dated 17 December 2013;
- Decree and its Technical Guidelines on IEE Process for Development Projects, No. 8029/ MONRE, dated 17 December 2013;

As part of the Environmental and Social Assessment (ESA) process, a series of public consultation were conducted. The process includes: (i) surveys and interviews, (ii) focus groups discussions, and (iii) public consultation meetings with the main objective of informing project beneficiaries on the benefit of the project, advise them on the potential environmental and social impacts that the project can generate during implementation and to receive feedback on potential concerns and solutions.

The ESA process included public participation, consultation and focus group discussions to help for achievement of the public acceptance of the Project. For this project, specific consultation guidelines will be followed to harmonize environmental and social safeguard requirements developed for the project. The following are the harmonized operational framework for the consultations:

- Free prior and informed consultation with affected people and informed participation as early as possible and throughout the project implementation;
- Disclosure at local level with understandable content during public consultation;
- A grievance mechanism to receive and facilitate resolution of the affected communities' concerns and grievances.

Extensive consultations and public participations have been conducted during project preparation. Awareness about the project within the affected community is well established.

The public consultations were meant to achieve the following objectives:

(i) To make the public aware of the Project;

(ii) To ensure that the public was provided with opportunities to participate in the decision- making process and to influence decisions that would affect them;

(iii) To identify the widest range of potential issues about the Project as early as possible and in some cases, have those resolved;

(iv) To ensure that government departments were notified and consulted early in the process;

Scope of consultation will focus on main components:

- Information Collection - involving collecting information on the environmental and social baseline conditions of the study area to determine key sensitive receptors;
- Information Dissemination - involving disclosure of information about the intended activity, project objectives and their outcomes in order to enable meaningful consultation.
- Participation-defined as a voluntary process in which stakeholders and project proponents come together to share, negotiate and control the decision-making process in project design and management. It builds on the consultation component.

The purposes of consultation are to introduce the proposed project to stakeholders, inform them as it develops, and identify their views and concerns. This approach stakeholders' engagement and contribution to the project, enhances its acceptability and encourages realistic expectations as to what the project will deliver to them.

The consultation program aims to:

- Identify problems, concerns and needs
- Inform stakeholders about the project
- Obtain feedback
- Learn from local knowledge and understanding
- Evaluate alternatives
- Promote ownership and enhance social acceptability
- Avoid or resolve conflicts
- Demonstrate commitment of the project proponent in addressing issues raised during consultations

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

- Formal meetings with government authorities, institutions, individuals, specialists and any NGOs identified.
- Meetings with opinion leaders, community representatives (village committees or councils).

VI.2 PARTICIPATORY PROCESS

6.1.1 Village and District Public Consultation Meeting

Participation with GoL stakeholders will involve a series of formal meetings and discussions. The purpose of the meetings are to inform the stakeholders of the proposed project, to discuss the associated environmental and social issues as well as to gather any relevant secondary data.

The public consultation meeting with affected villages and district stakeholders will also discuss the most practical and feasible mitigation measures in the opinion of these stakeholders. Consultation at these levels is an important step in the protocol of working in the local area.

Formal Village and District Public Consultation meeting was organized on 6 March 2015 at Xaythany District with about 60 participants from villages, See detail participant list and minute in Annex 1.

Figure 6-1: Village and District Public Consultation in Xaythany District

<table>
<tr>
<td> 
Village and District Consultation Meeting, organized in Xaythany District, Vientiane Capital, 6 March 2015</td>
<td> 
World Bank Representatives in the Meeting</td>
</tr>
<tr>
<td> 
Participantsto the Village and District Public Consultation Meeting</td>
<td> 
Director of EST/EDL in the Meeting</td>
</tr>
</table>

Participants from Villages with the Questionnaire Forms

Most of Participants Agreed with the Development of PGI Project

6.1.2 Results of the Village and District Public Consultation

In respect to the PGI project, there was supported from all the villages for the Project development. In general it is recognized the project will facilitate growth and socio-economic development in Xaythany District as well as Vientiane Capital.

The survey questionnaires which provided a fundamental component of both the environment and social aspects as the basis for identifying of impacts and mitigation measures that are specific to following questions, have been distributed to 45 participants from affected villages. The table as below shows the summary of comment and feedback from those participants.

Table 6-1: Summary of Comment & Feedback of Affected Villages and People during the Village and District Public Consultation Meeting

Questionnaire Provided in the Meeting		No. of Feedback Form	
		Yes	No
Q1	Do you have any suggestion, for installing of new insulated cables, new meters and other electrical equipment? *<u>Answer:</u> Agree, but the project is to inform in advance via village chief and then the villagers; and time needed for electric cut, to avoid impact on daily livelihood, household business and economic displacement*	All 45	None
Q2	Do you have any suggestion, for changing/upgrading by new transformers with none PCBs, in order to help improve efficiency and reliability of power distribution in the selected area? *<u>Answer:</u> Agree, but the project is to inform in advance via village chief and then the villagers; and time needed for electric cut, to avoid impact on daily livelihood, household business and economic displacement*	All 45	None
Q3	The changing/adding of 8m poles by of about 50 concreted 12 to	All 45	None

	14m poles along the existing ROW, which require land donation of 30cm X 30cm or equivalent to 0.09m2 per pole in maximum, and the project, will do the detail surveys for this. How do you think, in case of project request of land donation for the purpose of additional poles in your land ownership? *Answer: Agree, due to very small area, but the additional pole location shall be adjusted to some where do not encroach main household structure. Well documentation and safety/security implementation will be carefully proceeded*		
Q4	If the project request for Voluntary Resettlement from Distribution ROW (4 metres of each side from the Central line of ROW). Do you agree about this? *Answer:* Yes, I'm agree	42	3

There are 45 village participants have submitted back the forms, in which 45 participants (or equivalent to 100% were agreed with Question1, Question2 and Question3); 42 participants (or equivalent to 93.33% agreed with Question4). Only 6.67% not agreed with Question 4.

PART VII. CONCLUSION AND RECOMMENDATION

VII.1 CONCLUSION

The project development is to help improve efficiency and reliability of power distribution in the selected load areas served by EDL. The project involves rehabilitating the electric distribution network in Xaythany District of Vientiane Capital and related activities.

The potential negative impacts on eenvironmental and social by the development project that may result from the construction or operation of the proposed PGI project can be summarized as the followings.

- Trimming/pruning of trees and bushes under 22kV distribution line/ROW, as this negative impact is considered as minor significant and permanent;

Additional negative impacts as considered as minor significant and temporary as mentioned below

- Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase;
- Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials;
- Health, safety and security;
- Land donation for additional poles (no involuntary land acquisition/ resettlement);
- Interference on local villagers activities including temporary economic displacement;
- Gender impacts, increased role of women in decision making, empowerment of women.

The Project development will also create a range of positive impacts or benefits as listed as follow.

- Improve efficiency and reliability of power distribution;
- Improve voltage drop and reduction of distribution losses;
- Introduce advance metering technology, improve metering, billing and collection system;
- Strengthening of power distribution infrastructure (upgrading of conductors, increasing transformer capacity, placement of capacitors for reactive power and voltage control, installing load break switches and recloses, installation of optical fiber communication links in the project area, etc…);
- Potential expansion of residential customers, commercial, and industrial customers.

VII.2 RECOMMENDATION

The ESMP, ECoP as well as the World Bank group safeguards policy including the General EHS Guidelines, EHS Guidelines for Power Transmission and Distribution and national/contractor EHS requirements will be followed during project implementation, including provisions for beneficiaries and worker health and safety.

REFERENCES

The Amended Electricity Law, No. 03/NA, dated 20 December 2011;

The Amended Law on Environmental Protection, No. 29/NA, dated 18 December 2012;

Law on National Heritage, No. 08/NA, dated 9 November 2005;

The Amended Forestry Law, No 06/NA, dated 24 December 2008;

The Land Law, No 04/NA, dated 21 October 2003;

The Law on National Heritage, No. 08/NA, dated 9 November 2005;

The Road Law,No.04/99/NA, dated 3 April 1999;

The Decree on the Compensation and Resettlement of Development Projects, No 192/PM, dated 7 July 2005;

The Decree on Environmental Impact Assessment, No 112/PM dated 16 February 2010;

Agreement on National Environmental Standards, No 2734/PMO.WREA dated 7 December 2009;

Decree and its Technical Guidelines on IEE Process for Development Projects, No. 8029/ MONRE, dated 17 December 2013;

Decree and its Technical Guidelines on EIA Process for Development Projects, No. 8030/ MONRE, dated 17 December 2013;

Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution, IFC and The World Bank Group, April 2007;

Environmental, Health, and Safety General Guidelines, IFC and The World Bank Group, April 2007;

Integrated Safeguards Data Sheet Concept Stage, Report No.: ISDSC1082, The World Bank Group, December 2014;

Project Information Document (PID) Concept Stage, Report No.: PIDC15574, The World Bank Group, December 2014;

Updated technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs);

Updated technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs);

Environmental Safeguards Operation Manual, Rural Electrification Project 2 (REP II), EDL, MEM, March 2009;

Environmental and Social Safeguard Framework (ESSF), Rural Electrification Project 2 (REP II), EDL, MEM, March 2009;

Rural Electrification Phase II Project (REP II) and GEF Rural Electrification Phase II Project (GEF REP II) Environmental and Social Safeguard Framework (ESSF), EDL, MEM, January 2011

EDL Technical Standard, EDL, MEM, February, 2004;

ANNEX 1:

Minutes of Village and District Public Consultation Meeting
With District Line Offices at Xaythany District

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນາຖາວອນ

ເມືອງໄຊທານີ

ເລກທີ 482 .../ມຊທນ
ໄຊທານີ, ວັນທີ 06 MAR 2015

ບົດບັນທຶກກອງປະຊຸມ

ປຶກສາຫາລືຂັ້ນບ້ານ, ຂັ້ນເມືອງກ່ຽວກັບວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມຂອງໂຄງການປັບປຸງລະບົບຕາໜ່າງ 22 ກວ ໃນນະຄອນຫຼວງ(PGI)

- ອີງຕາມຂໍ້ຕົກລົງແຕ່ງຕັ້ງຄະນະກຳມະການຊຸກຍູ້ ແລະ ປະສານງານໂຄງການ ລະບັບເລກທີ 423 / ຈມ.ຊທນ, ລົງວັນທີ 27 / 02 /2015.

ກອງປະຊຸມປຶກສາຫາລືຂັ້ນບ້ານ, ຂັ້ນເມືອງກ່ຽວກັບວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມຂອງໂຄງການປັບປຸງລະບົບຕາໜ່າງ 22 ກວ ໃນນະຄອນຫຼວງ (PGI). ໃນວັນທີ 06/03/2015 ທີ່ຫ້ອງປະຊຸມ ກົມສິ່ງເສີມກະສິກຳ ແລະ ສະຫະກອນ ກອງປະຊຸມຮັບຟັງການສະຫຼຸບລາຍງານຂໍ້ມູນທາງດ້ານເຕັກນິກຂອງໂຄງການ ແລະ ການນຳສະເໜີຂໍ້ມູນກ່ຽວກັບວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມ. ທີ່ເມືອງໄຊທານີ, ນະຄອນຫຼວງວຽງຈັນ.

ກອງປະຊຸມ ໄດ້ຈັດຂຶ້ນຢ່າງເປັນທາງການ ໃນເວລາ 8:30 ຫາ 11:35 ໂດຍເປັນປະທານ ຂອງ ທ່ານ ດຣ ຫຼ້າສາຍ ນວນທາສີ, ຮອງເຈົ້າເມືອງໆ ໄຊທານີ, ປະທານຄະນະກຳມະການປະສານງານ ແລະ ຊຸກຍູ້ ໂຄງການພ້ອມທັງບັນດາທ່ານຜູ້ຕາງໜ້າຈາກທະນາຄານໂລກ, ພະແນກຫ້ອງການທີ່ກ່ຽວຂ້ອງເມືອງ ແລະ ບ້ານທີ່ຮັບຜົນກະທົບ, ຕາງໜ້າລັດວິສາຫະກິດໄຟຟ້າລາວ ພ້ອມດວ້ຍຄະນະ, (ດັ່ງບັນຊີລາຍຊື່ລະອຽດຄັດຕິດມາພ້ອມນີ້).

ຫຼັງຈາກນັ້ນ ທ່ານ ວິງຜາສຸກ ສຸວັນນະວົງ ຫົວໜ້າສາຂາລັດວິສາຫະກິດໄຟຟ້າລາວ, ຕາງໜ້າໃຫ້ລັດວິສາຫະກິດໄຟຟ້າລາວໄດ້ກ່າວມີຄຳເຫັນພາບລວມຂອງແຜນການພັດທະນາໄຟຟ້າລາວຂອງໂຄງການ ແລະ ຢັ້ງຢືນວ່າໂຄງການນີ້ແມ່ນການປັບປຸງລະບົບຕ່າໜ່າງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງໂດຍໄດ້ກຳນົດເຂົ້າແຜນພັດທະນາດັ່ງກ່າວ.

ຕາງໜ້າໃຫ້ໂຄງການໂດຍສົມທົບກັບຫ້ອງການສິ່ງແວດລ້ອມ, ລັດວິສາຫະກິດໄຟຟ້າລາວ ໄດ້ນຳສະເໜີຂໍ້ມູນທາງດ້ານເຕັກນິກ ແລະ ຄວາມຄືບໜ້າຂອງແຜນການຈັດຕັ້ງປະຕິບັດຂອງໂຄງການເປັນຕົ້ນແມ່ນວຽກງານກ່ຽວກັບສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ.

ກອງປະຊຸມປຶກສາຫາລືຂັ້ນບ້ານ, ຂັ້ນເມືອງກ່ຽວກັບວຽກງານການຄຸ້ມຄອງສິ່ງແວດລ້ອມ-ສັງຄົມ. ເພື່ອສາມາດສືບຕໍ່ຈັດຕັ້ງປະຕິບັດວຽກງານດັ່ງກ່າວໃຫ້ແທດເໝາະກັບສະພາບຄວາມເປັນຈິງຂອງທ້ອງຖິ່ນ ແລະ ລະບຽບການຕ່າງໆ ຂອງ ສປປ ລາວ. ຜ່ານການຮັບຟັງການນຳສະເໜີບັນດາໜ້າວຽກ ແລະ ຂໍ້ມູນຜົນກະທົບໃນຂອບເຂດໂຄງການ, ຫຼັກການເຮັດວຽກຕ່າງໆ ແລະ ຂັ້ນຕອນໃນການຈັດຕັ້ງປະຕິບັດວຽກງານສິ່ງແວດລ້ອມສັງຄົມຂອງໂຄງການ .

ພາຍຫຼັງການຮັບຟັງດັ່ງກ່າວກອງປະຊຸມໄດ້ປຶກສາຫາລື, ອອກຄຳຄິດຄຳເຫັນ ແລະ ແລກປ່ຽນຄວາມຄິດເຫັນ ຢ່າງກົງໄປກົງມາ ແລະ ເຫັນດີເປັນເອກະພາບກັນບາງບັນຫາລຸ່ມນີ້:

1. ສະເໜີເຫັນດີ ແລະ ສາມາດໃນການຈັດຕັ້ງປະຕິບັດຂອງໂຄງການດັ່ງກ່າວ.
2. ສະເໜີສ້າງແຜນງານລະອຽດເພື່ອປະສານສົມທົບແຈ້ງພາກສ່ວນນາຍບ້ານ ແລະ ປະຊາຊົນທີ່ກ່ຽວຂ້ອງໃນ ການເລີ້ມຈັດຕັ້ງປະຕິບັດໃນຂອບເຂດໂຄງການ
3. ສະເໜີໃຫ້ນາຍບ້ານລົງເຜີຍແຜ່ຂໍ້ມູນໃຫ້ແກ່ປະຊົນຜູ້ທີ່ໄດ້ຮັບຜົນກະທົບຈາກໂຄງການເຂົ້າໃຈ ແລະ ປຸກລະດົມໃນການໃຫ້ປະກອບສ່ວນຮ່ວມນຳໂຄງການເປັນຕົ້ນແມ່ນການນຳໃຊ້ທີ່ດິນເພື່ອຕັ້ງຕົນເສົາໃໝ່ ໃນບາງຈຸດຂອງໂຄງການ.

ສຸດທ້າຍ ປະທານກອງປະຊຸມ ໄດ້ສະຫຼຸບຄືນເນື້ອໃນການປຶກສາຫາລື ແລະ ໄດ້ສະເໜີໃຫ້ຜູ້ພັດທະນາໂຄງ ສາມາດຈັດຕັ້ງປະຕິບັດໂຄງການຕາມແຜນການ ແລະ ຂັ້ນຕອນທີ່ໄດ້ກຳນົດໄວ້

ກອງປະຊຸມກໍ່ໄດ້ປິດລົງໃນເວລາ 11:35 ໂມງ.

ບົດບັນທຶກສະບັບນີ້ມີຜົນສັກສິດຕັ້ງແຕ່ມື້ລົງລາຍເຊັນເປັນຕົ້ນໄປ.

ປະທານກອງປະຊຸມ

ກຣ. ຫລ້າສາຍ ນວນທາສີ

ຜູ້ບັນທຶກ

ນ. ຄຳຢຸພະເພ

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ

ຫົວຂໍ້: ກອງປະຊຸມປຶກສາຂັ້ນບ້ານ ແລະ ຂັ້ນເມືອງ ເພື່ອເຜີຍແຜ່ແຜນຄຸ້ມຄອງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຂອງໂຄງການປັບປຸງຕ່າໜ່ຽງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງ (PGI).

ໃນຄັ້ງວັນທີ: 06/03/2015

ພາກສ່ວນ ລັດວິສາຫະກິດໄຟຟ້າລາວ.

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department & Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
1				55664338	
2				54998448	
3				55663712	
4				55522782	
5				55932624	
6				55609566	
7				22425771	
8				22885262	
9				98880910	
10				222 34335	
11				54998521	
12			—	99884848	

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ

ຫົວຂໍ້: ກອງປະຊຸມປຶກສາຂັ້ນບ້ານ ແລະ ຂັ້ນເມືອງ ເພື່ອເຜີຍແຜ່ແຜນຄຸ້ມຄອງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຂອງໂຄງການປັບປຸງຕ່າໜ່ຽງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງ (PGI).

ໃນຄັ້ງວັນທີ: 06/03/2015

ພາກສ່ວນ ຂັ້ນເມືອງ.

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department & Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
1					
2					
3					
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5					
6					
7					
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9					
10					
11					
12					

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ

ຫົວຂໍ້: ກອງປະຊຸມປຶກສາຂັ້ນບ້ານ ແລະ ຂັ້ນເມືອງ ເພື່ອເຜີຍແຜ່ແຜນຄຸ້ມຄອງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຂອງໂຄງການປັບປຸງຕ່າໜ່ຽງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງ (PGI).

ໃນຄັ້ງວັນທີ: 06/03/2015

ພາກສ່ວນ ບ້ານ.

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department & Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
1					
2					
3					
4					
5					
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8					
9					
10					
11					
12					

ລ/ດ IO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department&Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
13					
14				9989 9372	
15				55 86430	
16				96377267	
17					
18				59965092	
19				77723096	
20				97822284	
21				54797081.	
22				58225751	
23				- - -	
24				99202131.	
25				7734.2076.	
26				23454124	

ລ/ດ IO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department&Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ນາຈາກພາກສ່ວນ Department&Company	ຕໍາແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
41	ນ. [illegible]	[illegible]	ນາຍບ້ານ	96753923	[illegible]
42	ນ. [illegible]	——	ນາຍບ້ານ	96615337	[illegible]
43	ນ. [illegible]	——	ປ/ຊ	96995821	[illegible]
44	ທ. [illegible]	[illegible]	[illegible]	58974921.	[illegible]
45	ທ [illegible]	[illegible]	[illegible]	5577624[illegible]	[illegible]
46	ທ. [illegible]	[illegible]	[illegible]	5984 [illegible]	[illegible]
49	ນ. [illegible]	ບ. [illegible]	[illegible]	55700640	[illegible]
48	ນ. [illegible]	ບ. [illegible]	[illegible]	55988864	[illegible]
49	ນ. [illegible]	ບ. [illegible]	ແມ່ຍິງ	59551661.	[illegible]
50	ນ [illegible]	ບ [illegible]	ແມ່ຍິງ	55408648	[illegible]
51	ນ. [illegible]	ບ. [illegible]	ແມ່ຍິງ	55495640	[illegible]
52	ທ. [illegible]	ບ. [illegible]	ປ/ຊ.	77607924	[illegible]
53					
54					

ANNEX 2:

Questionnaire for Households Headed
at the Village and District Public Consultation Meeting

		Á®®³ º´ ¦¿¹ ùÇ ¦¿¹ ßÈ£ÕØÀ¤ð-					£¤¸ ñêò	6/3/2015	
		¡ Èº¡ ®¡ ¾ ¯ö ¯É¤ê¾ÇÈ ¦¤Á¸ Ç¦ É´ Ái ½¦ ñÈ£ö							
		Â£¤¡ ¾ ¯ñ ¤ì ½ß®¥¿Î ßÀ³ ºÈ À ð¤ÄÅê¾ ó - ½£º - ¹ ù¤¸ ¼¥ñ							
§º Ã Ê¿² ¾Ç:			Î ßê¶ñ ®§º ®:			À ÇÃÀ ñ¹ ö Î ßÈ£º®£ö?			
®ß¼ :			Î ú¨ :		À ð¤	ÄÅê¾ ó	Á¢¸ ¤:	- ½£º - ¹ ù¤¸ ¼¥ñ	

1. ¢ÓøÊ¾À

¥¿- ¸ - ¦ ½ ¾ßÇÞÃ- £ÕØÀ¤ð- :			êñ ®		§¾		¨ ö	
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2. £÷ì ñ¦ ½ ¼¢º ¤À¤ð- êµ¦ßÉ¤Ái ¸¦ ¾ Ä³ ºÈ¶ñÎ ¯ö¥®ñ (Ã ¢º ®Ç©À®ßì ½ 4 Á´ ® ¹ ßÈ¥¾ Ã¥¡ ¾¤¢º ¤À ßÀ³ ºÈÇö)

À¤ð- ¢º ¤êÈ , ´ ðÊ- Ã©¢º ¤À¤ð- ª¤µßÉ¤Ái ¸¦ ¾ Ä³ ºÈ¶ñÎ ¯ö¥®ñ (Ã ¢º ®Ç©À®ßì ½ 4 Á´ ® ¹ ßÈ¥¾ Ã¥¡ ¾¤¢º ¤À ßÀ³ ºÈÇö)

®Òó		À¤ð- Ã¹ ¨ È		®¾ß Ê- ê¶ñð ºº ¡ ´ ¾		¦ ú- º ¹ Â, Ã¹ É½®÷ ¨ Ó	

3. êÈ ´ ó¾ Ã§Ê½Â¹ ¨ ©Á- ¸Ã© Ã ¡ ¾ ©¿À óê÷¼ ©, Ã ¦ Ê- Â£¤ ßÈ¢º ¤À¤ð- êµ¦ßÉ¤Ái ¸¦ ¾ Ä³ ºÈÇö

»ß¼ £ß òõ ¾		»ß ¢¾ Àº ¤¢½ ¾Ç É¨		»ß¼ º¾ ¾		»ß¼ ¦É´ Á¯¤ì ®	
Â»¤¦ ¸¢¾		Â»¤À º ¨		Â»¤Á»´ /®ßº ² ñ		»ß¼ ¦É´ Á¯º ¹ Â	
¯Õ Õ ñ			º ¹ Â ² É´ êñ ½®Â© ¹ ¨ Ó				
Á´ ÈÀ ÇÃÀ ñ¹ ñ Ã ¡ ¾ ©¿À óê÷¼ ® Ã £º ®£ö?			À Ç§¾			À Ç¨ ö	

4. Â£¤¡ ¾ - ¥½ ó¾ ¯ß¦ ¾ Ä³ Ã úÇÉ¨ ¦ ¾¹ É¦ ½ ¸ - ¡ ñÄ³ , ª ©ª¤ ® ¯ ¼ º - Ä³ ºÈ¶ñ¦ ½Ã Ái ½ À ßÀ³ ºÈ¶ Ã ®¾¥©

4.1 êÈ ´ ®¸ ¾ £©À ñÁ- ¸Ã©, «ßÂ£¤¡ ¾ ´ ó¾ ¯ß¦ ¾ Ä³ Á»¤¡ ¾ê¶ó¾ ¹ É, ¯ßÏ ÓßÄ³ , Î ú¨ ª ©Ä³ ºÈ¶ñ¦ ½Ã ¡ ¸ßÀ %

	À ñÇó¿Â£¤¡ ¾ Áª ÈÉ¤ó¾ Á¥ßÀ ð- ì Êñ ßÈ - ¾ ®ß Ã¹ Ê¾ ®ß ÄÇßñ»ß Êñ ß¼ Ái ½ Äì ¨ ½Àì ¾
	ê¶É¤ª ©Ä³ À º ´ ó¾ ¡ ¼ ¼ì Êñ ß¼ Ái ½ ¹ öì ßº ö¡ ½ê©ª Ô ¾ ©¿ì ø§ó© Ái ½©¿À óê÷¼ ©£º ®£ö
	®ÒÀ ñÇó Ã Çº ö:

4.2 êÈ ´ ®¸ ¾ £©À ñÁ- ¸Ã©, «ßÂ£¤¡ ¾ ¥½ÄÉó¾ ¯ß /ö ì ½©® ©É¨ Ï Ó¯¤Ä³ ºÈ¶ó½ ¾ÇÃ¹ ¨ Ê¸ ßÀ % À º ¨ öì ½©® ¯ ¼ ©êò¾® Ái ½¦ ½Ã¨ ì ½ ¾®Ã ¡ ¾ ¥¿Î ß² ½ ¤¤Ä³ ºÈÃ ² ©ê¶Ã¹ É©ø©¤ ¸ßÀ %

	À ñÇó¿Â£¤¡ ¾ Áª ÈÉ¤ó¾ Á¥ßÀ ð- ì Êñ ßÈ - ¾ ®ß Ã¹ Ê¾ ®ß ÄÇßñ»ß Êñ ß¼ Ái ½ Äì ¨ ½Àì ¾
	ê¶É¤ª ©Ä³ À º ´ ó¾ ¡ ¼ ¼ì Êñ ß¼ Ái ½ ¹ öì ßº ö¡ ½ê©ª Ô ¾ ©¿ì ø§ó© Ái ½©¿À óê÷¼ ©£º ®£ö
	®ÒÀ ñÇó Ã Çº ö:

4.3 Â£¤¡ ¾ ¥½ÄÉó¾ ¯ßÀ ßÀ³ ºÈ¶ª ¼ 8 Á´ ® Ái ½ª ©ª ¤À ßÀ³ ºÈ¦ ø 12 ¹ ¾14 Á´ ® ¯ ½ ¾ 50 ª ¡ À¶Ã ®¾¥©, À§¤.®¸ ¾ ¥¿À ñª É¤ÄÇÉ¿À§É¤¶½ ¾ 30 §ª Á´ ® X 30 §ª Á´ ® ¹ ßÀê%® 0.09 Á´ ®´ öêê ª Ô ¶ ¡ (ª ¾ Ái ¸¦ ¾ À %ê¶Ã ¯ ®¥®ñ), À§¤Â£¤¡ ¾ ¥½ÄÉ¿¹ ù¤Ç ½ ½© À º ¡ ¿- ®¥ª ®ª ¤À ßÀ³ ºÈ À¶À ð¤¡ ÈÈ , «ßÕõ©ò ñêÀ ñ ¡ ¿´ ¼ ® ¢º ¤êÈ , êÈ ¥½ ®¸ ¾ £©À ñÁ- ¸Ã© «ßÂ£¤¡ ¾ »¼ »ßª À¹ Éó¾ ®ßò¾ ¦öê®»Ê ¡ ®Â£¤¡ ¾ ?

	À ñÇóÀ ¾¼À ñ¸ ßÀ ñÇò² ¼À ñ- É¨ Áª ÈÉ¤ó¾ ¡ ¿- ®ßÊ- ª ©À ßÀ ®Õ ß©¢¸ ¾ª Â£¤ ßº ö¢º ¤À¤ð- Ã¹ ¨ ÊÁi ½ ª É¤ÄÇßÈ©®®ñêÕÀ ñì ¾ì ñº ñ¦ º - »Ê ¡ ñ Ái ½ª É¤»® ¯ ¼ ñê¾ÇßÈ À ñ- Õ Ái ½£¸ ¾ ¯ º ©Â² £ñÃ- Ê
	¨ ñª ®¦ òÃ¥®ÂÇÉ À Çº ö:
	®ÒÀ ñÇó À Çº ö:

5. «ßÂ£¤ ¾ »¼ »ß¤Ã Éó¾ ¨ ö ß Á®®¦ ½ ñÃ¥ ºº ¡ ¥¾ ¡ ßÉ¤Ái ¸¦ ¾ (Ã ¢º ®Ç©À®ßì ½ 4 Á´ ® ¹ ßÈ¥¾ Ã¥¡ ¾¤ ¢º ¤À ßÀ³ ºÈÇö) êÈ ¥½ ®¸ ¾ £©À ñÁ- ¸Ã©?

	À ñÇó		®ÒÀ ñÇó

6. êÈ £®¸ ßÂ£¤ ¾ Ç©¡ ßÈ ¥½ ðöÇÁ- ¸Ã© ÕÊ- ì ¸´ , £¿£®À ñ Ái ½¢Ö¼À ðßÈÅ ª®Â£¤ ¾ ?

	ì ¾À§ñ Ái ½§Á¥Ê

HOUSEHOLD INTERVIEW QUESTIONNAIRE Date: *6/3/2015*

Environmental and Social Safeguards

Power Grid Improvement Project, Xaytahny District, Vientiane Capital

Name of Interviewee:		Position:		Gender of Leaded HH?			
Village:		Unit:		District:	*Xaythany*	Province:	*Vientiane Capital*

1. General Information

Number of family members:		Total		Male		Female	
Ethnic group:	Lao Loum		Lao Soung		Lao Theung		Sub-Ethnic

2. Household Characteristics Under Existing Distribution ROW (Within 4 metres of each side from the Central line of ROW)

ere any of your houshold structures, located under the existing distribution ROW (Within 4 metres of each side from the Central line of

None		Main house		Additional structure		Other, please indicate	

3. How Do You Use This Household Structure Under Existing Distribution ROW, In Terms of Making Household Business

Minimark		Retail shop		Restaurant		Garage	
Ricemill		Sawmill		Hotel/Guesthouse		Other repairing shop	
Pump station		Other, please indicate					
Which gender is the main key for household business?				Male		Female	

4. The Project Will Change the Old Distribution Line by Insulated Cable, Install New Electrical Equipment and Additional Poles

4.1 Do you have any suggestion, for installing of new insulated cables, new meters and other electrical equipment

	Agree, but the project is to inform in advance via village chief and then the villagers; and time needed for electric cut, to avoide impact on daily livelihood, household business and economic displacement	
	Not Agree	Reason:

4.2 Do you have any suggestion, for changing/upgrading by new transformers with none PCBs, in order to help improve efficiency and reliability of power distribution in the selected area

	Agree, but the project is to inform in advance via village chief and then the villagers; and time needed for electric cut, to avoid impact on daily livelihood, household business and economic displacement	
	Not Agree	Reason:

4.3 The changing/adding of 8m poles by of about 50 concreted 12-to 14m poles along the existing ROW, which require land donation of 30cm X 30cm or equivalent to 0.09m2 per pole in maximum, and the project will do the detail surveys for this. How do you think, in case of project request of land donation for the purpose of additional poles in your land ownership.

	Agree, due to very small area, but the additional pole location shall be adjusted to some where do not enchroach main household structure. Well documentation and safety/security implementation will be carefully proceeded.	
	Not yet decided	Reason:
	Not Agree	Reason:

5. If The Project Request for Voluntary Resettlement from Distribution ROW (4 metres of each side from the Central line of ROW). Do You Agree About This? ☐ **Yes, I'm agree** ☐ **No**

6. Do You Think That The Project Activities Have Benefit For Common Community? Any Suggestion and Comment?

Signature and Name

ANNEX 3:
Leaflet for PGI Project

V. ຂອບເຂດດ້ານສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ

1. ການກຳນົດແລວສາຍສົ່ງໄຟຟ້າ 22ກວ:

ການກຳນົດແລວສາຍແຈກໄຟຟ້າ 22 ກວ ສູງສຸດ ແມ່ນ 8 ແມັດ, ເຊິ່ງວ່າ ສາຍແຈກໄຟຟ້າ ສ່ວນໃຫຍ່ ໄດ້ຖືກຕິດຕັ້ງຕາມຖະໜົນທີ່ມີຢູ່ແລ້ວ.

ຕົວຢ່າງຂອງເສົາ ສຳລັບສາຍແຈກໄຟຟ້າ 22ກວ

2. ຜົນກະທົບທາງດ້ານສິ່ງແວດລ້ອມທີ່ອາດເກີດຂຶ້ນ:

ຜົນກະທົບຊົ່ວຄາວຕໍ່ສິ່ງແວດລ້ອມ ໃນຊ່ວງຂອງການດຳເນີນໂຄງການ ອາດຈະລວມມີ:

- ການຕັດຕົ້ນໄມ້ ແລະ ພຸ່ມໄມ້ທີ່ຢູ່ກ້ອງສາຍແຈກໄຟຟ້າ ຫຼື ແລວສາຍແຈກ;
- ການກຳຈັດຍັນດາອຸປະກອນໄຟຟ້າເຊັ່ນ: ສາຍໄຟຟ້າ, ໝໍ້ລັບໄຟ, ຕົວທ້ອນ ຄາປາຊີເຕ້ ແລະ ສິ່ງເສດເຫຼືອຈາກການກໍ່ສ້າງຕ່າງໆ;
- ການກຳຈັດນ້ຳມັນ ແລະ ສານເຄມີ (ລວມເຖິງສານ PCBs) ແລະ ສິ່ງເສດເຫຼືອອັນຕະລາຍອື່ນໆ;
- ດ້ານສຸຂະພາບ, ຄວາມປອດໄພ ແລະ ການປ້ອງກັນໄຟ;

3. ຜົນກະທົບທາງສັງຄົມທີ່ອາດເກີດຂຶ້ນ:

- ການເວນຄືນທີ່ດິນ (ຖ້າມີ), ການລົບກວນໂຄງສ້າງຂອງບ້ານເຮືອນ, ໂຄງລ່າງພື້ນຖານ, ແລະ ກິດຈະກຳຂອງຄົນໃນພື້ນທີ່;
- ການຕັດກະແສໄຟຟ້າ ຫຼື ການຂັດຈັງຫວະການໃຫ້ບໍລິການ ໃນດ້ານຕ່າງໆ ໃນຊ່ວງຂອງການປັບປຸງຕິດຕັ້ງ;
- ດ້ານຍິດຍາດຍິງ-ຊາຍ ທີ່ອ່ອນໄຫວ ຕໍ່ກັບຄອບຄົວທີ່ມີຜູ້ຍິງ ມີຄວາມຮັບຜິດຊອບ ເປັນຫົວໜ້າຄອບຄົວ.

3. ນະໂຍບາຍຂອງທະນາຄານໂລກໃນດ້ານການປົກປ້ອງ:

ນະໂຍບາຍດ້ານການປົກປ້ອງ	ສະຖານະ
ການປະເມີນດ້ານສິ່ງແວດລ້ອມ OP/BP 4.01	ມີ
ຊັບພະຍາກອນທຳມະຊາດ OP/BP 4.04	ບໍ່ມີ
ປ່າໄມ້ OP/BP 4.36	ບໍ່ມີ
ການຈັດການສັດຕູພືດ OP 4.09	ບໍ່ມີ
ຊັບພະຍາກອນທາງວັດທະນະທຳ OP/BP 4.11	ບໍ່ມີ
ກຸ່ມຄົນທ້ອງຖິ່ນ OP/BP 4.10	ບໍ່ມີ
ການຍົກຍ້າຍຈັດສັນແບບບໍ່ສະໝັກໃຈ OP/BP 4.12	ບໍ່ມີ
ຄວາມປອດໄພຂອງເຂື່ອນ OP/BP 4.37	ບໍ່ມີ
ໂຄງການຕ່າງໆກ່ຽວກັບການເປີດປ່ານນ້ຳສາກົນ OP/BP 7.50	ບໍ່ມີ
ໂຄງການຕ່າງໆໃນພື້ນທີ່ທີ່ມີຂໍ້ຂັດແຍ້ງ OP/BP 7.60	ບໍ່ມີ

ຂໍ້ມູນເພີ່ມເຕີມ:

♦ **ສຳນັກງານໃຫຍ່ ລັດວິສະຫະກິດໄຟຟ້າລາວ:**
ຖະໜົນມິດຕະພາບລາວ-ໄທ, P.O BOX 309,
ບ້ານຕົ້ງກາງ, ເມືອງສີສັດຕະນາກ,
ນະຄອນຫຼວງວຽງຈັນ, ສປປ ລາວ.
ໂທ (+856-21) 451 537, 451 519
ແຟັກ: (+856-21) 416 318, 263 794
ອີເມວ: edlmdo@edl.com.la
ເວັບໄຊ: http://www.edl.com.la

♦ **ລັດວິສະຫະກິດໄຟຟ້າລາວ - ຝ່າຍປະຕິບັດການໄຟຟ້ານະຄອນຫຼວງວຽງຈັນ :**
ຖະໜົນສານແສນໄທ, P.O Box 309,
ບ້ານສີສະຫວາດ, ເມືອງຈັນທະບູລີ,
ນະຄອນຫຼວງວຽງຈັນ, ສປປ ລາວ
Tel: (+856-21) 212 800-9
Fax: (+856-21) 212 807

♦ **ລັດວິສະຫະກິດໄຟຟ້າລາວ - ສາຂາເມືອງໄຊທານີ :**
ຖະໜົນເລກທີ 10, P.O Box 309,
ບ້ານໄຊສະຫວ່າງ, ເມືອງໄຊທານີ,
ນະຄອນຫຼວງວຽງຈັນ, ສປປລາວ
Tel: (+856-21) 732 000
Fax: (+856-21) 732 249

♦ **ທະນາຄານໂລກ:**
ປະຕູໄຊ, ຖະໜົນຊຸ
ນະຄອນຫຼວງວຽງຈັນ, ສປປ ລາວ
ໂທ: (+856-21) 266 200
ອີເມວ: worldbanklaos@worldbank.org
ເວັບໄຊ: http://www.worldbank.org

ໂຄງການປັບປຸງ ລະບົບຈຳໜ່າຍໄຟຟ້າ

POWER GRID IMPROVEMENT PROJECT

I. ຄວາມເປັນມາ

ປະຈຸບັນ ລະບົບຈຳໜ່າຍໄຟຟ້າ ກຳລັງປະເຊີນໜ້າກັບຄວາມທ້າທາຍໃໝ່ໆ ເພີ່ມຂຶ້ນ ເນື່ອງຈາກຄວາມຕ້ອງການນຳໃຊ້ໄຟຟ້າເພີ່ມຂຶ້ນຢ່າງວ່ອງໄວ. ໃນນັ້ນ, ສິ່ງທ້າທາຍຫຼັກ ກໍຄືພະລັງງານຕົກເອ່ຍມີຄ່າສູງຢ່າງຕໍ່ເນື່ອງ (ສະເລ່ຍ ປະມານ 16 ເປີເຊັນ ໃນປີ 2012, ໃນບາງສາຂາໄຟຟ້າ ແມ່ນຫຼາຍກວ່າ 20 ເປີເຊັນ) ການຈຳໜ່າຍກະແສໄຟຟ້າ ທີ່ຕ່ຳກວ່າມາດຕະຖານ, ລວມເຖິງ ຄວາມສະເຖຍລະພາບ ຂອງການສະໜອງໄຟຟ້າຕ່ຳ ອັນເນື່ອງມາຈາກການ ເພີ່ມຂຶ້ນ ຂອງກຳລັງໄຟຟ້າເກີນກຳນົດ ຂອງລະບົບຈຳໜ່າຍ ໂດຍສະເພາະ ໃນບັນດາເຂດເມືອງ ໃຫຍ່ເຊັ່ນ: ນະຄອນຫຼວງວຽງຈັນ, ສະຫວັນນະເຂດ, ຫ່າແຂກ ແລະ ປາກເຊ. ດ້ວຍຄວາມເອົາໃຈໃສ ຕໍ່ກັບບັນດາສິ່ງທ້າທາຍ ດັ່ງກ່າວ, ຈຶ່ງໄດ້ມີການສະເໜີ ໂຄງການປັບປຸງລະບົບຈຳໜ່າຍໄຟຟ້ານີ້ຂຶ້ນ, ໂດຍການຊ່ວຍເຫຼືອຈາກທະນາຄານໂລກ ໃນການໃຫ້ຫຶນກູ້ຢືມ ເພື່ອການ ຈັດຕັ້ງປະຕິບັດໂຄງການ ແລະ ເພື່ອຊ່ວຍສົ່ງເສີມ ການພັດທະນາດ້ານພະລັງ ງານແຜ່ຍຍືນຍົງ ໃນ ສປປ ລາວ.

II. ຈຸດປະສົງຂອງໂຄງການ

ຈຸດປະສົງຂອງໂຄງການພັດທະນາ ແມ່ນເພື່ອຊ່ວຍຍົກລະດັບປະສິດທິພາບ ແລະ ຄວາມສະເຖຍລະພາບໃນການຈ່າຍພະລັງງານໄຟຟ້າ ໃນຂອບເຂດ ຂອງສາຂາ ໄຟຟ້າເມືອງໄຊທານີ ໂດຍການໃຫ້ບໍລິການ ຈາກລັດວິສະຫະກິດໄຟຟ້າລາວ.

⇒ ໝໍ້ນັບໄຟອັດສະລິຍະ ແລະ ການຫຼຸດຜ່ອນພະລັງງານໄຟຟ້າຕົກເຮ່ຍ: ການນຳໃຊ້ເທັກໂນໂລຊີວັດແທກຂັ້ນສູງໃນພື້ນທີ່ໂຄງການ ຈະຊ່ວຍຫຼຸດຜ່ອນພະລັງງານໄຟຟ້າຕົກເຮ່ຍ ແລະ ຍົກລະດັບຂອງໝໍ້ນັບໄຟ, ການອອກໃບເກັບເງິນ ແລະ ການຈັດຍັບຫົກ.

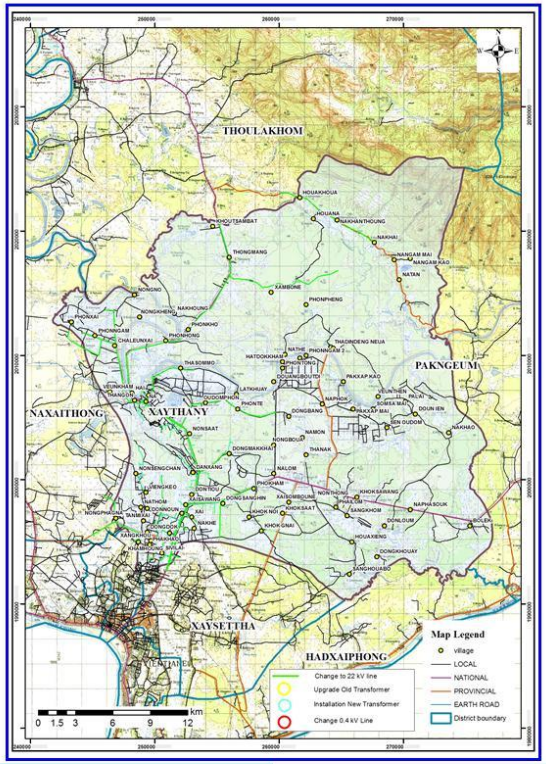
⇒ ຍົກລະດັບຄວາມສະເຖຍລະພາບຂອງການສະໜອງໄຟຟ້າ ແລະ ຫຼຸດຜ່ອນພະລັງງານໄຟຟ້າຕົກເຮ່ຍ ບາງສ່ວນຈາກລະບົບຈຳໜ່າຍ ໂດຍການເພີ່ມທະວີການກໍ່ສ້າງພື້ນຖານໂຄງລ່າງ ເພື່ອຮອງຮັບການສະໜອງພະລັງງານໄຟຟ້າ. ການປັບປຸງສາຍໄຟຟ້າຕາມແລວສາຍໄຟຟ້າປະມານ 366 ກມ ໃຫ້ສາມາດ ຮອງຮັບກັບການເພີ່ມຂຶ້ນຂອງການຊົມໃຊ້. ໃນນັ້ນສາຍແຈກແຮງກາງ 22 ກວ ມີ 127 ກມ.

⇒ ລະບົບການຈັດການຂໍ້ມູນ: **(i)** ສະໜອງ ແລະ ຕິດຕັ້ງລະບົບຕິດຕໍ່ສື່ສານ ຜ່ານສາຍໃຍແກ້ວໃນພື້ນທີ່ໂຄງການ; **(ii)** ຂະຫຍາຍລະບົບຂໍ້ມູນຂ່າວສານ ດ້ານແຜນທີ່ພູມສາດ (GIS) ເພື່ອຊ່ວຍໃນການດຳເນີນການສະໜອງພະ ລັງງານໄຟຟ້າ ແລະ ການບຳລຸງຮັກສາ; ແລະ **(iii)** ສະໜອງ ແລະ ຕິດຕັ້ງ ລະບົບການຈັດການຂໍ້ມູນຂ່າວສານດ້ານການເງິນ (FMIS).

⇒ ເສີມສ້າງຄວາມສາມາດຂອງສະຖາບັນສູນຝຶກອົບຮົມ ແລະ ການຊ່ວຍ ເຫຼືອດ້ານວິຊາການ.

III. ພື້ນທີ່ຂອບເຂດຂອງໂຄງການ

ຂອບເຂດທາງພູມສາດຂອງໂຄງການ ແມ່ນຈຳກັດໃນເຂດຕົວເມືອງ ແລະ ເຂດຊານ ເມືອງ ໃນນະຄອນຫຼວງວຽງຈັນ. ໂດຍສະເພາະແມ່ນ ເຂດເມືອງໄຊທານີ ເຊິ່ງຫ່າງຈາກ ໃຈກາງນະຄອນຫຼວງ ໄປທາງເໜືອປະມານ 10 ກມ, ເນື່ອງຈາກພະລັງງານໄຟຟ້າຕົກ ເຮ່ຍໃນພື້ນທີ່ດັ່ງກ່າວ ປະຈຸບັນແມ່ນເກືອບ 25 ເປີເຊັນ. ສະເພາະຂອບເຂດນະຄອນ ຫລວງວຽງຈັນ ພະລັງງານໄຟຟ້າທີ່ນຳໃຊ້ແມ່ນຢູ່ທີ່ປະມານ 40 ເປີເຊັນ ຂອງຄວາມ ຕ້ອງການນຳໃຊ້ໄຟຟ້າທົ່ວປະເທດ. ເມືອງໄຊທານີ ປະກອບດ້ວຍ ລູກຄ້າທົ່ວໄປທີ່ມີ ລາຍໄດ້ໜ້ອຍ ແລະ ຫຼາຍ, ລູກຄ້າທີ່ປະກອບທຸລະກິດຄ້າຂາຍ ແລະ ອຸດສະຫະກຳ. ເຊິ່ງປະຈຸບັນມີລູກຄ້າ ປະເພດທີ່ຢູ່ອາໄສປະມານ 46,000 ຄົວເຮືອນ ແລະ ລູກຄ້າ ທີ່ບໍ່ແມ່ນ ປະເພດທີ່ຢູ່ອາໄສ ອີກ 1,100 ລູກຄ້າ.



IV. ຂອບເຂດທາງດ້ານເຕັກນິກ

1. ການຫຼຸດຜ່ອນພະລັງງານໄຟຟ້າຕົກເຮ່ຍໃນທາງເຕັກນິກ ສາຍໄຟຟ້າແຮງຕ່ຳ (LV 0.4 ກວ) ແລະ ສາຍໄຟຟ້າແຮງກາງ (MV 22 ກວ):
   - ປັບປຸງປ່ຽນສາຍໄຟຟ້າແຮງຕ່ຳ ແລະ ແຮງກາງ: 239 ກມ ຕາຂ່າຍແຮງຕ່ຳ ແລະ 127 ກມ ຕາຂ່າຍແຮງກາງ;
   - ຍົກກຳລັງ ແລະ ເພີ່ມໝໍ້ແປງໄຟຟ້າ ແຮງກາງ: 150 ໜ່ວຍ;
   - ຕິດຕັ້ງຕົວທ້ອນ ຄາປາຊິເຕ້ ຂອງລະບົບໄຟຟ້າແຮງກາງ ແລະ ແຮງຕ່ຳ: ລະບົບໄຟຟ້າແຮງກາງ 36 ຊຸດ ແລະ ລະບົບໄຟຟ້າແຮງຕ່ຳ 300 ຊຸດ.
2. ຫຼຸດຜ່ອນການສູນເສຍລາຍໄດ້:
   - ນຳໃຊ້ໝໍ້ນັບໄຟແບບພິເສດ ອັດສະລິຍະ (AMI) ແລະ ໝໍ້ນັບໄຟ ແບບເອເລັກໂຕຣນິກ ເພື່ອວັດແທກປະລິມານການນຳໃຊ້ໄຟຟ້າ:
     - ໝໍ້ນັບໄຟ ປະເພດທີ່ຢູ່ອາໄສ: 35,000 ໜ່ວຍ;
     - ໝໍ້ນັບໄຟ ປະເພດອັດສະລິຍະ ສຳລັບຖານລູກຄ້າທີ່ໃຫຍ່: 1,500 ໜ່ວຍ;
   - ໜ່ວຍຕັດໄຟຟ້າແບບ Recloser ແລະ Load break switch:
     - ໜ່ວຍຕັດໄຟຟ້າແບບ Recloser: 63 ໜ່ວຍ;
     - ໜ່ວຍຕັດໄຟຟ້າແບບ Load break switch: 84 ໜ່ວຍ;
3. ໂຄງລ່າງຂໍ້ມູນ ແລະ ການຕິດຕໍ່ສື່ສານ:

   ນຳໃຊ້ເຄືອຂ່າຍສາຍໃຍແກ້ວນຳແສງ ສຳລັບໝໍ້ນັບໄຟພິເສດ ອັດສະລິຍະ AMI ແລະ ການຕິດຕໍ່ສື່ສານ ລະຫວ່າງ ສູນບັນຊາລະບົບໄຟຟ້າ ແລະ ສາຂາໄຟຟ້າ ເມືອງໄຊທານີ (127 ກມ).

V. SCOPE OF ENVIRONMENTAL AND SOCIAL CONCERNED

1. Right-of-Way for 22kV Distribution Line:

Maximum requirement for the right-of-way (ROW) of 22 kV distribution lines is 8 meters, where most of the distribution lines are located along the existing roads.

Typical Poles for 22kV Distribution Line

2. Potential Environmental Impacts: Temporary environmental impacts during works may include:

- Clearing of trees and bushes under distribution line/ROW;
- Disposal of conductors, meters, capacitors and other construction debris and wastes;
- Disposal of fuel oil and other chemical wastes (including PCBs) and hazardous materials;
- Health, safety and security;

3. Potential Social Impacts:

- Land acquisition, interference on household structures, local infrastructure, and local activities;
- Disconnection of power lines and interruption of service to beneficiaries during installation works;
- Gender issues which is gender-sensitive to the household responsibilities of women

3. World Bank Safeguards Policies:

Safeguard Policies	Triggered
Environmental Assessment OP/BP 4.01	Yes
Natural Habitats OP/BP 4.04	No
Forests OP/BP 4.36	No
Pest Management OP 4.09	No
Physical Cultural Resources OP/BP 4.11	No
Indigenous Peoples OP/BP 4.10	No
Involuntary Resettlement OP/BP 4.12	No
Safety of Dams OP/BP 4.37	No
Projects on International Waterways OP/BP 7.50	No
Projects in Disputed Areas OP/BP 7.60	No

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ໂຄງການປັບປຸງ ລະບົບຈ່າຍໄຟຟ້າ
POWER GRID IMPROVEMENT PROJECT

I. BACKGROUND

The power grid is increasingly facing new challenges related to the fast growth of electricity demand. The main challenges are persistently high distribution losses (averaging about 16 percent in 2012, with some areas experiencing losses of over 20 percent) and sub-standard electricity services, including low reliability of electricity supply due to overloading of the distribution grid particularly in major load centers as Vientiane, Savannakhet, Thakhek, and Pakse. By focusing on these new challenges in the power distribution sector, the proposed Power Grid Improvement (PGI) Project will complement the Bank's on-going assistance and help support sustainable development of the power sector in Lao PDR.

II. PROJECT OBJECTIVES

The project development objective is to help improve efficiency and reliability of power distribution in the selected load areas served by EDL.

⇒ Smart metering and reduction of distribution losses: introduce advance metering technology in the project area to help reduce distribution losses and improve metering, billing and collection system.

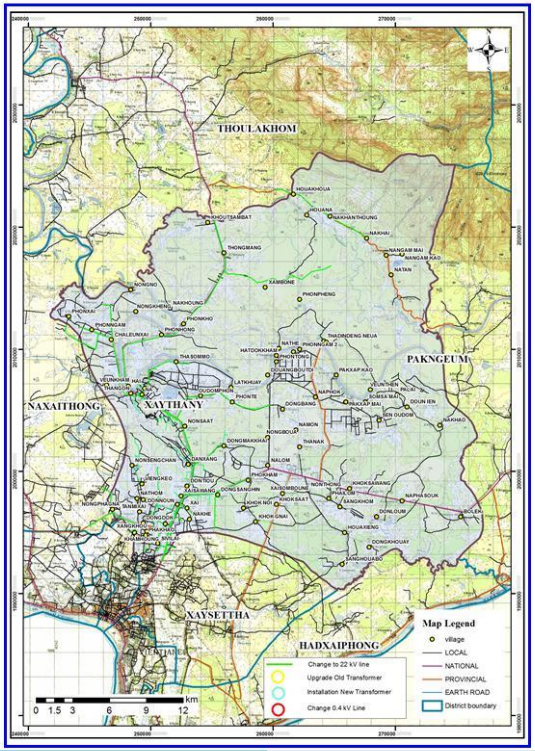
⇒ Improve reliability of power supply and reduce losses in selected parts of the distribution network through strengthening of power distribution infrastructure. The upgrading of conductors involves the rehabilitation of an estimated 366km of distribution power lines, including 127km of MV (22kV) power lines.

⇒ Management Information System: **(i)** Supply and installation of optical fiber communication links in the project area; **(ii)** Extension of Geographic Information System (GIS) to support power distribution operation and maintenance; and **(iii)** Supply and installation of an updated corporate financial management information system (FMIS).

⇒ Institutional capacity building and technical assistance (TA).

III. PROJECT AREA

The geographical scope of the project is limited to the urban and suburban area of Vientiane. Specifically, the intended project area is located in Xaythany district of Vientiane capital, about 10 kilometers north of Vientiane city center, with a distribution loss of almost 25 percent at present. The Vientiane capital area accounts for about 40 percent of the country's demand for electricity. The Xaythany district comprises low- and high-income residential customers, commercial, and industrial customers. There are currently about 46,000 residential and 1,100 non-residential customers in Xaythany.



IV. SCOPE OF TECHNIQUES

1. **Technical Loss Reduction for Low Voltage (LV 0.4kV) lines and Medium Voltage (MV 22kV) lines:**
   - Upgrading conductors of LV and MV lines: 239km of LV line and 127km MV line;
   - Upgrading and adding MV transformers: 150 units;
   - Capacitor placement: of MV and LV systems: 36 sets of MV capacitor and 300 sets of LV capacitor;
2. **Commercial Loss Reduction:**
   - Introduction of Advanced Metering Infrastructure (AMI) and Electronic Meter:
     - Residential Meter: 35,000 units,
     - Smart Meter for large customers: 15,000 units
   - Recloser & Load break switches:
     - Recloser: 63 units;
     - Load break switches: 84 units;
3. **Information and Communication Infrastructure:**

   Introduction of optical fiber network for AMI and communication link between Vientiane Capital and Xaythany district (127km).

ANNEX 4:

Power Grid Improvement Project
Resettlement Policy Framework (RPF)
and Protocols for Voluntary Land Donation (VLD)

Power Grid Improvement Project

Resettlement Policy Framework and Protocols for Voluntary Land Donation

Introduction

This document constitutes the Policy Framework for Compensation, Resettlement and

Rehabilitation of Displaced Persons (RPF) for **Power Grid Improvement Project** of which implementation will start in the second half of 2015 in the Lao People's Democratic Republic. EDL has agreed to apply World Bank environmental and social safeguard policies in the design and implementation of this project, including OP 4.12, "Involuntary Resettlement." For this project, design and scheduling considerations make it impossible to determine the extent of resettlement planning requirements at appraisal.

This is also in line with Lao government law and regulation on compensation and resettlement. The RPF establishes principles and procedures to be followed if subsequent stages of project design or implementation are to cause land acquisition or other involuntary restrictions on access to land or other resources including voluntary land donation (VLD). In such instances, the RPF requires that a Resettlement Plan (RP) is prepared for World Bank review and approval. The RP ensures that any such potential impacts are minimized, and that any persons affected by such impacts are provided ample opportunity, through provision of compensation or other forms of assistance, to improve or at least restore their incomes and living standards. Additionally, the RPF provide guidance for cases that requires voluntary land donation (P-VLD).

The Scope and Scale of Expected Impact

As part of project preparation an Environmental and Social Management Plan (ESMP) was prepared to identify the potential environmental and social impacts but at the same time to propose specific mitigation measures. It was identified that the key impact of the project will be during project implementation; specifically during project construction and operation phase.

The environmental and social impacts may include soil and surface water pollution due to disposal of fuel oils and disposal of construction debris (from earth excavation for installation of 50 electrical poles) and waste materials (from replacement of old PCB-based transformers, meters, etc.) and physical hazard to workers.

On-site assessment conducted found the following social impacts:

(1) About 30 households with structures around power poles and limit working space for EDL officers and contractors. The exact scale and history of household structures around power poles will be determined during implementation.
(2) It is expected that under this project no involuntary land acquisition, physical relocation of households, or commercial entities due to construction work will occur as all the work will be done on existing power distribution infrastructure.
(3) About 50 new power poles would be installed/replaced on private land under the existing right of way (ROW) along a nine-kilometer section of provincial public road and located in the field paddies. Impact will be minor since each pole will require only around one square foot of land. Such minor loss of land will be addressed through voluntary donations in line with the protocols provided in the Resettlement Policy Framework (RPF).
(4) Minor impacts on structures and standing crops and trees may occur during construction and maintenance. The RPF provides principles and procedures to ensure that such impacts will

be fully compensated at replacement value.

At this stage of the project design the location of the poles is not yet decided by EDL. A RPF was therefore developed which provides principles and procedures to ensure that such impacts will be fully compensated at replacement value.

Objectives of the RPF and Key Principles

Under the project, every reasonable effort will be made to avoid or minimize the need for land acquisition, and to minimize all resettlement-related adverse impacts. If land acquisition and associated adverse impacts cannot be avoided, all persons subjected to adverse impacts ("displaced persons" as defined below) are compensated at replacement cost for lost land and other assets and otherwise provided with any rehabilitation measures or other forms of assistance necessary to provide them with sufficient opportunity to improve, or at least restore, their incomes and living standards.

In order to meet the objective, social inclusive principles will govern the planning and implementation of the Project

a) Wherever possible, project designs and RPs should be conceived as development opportunities, so that displaced persons may benefit from the services and facilities created for, or by, project activities.
b) All displaced persons are entitled to compensation for lost assets, or to alternative but equivalent forms of assistance in lieu of compensation; lack of legal rights to the assets lost will not bar displaced persons from entitlement to such compensation or alternative forms of assistance.
c) Compensation rates as established in a RP refer to amounts to be paid in full to the individual or collective owner of the lost asset, without depreciation or deduction for taxes, fees or any other purpose.
d) When cultivated land is acquired, effort should be made to provide land-for-land replacement.
e) Replacement agricultural land should be of equivalent use value to the land that was lost.
f) Displaced persons should be consulted during the process of RP preparation, so that their preferences regarding possible resettlement arrangements are solicited and considered; RPs are publicly disclosed in a manner accessible to displaced persons.
g) Responsibility must be clearly established for meeting all costs associated with land acquisition and resettlement, and for ensuring that sufficient funds are available as they become needed.
h) Clear institutional arrangements must be established to ensure effective and timely implementation of all resettlement and rehabilitation measures.
i) Adequate arrangements for effective monitoring will be made on implementation of all resettlement measures.
j) Methods by which displaced persons can pursue grievances will be established, and information about grievance procedures will be provided to displaced persons

Preparing and Approving RPs and VLD

For this project, overall responsibility for preparation and implementation of any necessary RPs including VLD rests with EDL. Other agencies or jurisdictional units with direct responsibility for acquiring land or implementing resettlement measures include provincial authority. As relevant, Project Office of EDL will coordinate activities as necessary to ensure effective resettlement planning and implementation in a timely manner. (For VLD specific protocols will be followed, see annex 1)

Once it is determined that land acquisition or any associated impacts is essential to complete any project activities, and once siting criteria establish the land area to be acquired, resettlement planning should begin. The project owner will carry out, or cause to be carried out, a census survey to identify and enumerate all displaced persons, and a socioeconomic survey to determine the range and scope of adverse impacts in the affected area. The census survey must cover 100% of the persons to be displaced; the socioeconomic survey may be undertaken on a sample basis. The surveys, which may be undertaken separately or simultaneously, determine whether a full RP or an "abbreviated" RP (as defined in OP 4.12, Annex A) is necessary (if land or assets are not voluntarily donated). When the number of persons affected exceeds 200, a full RP is necessary. Where impacts on all displaced persons are relatively minor, or fewer than 200 people are affected, an abbreviated RP may be prepared.

Impacts are considered "minor" if the affected people are not physically displaced and less than 10% of their productive assets are lost.

If a RP is necessary, it will be prepared in accordance with the policy principles and planning and implementation arrangements set forth in this RPF. The RP is based on accurate baseline census and socioeconomic survey information, and establishes appropriate mitigation measures (e.g., compensation for assets, transitional assistance and economic rehabilitation assistance) as appropriate for all categories of adverse impacts. Depending on the categories of impacts, the RP specifically addresses the following:

a) description of the activity causing land acquisition;
b) range and scope of potential adverse impacts;
c) socioeconomic survey and baseline census survey information;
d) review of relevant laws and regulations relating to land acquisition and resettlement;
e) specific compensation rates (or alternative measures) for all categories of affected assets;
f) other measures, if any, necessary to provide opportunities for economic rehabilitation of displaced persons;
g) eligibility criteria for compensation and all other forms of assistance;
h) organizational arrangements for implementation;
i) consultation and disclosure arrangements;
j) resettlement implementation schedule;
k) costs and budget;
l) monitoring arrangements;
m) grievance procedures;
n) summary entitlements matrix

If an abbreviated RP is to be prepared, it also must be based on principles and planning and implementation arrangements established in this RPF. An abbreviated RP normally includes the following contents:

a) a census survey of displaced persons and valuation of assets;
b) description of compensation and other resettlement assistance to be provided;
c) eligibility criteria;
d) consultation and disclosure arrangements;
e) organizational arrangements for implementation;
f) timetable and budget;
g) monitoring arrangements;
h) grievance procedures

Any RPs prepared in accordance with this RPF must be reviewed and approved by the Bank prior to awarding of contracts for the civil works causing the displacement.

If a voluntary land donation is to be prepared, it also must be based on principles and planning and implementation arrangements established in this RPF. A VLD process should include the following contents (for specific guidance, see annex 1 Protocols for VLD):

a) Initial assessment. Determining the appropriateness of VLD in the circumstances of the project.
b) Determining of the voluntary will to donate land and/ or asset without force or under duress.
c) Conduct a verification (surveys).
d) Disclosure and Consultation.
e) Establish an informed consent.
f) Documentation.
g) Grievance Redress mechanism.

Entitlement Policy

All displaced persons are eligible for compensation and/or other forms of assistance, as relevant to the nature of impacts affecting them. In general, people eligible for compensation would include those affected in the following ways:

Land to be permanently acquired for the project: This includes a) owners with formal legal title, b) land users eligible for formal legal title under Lao PDR law, and c) those residing on, or using, state land prior to an established cut-off date, usually the date of public notification regarding the specific civil works activity that would cause displacement. Displaced persons in categories a) and b) are entitled to compensation at replacement cost. In lieu of formal compensation, displaced persons in category c) are provided with alternative forms of assistance, in value equivalent to replacement cost.

Community compensation for distribution poles: Placement of distribution poles requires use of roughly 30x30 cm. of land, making payment of compensation directly to individuals highly impractical. As is consistent with existing practice, EDL will provide, without charge, electrical hookups to one or more community facilities (e.g., school or wat) in lieu of individual-level compensation. This provision applies solely to land required for distribution poles. Without exception, full compensation at replacement cost remains necessary if land is taken for transmission towers or substations.

Loss of houses, other structures and fixed assets, including trees and standing crops: Owners of houses and other assets (regardless of whether they hold land title or building permits for structures erected prior to the cut-off date).

Losses associated with temporary impacts: This includes temporary loss of land, and transitional costs associated with moving, or disturbance to businesses during construction. Specifically, displaced persons will be entitled to the following types of compensation and rehabilitation measures:

1. Displaced persons losing agricultural land:

a. The preferred mechanism for compensation of lost agricultural land will be through provision of replacement land of equal productive capacity and satisfactory to the displaced person. If satisfactory replacement land cannot be identified, compensation at replacement cost may be provided.
b. Displaced persons will be compensated for the loss of standing crops at market price, for economic trees at net present value, and for other fixed assets (ancillary structures, wells, fences, irrigation improvements) at replacement cost.
c. Compensation will be paid for temporary use of land, at a rate tied to duration of use, and the land or other assets will be restored to prior use conditions at no cost to the owner or user.

2. Displaced persons losing structures

a. Loss of structures will be compensated to the displaced person at replacement cost.

Consultation and Disclosure

To promote active project engagement and adaptation to changed living circumstances, displaced persons should be provided with opportunities to participate in planning and implementation. At minimum, displaced persons should be consulted on preferences and concerns during the resettlement planning process. All displaced persons are to be informed regarding potential impacts and proposed mitigation measures, including compensation rates. The RP will be disclosed, in a manner and location accessible to displaced persons while in draft, and subsequently disclosed again following finalization.

Implementation Arrangements

The RP reviews organizational arrangements, to ensure that implementation procedures are clear, that responsibility is clearly designated for provision of all forms of assistance, and that adequate coordination among all agencies involved in RP implementation is assured. The RP must include a detailed implementation schedule, linking the project construction timetable to resettlement-related activities. The implementation timetable should establish that compensation (in cash or in kind) should be completed at least one month prior to initiation of civil works, and at least three months before residential structures are demolished.

Costs and Budget

Each partial and full resettlement plan will include detailed cost of compensation and other rehabilitation entitlements and relocation of displaced persons, if that be the case, with a breakdown by agricultural land, residential land, business land, houses, businesses and other assets. The cost estimates will make adequate provision for contingencies. The resettlement plans will explicitly establish sources for all funds required, and will ensure that fund flow is compatible with the timetable for payment of compensation and provision of all other assistance.

Grievance Procedure

RPs will establish means for displaced persons to bring complaints to the attention of relevant project authorities. Grievance procedures should include reasonable performance standards, e.g., time required to respond to complaints, and should be provided without charge to displaced persons. The RP should also state other avenues available to aggrieved persons if the project-related procedures fail to resolve complaints.

Monitoring

In addition to internal project monitoring arrangements, the project owner will ensure that in the case of a full RP implementation and VLD cases, this will be monitored by a qualified agency independent of project implementing agencies.

Resolving Inconsistencies

As provided in legal documentation for the project, if there is any inconsistency between the laws and regulations of Lao PDR and this policy framework, the domestic law or regulation shall be waived to the extent necessary to achieve RPF requirements.

Glossary of Definitions

"Displaced persons" refers to all of the people who, on account of the activities listed above, would have their (1) standard of living adversely affected ; or (2)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; (3) access to productive assets adversely affected, temporarily or permanently; or (4) business, occupation, work or place of residence or habitat adversely affected; and "displaced person" means any of the displaced persons.

"Replacement cost" is the method of valuation of assets which determines the amount of compensation sufficient to replace lost assets, including any necessary transaction costs. Compensation at 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 labor 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.

"Land acquisition" is the process whereby a person involuntary loses ownership, use of, or aces to, land as a result of the project. Land acquisition can lead to a range of associated impacts, including loss of residence or other fixed assets (fences, wells, tombs, or other structures or improvements that are attached to the land).

"Voluntary Land Donation" is the process whereby a person voluntary donate small area of land which could be in permanent or temporary basis as a result of the project. VLD should include a clear process for the donation, and to prepare and maintain documents that demonstrate such process; this will allow the project avoid potential negative impacts

"Rehabilitation" is the process by which displaced persons are provided sufficient opportunity to restore productivity, incomes and living standards. Compensation for assets often is not sufficient to achieve full rehabilitation.

"Cut-off Date" is the date prior to which the ownership or use establishes eligibility as displaced persons for compensation or other assistance. The cut-off date is established in the RP. It normally coincides with the date of the census of Displaced Persons, or the date of public notification regarding the specific civil works that would cause displacement. Persons coming into the project area after the cut-off date are not eligible for compensation or other assistance.

ANNEX 4-1: Protocols for Voluntary Land Donation

P-VLD describe the process whereby a person voluntary donate small area of land which could be in permanent or temporary basis as a result of the project the size of land contributed on a voluntary basis should not exceed 5% of that individual's total land holding.

For installing or replacing new poles, EDL will follow the Protocols for VLD. Proposals including voluntary contributions will not be submitted for approval where they would significantly harm incomes or living standards of individual owners or users.

During project implementation, EDL will conform a provincial and district multi-stakeholders committee ("Committee") to oversee the process and ensure that voluntary land donations process is followed and implemented. The process will include the following protocols:

10. **Official information and initial assessment. Determining the appropriateness of VLD in the circumstances of the project**. For the installation and replacement of new poles; EDL will inform the village head and villagers or land owners through official notification on where additional poles will be installed. Record and document the reasons why donation of land is appropriate for the project. EDL will take in consideration the following details for such documentation:
    - What the land will be used for;
    - How much land the project will require on both a permanent and temporary basis;
    - How much of the land will be donated;
    - What alternatives to donation exist (e.g., right of use, right of way);
    - The terms of the donation;
    - The identities of the parties who intend to donate;
    - The beneficiary of the donation; and
    - Any details that are relevant to why donation may be appropriate.

11. **Verification of voluntary donations.** The following conditions will be confirmed by the Committee including the village chief.
    - Confirmation that affected people agree to donate land or asset, based on a face to face meeting without presence of EDL.
    - No one would lose more than 5% of the total productive assets.
    - The total land holding of the affected person should be 200m2 or more.
    - No physical relocation necessary.

12. **Initial Village Consultation.** Under the village head leadership, a consultation process will be launched to invite different interest parties, including land owners to discuss and ratify the appropriateness of the voluntary basis of land donation.

13. **Transferring and formalizing the land.** EDL process for land donation includes very clear procedures that explain the process that should be followed to transfer the land, and appropriate ways to formalize the respective transfer. The process includes consideration of the legal and administrative requirements based on Lao's legal framework. The process will describe a clear and transparent decision making process.

14. **Verification process (surveys) to identify land ownership and use.** EDL will carry out specific surveys to understand the type of land rights that exist in the project area, and to identify any particular issues relating to land ownership and use. Preliminary findings

indicated (for the size of the land that will be donated about 30X30 cm for each pole) that the land is under private landownership. Moreover, more specific surveys must be conducted on each parcel of land proposed for donation to identify:

- 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;
- 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.

15. **Public consultations and disclosure.** The decision to donate must be taken on the basis of a full understanding of the project and the consequences of agreeing to donate the land. Accordingly, the parties that will be affected by the donation (the owners and users of the land) must be provided with accurate and accessible information regarding what the land will be used for, for how long, and the impact the donation will have on them and their families. It is important that prior written notification indicating the location and amount of land that is sought be provided and that its intended use for the project is 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 should be consulted about the proposed donation; for example, spouses and older children.

    There should be a clear agreement as to which party 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.

16. Establishing informed consent

EDL in coordination with the Committee will verify the *informed consent or power of choice* by the people who would donate land or asset. In particular, the following will be verified and documented in the voluntary donation report:

- What the land is going to be used for, by whom and for how long;
- That they will be deprived of the ownership or right to use the land, and what this really means;
- That they have a right to refuse to donate the land;
- Whether there are alternatives to using this land;

- What they will need to do to donate the land (e.g., execute documents, get spousal consents, pay taxes);
- The effect of the donation on their family, and what they can do if they (or their family or heirs) want the land back.
- All conditions provided in the para 2 above.

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.

17. **Proper documentation.** During the VLD process for new poles, it is important to distinguish between: (a) the agreement to donate the land; and (b) the document that carries out and evidences the legal transfer of the land. While it is important to have evidence of an intention and agreement to donate the 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)**

    EDL should:

    - Identify the appropriate documentation, including the agreement to make the 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 documenting the residual land rights;
    - Ensure that all necessary parties sign the documents, including obtaining consent from spouses and children over a certain 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 is 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.

The project implementing agency 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.

18. **Grievance redress arrangements.** The project specifies 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 project implementing agency. 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.

FORM 1: EDL - Voluntary Land Donation

Province:	
District:	
Kumban:	
Village:	
Sub-project ID:	
Name of CD:	

Name of land owner:	ID Number:		Beneficiary of the project: Y/N	
Sex:	Age:		Occupation:	
Address:				
Description of land that will be taken for the project:	Area affected:	Total landholding area:	Ratio of land affected to total land held:	Map code, if available:
Description of annual crops growing on the land now and project impact:				
	Details		Number	
– Trees that will be destroyed				
– Fruit trees				
– Trees used for other economic or household purposes				
– Mature forest trees				
– …				
Describe any other assets that will be lost or must be moved to implement the project:				
Value of donated assets:				
Will affected people need to be physically relocated?				

By signing or providing thumb-print on this form, the land user or owner agrees to contribute assets to the project. The contribution is voluntary. If the land user or owner does not want to contribute his/ her assets to the project, he or she should refuse to sign or provide thumb print, and ask for compensation instead.

Date:	Date: .....
Village Implementation Team representative's signature	Affected persons signature (both husband and wife)

ANNEX 5:
Chance Find Procedures

Chance Find Procedures

Contracts for civil works involving excavations and piling for the additional electrical poles should normally incorporate procedures for dealing with situations in which buried Physical Cultural Resources (PCR) are unexpectedly encountered. The final form of these procedures will depend upon the local regulatory environment, including any chance find procedures already incorporated in legislation dealing with antiquities or archeology.

Note: The case for which the general guidance below is provided applies where there will be an archeologist on call. In exceptional situations in which excavations are being carried out within PCR-rich areas such as a UNESCO World Heritage site, there will often be an archeologist on site to monitor the excavations and make decisions on-site. Such cases would require a modified version of these procedures, to be agreed with the cultural authorities.

Chance find procedures commonly contain the following elements:

1. PCR Definition

This section should define the types of PCR covered by the procedures. In some cases the Chance find procedure is confined to archeological finds; more commonly it covers all types of PCR. In the absence of any other definition from the local cultural authorities, the following definition could be used: "movable or immovable objects, sites, structures or groups of structures having archeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance".

2. Ownership

This paragraph should state the identity of the owner of the artifacts found. Depending on the circumstances, the owner could typically be, for example, the state, the government, a religious institution, the land owner, or could be left for later determination by the concerned authorities.

3. Recognition

This is the most difficult aspect to cover. As noted above, in PCR-sensitive areas, the procedure may require the contractor to be accompanied by a specialist. In other cases, the procedures may not specify how the contractor will recognize a PCR, and a clause may be required by the contractor disclaiming liability.

4. Procedure upon Discovery

Suspension of Work

This paragraph may state that if a PCR comes to light during the execution of the works, the contractor shall stop the works. However, it should specify whether all works should be stopped, or only the works immediately involved in the discovery, or, in some cases where the large buried structures may be expected, all works may be stopped within a specified distance (for example, 50 meters) of the discovery. This issue should be informed by a qualified archeologist.

After stopping work, the contractor must immediately report the discovery to the Resident Engineer.

The contractor may not be entitled to claim compensation for work suspension during this period.

The Resident Engineer may be entitled to suspend work and request from the contractor some excavations at the contractor's expense if he thinks that a discovery was made and not reported.

Demarcation of the Discovery Site
With the approval of the Resident Engineer, the contractor is then required to temporarily demarcate, and limit access, to the site.

Non-Suspension of Work
The procedure may empower the Resident Engineer to decide whether the PCR can be removed and for the work to continue, for example in cases where the find is one coin.

Chance Find Report

The contractor should then, at the request of the Resident Engineer, and within a specified time period, make a Chance Find Report, recording the following:

- Date and time of Discovery;
- Location of the Discovery;
- Description of the PCR, with photos if possible;
- Estimated weight and dimensions of the PCR;
- Temporary protection implemented.

The Chance Find Report should be submitted to the Resident Engineer, and other concerned parties as agreed with the cultural authority, and in accordance with national legislation.

The Resident Engineer, or other party as agreed, is required to inform the cultural authority accordingly.

ANNEX 6:

Environmental Code of Practices (ECoP)
Power Grid Improvement Project

Project's Environmental Code of Practices (ECoP)

Power Grid Improvement Project

1. Purpose of the ECoP

This Environmental Code of Practices (ECOP) has been prepared to define methods and/or procedures to be followed by consultants, designers and contractors for the avoidance or mitigation of adverse environmental effects that may arise out of the activities under Power Grid Improvement Project. This ECOP recognizes the need to additionally comply with the provisions of the EDL Environmental Policy Framework, Lao PDR Legislation and Regulation both Laws &Decrees and Government Guidelines to ensure the environmental protection from constructional, operational and maintenance impacts of the project.

2. Background

The power sector development in Lao PDR has entered a new "post-electrification" phase which brings new challenges and requires sustained improvements in the sector. The main challenges are persistently high distribution losses and sub-standard electricity services, including low reliability of electricity supply due to overloading of the distribution grid. By focusing on these new challenges in the power distribution sector, the proposed Power Grid Improvement (PGI) Project will complement the Bank's on-going assistance and help support sustainable development of the power sector in Lao PDR. The number of kilometers of power lines to be rehabilitated is about 366 (of which 127 for medium- voltage). Small-scale works linked primarily to installation of meters, capacitors, upgraded medium voltage transformers and conductors of low and medium voltage lines are linked to the proposed rehabilitation of existing medium and low voltage distribution lines and reinforcement of selected electricity networks. The planned activities within the project do not include construction of new transmission or distribution electrical lines. The physical installations of meters, power distribution equipment, communication links, computing hardware, testing equipment are expected to be done on existing power poles, power lines, and buildings owned by EDL or by electricity customers. There is the need however, to ensure the power grid improvement is planned and constructed with due consideration to a range of effects upon the environment. This ECoP was set up for the consultant/contractor of this project to ensure the environmental protection will be take into account during project implementation.

3. Authority of the ECoP

The following laws and regulations of the LAO PDR support the use of instruments like the ECoP to mitigate negative impacts of projects

Laws & Decrees:

1) *The Amended Electricity Law, No. 03/NA, dated 20 December 2011;*
2) *The Amended Law on Environmental Protection, No. 29/NA, dated 18 December 2012;*
3) *The Water and Water Resources Law, No 02-96/NA, dated 11 October 1996 and the Presidential Decree promulgating the law, No126/PDR, dated 2 November 1996;*
4) *The Amended Forestry Law, No 06/NA, dated 24 December 2008;*
5) *The Wildlife and Aquatic Law, No 07/NA, dated 24 December 2008;*
6) *The Land Law, No 04/NA, dated 21 October 2003;*
7) *The Decree on the Compensation and Resettlement of Development Projects, No 192/PM,*

dated 7 July 2005;

8) *Regulations for Implementing Decree 192/PM on Compensation and Resettlement of People Affected by Development Projects, No 24322/PMO, dated 11 November 2005;*
9) *The Decree on Environmental Impact Assessment, No 112/PM dated 16 February 2010;*
10) *Decision on the Management of Quality Standards for Drinking Water and Household Water Supply No 1371/MoH, dated 4 October 2005;*
11) *Agreement on National Environmental Standards, No 2734/PMO.WREA dated 7 December 2009;*
12) *National Policy on Heath Impact Assessment, No. 54/PM, dated 23 March 2006;*
13) *Amended Regulation on the Management of National Biodiversity Conversation Areas (NBCAs), Wildlife and Aquatic Animals (No. 0360/AF.2003, dated 8 December 2003);*
14) *Amended Labour Law (No. 06/NA, dated 27 December 2006);*
15) *Law on Urban Plans (No. 03-99/NA, dated 3 April 1999);*
16) *Law on National Heritage (No. 08/NA, dated 9 November 2005);*
17) *Road Law (No.04/99/NA, dated 3 April 1999).*

Government Guidelines:

1) *Environmental Impact Assessment Guidelines, October 2012;*
2) *Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, Regulation 699/PMO, WREA March 2010;*
3) *Technical Guidelines on Public Consultation For EIA Procedure, No. 707/MONRE, dated 05 February 2013;*
4) *Step-by-Step Environmental Guidelines for Biomass Removal from Hydropower Reservoirs in Lao PDR, SEM II and EMSP-WREA December 2012;*
5) *Environmental and Social Operational Manual for the Road Sector, Ministry of Public Works and Transport, March 2009;*
6) *National Policy on Environmental and Social Sustainability of the Hydropower Sector in Lao PDR, No. 561/IPC, dated7th June 2005;*
7) *Health Impact Assessment Guidelines, Ministry of Public Health, 2010;*
8) *Decree and its Technical Guidelines on IEE Process for Development Projects, No. 8029/ MONRE, dated 17 December 2013;*
9) *Decree and its Technical Guidelines on EIA Process for Development Projects, No. 8030/ MONRE, dated 17 December 2013.*

4. Code Format

This ECoP sets out its objective and contains a description of minimum practices that are to be applied to the planning, design, construction and operation and maintenance phases of the Power Grid Improvement Project. The ECoP also presents sample design directives for inclusion in terms of reference for planning and design and suggested specification clauses for insertion in project construction and specifications.

5. Objectives and Targets

The objectives and targets of this ECoP are to ensure that all people and communities involved in the development, project planning, design, construction and maintenance of this Power Grid Improvement Project are aware of the need for the ECoP, and implement the systems for the prevention or mitigation of adverse environmental effects of this project. The ECoP shall be followed for the planning, design and construction of all power grid improvement works.

In the case where project activities is awarded to a contractor, the contractor and its employee shall adhere to the minimum mitigation measures and guidelines set down in this ECoP to prevent and nuisance to local communities, and to minimize the impacts in construction and operation on the environment.

6. ECoP Development and Implementation

The ECoP has been developed by EDL and disclosed to public. There are three implementation mechanisms for the ECoP:

1.) Use of the ECoP is specified in the Terms of Reference for the design of works (if any). The relevant design directives stated in the ECoP should also be incorporated in the Terms of Reference;
2.) Use of the ECoP is specified in the specifications for the construction of physical works. The relevant suggested specifications stated in the ECoP should also be incorporated in the specifications.
3.) Environmental approvals are granted with the condition that works proceed under the provisions of the ECoP.

7. Monitoring of Implementation

EDL personnel and its environmental and social safeguard consultant will monitor the implementation of these ECoP. EDL will establish an Environmental and Social Team (ES Team) that will perform monitoring of the project. The ES Team will report to EDL's project director. They will ensure compliance with EDL Environmental Policy Framework and its tool and Laws and Decree of Lao PDR. The contractor hiring under this project will monitor the implementation of the ECoP through administration of the contractor contract agreement.

8. Environmental Impact

The environmental impacts that may result from the project activities of the Power Grid Improvement project are as follows:

1.) Impact to biological resources due to trimming of trees and bushes under 22 kV distribution line to avoid disruption to overhead power lines and poles;
2.) Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase and disposal of waste materials generated from maintenance activities during project operation phase;
3.) Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials;
4.) Health, safety, and security effects including injury and sickness of workers, construction hazard, road accident, electrocution, fire hazard and safety of household under transmission line;
5.) Impact to physical cultural resources (if any).

9. Mitigation Measures

As impacts from project development are unavoidable, all approaches of mitigation measures are essential and needed in order to protect the affected environmental quality. Thus, this part's structure aiming to specified necessary mitigation measures that impacts

are potentially contributed from project implementation during design, planning, construction and operation periods. The specific measures have been proposed according to each project component of PGI project.

Environmental protection measures are designed to:

- Mitigate environmental impacts,
- Achieve compliance with national environmental regulations, and World Bank operational policies,
- Provide compensation for lost environmental resources (if any), and
- Enhance environmental resources.

The matrix of impacts supplemented with management and monitoring activities and assigned responsibilities for implementing those activities, forms the core of the ECoP.

Prohibitions

The following activities are prohibited on or the right of way of the project site:

1.) Use of regulated or unapproved toxic materials, including pesticide, and PCB oil. The contractor shall inform EDL and secure permit or clearance from MoNRE and/or concerned agencies if these substances or material will be used or generated during project commencement;
2.) Disturbance to anything with architectural, cultural or historical and aesthetic value;
3.) Burning of wood waste or vegetation that was trimming to avoid disruption to overhead power lines and poles;
4.) Drinking of alcohol beverages and/or use of illegal drugs by workers and personnel;
5.) Removal of protected vegetation and species (species or communities). The contractor shall secure permit or clearance from the EDL and concerned agencies if disturbance to such vegetation and protected species is required.

The following information is intended solely as broad guidance to be used in conjunction with national regulations and EDL Environmental and Social management Plan (ESMP). Before initiation of project activities, EDL shall prepare a Construction Plan which explicitly states how EDL plans to abide by these ECoP. After agree upon with the Bank, construction activities can proceed.

9.1. Biological-Agriculture Resources in the Project Area

The contractor shall not trim/prune trees and bushes beyond predefined project boundaries. The contractor should make felled trees and/or pruned vegetation available to the owner or removed it if requested by the owner. The vegetation waste shall be disposed only to areas permitted by the concerned authorities.

The contractor shall be held responsible for any damages/inconveniences caused due to the trimming of tree or vegetation and damage shall be addressed by the contractor. As much as possible, they shall avoid stacked vegetation debris outside the right of way.

9.2. Disposal of Construction Debris and Wastes

The contractor shall recycle packaging wastes from electrical equipment and from replaced equipment that was taken out as much as possible otherwise dispose of in designated waste

disposal areas. The contractor shall remove all surplus materials and left in a clean and tidy condition after erection. The contractor shall transferred wastes that can cause adverse effects on human health and environment to Phonetong Storage facility.

9.3. Disposal of Replaced Electrical Equipment, Fuel Oil and Other Chemical Wastes (including PCBs) and Hazardous Materials

Pollution due to disposal of replaced electrical equipment, fuel oils and other chemicals related to works and disposal of waste materials from installations to be replaced, and physical hazards to workers. Special attention will be given to management of hazardous electrical waste (old transformers) including handling, transportation and final disposal of materials contaminated by Polychlorinated Biphenyls (PCBs), as well as to impacts from disconnection of power lines and interruption of service to beneficiaries during works.

The contractor shall follow the followings:

1.) Install garbage bins at construction site and make arrangement to dispose of recyclable waste such as paper, cans, tins, bottles cardboard and polythene as appropriate;

2.) Make arrangement to waste collecting points and disposed of complying with local authority's regulations;

3.) On completion of the works, left clean and tidy the site;

4.) Label hazardous materials with appropriate signage in both English and Lao;

5.) Maintain an inventory of all hazardous materials on site and update regularly;

6.) Install suitable sign boards to make people aware about potential hazard at working place;

7.) Remove all surplus material, and left in a clean and tidy condition after completion of the works;

8.) Proper management of hazardous electrical waste (oil, lubricant, old PCB transformer) including handling, transportation and final disposal of materials contaminated by PCBs, as per National regulation and appropriate standards including store retired transformers and equipment containing PCB on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked. The storage area will be at Phonetong storage facility which equipped with a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCB;

9.) Project activities may involve potential contact with PCB or PCB-contaminated machinery, training and personal protective device will be provided to workers;

10.) Provide training and appropriate personal protection equipment for contractor's employ who transport and handling PCB contaminated waste and equipment.

9.4 Health, Safety and Security

The objective of Health, Safety and Security management is to prevent nuisance, health and safety effects on the community, workers and impacts on the natural environment, particularly during project construction.

Most occupational health and safety issues during the construction, operation, maintenance, and decommissioning of electric power distribution projects include, among others,

exposure to physical hazards from use of heavy equipment and cranes; trip and fall hazards; exposure to dust and noise; falling objects; exposure to hazardous materials; and exposure to electrical hazards from the use of tools and machinery.

Occupational health and safety hazards specific to electric power transmission and distribution projects primarily include:

- Live power lines;
- Working at height;
- Electric and magnetic fields;
- Exposure to chemicals (including PCBs) and hazardous materials.

The operation of live power distribution lines may generate the following industry-specific impacts:

- Electrocution;
- Electromagnetic interference.

The WBG Environmental, Health and Safety (EHS) Guidelines for Power Transmission and Distribution will be followed during project implementation, including provisions for beneficiaries and worker health and safety. The contractor shall follow but not limit to the followings:

1.) Elaboration and enforcement of safety regulation;
2.) Install suitable sign boards to make people aware about potential hazard at working area. And place the warning barriers around the project working areas. Inform households that might have elderly people and children to be extra careful around the installation time;
3.) Provide training and appropriate personal protection equipment for contractor's employ;
4.) Maintain construction equipment in good condition;
5.) Testing structures for integrity prior to undertaking work;
6.) 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; among others;
7.) Hoisting equipment should be properly rated and maintained and hoist operators properly trained;
8.) Safety belts should be of not less than 16 millimeters (5/8inch) 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;
9.) When operating power tools at height, workers should use a second (backup) safety strap;
10.) Signs and other obstructions should be removed from poles or structures prior to undertaking work;
11.) Provide safety working space for workers when working at properties with additional structure around the power poles;
12.) Minimize transportation activities from 7:00 pm to 6:00 am;
13.) Vehicles to be maintained in good condition to minimize exhaust emissions;
14.) A speed limit of 20km/hour imposed on construction traffic through the villages;
15.) The contractor shall not use any vehicles, either on or off-road with grossly excessive exhaust or noise emissions.

16.) Share knowledge on regulations of traffic and traffic police directives among drivers;
17.) Provide appropriate driver training and careful planning of haulage routes and times to minimize risks to the local community;
18.) Implement regular inspection of the distribution line for clearing vegetation/obstructions;
19.) Install appropriate warning signs on facilities;
20.) Carry out electricity safety awareness raising in project areas. Coverage of households with men, women, elderly people;
21.) Only allowing trained and certified workers to install, maintain, or repair electrical equipment;
22.) Construction, electrical equipment installation and maintenance activities will follow EDL-ECoP and emergency response in case of fire hazard. EDL will consult with concerned agencies to avoid construction of infrastructure in the distribution line right of way in the future;
23.) Proper dissemination or inform public/communities about working schedule, interruption of services, traffic management, etc. would be required of all contractors;
24.) At least five days in advance of service disruption, the community must be advised through postings at the project site, and in affected home/businesses;
25.) Grounding conducting objects (e.g. fences or other metallic structures) installed near power lines, to prevent shock.

The contractor shall be held responsible for any damages/inconveniences caused due to the transportation of equipment to and from working area and damage shall be addressed by the contractor. The contractor shall be held responsible for safety of their workers and communities. Damage to the physical environment, workers and communities due to the project activities shall be addressed by the contractor.

9.5. Physical Cultural Resources

At the present, the potential impacts on stupas, pagodas or other cultural and historical resources were not found. The contractor shall conduct a survey to identify the location of additional poles before project commencement. In case of there are historical place or physical cultural resources along the right of way, digging for new poles will be suspended and will be reported to the Provincial Culture and Tourism Directorate for further instruction in case anything with archaeological value found. A chance find procedures was included in the ESMP.

10. Contractor's EHSS Plan

Upon awarding of the construction contract, the contractor is to prepare the site- and/or activity-specific Contractor's Environmental, Health, Safety and Security plan (EHSS plan) and submit to EDL. The contractor's EHSS plan shall follow the requirements established and in line with in the ECoP.

Table 1: Environmental Code of Practices for Power Grid Improvement Project

Issue Concerned / Potential Impacts	Mitigation Measures	Significant of Mitigation	Responsibility	Start Date	End Date
Design, Planning, and Construction Phases					
Environmental Issues					
1.) Trimming/Pruning of trees and bushes under 22kV distribution line/ROW to avoid disruption to overhead power lines and poles	- Vegetation waste shall be disposed only to areas permitted by Authorities concerned, - Ensure that vegetation is not cleared beyond predefined project boundaries. Prohibit herbicides and incineration for the ROW clearing, - Made felled trees and other cleared or pruned vegetation available to the owner (individual or village) or removed if requested by the owner, - Stacked vegetation debris from the ROW will be outside the ROW, - Burning of vegetation debris will not be permitted, - Install suitable sign boards to make people aware about potential construction hazard at construction site. And place the warning barriers around the construction/installation areas. Inform households that might have elderly people and children to be extra careful around the installation time.	Minor	Contractor	Before construction is started	After construction activities are completed
2.) Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase and disposal of waste materials generated from maintenance activities during project operation phase	- Recycle packaging wastes from electrical equipment as much as possible otherwise dispose of in designated waste disposal areas, - Remove all surplus materials and left in a clean and tidy condition after erection, - Identify disposal site at Phonetong Storage facility for wastes that can cause adverse effects on human health and environment.	Minor	Contractor	Before construction is started	After construction activities are completed
3.) Disposal of fuel oil and other chemical wastes (including PCBs	- Install garbage bins at construction site and make arrangement to dispose of recyclable waste such as paper,	Minor	Contractor	Before construction	After construction

based transformer) and hazardous materials	cans, tins, bottles cardboard and polythene as appropriate, - Make arrangement to waste collecting points and disposed of complying with local authority's regulations, - On completion of the works, left clean and tidy the site - Label hazardous materials with appropriate signage in both English and Lao, - Maintain an inventory of all hazardous materials on site and update regularly, - Install suitable sign boards to make people aware about potential construction hazard at construction site, - Remove all surplus material, and left in a clean and tidy condition after completion of the works, - Proper management of hazardous electrical waste (oil, lubricant, old PCB transformer) including handling, transportation and final disposal of materials contaminated by PCBs, as specified in ECoP including store retired transformers and equipment containing PCB on a concrete pad with curbs sufficient to contain the liquid contents of these containers should they be spilled or leaked. The storage area will be equipped with a roof to prevent precipitation from collecting in the storage area. Disposal should involve facilities capable of safely transporting and disposing of hazardous waste containing PCB, - Identify disposal site of fuel oil and other chemical wastes (including 56 units of PCBs based old transformers) at the existing maintenance shop and warehouse and storage located nearby Phonetong Substation; - Maintenance shops and other facilities, and activities may involve potential contact with PCB or PCB-contaminated machinery, training and personal protective device will be provided to technician at the maintenance workshop, - Provide training and appropriate personal protection equipment for Contractor's employ.			is started	activities are completed

4.) Health, safety and security	Injury and sickness of workers	- Elaboration and enforcement of safety regulation, - Implementation of an emergency digging/evacuation work.	Minor	Contractor	Before construction is started	After construction activities are completed
	Construction hazard	- Install suitable sign boards to make people aware about potential construction hazard at construction site, - Provide training and appropriate personal protection equipment for Contractor's employ, - Maintain construction equipment in good condition, - Testing structures for integrity prior to undertaking work, - 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; among others, - Hoisting equipment should be properly rated and maintained and hoist operators properly trained, - Safety belts should be of not less than 16 millimeters (5/8inch) 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, - When operating power tools at height, workers should use a second (backup) safety strap, - Signs and other obstructions should be removed from poles or structures prior to undertaking work.				
	Road accident	- Minimize transportation activities from 7:00 pm to 6:00 am, - Vehicles to be maintained in good condition to minimize exhaust emissions, - A speed limit of 20km/hour imposed on construction traffic through the villages; - Share knowledge on regulations of traffic and traffic police directives among drivers.				
	Electrocution	- Implement regular inspection of the distribution line for clearing vegetation/obstructions, - Install appropriate warning signs on facilities,				

		- Carry out electricity safety awareness raising in project areas. Coverage of households with men, women, elderly people. - Only allowing trained and certified workers to install, maintain, or repair electrical equipment.				
	Fire Hazard and safety of household under transmission line	- Construction, electrical equipment installation and maintenance activities will follow EDL-ECoP and emergency response in case of fire hazard. EDL will consult with concerned agencies to avoid construction of infrastructure in the distribution line right of way in the future.				
Social Issues						
5.) Land donations and land use change due to installation of new or upgraded poles (no involuntary land acquisition/ resettlement)		- Permanent structures for the upgraded 22 kV power poles will require small land donation (about 30cm x 30cm) from residential owners. For Land Donation, under this project community contributions are voluntary and frequent as standard practice of EDL. VLD Protocols will be followed during line upgrading and new poles instalment includes a planning and verification framework to ensure that any land acquisition is well-documented both in terms of its voluntary nature and the lack of any significant economic impact on villagers. Several approaches will be used to be obtain information: c) Information will be disseminated to community members on applicable rules and consultations will be conducted at key stages of the sub-project planning process, d) Check willingness for donations and provide written documentation, e) Train project staff how to conduct effective consultations during the proposed works planning process,	Minor	EDL	Before construction is started	After construction activities are completed

	f) EdL would install new supporter poles in different locations so no one would lose land or assets involuntarily or in such a scale that would create a significant and irreversible impact on the income stream of affected people. Such a change in locations to install poles is possible since the new, heavier conductors can technically be installed from among multiple potential locations along the existing alignment. g) The construction schedule would be adjusted so as to avoid any impact on standing crops.				
6.) Interference on local villagers' activities (temporary economic displacement)	- Erect danger and warning signs on every poles as well as conductors where the line is crossing a road or river, - Disconnection of power lines shall be noticed on newspaper and inform to local villagers 1 week before starting of installation works, - Disconnection of power lines and interruption of service to beneficiaries during installation works shall be allowed only on daytime (between 8.00 am to 17.00 pm).	Minor	Contractor	Before construction is started	After construction activities are completed
7.) Gender impacts, increased role of women in decision making, empowerment of women	- Disconnection of power lines shall be noticed on newspaper and inform to local villagers 1 week before starting of installation works, - Disconnection of power lines and interruption of service shall be allowed only on daytime (between 8.00 am to 17.00 pm), which is gender-sensitive to the household responsibilities of women.	Minor	Contractor	Before construction is started	After construction activities are completed
8.) Physical culture resources such stupas pagodas or other cultural and historical resources	- In case of there are historical place or physical cultural resources along the right of way, digging for new poles will be suspended; - Reported to the Provincial Culture and Tourism Directorate for further instruction in case anything with archaeological value found	Minor	Contractor	Before construction is started	After construction activities are completed

Operation Phase					
Environmental Issues					
9.) Right-of-way maintenance	- Regular maintenance of vegetation within the rights-of-way is necessary to avoid disruption to overhead power distribution lines and poles, - No herbicides used in the control of vegetation within the rights-of-way, - Tree plantation and crops with higher than 3 metres will not be allowed, - Rather, local people living along the distribution line route also will be participated under mutual contract to trim or cut vegetation along right-of-way, - Scheduling activities for right-of-way maintenance.	Minor	EDL (Xaythany Branch Office)	After construction activities are completed	During Project Life
10.) Safety maintenance of distribution power lines, meters, capacitors, transformers and other electrical equipment	- Ensuring that live-wire maintenance works are conducted by trained workers with strict adherence to specific safety and insulation standards, - Where maintenance and operation is required within minimum set back distances, specific training, safety measures, personal safety devices, and other precautions should be defined in a health and safety plan, - Scheduling for maintenance activities.	Minor	EDL (Xaythany Branch Office)	After construction activities are completed	During Project Life
Social Issues					
11.) Community health and safety	- Use of signs, dangerous warning signs, barriers, and education/public outreach to prevent public contact with potentially dangerous equipment particularly with households that have little children; - Grounding conducting objects (e.g. fences or other metallic structures) installed near power lines, to prevent shock.	Minor	EDL (Xaythany Branch Office)	After construction activities are completed	During Project Life

Table 2: ECoP's Monitoring Plan For Design, Planning and Construction Phases

Phase	Issue Concerned	What Parameter to be Monitored	Where Parameter to be Monitored	How Parameter to be Monitored	When Parameter to be Monitored	Responsible Agencies	Start Date	End Date
DESIGN PLANNING AND CONSTRUCTION PHASES	**Environmental Issues**							
	1.) Trimming/Pruning of trees and bushes under 22kV distribution line/ROW	Trimming/pruning of trees and bushes under 22kV distribution line ROW	22kV distribution line ROW	Visual observation and interview with contractor	Monthly	EO Office/EDL	Start of Construction	End of Construction
	2.) Disposal of packaging wastes from electrical equipment and replaced electrical equipment (conductors, meters, capacitors, etc.) during construction phase	Way of disposal of conductors, meters, capacitors, etc. Repair and recycle and reuse of such electrical equipment above	At construction site and warehouse nearby Phonetong substation	Visual observation and interview with warehouse manager	Monthly	EO Office/EDL	Start of Construction	End of Construction
	3.) Disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials	Way of disposal of fuel oil and other chemical wastes (including PCBs based transformer) and hazardous materials	At construction site and storage nearby Phonetong substation	Visual observation and interview with storage manager	Monthly	EO Office/EDL	Start of Construction	End of Construction
	4.) Health, safety and security	EHSS plan by contractor; Use of protection equipment and vehicles. Injury of workers and public record	At construction site	Visual observation and interview with contractor	Monthly	EO Office/EDL	Start of Construction	End of Construction
	Social Issues							

Phase	Issue Concerned	What Parameter to be Monitored	Where Parameter to be Monitored	How Parameter to be Monitored	When Parameter to be Monitored	Responsible Agencies	Start Date	End Date
	5.) Land donations and land use change due to installation of new or upgraded poles (no involuntary land acquisition/ resettlement)	Evident of land donation from residential owners, Land rehabilitation after completion of works	At construction site (additional pole location)	Visual observation and interview with contractor/ residential owners	Monthly	EO Office/EDL	Start of Construction	End of Construction
	6.) Interference on local villagers' activities (temporary economic displacement)	Temporary economic displacement by disconnecting of power lines; Villager complaints; Traffic control measures	At construction site where to be affected by disconnecting of power line	Visual observation and interview with villagers	Monthly	EO Office/EDL	Start of Construction	End of Construction
	7.) Gender impacts, increased role of women in decision making, empowerment of women	Interruption of service, temporary economic displacement to group of women headed households	Group of women headed households which to be affected by disconnecting of power line	Visual observation and interview with women headed household	Monthly	EO Office/EDL	Start of Construction	End of Construction
	8.) Physical culture resources such stupas pagodas or other cultural and historical resources	Historical place or physical cultural resources at the additional pole sitting	Additional pole sitting	Visual observation and interview with contractor/ residential owners	Monthly	EO Office/EDL	Start of Construction	End of Construction

Table 3: ECoP's Monitoring Plan For Operation Phase

Phase	Issue Concerned	What Parameter to be Monitored	Where Parameter to be Monitored	How Parameter to be Monitored	When Parameter to be Monitored	Responsible Agencies	Start Date	End Date
OPERATION PHASE	**Environmental Issues**							
	9.) Right-of-way maintenance	Pruning/trimming of trees and bushes under 22kV distribution line ROW	22kV distribution line ROW	Visual observation	As per Scheduling activities for right-of-way maintenance	EO Office/EDL	End of Construction	End of Project life
	10.) Safety maintenance of distribution power lines, meters, capacitors, transformers and other electrical equipment	Use of protection equipment and vehicles. Injury of workers and public	Placement of maintenance activities	Visual observation	As per scheduling for maintenance activities	EO Office/EDL	End of Construction	End of Project life
	Social Issues							
	11.) Community health and safety	Use of signs, dangerous warning signs, to prevent public contact with potentially dangerous equipment	At every distribution poles and replaced/added electrical equipment	Visual observation	Quarterly	EO Office/EDL	End of Construction	End of Project life

ANNEX 7:

Translated Minutes of the Public Consultations of Draft ESMP

Translated Minutes of the Meeting

Consultative Meeting at Vientiane Capital, District levels on the Environmental and Social Management Plan of 22kV Power Grid Improvement Project (PGI) in Vientiane Capital

The Consultative Meeting at Vientiane Capital, District levels on the Environmental and Social Management Plan of 22kV Power Grid Improvement Project (PGI) in Vientiane Capital. The Meeting was listened to the technical report of the project and the introduction of the environmental and social information on 03 April 2015, at the Meeting Room of Headquarters, Electricité du Laos, Vientiane Capital.

The Meeting was officially held at 8.30-11.35 a.m. under the chairmanship of Mr. Xonglao Pingnou, Head of Vientiane Capital Energy and Mines Department and Deputy Head of Electricité du Laos (EDL) Distribution Department and attended by government agencies at Provincial and District levels, EDL staff as well as representatives from the World Bank, (as a list of names attached).

After that, Mr. Yankham Duangsavanh, Deputy Head of Distribution Department, on behalf of Electricité du Laos, delivered short remarks on general situation of Lao Electricity development plan of the project and certified that this is 22 kV Power Grid Improvement Project in Vientiane Capital that was established and put into development plans.

The Meeting was listened to the presentations made by the project Technical Staff and Environmental and Social Consultant of Environmental Office, Electricité du Laos, who presented the project overview, technical information and the potential environmental and social impacts and mitigation measures such as the Environmental and Social Management Plan (ESMP).

After the presentations on the project and the procedures of implementation on the environmental and social management plans, the meeting discussed, commented, and exchanged views frankly and had the following summary:

❖ **Proposals:**

- The meeting proposed to provided more detailed technical information,
- The meeting proposed to further enhance coordination between impacted villages, impacted households, project staff, government agencies concerned particularly representatives from District Energy and Mines Departments during project implementation, to ensure adequate information sharing on the potential impacts and mitigations measures.
- For safety purposes, the meeting proposed the project to have barriers in the areas during the operation on site,
- The meeting proposed the project to consider working closely with the Safety Department at EDL on providing adequate training on safety issues and other necessary equipment before actual implementation on site,

- The meeting proposed to have protecting materials for workers and the clear safety measures for workers who operate the project work, and appoint safety team work to be present in this project,
- The meeting proposed to store the based transformer oil at safety place after changing the oil,
- The meeting proposed Electricité du Laos, branch of Xaythany District, to disseminate EDL rules/procedures for those who construct or build near power lines and to remove them from the areas,
- The meeting discussed recommendations from public consultation and pilot the Power Grid Improvement Project to further develop/improve legal framework to avoid future encroachment under right of way.

❖ After that the chairman of the meeting summarized the comments and discussion given by Vientiane Capital and District , as follows:

1) The meeting is in agreement that the mentioned project can be implemented,
2) The Chair advised that greater coordination between impacted villages, impacted households, project staff, government agencies concerned during project implementation, to ensure adequate information sharing on the potential impacts and mitigations measures,
3) The meeting proposed the project to disseminate information to the people who will be affected by the project to have a better understanding about the project,
4) The meeting proposed to have a clear mitigation measures including developing legal instruments and procedures, in close coordination with relevant agencies,
5) The meeting acknowledged the fact that the project is well-prepared in terms of mitigation guidelines and procedures. However, the meeting emphasized the need for the project to pay extra attention on following the procedures strictly during project implementation.

In conclusion, the Chairman of the meeting summarized again about the contents of the discussion and proposed the project developers to implement the project based on the work plan and procedures assigned.

The Meeting was closed at 11.35 am.

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ
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ນະຄອນຫຼວງ, ວັນທີ 03 APR 2015

ບົດບັນທຶກກອງປະຊຸມ

ປຶກສາຫາລືຂັ້ນນະຄອນຫຼວງ, ຂັ້ນເມືອງກ່ຽວກັບວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມຂອງໂຄງການປັບປຸງ ລະບົບຕາໜ່າງ 22 ກວ ໃນນະຄອນຫຼວງ(PGI)

ກອງປະຊຸມປຶກສາຫາລືຂັ້ນນະຄອນຫຼວງ, ຂັ້ນເມືອງກ່ຽວກັບວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມຂອງໂຄງການປັບປຸງລະບົບຕາໜ່າງ 22 ກວ ໃນນະຄອນຫຼວງ (PGI). ໃນວັນທີ 03/04/2015 ທີ່ຫ້ອງປະຊຸມ ສຳນັກງານໃຫຍ່ ລັດວິສາຫະກິດໄຟຟ້າລາວ ກອງປະຊຸມຮັບຟັງການສະຫຼຸບລາຍງານຂໍ້ມູນທາງດ້ານເຕັກນິກຂອງໂຄງການ ແລະ ການນຳສະເໜີຂໍ້ມູນກ່ຽວກັບວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມ. ທີ່ ລັດວິສາຫະກິດໄຟຟ້າລາວ, ນະຄອນຫຼວງວຽງຈັນ.

ກອງປະຊຸມ ໄດ້ຈັດຂຶ້ນຢ່າງເປັນທາງການ ໃນເວລາ 8:30 ຫາ 11:35 ໂດຍເປັນປະທານ ຂອງ ທ່ານ ຊົງເລີ ຢົງນຸ, ຫົວໜ້າພະແນກພະລັງງານ-ບໍ່ແຮ່, ຫົວໜ້າພະແນກພະລັງງານ ແລະ ບໍ່ແຮ່ ພ້ອມທັງບັນດາທ່ານ ຜູ້ຕາງໜ້າຈາກທະນາຄານໂລກ, ພະແນກຫ້ອງການທີ່ກ່ຽວຂ້ອງຂັ້ນນະຄອນຫຼວງ ແລະ ຂັ້ນເມືອງ ແລະ ຕາງໜ້າຝ່າຍຕ່າງໆຂອງລັດວິສາຫະກິດໄຟຟ້າລາວ ພ້ອມດວ້ຍຄະນະ, (ດັ່ງບັນຊີລາຍຊື່ລະອຽດຄັດຕິດມາພ້ອມນີ້).

ຫຼັງຈາກນັ້ນ ທ່ານ ຍັນຄຳ ດວງສະຫວັນ ຮອງຫົວໜ້າຝ່າຍກໍ່ສ້າງສາຍສົ່ງ ແລະ ສະຖານີ, ຕາງໜ້າໃຫ້ລັດວິສາຫະກິດໄຟຟ້າລາວໄດ້ກ່າວມີຄຳເຫັນພາບລວມຂອງແຜນການພັດທະນາໄຟຟ້າລາວຂອງໂຄງການ ແລະ ຢັ້ງຢືນວ່າ ໂຄງການນີ້ແມ່ນການປັບປຸງລະບົບຕ່າໜ່າງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງໂດຍໄດ້ກຳນົດເຂົ້າແຜນພັດທະນາ ດັ່ງກ່າວ.

ໂດຍກອງປະຊຸມໄດ້ຮັບຟັງການນຳສະເໜີຈາກວິຊາການຈາກໂຄງການ ແລະ ຈາກທີ່ປຶກສາທາງດ້ານ ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມຂອງຫ້ອງການສິ່ງແວດລ້ອມ, ລັດວິສາຫະກິດໄຟຟ້າລາວ. ເຊິ່ງໄດ້ນຳສະເໜີຂໍ້ມູນທາງ ດ້ານເຕັກນິກ ແລະ ແຜນການຄຸ້ມຄອງວຽກງານກ່ຽວກັບສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ.

ຜ່ານການຮັບຟັງການນຳສະເໜີບັນດາໜ້າວຽກ ແລະ ຂໍ້ມູນຜົນກະທົບໃນຂອບເຂດໂຄງການ, ຫຼັກການເຮັດ ວຽກຕ່າງໆ ແລະ ຂັ້ນຕອນໃນການຈັດຕັ້ງປະຕິບັດວຽກງານສິ່ງແວດລ້ອມ-ສັງຄົມຂອງໂຄງການ ພາຍຫຼັງການຮັບຟັງ ດັ່ງກ່າວກອງປະຊຸມໄດ້ປຶກສາຫາລື, ອອກຄຳຄິດຄຳເຫັນ ແລະ ແລກປ່ຽນຄວາມຄິດເຫັນຢ່າງກົງໄປກົງມາ ແລະ ມີຂໍ້ ສະເໜີລຸ່ມນີ້:

- ❖ ຂໍ້ສະເໜີຂອງຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ
  - ສະເໜີເພີ້ມຂໍ້ມູນລາຍລະອຽດທາງດ້ານເຕັກນິກເຂົ້າຕື່ມ.
  - ສະເໜີແຕ່ງຕັ້ງຄະນະປະສານງານຮ່ວມກັບພາກສ່ວນທີ່ກ່ຽວຂ້ອງ ແລະ ອອກນິຕິກຳເພື່ອນຳໃຊ້ເຂົ້າໃນການ ແກ້ໄຂບັນຫາທີ່ຈະເກີດຂຶ້ນທາງດ້ານສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ໃນໂຄງການ.

- ໃນການຈັດຕັ້ງປະຕິບັດຂອງໂຄງການແມ່ນຢູ່ແຄມເສັ້ນທາງໃຫຍ່ສະເໜີໃຫ້ທາງໂຄງການໃນເວລາຈັດຕັ້ງປະຕິບັດຄວນມີສິ່ງກີ້ນຂວາງໃນຂອບເຂດເວລາການປະຕິບັດວຽກເພື່ອຄວາມປອດໄພ.
- ສະເໜີໃຫ້ມີການຝຶກອົບຮົມໃຫ້ພະນັກງານກ່ອນທີ່ຈະໄປຈັດຕັ້ງປະຕິບັດວຽກເພື່ອໃຫ້ມີຄວາມສໍານານໃນການເຮັດວຽກ.
- ສະເໜີຕ້ອງມີເຄື່ອງປ້ອງກັນແຮງງານໃຫ້ແກ່ກໍາມະກອນ ແລະ ມາດຕະການຄວາມປອດໄພແກ່ກໍາມະການຜູ້ທີ່ປະຕິບັດວຽກຢ່າງຊັດເຈນ ແລະ ແຕ່ງຕັ້ງທີມງານຄວາມປອດໄພປະຈໍາໂຄງການ
- ສະເໜີໃຫ້ມີການເກັບມ້ຽນຂອງນໍ້າມັນໝໍ້ແປງທີ່ປ່ຽນອອກໄວ້ໃນບ່ອນປອດໄພ.
- ສະເໜີໃຫ້ ລັດວິສາຫະກິດໄຟຟ້າສາຂາ ເມືອງໄຊທານີ ລົງເພື່ອເຜີຍແຜ່ກ່ຽວກັບລະບຽບ ຂອງຟຟລ ສໍາລັບບຸກຄົນທີ່ປຸກສ້າງໃກ້ກັບເສົາໄຟຟ້າຍ້າຍອອກຈາກພື້ນທີ່ດັ່ງກ່າວເພື່ອຄວາມປອດໄພ.
- ສະເໜີອອກນິຕໍາ ແລະ ກໍານົດການສະຫງວນແລວເສັ້ນທາງ ແລະ ແລວເສົາໄຟຟ້າເປັນອັນດຽວກັນເພື່ອເຜີຍແຜ່ໃຫ້ປະຊາຊົນຮັບຮູ້ ແລະ ເຂົ້າໃຈ.
- ສະເໜີໃຫ້ເປັນໂຄງການນີ້ເປັນຕົວແບບເພື່ອບໍ່ໃຫ້ປະຊາຊົນລຸກລໍ້າເຂົ້າໃນເຂດສະຫງວນຂອງແລວໂດຍການອອກນິຕິກໍາລະດັບຂັ້ນນະຄອນຫຼວງເປັນຜູ້ອອກຂໍ້ກໍານົດຕ່າງໆ.

❖ ຫຼັງຈາກນັ້ນ ທ່ານປະທານກອງປະຊຸມຈຶ່ງໄດ້ສະຫຼຸບ ຕໍ່ກັບການປະກອບຄໍາເຫັນ ແລະ ປຶກສາຫາລືຂອງຂັ້ນນະຄອນຫຼວງ ແລະ ຂັ້ນເມືອງ ດັ່ງລຸ່ມນີ້:

1. ສະເໜີເຫັນດີ ແລະ ສາມາດໃນການຈັດຕັ້ງປະຕິບັດຂອງໂຄງການດັ່ງກ່າວ.
2. ຄວນມີການປະສານສົມທົບກັບພາກສ່ວນນາຍບ້ານ ແລະ ປະຊາຊົນທີ່ກ່ຽວຂ້ອງໃນການຈັດຕັ້ງປະຕິບັດໃນຂອບເຂດໂຄງການເພື່ອໃຫ້ມີຄວາມເຂົ້າໃຈ.
3. ສະເໜີໃຫ້ລົງເຜີຍແຜ່ຂໍ້ມູນໃຫ້ແກ່ປະຊົນຜູ້ທີ່ໄດ້ຮັບຜົນກະທົບຈາກໂຄງການໃຫ້ມີຄວາມເຂົ້າໃຈ ແລະ ປຸກລະດົມໃນການມີສ່ວນຮ່ວມນໍາໂຄງການ ແລະ ການຝຶກອົບຮົມທາງດ້ານຄວາມປອດໄພຕ່າງໆ.
4. ໃຫ້ມີມາດຕະການເພື່ອຈະແກ້ໄຂບັນຫາຕ່າງໆໃຫ້ມີຄວາມຊັດເຈນ ແລະ ສ້າງນິຕິກໍາ ແລະ ຂໍ້ຕົກລົງຕ່າງໆຮ່ວມກັບພາກສ່ວນທີ່ກ່ຽວຂ້ອງ.
5. ສະເໜີໃຫ້ເອົາໃຈໃສ່ໃນການຈັດຕັ້ງປະຕິບັດຕົວຈິງໃນກໍລະນີຖືຜົນກະທົບຂອງປະຊາຊົນເຊັ່ນ: ຕົ້ນໄມ້ ແລະ ອື່ນໆ.

ສຸດທ້າຍ ປະທານກອງປະຊຸມ ໄດ້ສະຫຼຸບຄືນເນື້ອໃນການປຶກສາຫາລື ແລະ ໄດ້ສະເໜີໃຫ້ຜູ້ພັດທະນາໂຄງການສາມາດຈັດຕັ້ງປະຕິບັດໂຄງການຕາມແຜນການ ແລະ ຂັ້ນຕອນທີ່ໄດ້ກໍານົດໄວ້

ກອງປະຊຸມກໍ່ໄດ້ປິດລົງໃນເວລາ 11:35 ໂມງ.

ບົດບັນທຶກສະບັບນີ້ມີຜົນສັກສິດຕັ້ງແຕ່ມື້ລົງລາຍເຊັນເປັນຕົ້ນໄປ.

ປະທານກອງປະຊຸມ

ຊົງເລົາ ຢົງມູ

ຜູ້ບັນທຶກ

ນ. ວິໄລພອນ ພ.ຈັນສີລິ

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ

ຫົວຂໍ້: ກອງປະຊຸມປຶກສາຂັ້ນນະຄອນຫຼວງ ແລະ ຂັ້ນເມືອງ ເພື່ອເຜີຍແຜ່ແຜນຄຸ້ມຄອງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຂອງໂຄງການປັບປຸງຕ່າໜ່ຽງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງ (PGI).

ໃນຄັ້ງວັນທີ: 03/04/2015

ພາກສ່ວນ ຂັ້ນນະຄອນຫຼວງ.

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department & Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
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ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ

ຫົວຂໍ້: ກອງປະຊຸມປຶກສາຂັ້ນນະຄອນຫຼວງ ແລະ ຂັ້ນເມືອງ ເພື່ອເຜີຍແຜ່ແຜນຄຸ້ມຄອງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຂອງໂຄງການປັບປຸງຕາໜ່າງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງ (PGI).

ໃນຄັ້ງວັນທີ: 03/04/2015

<u>ພາກສ່ວນ ລັດວິສາຫະກິດໄຟຟ້າລາວ.</u>

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department & Company	ຕໍາແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
1	[illegible]	[illegible]	[illegible]	55506783	[illegible]
2	[illegible]	[illegible]	[illegible]	55664338	[illegible]
3	[illegible]	[illegible]	[illegible]	22211489	[illegible]
4	[illegible]	[illegible]	[illegible]	59935993	[illegible]
5	[illegible]	[illegible]	[illegible]	55721868	[illegible]
6	[illegible]	[illegible]	[illegible]	2221[illegible]	[illegible]
7	[illegible]	WB			
8	[illegible]	[illegible]	[illegible]	99884848	[illegible]
9	[illegible]	[illegible]	[illegible]	54298448	[illegible]
10	[illegible]	EO/[illegible]	[illegible]	55663712	[illegible]
11					
12					

ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ

ຫົວຂໍ້: ກອງປະຊຸມປຶກສາຂັ້ນນະຄອນຫຼວງ ແລະ ຂັ້ນເມືອງ ເພື່ອເຜີຍແຜ່ແຜນຄຸ້ມຄອງຕໍ່ສິ່ງແວດລ້ອມ ແລະ ສັງຄົມ ຂອງໂຄງການປັບປຸງຕ່ຳໜ່າງໄຟຟ້າ 22 ກວ ໃນນະຄອນຫຼວງ (PGI).

ໃນຄັ້ງວັນທີ: 03/04/2015

ພາກສ່ວນ ຂັ້ນເມືອງ ໄຊທານີ.

ລ/ດ NO	ຊື່ ແລະ ນາມສະກຸນ Name&Surename	ມາຈາກພາກສ່ວນ Department & Company	ຕຳແໜ່ງ Position	ເບີໂທລະສັບ Telephone	ລາຍເຊັນ Signature
1	[illegible]	[illegible]	[illegible]	2222 9109.	[signature]
2	[illegible]	[illegible]	[illegible]	55609559	[signature]
3	[illegible]	[illegible]	[illegible]	22496236	[signature]
4	[illegible]	[illegible]	[illegible]	55579913	[signature]
5	[illegible]	[illegible]	[illegible]	22241486	[signature]
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Electricité du Laos **The World Bank**