Republic Of Rwanda
Ministry of Infrastructure

Rwanda Electricity Corporation (RECO)

Head Office: Avenue de l' Ihema,
P.O.Box 537, Kigali-Rwanda
Tel: (250) 598202 or 573666
E-mail: elgz@rwanda1.com
Website: www.electrogaz.co.rw

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Environmental and Social Management Plan (ESMP)

Rehabilitation of Substations 110/30kV: Rulindo, Gifurwe
Construction of Substation: Rukarara

September 2010

A. GENERAL INFORMATIONS

Project Title: Substations Rehabilitation and Expansion

Project Number: P-RW-FW0-005

Country: Rwanda

Department: ONEC

Division: ONEC.2

Introduction and Background

Environmental and Social Management Plan (ESMP) is an instrument that outlines the mitigation/enhancement, monitoring, consultative and institutional strengthening measures to prevent, minimize, mitigate or compensate for adverse environmental and social impacts and to enhance beneficial impacts. Typically, an ESMP specifies how, when and by whom such measures shall be implemented. This report presents an ESMP for Substations Rehabilitation and Expansion to be implemented by the Government of Rwanda (GoR) through the Ministry of Infrastructure (Mininfra) and the Rwanda Electricity Corporation (RECO) as the Executing Agency. This ESMP has been prepared in accordance with the African Development Bank's (AfDB) Environmental and Social Assessment Procedures (ESAP).

The report delineates mainly the following (i) project description and justification; (ii) potential major environmental and social impacts; (iii) possible enhancement and mitigation measures; (iv) cost estimates for ESMP implementation; (v) monitoring program and complementary initiatives (vi) institutional arrangements; (vii) public consultations and disclosure requirements; and (viii) implementation schedule and reporting.

Project Description and Justification

Rwanda has prepared and is implementing the Economic Development and Poverty Reduction Strategy (EDPRS) to accelerate economic development and poverty reduction in the country. In line with this strategy the Government has elaborated a Strategic Investment Program which focuses on top priority infrastructure investments. One of these priorities is the Electricity

Access Program (EAP). The EAP is aimed at (i) increasing the access rate from the current low level of about 9% to 16% by the end of 2013; and (ii) reducing the high cost of electricity supply to affordable levels to promote competitiveness of industrial and commercial sectors. Rwanda has recorded an impressive economic growth rate of between 7-9% prior to the recent economic downturn, and is targeting to restore high GDP growth from 2010. These objectives require the availability of reliable and affordable electricity supply. To this end, the GoR is pursuing an investment drive to urgently rehabilitate and expand electricity generation, transmission and distribution capacities in the country.

Within this context, the Ministry of Infrastructure and RECO have developed a system rehabilitation and expansion plan that entails private and public investments. The plan involves RECO and MININFRA increasing generation capacity by to at least 130 MW by 2012 and to 230 MW by 2015. The transmission and distribution of this power also requires the strengthening and expansion of the network. The plan also involves the construction, rehabilitation and expansion of a number of substations, including the proposed Rukarara, Gifurwe and Rulindo substations, and the transmission network to ensure improved reliability of electricity supply throughout the country.

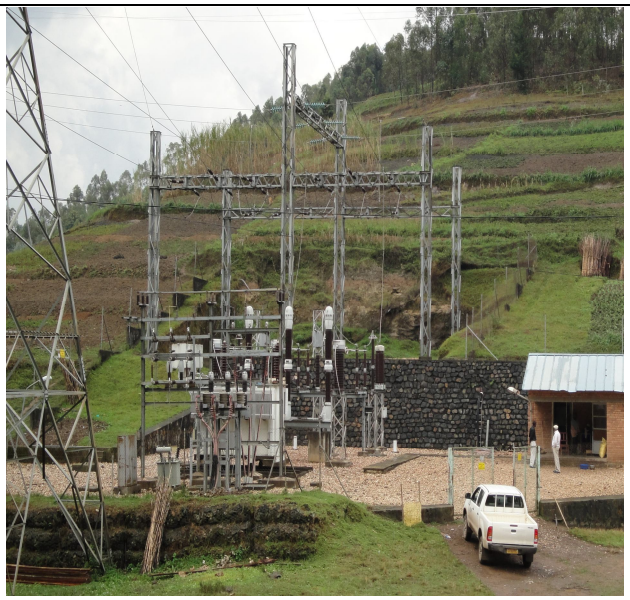
Project Objective

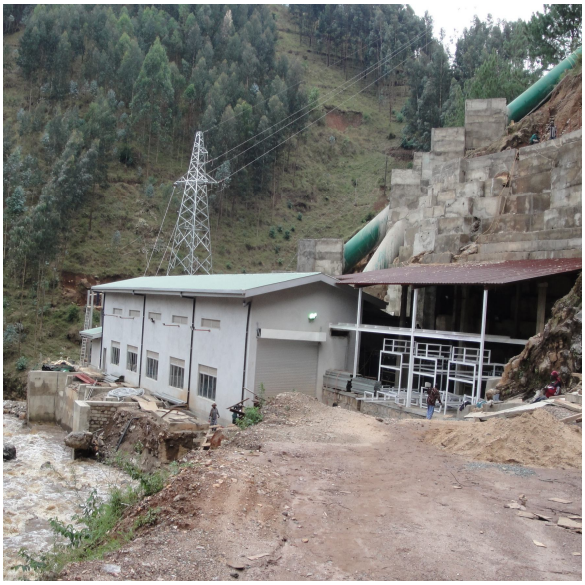
The objectives of the project are to extend and rehabilitate 110/30kV Rulindo and Gifurwe substations and construction of a new 110/30kV substation at Rukarara Hydropower plant, thereby increasing the reliability of the national electricity transmission grid. The sector goal is to increase the capacity to supply the national grid at affordable cost, and improve the reliability of the transmission system to meet the increasing demand of the country, thereby promoting economic growth and improved standard of living of the population. Electricity supplied to the national grid, via the proposed substations, is expected to contribute to the sector goal.

Project description

The project involves the extension and rehabilitation of 110/30kV Rulindo and Gifurwe substations and construction of a new 110/30kV substation at Rukarara. The facilities will be constructed on the sites of existing substations which are too small to handle the system

requirements from 2011. The projects will be located in the Northern and Southern Provinces of Rwanda. The Gifurwe substation will facilitate the interconnection of the 2,2MW from Rugezi hydro power plant under construction and is meant to serve mainly the Gakenke and Kirambo Business centers among many others which have grown into significant load centers. The Rulindo substation supplies the regions of Gicumbi, Musasa, Base and permit the interconnection with Uganda at 30kV voltage level. The Rukarara substation will evacuate power from a hydro plant under construction in the area as well as supply Nyamagabe , Huye and Nyanza districts.

	
Rulindo substation	Gifurwe substation



Rukarara Hydropower Station (dam & station)

Land acquired for substation construction

The substations will be constructed on the sites of existing substations which are too small to handle the system requirements given power projections from 2011. The project will consist of the following components:

(i) Civil works

(ii) 100 kV Line Bays
(iii) 30 kV GIS Switch Gear
(iv) Control and Protection Equipment
(v) Miscellaneous (cabling, battery systems, etc.)
(vi) SCADA System Equipment

The total cost of the project is approximately UA8.8 million

The rehabilitation and construction of the substations will concern the replacement or construction of the outdoor 110kV Switchyard, the Indoor MT 30kV Switchgear as well as the Protection, Control and Command system

B. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

1. Major Environmental and Social Impacts

Implementation of substations rehabilitation and expansion will have a wide range of environmental and social implications. In general, successful implementation of the Project will have high socioeconomic benefits to the people. The environmental and social impacts identified during the ESIA study include:

1.1 Potential Positive or Beneficial Impacts

Successful implementation of the Project investment will have numerous socioeconomic benefits including:

- Better access to electricity facilities leading to improved standard of living;
- The Project will contribute to increase in local development and employment as the local population are likely to be employed during the construction phase and after construction due to electricity related investments;
- Improved reliability and flexibility of the power system as a result of improved and increased transmission capacity,

- In the construction phase there will be temporary employment opportunities for local contractors and those who will be employed or supply services and provisions for workers and to contractors. Within the respective project areas there will be opportunities for petty trading and small business service provision on construction site.

- The program is expected to contribute to rural communities well-being associated with improved services, stability, work opportunities, settlements, health, empowerment and education training. Such benefits would serve as catalyst to.

- Improved social service delivery in housing developments, hospitals and schools. Stable access to affordable power in rural and urban residential areas and social sectors will also contribute toward improving the quality of life for women and children through time saving on household work and care giving, and through increased employment opportunities.

- The long-term direct positive impact is therefore in access to reliable electricity supplies, which will lead to better provision and easier management of goods and services, and enable new facilities for processing and storage. Data management with computers is made possible and communication facilities like Internet can be made available, as also charging for mobile phones; also, electric lighting adds to security at night and enables extended opportunities for work and study.

- Electricity supplied to rural towns would replace/reduce the consumption of woody biomass and petroleum products used for cooking, lighting, and motive power.

- It would Improved financial, managerial and administrative skills to the community due to the electricity access; It would support sustainable development in the commercial sector (shops, bars, and restaurants); to small and medium industries (flour mills, rural water supply installations, tanneries, and coffee processing plants), to the residential sector (lighting, heating, and cooking), to education (kindergarten, elementary schools, junior secondary schools, secondary schools and technical colleges), and to the health sector (pharmacies, health centers and hospitals); and employment creation through increased business activity as a result of energy availability.

In brief, the project would assist in the facilitation of economic growth in Project affected areas and create long-term employment opportunities for the poor, including women, thereby increasing income levels and reducing poverty.

1.2 Potential Negative Impacts

a. Land Acquisition

There is no need of land acquisition for rehabilitation of Rulindo and Gifurwe substations.
For the construction of Rukarara Substation, the site chosen up to date the land has been already acquired and belongs to RECO.

b. Fugitive Dust

For the three substations, fugitive dust may be emitted from construction works and stock piles of materials including machinery as well as from truck traffic. This could cause health related impacts to the communities around and workers in the project site.

Mitigation measures

Fugitive emissions from roads and site work to be eliminated or minimized by applying water on a need to need basis to dirt roads, unpaved surfaces and exposed construction areas during the dry season.
The dirt roads and exposed construction areas should be moisturized during the dry season to prevent or minimize the fugitive dust emissions.

c. Vehicular Emission

During rehabilitation and construction phase of the substations, increased use of heavy equipment and machinery like trucks, and excavators will cause increased vehicular emission (CO_2) in the atmosphere and will cause to some extent some form of atmospheric pollution. This impact though is expected not to be significant and to last only up until the construction phase.

d. Noise Pollution

The machinery and equipment that will be used to undertake heavy equipment loading and different civil works during the construction phase of the substations will cause noise pollution in the immediate surroundings of the project area. The impact is expected to last only during the construction phase and will be short term in nature and not very significant.

The equipment and machines that will be used are mainly excavators and trucks and these do not normally generate noise to levels that would be of concern or harmful to the residents. It is only the operators of these equipment and workers who will be affected by the impacts from the construction equipment and for this reason Personal Protective Equipment (PPEs) will be provided.

Mitigation measures

All equipments and machinery installed must be tested to verify if they are compliant with the AfDB acceptable standards. Noise emitting equipment should comply with the applicable Rwanda and AfDB noise standards and should be properly maintained. All of the 3 project sites are far enough of residential zone.
The substation will emit noise during operation mainly from the transformers and this will not exceed 39 decibels within the plant boundary. This is because the transformers have been designed internationally to emit no more than 39 decibels within the plant boundary.

All workers in the project site must be equipped with the necessary and required Personal Protective Equipment (PPE) but not limited to facilities to protect against noise impacts, ear muffs, safety helmets, boots, dust masks, gloves, overall, goggles, hearing protection etc.

e. Localized Soil Erosion

During the construction phase, activities involving preparation, stripping, grading, soil removal, backfilling, compacting, disposal of surplus and excavation of the earth surface to pave way for the installation of the substation, especially for Rukarara substation, will lead to fugitive dust emission and accelerate soil erosion and runoff.
Another impact of Rukarara substation construction on soil and geology will be compaction, localized soil erosion and increased runoff. The compaction will prevent infiltration of surface water to the ground. However, these impacts will be largely localized to the project area and will only occur during the construction phase.

Mitigation measures

The final site grade should include an adequate drainage channel which should facilitate drainage to avoid flooding and pooling. A site drainage plan should be developed to protect against erosion.

Protecting stockpiles through the use of silt fencing and reduced slope angles should be used to minimize soil erosion during construction.
Minimization of disturbances and scarification of the surface should be observed to reduce erosion impacts.
Re-vegetation should be performed using local plants. All slopes and working surfaces should be returned to a stable condition. Topsoil on the final site would be graded and re-planted as appropriate.

f. Localized Oil Spills

The project does not anticipate extensive use of motorized equipment and machinery that use fuel oil and lubricants that could impact on soil and water from accidental spills or unsound disposal or handling. The construction of access roads and foundation of cabins will however use motorized vehicles that can cause oil spills.

Mitigation measures

For the waste oil or used oil, the company contracted will collect the used oil for proper disposal. All waste oils and lubricants from maintenance of construction equipment should be segregated and disposed properly in accordance with the solid waste disposal plan.

g. Storage and treatment of waste

Solid waste materials during the construction include paper wrapping, scrap metal, excavated soils, polythene, plastic, metal containers, old transformers; liquid wastes including especially oily water and oil containing PCBs might cause pollution if disposed not appropriately. Waste oil is an output of the project that poses potential environmental hazard in case of poor handling and disposal methods.
PCBs used to be widely used as insulators in electrical equipment, including transformers, capacitors, switches, voltage regulators etc. They are of concern because they are powerful toxins, even at low concentrations, and they persist and bio-accumulate in the environment creating adverse health impacts and adverse ecological changes. Intentional PCB production was ended in most countries by 1980 and most transformers and capacitors built after 1980 do not contain PCBs.

Mitigation measures

RECO and the contractor should develop a solid waste disposal plan which includes the provision of receptacles at strategic points within the construction site, recycling programmes for recyclable wastes, separation of wastes.
RECO and contractor should engage a refuse handling company to remove the wastes from the site to the recommended waste management site.
Warning signs against littering and dumping within the construction site should be erected by the contactor.
Refurbishment of any substations for this Project will need to check whether any such old Transformers / equipment will be replaced and appropriate safeguards taken. This is not an issue with new transformers, as they will not contain PCBs.
Technologies for PCBs destruction to be considered are three methods commonly practiced by many countries. Those are: Incineration (combustion to high temperature > 1200 ^{o}C), Chemical, thermochemical and mechanochemical Technologies and Biological Degradation

h. Fire Hazards/Accidents

During the construction phase the chances of fire hazards occurring cannot be overlooked due to the use of combustible machinery and equipment in undertaking the construction works.

Mitigation measures

The construction site must contain fire fighting equipments of recommended standards and in key strategic points all over the site. Fire pumps, hydrants, sprinkler/water spray systems, hose houses, dry chemical systems, carbon dioxide systems, detection/alarm systems and portable fire extinguishers are all specified in the tender documents as necessary in the plant. All these fire suppression equipments are required in a substation and must all be present at key strategic points. The contractor is expected to provide all these equipment for fire suppression as stipulated in the tender documents.
Emergency zones should be planned and developed for every substation.

i. Accidents at the work place from operating of machineries and equipment by workers

The potential for accidents and hazards occurring in the substation during the operation of the equipment and machinery is a likely adverse impact that could lead to loss of life or injury to the workers.

Mitigation measures

Personal protection gear will be provided and its use made compulsory to all. The entire workforce of the plant should be trained in the use of protective gear, handling of chemical products, electric safety equipment, procedures for entering enclosed areas, fire protection and prevention, emergency response and care procedures.
Restricted ENTRY signs should be installed to keep away unqualified workers from access to restricted areas.
The contractor should develop an Emergency Response Plan for handling any emergencies arising thereof during the operation.

j. Workers Health and Safety

Adverse impacts on the workers health and safety is likely to occur especially through workers interaction with the equipments and machines during construction and operation of the plant. Accidents are likely to occur during construction and operations when the equipments are in use, and further to this if workers are exposed to the air emissions and incessant noise of the equipments could lead to potential harm on health of the workers.

Mitigation measures

All workers entering the construction site must be equipped with PPE including ear muffs, factory boots, overalls, gloves, dust masks, among others. The PPE should be those that meet the international standards of PPE.

Personal protection gear must be provided and its use made compulsory to all. The entire workforce of the plant should be trained in the use of protective gear, handling of chemical products, electric safety equipment, procedures for entering enclosed areas, fire protection and prevention, emergency response and care procedures.

'Restricted ENTRY' signs should be installed to keep away unqualified workers from access to restricted areas.

Machines and Equipments must be operated only by qualified staff and a site supervisor should be on site at all times to ensure adherence.

The contractor should develop an Emergency Response Plan for handling any emergencies arising thereof during the construction.

A perimeter fence should be constructed all around the project site to keep away unauthorized persons from the site.

1.3 Possible Enhancement Measures

Possible enhancement measures of beneficial impacts would include the following:

- Subproject construction should adhere to recommendable best construction practices that make effective and economical use of locally available resources including materials, expertise and labour.
- Highly reduce productions of solid, liquid and hazardous wastes.
- Give preference to local employment (youth, men and women).
- Carrying out periodic checks of different components of substations, transmission and distribution system to initiate immediate rehabilitation whenever problems are identified to reduce system hazardous and downtime.

2. Monitoring Roles and Responsibilities

The purpose of the environmental monitoring program is to ensure that the envisaged outcome of the Project is achieved and results in the desired benefits to Rwanda. To ensure the effective implementation of the ESMP it is essential that an effective monitoring program be designed and carried out. The environmental monitoring program provides such information on which management decisions may be taken during construction and operational phases. It provides the basis for evaluating the efficiency of mitigation and enhancement measures and suggests further actions that need to be taken to achieve the desired Project outcomes.

This Environmental and Social Management Plan (ESMP) indicates the range of environmental and social impacts/issues and associated mitigation measures envisaged for this Project.

The ESMP also identifies responsibilities for implementing the mitigation and monitoring measures.

Responsibilities and Time Frame for Implementation of the Enhancement and Mitigation Measures

Table 1 below provides a general implementation plan of the suggested enhancement and mitigation measures basing on detailed potential enhancement and mitigation measures for environmental and social impacts. The appropriate enhancement and mitigation measures for a specific subproject shall be identified according to the project context and major anticipated impacts during the implementation.

Table 1: Environmental and social management plan for Substations Rehabilitation and Construction

Activity/ Adverse Impacts	Mitigation and Enhancement Measures	Implementation schedule	Responsible person	Cost estimates
Fugitive Dust emission from construction works and stock piles of materials including machinery as well as from truck traffic	Fugitive emissions from roads and site work to be eliminated or minimized by applying water on a need basis to dirt roads, unpaved surfaces and exposed construction areas during the dry season. The dirt roads and exposed construction areas should be moisturized during the dry season to prevent or minimize the fugitive dust emissions.	During the construction	Contractor	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component.

Localized Soil Erosion compaction, localized soil erosion and increased runoff	The final site grade should include an adequate drainage channel which should facilitate drainage to avoid flooding and pooling. A site drainage plan should be developed to protect against erosion. Protecting stockpiles through the use of silt fencing and reduced slope angles should be used to minimize soil erosion during construction. Minimization of disturbances and scarification of the surface should be observed to reduce erosion impacts. Re-vegetation should be performed using local plants. All slopes and working surfaces should be returned to a stable condition. Topsoil on the final site would be graded and re-planted as appropriate.	During the construction	Contractor	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component.

Localized Oil Spills The construction of access roads and foundation of cabins will use motorized vehicles that can cause oil spills	For the waste oil or used oil, the company contracted will collect the used oil for proper disposal. All waste oils and lubricants from maintenance of construction equipment should be segregated and disposed properly in accordance with the solid waste disposal plan.	During the construction	Contractor	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component.
Noise Pollution The machinery and equipment that will be used to undertake heavy equipment loading and different civil works.	All equipments and machinery installed must be tested to verify if they are compliant with the AfDB acceptable standards. Noise emitting equipment should comply with the applicable Rwanda and AfDB noise standards and should be properly maintained. All workers in the project site must be equipped with the necessary and required Personal Protective Equipment (PPE) but not limited to facilities to protect against noise impacts, ear muffs, safety helmets, boots, dust masks, gloves, overall, goggles, hearing protection etc.	During the construction	Contractor	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component.

Storage and treatment of waste Solid waste materials during the construction include paper wrapping, scrap metal, excavated soils, polythene, plastic, metal containers, old transformers; liquid wastes including especially oily water and oil containing PCBs	Develop a solid waste disposal plan which includes the provision of receptacles at strategic points within the construction site, recycling programmes for recyclable wastes, separation of wastes. Engage a refuse handling company to remove the wastes from the site to the recommended waste management site. Warning signs against littering and dumping within the construction site should be erected by the contactor. Refurbishment of any substations for this Project will need to check whether any such old Transformers / equipment will be replaced and appropriate safeguards taken. Technologies for PCBs destruction to be considered are three methods commonly practiced by many countries: Incineration (combustion to high temperature > 1200 ^{o}C), Chemical, thermochemical and mechanochemical Technologies and Biological Degradation.	During the construction and operational phases Before construction phase	Contractor RECO	To be met by the contactor and To be met by RECO.

Fire Hazards/Accidents Due to the use of combustible machinery and equipment in undertaking the construction works.	The construction site must contain fire fighting equipments of recommended standards and in key strategic points all over the site. Fire pumps, hydrants, sprinkler/water spray systems, hose houses, dry chemical systems, carbon dioxide systems, detection/alarm systems and portable fire extinguishers are all specified in the tender documents as necessary in the plant. All these fire suppression equipments are required in a substation and must all be present at key strategic points. The contractor is expected to provide all these equipment for fire suppression as stipulated in the tender documents. Emergency zones should be planned and developed for every substation	During the construction	Contractor	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component.

Accidents at the work place from operating of machineries and equipment by workers	Personal protection gear will be provided and its use made compulsory to all. The entire workforce of the plant should be trained in the use of protective gear, handling of chemical products, electric safety equipment, procedures for entering enclosed areas, fire protection and prevention, emergency response and care procedures. Restricted ENTRY signs should be installed to keep away unqualified workers from access to restricted areas. The contractor should develop an Emergency Response Plan for handling any emergencies arising thereof during the operation.	During the construction and to continue after completion of construction into the operational phase	Contractor and RECO	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component

Workers Health and Safety Through workers interaction with the equipments and machines, during construction and operations when the equipments are in use, and workers are exposed to the air emissions and incessant noise.	All workers entering the construction site must be equipped with PPE including ear muffs, factory boots, overalls, gloves, dust masks, among others. The entire workforce of the plant should be trained in the use of protective gear, handling of chemical products, electric safety equipment, procedures for entering enclosed areas, fire protection and prevention, emergency response and care procedures. Restricted ENTRY signs should be installed to keep away unqualified workers from access to restricted areas. Machines and Equipments must be operated only by qualified staff and a site supervisor should be on site at all times to ensure adherence. The contractor should develop an Emergency Response Plan for handling any emergencies arising thereof during the construction. A perimeter fence should be constructed all around the project site to keep away unauthorized persons from the site.	During the construction and to continue after completion of construction into the operational phase	Contractor and RECO	To be met by the contactor. The actual cost will be reflected by tenders in the financial proposal which includes this component.

Monitoring Program

The responsibility of implementing the mitigation measures contained in the ESMP will be for the company/firm that will be awarded the contract to build the substations under the supervision of the Resident Engineer (Consulting Engineer).

During construction, RECO Environmentalist and Rwanda Development Boaard (RDB) will undertake regular monitoring of all the activities occurring in the project site to ensure compliance to the ESMP.

As the lead agency responsible for the protection of environment in Rwanda, Rwanda Environmental Management Authority (REMA) will play the leading oversight role of monitoring the activities of the project according to the Organic Law establishing REMA and its functions.

3. Public Disclosure and Consultations

Public consultation formed an integral part of the process used for gathering data, understanding community and individual preferences, selecting project alternatives, and designing viable and sustainable mitigation.
Recommendations for ongoing consultation during final design as well as during Project implementation are included in the ESMP.
The main stakeholders for this Project include Ministry of Infrastructure (Mininfra), RDB, AfDB and the local population where they stay around the site of the project. These stakeholders were consulted during the ESIA study and their inputs have been integrated into this ESMP appropriately.

4. Cost Estimates for ESMP Implementation

The total project cost is estimated at US$14.41million, equivalent to UA 9.55 million broken down into foreign cost of US$ 12.88 million (UA 8.54 million) and local costs of US$ 1.52 million (UA 1.01 million). The cost of the various components as well as the physical and price contingencies are given in the table 1 below.

Table 2 Total Project Cost

No.	Component	FC	LC	Total	FC	LC	Total
		In USD			In UA		
1	**Substation**						
a	GIFURWE Substation	2,787,137	309,682	3,096,819	,847,119	205,235	2,052,355
b	RULINDO Substation	3,266,669	362,984	3,629,653	2,164,920	240,561	2,405,480
c	RUKARARA Substation	4,845,862	538,429	5,384,291	3,211,498	356,833	3,568,331
	Sub Total for substation	10,899,667	1,211,095	12,110,763	,223,537	802,629	8,026,166
2	**Project Supervision and Management**	**605,538**	**0.00**	**605,538.13**	**01,308**	**0.00**	**401,308**
3	**ESMP Implementation**	0	150,000	150,000		99,410	99,410
	Physical Contingency 7%	805,364	95,277	900,641	533,739	63,143	596,882
	Price Contingency 5%	575,260	68,055	643,315.03	381,242	45,102	426,344
	Total Project Cost	**12,885,830**	**1,524,427**	**14,410,257**	**,539,827**	**1,010,283**	**9,550,110**

5. Institutional Arrangements

Executing Agency: The Ministry of Infrastructure is the borrower and beneficiary of the proposed loan. RECO will be the executing agency and responsible for the procurement of works and consulting services.

Institutional Arrangements: The day to day implementation of the project will be under the responsibility of a Project Implementation Unit (PIU). The PIU will be headed by Director of Electrical Department of RECO

RECO has sufficient experience in the preparation of bidding documents and will be responsible for preparation of the draft bidding document. The consultant will be responsible for the review of the bidding document.

6. Implementation Schedule and Reporting

All mitigation and enhancement measures will be implemented along side with the implementation of program subprojects as required and planned in the subproject implementation schedules. As mentioned earlier, progress on the implementation of the safeguards is included in the overall periodic progress reports, supervision mission's Aide Memoires, midterm review and monitoring and evaluation reports for the P-RW-FW0-005.

C. CONCLUSION AND RECOMMENDATIONS

The ESMP clearly demonstrated that with relatively easy and cost effective mitigation strategies, social and environmental impacts can all be kept to a low significance while beneficial impacts can be easily enhanced.

Furthermore, the ESMP study clearly revealed that the anticipated negative impacts will be short-term, site specific, confined and reversible and can be managed through the application of mitigation and monitoring measures while beneficial impacts can be readily enhanced.

Mindful of the greater socio-economic significance of investment subprojects, their successful implementation will improve the quality of life of a significant number of people living in villages, hamlets and streets of different districts

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This ESMP report has suggested comprehensive generic mitigation measures. Implementing such mitigation and enhancement measures will reduce the limited potentially significant adverse environmental impacts to acceptable levels.

Therefore, increase environmental and social soundness of the project in line with both applicable national and Bank's environmental policies, legislations and procedures. It is certainly up to RECO to ensure an effective and efficient coordination mechanism for safeguard management at the Ministry and local levels particularly for the implementation of this ESMP.