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USAID'S LIBERIA ENERGY SECTOR SUPPORT PROGRAM (LESSP)

FINAL YEAR TWO WORK PLAN
OCTOBER 2011 - SEPTEMBER 2012

CONTRACT 669-C-10-00059-00



SEPTEMBER 24, 2011

This document was prepared for review by the United States Agency for International Development. It was prepared by Winrock International under USAID's Liberia Energy Sector Support Program, Contract No. 669-C-00-10-00059-00.

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Prepared for: USAID/Liberia
Submission Date: September 24, 2011
Award No: 669-C-00-10-00059-00
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Strategic Objectives:

- SO1: To extend grid electricity throughout Monrovia and its environs;
- SO2: To develop hydro capacity and other renewable energy sources;
- SO3: To expand grid electricity to other urban areas and some rural areas; and
- SO4: To improve legal, institutional and regulatory framework in the energy sector.

The views expressed in the publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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Abbreviations and Acronyms

AETT	Alt Energy Technical Team
BTT	Biomass Technical Team
BWI	Booker T Washington Institute
CBEP	Cocopa Biomass Electricity Project
CBO	Community-based Organizations
COO	Community Outreach Officer
COP	Chief of Party
CPO	Crude Palm Oil
CSET	Center for Sustainable Energy & Technology
DCA	Development Credit Authority
DCOP	Deputy Chief of Party
EHELD	USAID's Excellence in Higher Education for Liberia Development
EPA	Environmental Protection Agency (Liberian)
EPC	Engineering, Procurement, Construction
EPP	Emergency Power Project
ERB	Electricity Regulatory Board
ESG	Energy and Security Group
ESRS	Energy Sector Reform Specialist
GDA	Global Development Alliance
GOL	Government of Liberia
HTT	Hydropower Technical Team
HQ	Winrock Head Quarters
LEAP	Liberia Energy Assistance Program
LEC	Liberia Electricity Corporation
LESSP	Liberia Energy Sector Support Program
LTI	Lutheran Training Institute
MEC	Monitoring, Evaluation, Communication Specialist
MHI	Manitoba Hydro International
MLME	Ministry of Lands, Mines, and Energy
MOU	Memorandum of Understanding
NARUC	National Association of Regulatory Utility Commissioners
NORAD	Norwegian Agency for Development Cooperation

O&M	Operations and Maintenance
PA	Pierce Atwood
PMU	HQ Project Management Unit
PMP	Performance Monitoring Plan
PPP	Public Private Partnership
PPPS	Private Power Producer Specialist
PRS	Poverty Reduction Strategy
PS	Procurement Manager/Specialist
RE	Renewable Energy
REE	Renewable Energy Engineer
REFUND	Renewable Energy Fund
RREA	Rural and Renewable Energy Agency
SBEP	Sorlumba Biomass Electricity Project
TDP	LEC Training and Development Plan
TT	TetraTech
USG	US Government
WI	Winrock International

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Executive Summary

The U. S. Agency for International Development's (USAID) Liberian Energy Sector Support Program (LESSP) responds to the priority set by the Government of Liberia (GOL) of rehabilitating electricity infrastructure, which is an integral component of the nation's macroeconomic development strategy as set forth in the Poverty Reduction Strategy (PRS). Specifically, LESSP contributes to the following goals stipulated in the PRS: it builds the capacity of a restructured Ministry of Lands, Mines and Energy (MLME); increases energy access in both Monrovia and three rural counties; launches Liberia's small, micro and mini hydropower generation capability and explores additional generation options from other renewable energy sources; and improves legal, institutional, and regulatory frameworks within the electricity sector. LESSP's three objectives are broad and diverse, encompassing electricity sector regulation and institutional reform, renewable energy (RE) pilot power plant construction and commercialization, strengthening of community-based organizations (CBOs) and university curricula, public private partnership project development, and support for the Liberia Electricity Corporation's (LEC) new management contract. At the same time, a common thread connects the various subcomponents: the focus on renewable energy as a key tool for enabling economic growth. The LESSP Team has developed a comprehensive strategy and implementation plan for LESSP that reflects lessons learned from two decades of global experience in energy policy and regulatory reform, institutional capacity building, rural electrification, RE technologies and service delivery, CBO and enterprise development, Global Development Alliance (GDA) or other public-private partnership development, power distribution, and the Liberia energy sector.

I. LESSP Background

The purpose of the U. S. Agency for International Development (USAID) Liberia Energy Sector Support Program (LESSP) is to increase access to affordable, renewable energy services in geographically focused rural and urban areas in order to foster economic, political, and social development. The ultimate impact of the activity, i.e. the change that is expected in targeted areas upon assessing the completed work, will include:

- increased and sustainable access and affordability of electricity within urban and rural poor communities;
- improved performance of local governments, civil society and the private sector in monitoring, regulating, and managing the use of renewable energy;
- an increase in the percentage of households and businesses utilizing clean energy and a corresponding increase in economic activity; and
- policy changes that improve the investment climate for the electricity sector.

USAID plays a leading role in building Liberia's energy sector. Its successful collaboration with the Government of Liberia (GOL) and other donors during the Emergency Power Project (EPP) and Liberia Energy Assistance Program (LEAP) has provided a strong platform and valuable lessons for expanding access and improving the affordability of electricity to urban and rural dwellers. LESSP will mobilize the public and private sectors in order to develop the country's diverse and plentiful renewable energy resources.

LESSP will focus efforts in three counties: Bong, Nimba and Lofa counties. The selection of these counties was based on the fact that the majority of Liberia's population (outside of Monrovia) resides in these three counties. In addition, LESSP will be able to foster useful synergies with other USAID-assisted agricultural, health and education projects that are based in these counties.

USAID's LESSP and its partners will continue support to the Ministry of Lands, Mines and Energy (MLME), Rural and Renewable Energy Agency (RREA) and the Liberia Electricity Corporation (LEC), to strengthen institutional capacity and expand the customer base in Monrovia. LESSP will help strengthen the LEC's human capital by administering funding for a LEC capacity building Training and Development Plan (TDP), to be implemented by the LEC Management Contractor.

USAID Liberia, in consultation with GOL, donor community and other stakeholders, has identified renewable energy as an underutilized resource that could have tremendous impact on the country's development. In order to exploit these resources in the most cost-effective and expedient way, LESSP will work with the GOL to implement policies that create a conducive environment for foreign investors and for Liberian entrepreneurs to participate in the growing market for 'green' technologies and services.

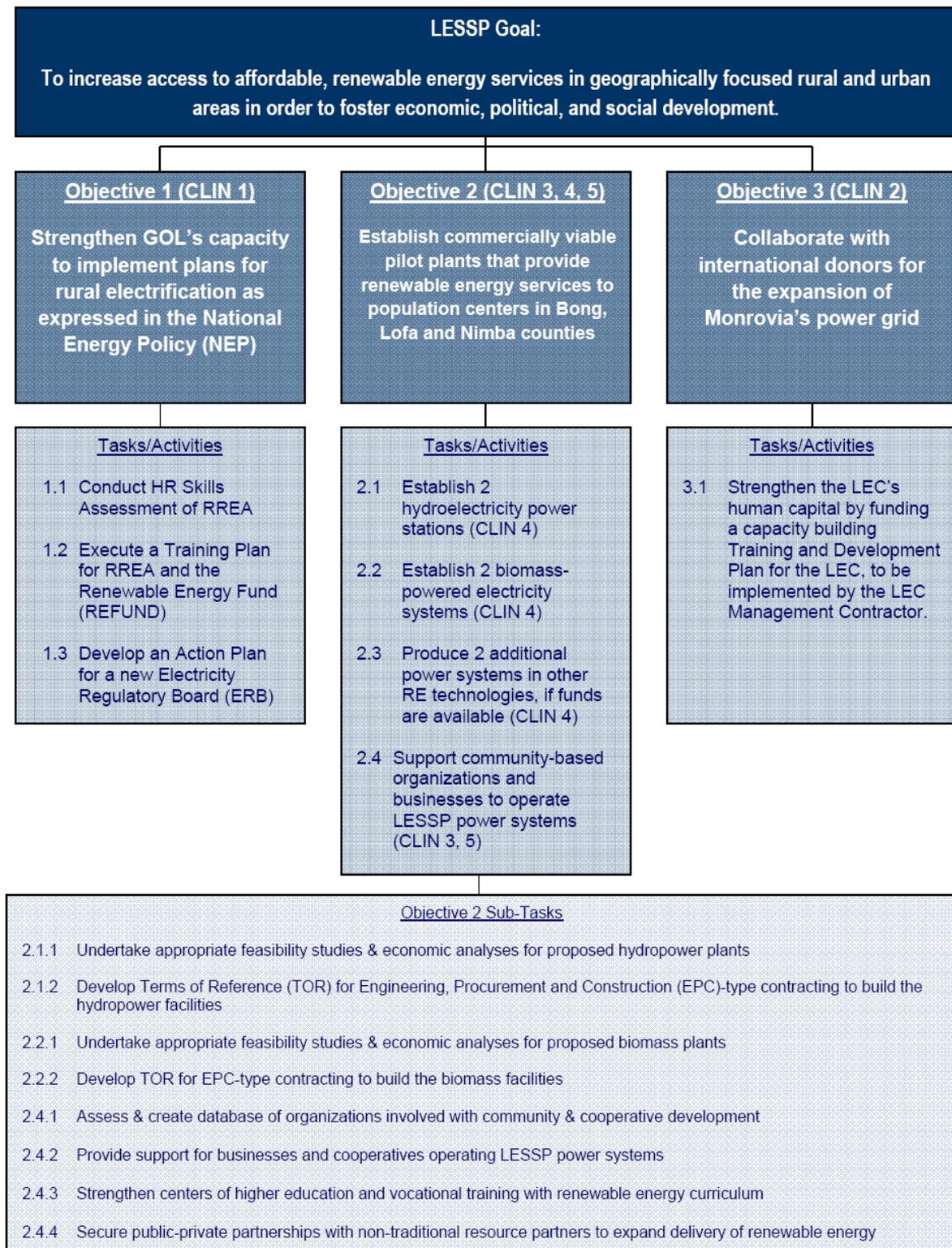
LESSP will establish power projects that will demonstrate the viability of renewable energy, especially for rural communities. These stations will utilize a range of technologies including: mini (100 Kw to 5Mw)/micro (up to 100Kw) -hydroelectricity and biomass. It is intended that these types of projects will be replicated by other non-US government (USG) donors, the GOL and private sector investors.

The establishment and management of these renewable energy models will involve public-private partnerships (possibly employing USAID's GDA model). LESSP shall pursue opportunities to partner with commercial-scale investors. Concurrently, LESSP will support the development of a skilled workforce capable of constructing, maintaining and sustaining infrastructure.

Under the US Foreign Assistance framework's Economic Growth Objective, USAID Liberia's assistance will be used to increase access to modern energy services. USAID Liberia will pursue the following objectives which are consistent with the USG assistance framework, the Government of Liberia's Poverty Reduction Strategy, Liberia's National Energy Policy, and the USAID-GOL bilateral assistance agreement.

II. LESSP Activities Map

Diagram I: Activities Map



III. Year 2 Work Plan Overview

For Objective 1, the second year of LESSP activities (October 2011-September 2012) will build upon the foundation established in Year 1, where LESSP:

- (1) Completed the Rural and Renewable Energy Agency (RREA) skills assessment and training plan for the six RREA directors.
- (2) Conducted one RREA team training course on Program Management; a second training course on Finance/Budgeting that included RREA and MLME staff; organized RETSCREEN training in Canada for two members of the RREA team; and organized an on-line graduate program in clean energy for the RREA Technical Director.
- (3) Prepared detailed comments on the draft energy law of 2009, initiated stakeholder discussions to review the law and obtain their inputs on the proposed modifications, and prepared the draft Energy Regulatory Board Action Plan.

In Year 2, the focus of the RREA capacity building activities will be to design, develop, and implement individual training plans for each of the six Senior Management staff; this will involve off-site, short-term training of 2-4 weeks each at credited institutions in Africa. LESSP will also conduct planning for Year 3 capacity strengthening activities, to include any new senior staff members the RREA may hire. LESSP will identify opportunities to include MLME staff in training activities where possible.

For the program's policy work, LESSP will update the draft energy law and ERB action plan based on comments received in stakeholder meetings in the fall 2011. Stakeholder meetings will include government agencies, donors, county leaders, the private sector, and others to be determined. LESSP will also support MLME in its efforts to advance the energy law and ERB action plan for approval. Finally, LESSP will continue coordination with MLME and other donors working in the energy area in Liberia (e.g., World Bank, Norway NVE, EU, Japan, etc.).

For Objective 2, the primary focus of Year 2 will be to finalize all four pilot project feasibility studies and secure approvals from USAID and the Government of Liberia, including the EPA, to enable the program to proceed with procurement and construction. LESSP will finalize EPC and Quality Control Plans for construction of the pilot projects to submit to USAID for approval and develop a streamlined procurement system for the power systems' development. Relationships with the pilot site communities and partners will be formalized through signing of MOUs/Agreements with clear roles and responsibilities in the implementation and eventual ownership and operation of the pilot projects. The smaller size projects - Sorlumba Biomass Electricity Project (SBEP) and Wayavah Falls Micro Hydropower Project (WFMHP) are expected to be completed in Year 2, contingent upon receiving all approvals. These projects will be owned, operated and managed by local Electricity Cooperatives, which LESSP will help to establish and build their capacity to operate and maintain and manage the power plants. Cocopa Biomass Electricity Project (CBEP) and Mein River Hydropower Project (MRHPP) are expected to be public-private partnerships and they are not expected to be completed until Year 3.

Other Objective 2 program deliverables for Year 2 include preparation of a report on other RE activities and opportunities in Liberia; training and capacity building of the new pilot project electricity cooperatives for maintenance and management of the electricity projects; and provision of technical assistance to strengthen renewable energy curriculum in select institutions of higher learning. LESSP will

seek to leverage additional funding to scale up the Mein River Hydropower Project to generate 1500 kW instead of the current target of 500 kW, and to increase the output of the Cocopa Biomass project.

For Objective 3, LESSP will assist the LEC and its Management Contractor Manitoba Hydro International (MHI) with development and implementation of a Training and Development Plan to strengthen the LEC's manpower, pending final approval from USAID.

The following sections detail planned activities and milestones for LESSP in Year 2.

IV. Objective I: Strengthen the GOL's Capacity to Implement Plans for Rural Electrification as Expressed in the National Energy Sector Policy

Team Leader: Energy Sector Reform Specialist, ESG

Supporting Team Members: COP ; Tetra Tech; ESG

Collaborating partners: World Bank's Catalyzing New Renewable Energy in Rural Liberia project; NORAD's Norwegian Water Resources and Energy Directorate (NVE) Liberia Power and Water Resources Program; DTI

Year 2 Deliverables: Final Review of Energy Law (Oct 2011); Individual Training for RREA Directors (Nov 2011 – Sept 2012); REFUND Operating Guidelines (June 2012); Final ERB Action Plan (SEPT 2012)

Other Milestones: Skills Assessment and HR gap update for RREA New Hires (TBD)

A. Overview

The Rural and Renewable Energy Agency (RREA) was created by the Government of Liberia by Executive Order 23 in January 2010 to facilitate and accelerate the economic transformation of rural Liberia by promoting the commercial development and supply of modern energy products and services to rural areas through private sector development and support of community initiatives. RREA also manages a Rural Energy Fund (REFUND), which will facilitate the coordinated and sustainable financing of projects and programs and serves as a channel through which domestic and international financial resources intended for rural and renewable energy delivery in Liberia are managed. As part of its support to Liberia, USAID is partnering with the Government of Liberia through MLME to help establish and build the capacity of the RREA to strengthen and support the agency to achieve its mission.

The following are the tasks associated with Objective I:

Task 1: LESSP will conduct a skills assessment of human resources within the RREA, including identification of HR gaps and requirements for new hires.

Task 2: LESSP will develop and execute a training plan for RREA/REFUND staff, using information generated in Task 1 above. LESSP will utilize the skills assessment in creating the training plan that will help build technical, managerial, and institutional capacity of RREA to implement its plans for rural electrification and achieve its goals and objectives. LESSP will also support the creation of the RREA Renewable Energy Fund (REFUND).

Task 3: LESSP will develop an action plan for an Electricity Regulatory Board in Liberia. This involves working with the MLME to create a plan for establishing the ERB to regulate all aspects of the Liberian electricity sector thereby improving the enabling conditions for private sector participation in the sector. LESSP's technical assistance will result in a detailed action plan that the GOL can use to create this important institution. Additionally, LESSP will provide a review of the draft Energy Law of 2009.

Anticipated Results During Life of Project:

- Through a skills assessment and training, the technical and managerial capacity of RREA and MLME staff will be strengthened to expand energy services in the rural areas and support the development of viable rural electrification projects by the public and private sector.
- An action plan for the development of an independent electricity regulatory board will be developed in conjunction with the MLME, key donors and other stakeholders.
- Review of draft energy law and action plan for the ERB.

B. Year 2 Activities, Results, Deliverables

i. Task 1: Skills Assessment

This task involved an assessment of RREA current staff capabilities, as well as identification of gaps and the associated needs for additional skill sets. Information obtained from the report provided the basis for developing RREA/REFUND training priorities for Task 2. The Skills Assessment report was completed in Year 1. However, as new senior management staff members are hired by RREA in LESSP Year 2, the team will update the skills assessment and gap analysis.

a) Year 2 Results/Deliverables

- Updated skills assessment and gap analysis for new RREA directors as hired (September 2012).

ii. Task 2: Develop and Execute Training Plan

In Year 1, the LESSP team developed a training plan for the RREA management team and began execution. The Training Plan was based upon the Skills Assessment conducted in Task 1. Training plans were developed for the RREA management team as a whole, as well as for each of the individual RREA directors according to his/her professional aspirations, work responsibilities, and training preferences. The training plan was designed to strengthen the technical, managerial, and institutional capacity of RREA to implement its plans for rural energy development in the country and addressed the following:

- defined training objectives over the course of the project;
- set priorities for RREA management training requirements in Years 1 and 2;
- allocated resources for near term training;
- outlined specifications for each training course identified, to include course title, description, venue and dates, duration, estimated budget, and training co-sponsors (where applicable); and
- identified prospective training programs/institutions to meet these requirements in Africa and elsewhere.

In addition to developing the training plan in Year 1, the first two training courses were conducted, engaging each of the six RREA directors. These courses focused on: (1) Program Management, and (2) Financial Management and Budgeting. The MLME staff participated in the second course. Additionally in Year 1, the RREA Manager and the Technical Director attended a training course on RETSCREEN Clean Energy Project Analysis Software in Canada.

In Year 2, LESSP will continue implementation of the training plan. Whereas in Year 1, team courses were conducted in a group in Liberia, in the second year RREA directors will go off-site to attend individual training courses at prestigious training institutions in Africa. LESSP team activities will include:

- Finalizing selection of the training courses/institutions for each of the RREA directors.
- Negotiating with the selected training institutions on appropriate courses, based on RREA director availability and budget available for this activity.
- Registering RREA directors to participate in the training.
- Making logistical arrangements for RREA directors to attend the training courses, including airfares/transportation, lodging, meals, etc.
- Monitoring, evaluating, and reporting on course impact.

If RREA hires any new senior managers in Year 2, following the completion of the skills assessment and gap analysis above, LESSP will develop and implement a training plan for new managers as well.

Also in Year 2, the LESSP Team will work with RREA on the development of the REFUND operating guidelines. The REFUND is designed to support all economically viable, socially acceptable, and environmentally friendly rural energy projects and programs. It will be designed to ensure that energy services are provided on a full cost recovery basis to those who can pay and a subsidized basis to those who can only afford to pay part of the cost. Information contained in the guidelines will include: goals and objectives, sources and uses of funds, **project and beneficiary selection**, and fund management and operation.

a) Year 2 Results/Deliverables

Implementation of training programs for each of the six RREA Directors, focused on their individual technical/functional job area. Estimated dates for training course completions are:

- November 30, 2011 (1 RREA Director trained).
- May 31, 2012 (2 RREA Directors trained).
- August 31, 2012 (1 RREA Director trained).
- September 30, 2012 (2 RREA Directors trained).

The exact dates, courses, and venues for each of the RREA directors will be determined in Year 2 in conjunction with each of the RREA directors.

- Updated Training Plan for any new RREA senior managers (September 2012).
- Execution of Training Plan (September 2012).
- Draft REFUND Operating Guidelines (July 2012).
- Final REFUND Operating Guidelines (September 2012).

iii. Task 3: ERB Action Plan

Two activities are being conducted under this task: (1) finalize review of the 2009 Energy Law, and (2) develop an Electricity Regulatory Action Plan. These activities are led by subcontractor TetraTech, with support of the Energy Reform Specialist, LESSP COP, and a local legal advisor.

Draft Energy Law. In Year 1, LESSP conducted a review of the draft energy law prepared in early 2009. Detailed comments were prepared and submitted to USAID, MLME, RREA MHI/LEC, key donors and others in March 2011 and a review meeting was held with MLME in July 2011. At the time of this writing the draft report is circulating for comment and another series of stakeholder review meetings are planned for September/October 2011.

In Year 2, LESSP's final inputs to the draft energy law review will be prepared and submitted to the Government. Follow-on consultations, additional stakeholder meetings, and re-drafting of the law will occur as requested by MLME. Key stakeholders to be engaged in the energy law review and the ERB action plan include: MLME, government agencies, including LEC, NOCAL, RREA, The Ministry of Planning and Economic Affairs, and the Ministry of Finance; donor organizations from Norway, Japan, the EU, the World Bank, UN agencies, etc.

ERB Action Plan. LESSP is taking a lead role in developing a plan for creation of an Electricity Regulatory Board (ERB) for Liberia that sets specific milestones and mechanisms. Preparation of the ERB action plan entails tariff design, public-private partnerships, licensing, public hearings, customer service, dispute resolution and other areas. The LESSP team will draw on expertise from other team members (e.g., Pierce Atwood) and groups such as the National Association of Regulatory Utility Commissioners (NARUC), as needed, to ensure that international best practices in energy sector regulation are followed. The ERB will be designed to have an open door policy that allows for new ideas/processes to evolve for the growth of the sector. In its early development, the ERB may first be developed within the MLME as this ministry has the primary electricity experience in Liberia (other than LEC); however, eventually the ERB must become independent.

In Year 1, the LESSP team completed a draft ERB Action Plan. The plan provides a step-by-step roadmap for the government to use in establishing and developing the ERB. It also includes a menu and schedule of training topics to support ERB development in Years 2-4, including a focus on tariffs, licensing assistance to the MLME, service quality standards and enforcement, customer service and dispute resolution. The establishment of the ERB is a significant undertaking for any country, even under the best of conditions. The process is made even more challenging when the country conditions are not ideal, e.g., an uncertain political and institutional environment, weak utilities, power deficits and shortages, and a general environment of economic instability. The ERB action plan addresses the key steps, decision points, enabling instruments (legislation, policy, etc.), and a collaborative process with the domestic and international community to ensure the highest degree of buy-in and support for the new Commission.

In Year 2 LESSP will finalize the ERB Action Plan with comments and approval from USAID. However, as the ERB is linked to the enactment of the new Energy Law, there will not likely be much additional work to be conducted on the Plan until the Law nears enactment. The LESSP team will remain available to provide technical assistance and support to MLME and others as requested and as budget is available.

a) Year 2 Results/Deliverables

The major deliverables are:

- Final Energy Law Review and Report, incorporating stakeholder meeting comments (September 2012).
- Final ERB Action Plan, incorporating comments received during stakeholder meetings (September 2012).

C. Potential Challenges and Mitigation Strategies

Diagram 2: Potential Challenges and Mitigation Strategies, Objective I

Objective I: Example Potential Challenges	Example Mitigation Strategies
In an election year, activities could slow down in next few months; potential for transition of senior officials could become an issue for MLME energy law, ERB plan development, and RREA management training.	Work will progress carefully, ensuring that training and capacity building efforts are focused at the appropriate level for the RREA directors. LESSP will also work closely with the MLME to develop the energy law and ERB Action Plan, with guided implementation of the energy law and ERB action plan to launch after the election period.
RREA budgetary support by the Government is to take effect by August 2011 for the first time. Since its inception, the World Bank has provided the bulk of RREA staff support. Any delays in the Government funding could provide slowdown/stoppage of RREA activities and staffing.	RREA is supporting legislation to make it an independent agency and is working with the Government to ensure funding streams. RREA is also working with a number of donor organizations to obtain funding for its activities; the LESSP team is available to assistance in this area as requested. The LESSP team is also helping in the development and structuring of the new Renewable Energy Fund (REFUND) which will support renewable energy projects in the country.
Failure to provide training that remains relevant even as institutional circumstances change.	Focus on development of analytic and problem-solving skills and processes, not just the transfer of technical knowledge.
Provision of training that a recipient easily forgets or has trouble putting to use.	Provide training according to a skills acquisition timetable for each position description, with an emphasis on achieving key skills early on and moving on to more refined topics and skill sets only after a solid foundation of learning is in place.
Conflict between agencies.	Focus on clarity in the division of roles.
Failure to obtain buy-in from the necessary stakeholders.	Engage stakeholders at all stages of RREA/Energy Law/ERB Action Plan development and implementation.
Lack of institutional knowledge to transfer training to new staff members.	Institutionalize training programs within RREA for educational development on new employees.
Uncertain political and institutional environment, weak utilities, power deficits, and economic instability in Liberia.	The ERB action plan will layout the steps needed to develop and implement an effective ERB in the country, based on the successful experiences of other countries in Africa and elsewhere.

V. Objective 2: Establish Commercially – Viable Pilot Plants that Provide Renewable Energy Services to Population Centres in Bong, Nimba, and Lofa Counties

Team Leader: Deputy Chief of Party

Supporting Team Members: Private Power Producer Specialist (PPPS); Renewable Energy Engineer; Community Outreach Specialist; M&E Specialist; Hydropower Technical Team; Biomass Technical Team; Alternative Energy Technical Team; and various STTA provided by LESSP and Center for Sustainable Energy Technology (CSET), ESG, Green Consultancy Inc. Collaborating Partners: MLME, RREA, Liberia Electricity Corporation, Bong, Lofa and Nimba County local authorities, Cuttington University, Phebe Hospital, DEN-L, Liberia Company, Sorlumba Community, Gbarnway Community, Suakoko District Community, Development Credit Authority/USAID, International Bank of Liberia, World Bank's Catalyzing New Renewable Energy in Rural Liberia project; NORAD, University of Liberia (coordinated with USAID/Liberia's EHELD program), Stella Maris Polytechnic, BWI, Lutheran Training Institute, European Commission's EU-ACP Energy Facility, lending institutions such as Ex-Im Bank, OPIC and ECOWAS Bank, UNDP, UNIDO; Federation of Liberian Youth;

Year 2 Deliverables: Mein River Hydropower Feasibility Study Report and Wayavah Falls Micro Hydropower Feasibility Study Report (October 2011); Cocopa Feasibility Study (November 2011); Environmental Assessment Report with Environmental Mitigation and Monitoring Plans (EMMP) for Wayavah Falls (December 2011); Environmental Assessment Report with EMMP for Sorlumba (December 2011); Environmental Assessment Report with EMMP for Mein River (January 2012); Environmental Assessment Report with EMMP for Cocopa (January 2012); EPC/Bidding Documents and Quality Control Plans for hydropower projects (April 2012); Higher Education Institutional Support Plan (February 2012); RE Curriculum Update for Center of Higher Education (September 2012); Training Plan for O & M and Management of power plant (Feb - April, 2012); RE Activities and Opportunity Report (February 2012); one PPP/GDA signed (September 2012).

Other Milestones: Testing and Commissioning of Sorlumba project (July 2012); Testing and Commissioning of Wayavah Falls (September 2012); Updated Public-Private Partnership/GDA Plan (October, 2011).

A. Overview

This objective's centerpiece is establishment of commercially viable pilot plants in Bong, Nimba, and Lofa counties using hydropower, biomass, and possibly other RE technologies to demonstrate commercial viability and encourage replication. Expected results are the construction of at least two hydroelectric plants, two biomass plants and, funds permitting, other RE systems; an increase in Liberian skilled labor; community or private management entities formed to manage and operate each power system, supported by a viable cost-recovery program; enhanced technical capacities in RE technologies in higher education institutions; and an increase in rural access to electricity to 10% in the four target areas.

An important focal area for technical assistance in Objective 2 is the setting up of community-based cooperatives and businesses as commercial entities that can operate plants on a sustainable long-term basis. Capacity-building efforts will extend to strengthening RE science and engineering capabilities at centers of higher education to build a more robust base of local expertise. In implementing this objective, we will also continue to identify ways to target participation from women and youth. We will also identify linkages with USAID and other donors working in our target counties and pilot

communities in cross-cutting areas such as agriculture, health, education, and ICT. Public-private partnerships will leverage the impact of LESSP resources and strengthen sustainability.

The following are the minimum tasks and sub-tasks associated with Objective 2:

Task 1: LESSP shall establish at least two hydroelectricity power systems. One mini hydroelectricity system with a minimum output of 100 Kw and maximum 5 Mw, and one micro hydroelectricity system with a maximum output of 100 Kw are to be established. Preferably, these systems should be designed to supply electricity through an auxiliary source when water levels are at their lowest. The auxiliary systems, if utilized, must use a renewable energy source.

Sub-task 2.1.1: LESSP shall undertake appropriate feasibility studies, environmental reporting and socio-economic analyses based on actual site conditions, and present plans for USAID's approval before the implementation of proposed power pilots.

Sub-task 2.1.2: LESSP shall develop the terms of reference for EPC- type contracting mechanism to build these facilities. Under an EPC contract, LESSP will design the installation, procure the necessary materials and construct the installation, either through its own labor or by subcontracting the work.

Task 2: LESSP shall establish at least two biomass-powered electricity systems.

Sub-task 2.2.1: LESSP shall undertake appropriate feasibility studies, environmental reporting and socio-economic analyses based on actual site conditions, and present plans for USAID's approval before the implementation of proposed power pilots.

Sub-task 2.2.2: LESSP shall develop the terms of reference for EPC -type contracting mechanism to build these facilities. Under an EPC contract, LESSP will design the installation, procure the necessary materials and construct the installation, either through its own labor or by subcontracting the work.

Task 3: If funds permit, LESSP shall produce two additional power systems using any of the following technologies: solar, biofuels, wave, geothermal or wind.

Task 4: LESSP shall develop a program that will establish community-based organizations and/or assist local businesses to operate and manage LESSP power systems.

Sub-task 2.4.1: LESSP shall assess and create a database of organizations involved with community and cooperative development in target areas.

Sub-task 2.4.2: LESSP shall provide training and material support (e.g. business plan development, accounting training and software, equipment, and equipment maintenance training) for cooperatives and/or businesses operating power systems.

Sub-task 2.4.3: LESSP shall provide short-term technical assistance to strengthen centers of higher education (e.g. vocational education schools, universities, colleges) in the science and engineering of renewable energy technologies. LESSP shall also update curricula at vocational schools and other centers of higher education to enhance the programs' objectives and results.

Sub-task 2.4.4: LESSP shall pursue a public private partnership (PPP) strategy, which may include a GDA, with traditional and non-traditional resource partners (companies, foundations etc.) to leverage USAID funds in expanding the delivery of renewable energy.

Anticipated Results During Life of the Project:

- Two hydroelectric plants (one mini and one micro) will be constructed.
- Two biomass plants will be constructed.
- Additional renewable energy system based on availability of funds.
- Liberian human resources in the renewable energy sector will be strengthened laying the foundation for rapid future growth with private sector investments in renewable energy technology. In addition, each rural power system will have community and or private sector management and an agreed upon cost-recovery program.
- By the end of four years, access to electricity outside of Monrovia would increase from 2% to at least 10% in target geographical areas.
- Technical capacities of centers of higher education in science, engineering and renewable energy technologies strengthened.

B. Year 2 Activities, Results, Deliverables

i. Task 1: Hydropower Systems

The main activities for Year 2 are completing environmental assessments and securing approvals from the EPA and USAID; preparation of hydropower EPC and quality control plans and approvals; formalizing agreements with the local communities and investors who will be the owners of the project; securing additional financing for the Mein River Hydropower Project; and awarding contracts for construction and carrying out construction supervision of the pilot projects. The Wayavah Falls Micro Hydropower Project is to be up and running by the end of Year 2.

a) Feasibility Studies and Socio-Economic analyses

In Year 1 LESSP developed comprehensive criteria for hydro site selection, and identified and selected three sites to be considered for further feasibility analysis, one in Bong County and two in Lofa County. The LESSP hydropower team conducted surveys for topographical mapping purposes, load demand assessments and socio-economic baseline surveys, and carried out regular flow measurements of the rivers at all the sites for hydrological analysis. LESSP will complete full feasibility studies around the end of Year 1 for Mein River Hydropower Project (MRHPP) and Wayavah Falls Micro Hydropower Project (WFMHP). Because of the significant drop in flow during the dry season, the WFMHP has been downsized from earlier estimates to about 15 kW, which can supply power to the nearest village called Gbarnway with 162 households. The sustainability issues of community capacity to own and operate, and people's ability to pay the tariff is being reviewed. An assessment of a third hydro site in Wozi Falls was also conducted and flow measured during the low flow period in order to have this site as a fallback position in case any issues develop with the top two site choices. Environmental Review report for each pilot site to comply with USAID requirement is currently being prepared. After consultation with USAID these reports will be submitted to USAID after the environmental studies for EPA are completed and possibly permits obtained. LESSP is currently in the process of assigning Environment Protection Agency (EPA) listed consultants to carry out environmental assessments for both the Mein River and Wayavah Falls hydro pilot projects to comply with EPA requirements. LESSP expects to submit feasibility studies to USAID before the end of Year 1 or early in Year 2. The feasibility studies

will include technical analyses, financial analyses, auxiliary system analyses, environmental assessments, community development analyses and identification of potential public-private partnerships and funding opportunities.

Delivery of the feasibility studies in Year I was delayed for several reasons. One of the first tasks as part of a feasibility study is the hydrological analysis and no hydrological data has been collected in Liberia for the last 30 years as a result of civil conflict. Secondly, the proposed hydro project sites are located in small catchment rivers, which are the tributaries of large river systems, the flow records for which are not usually taken. This required flow measurements of the river during the entire low flow period from January – May/July. As a result, the hydrological analysis could not be initiated until May for the Mein River and until after mid-July for Wayavah Falls, when the low flow periods ended.

LESSP's Pilot Hydropower Sites – Feasibility Studies

Diagram 3: Pilot Hydropower Sites Summary

County	Name of River	Site	Design Flow (m ³ /sec)	Head (m)	Potential kW	Major Load centers
Lofa	Wayavah creek	Wayavah Falls	0.060	50	15	Gbarneway town
	Viah	Wozi Falls	5 ¹ .0	15	500	Wozi, Zilemai, Borkeza Junction, Fissebu, Yeala, Zorzor
Bong	Mein river	Upper Kpatwee Falls	2.0-6.0	35	500-1500	Suakoko district, Cuttington University (Phase I) and part of Gbarnga (Phase II)

No new auxiliary systems are being planned for the hydropower project low flow periods as this will not be financially sustainable. In the case of Mein River, approximately 47% of the commercial consumers in Suakoko District have their own generators. Some of the larger institutions such as Cuttington University and Phebe Hospital have sizeable generation capacity and are open to supply surplus generation to meet evening peak load of surrounding towns during the low flow period on the basis of a power purchase agreement with local distribution companies.

b) Engineering, Procurement, Construction (EPC)

LESSP could not complete this activity in Year I as completion and approval of feasibility studies took the entire year. However, the LESSP hydropower team did begin to map out alternative strategies for handling the EPC for each hydropower project. LESSP expects to submit both hydropower feasibility studies by the end of September 2011. Soon after the approval by USAID of the feasibility studies and the environmental review reports, LESSP will finalize the detailed engineering designs and drawings and the procurement and contract bidding documents as applicable and share with USAID for approval.

LESSP is in the process of evaluating different contract models of carrying out construction activities. A well thought out plan will save from any mishap in the project construction. In the process LESSP will continue to carry out construction capability of local companies. The decision on the best contract/construction modality will be based on the evaluation.

¹ The dry season flow varied from 1.67m³/s to 3.16 m³/s. The wet season flow can be estimated to be three times or more than this, based on which a rough design flow of 5m³/s has been assumed here.

For both hydro projects, LESSP will assess the best contract modality including LESSP serving as its own EPC contractor. In any case, LESSP will oversee subcontractors and actively supervise all aspects of subcontracted construction, including monitoring and supervising work progress and quality. LESSP will subcontract with Liberian companies to carry out the construction of the electricity distribution system. LESSP will ensure that the team provides on-the-ground supervision for all procurement, construction, installation, and training. LESSP will request USAID prior approval for procurement of generators, equipment and distribution material and also for local civil construction firms. LESSP will submit a Quality Control Plan before construction starts and a schedule no later than five days after work begins. Periodic Quality Control Reports will be submitted to USAID along with monthly schedule updates during construction. LESSP will ensure full compliance with USAID regulations, GOL rules and regulations, and environmental compliance. The COP will ensure standard regular communications with USAID to ensure agreement with plans.

Year 2 Results/Deliverables

- Environmental Approvals for two hydropower projects (December 2011 – January 2012).
- EPC and Quality Control Plans (January 2012).
- Site mobilization and start of construction of Wayavah Falls Micro Hydropower Project, (April 2012).
- Wayavah Falls Launch (September 2012).
- Contract award and initiation of construction of Mein River Hydropower Project (June 2012).

ii. Task 2: Biomass Systems

The main activities for Year 2 are completing environmental assessments and securing approvals from the EPA and USAID; preparation of biomass EPC and quality control plans and approvals; formalizing land-use agreements with the local communities and investors who will be the owners of the projects; securing private sector financing for Cocopa; awarding contracts for construction; and carrying out construction supervision of the pilot projects. The Sorlumba project will be up and running by the end of Year 2.

a) Feasibility Studies and Socio-Economic Analyses

LESSP identified viable biomass project sites in Nimba, Lofa and Bong Counties as a priority activity for the first six months of Year 1. Based on the sustainable availability of biomass resources and the potential for power generation by using different biomass resources, LESSP selected two sites in Lofa and Nimba Counties for preparing feasibility studies for pilot biomass power projects. The pilot projects have been identified for using two types of biomass resources, crude palm oil (CPO) and rubber wood chips. These resources are widely available in Liberia.

The biomass project in Sorlumba, Lofa County, called the Sorlumba Biomass Electricity Project (SBEP) is a biofuel power project with an installed capacity of 35 kW using CPO as fuel. The SBEP will be established as a community owned and managed project. During Year 1, LESSP completed the Feasibility Study Report for Sorlumba and received USAID approval for the same.

LESSP also completed the Feasibility Study Report for Cocopa in Nimba County. The Cocopa Biomass Power Project (CBPP) Project will use rubber wood chips as fuel with an installed capacity of 240 kW. It is structured as a public-private partnership whereby Liberia Company which owns the Cocopa Rubber Plantation will invest in the generating assets and USAID grant funds will be invested in the Transmission and Distribution assets. The Center for Sustainable Energy Technology (CSET) conducted a survey in

the proposed project coverage area for assessing the willingness and ability to pay for electricity by the potential consumers in the identified geographic locations. An initial draft Financial Model for the proposed Cocopa Biomass Power Project has been prepared for discussion with the management of the Cocopa Rubber Plantation for potential PPP investment. However, pending the execution of the Memorandum of Understanding with Liberia Company the submission of the Feasibility Study Report to USAID is delayed and LESSP will submit it to USAID in November 2011.

b) Engineering, Procurement, Construction (EPC)

LESSP could not complete this activity in Year 1 as completion and approval of feasibility studies took the entire year. However, the LESSP biomass team did begin to map out alternative strategies for handling the EPC for each biomass project. Soon after the approval by USAID of the feasibility studies (at the time of writing this plan Sorlumba has been approved and Cocopa will soon be submitted for approval) and the environmental reviews, LESSP will finalize the detailed engineering designs and drawings and the procurement and contract bidding documents, as applicable, and share with USAID for approval.

For both biomass projects, LESSP will assess the best contract modality including LESSP serving as its own EPC contractor. It is likely that LESSP will oversee the EPC work here, designing the biomass plants and overseeing all equipment installation and plant construction for the two biomass pilot projects.

LESSP will oversee subcontractors and actively supervise all aspects of subcontracted construction, including monitoring and supervising work progress and quality. LESSP will subcontract with Liberian companies to carry out the construction of the electricity distribution system. LESSP will ensure that the team provides on-the-ground supervision for all procurement, construction, installation, and training. LESSP will request USAID prior approval for procurement of generators, equipment and distribution material and also for local civil construction firms. LESSP will submit a Quality Control Plan before construction starts and a schedule no later than five days after work begins. Periodic Quality Control Reports will be submitted to USAID along with monthly schedule updates during construction. LESSP will ensure full compliance with USAID regulations, GOL rules and regulations, and environmental compliance. The COP will ensure standard regular communications with USAID to ensure agreement with plans.

c) Year 2 Results/Deliverables

- Submission of the Cocopa Feasibility Study Report (November 2011).
- Environmental Approvals for two biomass projects (December 2011 and February 2012).
- EPC and Quality Control Plans (March 2012 and May 2012).
- Construction Schedules (May 2012 – July 2012 and July 2012 – December 2012).
- Launch of Solumba Biomass Electricity Project (July 2012).

iii. Task 3: Additional Power Systems

LESSP anticipates that all current project funds will be required to develop the four pilot projects, so no funding will be available for additional RE power systems. However, the LESSP team will prepare a report on other renewable energy opportunities (solar, wind, biofuels) in Liberia, a deliverable not completed in Year 1 that will be completed in Year 2.

a) Year 2 Results/Deliverables

- A report on RE activities and opportunities in Liberia (February 2012)

iv. Task 4: Power System Operators (CBOs and Businesses)

Local communities need significant support to develop the skills needed to own and operate pilot plants; LESSP must also help build in-country technical capacity and assist communities in developing income flows to support plant operations and maintenance (O&M), repairs and upgrading.

LESSP anticipates that at least one (1) Power Company and three (3) Cooperative-type Community Associations will need to be formed, starting in Year 2, to own and operate the four pilot projects. Additionally, in the larger Mein River hydropower project that will reach a greater number of communities and households, LESSP anticipates the need for 15-20 Electricity User Groups to be formed to manage distribution in different sections of the towns that will be served. All of these organizations will be newly formed with limited to no experience in owning, operating and maintaining power plants and transmission and distribution of electricity to customers. They will need training in operational and financial management and planning, technical O&M matters, customer service, billings and collections, etc.

LESSP will continue to work closely with the RREA and LEC to identify local organizations and businesses, with the potential to become financially sustainable owners and operators of the LESSP power plants and transmission and distribution systems.

a) Subtask 2.4.1 Assess and Create a Database of Organizations Involved with Community and Cooperative Development in Target Areas

The LESSP team created a database of organizations involved in community and cooperative development in Bong, Nimba and Lofa counties, based on secondary sources of information particularly the database updated by Ministry of Planning and Economic Affairs. Once the pilot hydro and biomass sites were identified, the LESSP team conducted a survey in the project areas to collect information on organizations involved in community and cooperative development. The report was submitted to USAID in Year 1 and was approved. The following CBOS were identified as likely candidates to own and operate the four LESSP pilot projects.

A matrix showing potential organizations involved in cooperative/community development for collaboration with LESSP pilot projects is shown on the next page.

Diagram 4: Potential Organizations to collaborate with LESSP pilot projects

N0.	Pilot Project	Potential Organizations	Areas of Collaboration	Remarks
1.	Mein River Hydro Power Project (MRHPP)	Cuttington University	Could serve as one of the owner/shareholder of the power plant	The three organizations could be owner of the Mein River Hydro power plant by buying certain amount of share as an investment capital into the business to prove the owner status
		Phebe Hospital & School of Nursing	Could serve as one of the owner/shareholder of the power plant	
		Pulukpeh Multipurpose Farmers' Cooperative	Could serve as one of the owner/shareholder of the power plant	
2.	Wayavah Falls Hydro Power Project (WFHPP)	Gbarway Youth Association	Supplier of casual labor during the construction	The formation of a electricity cooperative that would manage the power plant could begin with the three groups
		Sucromu Rock Crusher Association	Supplier of crush rocks, sand & other local materials	
		Sucromu United Youth Development Association	Could be hired for the masonry, carpentry aspects of the construction	
3.	Cocopa Biomass Electricity Project (CBEP)	Gbatemon Rubber Farmers Union	Mobilizer of biomass resource supplier	These groups could later be transformed into users' organization to oversee the transmission and distribution lines and at the same time collect tariff in communities outside of Cocopa plantation.
		Flumpa Youth Development Project	Hired for construction of the project	
		Borzuah-Gbeipea Agriculture Organization	Mobilizer of biomass resource suppliers	
4	Sorlumba Biomass Electricity Project (SBEP)	Sorlumba People United Club	Could be used for casual labor during the construction of the power plants. This group will be transformed into users cooperative to own and manage the power plant	Sorlumba People United Club could be transformed into a cooperative to own and manage the biomass electricity project in Sorlumba

In the case of the smaller pilot projects, local groups from the community will become the owner/manager of the power plant. For the larger Mein River Hydro project, LESSP anticipates that a group of private sector shareholders will form a company to own/manage the plant. LESSP will develop MOUs/Agreements with the communities and the company, subject to approval from USAID, in Year 2.

b) Subtask 2.4.2 Provide Support for Businesses and Cooperatives Operating Power Systems

As the time line for completing feasibility studies required more time than anticipated, particularly for the hydropower sites, due to the need to complete flow measurements of the rivers in the entire low flow period, this activity which must follow completion of feasibility studies, has been pushed into Year 2. A draft Training Plan will be prepared and concluded in coordination with RREA.

This activity will be intensified after the approval of feasibility studies and as environmental permits are issued by EPA. During the interim period, contingent MOUs/Agreements describing the roles of each party will be signed with the communities and the partners, who will eventually own, operate and manage these power plants. LESSP will facilitate formation and registration of Electricity Cooperatives and develop and implement plans for capacity building of the board members of the cooperative. LESSP will also facilitate formation of local O & M teams who will be put through various training programs to enable them to operate, maintain and manage the power plants. In the case of larger power plants such as Mein River, LESSP will facilitate establishment of a Power Company, strengthen the board of directors and help establish strong O & M teams and build operation, maintenance and management capacity of large power plants. LESSP will coordinate with LEC to revisit the practicality of the existing electrical standards (e.g. transmission and distribution system) for the pilot projects. LESSP will also coordinate with LEC/RREA to develop institutional set up for off-grid power companies or cooperatives. Such coordination/collaboration will help in harmonizing technical standards and also institutional and management set up of power companies taking into account LEC's grid extension in the future.

c) Subtask 2.4.3 Provide Short-term Assistance to Strengthen Centers of Higher Education in the Science and Engineering of Renewable Energy Technologies; up-date curricula at Vocational Schools and Other Centers of Higher Education to Enhance Program Objectives and Results

In this subtask LESSP will strengthen centers of higher education (e.g. vocational schools, universities, colleges) in the science and engineering of renewable energy technologies. Specifically LESSP is to update curricula at vocational schools and other centers of higher education to enhance LESSP's objectives and results. LESSP is contractually required to update curricula at one training institution.

In Year 1 LESSP held initial discussions with these institutions, with USAID's Excellence in Higher Education for Liberia Development (EHELD) project and other relevant USAID programs, and with other donors' programs. Initial discussions were held with University of Liberia, Stella Maris Polytechnic, Book T Washington Institute (BWI) and Lutheran Training Institute (LTI) on the present status of their engineering/technical courses in general and RE education in particular and, identifying areas for support to introduce or strengthen renewable energy curriculum teaching and research.

For Year 2 LESSP will conduct additional meetings and research and will produce a report of the status of renewable energy training in higher education institutions in Liberia with recommendations for which institutions LESSP should support and proposed activities to strengthen teaching capabilities at these institutions. In Year 2 LESSP will provide technical assistance to strengthen at least one center of higher education including developing renewable energy curriculum and preparing the instructors to deliver the training and implement the curriculum by the Fall semester 2012 (September).

i) Year 2 Results/Deliverables

- MOU/Agreements signed with Community Organizations/Partners in Pilot Project implementation (October 2011 - January 2012)
- Electricity Cooperative management training/support Plan (December 2011)
- Power Systems Operator Training Plan (February-April 2012)
- Larger Power Plant Company management training/support plan (February 2012)
- Higher Education Institutional Support Plan (January 2012)
- RE Curriculum designed (September 2012)

d) Subtask 2.4.4 Global Development Alliances (GDAs) and Public Private Partnerships In Year 1, LESSP researched and pursued opportunities for private sector/donor support to LESSP pilot projects and produced a LESSP Public-Private Partnership/GDA Plan.

In Year 1, LESSP researched and pursued opportunities for private sector/donor support to LESSP pilot projects and produced a LESSP Public-Private Partnership/GDA Plan.

Following which, a presentation was made at the CSR Forum, which is comprised of 27 companies, mostly representing the private sector, that have signed concessions with the Government of Liberia. Currently, Arcelor Mittal chairs the CSR Forum. LESSP will contact the County Legislative caucus which has a say in the allocation of county development funds, which Arcelor Mittal provides annually 1.5 million USD to Nimba county and 500,000 USD to Bong county.

Discussions were held with Liberia Bank International Limited for possibility of raising debt financing for the proposed CBPP under USAID's Development Credit Authority (DCA) program.

If pilot projects are implemented as public private partnerships, LESSP will assist the private investors to raise local debt financing under USAID's DCA program.

i) Year 2 Results/Deliverables

- At least one public –private partnership/GDA agreement signed (September 2012)

C. Potential Challenges and Mitigation Strategies

Diagram 5: Potential Challenges and Mitigation Strategies, Objective 2

Objective 2: Potential Challenges	Mitigation Strategies
Achieving private sector investment in renewable energy.	Identify and engage investors from the planning stage of pilot plants; arrange meetings with local technical experts and encourage formation of local energy project management companies; provide capacity building support, with on-the-job training to boost confidence; share business plans for pilot plants; and use an effective public-private/GDA strategy to bring in private investment.
Reaching financial closure for projects with private sector investment in renewable energy.	Any private sector investment with substantial debt financing will take time because lenders will want to carry out comprehensive due diligence studies. LESSP will work with the private sector partner in dealing with lending institutions and will address any technical and financial issues with lending institutions.
Non responses from EPC type contractors because of the small size of pilot plants.	LESSP will utilize different media to advertise RFPs and receive responsive proposals. If no such responsive proposals are received, LESSP will act as the EPC contractor by subcontracting individual vendors for different components of the project physical facilities subject to receiving prior approval of USAID.
Lack of local engineering construction firms to undertake civil construction components of biomass plants.	LESSP will explore the regional engineering construction firms with Liberian counterparts for the implementation of civil construction work.
Building local technical capacity to manage and operate renewable energy systems.	Provide hand holding support to the local communities during the first few months of the plant operation. Provide technical training to the employees through the provision of on –the job-training by the equipment and machinery vendors as part of the procurement of the power system.
Ensuring commercial operation.	Develop maximum private sector participation; support preparation of strong business plans and strategies to implement them; develop capable technical manpower and service providers; and seek out and develop opportunities for carbon financing offsets. Develop capable technical and managerial manpower program for the owners/employees of the power system. Help them develop reliable tariff collection systems and monitor the operation costs closely. Help them avoid theft and waste. Ensure the tariff reflect the cost of generation.

<p>Ensuring sustainability and equitable growth.</p>	<p>Ensure that environmental sustainability standards are followed, from screening through construction, commissioning, and operation; maximize use of local labor, materials, and companies; maximize socio-economic benefits to communities by enhancing opportunities for economic activities; develop project-to-project links to improve education, communication, and health; increase the role of women in project activities; and conduct youth-targeted activities within organizations and educational institutions to raise awareness of RE and support development of science and engineering skill sets.</p>
<p>Reliability of hydrological analysis due to lack of long term historical hydrological data (rainfall, river gauge reading, etc.).</p>	<p>This is particularly applicable to the mini hydro site. LESSP plans to install a river gauging station and possibly a rain gauge station and continue to collect data in Year 2 which will also be used for firming up analysis for planned phase II for MRHPP.</p>
<p>Timeline for securing Environmental permits from EPA and Environment Review report approval from USAID, particularly for mini hydro project could be delayed, which would delay the start of construction.</p>	<p>Hold prior consultation with EPA and USAID to understand their reporting and Environmental Assessment requirements and prepare reports to comply with the requirements.</p>
<p>Completion of the larger biomass projects within Year 2.</p>	<p>The completion of the larger biomass project may get delayed depending on the date of reaching financial closure and the approval process for the project. Although both these tasks are beyond the control of LESSP, LESSP will work very closely with approving agencies to expedite the same.</p>

VI. Objective 3: Collaborate with International Donors for the Expansion of Monrovia’s Power Distribution Network

Team Leader: Chief of Party

Supporting Team Members: Private Power Producer Specialist; Financial/Procurement Specialist; TBD Fund Manager

Collaborating Partners: Liberia Electricity Corporation, Manitoba Hydro International, NORAD, World Bank

Year 2 Deliverables: Pending USAID approval, the result of Objective 3 will be that a to-be-determined number of training modules will be established for the LEC and delivered to a to-be-determined number of technical and managerial employees of LEC.

A. Overview

The Norwegian Agency for Development Cooperation (NORAD) is funding a management contract (MC) awarded to Manitoba Hydro International to manage the LEC and to extend electrification to low- and middle-income underserved populations in Monrovia in partnership with the LEC.

In the original scope of work for Objective 3 LESSP was to manage USAID/Liberia contributions for the procurement of electricity distribution materials (e.g. meters, wires, transformers, etc.) to connect low and middle income customers to the grid. LESSP was to be responsible for establishing the technical specifications; competing subcontracts for the procurement of materials; and overseeing quality control for the expansion of the distribution network. LESSP was to work with the MC contractor to develop a procurement system to ensure that all subcontracts receiving USAID funds would be competitively subcontracted. LESSP was to sit on subcontract selection committees and approve all final subcontracts to be paid using USG funds and to monitor all subcontracts to ensure the delivery of all agreed upon subcontract deliverables. The result of this work would be support for system expansion to at least 5,000 low and middle income customers in and around Monrovia. In addition, the MC/LEC would have a sound procurement plan, including standard procedures for RFQs, evaluation criteria, standard terms of business, and procedures for monitoring and acceptance.

In Year 1 LESSP worked with the LEC and USAID to devise a procurement auditing strategy that would ensure USAID procurement compliance and enable LESSP to support the LEC distribution procurement plans. In July 2011, LEC approached USAID's LESSP and requested that LESSP support a comprehensive Training and Development Program (TDP) for LEC employees instead of procurement of distribution equipment. LEC further informed LESSP that LEC had secured some funding resources from other donors to procure equipment and that an equally important need was to build the technical and management capacity of the LEC employees because even with all the equipment for distribution expansion, without this manpower development the LEC may not be able to accelerate electricity connection to low income households in Monrovia. LESSP has discussed this request from

the LEC with USAID and USAID, in principle, has indicated their support for this alternative strategy to support the LEC. LESSP understands that the LEC needs a manpower capacity building strategy and plan to be successful and to support this work is in keeping with USAID/Liberia and LESSP's program objectives. At the time of submitting this work plan, LESSP is awaiting a more detailed TDP proposal and budget from the LEC to submit it to USAID for approval.

Thus the revised purpose of Objective 3 (subject to formal approval by the USAID Contracting Officer) is for LESSP to manage USAID/Liberia contributions to this effort through the funding of a comprehensive TDP for LEC employees with a view to enhancing their skills in managing LEC's generation and T&D systems and to accelerating the construction of electricity connections to low and middle income customers. LESSP will request the USAID Contracting Officer for a formal Contract Modification to support the TDP once LESSP receives the final LEC proposal.

Anticipated Results During Life of the Project

Pending USAID approval, the result of Objective 3 will be that a to-be-determined number of training modules will be established for the LEC and delivered to a to-be-determined number of technical and managerial employees of LEC. This training will strengthen the LEC's ability to deliver services, thus accelerating expansion of new transmission and distribution for Monrovia.

B. Year 2 Activities, Results, Deliverables

i. Task 1: Fund Management for Training and Development

a) Subtask 3.1.1 LESSP Shall Work with the contractor of a Five-Year Management Contract (MC) for the Liberia Electricity Corporation (LEC). The MC Contractor will be responsible for implementing a training and development program.

LESSP shall ensure that delivery of the TDP ensures competitive subcontracting and will monitor all subcontracts to ensure delivery of all agreed upon deliverables.

b) Subtask 3.1.1 LESSP SHALL WORK WITH THE CONTRACTOR OF A FIVE-YEAR MANAGEMENT CONTRACT (MC) FOR THE LIBERIA ELECTRICITY CORPORATION (LEC). THE MC CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING A TRAINING AND DEVELOPMENT PROGRAM.

LESSP will monitor the implementation of the TDP closely and will release funds upon satisfactory evidence as to the successful completion of training modules.

i) Year 2 Results/Deliverables

Pending USAID approval, the result of Objective 3 will be that a to-be-determined number of training modules will be established for the LEC and delivered to a to-be-determined number of technical and managerial employees of LEC.

C. Potential Challenges and Mitigation Strategies

Diagram 6: Potential Challenges and Mitigation Strategies, Objective 3

Objective 3: Potential Challenges	Mitigation Strategies
Delay in implementing the Training and Development Program due to factors beyond LESSP's influence	Work very closely with the Management Contractor to structure the implementation program in compliance with USAID regulations
Employees may not take the training program seriously	Work with the LEC Board to ensure appropriate selection of employees to be trained. Ensure relevancy of training for employees and quality of training. Training should be mandatory and institutionalized.

VII. Grants Under Contract

LESSP grants are to support the development of four renewable energy pilot projects which will include construction of electricity generation plants with accompanying transmission and distribution systems. Each of these projects will require formation of new Liberian entities to own, manage, and operate these new power projects. These new Liberian entities will require training and operational support to ensure success and sustainability and will be the priority target for grant funding. In Year 2 the LESSP team will provide technical assistance and training to create and launch these entities and will utilize grant funding to further develop and strengthen these entities.

LESSP anticipates that at least one (1) Power Company and three (3) Cooperative-type Community Associations will need to be formed, starting in Year 2, to own and operate the four pilot projects. Additionally, in the larger Mein River hydropower project that will reach a greater number of communities and households, LESSP anticipates the need for 15-20 Electricity User Groups to be formed to manage distribution in different sections of the towns that will be served. All of these organizations will be newly formed with limited to no experience in owning, operating and maintaining power plants and transmission and distribution of electricity to customers. They will need training in operational and financial management and planning, technical O&M matters, customer service, billings and collections, etc. For example, grant funding could be used to provide training to the community youth, perhaps from LEC with their concurrence, who could be employed in these pilot projects as operators, linemen etc. These new operating entities will also require financial support to help start up their operations for items including: office space, office furniture, computers and other equipment, salaries for start-up staff, etc. Additionally LESSP anticipates some pilot areas may need support to subsidize the cost of prepaid meters (Mein River) and end-boards (Sorlumba and Cocopa) for some lower income customers.

In Year 2 the LESSP team will develop detailed plans for appropriate use of grant funding for each pilot owner/operator, with associated grant agreements and a grant manual approved by USAID to guide the program and grant recipients to ensure compliance with USAID guidelines (including ADS 303 and Mandatory Standard Provisions for Non US Recipients) for use of grant funds.

If not all the grant funding will need to be used to support these primary operating organizations, then other grant recipients will be considered for funding, with an emphasis on selecting entities and activities that promote employment generation and skill building, especially for women and youth. For example, during the construction or pre-construction phase, grants could support skill development training related to construction activities to enable local employment opportunities, through local partners with such experience. Prior to electrification, grants could support local partner-managed electricity

awareness programs (electricity uses, safety issues, end-uses). Finally, during the power plant operation phase grants could support enterprise development training for new business creation once electricity supply is available.

VIII. Communications and Outreach

LESSP will hire a local Communications Officer in Year 2 to manage project information and communications with the Government, public and media. LESSP provides monthly status reports to USAID, as well as frequent informal presentations and reporting to GOL stakeholders and donors on LESSP progress, challenges and achievements. Formal public events will be developed as well, to include media coverage through radio and press. All formal events and presentations will comply with the approved LESSP Branding and Marking Plan.

In Year 2, LESSP will make significant progress in developing its four pilot projects and two of the four projects will be launched. Much of LESSP's Communications and Outreach activities in Year 2 will focus on these four pilots in Bong, Lofa and Nimba counties, including formal project launch activities.

IX. Monitoring, Evaluation, Reporting

LESSP provides monthly status reports to USAID in addition to Quarterly Progress Reports, Financial Reports and Annual Reports. LESSP also maintains a Performance Monitoring Plan (PMP) that describes linkages between the project inputs/activities and expected results and objectives; and identifies indicators and targets for measuring program success.

After consultation with USAID/Liberia, the Government of Liberia, and other key donors and stakeholders in Liberia, LESSP completed a PMP that was approved by USAID in August 2011.

The LESSP Monitoring, Evaluation and Communication Specialist oversees the program's indicator management and data tracking as detailed in the PMP, working closely with Objective team leaders to link with implementation activities.

X. Cross Cutting Issues

In Year 1, LESSP developed a Cross-Cutting Issues (Gender, Youth, ICT) Integration Plan to serve as a guide to the LESSP team throughout the implementation of project activities to keep cross-cutting issues at the forefront of planning, design, training, community ownership transfer, as well as the selection of beneficiaries and trainees. With its focus on improving energy infrastructure, LESSP activities and results can positively impact some cross sector areas important to USAID including local capacity building, democracy and governance, environmental sustainability and economic growth. With this work plan's activities, LESSP will take into consideration ways to integrate youth, gender and information, communication technology (ICT). For example, to the extent practicable, LESSP will seek to:

- Provide employment opportunities to Liberians in the implementation of the construction of pilot plants and electricity sector value chain.
- Build capacity of Liberian local government, women, and youth to manage and maintain electricity infrastructure.
- Increase citizen's participation with local government on the identification and prioritization of community needs for electricity access.

- Support local communities and governments to leverage private resources to provide affordable and accessible electricity services.
- Encourage community participation and empowerment in the planning, design, construction, and maintenance of electricity infrastructure.
- Demonstrate the U.S. commitment to Liberia's reconstruction and poverty alleviation.

Diagram 7: LESSP Work Plan Timeline for Year 2

LIBERIA ENERGY SECTOR SUPPORT PROGRAM (LESSP)

WORK PLAN TIMELINE FOR PROJECT YEAR TWO (10/04/11 – 10/03/12)

DRAFT 1 **3 DECEMBER 2010**

Objective 1: Strengthen the GoL’s Capacity to Implement Plans for Rural Electrification as Expressed in the National Energy Sector Policy

TASK 1: Conduct Human Resources skills assessment for the MLME (RREA specific).
Conduct a skills assessment of human resources within the Rural and Renewable Energy Agency (RREA). Utilize the skills assessment as the basis of developing a training plan that will help build technical and managerial capacity of the RREA to implement its plans for rural electrification.

Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone/Deliverable
1	Carry out the HR skills and needs reviews for any new RREA directors hired in Year 2	ESRS	COP, ESG	Oct 2011	Sep 2012		Identification of capabilities/gaps for any new RREA directors hired in Year 2
	Update Skills Assessment Report for any new RREA directors	ESRS	COP, ESG	Oct 2011	Sep 2012		Skills Assessment Report and any new RREA directors hired in Year 2

TASK 2: Develop and Execute Training Plan to assist RREA.

Develop and execute a training plan on the basis of results from Task #1. The primary focus of the task will be to build capacity of staff at the Rural Renewable Energy Agency (RREA) and the Renewable Energy Fund (REFUND), as elaborated in the National Energy Policy.

Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone/Deliverable
1	Develop Training Plan for any new RREA directors hired in Year 2	ESG	COP, ESG	Oct 2011	Sep 2012	Multiyear plan	Training Plan for new RREA directors hired in Year 2
2	Execute Training Plan developed in Year 1 for existing directors, as well as training courses identified for new RREA director hires in Year 2.	ESG	ESG, and African training institutes to be attended by RREA directors, PMU	Oct 2011	Sep 2012		RREA attendance at selected Training Courses in Year 2 and training reports; currently 6 Directors to be trained
3	Draft REFUND operating guidelines	ESG	COP	Jan 2012	July 2012		REFUND Operating Guidelines document - draft
4	Finalize REFUND operating guidelines	ESG	COP	Aug 2012	Sep 2012		REFUND Operating Guidelines document - final

TASK 3: Develop action plan for an electricity regulatory commission.

Develop action plan for an Electricity Regulatory Board (ERB).

Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
1	Prepare final energy law review and report	Tetrattech	ESRS, COP	Oct 2011	Sep 2012	Ongoing technical assistance and support on energy law throughout Year 2 if requested	Final Energy Law Review and Report
2	Finalize ERB Action Plan	Tetrattech	ESRS, COP	Oct 2011	Sep 2012	Will be linked to energy law as this is developed. On-going technical assistance and support on ERB throughout Year 2 if requested	Final ERB Action Plan

Objective 2: Establish Commercially-Viable Pilot Plants that Provide Renewable Energy Services to Population Centers in Bong, Lofa and Nimba Counties.

TASK 1: Establish two hydroelectric power systems.

Establish two hydropower systems, one mini hydro with a minimum output of 100 kW and maximum 5 MW, and one micro hydro system with a maximum output of 100 kW. Preferably these systems should be designed to supply electricity through an auxiliary source (renewable energy powered) when water levels are their lowest (time and budget permitting).

Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
Subtask 2.1.1 Undertake feasibility studies and socio-economic analyses	Feasibility studies (Wayavah Falls Micro Hydropower Project	DCOP	Hydropower team, REE, COO	Feb 2011	Oct 2011		Feasibility studies and socio-economic analyses completed
	Mein River Hydropower Project)			Feb 2011	Oct 2011		
	Environmental compliance of Wayavah Falls Micro Hydropower Project	DCOP	Hydropower team, Environmental Assessment team, REE, COO, Green Consultancy	Aug 2011	Dec 2011		EPA Permits and USAID approval Environment Assessment reports with EMMP
	Environmental compliance, Mein River Hydropower Project	DCOP	Hydropower team, Environmental Assessment team, REE, COO, Green Consultancy	Aug 2011	Jan 2012		EPA Permits and USAID approval Environment Assessment reports with Environmental Mitigation and Monitoring Plan

Subtask 2.1.2 Develop TOR for EPC contracting mechanisms to build the facilities	Develop design documents and engineering diagrams for EPC contracts for Wayavah Falls	DCOP	Hydropower team, REE, Procurement Specialist, PMU, HQ	Oct 2011	Jan 2012	Due to small size project WI is likely to be its own EPC contractor	Design documentation completed
	Create bidding/tender documents for procurement of suppliers/subcontractors for Wayavah Falls and submit to USAID for review and approval	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Oct 2011	Jan 2012		Final TOR and release of Bids/Tenders
	Release bidding/tender documents and select the vendors /subcontractors for Wayavah Falls	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Feb 2012	Apr 2012	There can be several subcontracts (Petty Contracts) awarded from time to time during the period as per requirements	Award Subcontracts
	Prepare draft Quality Control Plan for Wayavah Falls and submit to USAID	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Oct 2011	Feb 2012		Draft plan issued
	Finalize Quality Control Plan for Wayavah Falls	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Feb 2012	Mar 2012		Final Quality Control Plan delivered
	Develop design documents and engineering diagrams for EPC contracts for Mein River	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Nov 2011	Jan 2012	Some uncertainty of finding reputed international firms to handle small project contract or their cost may be very high; WI may also be its own EPC contractor	Design documentation completed
	Create bidding/tender documents for procurement of suppliers/subcontractors for Mein	DCOP	Hydropower team, PPPS, COP, REE, Procurement	Nov 2011	Feb 2012		Final TOR and release of Bids

	River and submit to USAID for review and approval		Specialist, PMU, HQ				
	Release bidding/tender documents	DCOP	Hydropower team,	February	May 2012		Subcontracts awarded
	and select the vendors or subcontractors for Mein River		PPPS, COP, REE, Procurement Specialist, PMU, HQ	2012			
	Prepare draft Quality Control Plan for Mein River and submit to USAID	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Oct 2011	Feb 2012		Draft plan delivered
	Finalize Quality Control Plan for Mein River	DCOP	Hydropower team, PPPS, COP, REE, Procurement Specialist, PMU, HQ	Feb 2012	Mar 2012		Final Quality Control Plan delivered
N/A Construction	Site mobilization and complete construction of Wayavah Falls	DCOP	Hydropower team, PPPS, COP, REE, COO, MEC, Procurement Specialist, PMU, HQ	May 2012	Sep 2012		Construction completed approval
	Site mobilization and initiate preparatory work for construction of Mein River	DCOP	Hydropower team, PPPS, COP, REE, COO, MEC, Procurement Specialist, PMU, HQ	Jun 2012	Sep 2012		Preparation work started

TASK 2: Establish two biomass-powered electricity systems.

Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
Subtask 2.2.1 Undertake feasibility studies and socio-economic analyses	Final comments/approval from USAID on Cocopa Feasibility Study	PPPS	Biomass team, REE, COO	Nov 2011	Nov 2011	An MOU needs to be executed between LESSP and the Liberia Company before finalizing the feasibility study	Feasibility study approved
	Environmental Compliance of the Sorlumba Biomass Electricity Project	PPPS	Biomass team, Environmental Assessment team, REE, COO, Green Consultancy	Nov 2011	Dec 2011	After receiving the Environmental Permit from EPA of Liberia, USAID approval will be sought along with the EMMP	Environmental Permit from EPA of Liberia USAID BEO Approval
	Environmental Compliance of the Cocopa Biomass Electricity Project	PPPS	Biomass team, Environmental Assessment team, REE, COO, Green Consultancy	Nov 2011	Feb 2012	After receiving the Environmental Permit from EPA of Liberia, USAID approval will be sought along with the EMMP	Environmental Permit from EPA of Liberia USAID BEO Approval
Subtask 2.2.2 Develop TOR for EPC contracting mechanisms to build the facilities	Develop Procurement Strategy for each of the components of the Sorlumba Biomass Electricity Project	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU, HQ	Oct 2011	Nov 2011		Approved Procurement Strategy
	Develop Procurement Strategy for each of the components of the	PPPS	Biomass team, COP, DCOP, REE,	Oct 2011	Feb 2012	The Cocopa Project is structured as a PPP transaction, and therefore,	Approved Procurement Strategy

	Cocopa Biomass Electricity Project		Procurement Specialist, PMU, HQ			this sub-task activity will be undertaken in consultation with the private equity investor	
	Create bidding/tender documents for procurements of suppliers/subcontractors for the Sorlumba Project and submit to USAID for review and approval	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU, HQ	Jan 2011	Feb 2012		Final TOR and release of Bids
	Create bidding/tender documents for procurements of suppliers/subcontractors for the Cocopa Project and submit to USAID for review and approval	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU, HQ	Mar 2012	Apr 2012	The Cocopa Project is structured as a PPP transaction, and therefore, this sub-task activity will be undertaken in consultation with the private equity investor	Final TOR and release of Bids/Tenders
	Release bidding/tender documents and select the preferred vendors/subcontractors for the construction of the Sorlumba Project	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU, HQ	Feb 2012	Apr 2012		Subcontracts awarded
	Release bidding documents and select the preferred vendors/subcontractors for the construction of the Cocopa Project	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU, HQ	April 2012	June 2012	The Cocopa Project is structured as a PPP transaction, and therefore, this sub-task activity will be undertaken in consultation with the private equity investor	Subcontracts awarded
	Submit draft Quality Control Plans for the construction of the: (a) Sorlumba Project to USAID	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU,	Mar 2012 May 2012	Mar 2012 May 2012		Draft plans

	(b) Cocopa Project		HQ				
	Finalize Quality Control Plans for (a) Sorlumba Project b) Cocopa Project	PPPS	Biomass team, COP, DCOP, REE, Procurement Specialist, PMU, HQ	Apr 2012 Jun 2012	Apr 2012 Jun 2012	On receipt of USAID concurrence	Final Quality Control Plans
N/A Construction	Site mobilization and complete constructions for Sorlumba	PPPS	Biomass team, COP, DCOP, REE, COO, MEC, Procurement Specialist, PMU, HQ	May 2012	Jul 2012		Construction completed, approval
	Site mobilization and initiate preparatory work for construction of Cocopa (completed in 2012)	PPPS	Biomass team, COP, DCOP, REE, COO, MEC, Procurement Specialist, PMU, HQ	Jul 2012	Sep 2012		Preparation work started

TASK 3: Funds permitting, produce two additional power systems using any of the following technologies: solar, biofuels, wave, geothermal or wind.							
Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
N/A	Prepare report on RE activities and opportunities in Liberia	DCOP	REE, COO	Oct 2011	Feb 2012	This was originally due in year 1 but has been pushed to year 2.	Final Report on RE Activities and Opportunities

TASK 4: Develop a program to establish community-based organizations and/or assist local businesses to operate and manage LESSP power systems.

Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
Subtask 2.4.1 Create database of community and cooperative organizations in target areas	Confirm entities that will own and operate the four pilot projects.	DCOP	COO, MEC PPPS, COP	Oct 2011	May 2012	Database report was delivered in year 1. In year 2 this information will be used to select organizations to own and operate the pilot projects	MOUs/Agreements with community organizations or partners-all four sites
Subtask 2.4.2 Provide training and material support for cooperatives/businesses operating power systems	Design training strategy and plan for pilot project operating entities. Start implementing training for the first pilot projects.	DCOP	PPPS, Hydropower team, Biomass team, REE, COO, MEC, PMU	Mar 2011	Sep 2012	Training of operating entities will begin in Year 2 for at least the two pilot projects that will be on line in Year 2.	Power System Operator Training Plan – delivered by April 2012; Training modules delivered and training reports
Subtask 2.4.3 Provide STTA to strengthen centers of higher education in RE science & engineering	Produce Higher Education Institutional Support Plan with recommendations for LESSP Years 2-4	DCOP	STTA PMU, ESG	Dec 2011	Feb 2012		Report with recommendations
	Provide technical assistance and up-date curricula at one institution	DCOP	STTA, PMU, ESG	Jan 2012	Sept 2012		Curriculum
Subtask 2.4.4 Pursue Public Private Partnerships with non-traditional resource partners to leverage USAID funds in expanding the delivery of RE	Continue work to develop a public private partnership to secure private sector funding for one of the pilot projects	COP	DCOP, PPPS, STTA, COO, MEC	October 2011	September 2012	A PPP priority plan was submitted to USAID end of Year 1.	Development of a Public Private Partnership

Objective 3: Collaborate with International Donors for the Expansion of Monrovia's Power Distribution Network.

TASK 1: Manage a Fund for implementation of a Training and Development Program (TDP) for LEC employees with a view to accelerating the electricity connections to low and middle income customers							
Work with the management contractor (MC) for the Liberia Electricity Corporation (LEC). The MC will be responsible for developing the TDP. Work with the MC to develop a training procurement system for speedy implementation of the TDP							
Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
Subtask 3.1.1 Work with LEC MC to establish an implementation program for the training and skills development of LEC employees, subject to the Contract7 Amendment.	Develop a detailed TDP program on modular basis including budgets for each training module and submit it to USAID for concurrence.	COP	PPPS, PS, PMU, HQ	TBD	TBD	The new task for Year 2 has been created on the basis of amending the Contract scope of work for Objective 3 in order to accommodate the request of LEC/MC.	USAID approval
	Enter into an MOU with the Board of LEC for the implementation of the TDP.	COP	PPPS, PS, PMU, HQ	TBD	TBD		Executed MOU
	Monitor the implementation of training modules as per the TDP	COP	PPPS, PS, PMU, HQ, MEC	TBD	TBD	LEC/MC and the Training Provider must use the result of pre training and post training tests as a benchmark for determination of successful completion of training modules.	No of Training Modules Conducted. No of Trainees successfully completing the training modules. LEC/MC Quarterly Reports

Subtask 3.1.2 Release funds for implementation of Training Modules	Release funds to MC/Training Provider on successful implementation of each training module	COP	PPPS, PS, PMU, HQ	TBD	TBD		No of Training Modules LEC Board confirmation
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Reporting

Reporting Requirements – Year 2							
Subtask	Task Activities	Lead	Support	Start Date	End Date	Comments	Milestone / Indicator
	Year 2 Annual Work Plan	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	July 2011	Sep 3, 2011		Work Plan delivered to USAID for approval
	Year 1 Annual Report	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	Oct 2011	Nov 2011		Annual Report delivered to USAID for approval
	Year 2 Quarterly Report 1	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	Jan 1, 2012	Jan 31, 2012		Report delivered to USAID for approval
	Year 2 - Quarterly Report 2	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	Apr 1, 2012	Apr 30, 2012		Report delivered to USAID for approval
	Year 2 - Quarterly Report 3	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	Jul 1, 2012	Jul 31, 2012		Report delivered to USAID
	Year 2 Quarterly Report 4	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	Oct 3, 2012	Nov 4, 2012		Report delivered to USAID
	Year 3 Annual Work Plan	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	July 2012	Sep 3, 2012		Work Plan delivered to USAID
	Annual Review/Update of Performance Monitoring Plan (PMP)	MEC	PMU, COP, DCOP, PPPS, ESRs, COO	Jul 2012	Sep 2012		Plan updated and delivered to USAID for approval
	Year 2 Annual Report	COP	PMU, DCOP, PPPS, ESRs, COO, MEC	Oct 2012	Nov 2012		Report delivered to USAID
	Quality Control Reports	PPPS/DCOP	COP, RE, PS, HQ, PMU	TBD	TBD		QC reports delivered to USAID
	Construction Reports	PPPS	COP, RE, PS, HQ, PMU	TBD	TBD		Construction Reports delivered to USAID

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