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# USAID'S LIBERIA ENERGY SECTOR SUPPORT PROGRAM (LESSP) - YEAR TWO ANNUAL TECHNICAL PROGRESS REPORT

OCTOBER 1, 2011 – SEPTEMBER 30, 2012

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OCTOBER 31, 2012

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# **USAID'S LIBERIA ENERGY SECTOR SUPPORT PROGRAM (LESSP)**

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**October 1, 2011 – September 30, 2012**

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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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Appendix I: Success Story on RREA Year Two Training

## Abbreviations and Acronyms

BEO	USAID/WDC Bureau Environmental Officer
CBEP	Cocopa Biomass Electricity Project
CBOs	Community-based Organizations
CDA	Cooperative Development Agency
CESLY	Core Education Skills for Liberian Youth
COP	Chief of Party
COR	Contracting Officer's Representative
COTR	Contacting Officer's Technical Representative
CPO	Crude Palm Oil
CSET	Center for Sustainable Energy Technology
CSR	Corporate Social Responsibility
CRF	Corporate Responsibility Forum
DCA	USAID's Development Credit Authority
DCOP	Deputy Chief of Party
DTI	Development Training International
DQA	Data Quality Assurance
EPA	Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
ERB	Energy Regulatory Board
ESG	Energy and Security Group
ESRS	Energy Sector Reform Specialist
EU/EC	European Union/European Commission
FGD	Focus Group Discussions
GDA	Global Development Alliance
GOJ	Government of Japan
GOL	Government of Liberia
GON	Government of Norway
GPS	Global Positioning System
Green cons	Green Consultancy Inc.
HQ	Head Quarters
ICT	Information and Communication Technology
KII	Key Informant Interview
KNUST	Kwame Nkrumah University of Science and Technology
LEAP	Liberia Energy Assistance Project
LEC	Liberia Electricity Corporation
LESSP	Liberia Energy Sector Support Program
LIBCO	The Liberia Company
LOE	Level of Effort
LTI	Lutheran Training Institute
MC	Management Contractor
MEC	Monitoring, Evaluation, and Communications Specialist
M&E	Monitoring and Evaluation
MHI	Manitoba Hydro International
MLME	Ministry of Lands, Mines and Energy
MOU	Memorandum of Understanding
MRHP	Mein River Hydropower Project
NEC	National Election Commission
NEP	National Energy Policy (Liberia)
NIC	National Investment Commission
NORAD	Norwegian Agency for Development Cooperation

NRC	Norwegian Refugee Council
NVE	Norwegian Water Resources and Energy Directorate
ODAFARA	Organization for the Development of Agriculture and Farmer Related Associations
O&M	Operation and Maintenance
PIDS	L-MEPS Performance Indicators Database System
PMP	Performance Monitoring Plan
PRS	Poverty Reduction Strategy
PPP	Public Private Partnership
PPPS	Private Power Producer Specialist
RE	Renewable Energy
REFUND	Renewable Energy Fund
RET	Renewable Energy Technologies
RoL	Republic of Liberia
RREA	Rural and Renewable Energy Agency
SCECS	Sorlumba Community Electric Cooperative Society
SBEP	Sorlumba Biomass Electricity Project
SHOPS	Smallholder Oil Palm Support Project
SME	Small and Medium Enterprises
TDP	LEC Training and Development Program
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization
USAID	U.S. Agency for International Development
WAPP	West African Power Pool
WFMHP	Wayavah Falls Micro Hydro Project
WB	World Bank
WI	Winrock International

## I. PROJECT DESCRIPTION

The U. S. Agency for International Development's (USAID) Liberia Energy Sector Support Program (LESSP) contract was awarded to Winrock International (WI) on October 4, 2010 under USAID Contract 669-C-00-10-00059-00. The LESSP team, including WI, Energy and Security Group (ESG) and Tetra Tech ES Inc., is implementing LESSP.

LESSP was developed by USAID in response to the priority set by the Government of Liberia (GOL) of rehabilitating energy 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:

- builds the capacity of the Rural and Renewable Energy Agency (RREA) and the restructured Ministry of Lands, Mines and Energy (MLME);
- increases energy access in both Monrovia and the three rural counties;
- launches Liberia's hydropower generation capability and explores additional generation options from other renewable energy sources; and improves legal, institutional, and regulatory frameworks within the energy sector.

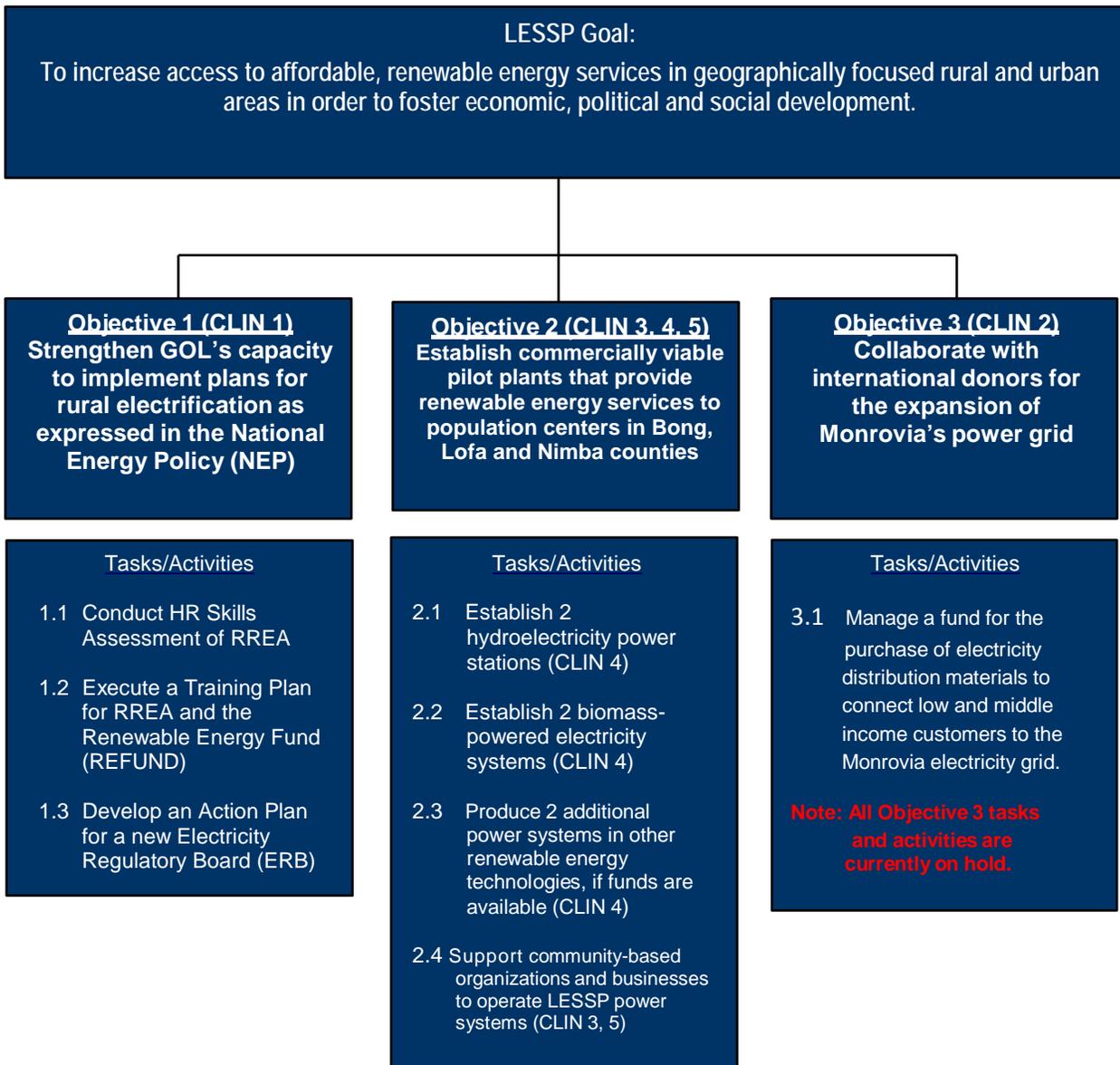
The purpose of the LESSP program for USAID is to increase access to affordable, renewable energy services in geographically focused rural and urban areas in order to foster economic, political and social development in Liberia. The program is focusing its work in Bong, Nimba and Lofa counties. The ultimate impact of the program, the change that USAID/Liberia expects to see in targeted areas, 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 energy sector.

LESSP's three objectives are broad and diverse, encompassing energy sector regulation and institutional reform, renewable energy (RE) pilot power plant construction and commercialization, strengthening of community-based organizations (CBOs) and capacity of institutions of higher education, public-private partnership development, and capacity building for support of the Liberia Electricity Corporation's (LEC) to hasten electricity connections for lower income customers. A common thread connects the various subcomponents: the focus on RE as a key tool for enabling economic growth, and building an environment conducive to private investment in the energy sector.

The LESSP Team has developed a comprehensive strategy and implementation plan that reflects lessons learned and global experience in energy policy and regulatory reform, institutional capacity building, rural electrification, RE technologies and service delivery, CBO and enterprise development, and Global Development Alliance/Public Private Partnership (GDA/PPP) development. The graphic on the next page, titled the **LESSP Activities Map**, shows the project Goal, the three Objectives and the Tasks and Sub-Tasks associated with the program Objectives.

# LESSP ACTIVITIES MAP



**Objective 2 Sub-Tasks**

- 2.1.1 ( For hydro) Undertake appropriate feasibility studies & economic analyses for proposed plants
- 2.1.2 ( For hydro) Develop Terms of Reference (TOR) for Engineering, Procurement and Construction (EPC)-type contracting to build the hydro facilities
- 2.2.1 ( For biomass) Undertake appropriate feasibility studies & economic analyses for proposed plants
- 2.2.2 ( For biomass) Develop TOR for EPC-type contracting to build the biomass facilities
- 2.4.1 Assess & create database of organizations involved with community & cooperative development
- 2.4.2 Provide support for businesses and cooperatives operating power systems
- 2.4.3 Strengthen centers of higher education, vocational training for renewable energy disciplines
- 2.4.4 Secure GDAs with non-traditional resource partners to expand delivery of renewable energy

## II. EXECUTIVE SUMMARY - YEAR 2 HIGHLIGHTS

This Annual Technical Progress Report covers Year Two of LESSP from October 1, 2011 through September 30, 2012. This report summarizes activities and results for the year in relation to the LESSP Year 2 Annual Work Plan that was prepared by LESSP and approved by USAID. A number of major contract deliverables were submitted to USAID for review, comment and approval in Year 2. An overview is provided below and details of the status of LESSP Tasks and Activities addressed and/or completed can be found in the body of this report.

### **Project Management, Reporting and Operations**

- The LESSP team produces monthly progress reports (not a required project deliverable) for USAID, GOL partners, other stakeholders, and LESSP personnel on LESSP progress and status of tasks and activities and deliverables in progress or attained accomplishments, problems and issues raised, and future planned tasks and activities. All monthly reports for year 2 have been delivered to USAID and those noted above.
- Quarterly Progress Reports for Quarters 4, 5, 6 and 7 were delivered to the same recipients after approval by USAID.

Year Two activities and accomplishments included:

- The LESSP Work Plan for Year 2 of the project (October 2011 through December 2012) was submitted to and approved by USAID.
- The draft LESSP Work Plan for Year 3 was submitted to USAID in September 2012. USAID commenced a Mid-Term Evaluation of the project in September 2012 which included meetings with the LESSP team. The evaluation report and recommendations are pending at this time.
- The COP and LESSP team held approximately fourteen scheduled meetings with the USAID COR during the year. Other numerous ad hoc discussions ensued by email and telephone throughout the quarter with the COR and other USAID officials. These communications covered myriad issues such as status, challenges, and progress reports on the four hydro and biomass pilot projects; budget and contractual issues; environmental reporting and permitting; progress with various MOUs, land grants, cooperative registrations and other local partner activities ;and requests for approvals regarding contract matters, personnel changes/additions and travel requests.
- Meetings were held with the RREA, MLME, LEC, other GOL agencies, selected stakeholders and counterparts such as the World Bank, NORAD, NVE, MHI/LEC, potential partners and other local organizations and individuals. Notes of important meetings have been prepared and are available.
- Facing a Presidential election period in late 2011, the LESSP team prepared and implemented a comprehensive Security Plan to protect the project team members and project assets during an unstable period in the country.

### **Objective 1: Strengthen the GoL's capacity to implement plans for rural electrification as expressed in the National Energy Policy (NEP)**

In Year 2 LESSP provided technical assistance for: (1) capacity building and training of the Rural and Renewable Energy Agency (RREA) directors; and (2) contributed to the enhancement of the draft energy law and draft Action Plan to establish an Energy Regulatory Board.

Activities and deliverables included:

- Organized individual training courses for the RREA directors at accredited institutions in Africa and Canada.
- Updated comments on the Draft Liberia Energy Law of February 2009 and circulated for comment.
- Updated the draft Electricity Regulatory Board Action Plan and circulated for comment.

- Met with selected stakeholders on the draft Energy Law and ERB Action Plan.
- Updating the REFUND Operating Guidelines.
- At MLME request, provided list of African based university-level programs in technical areas such as engineering.

**Objective 2: Establish commercially viable pilot plants that provide renewable energy services to population centers in Bong, Nimba and Lofa counties.**

- Received USAID approval for the Feasibility Studies for the Mein River Mini-hydropower Project, Wayavah Falls Micro hydropower Project and the Cocopa Biomass Electricity Project.
- Formally established Gbarway Woeyah Electric Cooperative to own and manage Wayavah Falls Electric Cooperative and Sorlumba Community Electric Cooperative Society to own and manage the Sorlumba Project.
- Received the Environmental Permits for three pilot projects from EPA, Liberia and also USAID Bureau Environmental Office approval for two pilot projects; began preparation of Environment Assessment report for the third pilot project (Mein River Mini Hydro Project) to comply with USAID requirement.
- Commenced the formal procurement process for construction of the two hydropower pilot projects.
- Completed institutional support plans for strengthening RE curricula in higher education and vocational institutions and conducted RE Workshop at BWI and delivered RE Curriculum to University of Liberia undergraduate engineering program.
- Developed a capacity building Training Plan for the two cooperatives, which was delivered to and approved by USAID.
- Developed a relationship with UNIDO for co-financing the Mein River Hydropower Project. GEF has approved the UNIDO application.
- Worked on developing other public private partnership opportunities for the pilot projects in addition to the UNIDO effort.

### III. OBJECTIVE I: STRENGTHEN THE GOL'S CAPACITY TO IMPLEMENT PLANS FOR RURAL ELECTRIFICATION AS EXPRESSED IN THE NATIONAL ENERGY POLICY (NEP)



*.....U Executive Director of the RREA in Liberia, was one of five senior staff to participate in specialized training abroad in 2012, including his course on Management of Public-Private Partnerships.*

#### Annual Highlights

- Strengthened capabilities of the RREA to manage and finance renewable energy projects and programs in rural Liberia.
- Supported the development of an energy policy for Liberia as well as an Action Plan for an Energy Regulatory Board for implementation.

#### Activities Completed

- Built Capacity of the RREA management team through participation in specialized courses outside Liberia, with job-specific content tailored to the specific requirements of each individual Director. In particular, LESSP partnered with premier training institutions in Africa and North America to provide training to RREA Directors, each of whom is responsible for leading a new Department within the growing RREA organization. Following a USAID Skills Assessment, courses most relevant to the responsibilities of each Director included:
  - RREA Executive Director: Management of Public-Private Partnerships, at SETYM International, in Montreal, Canada.
  - Administration and Operations Director: Human Resources Management and Development, at the Eastern and Southern Africa Management Institution (ESAMI), in Arusha, Tanzania.
  - Finance Director: Financial Management for NGOs at the Institute for Capacity Development (ICD) in Pretoria, South Africa.
  - Procurement Director: Effective Purchasing, Tendering, and Supplier Selection, at ICD, in Pretoria, South Africa.
  - Technical Services Director: On-line MSc in Renewable Energy Technologies, at Kwame Nkrumah University of Science and Technology (KnuST), in Kumasi, Ghana.

- Coordinated capacity building activities with the Government of Norway NVE which is providing training and support to MLME staff and RREA.
- Initiated work with RREA to update operating guidelines for a new Renewable Energy Fund (REFUND).
- At the request of MLME, prepared a list of university programs available in Africa at the bachelor and master levels in technical areas, such as engineering.
- Provided Advisory Support for Energy Policy Development in Liberia. This included revising the draft energy law and preparing the draft Energy Regulatory Board Action Plan. The ERB Action Plan provides a step-by-step roadmap for the government to use in establishing and developing the Energy Regulatory Board. These documents were circulated to MLME and other key stakeholders for comment. At MLME, this included Minister Sendolo and the Program Coordinator on Energy in the Office of the Minister, as well as the Assistant Minister for Energy. Follow up meetings on the documents were also conducted.

### Success Story

A USAID Success Story on the Year 2 RREA Training Program was prepared and is included in this document as Appendix I. As a result of the courses provided, RREA Directors have bolstered their skill sets in the areas of program management, finance, budgeting, proposal development, fund raising, human resources management, vendor selection, gender, and renewable energy technologies. The management team has written several successful proposals which has increased their funding base from multiple donors for clean energy project development, and enlarged staffing for the organization—leading to a doubling in size over the last year. This is enabling RREA to improve access to modern energy services in rural Liberia.

### Deliverables

- Successful completion of five training courses for RREA directors at accredited institutions in Africa and Canada.
- Revised Draft Liberia Energy Law Review.
- Draft Electricity Regulatory Board Action Plan.
- List of African universities with technical program offerings, such as engineering.

## IV. OBJECTIVE 2: ESTABLISH COMMERCIALY VIABLE PILOT PLANTS THAT PROVIDE RENEWABLE ENERGY SERVICES TO POPULATION CENTERS IN BONG, NIMBA AND LOFA COUNTIES

### Annual Highlights

- Received USAID approval for feasibility studies for the Mein River Mini Hydropower Project, The Wayavah Falls Micro Hydropower Project, the Sorlumba Biomass Power

Project and the Cocopa Biomass Power Project.

- Obtained Environmental Permits from EPA for Wayavah Falls, Sorlumba and Mein River projects and USAID Environmental Approval for Wayavah Falls and Sorlumba. Began preparation of full Environment Assessment (EA) report for Mein River as directed by USAID.
- Formally established Gbarnway Woeyah Electric Cooperative to operate, own and manage Wayavah Falls Electric Cooperative and Sorlumba Community Electric Cooperative Society.
- Gbarnway and Sorlumba donated parcels of land required for the pilot project construction and the title deeds have been prepared. The process of issuing title deeds in the name of each cooperative is awaiting final approval from the office of the President of Liberia.
- Provided support to communities of Gbarnway and Sorlumba and legally registered Gbarnway Woeyah Electric Cooperative and the Sorlumba Community Electric Cooperative Society. Provided a series of trainings to the members of the cooperatives.
- Provided basic electrical and mechanical training to potential operators for Wayavah and Sorlumba power plants. Commenced the formal procurement process for construction of the Wayavah and Sorlumba pilot projects.
- Evaluated alternative sites for a biomass pilot project in the event the proposed Cocopa Project can't proceed as planned.
- Developed a relationship with UNIDO for co-financing the Mein River Hydropower Project. GEF has approved the UNIDO application.
- Developed a capacity building Training Plan for the two cooperatives, which was delivered to and approved by USAID.
- Completed institutional support plans for strengthening RE curricula in higher education and vocational institutions and conducted RE Workshop at BWI and delivered RE Curriculum to University of Liberia undergraduate engineering program.

## Activities Completed

### Pilot Hydropower Projects



LESSP made a presentation on the Mein River Mini Hydropower Project to USAID Mission Director. Other USAID officials, President of Cuttington University, Development Superintendent of Bong County and other stakeholders at Cuttington University in March 2012 (left) and (right) EPA Liberia technical team visited Mein River Mini Hydro Project site to view the access road

- Installed a river gauge station at the downstream of lower Kpatawee Falls and measurements are recorded. Also installed a data logger to measure flow near the intake of the Mein River Mini Hydro Project. An automatic rain gauge station has also been installed near the lower Kpatawee Falls to record rainfall data. These flow data and rainfall data will help to further refine hydrological analysis.
- Prepared Environmental Project Briefs for Wayavah Falls and Mein River Mini Hydropower Projects. EPA issued Environment Permit for Wayavah Falls Micro Hydropower Project and Mein River Mini Hydropower Project with conditions.
- Environment Review reports for Wayavah Falls and Mein River Mini Hydropower Projects were submitted to USAID along with the Environment Permit from EPA, Liberia. USAID issued

environmental approval for Wayavah Falls Micro Hydropower Project. USAID asked for an EA report for Mein River Mini Hydropower Project. A Scoping Statement for performance of the EA was prepared and approved by USAID with comments. The EA is in progress.

- Construction schedules for Wayavah Falls and Mein River hydropower pilot plant were delivered to USAID for review, comment and approval.
- A Generic Quality Control Plan template was submitted to USAID and it was approved.
- Notice for RFPs for transmission and distribution line material supply and electro-mechanical works for Wayavah Falls were published in June 2012. Both RFPs were cancelled as the cost proposals were prohibitively high. A notice for revised RFP for turnkey contract for Wayavah Falls Micro Hydropower Project was issued in September 2012 and the procurement process is ongoing.
- Preparation of technical specification, BOQs and drawings for Mein River Project are nearing completion. The preparation of an RFP for Mein River Mini Hydro Project is in progress.
- Gbarnway Wayavah Electric Cooperative was legally registered. A series of trainings were held for members of the Cooperative. An MOU has been signed with the Cooperative which describes the role of the cooperative and LESSP in the planning, construction and later operation and maintenance of the power plant.
- A ten-week long basic electrical and mechanical training program was conducted for potential power plant operators/managers from Gbarnway and Sorlumba at BWI. Eight youths each from Gbarnway and Sorlumba attended the training.
- Several consultative meetings were held with the Mein River project partners and other stakeholders from the local community and Bong County to discuss issues on the project ownership and management, partner's contributions, the formation of an independent power company, the access road to the project site and the boundary of the protective areas.
- A local lawyer has been engaged and he is conducting legal due diligence for establishing Mein River Power Company in which Cuttington University, Phebe Hospital and Pulkpeh Multipurpose Farmers' Cooperative will be the shareholders.

### **Pilot Biomass Power Projects**

- Completed the Feasibility Studies for the Sorlumba and Cocopa Biomass Electricity Projects and both were approved by USAID.
- The Sorlumba Project Brief was submitted to the EPA along with the formal application for the Environmental Permit. The EPA approved the Project and issued the Environmental Permit. Thereafter, LESSP submitted the EMMP to USAID and it was approved.
- LESSP assisted the Sorlumba Community to form a Steering Committee to establish a cooperative to operate, maintain, manage and own the proposed power system. Provided initial training to the members of the Steering Committee to conduct an election of a Board of Directors, which was completed.
- Mobilized the local community in setting up the Sorlumba Community Electric Cooperative Society (SCECS). Members subscribed for initial shares of the SCECS. LESSP assisted and trained the Community carry out all SCECS activities.
- The Sorlumba Community donated the land required for the project's powerhouse. During the year all formalities including the preparation of the formal deed of transfer were completed and the Land Commissioner formally registered the deed in the name of the SCECS.
- SCECS and LESSP executed a Memorandum of Understanding delineating the responsibilities of the SCECS cooperative. USAID/Liberia had no objection to the terms of the MOU.
- Created bidding documents for the Sorlumba Biomass Electricity Project. The RFP for the procurement of the CPO generator and the required CPO pre-treatment system was issued internationally. However, the response was poor and there was only one bidder. After testing the CPO twice it was determined that the CPO and the generator were not compatible.
- A search for other suitable generators commenced and three providers of Lister generators that are compatible with CPO were located in India. Procurement of a very small Lister

machine is in progress. It will be installed at BWI for testing purposes and later for training operators.

- The proposed Cocopa Project was put on hold due to a number of reasons beyond the control of LESSP. The difficulties encountered have been clearly detailed in previous Monthly and Quarterly Progress Reports.
- It was learned that the Cross Border Electricity Supply Project (CBESP) in concert with LEC would be supplying electricity to towns along the Ganta – Saclapae corridor in Nimba County which could potentially conflict with Cocopa plans to supply electricity to parts of the same corridor. The difficulties involve which communities CBESP/LEC will electrify and what the end user tariffs would be. These two issues remain pending more information from LEC.
- LIBCO/Cocopa have not yet guaranteed funding for construction of the powerhouse as they promised, which must be done in order to proceed with the Cocopa pilot plant.
- LESSP is pursuing another biomass site in Nimba County as an alternative to Cocopa. The selected site is located in the town of Kwendin. Kwendin has adequate biomass resources in the form of old rubber trees. LESSP began the preparation of the Feasibility Study and the socio-economic survey for a biomass electricity project in Kwendin using rubber wood chips as fuel.

### Environmental Status Reports

Per details above, the Liberia EPA issued the Environmental Permits for three Pilot Projects: Wayavah, Sorlumba and Mein River. USAID Bureau of Environmental Office approved the Sorlumba and the Wayavah Falls projects. USAID BEO required a full Environmental Assessment study for the Mein River Mini Hydro Power project which is currently in progress.

### Building Capacity for Community-Based Organizations (CBOs)

A database of organization involved in community and cooperative development was developed in Year 1, based on the field surveys in each of the pilot project areas. Potential organizations that could be responsible for ownership, operation and maintenance of the LESSP pilot projects were identified in Year 2. LESSP worked with pilot project communities to develop formal cooperatives to take on the responsibility of owning and managing the pilot power projects. The LESSP team mobilized community residents and CBOs for their involvement, assistance and participation in the pilot projects. Training and capacity building activities for these organizations began in Year 2 and will continue into Years 3 and 4.

### Community Outreach and Capacity Building Activities In Year 2 Included:



Certificated Trainees of both Gbarway (left) and Sorlumba (right) after ten week training at BWI in basic electricity and mechanics

- New electric cooperatives were formed in Gbarway and Sorlumba to own and operate the pilot projects. As a first step for establishment of the cooperatives, steering committees were formed in each community. These committees were given training on how to form and

develop a cooperative business. The committees had the responsibilities to handle the processes of forming the cooperatives. Such processes include the application to Government, the writing and filing of the Articles of Incorporation, the Bylaws, mobilization of members and membership registration and the fulfillment of all other criteria as set by the Government of Liberia for the formation of cooperative businesses. The Steering Committees appointed Election Committees and guided the election process for the first Boards of Directors of the cooperatives. These boards of directors will hire and supervise the management teams of the cooperatives for the pilot projects. The Election Committees were jointly trained by LESSP, the Cooperative Development Agency (CDA) and the Liberia National Election Commission (NEC) on how to conduct cooperative elections. The committees conducted these elections, certificated the winners and inducted them into office under the supervision of CDA, NEC and LESSP. The Board of Directors received their first training on the Governance and Management of Cooperative Business. The cooperative established their offices and opened bank accounts at Ecobank Liberia Ltd.

- LESSP signed MOUs with each of the electric cooperatives. The MOU describes the roles and responsibilities of each party.
- Two community mobilizers, male and female, were hired in each community to assist with the community outreach activities important for the pilot projects.
- A “Training Plan for Community-Based Organizations and Local Businesses to Operate and Manage Power Systems” was prepared and submitted to USAID in June 2012 and approved. Training activities from this plan were started in Year 2 (2012) and will continue into Years 3 and 4. To date training for the newly formed cooperatives included: How to Form and Develop a Cooperative by LESSP; Cooperative Development and Capacity Building by CDA and ODOFARA; How to Conduct Credible Elections by LESSP, CDA, and the Liberia National Election Commission (NEC); Governance and Management of Cooperative Businesses by LESSP; and Monitoring and Evaluation by LESSP.
- Sixteen persons (mostly youths) from the pilot communities were recruited and trained at BWI in basic electricity and mechanics.

### **Strengthening Centers of Higher Education in Renewable Energy**

An institutional support plan for strengthening Centers of Higher Education and Vocational Institution was prepared and submitted to USAID in Year 2. After USAID’s concurrence, LESSP began implementing some of the activities in the plan. A renewable energy curriculum for an electrical engineering undergraduate course at the University of Liberia has been prepared and delivered to the USAID EHELD program for further implementation. The RE course is planned to be taught as part of the course on Electrical Energy Conversion with a total of ten credits. A three-day workshop on introduction to renewable energy was held for instructors at BWI. There were twenty seven participants (twenty four male and three female) at the workshop. The workshop covered solar PV, micro hydropower and biomass technology. The workshop covered both theory lectures and practical training.

### **Developing Public Private Partnerships**

Discussions and meetings were held throughout Year 2 with potential partners for LESSP’s renewable energy pilot projects including Arcelor Mittal, Corporate Responsibility Forum (CRF), BHP Billiton, UNIDO, UNDP, World Bank, NVE, Dedicated Funds Committee chaired by the Minister of MLME and the International Bank of Liberia. LESSP is seeking to identify private or other funding that can leverage and increase the impact of its pilot projects.

## Problems Encountered/Solutions Developed or in Progress

**Mein River Full EIA Required:** Environmental studies couldn't start until feasibility studies were completed and approved. Hydropower feasibility studies were delayed due to lack of hydrological data and the need to collect data over time. Therefore the environment study of Mein River Mini Hydropower Project and Wayavah Falls Micro Hydropower Project could only begin in September 2011, when the feasibility study reports for both were in the completion stage. The process of carrying out environment studies and submitting reports and securing approvals from EPA Liberia took approximately five months for Wayavah Falls and seven months for Mein river project. This requirement has affected the timeline for launching the Mein River project.

## Success Story

A Success Story regarding organization, development and operation of the Sorlumba Community Electric Cooperative Society (SCECS) has been prepared and it will be included in the first Quarterly Progress Report (Quarter 9) of Year 3.

## V. OBJECTIVE 3: COLLABORATE WITH INTERNATIONAL DONORS FOR THE EXPANSION OF MONROVIA'S POWER DISTRIBUTION NETWORK

### Annual Highlights

The original scope of work includes the following tasks and sub-tasks which were pursued in Year 1, but were put on hold in Year 2 per direction from USAID.

**Task 1:** LESSP shall manage a fund for the purchase of electricity distribution materials (e.g. meters, wire, transformers) needed to connect low and middle income customers.

**Subtask 3.1.1.** LESSP will work with the Management Contractor (MC) for the LEC. The MC will be responsible for establishing technical specifications, competing subcontracts for procurement of materials, installing materials, overseeing quality control for the expansion of the distribution network. LESSP will be responsible for working with the MC to develop a procurement system that ensures all subcontractors that will receive USAID funds are competitively subcontracted. LESSP will sit on subcontract selection committees and will approve all final subcontracts to be paid with USG funds. LESSP shall monitor all subcontracts to ensure the delivery of all agreed upon subcontract deliverables.

**Subtask 3.1.2.** LESSP will release funds for the procurement of distribution equipment to the MC based upon the successful completion of subcontracts and proof of acceptance of all subcontract deliverables.

**Anticipated Results during Life of the Project:** In Monrovia and environs, the MC will be supported to expand connections to middle and low income customers. The distribution grid will be expanded to cater for at least 5,000 low income customers.

## VI. CROSS-CUTTING ISSUES

The LESSP program can benefit from integrating women, youth, and ICT, where applicable, with improved uptake of new renewable energy technologies (and reduction of environmentally harmful practices), expansion of the paying customer base (both households and small and medium enterprises) and increased community participation and support for project activities. The program can contribute to cross-cutting concerns important to USAID by improving health, education and economic conditions of disadvantaged groups to reduce conflicts caused by unequal distribution of resources, mitigating the disproportionately negative effects of unsustainable energy use and practice on the poorest and most isolated populations, and contributing to Liberia's economic growth.

In Year 2, the LESSP team created awareness among the project partners and stakeholders of the project communities on Cross-Cutting Issues to serve as a guide to the LESSP team throughout the development of annual work plans and implementation of the 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.

Considering that gender and youth mainstreaming is important for ensuring equitable and sustainable human development by the most effective and efficient means, LESSP places a high level of importance in integrating gender and youth in all of its activities. Overall, effective monitoring has found that progress has been made in this direction with more women and youth being represented.

In general, all of the recruitment selection processes of community residents included youths and women for the performance of any or all LESSP project activities were made public either by bulletin board notices, local radio announcements (in both simple Liberian English and local dialects) or mass community meetings. Considering gender terms of equitable and fairer participation of men and women, LESSP highly encourages female participation in all aspects of the project implementation.

Heterogeneous Focus Group discussions were conducted at least once a quarter in order to obtain diverse ideas and perceptions on topics of interest in line with the project implementation in a relaxed, permissive environment that fosters the expression of different points of view, with no pressure for consensus. Each focus group consisted of 12 youth/12 elders and 12 males/12 females.

Community Outreach activities and the formation of the electric cooperatives and very careful documentation of all recruits in a number of different areas has been developed and it is carefully maintained as to numbers of recruits/hires, numbers of men, women, youths and elders participating in the process. Similar information is collected during regularly mandated visits to all project areas.

LESSP outreach activities as they relate to information and communication technology (ICT) has been instrumental in creating the awareness of the importance of ICT as a tool to empower women and youths, by improving their ability to access information, education and services such as the provision of electricity.

In Year 3, LESSP will seek to pursue the recommendations made in the Cross-Cutting Issues Integration Plan and ensure that the number of women and youths increase and that they have access to ICT as an empowerment tool for their social and economic development. LESSP also hopes that numbers of women and youth will continue to increase in the implementation of the project activities to include construction, operations and maintenance of the power plants, training and participation in the cooperative leadership.

## VII. PERFORMANCE MONITORING RESULTS AND IMPACT



A pregnant woman using Jack-O-lantern as a source of lighting in Dumai village.



Two female students in Raymond Town using Jack-O-lantern to study their lessons at home.

The goal of LESSP is a Liberian energy sector with strengthened capacity to promote rapid, sustained and broad-based growth. The realization of this goal is linked to achieving the following objectives/intermediate results:

- Government of Liberia's, specifically, the Rural and Renewable Energy Agency (RREA), capacity for rural energy establishment and management strengthened.
- Commercially viable renewable energy pilot plants established in Bong, Nimba and Lofa Counties.
- The Monrovia power grid expanded to low income households through collaboration with international donors.

Other important objectives include:

- To the full extent practicable, provide employment opportunities to Liberians in the implementation of the construction of pilot plants and electricity sector value chain.
- Build capacity of Liberian local governments and communities including women, and youth to manage and maintain electricity infrastructure.
- Special attention will be paid to employing women and youth as enumerators and data gatherers for socio-economic surveys and performance monitoring purposes.
- 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.

### Quantitative/Qualitative Results

Collection of performance results and impacts present a synthesis of the results and impact of the entire project yearly tasks, activities and deliverables thereby raising systemic issues and lessons learned that can contribute to further improve performance in the future. This is LESSP's second Annual Report and it is the second time that details of performance indicators are included.

As mentioned in the previous annual report, comprehensive data required for each indicator was reported upon in the Quarterly Progress Reports for all Quarters of USAID fiscal year 2012.

All requirements of the PMP have been completed including the revision of the PMP in concurrence with the Liberia Monitoring and Evaluation Program (LMEP) and has been submitted to USAID for approval. LMEP also conducted DQA's on LESSP during the first quarter of USAID fiscal year of 2012. In May of 2012, LMEP also conducted the first field visit in collaboration with LESSP's MEC Specialist following the DQA earlier conducted with the purpose of monitoring LESSP's field activities and provided technical support to newly established community based management entities.

In terms of results and impact in this light, the following were achieved during the second fiscal year of the LESSP implementation.

- Performance indicators and targets were revisited and development hypothesis was clearly defined in accordance with the PMP guidelines and recommendations made by LMEP.
- The Performance Management Plan was revised in close consultation with LMEP and was delivered to USAID for approval.
- The MEC Specialist conducted on monthly basis routine audit/inventory of LESSP indicator filing system so as to ensure that periodic reports submitted to USAID are filed in accordance with USAID's standards and procedures.
- On a quarterly basis, project progress monitoring (Site visit checklist) was conducted with the purpose of providing an understanding of the project's progress so that appropriate corrective actions could be taken if the project's performance deviates significantly from the annual work plan. Additionally, it also assessed the level of engagement of community members including youth groups, women's groups and local community leaders in the implementation process of the LESSP project in Wayvah and Sorlumba (Lofa County).
- In the process of mainstreaming gender and youth at all levels of LESSP activities, LESSP closely monitored gender and youth-specific indicators, including those related to the quantity and quality of their participation and benefit in the project by conducting Focus Group Discussions to assess women's and youth's view of how much progress has been made and what the challenges are.
- Additional data collection and reporting forms and tools were developed for data management purpose
- Implemented recommendations from the LMEP's DQA and field monitoring reports
- Entered required data on a periodic basis (quarterly & annually) into USAID's Performance Indicator Database System (PIDS) and USAID's TraiNet.
- In the process of finding out how the development or training process has affected individuals, teams, management entities and communities at large, the MEC specialist conducted post capacity building/training evaluation and developed a success story for year 2 annual report
- Conducted Monitoring and Evaluation training for newly established community based management entities of Sorlumba and Wayvah (Lofa County) to enable them to assess the quality and impact of their work versus action plans and strategic plans.

## VIII. Community Outreach



Field Meeting and assessment at the Sorlumba Project Site involving LESSP Staff, Community Stakeholders and representatives of seven (7) companies that was among applicants for the Request for Proposal (RFP) for Sorlumba Biomass project

By the end of year 2, the LESSP Outreach and Monitoring and Evaluation teams have been working together to identify and mobilize community residents, community-based organizations, local and national stakeholders and institutions for their involvement, assistance and participation in the pilot projects for such tasks and activities as information sharing, conducting GPS surveys, Electricity

Connectivity to Household Survey, assessments, addressing cross cutting issues and training locals to operate, own and manage selected pilot projects.

### Results

Note: Some Community Outreach results have been addressed elsewhere in this report under Objective 2.

- Different institutions and organizations including INGOs, NGOs, local and national governments institutions, and community-based organizations were engaged by LESSP to ensure collaborative partnership during the implementation of the project.
- As a first step for establishment of cooperative, a steering committee each in Sorlumba and Gbarnway was formed. The committee was given training on how to form and develop a cooperative business. The committees had the responsibilities to handle the processes of forming the cooperatives. Such processes include the application to Government, the writing and filing of the Articles of Incorporation, the Bylaws, mobilization of members and membership registration and the fulfillment of all other criteria as set by the Government of Liberia for the formation of cooperative businesses.
- The Steering Committee appointed the Election Committee and guided the election process for the first Board of Directors of the cooperatives. The Election Committees were jointly trained by LESSP, the Cooperative Development Agency (CDA) and the Liberia National Election Commission (NEC) on how to conduct the cooperative elections. The committees conducted these elections, certificated the winners and inducted them into office under the supervision of

CDA, NEC and LESSP. The Board of Directors received their first training on the Governance and Management of Cooperative Businesses. The cooperative established their offices and opened bank account at Ecobank Liberia Ltd.

- LESSP signed MOUs with each of the electric cooperative in Gbarway and Sorlumba. The MOU describes the roles and responsibilities of each party.
- The Cooperative Development Agency, CDA carried out assessment on the two newly formed cooperatives and awarded pre-certificates to these cooperatives as its recognition until they satisfy six (6) laid down criteria by CDA are met by the cooperatives. Five of the six criteria have been satisfied by the cooperatives.
- Two community mobilizers a male and female each were hired to assist with the community outreach activities in Gbarway and Sorlumba.
- Sixteen (16) persons (mostly youths) were recruited and trained at the BWI in basic electricity and mechanics from the project areas. Additionally, other trainings were administered to the members and officials of the cooperatives by LESSP, CDA, ODOFARA, and NEC.
- The process of formation of new electric cooperatives was completed and Board of Directors elections held. These boards of directors will hire and supervise the management teams of the cooperatives.



Cooperative members in queue and casting votes during election for Board members

## USAID continues support to government leaders who bring renewable energy to Liberia



*The Executive Director of the RREA in Liberia, was one of 5 senior level staff to participate in specialized training abroad in 2012, including his course on Management of Public-Private Partnerships.*

***USAID’s Liberia Energy Sector Support Program (LESSP) began in 2010 to start rebuilding clean energy power plants and to support the government in making energy more accessible for all. To ensure that rising energy leaders begin implementation of such a sizable initiative, USAID has been strengthening core managerial and financial skills for Liberian managers within the Ministry of Lands, Mines, and Energy (MLME), and the Rural and Renewable Energy Agency (RREA).***

# SUCCESS STORY

## Energy Leaders Trained and Thriving

Liberia’s access to reliable electricity is negligible, with a vast majority of the population dependent on polluting energy sources such as candles, kerosene, diesel, firewood, and disposable batteries. To improve energy access across the country, Liberia’s President, Ellen Johnson-Sirleaf, created the Rural and Renewable Energy Agency (RREA) in 2010.

As strong financial and managerial skills are necessary to design, develop, and implement simultaneous rural and renewable energy projects, in 2011 USAID conducted on-site group training sessions to strengthen RREA management capacities and broader institutional development. Two courses were conducted focusing on: (1) Project Planning and Project Management, and (2) Financial Planning and Budgeting. Each of these sessions involved the RREA Directors, with the second training course also including officials from the Ministry of Lands, Mines, and Energy (MLME).

In 2012, USAID continued to support the RREA leaders by identifying and sponsoring courses abroad with job-specific content tailored to the specific requirements of each individual Director. In particular, USAID partnered with premier training institutions across Africa and North America in providing training to RREA Directors, each of whom is responsible for leading a new Department within the growing RREA headquarters. Following a USAID Skills Assessment, courses most relevant to the responsibilities of each Director included Management of Public-Private Partnerships; Financial Management for NGOs; Human Resources Management and Development; Purchasing, Tendering, and Supplier Selection; and an MSc in Renewable Energy Technology. These courses were offered at accredited institutions in Canada, South Africa, Tanzania, and Ghana, respectively.

In completing specialized courses, the RREA has made significant progress on several key initiatives towards its clean energy mission. For example, Directors have written successful proposals for a gender-focused clean cook stove project, a RET Screen training program in Liberia that will be offered to officials from multiple agencies, and securing funding for nine new staff. With a team that has doubled in size, new projects underway, core operational procedures in place, and successful proposals for our year funding from multiple stakeholders, the RREA and USAID have built the foundation and competencies needed to improve access to clean, renewable energy for millions of people across Liberia.

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