



**USAID**  
FROM THE AMERICAN PEOPLE



**NRECA International Ltd.**

Your Touchstone Energy® Partner 

**Electrification Sustainability Program  
In South Sudan  
(ESP)  
Cooperative Agreement No. AID-668-A-12-00002**

**Quarterly Report**

**January 1 – March 31, 2013**

**NRECA International Ltd.  
April 30, 2013**

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

### Contents

List of Terms and Acronyms .....	ii
Introduction .....	3
Background .....	3
ESP Objectives.....	3
Project Team .....	4
Activity Summary .....	5
Task I – Technical and Financial Sustainability Support for Kapoeta, Maridi and Yei	
Electric Utilities .....	5
Customer Information System (CIS) and Accounting Workshops and Mentoring	
Activity.....	5
Training Partners.....	5
Board Training .....	6
Management Training Workshop .....	7
Inventory Management, Physical Count of Material and Procurement Network.....	8
Transfer of Project Assets .....	9
Weekly Utility Operations Report .....	9
Project Employee and Specialist Travel During the Quarter .....	11
Task II – Yei, Maridi Hybrid Micro-Hydro Capacity.....	11
Task III - Utility Evaluation and Development Support for Yambio .....	12
Other ESP Support Activities .....	12
Reimbursement Payments to Utilities.....	12
NRECA Senior Vice President of International Programs Visits South Sudan.....	12
Participation in USAID Training on Recipient Contract Audits and USAID Financed	
and Procurement Topics.....	12
Meeting with USAID Agreement Officer Representative (AOR) for ESP .....	13
Key Issues and Challenges.....	13
Political Activity in Yei .....	13
Transportation .....	14
Generator Efficiency in Yei .....	14
KAPECO and MECO Employee Contract and Wage Issue .....	14
Major Events – Upcoming Activity .....	15
Financial.....	16
Process Indicators.....	18
Output Indicators.....	20
Outcome Indicators .....	22
Impact Indicators.....	24
ESP Project Gantt Chart.....	25
Management Training Workshop Evaluation .....	26

# Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

---

## List of Terms and Acronyms

CIS	Customer Information System
COP	Chief of Party
DCOP	Deputy Chief of Party
ECMP-3	Electronic Module Component Panel-Model 3
ESP	Electrification Sustainability Program
RSS	Republic of Southern Sudan
KAPECO	Kapoeta Electric Company
LBG	The Louis Berger Group
MECO	Maridi Electric Company
NGOs	Non-Government Organizations
NRECA	National Rural Electric Cooperative Association
SSREP	South Sudan Rural Electrification Project
SISP	Sudan Infrastructure Service Project
SUWASA	Sustainable Water and Sanitation in Africa
USAID	United States Agency for International Development
WES	Western Equatorial State
YECO	Yei Electric Cooperative

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

### Introduction

### Background

Since 2005, the U.S. Government has provided ongoing infrastructure and institutional support to strengthen power sector planning throughout South Sudan, and to initiate or improve service delivery in Kapoeta, Maridi, Yei and Juba. Under the South Sudan Rural Electrification Project, USAID financed design and construction of a small generation-distribution utility in Yei that has evolved into a self-sustaining municipal electric cooperative serving approximately 1,200 consumers. Thereafter, USAID financed construction of two additional market town electrification projects in Kapoeta and Maridi; these two systems began commercial operations in April, 2011 and serve approximately 300 customers – households, commercial enterprises, public institutions and NGOs – in each community.

The challenges these small utilities face are similar but not identical. In the case of Yei, the utility commercializes enough electrical energy to cover all operating expenses and has managed to finance corrective and preventative maintenance costs for the past four years. However, the staff turnover has been high, and management still requires support to achieve long-term institutional and financial sustainability.

The two nascent utilities in Kapoeta and Maridi have not yet connected enough consumers nor do they sell enough electricity to achieve financial sustainability. The cost of generated energy is quite high, house wiring costs are still high, and there simply has not been enough time to connect enough consumers to reach a break-even point between operating costs and revenues. In both cases, there is also a need for ongoing training and mentoring for the boards of directors, the management, and employees who work at both utilities.

The Electrification Sustainability Program (ESP) has been designed to address the needs of all three utilities, as well as to undertake hydroelectric studies in Yei and Maridi (should additional funding become available), and to support Western Equatoria State (WES) and the Republic of South Sudan (RSS) to initiate planning for utility formation in Yambio.

This report covers the period January 1, 2013 to March 31. It summarizes ESP activities, challenges and accomplishments during the reporting period and identifies action items that will need to be addressed by NRECA International as well as issues that may require USAID attention.

### ESP Objectives

The ESP is designed to support the process of achieving long-term sustainability for the electric generation-distribution utilities in Kapoeta, Maridi and Yei and to initiate utility formation in Yambio.

As per the cooperative agreement, the program assistance will result in “generation-distribution utilities that have well-established business systems and staff that are trained to manage the business systems without external oversight; to have a technical team with the capacity to manage the day-to-day operating challenges of small, islanded, vertically integrated electric

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

utilities, including power plant management and the operation and maintenance of the distribution system.”

A second project objective is to complete pre-feasibility studies to explore the potential for development of micro- and small-hydro generation near Maridi and Yei in order to reduce the cost of power supply to MECO and YECO. In the event that USAID decides to pursue these investments, the ESP program includes an option to review the feasibility of these investments and oversee the completion of final design of micro/small hydroelectric projects as proposed.

The third project objective will focus on completion of an institutional and technical evaluation of the incomplete Yambio electric generation-distribution system. The ESP team will engage in a comprehensive evaluation of the engineering and construction requirements to energize the generation-distribution system, and will evaluate management options to achieve sustainable operation of the utility in collaboration with WES leadership and technical-administrative staff.

### Project Team

The NRECA project team assigned to support ESP includes the following team members, by position:

Person	ESP Duties	Tenure
Robert O. Ellinger	Chief of Party	Full Time
Janet Kauffman	Deputy Chief of Party	Full Time
Swalleh Rajab	Senior Commercial Utility Advisor	Full Time
James VanCoevering	Electrical Engineer	Part Time
Md. Tajul Islam	Customer Information System (CIS) Specialist	Contracted-Part Time
Jerry Rodgers	Lineman Training Specialist	Contracted-Part Time
Eldon Stanley	Power Generation Specialist	Contracted-Part Time
Gregory Boudreaux	Board Development Specialist	Contracted Part Time
Kent Wick	Utility Finance Specialist	Contracted Part Time
Laban Kariuki	Utility Planning Specialist	Contracted Part Time

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

Additional support will be provided by the NRECA International Foundation that will take responsibility for organizing volunteer services of U.S. line workers from NRECA member cooperatives in the United States. NRECA International Foundation contributions will be managed by the Foundation Program Manager and Foundation Program Assistant.

### Activity Summary

#### Task I – Technical and Financial Sustainability Support for Kapoeta, Maridi and Yei Electric Utilities

##### Customer Information System (CIS) and Accounting Workshops and Mentoring Activity

Utility Visits - Janet Kauffman and Swalleh Rajab completed a three week tour visiting each utility to review CIS activity and work with the employees in preparation of year-end closing of financial records including the reconciliation of accounts. As part of their work they:

- Developed/discussed month end closing activities with staff and assigned tasks
  - Discussed approaches for when expected data is not available
- Worked with staff on reconciliations/developed formats
  - Discussed possible reasons for differences and how to resolve
- Discussed chart of accounts revisions and related transactions

The visits began in Kapoeta in January 15 and concluded in Maridi January 31.

CIS Updates - Janet and Swalleh continued to work with our CIS specialists in Bangladesh on pending issues, report adjustments, software updates and the development of an inventory module for the system.

Changes at YECO – In February there was a turnover in billing department employees due to the resignation of their customer service/billing representative who was responsible for billing. Swalleh spent several weeks working with the new employees to introduce the CIS billing and collection and accounting modules and to discuss procedures involved in connecting new customers, completion of the various forms and documents required to establish the new accounts in the CIS. Nine trainees (three men and six ladies) attending the sessions covering two weeks. As part of this instruction the March bills were completed successfully.

Also in Yei, Janet participated in the review of resumes and interviews for the top candidates to fill the position of General Manager. The interview panel recommended and the Board approved the selection of Malish Lawrence Taban to be the new general manager of the cooperative. Mr. Taban was most recently employed as the field manager for the International Rescue Committee (IRC) Torit office.

##### Training Partners

We are continuing our search for local training partners to work on basic English, Math, Computer and Bookkeeping skills which will help the utilities' current employees along with providing the foundation for the training of new employees in the future. Our initial contact is with a technical school in Maridi operated by the Episcopal Church in Sudan (ECS). Once a

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

program is developed for Maridi we will introduce the curricula to Kapoeta and Yei to explore options in these towns to serve the utilities.

We also approached Ezentus, the local Caterpillar dealership in Juba regarding the possibility of establishing joint training program for generator operation and maintenance. One of biggest struggles we encounter when training plant operators on the operation and maintenance of the CAT units is their lack of understanding of English along with their minimal background in math and science. The initial thought is to work with Ezentus to develop an operations and maintenance training program that plant operators would attend once a year. We believe Ezentus employees have an understanding of the technical issues and in most cases will be able to disseminate the information to the South Sudanese employees better than specialists from the United States. ESP Specialists can support the effort by working with Caterpillar to help develop the training course and possibly in training some of the Ezentus trainers. ESP would support the attendance of the local staff at these training programs by paying the expenses and/or host a visit from a training specialist for a week to observe operator procedures and perform diagnostics on the generators. Any major work past the normal startup, day to day operations, initial diagnostics and regular maintenance (oil, filter changes etc.) would be contracted to Ezentus.

### Board Training

Bob provided the initial board training module along with an update on ESP activities to the board members and senior staff in Maridi and Yei in February. Topics covered in the board training presentation include; board governance, policy development, and board/CEO evaluations.

At YECO the board requested Bob observe the full board meeting and offer comment on the meeting structure and board actions. At the MECO board meeting Bob presented a review of the financial condition of MECO. The presentation included a comparison of the balance sheet, income statements and key financial ratios of 2011 and 2012. The MECO board meeting also included a discussion on the wage and salary concerns of the employees. Twelve board members participated in these sessions including one female board member.



Swalleh attended the KAPECO board meeting in March and presented an update on technical operations and reviewed the December 2012 financial statements. Additional board training will be provided to the KAPECO Board in June.

### Technical Assistance and Mentoring

The ESP team continues to provide daily oversight and mentoring on a variety activities, processes and procedures. As part of the mentoring process we provide ongoing guidance on the review and revision of current procedures. The mentoring process builds practical, day to day business skills based upon the sound foundation developed through the formal training programs being held. A few of the quarterly activities included:

Maridi Water Treatment Plant - Included under technical assistance is the coordination and planning support provided by the local ESP team and NRECA International to MECO as they

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

work with the Sustainable Water and Sanitation in Africa (SUWASA) organization in constructing an extension of the three-phase distribution network to the Maridi water treatment plant. During January representatives from SUWASA met with utility officials the ESP team to establish a timetable for construction. A letter of connection, service agreement, and contribution to aid construction letter were developed and sent from MECO to SUWASA.

MECO received 50% payment on the contribution toward construction from SUWASA for construction of the three-phase line to the Maridi water treatment plant. Jim VanCoevering provided guidance on sizing of the transformer, placing the order for material and final placement of the distribution line.

KAPECO Service to UN Mission in South Susan (UNMISS) - Swalleh met with the Engineer for the UNMISS in Torit to discuss the proposed connection of the UNMISS Kapoeta compound to the KAPECO distribution system. Internal discussions are underway at UNMISS to compare the cost and benefits of the proposal.

MECO Distribution System Load Balance - Completed an analysis of the electric load (amperage) on each phase of the distribution system to balance the amperage load on each phase. It was recommended that a change in the phase connection of two 25 kVA transformers be made.

Board and Employee Evaluations - Developed evaluation forms for the board, managers and employees. The drafts were a key topic of discussion at the management training workshops in Yei and the development of evaluation forms to be used at the utilities.

KAPECO Service to UN Humanitarian Air Service - Examining materials and work process to connect the World Food Program complex in Kapoeta which is scheduled to begin in April.

Hiring of New General Manager at YECO - Worked with YECO board to review resumes and observed the interviews for the general manager position.

Financial Analysis - Worked with utility management and ESP staff to analyze the revenue and expenses of the utilities to determine the root cause of continued negative operating margins.

Environmental Compliance - Swalleh represented ESP and NRECA at the Life of Project Environmental Compliance and Environmentally Sound Design and Management workshop held in Juba in January. The workshop covered USAID compliance requirements, effective mitigation and monitoring design, mitigation and monitoring plans, compliance reporting and various roles and responsibilities of stakeholders. Swalleh developed an action plan along with a checklist that will be distributed to the respective utility managers in April / May to fulfill the environmental mitigation & monitoring requirements.

### Management Training Workshop

The initial management training program for ESP was held in Yei on March 18-21 at the Episcopal Church of Sudan (ECS) Conference Center. The 3-½ day workshop featured presentations by Kent Wick, NRECA International Management and Finance Specialist and Bob with support provided by Janet and Swalleh. Nine employees attended the



# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

workshop – 7 men and 2 women. The formal presentations covered the following topics;

- Management/board Relations
  - The difference between the two leadership roles and how they interact
- Management/employee expectations, communications and performance evaluations
  - What do employees and employers want/expect; how can they communicate expectations; and, how can expectations and performance be judged?
- Financial evaluation of an electric utility
  - What numbers, trends and/or ratios are important; what are internal controls and how they can help to improve operations?
- Leadership – the ability to guide and direct employees
  - What makes a good leader and can these traits be learned?

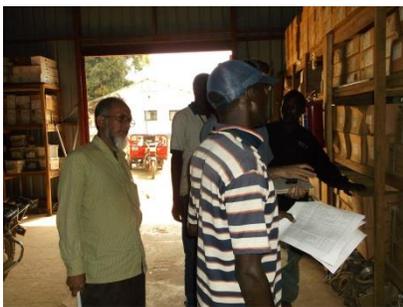
Each afternoon following lunch the participants joined in some excellent peer-to-peer discussions sessions covering a variety of topics including; improving revenue collection, reducing expenses, key accounts, safety and safety awareness, human resources (employee and utility wants and needs), workplace conflicts, budgeting and working within budget, and increasing kWh sales. Time was taken on Thursday afternoon to develop an employee evaluation form to be used by the participants for future evaluations. The group also discussed training needs and made suggestions on future training topics. A summary of the evaluations of the participants may be found at the end of this report.



Because of an employee contract dispute at KAPECO the management staff (with full board support) made the decision to not attend the workshop in Yei. Bob presented most of the management training workshop material to the KAPECO staff during a visit to Kapoeta March 25-29. Six staff attended the daily sessions; 4 male and 2 female.

### [Inventory Management, Physical Count of Material and Procurement Network](#)

Following the initial evaluations of the utilities early in ESP it was found that additional work and analysis need to be undertaken in the management and procurement of materials and current inventory. During this quarter Nicholas Allen and Shahid Zaman arrived in South Sudan to begin the evaluation of current inventory management and procurement policies and procedures. The team of specialists evaluated the inventory/warehouse control processes as well as conducting a full physical count of existing material. The team also initiated the development of several template documents for potential use at the utilities including;



- An inventory issue and return form
- An inventory stock card ledger
- A template item trading agreement
- A template inventory database
- A simplified instruction sheet covering the usage of the

various forms and the process of updating the inventory database.

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

In preparing to explore opportunities for the exchange of material between the utilities and the development of a supplier network (East Africa) we are establishing values for the inventory items and beginning to research material suppliers. The team is also exploring opportunities for the exchange of material between the utilities along with the opportunity to develop a supplier network (East Africa) for the three utilities to use in joint procurement program.

The inventory and warehouse assessment report which includes the various template documents/forms for recording and dispensing inventory, material exchange and joint acquisition was completed. Plans call for the review of the recommendations for each utility along with developing plans for implementation to begin in May.

### Transfer of Project Assets

At the request of USAID, ESP staff is finalizing the transfer of utility plant assets from the South Sudan Rural Electrification Project (SSREP) and the Sudan Infrastructure Project (SISP), two projects in which NRECA actively participated. Bob is working closely with NRECA staff to transfer the assets built under SSREP to Yei Electric Cooperative. He is also working with representatives of The Louis Berger Group (LBG) to finalize the transfer of assets built under SISP to the Eastern and Western Equatoria State governments with the utilities being operated by KAPECO and MECO.

Laban Kariuki, ESP Utility Planning Specialist, developed a memorandum of understanding (MOU) to be incorporated in the transfer of assets from USAID to the utilities under SISP. The draft was submitted to USAID, NRECA staff and LBG for review / comment. The comments and revisions were incorporated into the final draft to be presented to the State Ministers and utilities in April. The meetings in April include discussions on final agreement for the continued operation and maintenance of the distribution plant by KAPECO and MECO for the electrification of Kapoeta and Maridi.

### Weekly Utility Operations Report

The weekly utility operations report was revised this quarter with key performance monitoring and measuring indicators established to contribute to the understanding of good business practices.

Key performance indicators for the Quarter (January - March)

Key Performance Indicators	KAPECO	MECO	YEI
Services in Place (3/31)	414	501	1,107**
New Connections	24	21	6
Percentage Increase in Connections (Quarter)	6.3%	4.4%	0.5%
System Peak (kW) Y-T-D	117	94	576
Generator Efficiency (kWh/Liter)	2.82	2.75	2.9

## Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

Percentage Increase/Decrease in Generator Efficiency-Quarter	+4.8%	+5.0%	+3.2%
Average Run Hours per Day	13	15.6	17
Outages (Quarter)	4	1	1
Outage Hours per Consumer Year to Date	6.6**	0.125	3.39

Key issues and activities at the utilities:

### KAPECO

- \*\* Major increase in outage hours per consumer due to SPLA truck breaking a pole with the resulting outage lasting seven hours
- Held training on safety and climbing techniques for all linemen
- Planning and line staking continue for line extension to WFP
- Resignations of three line employees and one customer service representative
- Negotiating with Zain and MTN to connect cell phone towers

### MECO

- Started rationing power from January 2 running from 8:00 am - 12:00 noon and 4:00 pm - 11:00 pm due to low fuel inventory caused by delay in delivery. Fuel was delivered January 11 and resumed normal operating hours 8:00 am to 12:00 midnight
- Staff from SUWASA visited office to discuss three-phase line extension project
- Continue to find a few meters reading incorrectly (8888) – Replacing
- Governor of WES, Maridi County Commissioner and UN personnel visited compound 13-Feb.
- National Minister and Deputy for Telecommunications visited compound February 19
- Maridi water treatment plant three-phase line extension staked
- A contingent from USAID including the local program Monitoring and Evaluation officer and ESP Agreement Officer Representative George Wagwa visited the compound March 22.

### YECO

- \*\* Accounting adjustment for proper recoding of total services caused reduction
- Continued to work on line extensions to MTN towers
- Genset #3 not operating since January 17 due to blown fuse caused by faulty wiring - Technicians from Ezentus replaced fuse and repaired unit on February 4.
- JICA representatives visited and surveyed board and staff members along with visiting the power plant - JICA is exploring opportunities for electricity sector projects in South Sudan

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

- A lineman was seriously burned after coming in contact with the high voltage electric line. The lineman was transferred to Kampala for treatment. A meeting was held with all linemen and ground men to discuss the electrical contact accident; the cause and what could have been done to prevent the accident. The lineman remains in Kampala hospital.
- YECO cashier suspended for two months with pay pending investigation into mismanagement of funds. An investigation committee completed their report and submitted to the Board for further action.
- The Administrative and Finance Manager resigned and returned home to Uganda.
- Completed work on three-phase line extensions to MTN communication towers

### Project Employee and Specialist Travel During the Quarter

- Bob Ellinger, Chief of Party and Swalleh Rajab, Senior Commercial Specialist returned to South Sudan in January following holiday travel
- Nicolas Allen (Burundi) and Shahid Zaman (Bangladesh) Inventory Management Specialists spent the month of February working on the tasks assigned following their arrival on February 5 - they departed in February and March respectively
- Janet Kauffman departed for R&R leave on February 14 and she returned to South Sudan March 16
- Kent Wick (US) NRECA Management and Financial arrived in South Sudan on March 15<sup>th</sup> to lead the Management Training Workshop and departed March 23

### **Task II – Yei, Maridi Hybrid Micro-Hydro Capacity**

We continue to make inquiries on the introduction of renewables to the wholesale power generation mix at all three utilities. This will be a concerted effort to reduce the cost of wholesale power in an effort to improve long-term sustainability.

This is an activity in ESP that will require action at the earliest possible date. It is quite significant that, while the number of connections at Kapoeta and Maridi continue to increase and approach the number of connections originally thought necessary to achieve self-sufficiency; the financial break-even point has still not been reached. We continue to analyze the situation with initial information indicating the newly connected consumers are using very little energy because the cost is high due to the high cost of diesel fuel.

For this reason, we believe that it would be extremely important to evaluate other renewable energy options – in addition to the hydroelectric power options already reviewed – in Maridi and Yei. We would like to evaluate potential for solar photovoltaic generation in both Kapoeta and Maridi.

Should one or both of the small hydroelectric options receive funding at Maridi or Yei, we recommend that these activities be fast-tracked to allow the utilities to avail of lower cost energy at the earliest possible date. Providing a lower cost renewable energy component to the energy production mix will have an immediate and lasting impact on self-sufficiency for each utility that enjoys this option.

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### Task III - Utility Evaluation and Development Support for Yambio

Activities to evaluate the options to develop an electric utility in Yambio have been stalled. The review of the remnants of the generation-distribution system built by an Egyptian contractor is being slowed by disagreements over the payment of the contractor and rightful ownership of the assets. While significant progress had been made to design, procure and install power generation and distribution infrastructure in Yambio, the system has not been placed in commercial operation and the components of the system are falling into disrepair. The Hon. Clement Juma Mbugoniwia, Minister of Physical Infrastructure and Public Utilities for the Western Equatorial State (WES) continues to try and open dialogue with representatives in Juba on how the system be placed into service and we are aware of some movement on the issue. We will continue to support these efforts to open dialogue with all stakeholders to move this task forward.

### Other ESP Support Activities

#### Reimbursement Payments to Utilities

Payments to Kapoeta and Maridi Utilities for reimbursement of non-fuel operating expenses were made following a thorough review of the financial and accounting records. Reimbursement payments to KAPECO and MECO for this quarter were as follows.

Utility	January	February	March	Total	FY-T-D
KAPECO	\$ 17,700	\$0	\$0	\$ 17,700	\$57,700
MECO	\$19,000	\$0	\$0	\$ 19,000	\$64,000
				\$36,700	\$121,700

#### NRECA Senior Vice President of International Programs Visits South Sudan

Dan Waddle, Senior VP for NRECA International Programs visited Juba on March 11-12. While the visit was short it was very productive in substance as meetings were held with Tom Rhodes, USAID-SS Director of Economic Growth; George Wagwa, ESP Agreement Officer Representative, Samuel Taban Youziel of the Ministry of Electricity and Dams, and Undersecretary Jaden Tongun Emilio of the Ministry of Agriculture, Forestry, Cooperatives and Rural Development. As a follow-up to these meetings we made an initiated a dialogue with David Hughes, Chief of Party for the USAID FARM project in South Sudan to explore synergies between FARM and ESP activities. Dan Waddle also made contact with David Miller, the FARM home office manager at Abt headquarters in Bethesda Maryland.

#### Participation in USAID Training on Recipient Contract Audits and USAID Financed and Procurement Topics

Bob Ellinger, ESP Chief of Party, attended a USAID training program covering various points of interest concerning contract / agreement audits and finance & procurement rules and regulations. William Brands, Mission Director welcomed everyone and discussed the importance of the information being shared and participant questions. The Regional Inspector General, Mission Attorney and representatives of the Office of Financial Management and the Office of Acquisition and Assistance presented information and fielded questions on the following topics: program audits - who, what, when, where and why; fraud; procurement; and the roles of the agreement/contracting officer and agreement/contracting officer representatives. Soft copies of

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

the presentations were shared with recipients and we shared them with our home office staff in Arlington, Virginia.

### Meeting with USAID Agreement Officer Representative (AOR) for ESP

Bob Ellinger met with George Wagwa, USAID AOR for ESP to discuss program activity and the status of various tasks. Items discussed included: the status of the political situation and activity in Yei and Yambio; integration of renewables in ESP by exploring min-hydro, wind and solar generation at the three utilities in an effort to help reduce power production costs; electronic filing of USAID quarterly reports and key project documents; and transfer of assets to KAPECO, MECO and YECO.

## **Key Issues and Challenges**

### Political Activity in Yei

During the normal process of collection and disconnecting of accounts at YECO, several high profile accounts were disconnected; they included the National Security Agency, Police Headquarters and Doctors Quarters. Many of the accounts disconnected had not paid bills for over a year and we believe that YECO was well within their right to disconnect these non-paying customers. Unfortunately “politics” transformed a normal electric utility action into a confrontation which generated anti-YECO sentiment leading to questions on the cooperative business model.

The group of doctors discussed the disconnection of their staff quarters at length with YECO Technical Manager Ben Alal and as businessmen came to an agreement for reconnection. Unfortunately the National Security Office took the disconnection as an act of sabotage, an attack on the government which threatened the security of the county and country. Several YECO employees and the ESP COP were detained at the Director of National Security’s office. The YECO board chairman was summoned to explain and defend the actions of the cooperative (which he did very well). The National Security Director allowed his “guests” to leave following his conversation with the board chairman. The resolution included the reconnection of critical county office accounts (without payment).

YECO board chairman, Samuel Kilombe and several board members met with the County Commissioner and the head of the National Security office to discuss cooperative operations including billing and disconnection procedures. While the Commissioner initially proposed the transfer of the cooperative business to Central Equatoria State and/or the South Sudan Electric Corporation (SSEC) he was cautioned by the board members that such a proposal would be very unpopular among the YECO members and could be politically disastrous. Midway through the meeting the National Security Director excused himself as he had “pressing business” to attend to and as the discussion continued the Commissioner seemed to take a more conciliatory position. It was agreed by everyone to continue discussions on how best to resolve the situation for the benefit of all stakeholders.

This situation has been brewing for many months as YECO representatives have held meetings with the County Commissioner and other county officials concerning the unpaid accounts. YECO has not received payment on many of these accounts going back 12-24 months which is

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

unsustainable. The government officials believe that the utility (paying customers) should support all public service facilities – government offices, hospital, street lights, etc.

A revealing observation from the confrontation and subsequent meetings that followed was that the board and YECO are viewed as being very secretive with little information provided to the membership regarding operations and finances. Unfortunately YECO has not held an annual meeting for several years and this particular incident has called attention to the need to ensure that annual general meetings are held to keep the membership informed and gain membership support for the organization. What may be the most important result of this whole situation is the scheduling of an annual meeting for May-June of this year with full operations and financial reports on the agenda.

### Transportation

Purchase of New Project Vehicle - A waiver of geographic code 937 under Cooperative Agreement No. AID-668-A-12-00002 (South Sudan ESP project) was submitted to USAID for review and approval. NRECA Arlington staff worked with USAID to answer questions and clarify information contained in the waiver request and support documentation which led to a quick review and approval. Procurement in Arlington ordered the vehicle and we expect delivery in May.

Helicopter - This quarter marked the project's use of the United Nations' Mission in South Sudan (UNMISS) helicopter as part of our various modes of transportation. The UNMISS helicopter flies between Juba, Maridi and Yambio every Monday, Wednesday and Friday. We provided UNMISS with a request letter explaining the project and the transportation needs along with supporting documentation. UNMISS has agreed to accept and review transportation requests on a case by case basis.

### Generator Efficiency in Yei

While the efficiency of the power generators improves slightly in both Kapoeta and Maridi as the electric load on the units increases, the generation efficiency at YECO has fallen due to a failure to perform routine maintenance on the generators. NRECA engineering advisors anticipate that a 20% increase in efficiency is likely by simply replacing old air filters; this recommendation was presented to the Technical Manager at YECO but he has been slow to implement the recommendation. With the hiring of a new general manager the case to complete the recommendations will be made to him specifically pointing out the fuel savings that can be realized with improved efficiencies. If we have no success with the new general manager we will discuss the situation with the Board President.

### KAPECO and MECO Employee Contract and Wage Issue

At the end of February the contracts of all employees at KAPECO and MECO expired. The expiration apparently caught the management and board at both utilities by surprise but the employee groups at both utilities quickly recognized the expiration and expressed concern.

MECO - Bob met with the MECO employees to address their questions and concerns in regard to the expiration and possible wage increases for the upcoming year. Management was provided a template for employee evaluations and began the process of reviewing employees and

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

---

developing new contracts / contract extensions. All employees continued to report for duty and there was no work slowdown / stoppage.

Following an evaluation of current financial status and the scheduled reduction in ESP reimbursement payments, the board and management of MECO decided to maintain the current staffing levels with no salary adjustment for 2013. All employees signed employment agreements and will continue the performance evaluation program in 2013.

KAPECO - In Kapoeta three KAPECO linemen elected to resign in protest and the remaining three elected to remain home and not report to work. Bob Ellinger sent a letter to the three remaining linemen encouraging their return to duty which they did. During this turmoil the management and office staff maintained the workflow of the utility including meter reading along with the printing and delivery of March bills. Bob met with the KAPECO board and employees the last week in March to discuss the situation and participate in negotiations on the signing of new contracts and wage increases.

Following an evaluation of current financial status and the scheduled reduction in ESP reimbursement payments, the board and management of KAPECO decided to not replace the four employees who resigned but to continue operations with twelve employees. The reduction in staff (four open slots – three line employees and the customer service representative who had resigned earlier as part of a family dispute) allowed an increase in employee wages yet total payroll was reduced. All remaining employees signed employment agreements and will begin a performance evaluation program in 2013.

### Major Events – Upcoming Activity

- Complete Asset Transfer at Kapoeta, Maridi and Yei
- Program Development and Project Planning
  - Continue the development of Board training program including finalizing schedule for the June workshop in Yei.
- CIS/Accounting
  - Complete the second phase of CIS – Accounting training visits with the three utilities
- Explore Training Partner Opportunities in Kapoeta, Maridi and Yei
  - ECS Technical Training Center in Maridi & JY Accounting Mgmt. in Juba
- Utility Evaluation in Yambio
  - Meet with concerned officials to explore options for utility development

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### Financial

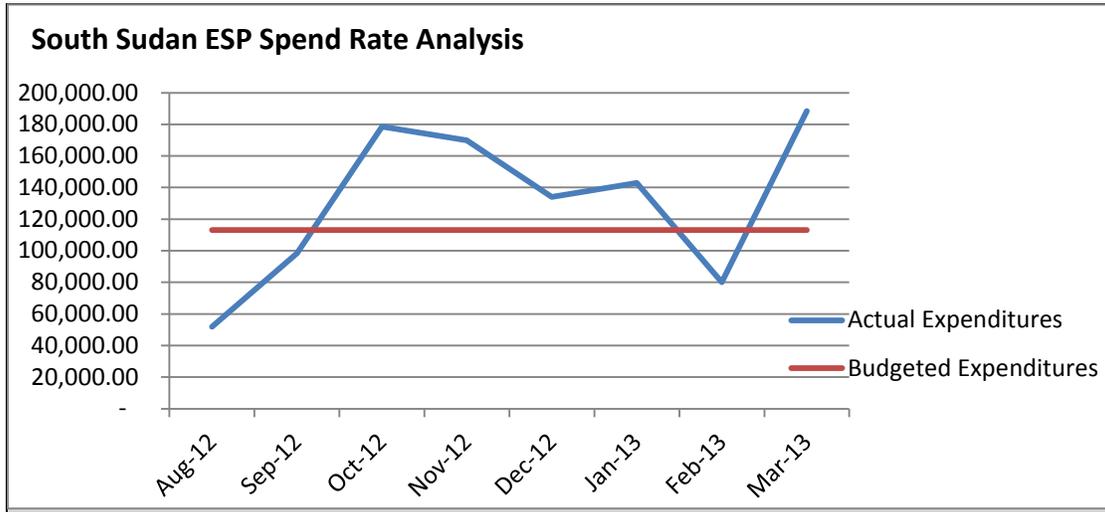
<b>Financial Status (as of end of reporting period - 03-31-2013)</b>	
a. Project Start Date:	8/08/2012
b. Project Completion Date:	8/07/2015
c. Estimated Life of Activity (months):	36
d. Expired Life of Activity (months):	8
e. Total Estimated Cost:	3,870,000
f. Unilateral Obligation	2,194,000
g. Bilateral Sub-obligation	0
h. Total Obligation:	2,194,000
i. Mortgage (e-h):	1,676,000
j. Expenditures:	1,044,119
k. Pipeline as of end of reporting period (h-j):	1,149,881
l. Historical Monthly Burn Rate (j/d):	130,515
m. Average Monthly Burn Rate (Last Quarter):	138,581
n. Length of Pipeline in Months (k/m):	8.29
o. Cumulative Expenditures as % of Obligations:	47.59%

<b>Spend Rate Compared to Budget (FY 2013)</b>								
Month	Actual	Budget	Month	Actual	Budget	Month	Actual	Budget
August	51,770	113,119	November	169,990	113,119	February	79,987	113,119
September	98,446	113,119	December	134,090	113,119	March	188,326	113,119
October	178,520	113,119	January	142,991	113,119	<b>Total</b>	<b>1,044,119</b>	<b>904,952</b>

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### Spend Rate Analysis Graph



Breakdown in Project Costs by Specific Element	
Personnel	\$232,968
Fringe Benefits	\$119,717
Travel	\$66,884
Equipment	\$54,979
Supplies	\$2,452
Contractual	\$89,776
Other	\$70,319
Non-Fuel operating Costs	\$121,919
Indirect Charges	\$285,105
<b>Total</b>	<b>\$1,044,119</b>

While the project actual expenses have outpaced the budget such a spending pattern could be expected with frontend expenses being loaded with project startup costs. These early costs also include the expenses associated with the plan to reintroduce training programs early on in the program.

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### Process Indicators

The table below shows the process indicators that will be used to track progress in the program as compared to initial benchmarks for all activities and tasks. The process indicators for the ESP program are drawn from the program workplan, in which completion milestones have been set for each Task within the three Activities of the program. More details on each Activity and Task are available in the ESP program workplan.

Workplan No.	Activities and Tasks	Milestones	Completion (Planned)	Completion (Actual)
1.0	Yei, Maridi, Kapoeta Technical & Financial Sustainability Support			
1.1	Benchmark diagnostics	Diagnostics completed.	31-Oct-2012	26-Oct-2013
1.2	Board training courses	Board members complete training courses.	18-Jan-2013	Feb-2013
1.3	Board peer-to-peer sessions	Board members participate in peer-to-peer sessions.	23-Jan-2013	
1.4	Leadership Training	Utility managers and key staff complete training courses.	22-Mar-2012	21-Mar-2013
1.5	GM Training	Utility managers and key staff complete training courses.	29-Mar-2013	21-Mar-2013
1.6	Annual GM retreat	Utility managers participate in peer-to-peer sessions.	03-April-2013	
1.7	Human resource management training	Utility managers and key staff complete training courses.	24-May-2013	21-Mar-2013
1.8	Accounting and Financial Control Training	Utility financial and commercial staffs complete training courses.	28-June-2013	
1.9	Meter reading and data management training	Utility financial and commercial staffs complete training courses.	8-Mar-2013	
1.10	Commercial management training	Utility financial and commercial staffs complete training courses.	30-Nov-2013	
1.11	Line worker safety training	Line workers complete training courses.	12-July-2013	
1.12	Power Generation Training	Power plant O&M training for plant operators and key staff	21-Dec-2012	20-Dec-2012
2.0	Yei, Maridi Hybrid Micro-Hydro Capacity			
2.1	Hydrology data and community coordination	Review completed.	TBD	
2.2	Civil engineering design	Design work completed	TBD	
2.3	Generation and substation design	Design work completed	TBD	
2.4	Power line interconnection design	Design work completed	TBD	
2.5	Cost estimates	RFQ completed	TBD	
2.6	Financial model	Modelling completed	TBD	
2.7	Report delivered	Design report delivered.	TBD	
3.0	WES & Yambio Electric Utility Assistance			
3.1	Planning workshop with WES Government	WES participates in workshop.	13-Mar-2013	Delayed
3.2	Diagnostic fieldwork, initial recommendations	Fieldwork completed, initial recommendations delivered.	3-April-2013	Delayed
3.3	Diagnostic report prepared	Diagnostic report prepared.	07-May-2013	Delayed
3.4	Diagnostic report delivered	Diagnostic report delivered.	08-May-2013	Delayed

## Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

Workplan No.	Activities and Tasks	Milestones	Completion (Planned)	Completion (Actual)
3.5	Implementation of Follow-on Training Activity	Follow-on training activity implemented (TBD)	TBD	Delayed
4.0	Program Management, Monitoring, Evaluation and Reporting			
4.1	ESP team mobilization	Consultants notified, PSA signed, and Team mobilized to SS	28-Aug-2012	10-Sept-2012
4.2	Workplan and MEP submitted	Annual workplan and MEP submitted to USAID	5-Sept-2012	05-Sept-2012
4.3	Workplan and MEP revised	Revised workplan and MEP delivered.	28-Sept-2012	17-Oct-2012
4.4	Quarterly Progress Reports	Quarterly progress reports delivered within 30 days of end of quarter.	Jan, April and July 2013	30-Sept-2012 31-Dec-2102
4.5	Quarterly Financial Reports	Quarterly financial reports delivered within 45 days of end of quarter.	Feb, May and August 2013	30-Jan-2013
4.6	Year 2 - Workplan and MEP submitted	Year 2 - Workplan and MEP submitted to USAID	30-Aug-2013	

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### Output Indicators

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actuals
Output 1.0	Board training.	<p>Definition: Number of people receiving USG supported training in roles and responsibilities of electric utility board members.</p> <p style="text-align: right;">KAPECO MECO YEKO</p> <p>Description: Total number of participants in electric utility board training sessions, disaggregated by gender and utility.</p> <p>Data Source: NRECA project reports.</p> <p>Discussion: This is an ESP indicator that closely resembles the USAID standard indicator for management training (see Output 2.0 indicator below). While this indicator is disaggregated by gender, the target is not disaggregated because the program has no influence over the gender of board members selected or elected in the three communities.</p>	0 0 0	M-F 5-1 6-1 6-1	M-F 0-0 6-1 5-0	M-F 0-0 6-1 <u>5-0</u> 11-1
Output 2.0	Management training.	<p>Definition: Number of people receiving USG supported training in energy related business management systems.</p> <p style="text-align: right;">KAPECO MECO YEKO</p> <p>Description: Total number of participants in utility management basic training, and administrative training, disaggregated by gender.</p> <p>Data Source: NRECA project reports.</p> <p>Discussion: This is a USAID standard indicator. While this indicator and reporting is disaggregated by gender, the target is not disaggregated because the program has little influence over selection of utility personnel in the three utilities, and therefore should not set a target as to their gender. Note that the management training and the administrative and financial training envisioned in the program have been combined into this one indicator.</p>	0 0 0	M-F 3-3 5-0 5-1	M-F 4-2 4-0 3-2	M-F 4-2 4-0 <u>3-2</u> 11-4

## Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actuals
Output 3.0	Electric lineworker training.	<p>Definition: Number of people receiving USG supported training in electric line and power plant generation work.</p> <p style="text-align: right;">KAPECO MECO YECCO</p> <p>Description: Total number of participants in lineworker and power plant generation training, disaggregated by gender.</p> <p>Data Source: NRECA project reports.</p> <p>Discussion: This is an ESP indicator that closely resembles the USAID standard indicator for management training (see Output 2.0 indicator above). While this indicator and reporting is disaggregated by gender, the target is not disaggregated because the program has little influence over selection of utility personnel in the three utilities, and therefore should not set a target as to their gender.</p>	0	M-F	M-F	M-F
			0	10-1	10-0	10-0
			0	10-1	9-1	9-1
			0	14-0	17-0	<u>17-0</u> 36-1

## Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

### Outcome Indicators

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actual FY 2013
Outcome 1.0	Improved electric service.	<p>Definition: Number of beneficiaries receiving improved infrastructure services due to USG assistance.</p> <p style="text-align: right;">KAPECO MECO YECO Yambio</p> <p>Description: Total number of customers connected to the three primary beneficiary utilities (MECO, KAPECO and YECO), and to a potential new rural utility in Yambio, multiplied by four. This multiplier is used, rather than a higher number of average household size in South Sudan utilized in other analyses, because some of the electric service customers will be small commercial establishments rather than households. No attempt is made to count beneficiaries such as users of public lighting, beneficiaries of public institutions and NGOs, etc. The indicator therefore will provide a conservative estimate of beneficiaries of improved utility management and operations.</p> <p>Baseline and targets determined following utility diagnostics (Nov-2012)</p> <p>Data Source: NRECA project reports and utility records.</p> <p>Discussion: This is a USAID standard indicator. In the ESP, this indicator is not disaggregated by gender because it will not be directly measured; i.e. the number of people with electric service will not be directly counted in each customer (household, commercial establishment, public institutions, etc.); therefore any gender disaggregation would be an estimate only.</p>	7,400	300		
			1,350	90	96	96
			1,550	100	84	84
			4,400	110	0	0
			0			0
Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actual FY '13
Outcome 2.0	Utility cost recovery.	<p>Definition: Cost recovery index-(Indicators No. 2-5 are based on year end 2012 figures-3 month lag)</p> <p style="text-align: right;">KAPECO MECO YECO</p> <p>Description: This standard index will measure the commercial cycle efficacy of each utility (MECO, KAPECO and YECO) as the product of collection rates and losses for each utility. A utility with 95% collection rates and 10% losses would have a cost recovery index of 0.95 * 0.90 or 0.855.</p> <p>Baseline and targets to be set following utility diagnostics (Nov- 2012)</p> <p>Data Source: NRECA project reports and utility records.</p> <p>Discussion: This is not a USAID standard indicator. Disaggregation by utility</p>	85%	86.5	90%	90%
			75%	77%	82.5	82.5%
			66%	72%	83.2	83.2%

## Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actual FY 2013
Outcome 3.0	Utility expenditure management.	<p>Definition: O&amp;M expenses per kWh sold, normalized for fuel costs. (Indicators No. 2-5 are based on year end 2012 figures-3 month lag)</p> <p style="text-align: right;">KAPECO MECO YECO</p> <p>Description: The ratio of operation and maintenance expenses per period to kilowatt hours sold in the same period. This ratio will be normalized for variation in fuel costs to ensure that the indicator tracks utility management behavior and not variations in the fuel markets.</p> <p>Baseline and targets to be set following utility diagnostics.</p> <p>Data Source: NRECA project reports and utility records.</p> <p>Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>	2.1 SSP 1.9 SSP 2.5 SSP	2.05 1.85 2.4	2.06 2.29 0.44	2.06 2.29 0.44
Outcome 4.0	Utility operating margins.	<p>Definition: Operating margins per kWh generated. (Indicators No. 2-5 are based on year end 2012 figures-3 month lag)</p> <p style="text-align: right;">KAPECO MECO YECO</p> <p>Description: The operating margins for each of the three utilities (MECO, KAPECO and YECO) will be tracked and reported. It should be noted that this indicator is <u>not</u> a proxy measure of effectiveness of the ESP program, since fuel costs and other variables in the economic context of each service territory will influence this metric, but it will still be a useful data set for USAID in considering the implications of its investments in utility start-up in South Sudan.</p> <p>Baseline and targets to be set following utility diagnostics.</p> <p>Data Source: NRECA project reports and utility records.</p> <p>Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>	-1.1 SSP -1.3 SSP -1.5 SSP	-.88 -1.04 -1.2	-.37 -1.61 -.06	-.37 -1.61 -.06

## Electrification Sustainability Program In South Sudan Quarterly Report, January - March 2013

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actual FY 2013
Outcome 5.0	Mgmt. Staff Turnover Percentage	<p>Definition: Management Staff Turnover Percentage (Indicators No. 2-5 are based on year end 2012 figures-3 month lag)</p> <p style="text-align: right;">KAPECO MECO YECO</p> <p>Description: A high turnover of key management staff may be an indicator of internal strife and disruption within an organization. While there is little information on utility standards in this area comparisons can be made from project start (possibly a year or two prior) to end dates.</p> <p>Baseline and targets to be set following utility diagnostics. Data Source: NRECA project reports and utility records. Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>	24% 0 % 100%	12% 0% 50%	24% 0% 50%	24% 0% 50%

### Impact Indicators

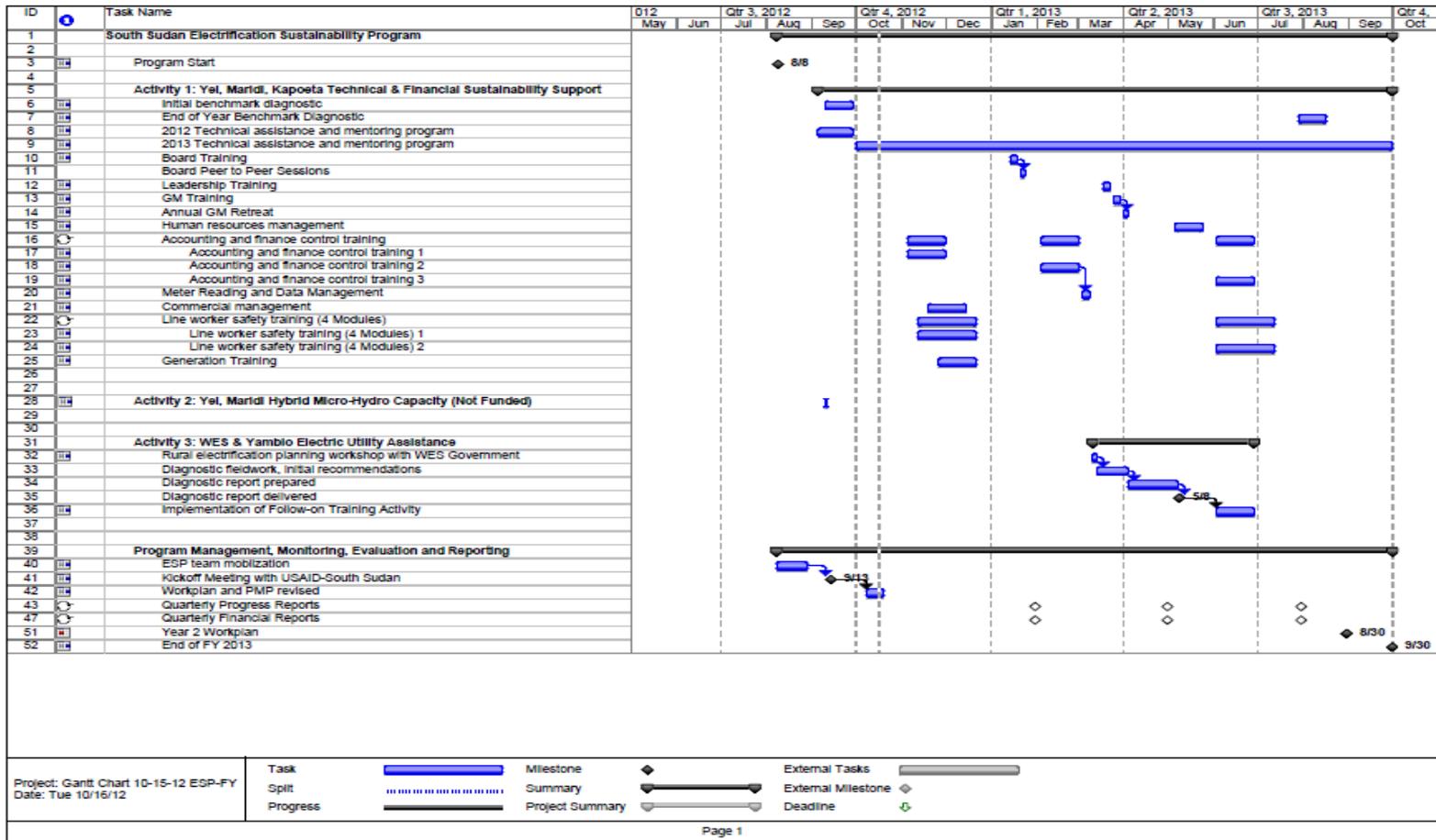
The ESP program will be focused on improving utility management and operations, and therefore will not track high-level impact indicators. However, while there is no direct correlation with project training activities to the indicator, an attempt will be made to measure the number of new businesses or expanded businesses connecting to the distribution grid during the project; possibly as a percentage of businesses receiving electric service from the distribution grid.

Indicator No.	Indicator Name	Indicator Definition, Description, Data Source, and Discussion	Baseline (2012)	2013 T - A		Program Actual FY'13
Impact 1.0	Number of new / expanded business connections.	<p>Definition: Number of new or expanded business connections (Impact Indicator is current through Quarterly Report period)</p> <p style="text-align: right;">KAPECO MECO YECO Yambio</p> <p>Description: While there is no direct correlation between the project training and mentoring activities and the number of new businesses or expanding businesses receiving electric service, an attempt will be made to measure the number of new or expanded businesses connecting to the distribution grid during the project. Baseline and targets to be set following utility diagnostics. Data Source: NRECA project reports and utility records. Discussion: This is not a USAID standard indicator. Disaggregation by utility.</p>	238 237 740 0	16 16 19	16 08 08	16 08 08 0

# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### ESP Project Gantt Chart



# Electrification Sustainability Program In South Sudan

## Quarterly Report, January - March 2013

### Management Training Workshop Evaluation

#### Management Training Program Evaluation

1. **Did the topics covered and format(s) used meet your expectations? (overall program)** YES 8 NO 1(?) (Financial Evaluation session not clear)
2. **Did the presenter(s) present the subject matter in a clear, concise and interesting manner?** YES 9 NO 0
3. **Please rate the presentation(s) / discussion topics most important to you on a scale of “1” (least important) to “5” (most important)** Average calculated by eliminating one highest score and one lowest score.
  - a. Program Overview & Video - 3.3
  - b. Management and Board Relations – 4.6
  - c. Peer to Peer Discussion Session (Tuesday) - 4.5
  - d. Financial Evaluation of and Electric Utility – 4.5
  - e. Internal Controls - 4.3
  - f. Leadership Training - 4.6
  - g. Peer to Peer Discussion Session (Wednesday) - 4.3
  - h. Employee Expectations & Communications - 4.6
  - i. Performance Evaluations - 4.4
  - j. Peer to Peer Discussion Session (Thursday) - 4.3
4. **Did the Meeting Room & Conference Center meet your expectations?** YES 8 NO 1  
If “NO” – why not?? Toilets dirty and not in good working order – Food Substandard
5. **What other topics do you recommend for future programs?** 1. Safety & Safety Awareness, 2. Mapping / GIS (as built), 3. Community Awareness Campaign, 4. Customer Care and Public Relations, 5. Financial Analysis / Mgmt. / Adm., 6. CIS Training, 7. Budgeting, 8. Courteous Management & Staff Relations, 9. Commercial Management / Line Staking, 10. Human Resource Management, 11. KWH Sales Promotion, 12. Generation, 13. Line Construction / Design