TASK ORDER COMPLETION REPORT

PRIVATE SECTOR PARTICIPATION IN CLEAN ENERGY DEVELOPMENT, MANAGEMENT, AND OPERATIONS

USAID
Energy and Environment Training Program (EETP)
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Submitted By

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EXECUTIVE SUMMARY

This Private Sector Participation in Clean Energy Development, Management, and Operations Task Order under the Energy and Environment Training Program (EETP) Indefinite Quantity Contract was wide-ranging both in terms of its geographic scope and the number and types of energy sector issues it addressed. CORE's work under the Task Order was comprised of five distinct Sub-Tasks including (i) assistance in the facilitation of improvements in the operations of the Southern African Power Pool (SAPP) system, (ii) capacity building in the area of rural energy service delivery in numerous countries in Southern Africa, (iii) work related to the advancement of Global Village Energy Partnership (GVEP) initiatives in Zambia and Sri Lanka, (iv) advisory services and capacity building in energy sector policy and institutional reform in Albania, and (v) assistance in the design of power distribution reform efforts in India. This Task Order allowed for targeted interventions by USAID in these key countries and regions to build the internal capacity of the beneficiaries to overcome major hurdles to service improvements. These efforts all focused on energy sector reform in developing countries in order to increase the quantity and quality of energy service availability, strengthen the internal capacity of the countries to increase efficiencies in service delivery, and to increase the role of the private sector and the broader stakeholder community (NGOs, community organizations, consumer groups, regulators, planners) in improved service delivery.

The development of a modern and efficient power trading system for members of the Southern African Power Pool would be beneficial to all member countries. Members of SAPP with excess power capacity can sell this excess to their neighbors, while those with shortfalls can import for a lesser cost than if they were to make their own investments in new capacity. The quality of each member countries' infrastructure, the skill sets of the power traders, the ownership and structure of the countries' utilities, and the authority of the regulator, varies amongst the member states. While SAPP is developing rules to increase the effectiveness of the trading system, many of the state-owned monopolies are restructuring and commercializing and are separating out their generation, transmission, and distribution functions. In this environment, USAID provided capacity building support to SAPP member countries' to assist with increasing the efficiencies and benefits of the Southern African Power Pool trading system. The approach included involving all stakeholders that have a role to play in increasing the effectiveness of SAPP -- senior utility executives, policy makers, regulators, energy service providers, local officials, and civil society stakeholders. The capacity building activities included workshops and training programs in the operation and management of power pools and wholesale market development, hands-on training in the buying and selling of bulk electricity and spot-market trading, and programs highlighting worldwide best practices in power utility restructuring and privatization.

In the area of rural energy services improvement, USAID's interventions focused on Southern Africa and the Southern African Development Community (SADC) countries. Electrification levels within Southern Africa are among the lowest in the world with an average electrification rate of approximately 20%. The urban-rural divide highlights the problem further as the average rural electrification rate is below 5.0%. Most of the utilities are highly inefficient, incurring huge losses and suffering from unsustainable debt levels

and poorly equipped managers. Sector regulatory, policy making, and legal institutional structures are relatively weak across the region. Rent seeking by public officials is common-place and discourages private investment. All of these issues have an adverse impact in terms of attracting the knowledge, technology and financing required to grow rural access to modern energy services. Through both regionally focused and country-specific programs in the form of roundtables, workshops, conferences and other outreach tools, CORE International effectively transferred knowledge in best practices in policy, regulatory, and financing needed for designing and implementing sustainable RE programs. Activities focused on the inclusion of community-based stakeholders and the private sector in RE planning and implementation through the introduction of various models and approaches for the provision of reliable and affordable rural energy services.

USAID activities related to the Global Village Energy Partnership (GVEP) funded under this Task Order had similar goals to the RE work and emphasized the relationship between energy services delivery and economic growth and therefore, poverty alleviation. The nexus between energy service delivery and improvements in other sectors such as healthcare, education, and agricultural, is at the center of the rural development challenge. To meet this challenge in the countries of Zambia and Sri Lanka, USAID supported technical consultations and capacity building programs to further the participation of the countries in the GVEP. This included assistance for the establishment of multi-stakeholder working groups and National GVEP Action Plans.

Letter to H.E. Martin Brennan
U.S.A. Ambassador in Zambia

"… Based on outstanding support from USAID [through CORE International, Inc.]*, we have made considerable progress on all fronts in advancing our energy sector agenda. In November 2003, Cabinet approved my Ministry's proposal for the establishment of a Rural Electrification Authority (REA); we have a functioning multi-sector Rural Electrification Working Group (REWG) that has been advising us on next steps for enhancing rural energy access in the country; we have had two Workshops on the GVEP initiative facilitated by CORE International and are in the process of formalizing the establishment of a GVEP Working Group; and we have begun the process of revising our National Energy Policy to incorporate new developments since 1994 when the policy was enacted. We give USAID the credit for assisting us achieve milestones that have developed a strong momentum, which we now want to maintain."*

H.E. Mr. George W. Mpombo, M.P, Minister
Ministry of Energy and Water Development, Zambia
April 28, 2004

In Albania, USAID supported the Ministry of Energy in its efforts to reform the country's energy sector and planning for its future, including its participation in the Southeast Europe Regional Energy Market. CORE International's capacity building assistance enhanced the capabilities of the Ministry of Industry and Energy to (i) plan and implement national power sector policies, (ii) effectively support the country's planning process for participating in the Southeast Europe Regional Energy Market, and (iii) provide advisory services related to enhancing financial and accounting capabilities within Albania's state-owned power utility.

In India, USAID supported the preparation of a detailed assessment of the issues and problems inherent in India's power distribution system and the options to best approach the distribution reform process both nationally and at the state and local levels. This work was in support of the distribution reform initiatives initiated by the Ministry of Power in India and

the USAID Mission in India. The key driver behind this initiative and CORE's work was the massive distribution losses amounting to approximately $6 billion annually, an amount equaling the entire education sector budget and about twice of what the country budgets annually for its healthcare program.

This report documents the interventions supported by USAID and the results achieved through these targeted and directed capacity building activities. Participants in CORE's activities came from over 200 different organizations including government ministries (ministries of power and energy, natural resources, mines, water, tourism, commerce & trade, industry), energy regulatory agencies, state-owned and private power companies, community-based interest groups and other non-governmental organizations, the private sector, donor organizations (including USAID, UNDP, SIDA, DfID, and the World Bank), foreign embassy personnel, and academic organizations.

Letter to Mr. Gordon Weynand
Energy Team Leader, EIT/EGAT Bureau, USAID

"… I write to report to you about the positive assistance that we are receiving from USAID the programs that we are pursuing. With the assistance of funds provided by USAID [through the Private Sector Development Task Order] *and the facilitation of CORE International we have been able to among other things, achieve/get useful inputs in the following:*

- *Identified critical issues in our rural electrification program and how to address these issues*
- *Designed a framework for establishing a Rural Electrification Authority (REA) whose legal framework was adopted by our Parliament in November, 2003*
- *Set in motion a wider consultative process for reviewing our National Energy Policy which we adopted in 1994*
- *Gathered and got on board the support of many local stakeholders for the Zambian Component of the Global Energy Partnership*
- *Preparation of the Increased Access to Energy Services Project on which we are collaborating with the World Bank.*

The purpose of writing this letter is to alert you of our need for further USAID support in completing the activities we have commenced. We are thinking of putting together a request for support covering the next 3 years. Should this be acceptable to USAID, we propose to continue working with CORE International, which has so far proved very effective in providing this support to us.

Yours Sincerely,"

In the broadest sense, CORE's activities have helped create a greater sensitivity among all stakeholders to the need for power reform and new and successful approaches to modern and efficient energy service delivery. CORE has also gone far to instill a regional focus in the approach of energy sector stakeholders. This has been of particular importance in Albania, considering the country's planned integration with the Southeast Europe Regional Energy Market. The regional focus also supported improvements in cross-border energy trading in the Southern African region. CORE has also contributed to an increased dialogue, wider participation, and a greater understanding of the process of creating institutional and regulatory mechanisms required for the growth and development of reliable, affordable and sustainable energy systems. Wide participation in CORE activities has allowed for local level input as well as private sector participation which offer the promise of greater commitment, improved sector performance, and greater potential for long-term sustainability of energy service delivery programs.

Results were achieved in each general intervention area which USAID supported. Based on the knowledge gained from activities conducted by CORE, the SAPP Co-ordination Center in Zimbabwe has put forward recommendations to the SAPP Operating Sub-Committee (OSC) on ways to improve the Short Term Electricity Market (STEM) Model in terms of both its physical and financial operations. All of the recommendations related to financial operations of the SAPP were subsequently approved and adopted by the OSC. CORE has provided assistance to SAPP in increasing the transparency of the transaction "black box" by developing a policy and a roadmap for the treatment of ancillary services, which will become more critical as the SAPP trading volume increases.

At the regional level in the Southern African Region, CORE activities have helped to build a consensus among stakeholders that rural energy policies need to be integrated with national energy planning, economic development, and poverty alleviation initiatives. CORE's programs successfully transferred the best practices for structuring Rural Electrification Funds (REFs), a popular tool used by governments to finance rural energy services delivery. Many Southern African Development Community (SADC) countries are now re-evaluating the institutional framework, regulatory and planning policies, and operational aspects of their REFs in order to make them more effective.

Workshop on Advanced Electricity Trading – Lusaka, Zambia
July 24-25, 2003
Private Sector Development Task Order

"*The SAPP Operations Sub-Committee would like to thank USAID for funding the Workshop and CORE International, Inc. for running the traders course and facilitating the Workshop. The traders have described this particular Workshop as the best Workshop ever conducted for SAPP traders."*

Dr. Lawrence Musaba
Manager
SAPP Co-ordination Centre
Zimbabwe

In the area of Rural Energy Service delivery and Global Village Partnership Program activities, CORE's work in Zambia has led to a commitment among key energy stakeholders to conduct a review of the country's National Energy Policy (NEP) by December 2004 in order to incorporate best practices to increase the impact of these policies. One institutional reform already implemented by the government of Zambia includes the approval, in December 2003, of the creation and empowerment of a Rural Electrification Authority. This entity will serve as the country's top institution to design and implement a massive rural electrification program in partnership with donors, the private sector, and the broader stakeholder community. Also, the Minister of Energy and Water Development has announced the establishment of a Stakeholder Task Force to assist in developing an institutional structure for the energy policy design and power sector reform, including the commercialization of ZESCO, the national utility.

CORE's recent work in Albania was highly integrated with its earlier work in the country. The previous work had facilitated significant changes in the country's energy sector and was furthered through additional capacity building activities. With assistance from the law firm Pierce Atwood, CORE assisted in the development of the Albania Power Sector Policy Statement (PSPS), which was submitted for high level discussions in early 2002 and approved by the Government of Albania in March 2002. Continued donor support to the country was subsequently made conditional upon the implementation of the PSPS. CORE

also assisted Albania in its coordination with the regional integration and cooperation organization of the Stability Pact as well as the donor organizations of the EBRD, the EIB, and the World Bank. Capacity building assistance performed in coordination with the World Bank, the EBRD, and ENEL (the National Electric Utility of Italy), included support to KESH (the national electric utility of Albania). Through these combined efforts, the Government of Albania adhered to the World Bank's conditionalities for two new power loans for the country – a $35 million loan for high priority power system interconnection improvements and a $100 million loan for the construction of a new thermal power station at Vlora. The development of the Vlora power station is a hallmark effort to diversify Albania's power sector which is currently dependent on hydropower for over 98% of its generation. During the timeframe of CORE's work, the country saw a decline in distribution losses from 40% in 2000 to 12.5% by 2004 and an improvement in collection rates from 30% to 87% over the same period at KESH. At the same time, the Ministry of Energy's institutional capacity was strengthened, the government's regulatory authority received greater responsibilities and authorities, and energy planning and operational procedures for facilitating greater efficiencies within the power sector were standardized.

In India, CORE's work was instrumental to USAID in designing the objectives of a future power sector assistance program in the country. The Distribution Reforms Upgrades and Management (DRUM) Project initiated jointly by the Ministry of Power and the USAID Mission in India is largely based on a pre-design review and assessment of India's power distribution sector conducted by CORE International. The DRUM Project is being launched to demonstrate best commercial and technological practices to improve the quality and reliability of "last mile" power distribution in selected urban and rural distribution circles which will help to correct an estimated $6 billion drain on the national budget.

I. OVERVIEW

A. TASK ORDER SCOPE OF WORK AND CONTRACTUAL REQUIREMENTS

The objective of this Task Order was to increase the knowledge and skill base of USAID's local partners to increase access to environmentally sound energy in USAID client countries. The focus of the Task Order was "Private Sector Participation in Clean Energy Development, Management and Operations." The Task Order was issued under the Energy and Environment Training Program (EETP) IQC. Under the Task Order, CORE provided services in developing and implementing programs in professional training, public education and communication and outreach. In all of the activities associated with this Task Order, CORE was tasked to work with USAID-assisted countries that are transforming their electric power systems, including focusing on delivering electricity to populations that are currently not served.

Lack of knowledge and skill with the operation of energy enterprises as commercial ventures has meant that utilities and other energy service providers have not been able to generate sufficient revenues to make investments in equipment and personnel that is required to provide efficient services with a reasonable return on the investment. This has in turn led to unnecessary pollution from improperly operated and maintained equipment, social inequities, and the misallocation of windfall profits. CORE was tasked to address these concerns by implementing a variety of training and capacity building activities utilizing the most applicable and proven delivery methods including in-class training courses and workshops, roundtables, case study sessions, field visits, and other approaches to enhance the participants' understanding of the key power sector reform issues. The Task Order activities conducted by CORE covered the following areas:

- Economics and finance of clean energy
- Interface of the government ministries, power enterprises, and the civil society with the Regulator
- Best practice approaches to commercial models for energy service delivery including rural energy service delivery
- Institutional and business models for energy service delivery including private sector led sustainable initiatives
- Distribution reform and efficiency improvements
- Rural energy and rural electrification

CORE designed and conducted a wide variety of capacity building and technical assistance activities in Zambia, Lesotho, Namibia, the SAPP countries, Albania, and India in all of these key areas throughout the life of the Task Order. CORE's work extensively involved local in-country counterparts, stakeholder participation, and a variety of targeted field visits.

B. KEY PROGRAM HIGHLIGHTS

1. Regional Electricity Market and Trading
Southern African Power Pool

The Southern African Power Pool (SAPP) was created in 1995 with the primary aim of linking all twelve member countries into a common market electricity grid. The overarching goal of SAPP is to extend the provision of reliable and affordable power supply to consumers. The vision of SAPP is (i) to facilitate the development of competitive electricity markets in the region, (ii) to give the end- user a choice of electricity supply, and (iii) to help attract investment in the energy sector. While progress has been slow, grid interconnections have gradually increased and short-term competitive energy markets are now operating.

However, the development of a modern and efficient SAPP trading system remains hampered by a number of issues. For example, power sectors in most SAPP countries continue to exist as government monopolies, wherein subsidies are commonplace, utility companies frequently do not recover the cost of provision, and debt levels are unsustainably high. Basic maintenance is often not undertaken and technical and non-technical losses are high. In this environment, the smooth development of a regional trading market is made difficult. Additionally, while an increasing volume of trade has been brought into the formal trading process of the SAPP, many trading arrangements in the region still take place outside of the SAPP mechanisms. Conversely, in some cases, it can be found that initial SAPP rules have become outdated as state monopolies have begun to restructure their organizations into separate generation, transmission and distribution functions and as power markets become more integrated and competitive.

CORE International worked with the SAPP member countries in providing training courses, workshops, and roundtables on issues related to SAPP's functions and goals. These activities involved extensive participation by senior utility executives, policy makers, and regulators from ten of the 12 SAPP member countries. CORE organized and conducted six program activities, each of which had a regional focus and was designed to aid the further development of the SAPP. CORE's activities focused on the following issues:

1) Privatization, regulatory reform, sector restructuring, and competition in supply, and environmental issues in the power sector within a restructured market.
2) The nature and benefits of electricity trading for national power systems, electricity trading exercises, and the mechanics of trading in other countries.
3) Best practices in system-wide transparency and efficiency gains for SAPP countries to better utilize their power system resources.
4) The role of the regulators and senior policymakers in SAPP member countries on issues surrounding power trading.
5) Trading and financial settlements for electricity traders: (i) how financial settlement needs must adapt to trading systems in use and (ii) facilitation of discussions among traders concerning key market development issues.

2. Rural Energy Services

Electrification levels in countries within Southern Africa are among the lowest in the world with an average electrification rate of approximately 20%. Furthermore, the urban-rural divide is significant; the average rural electrification rate for the region is below 5.0% – and less than 2.0% when South Africa is excluded. Progress in providing rural energy services in the Southern African Development Community (SADC) region is severely hampered by a number of issues. As noted above, most countries' power sectors in the region remain heavily or entirely state-owned and managed. Utilities, for the most part, remain organized as huge vertically integrated companies responsible for generation, transmission and distribution functions. Most of the utilities are highly inefficient, incurring huge losses and suffering from unsustainable debt levels and poorly equipped managers. Sector regulatory, policy making, and legal institutional structures are relatively weak across the region. Rent seeking by public officials is common-place and discourages private investment. All of these issues have an adverse impact in terms of attracting the knowledge, technology and financing required to grow rural access to modern energy services.

As part of its rural electrification (RE) related work CORE conducted six activities, primarily Workshops and Conferences on financial, policy, institutional, and service delivery topics. Some of these activities were regionally focused. However CORE also conducted country-specific RE activities in Zambia, Namibia, and Lesotho. Of the regional activities, one was a Workshop designed for SAPP member country energy sector officials, regulators, consumer groups, and other stakeholders to sensitize them to the policy, regulatory, financing, and institutional capacity requirements for implementing a successful rural electrification (RE) program. Another regional activity focused on the importance of private sector participation in the provision of rural energy services. CORE reviewed the enabling factors, including policy, regulatory and legal frameworks,

Workshop on Issues in Realizing Wholesale Electric Power Competition Through Private Sector Ownership
July 15-20, 2001
Workshop on Issues and Options for Rural Electrification in Zambia
May 6-10, 2002
Private Sector Development Task Order

"The Course on Issues in Realizing Wholesale Electric Power Competition Through Private sector Ownership helped me in appreciating what role the private sector can play in the power sector and as Chairman of the National Reference Group which was the umbrella Committee for dealing with restructuring of the power sector, I was able to ensure that the role of the private sector was clearly articulated in the proposed restructuring.

The result of the process was a document which was submitted to the Minister of Energy and Water Development in November 2002. Although the Government has not yet made a decision on that matter, a commitment was made at a meeting held on 22-23 March 2004 that the proposal submitted by the ERB will be addressed by the Government.

On rural electrification course, a rural electrification committee was established after the course to work out proposals on the institutional framework for accelerating rural electrification in the country. A law was passed December 2003 (The Rural Electrification Act) which provides for the establishment of a Rural Electrification Authority."

Mr. Silvester Hibajene
Technical Director
Energy Regulation Board
Zambia

appropriate institutional arrangements, and adequate subsidy schemes, required to attract private sector investment in rural energy service delivery. The presentations addressed shortcomings in the region and innovative approaches to overcoming them, and facilitated discussion among participants on these issues. CORE held a combined Workshop and roundtable activity in Zambia on key issues and options for RE program development in the country. The roundtable helped sensitize energy sector officials, regulators, consumer groups, and other stakeholders to the regulatory, policy, and institutional capacity requirements for implementing a sustainable and successful RE program. Another Zambia-focused Workshop was designed to build a consensus among energy sector stakeholders around the need to develop adequate institutional arrangements for energy policy design and power sector reform. CORE also held a Workshop in Lesotho on rural electrification planning options and challenges for the country within a framework of rural development and poverty alleviation. The event brought together senior energy sector and rural development officials, potential energy providers, consumer groups, locally-based donors and local NGOs. In addition, at the request of the Namibian regulator, CORE designed and implemented a Namibia-focused Workshop to build knowledge on how to best reform the Namibian power sector and how to promote private sector participation in the energy sector through allowing Independent Power Producers (IPPs) into the market.

Training Course on Issues in Realizing Wholesale Electric Power Competition through Private Sector Ownership – Lusaka, Zambia
July 15-20, 2001
Private Sector Development Task Order

"The problem that our electricity industry had been faced with was/is how to restructure the industry in the best way possible while maximizing benefits to all stakeholders in the country. This training gave me an opportunity to learn how restructuring has been conducted both in the third and developed world and what levels of success have been achieved. Although restructuring is yet to be carried out in our industry, I am very clear in my mind as to the benefits, together with the merits/demerits of the various models available. I am hopeful that I have some influence when the time comes to make a decision on the matter."

Mr. Matthew Linduda
Technical Services Manager
Kariba North Bank Company, Ltd.
Zambia

3. Global Village Energy Partnership Program

The Global Village Energy Partnership (GVEP) is a voluntary partnership that brings together developing and industrialized country governments, public and private organizations, multilateral institutions, consumers and others in an effort to ensure access to modern energy services by the poor. Over 250 organizations are currently involved in the Partnership. The group consists of 35 governments, nine multilateral donor agencies, nearly 120 NGOs and 95 private sector companies. The GVEP initiative has multiple aims including (i) catalyze commitments to rural energy programs and guide policies in this area, (ii) bridge the gap between investors, entrepreneurs and energy users in the design, installation and operation of replicable energy-poverty projects, (iii) facilitate policy and market regulatory frameworks that can scale up the availability of energy services, (iv) serve as marketplace for information and best practices on the effective development and

implementation of energy-poverty projects and programs, and (v) create and maintain an effective coordination mechanism for addressing ongoing energy-poverty needs.

CORE performed work for the advancement of GVEP initiatives in Zambia and Sri Lanka. Some of the key factors that contribute to current unsustainable energy use in Zambia's rural regions are (i) heavy dependence on biomass, (ii) large reliance on imported petroleum, (iii) lack of implementation of legislated policies, (iv) an ineffectual rural electrification fund (v) large government subsidies to power buyers, and (vi) poor information dissemination. Sri Lanka is impacted by many of the same issues and, in addition, suffers from a lack of data on actual energy use in the country.

CORE initiatives included the design and implementation of in-country meetings, workshops and technical consultations (TC) to initiate a momentum for a concerted GVEP process. Specifically, in Zambia, CORE designed and facilitated a TC meeting with all relevant Zambian stakeholders on establishing a GVEP Working Group and planning for the National GVEP Action Plan. The event was designed to allow for open discussions among stakeholder representatives on the following issues:

- Possible key focus areas of GVEP efforts in Zambia
- Potential composition of the Zambia GVEP Working Group
- Major responsibilities and functions of the GVEP Working Group
- Structure of the GVEP Working Group
- Identification of key elements in the GVEP National Action Plan and the next steps

CORE has been working in Sri Lanka since 2003 when it worked with the Ministry of Power and Energy to review the current state of rural electrification (RE) and rural energy services (RES), to help establish a multi-sector GVEP Working Group, and to assist the Working Group in the development of an initial Action Plan. CORE also worked with the government in analyzing its poverty reduction programs to determine potential linkages of the country's poverty reduction strategy with the GVEP program.

In May 2004, CORE facilitated a TC meeting among candidates for the Sri Lanka GVEP Working Group on ways to formalize the GVEP Working Group in the country and on planning for the National GVEP Action Plan. The TC was designed as two plenary meetings intended to accomplish two basic goals: (i) recommendation of an operating modality for the Working Group in preparing an initial Action Plan, and (ii) identification of initial areas of focus for the development of specific GVEP Action Plan projects.

4. Energy Sector Policy and Institutional Reform in Albania

Due to the deteriorating state of its power industry, the government of Albania in recent years has undertaken efforts to reform and develop the sector. The pace of reform, however, has been slow due to (i) the ownership and management of the sector as a monopolistic fully integrated state-run company, (ii) the lack of strong institutional and regulatory mechanisms in the sector, (iii) demand growth in excess of available generating

capacity, and (iv) tariff rates below the cost of production which has necessitated significant government subsidies and mounting debt levels.

During the 2001-2003, through a separate activity, CORE International supported the government of Albania in the development of a Power Sector Policy Statement (PSPS) which addressed numerous first steps needed to be taken by the government in the reform process. It also contained provisions which, when implemented, would allow the government to meet donor and World Bank conditionalities in sector reform, opening the way for further investments by these groups. The main areas of intervention supported by USAID included the following targeted training and capacity building initiatives:

- Assistance to KESH (the state utility) in reform and restructuring activities to improve operational efficiency, to unbundle its generation and transmission business segments, and to prepare the power sector for private investment.
- Support to the Ministry of Industry and Energy in terms of national energy policy and strategy development, preparation of action plans, and related training.
- Development of capacity building within the investment community and enhancing dialogue with the donor agencies to facilitate external investment including private sector investment.
- Performance of various technical assistance activities including a needs assessment survey and provision of advice on the Athens Memorandum (Athens MoU) process.

Workshop on Program Management: Planning, Monitoring, and Control
May 10-13, 2004
Tirana- Albania
Private Sector Development Task Order

Thanks to USAID's continued support through CORE International, Inc. during the past three years, we at the Albanian National Agency of Energy have been able to enhance our knowledge and performing capacity. The development of Albania's National Energy Strategy in mid-2003 represents our major milestone achieved for which we thank USAID and CORE.

Dr. Besim Islami
Chairman
National Agency of Energy
Albania

The activities conducted under the Private Sector Participation in Clean Energy, Development, and Operations Task Order focused on furthering and improving Albania's internal capacity to meet the goals and objectives of the PSPS and remained focused on key topics of power sector reform.

Specifically, CORE's activities included the following specific initiatives:

- Planning and policy implementation management support to MI&E in the implementation of the Power Sector Policy Statement (PSPS) and regional market participation.
- A Resident Advisor for financial and accounting capacity building at KESH.
- Planning and advice for the implementation of Athens Memorandum of Understanding I and Athens Memorandum of Understanding II requirements.

- Technical advisory services to the MI&E on Power Sector Restructuring and the Restructuring Plan prepared by KESH.

CORE's overall assistance in Albania's power sector over the last four years has resulted in a significant reform of the country's power sector. Distribution losses have reduced to 12-13 percent and collections are estimated to be in excess of 85 percent. Albania is increasingly becoming an important member of the Southeast Europe Regional Energy Market and an important player in what has come to be known as the "Athens Process" for regional integration and harmonization.

5. Power Sector Distribution Reform in India

India's power sector is characterized by inadequate and inefficient power supply. Given the shortfall in energy supply, the Government of India, in the early 1990's, opened up the power sector to private investments in new generating capacity. Investment was inhibited, however, due to the inability of investors to mitigate the risk associated with major projects in the country. This was largely due to poor management practices – especially in collections, performance monitoring, and operational control – that had long been ingrained in the State Electricity Boards (SEBs), the state-level distribution utilities.

The USAID Mission in India has been working in support of reforms in power sector distribution in order to address issues of weak financial performance, high T&D losses, low energy efficiency, and mitigating environmental impacts. In an attempt to advance these reforms the Mission launched planning for a distribution reform initiative jointly with the Ministry of Power in India. The thrust of this initiative is to better understand the various technical, commercial, and social issues impacting the power distribution system in the country. In support of these efforts, CORE conducted a detailed review and assessment of the distribution problem and developed a framework for potential opportunities for distribution efficiency reform in the country. CORE's work confirmed that the power distribution problem is multi-dimensional. CORE highlighted technical problems indigenous to the distribution system as well as outlined the economic, social, and political dimensions that need to be addressed. CORE evaluated a number of distribution reform projects – both urban and rural – that were being planned and noted that very different approaches are required for reform of rural versus urban distribution systems. CORE also visited a number of State distribution companies to gain insight into the distribution problem. CORE's report highlighted various approaches to reform in rural versus urban settings. The analysis showed that the proposed urban reform projects had an average payback period of less than four years while the rural projects had payback periods of eight to twelve years. Also, the investment level per unit of energy input and per unit of energy savings in rural projects was 3-5 times more than for urban projects. This analysis provided USAID with a more informed basis for developing its interventions and defining activities to support reform initiatives.

USAID employed CORE's report for extensive discussions with India's power sector officials which led to the creation of the Distribution Reforms Upgrades and Management (DRUM) Project, which based largely on CORE's recommendations. The DRUM Project is

being launched with the purpose of demonstrating best commercial and technological practices for improving the quality and reliability of “last mile” power distribution in selected urban and rural Indian distribution circles. The overall goal of DRUM is to demonstrate commercially viable distribution systems that are able to provide reliable and high quality power and to establish a replicable framework and methodology to allow for non-recourse financing of distribution projects.

II. TASK ORDER ACTIVITIES

A. REGIONAL ELECTRICITY MARKET AND TRADING – SOUTHERN AFRICAN POWER POOL

1. Background

The Southern African Power Pool (SAPP) was created in 1995 with the primary aim of linking all twelve member countries into a common market electricity grid. The overarching goal of SAPP is to provide reliable and economical power supply to consumers in each of the SAPP member states, while at the same time taking into consideration the efficient utilization of natural resources and the effect on the environment. The vision of SAPP is to (i) facilitate the development of competitive electricity markets in the Southern African region, (ii) give the end user a choice of electricity supply, and (iii) help attract investment in the energy sectors in the Southern African region.

Co-operation in the electricity sector is not new in the Southern African region. It has taken place over the past several decades between various countries at the policy, planning and operational levels. To formalize this interaction, however, several utility companies in the region came together under the auspices of Southern African Development Community (SADC) to formulate the SAPP. Utilities participating in SAPP have agreed to share information and knowledge, be politically neutral, and develop common planning and operating criteria and procedures and to accept wheeling (the free movement of electricity along interconnected transmission lines) on behalf of other members when this is technically feasible.

The origins of SAPP go back to the 1980's. Political changes in Southern Africa since that time have strongly influenced socio-economic factors in the region and have led to increased economic cooperation between countries in the region. In 1980 the Lusaka Declaration led to the creation of the Southern African Development Co-ordination Conference (SADCC) which aided increased regional economic co-operation. This was later transformed into the Southern African Development Community which has provided the impetus for various initiatives intended to boost the strength of Southern Africa in global economic affairs. The Intergovernmental Memorandum of Understanding (MoU) signed on 28 August 1995 brought SAPP into being.

SADC is the primary regional organization tasked with implementing the SADC Protocol on Energy which seeks to (i) enhance cooperation among the SADC countries through the harmonization of national and regional energy policies, strategies and programs; (ii) cooperate in the development of energy and energy pooling to ensure security and reliability of energy supply and the minimization of costs; and (iii) cooperate in the research, development, adaptation, dissemination and transfer of low cost energy technologies.

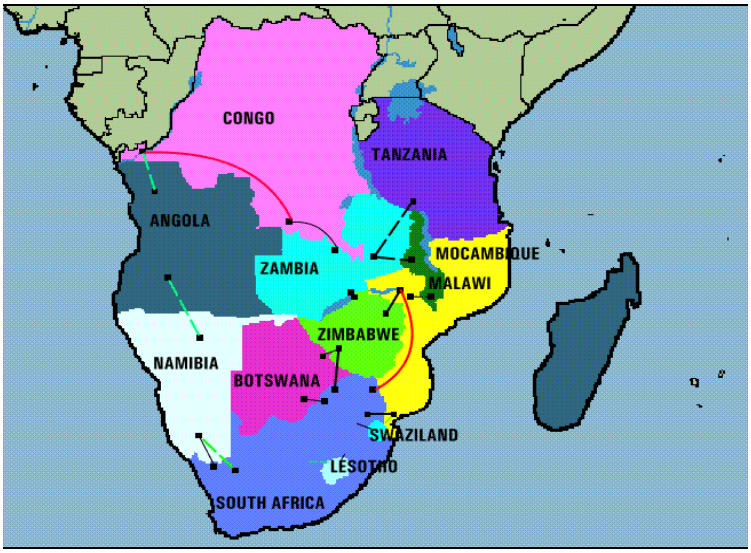
Exhibit II-1 includes a list of the countries and national utility companies that participate in SAPP.

Exhibit II-1: Countries and Utilities within SAPP

	Utility Companies	Countries
1	Empressa National de Electricidade (ENE)	Angola
2	Botswana Power Corporation	Botswana
3	Societe National d'Electricite	D.R. Congo
4	Lesotho Electricity Corporation (LEC)	Lesotho
5	Electricity Supply Commission of Malawi	Malawi
6	Electricidade de Mozabique (EDM)	Mozambique
7	NamPower	Namibia
8	ESKOM	South Africa
9	Swaziland Electricity Board (SEB)	Swaziland
10	Tanzania Electric Supply Company	Tanzania
11	ZESCO	Zambia
12	Zimbabwe Electricity Supply Authority	Zimbabwe
13	MOTRACO – Joint venture tw/ ESKOM, EDM and SEB	

Exhibit II-2 depicts the existing electricity interconnections in SAPP member countries. The power grids of Angola, Malawi and Tanzania are not yet connected with the other SAPP member grids, however, interconnection plans for the three countries are in various stages of development.

Exhibit II-2: SAPP Member Country Electricity Interconnections



Southern Africa's total installed electric generating capacity was 53.6 GW in 2000, the majority of which is thermal. Total power generation for the region was 226.8 billion kilowatt-hours (bkwh) of which 86% was generated by South Africa followed by Zambia at 3.4% and Mozambique at 3.1%. Net hydroelectric generation was 28.8 bkwh, with Zambia (7.8 bkwh), Mozambique (6.8 bkwh) and the D.R. Congo (5.3 bkwh) being the largest

generators. In 2000, total regional consumption was 211.2 bkwh, of which South Africa consumed 85%. Zimbabwe, Zambia and D.R. Congo were the next largest power consumers at 4.9%, 2.7% and 2.2% of total respectively.

2. Key Issues

Rules for SAPP trading need to evolve as the trading environment evolves and as utilities reform: As SAPP moves to deepen and broaden the trading environment for electricity, the rules surrounding the transmission of energy from seller to buyer must evolve as well. The initial SAPP rules were appropriate for a loose group of state-owned and vertically integrated monopolies. Since 2001, the changes in SAPP's environment – unbundling of several utilities, restructuring of entire systems, privatization of parts of some systems and new private generating companies – have demonstrated the need to make some changes in SAPP's own rules for completing transactions. Part of this task is to make sure that market participants believe that transactions in the SAPP system are fair, transparent and efficient. At present, energy leaves a seller, enters a black box called "transmission", and reemerges at the other end with the buyer.

The SAPP energy trading system is still in the early stages of development: The system is dynamic and evolving. Many of current trading arrangements between countries in the region take place outside the formal SAPP mechanisms. However, an increasing volume of trade has been brought into the formal trading process of the SAPP Control Centre in Zimbabwe in recent years. The SAPP trading arrangements still need to be deepened and members need to better understand and participate in spot- and short-term trading markets. Many of those that work in this sector however have had relatively little experience. Additionally in a trade-dependent organization such as SAPP, managers and traders need to be able to integrate organizational approaches and goals with national investment activities in generation and transmission.

A key problem is that the power sectors in most SAPP countries continue to be run as vertically integrated government monopolies, where governments are the owners, managers, and operators of energy service delivery and exercise excessive political influence in giving away free power with huge subsidies. The result of this model has been (i) poor recovery of the cost of service, (ii) huge public debts, (iii) a lack of funds for basic maintenance and/or investments in modernization, (iv) deteriorating quality of service, (v) huge technical and non-technical losses, (vi) limited civil society participation in decision-making within the sector, (vii) limited private participation or private sector investment, and (viii) a lack of consumer confidence and unwillingness to pay for unreliable and poor quality power.

Although progress in the implementation of the SADC Energy Protocol has been rather slow, some encouraging strides have been made especially in the SAPP. The interconnection of power grids has made progress and led to the introduction of a short-term competitive energy market. Encouraging progress has also been made in the establishment of a Regional Regulatory Association (RERA).

Regional cooperation has been limited: Many of the SAPP countries have national energy plans, while some have progressive and sustainable energy strategies that their neighbors could learn from. Effort should be made to ensure that the lessons that have already been learned are shared with those who could benefit from them. Economies of scale may only be achieved if countries work in a coordinated way to develop regional strategic plans. Ensuring consistency in regulations and standards among the SAPP countries will give energy service providers and manufacturers of energy technologies access to larger markets. Identifying the common problems and sharing research activities among countries will begin to build capacity in all countries, instead of just the favored few. The regional trade of energy among SAPP members is also extremely important. Large energy projects are viable only if their potential markets include several countries in a region.

SAPP initiatives are being implemented concurrent with utility restructuring programs: Concurrent with enhancing supply interconnections, many SAPP national utilities are simultaneously undergoing reform and restructuring, the end-goal of which is to privatize state power companies and thereby create improved efficiencies in these respective national industries.

Utility companies are financially weak: The restructuring and privatization process has been aggravated by the fact that many SAPP member electric utilities are suffering from low revenue receipts, high debt levels, and untenable financial stress. This lack of financial resources impedes their ability to maintain, upgrade, and expand their existing systems and networks. This condition increases the urgency of policy initiatives to unbundle, commercialize, and eventually privatize their respective state owned power sectors. The status of power sector reform initiatives for SAPP member countries is summarized in Exhibit II-3.

Exhibit II-3: Status of Initiated Power Sector Reforms in SAPP Countries

	Ang	Bot	Les	Mal	Moz	Nam	SAfr	Swa	Tan	Zam	Zim
New legal framework	X		X	X	X	X	X	X		X	X
Unbundling & IPP's			X		X	X			X	X	X
Private sector participation	X				X	X		X	X	X	X
Third party access					X	X			X	X	X
New regulatory framework	X		X		X	X	X	X	X	X	X
Reorganization of distribution	X				X	X	X			X	
Tariff reform	X		X		X	X	X	X	X	X	X
Utility commercialization	X		X	X	X	X		X	X	X	X

Source: Francis Masawi, Transmission Director, ZESA-1999, modified for Lesotho 2003

Rural areas suffer most from lack of access: The rural energy situation in Southern African countries is similar to that in other developing countries – they are difficult and often not economically viable to reach given their remote nature and their low density of demand. The level of access is growing as SADC governments are starting to realize the importance of electrification for the growth and sustainability of local economies. A number of countries have committed themselves to aggressive electrification goals for the short to medium term. Regional cooperation as that espoused by the SAPP is expected to aid at least indirectly in national electrification programs.

3. CORE International Task Order Assignments

CORE International worked with the SADC and SAPP in providing training courses, Workshops, and roundtables to senior utility executives, policy makers and regulators from 10 SADC countries (Angola, Botswana, D.R. Congo, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, and Tanzania). The six programs are summarized below. A total of 109 participants were involved in these activities. These programs were designed to promote further development of the SAPP in the following major areas:

- Best practices for the operation and management of power pools
- Tools of power trading
- Advanced power trading
- Wholesale market development
- Utility restructuring
- Commercial methods for managing public sector utilities

3.1 Regional Southern Africa – Workshop on Realizing Electric Power Competition through Private Sector Ownership (Zambia, July 15-20, 2001)

This five-day intensive course included lectures, discussions and case studies in privatization, regulation and restructuring, competition in supply and environmental issues in the power sector within a restructured market. Case studies included the Nordic Power Pool (considered to be very successful), and the UK Power Pool (which demonstrates the evolution of a successful model over a 10-year period).

3.2 Regional Southern Africa – Workshop on Advanced Electricity Market Southern African Power Pool (South Africa, October 28-November 1, 4-8, 2001)

The objectives of this one-week Workshop were to (i) demonstrate the nature and benefits of electricity trading for national power systems, (ii) prepare and conduct exercises on electricity trading, and (iii) provide an opportunity for regional electric company managers to gain knowledge of trading activities in other countries. The Workshop was designed for SAPP electricity traders, regulators and generation officials to demonstrate the potential gains and benefits of electricity trading along with its potential costs and pitfalls. The Workshop required participants to learn and apply their skills through the solving of “real-world” problems.

3.3 Regional Southern Africa – Seminar on the Treatment of Ancillary Services Southern Africa Power Pool (Mozambique, February 20, 2002)

As SAPP moves to deepen and broaden the trading environment for electricity, the rules surrounding the transmission of electricity from seller to buyer must also evolve. The initial SAPP rules were appropriate for a loose group of state-owned and vertically-integrated monopolies. However, changes in the SAPP operating environment – the unbundling of several utilities, the restructuring of power systems, the privatization of some system components, and the creation of new private generating companies – have exposed the need to make changes in SAPP rules for completing transactions. This Seminar and the underlying report were intended to provide system-wide transactional transparency and efficiency improvements that will enhance the ability for SAPP countries to better use their electricity system resources.

3.4 Regional Southern Africa – Workshop on Developing SAPP through Advanced Electricity Trading (Zambia, July 24-25, 2003)

The primary objective of this two-day Workshop was to discuss issues surrounding electricity trading and the role of regulators and senior policymakers in SAPP member countries. It built on the 2001 Workshop provided by CORE on the same subject. Similarly, it was oriented to SAPP electricity traders, regulators and power generation officials. The key aspects of electricity trading were covered, together with various policy, regulatory, and institutional capacity requirements for implementing a successful electricity trading program.

3.5 Regional Southern Africa – Course on SAPP Advanced Power Trading (Zambia, July 28-31, 2003)

The primary objective of this course was to address issues surrounding trading and financial settlements for electricity traders. The course was designed to (i) demonstrate the nature and benefits of medium-term energy and capacity trading for national electric power systems (ii) show how financial settlement needs must adapt to trading systems in use, and (iii) facilitate a discussion among SAPP traders concerning key concerns and issues regarding SAPP market development. The three-day course for SAPP traders demonstrated the potential gains and benefits of moving beyond short-term electricity trading, along with the potential costs and pitfalls.

Course on SAPP Advanced Power Trading – Lusaka, Zambia
July 24-25, 2003
Private Sector Development Task Order

"The workshop provided insight into how experienced power pools managed challenges such as 1) foreign exchange exposures, and 2) how financial derivates such as currency hedging enabled other power exchanges to operate consistently. Relevant detailed cases also enabled us to formulate a financial model taking into account the experiences from our lectures. To date we believe the use of SAPP extended account, which came out of the meeting, has alleviated most of our currency exposures and this has been complemented by the traders who attended the Workshop."

Dr. Lawrence Musaba
Manager
SAPP Co-ordination Centre
Zimbabwe

3.6 Regional Southern Africa – National Association of Regulatory Utility Commissioners' (NARUC) Southern African Energy Regulators and Other Stakeholders Forum (South Africa, April 30-May 9, 2004)

At this Workshop organized by NARUC, CORE International presented on the subject of *"Electricity Market Development"* and described various issues and options for SAPP member countries to consider when moving forward with increased trading in the regional market.

4. Key Program Highlights and Results

4.1 Regional Southern Africa – Workshop on Realizing Electric Power Competition through Private Sector Ownership

The one-week course addressed the issues and challenges in implementing electric power competitive models, with a focus on the Zambian power sector. The course modules are identified below.

Workshop Modules
♦ Status of Power Sector in Zambia
♦ Competition in Electricity Supply
♦ Key Issues with Wholesale Electricity Markets
♦ Wholesale Electricity Markets: Examples and Lessons Learned
♦ Issues in Wholesale Market Implementation
♦ Implications for Zambia

4.2 Regional Southern Africa – Workshop on Advanced Electricity Market Southern African Power Pool

This one-week Workshop (i) demonstrated the nature and benefits of electricity trading for national power systems, (ii) prepared and conducted exercises on electricity trading, and (iii) provided an opportunity for regional electric company managers to gain knowledge of trading activities in other countries.

The course consisted of lectures on various policy, regulatory and institutional capacity requirements for implementing a trading program. The course showed how to implement a trading program using the SAPP-developed trading model of electricity transactions to demonstrate the benefits of the existing framework for trading. Knowledge was transferred to participants in the areas of: (i) buying and selling of bulk electricity, (ii) evaluation skills to justify new projects by application of the financial analysis model, and (iii) electricity spot-market trading. This was accomplished through the following course modules:

Workshop Modules
♦ Electricity Trading
♦ Elements of Trading Strategy
♦ Exercise I – Spot Market Clearing
♦ Exercise II – Long-Term Market Clearing
♦ Financial Results in Trading Model

- Exercise III – Profit and Loss (P&L) Driven Trading
- Summary

4.3 Regional Southern Africa – Seminar on the Treatment of Ancillary Services Southern Africa Power Pool

The Seminar, attended by SAPP Operations Committee members, provided an opportunity to discuss the treatment of ancillary services (A/S) and various approaches to pricing such services. How customers are charged for ancillary services is a much debated issue due to a lack of transparency in service charges added to bills for customers in SAPP member countries.

While the initial SAPP rules were appropriate for a loose group of state-owned and vertically integrated monopolies, it is no longer appropriate in an integrated competitive marketplace. One objective of this activity was to inform participants of the importance of the belief within the market that transactions within the SAPP system are fair, transparent and efficient. A white paper was developed to:

1) Summarize the treatment of A/S in other countries/grid systems
2) Outline a means to accomplish system-wide transactional transparency and efficiency improvements
3) Recommend a SAPP transmission tariff that would meet member needs

To realize this future of greater transactional value and improved services, SAPP will need to embark on a long-term program of institutional strengthening and building. In particular, this means more and better-trained staff, improved communications, improved data monitoring and collection, and improved simulation.

4.4 Regional Southern Africa – Workshop on Developing SAPP through Advanced Electricity Trading

This Workshop was designed primarily for SAPP regulators and electricity traders to help them understand trading techniques, strategies, regulatory issues and options, and institutional capacity requirements for implementing a successful electricity trading program. The Workshop focused on the following three areas through the listed six modules below:

- Demonstrating the nature and benefits of electricity trading for national electric power systems
- Making regional electric regulators aware of trading activities in other countries
- Providing regional electricity regulators first-hand experience with spot market trading

Workshop Modules
♦ Electricity Trading
♦ Elements of Trading Strategy
♦ Exercise I – Spot Market Clearing

- Financial Results in the Trading Model
- Exercise II – Profit and Loss (P&L) Driven Trading
- Summary – Trading and Regulation of State-Owned Electricity Companies

To demonstrate the significant benefits of electricity trading the CORE team developed two exercises:

1) *Spot Market Clearing*. This exercise was quantitatively simple and intended to aid participants in understanding the nature of electricity trading gains and costs.
2) *Conceptual Trading Model*. This exercise demonstrated the benefits that arise from electricity trading. It was developed using a simple trading model to show how the benefits identified through the initial trading exercise can be augmented using a systematic and quantitative approach.

The model-based exercises were based on a series of normal and extraordinary circumstances in SAPP member countries to show how trading can work in a variety of "real-world" situations.

4.5 Regional Southern Africa – Course on SAPP Advanced Power Trading

Recognized as the "best course for SAPP traders ever" by Dr. Lawrence Musaba of the SAPP Co-ordination Center, this Workshop addressed issues surrounding trading and financial settlements for electricity traders at SAPP. The Workshop provided the participants with an understanding of modern methods for power dispatch and power trading for energy traders and system operators. It did so through the following eight modules:

Workshop Modules

- Electricity Trading
- Elements of Trading Strategy
- Exercise I – Medium Term Market Clearing
- Exercise II – Profit and Loss (P&L) Driven Trading
- Summary – Trading and Regulation of State-Owned Electricity Companies
- Financial Settlements in SAPP Trading System
- Summary of Financial and Trading Issues
- Roundtable on Key Issues and Concerns for SAPP Electricity Traders

4.6 Regional Southern Africa – NARUC's Southern African Energy Regulators and Other Stakeholders Forum

At this Forum CORE International delivered a presentation entitled: *"Electricity Market Development."* It described various issues and options for SAPP member countries to consider when moving forward with increased trading in the regional market.

5. Complete List of Activities

Exhibit II-4 provides a list of the activities and deliverables conducted under this Task Order.

Exhibit II-4: List of Activities and Deliverables

No	Type of Activity	Title	Location	Date
1	Course	Issues in Realizing Wholesale Electric Power Competition Through Private Sector Ownership	Zambia	July 15-20, 2001
2	Course	Advanced Electricity Market SAPP	South Africa	Oct 28-Nov 1 and Nov 4-8, 2002
3	Seminar	The Treatment of Ancillary Services SAPP	Mozambique	Feb 20, 2003
4	Workshop	Developing SAPP Through Advanced Electricity Trading	Zambia	July 24-25, 2003
5	Course	SAPP Advanced Power Trading	Zambia	July 28-31, 2003
6	Workshop	Participation in NARUC Workshop on IPP/PPA	South Africa	April 30-May 9, 2004

6. Follow-Up Activities and Results Review

The SAPP system is a dynamic and evolving one. While current trading arrangements still largely occur outside formal SAPP mechanisms an increasing volume of power trade is continuously being brought into the formal trading process of the SAPP Co-ordination Center. Therefore, there is a continued need to enhance trading capacity among SAPP traders and members. Based on knowledge gained in activities conducted by CORE, the SAPP Co-ordination Center put forward recommendations to the SAPP Operating Sub-Committee (OSC) on how to improve the Short Term Electricity Market (STEM) – both physical and financial operations. All recommendations relating to financial operations of the STEM were approved and adopted by the OSC.

Discussions with the SAPP Co-ordination Center indicate that the SAPP member utilities and the regulators in the region need to continue to expand their capacity in modern utility management and regulatory approaches in the context of a true and functioning power pool.

As SAPP trading volume increases, rules surrounding the transmission of energy from seller to buyer must evolve as well. Therefore, considerable capacity building is needed in such areas as developing trading rules, estimating transmission tariffs, refining ancillary cost approaches, and trading models.

In addition, SAPP member country regulators have expressed interest in pushing forward with energy sector regulatory reform focusing on the following key areas:

- Introducing competition
- Allocating a greater role for the private sector
- Separating the roles of ownership, management and regulation
- Providing for fair, objective, stable, and transparent regulation
- Broadening the financing base for the energy sector
- Ensuring for all necessary measures to protect consumers and the environment

B. RURAL ENERGY SERVICES

1. Background

The energy situation in Southern African countries is such that rural areas, especially remote regions with low population densities, typically do not receive electricity access. Those that do have access usually rely on off-grid power systems. This is due to the fact that the delivery cost of electricity to remote regions via transmission lines is typically much higher than in high-density urban areas. For rural areas situated close to a main urban center the approach used in many developing countries is to extend the national or regional grid to those locations. Given that electricity provision to rural regions in most developing countries is an uneconomic proposition, governments routinely subsidize energy access, when it is provided at all.

Electrification levels in countries within the Southern African Development Community (SADC) are among the lowest in the world. The average electrification rate for the SADC member countries is approximately 20%. South Africa stands out among its SADC peers with an electrification level of approximately 70%. Exhibit II-5 illustrates the level of energy access for urban and rural areas for a selected group of SADC countries at year-end 2000. The average rural electrification rate for the ten SADC countries listed is below 5.0% – and less than 2.0% when South Africa is excluded.

Exhibit II-5: Electrification Rates in Selected SADC Countries

	Urban (%)	Rural (%)
Malawi	11.0	0.3
Tanzania	13.0	1.0
Lesotho	14.0	4.0
Mozambique	17.1	0.7
Zambia	1739	1.4
Namibia	26.0	5.0
Botswana	26.5	2.1
Swaziland	42.0	2.0
Zimbabwe	64.7	0.6
South Africa	74.6	27.2
Average	**30.7**	**4.4**
Average excl. South Africa	**25.8**	**1.9**

The level of access has grown in recent years as SADC member governments have begun to realize the important links between rural electrification and economic development in rural areas. A number of countries have committed themselves to bold electrification goals for the short- to medium-term. Zambia, for example, has explicitly stated its intention to raise rural access from its current level of approximately 18% in 2001 to over 80% by 2012.

Historically, when governments have sought to make electricity available to rural populations they subsidized the cost to make it affordable to consumers. This well-intended policy has not proven to be sustainable. Electrification programs were not

designed to create a cost-recovery-based revenue stream because of the belief that poor rural populations would be unwilling and/or unable to afford the full cost of electricity provision. In addition, the administration of such programs has been maintained at the central government level. The result was that, as delivery systems broke down due to poor maintenance at the local level, additional government and donor support was necessary.

Best practices, however, have shown that even some of the poorest rural populations are willing and able to pay for energy service delivery, even at a higher rate than urban consumers. The preconditions however are that the service be reliable and of a high quality. Additionally, some of the most successful examples of rural electrification (RE) confirm that rural energy service delivery can be economical if it is designed as a stimulus to economic development in rural areas.

New approaches to RE development that are being developed and adapted include (i) encouraging private sector-led energy service delivery and (ii) involving the broader stakeholder community in all facets of RE including local management. These new decentralized schemes have had an immediate impact on economic growth in rural areas by creating a culture for entrepreneurial skills development. Several developing country examples have shown that these programs are sustainable and that up-front government subsidies can be reduced and potentially withdrawn over time.

2. Key Issues

No country in modern history has been able to escape from a subsistence economy without access to modern energy services. Access to reliable and affordable energy service is a prerequisite to growth and development as defined by most social and economic indicators. Additionally, it has been quantified that a lack of these services inhibits such development. Separately, it has been shown that people in developing countries spend a significantly higher portion of their incomes on energy compared with those in industrialized countries. This highlights the strong desire within the world's poorest communities to access the benefits of energy services.

One of the key requirements for improvement in sector conditions is an increase in private investment. Private funding currently provides around 20% of global developing-country energy sector investment requirements. However, most of this investment is focused in just 12 countries – none of them in Africa. The lack of private sector participation, however, is only one of a number of interwoven issues that have acted as an impediment to sector reform in Africa. Exhibit II-6 lists a few of the key issues in rural energy in the SADC Region.

Exhibit II-6: Key Rural Energy Issues in SADC Countries

Key Issues in Rural Energy Service Provision in the SADC Region
♦ Public ownership of utilities inhibits financial and operational efficiency.
♦ Institutional structures and inter-relationships are not well developed.
♦ Regulatory groups are not well developed.
♦ Difficult to attract private investment.
♦ Local participation in decision making is limited.

The following discussion summarizes the key issues that must be addressed in designing rural energy service delivery strategies:

Continued need for financial strengthening of utilities: State-owned utilities across the SADC region over the past few decades have treated power provision as a public good with little or no effort to foster financial discipline or viability. National utilities have typically been structured as one large, vertically integrated company responsible for everything from generation to transmission to distribution. Management at these companies has generally had no experience in operating within a competitive environment. Cost management and quality control – core concepts of management within a market economy – are typically not well understood. Most SADC region power utilities have never realized a profit, and instead have generally required significant government subsidies. Only in recent years have macroeconomic pressures caused governments to pressure utilities to bring about increased financial discipline in the sector.

Lack of institutional support for speedy financial and operational reforms: Because power provision has for decades been treated as a "public good" under the management of a vertically-integrated monopoly structure, there has never been the need for policy-making or legal institutional structures or a regulatory function to monitor the sector. Many of these functions, however, have been created across the region in recent years as governments begin to understand the importance of bringing about some measure of financial and market discipline to the sector. Unfortunately, officials in these newly created structures are generally lacking in expertise and understanding of their roles and functions in a fully functioning market economy.

Poor governance: Rent seeking by public officials is not uncommon in developing country economies. This practice strongly discourages private capital flows. The impact of poor governance makes the sector a strong target for initiatives to overhaul/update management skills and practices, and to review the governments' executive role in the sector. Good models from around the world exist and these are readily transferable to Africa.

Lack of private investment in the sector: Within the SADC region, private sector participation in the power sector is quite limited at the moment. Privatization of state utilities is a difficult process for many SADC countries because of weak profitability profiles and because often times managers are not endowed with strong financial management skills. Private investment in new generation facilities is not taking because energy sector regulatory and legal institutions are not yet well-developed.

Outdated legislation inhibits small investors – growth in energy access has been stagnant: State-owned utilities have not been effective in achieving significant improvements in access. Further, private investments in large projects will not likely perform much better at growing access in rural regions. This is because large private investors generally focus on urban residential and commercial customers where revenues and profit margins are more significant. Improvements are more likely to be achieved through incentives to make the business of retailing energy services and technologies commercially more attractive, including to smaller local investors. Here again, however, the difficulty has been the lack of government institutions to allow for small-scale investors and entrepreneurs to obtain financing and market access.

Many African countries operate under legislation that supports the creation and operation of state-run monopolies, effectively shutting out private investment. The removal of legislative roadblocks remains an issue; it is a priority in some SADC countries. Uniform national tariffs have also served to inhibit small-scale investment. In most cases these rates do not come close to reflecting the full cost of supply and as a result block the potential for small private suppliers to operate on a commercial basis.

Successful public/private partnerships remain in early stage: Over the past decade many SADC governments have begun to recognize the benefits of privatizing utilities and opening infrastructure sectors to private investors. However, few have experience with planning and implementing privatizations or soliciting private investment. Energy sectors are not currently structured so as to promote competition with a clear interface between the public and private sectors operating within a regulatory framework that is independent, transparent and predictable. Helping governments develop standard procedures for soliciting, appraising, and negotiating private investments remains a key area for additional support.

Lack of power sector reform hurts other sectors: Government ownership of large and inefficient utilities “crowds out” public investment in other areas of national importance like education and health, which cannot as easily attract private investment.

Regional power market development still in early stage: The interconnection of national power markets across the region should help encourage private investment. An expanded market size would help investors manage commercial and political risks. The creation of a regional power market would also encourage larger-scale projects, which would reduce/eliminate infrastructure redundancies and thereby lower supply costs. It also would reduce strategic and macroeconomic risks by expanding SADC supply options. A more integrated power market would also help foster overall economic cooperation, and would serve to ease political tensions within the region by increasing the financial risks of conflict.

3. CORE International Task Order Assignments

As part of this Task Order CORE conducted six activities over a two year period in the SADC) region on topics related to rural electrification.

3.1. Zambia – Workshop and Roundtable on Issues and Options for Rural Electrification (May 6-10, 2002)

This event, focusing on key issues and options for RE program development in the country, was based on a Desk Study report prepared by CORE. The Roundtable served to sensitize energy sector officials, regulators, consumer groups, and other stakeholders to the regulatory, policy, and institutional capacity requirements for implementing a sustainable and successful RE program. Issues of discussion included RE policy approaches, institutional requirements for rural development, and political acceptance of consumer participation in RE development and the role of RE in poverty alleviation.

3.2. Regional Southern Africa – Workshop on Issues and Options for Rural Electrification in SAPP Member Countries (April 7-9, 2003)

This Workshop was designed for SAPP member countries' energy sector officials, regulators, consumer groups, and other stakeholders to sensitize them to the policy, regulatory, financing, and institutional capacity requirements for implementing a successful RE program. The Workshop, held in Lesotho, was based on a Desk Study designed to facilitate discussions among government participants and the stakeholder community. The report presented a snapshot of RE status from the development point of view, and a) described the approaches and challenges to RE and b) addressed various critical issues related to the planning process of RE within the framework of sustainable rural development for poverty alleviation.

USAID/CORE Assistance to Zambia on Rural Electrification – Lusaka, Zambia
May 2003
Private Sector Development Task Order

"I wish to inform you that we had a wonderful time with Vinod and Vaso [CORE team consultants]. *We found their input most rewarding and the Rural Electrification Working Group Members are very happy."*

Mr. Oscar S. Kalumiana
Assistant Director
Department of Energy
Zambia

3.3. Lesotho- Workshop on Rural Electrification Planning in Lesotho (April 10-12, 2003)

Held in April 2003, this Workshop on rural electrification planning options for Lesotho brought together senior energy sector and rural development officials from government, potential energy providers, consumer groups, locally-based donors and local NGOs. The Workshop was based on a Desk Study report designed to serve as a reference document. The report described the status of RE in Lesotho, and outlined the challenges and approaches to various issues related to RE planning within the framework of creating sustainable rural development for poverty alleviation. Included in the report were a variety of successful best practices that could be considered by Lesotho authorities, as Lesotho embarks on an ambitious rural electrification program.

3.4. Zambia – Workshop on Enhancing Energy Sector Policy and Reform Process (March 22-23, 2004)

The Workshop was designed to build a consensus among energy sector stakeholders around the need to develop adequate institutional arrangements for energy policy design

and power sector reform. The Workshop was intended to catalyze a participatory process of "brainstorming" on energy sector policy and reform in Zambia. By the end of the Workshop, participants demonstrated an increased understanding of the need to evaluate and update the country's energy policy. The Zambian government has placed a high priority on the review of its energy sector policies. Representation in the Workshop was of the highest level. His Excellency George W. Mpombo, the Zambian Minister of Energy and Water Development (MEWD) participated in this Workshop; the keynote address was delivered on his behalf by the Deputy Minister of MEWD; and Mr. Martin Brennan, U.S. Ambassador to Zambia also addressed the audience during the opening session.

3.5. Namibia – Workshop on Enhancing the Environment for IPPs in the Reforming Namibia Power Sector (April 13-14, 2004)

This Workshop was conducted in close coordination with Namibia's Electricity Control Board (ECB). The Workshop enhanced the knowledge of all participants on a) how best to reform the Namibian power sector and b) how to promote private sector participation. The event brought about an increased consensus on issues regarding power market models that could be used in Namibia, and on the benefits of allowing IPPs into the market. The Workshop attracted high-level participation from a number of key Namibian energy institutions; both the permanent secretary of the Ministry of Minerals and Energy (MME) and the CEO of the Electricity Control Board (ECB) attended.

3.6. Regional Southern Africa – Conference on Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries (April 15-16, 2004)

Regional Conference on Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries
April 15-16, 2004
Windhoek, Namibia
Private Sector Development Task Order

*"Hello Kevin**

I just wanted to give you a quick note to tell you that I was quite impressed with the Namibia conference on enabling environment. They were mostly good relevant speakers on useful topics. I also appreciated the concise nature. Our friends Ingrid (NORAD) and Anne (Danida) also said good things about the event. Best,"

Andrew James, P.E.
USAID/Mozambique

* Dr. Kevin Warr, Governance Advisor, Energy Team, EGAT, USAID

The lack of private participation has been identified as a key constraint to successfully sustained rural energy service delivery (RESD) in the SADC region. This occurs because an enabling environment (including policy, regulatory and legal frameworks, appropriate institutional arrangements, and adequate subsidy schemes) for private participation is absent. In addition, the scarcity of grants and soft financing, as well as the lack of innovative financing mechanisms, are major impediments to the implementation of large-scale RESD programs. Therefore, designing and developing innovative approaches and institutions for preparing and financing RESD programs, has become a priority for many governments in the SADC region. To help address these issues, CORE International designed, developed, organized, and facilitated this regional Conference.

4. Key Program Highlights and Results

4.1. Zambia – Workshop and Roundtable on Issues and Options for Rural Electrification

This combined Workshop and Roundtable activity was based on a Desk Study. The Desk Study outlined potential options for RE in Zambia based on experience with rural electrification models in other countries. The report contained a set of options and approaches for Zambia to a) increase rural electricity access, and b) analyze the costs and benefits of each option and the institutional capacity requirements to implement these options.

The four-day Workshop was held for Zambian energy sector officials, regulators, consumer groups, and other stakeholders in order to sensitize them to the policy, regulatory, and institutional capacity requirements for implementing a sustainable and successful RE program. A key component of the exercise was to evaluate the concept of REU models and the process for developing and implementing laws and regulations for establishing viable RE options. Key topical points that guided the Workshop discussions are outlined below:

Workshop Modules
♦ Status of Rural Electrification in Zambia
♦ Rural Electrification in Other Countries
♦ Lessons Learned from Other Countries
♦ Unique Attributes of Zambia's RE Challenge
♦ Business Models
♦ Technical Models
♦ Operational Models and Implementation
♦ Financial Models
♦ Implications for Zambia

After the Workshop, CORE worked with Zambian authorities to conduct a one-day Stakeholder Roundtable, which catalyzed a process of consumer participation and consumer acceptance of the Government's approach to implementing a rural electrification program. During the Roundtable, CORE highlighted the findings of the Desk Study. Key issues discussed during the Roundtable are listed below:

Roundtable Topics
♦ Detailed description of the proposed rural electrification option
♦ Implementation process
♦ Policy and regulatory requirements
♦ Institutional capacity enhancement needs
♦ Consumer participation and consumer acceptance approaches
♦ Technical Models
♦ Approach to target subsidies to the rural consumers to facilitate the planned power sector transition to a competitive market model

4.2. Regional Southern Africa – Workshop on Issues and Options for Rural Electrification in SAPP Member Countries

The Workshop which took place in Lesotho during April 2003 addressed issues and options for RE in SAPP member countries. Representatives from SAPP member-country electric utility companies and government energy department officials participated; a total of 31 participants from nine SAPP member countries took part. Participants were mainly from electric utilities, government energy departments and universities; a representative from the SAPP Coordination Center also participated. There was extensive discussion among the participants on various issues and options involved in the RE development process.

Southern African Power Pool (SAPP)
Activity Completion Report
December 24, 2004
Private Sector Development Task Order

"Good work and planning by CORE International, Inc. The focus on Zambia is deeply appreciated."

Mr. Cris Muyunda
Economic Growth Deputy Team Leader
USAID/Zambia
Lusaka, Zambia

As part of this activity, CORE developed a two-part Desk Study entitled "Issues and Options for Rural Electrification in SAPP Member Countries and Rural Electrification Planning in Lesotho". The purpose of this study was to provide a comprehensive background to participants on the "best practices" in rural electrification worldwide. The first part of the study, which focused broadly on all SAPP member countries, highlighted regional issues listed in Exhibit II-7.

Exhibit II-7: Key Regional Rural Electrification Issues

INPUT	OUTPUT
Desk study	♦ Provided information on each country's development status, energy sector and resources, and power sector reform and restructuring. ♦ Provided common key social and economic challenges for the Southern Africa Region. ♦ Provided best practices and case studies focusing on technical institutional and financial options and models for RE. ♦ Provided viewpoints on common RE policy, institutional and financial issues in SAPP member countries.

In order to facilitate the discussions among the participants, CORE developed and presented a set of eight modules based on the Desk Study. The Desk Study helped to enhance participants' understanding of the issues, as was demonstrated by the numerous insightful comments regarding the report that came up during the Workshop. A particularly interesting comment came from a representative of Mozambique's electric utility company who noted that the only thing he would not be able to take back home was the recommendation to "avoid political interference in rural electrification". This comment provided an entry point for CORE to reiterate the true meaning of this recommendation: Political interference must be avoided in the process of RE project selection. Politicians

should play their role – through participation in government – in the process of policy development and in the coordination and supervision of the overall RE process implementation.

As a part of the Workshop, representatives of each country made presentations on their RE progress, as well as issues, plans, and programs for RE in their respective countries. Exhibit II-8 summarizes the findings from the individual country presentations.

Exhibit II-8: Key Findings of the Workshop

INPUT	OUTPUT
Country Repre-sentations	♦ SAPP member countries are each at different stages in their power sector restructuring efforts. ♦ RE is provided in most cases by national vertically integrated utility companies and includes some form of government subsidization. ♦ Realization that power sector restructuring will impact the RE process and the rural poor in multiple ways. ♦ Agreement was reached that SAPP website should be better utilized as a forum for the regional exchange of information regarding RE. ♦ Understanding was reached that SAPP countries need to be more active in providing current reliable data to the international community.

Participants felt the Workshop served as a good forum to interchange with their regional counterparts, and to establish connections which will help their future efforts in addressing rural electrification. The participants agreed to provide periodic information to the SAPP Co-ordination Center and utilize the SAPP website as a tool to exchange information on RE issues, options, and financing. Mr. Alison Chikova of SAPP, agreed to take this message to SAPP headquarters and have SAPP take over the coordination role for this effort.

4.3. Lesotho – Workshop on Rural Electrification Planning in Lesotho

This Workshop was held contiguous with the previously discussed Workshop, but was conducted solely for Lesotho rural energy stakeholders. A total of 26 participants represented the full spectrum of RE stakeholders: central and local governments, private sector, NGOs, local consumer associations, and local RE funding institutions. The second part of the Desk Study mentioned earlier was designed specifically for this Workshop, as it focused on the RE planning process in Lesotho. The study detailed a number of issues of importance to Lesotho RE stakeholders as listed in Exhibit II-9.

Exhibit II-9: Key Rural Electrification Issues in Lesotho

INPUT	OUTPUT
Desk study (part 2)	♦ Detailed the implications of RE in Lesotho and the challenges it could face in its RE efforts. ♦ Outlined a number of potential approaches to RE in Lesotho. ♦ Provided a focus on institutional issues notably on the proposed National Rural Electrification Fund (NREF). ♦ Focused on the roles a various stakeholders to the RE process.

To facilitate interaction and discussions among the stakeholders, CORE made a presentation based on six theme modules, one of which included a role playing exercise. Additionally, the Director of Energy within the Ministry of Natural Resources, Mr. B. Kanetsi, made a presentation on RE issues, options, and challenges in Lesotho. He stressed the need for continuous stakeholder involvement in the RE process and invited the participants to provide innovative ideas and next steps as the country prepares to launch its three-stage, country-wide RE program. Mr. Kanetsi noted that institutional arrangements and funding issues are major concerns in achieving Lesotho's targeted level of 35% RE by year 2015.

The last session of the Workshop consisted of a role playing exercise. Participants formed into groups that simulated the roles of various stakeholder groups to the process of RE planning, development, implementation, and operation. The roles included central and local governments, the private sector, consumers and NGOs, international and local financial institutions, and regulators. Groups first held internal discussions in order to articulate a plan and bargaining position to the RE process based on their roles. These meetings were followed by discussions among the groups in an effort to simulate the actual negotiations and discussions that would take place among stakeholders. Group leaders then made presentations on the role that they expected their group to play in the national RE process. Many questions surfaced during these presentations that showed most participants had gained a deeper appreciation for the process.

4.4. Zambia – Workshop on Enhancing Energy Sector Policy and Reform Process

A total of 26 high- and mid-level officials from various energy sector stakeholder institutions participated in this Workshop. These included representatives of the Ministry of Energy and Water Development (MEWD), the regulator (ERB), utility companies including ZESCO, CEC, a large hydropower generation company, consumer groups, provincial and local governments, private sector groups, and donors including the Swedish Embassy. Representation from the MEWD was at the highest level – both the Minister and the deputy Minister participated in the Workshop discussions at various times. Additionally, the Chief Regulator and Chairman of ERB participated in the Workshop and made an extensive contribution to the discussions. Utility companies were represented at the general manager level.

The MEWD Minister, in the keynote address, stressed the need to review Zambia's 1994 National Energy Policy (NEP) and acknowledged the role that all major stakeholders should play in this process. The Minister indicated that the timing of the Workshop was opportune given that the Zambian government had just begun the NEP review process. He also stressed the need for the creation of a Task Force to engage in the energy policy review process and to address power sector reform issues.

Workshop on Enhancing Energy Sector Policy and Reform Process in Zambia
March 22-23, 2004
Private Sector Development Task Order

"I participated in the Workshop on Enhancing Energy Sector Policy and Reform Process in Zambia and an earlier one on Issues and Options for Rural Electrification in Zambia.

Both of these activities were immensely useful to me. The Rural Electrification Working Group, of which I am a member, was able to focus much more clearly on the issues pertaining to rural electrification in Zambia. The Workshop reviewed international and regional approaches and provided a template for a possible way to proceed in Zambia. Matters that needed to be addressed through policy interventions were identified as well as the principles that should govern an effective institutional framework.

Later, I worked with the Department of Energy to prepare a layman's draft for a Rural Electrification bill to establish the Rural Electrification Authority. The discussions during the Workshop and the additional information that had been provided by CORE International were of direct use to me. In December 2003, Parliament passed the Act and the process for establishing the Authority has begun.

The reform of the power sector is still a challenge but the Workshop on enhancing the policy reform kick-started the policy review process and clearly identified implementation of agreed measures as a major challenge, especially for Government. This helps the Energy Regulation Board to work with government through the various issues that need to be clarified and to map out a possible process of reform."

Prof. Jorry Mwenechanya
Chairman
Energy Regulation Board
Zambia

The Workshop was comprised of several modules presented by CORE experts and four presentations made by local stakeholder representatives. The local presentations focused on four key areas listed in Exhibit II-10. In this manner, CORE and the Zambian DOE were able to bring together local and national issues and concerns with the relevant international experience.

Exhibit II-10: Presentation on Energy Policy Issues

Presentations Made by Local Stakeholders
♦ The Proposed Roadmap for the Review of the NEP (Department of Energy, MEWD)
♦ A Proposed Model for the Development of a Power Market in Zambia (Energy Regulatory Board)
♦ Energy Sector Institutions in Zambia (ERB)
♦ Renewable Energy Resources/Technologies and Policy Review Issues (EEEC, a Zambian energy NGO)

Participants discussed a variety of issues related to energy policy formulation and review and power restructuring issues throughout the modules and after presentations by local speakers.

The minister of MEWD participated in the first session of the second day, where numerous issues were taken up for discussion. The most important of these included (i) the need for a fast-track review of the 1994 NEP and (ii) expanding the rural electrification process in Zambia and the role that Rural Electrification Authority (REA) should play in this process. (The REA was established by the Zambian government in December 2003 and was based on a concept developed by the Rural Electrification Working Group with the support USAID via the work of CORE International.)

Overall, a number of key areas of concern were addressed during the Workshop and a number of critical commitments were made. These are outlined in Exhibit II-11.

Exhibit II-11: Key Outputs of the Workshop

INPUT	OUTPUT
Policy Workshop	♦ Key energy stakeholders agreed to conduct a review of NEP by July 2004. ♦ DOE and MWED realized the need for periodic review of the NEP and the need for a policy implementation monitoring mechanism. ♦ Stakeholders have become increasingly sensitive to the cross-cutting nature of energy policy and other economic and social areas. ♦ Stakeholders have begun to pressure the government to more rapidly institutionalize and empower the REA. ♦ The Zambian Government has agreed with the World Bank to conduct an assessment of the progress on its efforts to commercialize ZESCO. ♦ The development of a Stakeholder Task Force to assist in developing an institutional structure for energy policy and power sector reform was considered as a real option.

4.5. Namibia – Workshop on Enhancing the Environment for IPPs in the Reforming Namibia Power Sector (April 13-14, 2004)

The objective of this Workshop was to provide participants with enhanced knowledge on ways to best reform the power sector and promote private sector participation in new generation in Namibia, while at the same time protecting consumer rights and the environment. A key objective of the Workshop was to reach a consensus on the issue of allowing IPPs in the country. This is a pressing issue for Namibia because the country is highly dependent on high-priced imported electricity. The Namibian government is committed to the introduction of IPPs, and the Workshop served as a forum to discuss options that would facilitate the successful introduction of IPPs in the Namibian economy.

There were 26 participants in the Workshop roughly half of whom came from the Electricity Control Board (ECB) of Namibia. All of Namibia's key stakeholder institutions including the Ministry of Mines and Energy (MME), NamPower (the State generation and transmission company), representatives of various municipal distribution companies, and the private sector, were represented.

The CEO of the ECB spoke on the policy, regulatory, and institutional developments that have occurred since 1998 when the new energy sector policy was introduced (Energy White Paper) in Namibia. The CEO discussed a number of key developments including: (i) reorganization and commercialization of regional electricity distribution entities (REDs), (ii) ring-fencing of NamPower's businesses, (iii) development of rural electrification, and (iv) planned tariff methodology that allows for implementing cost-recovery tariffs in the future. He also addressed the planned establishment of a single-buyer market model in Namibia.

As part of the Workshop, CORE consultant Prof. Anton Eberhard presented the reform steps being taken in South Africa and the implication of these reforms for Namibia. By 2007 South Africa, given its growing demand for power, will no longer be in a surplus position; it will likely reduce its electricity exports to neighboring states including Namibia. Namibia will, therefore, need to plan for this expected shortfall in electricity. Either replacement of imported electricity will be required or Namibia will need to permit private power producers such as the Kudu Independent Power Producer (IPP) into the power sector. Prof. Eberhard's presentation elicited active discussions on ways to expedite the process of introducing private sector generation companies in Namibia.

The Workshop also included a component, led by CORE expert Dr. Donald Hertzmark, on attracting IPP investment in Namibia. The key points proposed in this presentation included (i) optimum design of contracting procedures and structures, (ii) structure of long-term IPP contracts, (iii) Power Purchase Agreements (PPAs), and (iv) contract documents in a typical IPP.

One concern brought forward during the Workshop was the apparent lack of ECB involvement in the Kudu IPP negotiation process. Their eventual involvement in the licensing stage may delay the IPP closing process. The Namibian stakeholders, in particular the ECB and NamPower, need to be cautious and well-prepared in dealing with the Kudu IPP project as it represents a large development project that will require substantial financing and long-term obligations.

4.6. Regional Southern Africa – Conference on Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries

During this Conference, proven approaches for successful participation of private investors in rural energy service delivery (RESD) were highlighted and discussed. Several Conference papers and presentations reviewed the best worldwide experience in the area of private participation in RESD, as well as institutional arrangements and mechanisms for funding and implementing RESD expansion. Other papers and presentations that SADC regional stakeholders brought to the Conference highlighted valuable experiences and raised relevant issues while offering options for solutions.

The Conference consisted of four plenary sessions, each of which was followed by a panel discussion. Plenary Session 1 consisted of three presentations. The key points made in these presentations included the following:

- The need for a national rural energy policy and a legal and regulatory framework
- The role of subsidies in private sector led rural energy service initiatives
- The need for local stakeholder participation in planning, designing, implementation and monitoring of RESD programs

Regional Conference on Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries
April 15-16, 2004
Windhoek, Namibia
Private Sector Development Task Order

"We thank USAID and CORE International, Inc. for facilitating this very productive conference. The participants in the conference broadened their understanding of how the private sector can participate in rural energy service delivery programs. This was accomplished by an exchange of information and experience. … The task at our hands is enormous and it is important that the countries help each other through regional efforts. … All SADC countries are in the same ship and they will sink or float together. … The conference was a wonderful success. I was touched by the atmosphere experienced during the two-days of the conference."

Mr. Siseho Simasiku
Chairman
Electricity Control Board (ECB)
Namibia

After the three presentations, a panel discussion facilitated a question and answer/discussion period. A general consensus was reached on a number of key issues listed in Exhibit II-12:

Exhibit II-12: Key Issues in Panel One Discussion

INPUT	OUTPUT
Panel Discussion 1	**Rural Energy Policies:** ♦ Need to be integrated with national energy planning. ♦ Bottom-up approach to planning RESD needs to be internalized. **Rural Electrification Funds (REFs):** ♦ Some SADC countries have established REFs. However, none have been successful in facilitating rural energy financing. ♦ Need to understand why they have been unsuccessful. ♦ REFs need to be run along commercial lines, and independent of political influence. **Government Subsidies:** ♦ Subsidies will be required in RESD, however questions remain: o How large should subsidies be? o How and for whom should the subsidies be used? o How can the subsidies be phased out over time?

	♦ Subsidies should be used to fund up-front capital costs. ♦ Consumers should pay for operating costs.

Plenary Session 2 consisted of three presentations that focused on case studies in private participation as well as institutional support for expanding RESD. The key topics addressed in these presentations included (i) Opportunities for women in renewable energy technology utilization, (ii) Case studies on private solar energy service delivery, and (iii) Private participation in the power sector in Mozambique. The discussion that followed from these presentations was wide ranging and addressed a wide variety of relevant topics as shown in Exhibit II-13.

Exhibit II-13: Key Issues in Panel Two Discussion

INPUT	OUTPUT
Panel Discussion 2	♦ Importance of combining RE with income generating activities to ensure sustainability and economic growth. ♦ Government subsidies must be (i) sustainable, (ii) impactful, (iii) transparent, and (iv) targeted to those in need. ♦ Sri Lanka case study highlighted that local commercial development bank has successfully implemented two large World Bank service delivery programs. ♦ Nepal case study indicated that rural electric cooperatives (RECs) have worked well for local consumers. ♦ A discussion on Mozambique's failures with remote diesel-fueled gensets. ♦ Recognition of the need for cost-recovery tariffs. ♦ Pros and cons of pre-payment versus remote metering. ♦ A South African utility representative discussed the utility's approach to mitigating political interference in electrification projects.

During Plenary Session 3, five presentations were made. The presentations focused on innovative financing approaches for sustainable RESD, and the role of international donor agencies in expanding RESD in the SADC region. Financing issues included (i) small and medium enterprise energy service delivery approaches, (ii) role of rural electrification funds in financing rural energy, (iii) coordinated approaches to bilateral and multilateral donor financing, and (iv) approaches to encouraging the private sector to invest in energy enterprises.

Dr. Lawrence Musaba, Manager of SAPP, made a number of notable observations. First, he highlighted that some utilities in the SADC region are giving priority to providing electricity connections to those customers that have or intend to establish income generation activities. Further, he noted that (i) the SADC region is running out of generating capacity and (ii) there is a significant weakness in the distribution systems of

various utilities because of illegal connections and poor maintenance. Dr. Musaba stressed the need for further capacity building of utility planners and managers.

5. Complete List of Activities

Exhibit II-14 provides a complete list of activities completed under this Sub-Task of the overall Task Order.

Exhibit II-14: List of Activities

No	Type of Activity	Title	Location	Date
1	Workshop/ Roundtable	Issues and Options for Rural Electrification in Zambia	Zambia	May 10, 2002
2	Workshop	Issues and Options for Rural Electrification in SAPP Member Countries	Lesotho	April 7-9, 2003
3	Workshop	Issues and Options for Rural Electrification Planning in Lesotho	Lesotho	April 10-12, 2003
4	Workshop	Enhancing Energy Sector Policy and Reform Process in Zambia	Zambia	March 22-23, 2004
5	Workshop	Enhancing the Environment for IPPs in the Reforming Namibia Power Sector	Namibia	April 13-14, 2004
6	Conference	Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries	Namibia	April 15-16, 2004

6. Follow-up Activities and Results Review

CORE's work in the SADC region found that local stakeholders are generally eager to participate in taking responsibility for their own development and in the process of increasing RE access. A condition of participation, however, is that they receive support from their governments in the form of appropriate institutional, financial, and regulatory frameworks together with an attractive environment for private sector participation. Involvement of local partners in the reform process can be a catalyst to provide a sense of ownership and to reduce the resistance to change.

In terms of future priorities and recommended follow-up actions, a number of critical areas stand out from the six activities as key focus points:

Increased priority: Rural energy development must be accorded higher priority and integrated with national development plans for rural areas. Clear rural energy development policies can accelerate the pace of development when they are integrated with energy

sector policies within overall national development plans. Training and capacity building to assist stakeholders in formulating such policies will hasten the pace of development.

Decentralization: Rural energy development must be decentralized to place rural populations at the heart of the planning and implementation process. Rural populations have the best insights into their needs and priorities. Bottom-up, people-led development shows the best promise for achieving sustainable rural development and poverty alleviation. However, rural population groups, local village level organizations, farmers' groups and other local entities need extensive training and capacity building to assume the functions of rural energy planning and implementation. Specifically, rural electric cooperatives, private energy service providers, licensees, and franchisees, all need on-going capacity building before they can effectively and permanently perform the function of energy services delivery to rural populations.

New institutions: Dedicated institutions for rural energy and rural development must be established to manage the process of implementing rural energy programs. Such institutions should be operated along commercial lines and need to offer transparency and accountability in order to attract donor funding and private sector participation. Additionally, there is a need for training and capacity building for newly established (or about to be established) rural electrification agencies to manage the business of rural energy supply. Also, specific training is needed in rural energy planning, financing, implementation, and impact monitoring.

Replicable programs: Foreign aid should focus on projects that can be developed as longer-term replicable sustainable programs. Governments and private sector energy providers would benefit from training and capacity building in developing long-term projects consistent with national rural electrification goals and Poverty Reduction Strategy Papers (PRSPs). PRSPs are required of all recipients of World Bank and IMF lending.

Public participation: Non-governmental organizations (NGOs) and consumer associations can play a role in articulating and communicating the needs of the people to government. Capacity building to increase public participation and stakeholder involvement greatly contributes to successful energy reform programs and rural energy development.

Local involvement: The key to increasing the potential for successful and sustainable energy development is people's involvement and empowerment – enabling them to take fate in their own hands utilizing available local resources to improve their social and economic livelihood. In order to enhance local community development, it is important to build the capacity of NGOs involved in the energy sector to identify and support small enterprises through their critical start-up phase and to help financial institutions better understand and ultimately invest in technologies that use local resources (such as renewable energy). It is also important for local stakeholders to work with central governments in creating sound policy frameworks.

6.1. Regional Southern Africa – Workshop on Issues and Options for Rural Electrification in SAPP Member Countries

The suggested follow-up activities from this Workshop were largely reflective of the overall regional viewpoints discussed at the beginning of this section (6). Additional points specific to the Workshop, however, included:

The SAPP Co-ordination Center needs to take a lead role in creating a virtual forum for RE issues and options in the SADC region: Representatives from Botswana, Lesotho, Mozambique, and other countries supported the idea that SAPP's web site be expanded to host information from SAPP members and other member-country stakeholders. The web site should also serve as a forum to exchange views and ideas on RE among member countries. The SAPP Coordination Center Representative welcomed the idea.

During the Workshop it became clear that apart from funding and financing issues, establishment of institutions to manage large and complex RE programs is missing in most of SADC countries. The need for institutional capacity building – a common need in all SADC countries – provides USAID an opportunity to strengthen its program focus in this area. Furthermore, governments need to integrate RE programs into their respective Poverty Reduction Strategies and budgeting programs. This will provide a better environment for attracting bilateral donors, as well as private sector participation in RE program funding.

While participants were pleased with the content, structure and the lessons conveyed through the Workshop, a post-event survey pointed to three areas of concern that participants had:

- There were mixed opinions regarding the use of case study examples from other regions of the world, and how appropriate it was to discuss them in the African context.
- There was a need for more updated data in order to have discussions pertinent to the current environment.
- Participants felt that more activities involving interactive discussions among Workshop participants would have been valuable.

6.2. Lesotho – Workshop on Rural Electrification Planning in Lesotho

Lesotho faces many of the same barriers – regarding efforts to increase rural energy access – typical in most SADC countries. These barriers include financial shortfalls as well as institutional and managerial deficiencies. There is a need for a more in-depth identification and specification of barriers, together with development of approaches to address them.

The Lesotho Workshop concluded with a reiteration by the director of the Ministry of Natural Resources regarding the need to continue with follow-up steps for developing a comprehensive energy policy and a roadmap for RE in Lesotho. The Lesotho government is expected to contact USAID in search of further assistance, pursuant to the April 2003 Workshop. The next step in helping Lesotho prepare its RE process would be for USAID to

provide well-targeted assistance that would facilitate the development of a stakeholder-led RE plan.

To achieve this goal, the current mode of planning and implementing RE has to be reformed principally in the following three key areas:

1) Establish a Working Group or Task Force that includes representation from the broad stakeholder community and assist this Group to develop a blueprint for a RE master plan.
2) Develop the necessary institutional mechanisms to allow for the establishment of a Rural Electrification Authority/Agency (REA), which would also administer the National Rural Electrification Fund (NREF). The Ministry of Natural Resources (MNR) has already initiated actions towards the creation of the NREF.
3) Take steps to help promote active participation of the private sector in RE.

CORE proposed the establishment of a Working Group for Rural Electrification (WGRE), and recommended that the Group be made up of participants from all major stakeholder groups including local representatives of the donor community as observers. The Group should have a clear mandate and should work for a period of two months. The Group should be coordinated and supervised by the DOE, and should establish a precise schedule and set of deliverables. It should address all technical and institutional issues and options that may be practical in the Lesotho context. CORE recommended that by the end of the two month period (June 30, 2003) the Group should submit a draft comprehensive policy and master action plan for RE to the Lesotho government and donor community for approval and endorsement. CORE also outlined a comprehensive scope of work (SOW) that the WGRE should work with. The SOW outlined questions that need be addressed including: questions of institutional models; the role of the regulator; subsidy mechanisms; investment promotion; and consumer education.

According to the post-Workshop survey, participants were satisfied with the structure and content of the Workshop; they felt it was a strong learning experience. However, a number of concerns were raised. Participants felt that local energy companies should be represented in any future RE-related discussion forums. Participants felt it would have been useful to have the Lesotho Electric Corporation represented. Some also suggested that the viewpoints of private sector and consumer organizations in Lesotho should have received more attention during the Workshop. They would like to better understand how the private sector addresses the opportunities and risks associated with investments in RE.

6.3. Zambia – Workshop on Enhancing Energy Sector Policy and Reform Process

Based on discussions between CORE and various stakeholders in attendance at the Workshop, the following recommendations on potential areas of future USAID assistance to Zambia were developed:

Review of existing national energy policy (NEP) and institutionalization of its periodical review: This is recognized as a top priority by the Zambian government. The DOE and the MEWD have set a target to complete the NEP review by July 2004. CORE

has recommended that the government should establish an information system that allows for the systematic collection and analysis of energy supply and demand related data and forecasts. The institutionalization of such a system would require substantial technical assistance and capacity building within the DOE.

Development of a process to implement electricity market reform and restructuring: Assistance is required on the design, development, and assessment of various options for Zambia's future wholesale electricity market (WEM). ERB has developed a proposal on a potential WEM for Zambia. This proposal was submitted to DOE/MEWD for review over a year ago. The process was delayed, however, and needs to be put back on track. The ability of the DOE and the MEWD to assess and review the WEM proposal was raised as a major concern by various stakeholders during the Workshop.

Based on the presentation provided by the ERB on the WEM option for Zambia, the CORE team feels that the WEM proposal submitted to DOE/MEWD may need further analysis and fine-tuning. Additional guidance on power market reform may surface after the NEP review could result in the need for revisions to the existing WEM proposal. CORE believes that Zambian institutions need substantial technical assistance and capacity building in the area of WEM design, assessment, development, and implementation.

The creation and initiation of the REA: As noted, various stakeholders urged the MEWD and DOE to expedite the process of creating and empowering the REA. This effort will require substantial support in the near-term because:

- The Zambian government is currently working with the World Bank to prepare a program to support the country's electrification process. This program – Increased Access to Energy Services (IAES) – is expecting Bank lending support in the range of $90-$100 million. Project implementation is planned to begin by September 2005. In order to implement the rural component of this program, the government will need to establish staffing and technical capacity in an institution (such as the REA) to execute the project.
- There is currently a scarcity of local human resources and expertise to manage such an undertaking. World Bank conditionalities require full compliance with its policies on establishing open, independent, transparent, and accountable institutions for the implementation of donor- funded programs. The REA should be tasked with creating an institutional sustainability of energy services delivery.
- By establishing and operationalizing the REA the government will be able to better employ the existing 3% levy on all electricity customers. These funds are supposed to be directed to the Rural Electrification Fund (REF) in order to fund RE programs. This funding is currently happening sporadically and is controlled by a single institution – the Ministry of Finance.

CORE suggests that USAID consider some level of immediate assistance in the area of REA institutional design, organizational structure, staffing needs, business planning, and start-up requirements. In addition, some assistance to help restructure the Rural Electrification Fund is needed. Specifically, a set of procedures to manage the Fund is

needed. Also, the government needs assistance in developing a marketing plan and business approach in order to increase Fund capitalization. Target funding sources should ideally include both donor agencies and the private sector.

6.4. Namibia – Workshop on Enhancing the Environment for IPPs in the Reforming Namibia Power Sector

The key concern for Namibia's power sector stakeholders in coming years will be to reduce the country's dependence on imported electricity. With this in mind, it is CORE's opinion that Namibian power sector stakeholders need strategic technical assistance focusing on a number of areas shown in Exhibit II-15.

Exhibit II-15: Namibia's Future TA and Training Needs

Key Areas of Future Work
♦ Reducing Namibia's dependence on imported electricity.
♦ Strengthening regulatory processes and mechanisms to allow for private sector participation in power generation.
♦ Establishing institutional arrangements for dealing with IPP proposals.
♦ Enhancing cooperation among the Namibia energy stakeholders in order to facilitate a fast-track IPP process.

Based on discussions with ECB officials, as well as conversations with representatives of the Regional Energy Regulatory Authority (RERA), there is a need to begin a process of streamlining and unifying national regulatory policies and processes among the SADC countries. This is an area of potential additional technical assistance. Participants from Namibia – as well as from within the RERA – have requested assistance in areas including tariff setting, incentives for energy service providers, and regulation on enhancing public participation in the provision of energy services. RERA has begun to organize a course on basic regulatory issues and policies for regional authorities to be conducted in Mozambique in October 2004. Mr. Siseho Simasiku, CEO of the Namibian ECB, noted that there is a need for donor financial support for this activity.

6.5. Regional Southern Africa – Conference on Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries

The following are the key recommendations that came out of this Conference.

- Participants recognized the need for planners, regulators, service providers, financiers and other stakeholders to work together. Future regional Conferences should further enhance stakeholder cooperation and interaction in understanding the issues and barriers faced in RESD.
- Participants agreed on the need to implement bottom-up, demand-driven approaches in order to gain consumer confidence in rural electricity supply. Quality of service is a critical success factor. Educating rural populations on the issues and opportunities (notably income-generating opportunities) associated with energy provision is a key element for successful and sustainable RESD programs. This implies the need for public awareness campaigns at the local level.

- Other Conferences on topical issues related to policy, subsidy design, rural energy technology, and rural income generation opportunities, for example would be useful.

Logistical considerations include: (i) the opportunity to cover travel expenses to allow for wider and higher-level participation; and, (ii) providing for the participants to remain one day after a Conference closes to allow for further discussions and planning for future interactions and other regional activities with counterparts from neighboring countries.

C. THE GLOBAL VILLAGE ENERGY PARTNERSHIP PROGRAM (GVEP)

1. Background

1.1. GVEP – Background

The Global Village Energy Partnership (GVEP) is a voluntary Partnership that brings together developing and industrialized country governments, public and private organizations, multilateral institutions, consumers and others in an effort to ensure access to modern energy services by the poor. Its origins date back to late 2000 when the World Bank, USAID, the US Department of Energy, the National Renewable Energy Laboratory, and several private firms hosted the eighth Village Power Conference. This event brought together over 600 participants from 60 countries to share lessons learned, best practices, and new approaches for meeting rural energy needs.

A key outcome of the event was a Village Power Communiqué, which called for a ten-year effort to increase modern energy access to marginalized populations as a means of alleviating poverty and accelerating rural development. The Communiqué called for a partnership that leverages proven technologies and institutional approaches to help create sustainable improvements while engaging the private sector. The Communiqué also set forth the expected contributions of these efforts towards the achievement of the Millennium Development Goals (MDGs), then referred to as the International Development Targets.

Village Power was renamed GVEP in an effort to emphasize that modern energy services includes not only electricity and its related services, but also heating, cooling, and very importantly, cooking. The Energy Sector Management Assistance Program (ESMAP) at the World Bank was chosen as the Interim Technical Secretariat to coordinate, broker and facilitate GVEP activities and since September 2002 it has been serving as the full-fledged Secretariat. Plans are underway to have a permanent structure for the Secretariat in the near future.

Over 250 organizations are currently involved in the Partnership. The group consists of nearly 120 NGOs, 95 private sector companies, 35 governments and nine multilateral donor agencies. The aim of GVEP is to:

- Catalyze country commitments to rural energy programs and guide policies in this area.
- Bridge the gap between investors, entrepreneurs and energy users in the design, installation and operation of replicable energy-poverty projects.
- Facilitate policy and market regulatory frameworks that can scale up the availability of energy services.
- Serve as marketplace for information and best practices on the effective development and implementation of energy-poverty projects and programs.
- Create and maintain an effective coordination mechanism for addressing ongoing energy-poverty needs.

GVEP reaches out to non-energy organizations in the health, education, agriculture, transport and commercial sectors, and offers a range of technology solutions including renewable energy, energy efficiency, modern biomass, liquefied petroleum gas (LPG) and clean fossil fuels, to meet energy needs. GVEP also addresses gender issues in attempt to reduce health and environmental hazards and to increase social and economic welfare. GVEP offers a number of services in order to reach the above noted objectives including:

- **Action Plan Development –** Action Plans provide the implementation vehicle for energy-related activities usually as set forth in national poverty reduction strategies and development plans.
- **Capacity Development –** Capacity building efforts increase access to energy services by enhancing policy frameworks, entrepreneurial skills, consumer organization, and credit systems, thereby expanding the number and capabilities of enterprises operating in rural markets.
- **Finance Facilitation –** GVEP works with a broad range of local, bilateral and multilateral financiers, expanding existing programs and financial instruments to better suit the needs of investors and energy consumers.
- **Knowledge Management –** Sharing of information and knowledge enables access on new approaches, lessons learned and best practices for improved energy service delivery to the stakeholders and provides a forum for networking among partners.
- **Results and Impact Monitoring and Evaluation –** These activities track the impact of energy services on poverty reduction and sustainable development, and enhances partner accountability for tangible results.

GVEP is intended to yield benefits to various groups including:

- **Local Communities –** via improved social services (health, education), linkages to markets (telecommunications), and enhanced opportunities for attracting commercial enterprises and investments.
- **Households –** via job creation, increased incomes, and a better quality of life due to improved lighting, power, heating, and social services.
- **Community and Civil Society Organizations –** NGOs and entrepreneurs are expected to benefit from training and inclusion in a network of service providers, technicians and project managers, and as a result from increased business opportunities.
- **National Governments –** are expected to benefit from poverty reduction, increased economic growth, improved fiscal balances, better environmental conditions and enhanced energy security.
- **Domestic and International Financial Institutions –** will be able to expand their investment portfolios.

1.2. Zambia – Background

Three-quarters of Zambia's population lives below the World Bank poverty threshold of $1 a day. Most of these people rely on traditional, low efficiency fuels to meet their daily energy needs. Wood-fuel in the form of charcoal and firewood contributes 79% of total

national energy consumption. Electricity makes up 10% of the mix (the majority of which is generated via hydropower, and the majority of which is consumed by the mining sector), petroleum products contribute 9% and coal is 2% of total consumption.

Access to affordable electricity and modern sources of energy remains a significant developmental challenge for Zambia. While the average national electrification rate is roughly 20%, the rate of access in the rural regions is around the 2% level. Reliance on traditional energy sources (as opposed to conventional modern fuels) puts poor households in a disadvantaged situation as more money is spent for each unit of energy consumed.

Some of the key issues that Zambia faces in its energy sector include (these key issues are further described in Section 2.1 Zambia – Issues):

- Heavy reliance of rural populations on biomass for their energy needs
- Weak institutional arrangements and financing mechanisms originally intended to encourage rural energy provision
- Subsidization of power tariffs which has had the effect of discouraging investments particularly in rural areas
- Slow economic growth, which has diminished the ability of government to provide improved public services including RE

The Zambian government has shown a strong commitment to its participation in the GVEP initiative. Its Poverty Reduction Strategy Paper (PRSP) makes improved access to modern energy services a key priority, and this was a key consideration for Zambia's inclusion in the GVEP initiative. Through its Ministry of Energy and Water Development (MEWD) Zambia joined GVEP in February 2002, and in June 2003 the Zambia National GVEP Secretariat was established at the Department of Energy (DOE).

The Zambian Secretariat has worked to recruit domestic stakeholders interested in collaborating in energy/poverty issues in Zambia through the GVEP framework. The Secretariat has since requested funds from the GVEP Technical Secretariat in Washington D.C. for support of a national consultative process to develop a GVEP Action Plan. The Action Plan would form the basis for potential funding requests for targeted GVEP interventions to enhance the use of modern energy services for poverty reduction.

Enhancing energy services to support poverty alleviation and development is one of the highest priorities of the Zambian government. A lack of financial resources, however, is a major obstacle to accessing alternative energy sources. By helping to mobilize capital, the GVEP initiative can lend support to improvements in social services and the expansion of local economic opportunities in the rural and peri-urban areas of Zambia. Toward this goal the government plans to:

- Formalize and institutionalize participation in GVEP by facilitating the creation of organizational structures, and coordinate at the national level with local partners throughout the country.

- Facilitate and help organize stakeholder meetings and initiate in-country consultations amongst stakeholders on GVEP.
- Integrate GVEP in the country policy framework, especially the Poverty Reduction Strategy Paper (PRSP) and the plan for rural electrification.
- Develop an actionable GVEP Plan that could be presented to donors and other stakeholders for follow up support.

1.3. Sri Lanka – Background

Nearly 90% of the poor in Sri Lanka reside in rural areas in the South and on tea and rubber estates in the Central region. Between 25% and 39% of the population can be classified as poor, depending on which of the various benchmarks of poverty are accepted.

Commercial energy availability and consumption in Sri Lanka's rural regions are at levels associated with subsistence or otherwise low-productivity agriculture. This lack of available energy is a limiting factor for increased agricultural productivity and improved rural living standards. Agriculture, however, is central to Sri Lanka's economy. It employs some 35% of the country's workforce and accounts for around 20% of GDP. Raising agricultural productivity is, therefore, an important component of the Sri Lanka Poverty Reduction Strategy Paper (PRSP). Accordingly, an important step in the development of a GVEP Action Plan for Sri Lanka will be to gain a better understanding of the impact of limited commercial energy supplies on agricultural productivity.

Sri Lanka's total primary energy demand is met largely with biomass (which contributes 50% of supply) and petroleum (41%). Nearly 76% of demand for biomass (mainly from crop residues and home gardens) is used in households for cooking. The remaining 24% of demand for biomass is from industry, including the plantation industries. The share of petroleum in the energy mix is expected to grow in the future as (i) annual electricity demand is growing at around 7%, (ii) the country's remaining undeveloped hydropower resources are limited and, (iii) there is a growing demand for transport fuels. With the exceptions of biomass and hydropower, Sri Lanka is poorly endowed with primary energy resources and faces rising imports of commercial energy to realize economic growth.

Sri Lanka's electricity grid reaches into most of the country's rural areas with the exception of the Northeast region, which suffers from the impact of the ongoing insurrection led by Tamil groups seeking independence. The existing rural electricity distribution system is of modern design and is reasonably well maintained and operated. Much of this infrastructure was developed over the past 25 years with grants and concessional loans from donor agencies. In the late 1990's, however, the growing insurrection in the northeast, the resulting negative impact on economic growth, and the apparent inability of the government to address the issues led to a sharp withdrawal of international donor support. This situation was reversed following the 2001 election in which the United National Front (UNF) party gained a parliamentary majority. The UNF, which has advocated private-sector led growth in Sri Lanka, was also successful at signing a cease fire agreement with the Tamils. Since that time, international donor funding to grid extension projects has quickly resumed.

Some of the key issues that Sri Lanka faces in its energy sector include (the following issues are further discussed in Section 2.2 Sri Lanka – Issues):

- Political instability including for example the recent dissolution of Parliament and the calling of snap elections
- Lack of energy sector data necessary to understanding the requirements of GVEP efforts
- Weaknesses in national RE efforts to date including a lack of pro-poor tariffs and a concurrent lack of focused subsidy implementation
- Lack of education efforts geared toward rural consumers on income generating opportunities that follow from electricity access

The Government of Sri Lanka (GOSL) has stated its intentions to restructure the power sector along commercial lines and to establish improved regulatory mechanisms over the next five years so as to attract investment in the sector. It also plans to establish a credible rural electrification and renewable energy policy to promote sustainable market-based provision of rural energy services to reduce the need for larger grid investments. Currently planned projects are expected to provide power access to 285,000 new rural customers over the next five years.

Sri Lanka was one of the first countries to join GVEP during the World Summit on Sustainable Development in Johannesburg in August 2002. The GOSL designated the Ministry of Power and Energy as the key ministry for coordinating the development of its initial GVEP Action Plan. CORE International has been providing support to the GOSL in this effort, building on its GVEP technical support experience in Zambia. The government has received technical assistance in order to help it:

- Conduct a comprehensive review and assessment of the current state of rural electrification (RE) and rural energy services (RES) and assess the role of various government entities in the implementation of a multi-sector approach to rural development.
- Establish a multi-sector GVEP Working Group through the initiation of technical consultations with all major RE and RES stakeholders.
- Assist the Working Group in the development of an initial GVEP Action Plan for enhancing its participation in the GVEP efforts.

2. Key Issues

2.1. Zambia – Key Issues

The following key issues characterize Zambia's energy setting:

Fuel mix heavily weighted to biomass: As previously noted the structure of Zambian energy demand is dominated by traditional wood-fuels such as firewood and charcoal. The main sources of these fuels are natural woodlands and agricultural lands and the present rate of wood-fuel demand exceeds the sustainable supply. Further, the rate of growth in

demand is expected to rise due to the fact Zambia has a very low urbanization rate of around 1% of the total population. The current estimated ratio of covered (forested) land to total land is 66%. While this is not a tenuously low level, continued deforestation could turn this situation within a relatively short period of time.

Zambia is dependent on imports for its petroleum needs: Zambia imports all of its petroleum requirements, which make up 9% of total energy demand. Further, the import of petroleum dominates all other government expenditures and makes up a major part of Zambia's import bill. This is a significant area of concern to the government especially given its IMF status as a Highly Indebted Poor Country (HIPC). The transport and mining sectors are the dominant consumers of petroleum products.

Policy efforts towards RE have not worked: Despite the creation of policy functions and official organizational relationships within and between various ministries, power providers, and energy regulators and despite the approval of laws aimed at increasing private sector participation and consumer protection within the power sector, little positive change has resulted. Rural power access for example has remained below the 2% level for at least past decade. The challenge of delivering power to rural areas remains formidable given high capital costs and low financial returns compared with urban projects.

Rural electrification funds have been ineffectual: To accelerate the rate of rural electrification, a Rural Electrification Fund (REF) was established in 1995 within the Ministry of Energy & Water Development (MEWD). The fund has been financed by a 3% levy on all electricity consumption and was intended to finance the extension of power grids to rural consumers. Since the fund was created however, Zambia has not seen any increase in the rural energy access rate above the 2% level. The REF has not performed well for a number of reasons that are summarized below:

- The funds collected fell fall far short of the requirements of a meaningful rural electrification program.
- Government has diverted a significant proportion of the levy to other purposes, thus reducing the capacity of the Fund to finance projects.
- The selection of projects has been open to political interference, resulting in haphazard implementation that does not accord with national priorities.
- The current REF is narrowly focused on grid extensions. Yet for many parts of the country this is not an economically feasible option due to the remoteness of the areas or low population densities.

Tariff rates are heavily subsidized: The current mechanism for applying uniform national electricity tariffs is not cost reflective. For example, customers supplied with diesel generation enjoy a common tariff with those supplied from the national grid (primarily hydropower) although the cost of diesel generation is nearly ten times higher. This makes investments particularly in rural areas unattractive.

Overall economic growth has been slow: The poor performance of the Zambian economy since the 1970s has diminished the ability of the government to provide public

services including RE and rural energy service delivery (RESD). The scarcity of public funds and the competing need to invest in variety of sectors has negatively impacted RESD programs.

Information and awareness has been weak: Information about available energy resources and applicable technology, which can be utilized for project planning, has been inadequate. Further, there has been poor dissemination of information due to a lack of communication infrastructure, low literacy levels, and language barriers. There is also a lack of awareness of business opportunities among entrepreneurs.

2.2. Sri Lanka – Key Issues

Political uncertainty: In February 2004 the President of Sri Lanka dissolved the Parliament and called for a new general election in early April 2004. This action was a result of power struggles between Sri Lanka's two main political coalitions, the United National Front (UNF) and the Freedom Alliance (formerly the Peoples Alliance). The UNF maintained its majority in Parliament with the result of an increased likelihood of maintaining the conditions needed to conduct a meaningful national level stakeholder GVEP Workshop. Clarification and stability of the country's economic development priorities is important for GVEP Action Plan development. Significant differences exist on development policies between the two main political coalitions. The role of the private sector is a particularly contentious issue between the two coalitions.

Lack of energy sector data: A key problem in the process of advancing GVEP in Sri Lanka is the deficiency in available national and regional energy data. The key areas of data deficiency include:

- **Urban versus rural data:** One of the key gaps is the inability to differentiate between rural and urban energy consumption. Current data combines rural energy consumption into larger categories such as the "Domestic & Commercial" and "Transport" sectors.
- **End user data:** Statistics are also available on the geographic breakdown of electricity consumption across the country. However, this data does not differentiate between electricity end users and uses (commercial and industrial versus residential).
- **Agriculture sector data:** Further, there is lack of good data on energy consumption within the agriculture sector. This could present a problem in GVEP Action Plan development because of the concentration of poverty among the country's farmers.
- **Data from the northeast region:** A further complication to understanding the dimensions of rural energy supply in Sri Lanka is the lack of data for the northeast part of the country, a direct consequence of 25 years of insurrection in the region.

Lack of good data on rural energy consumption will complicate the targeting of initiatives for GVEP programs, make it difficult to establish regional priorities, and complicate eventual program performance monitoring and evaluation. To initiate the development of a GVEP Action Plan, it will be necessary to begin developing improved estimates of rural energy

consumption patterns throughout Sri Lanka. It will also be necessary to understand the relationship between rural incomes and commercial energy consumption.

Rural electrification issues: As noted Sri Lanka has in place an electricity grid that reaches into most of the country's rural areas. Much of the existing rural power infrastructure is of modern design and is reasonably well maintained and operated. However, there are salient weaknesses associated with Sri Lanka's RE program that need to be addressed. These include:

- **Lack of training to new rural customers:** There is a lack of any supporting development program to promote the use of electricity for reducing rural poverty through enhancing rural poor productivity, particularly agriculture productivity. RE programs have historically involved the provision of "wires" under the expectation that the rural consumers will, at their own initiative or with assistance from other institutions, learn how to use electricity in ways that improve their income earning abilities and living conditions.
- **Anti-poor tariff policies:** Retail tariffs related to RE programs have in the past been full cost-of-service reflective. In regions where this could not be achieved, electricity access has been routinely refused. In many cases, this has meant that poor rural consumers living in close proximity to low-voltage distribution lines have not been able to receive service. The key will be to establish rural retail electricity tariffs that will promote and sustain productive uses of electricity for new consumers, particularly poor consumers.
- **Poor subsidy planning:** The current RE program will expand the grid to rural areas where customers cannot currently afford to pay cost-of-service reflective tariffs. Subsidies will likely be required in many regions. New customers are expected to use power access to raise their economic productivity and income earning power to a point where they can afford full-cost tariffs. As of yet, however, no real attention has been given to the issue of how subsidies should be best structured under a pro-poor Poverty Reduction Strategy (PRS). International donors are typically reticent to address the issue given the difficulties in eliminating subsidies once they have been granted.

3. CORE International Task Order Assignments

Work performed by CORE for both the Zambia and Sri Lanka GVEP initiatives included general stakeholder capacity building and the design and implementation of in-country meetings, Workshops and technical consultations (TC).

3.1. Zambia – Task Order Assignments

CORE International developed and delivered the following activities under its GVEP Sub-Task:

Reports:

1) Progress Report on Discussions on the GVEP Program in Zambia, May 19-23, 2003

2) Activity Completion Report on Technical Consultation on Establishing the GVEP Working Group in Zambia and Planning for the National GVEP Action Plan in Zambia, March 24, 2004.
3) Progress Report on Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership (GVEP) Initiative, May 27, 2004.
4) Final Report on Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership (GVEP) Initiative, July 6, 2004.

Meetings, Workshops, and Technical Consultations:

1) CORE initiated its work with Zambian authorities and RE stakeholders via in-country consultations on coordinating GVEP activities on May 19-23, 2003.
2) CORE designed and facilitated a TC meeting among the Zambian stakeholders on Establishing the GVEP Working Group in Zambia and Planning for the National GVEP Action Plan, March 24, 2004. . Forty-one stakeholders participated representing almost all stakeholder groups including government, the private sector, consumer groups, NGOs, academia, and donors.

3.2. Sri Lanka – Task Order Assignments

CORE International developed and delivered the following activities under its GVEP Sub-Task:

Reports

1) Activity Completion Report on Technical Consultation on the Formalization of the GVEP Working Group and Planning for the National GVEP Action Plan, May 27, 2004.
2) Interim Report on Global Village Energy Partnership Technical Support to Sri Lanka on Action Plan Development, April 8, 2004.

Meetings, Workshops, and Technical Consultations:

1) CORE initiated GVEP Action Plan development support to Sri Lanka through an initial strategy meeting with the then Secretary of the Ministry of Power and Energy, October 2003.
2) With support from USAID/Sri Lanka, CORE helped design and implement the initial technical consultation to the formation of Sri Lanka's GVEP Working Group in March 2004. .
3) CORE designed and facilitated a TC meeting among the Sri Lankan stakeholders on the Formalization of the GVEP Working Group and Planning for the National GVEP Action Plan, May 27, 2004. Twenty-six stakeholders participated representing almost all stakeholder groups including government, the private sector, consumer groups, NGOs, academia, and donors.

4. Key Program Highlights and Results

4.1. Zambia – Highlights and Results

As noted previously, CORE designed and facilitated a technical consultation (TC) meeting among the Zambian stakeholders on "Establishing the GVEP Working Group in Zambia and Planning for the National GVEP Action Plan". The event, held on March 24, 2004, was attended by 41 stakeholder representatives from nearly all GVEP stakeholder groups including government agencies, the private sector, consumer groups, NGOs and academia, energy sector regulator, and various donor representatives.

The TC was designed to allow for open discussions among stakeholder representatives. Facilitators from the DOE, CORE and USAID worked to clarify the objectives and expected results from the TC so that participants could best focus on the most important and relevant issues that need to be discussed and agreed upon. Participants engaged in active discussion on the following issues:

- Possible key focus areas of GVEP efforts in Zambia
- Potential composition of the Zambia GVEP Working Group
- Major responsibilities and functions of the GVEP Working Group
- Structure of the GVEP Working Group
- Identification of major elements for the GVEP National Action Plan
- Identification of the next steps

As part of the TC, Mr. Oscar Kalumiana of the DOE provided participants with a presentation on GVEP and related Zambian issues. After this presentation, Mr. Clement Sasa, local consultant to CORE International, provided a summary of the CORE Team's recent report on "Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership Initiative (GVEP)." These presentations prepared the ground for fruitful discussions among the TC participants.

Participants agreed upon a series of follow-up points to guide them as to how they should proceed with their GVEP initiative. A number of key insights came out the TC session:

1) Zambia has shown a strong commitment to the GVEP initiative. The DOE has established the GVEP Technical Secretariat and has solicited support from the GVEP Technical Secretariat in Washington DC. Sufficient momentum has been built among stakeholders to allow for significant milestones to be quickly achieved. Indications are that Zambia plans to have a comprehensive GVEP National Action Plan developed by the end of 2004.
2) The DOE has established the Technical Secretariat as one of its offices. This structure needs technical assistance and support to be able to prepare and facilitate the work of the GVEP WG and its sub-groups. The GVEP WG and its sub-groups will very likely need technical assistance to perform their functions and responsibilities.
3) Some stakeholders showed reluctance regarding the extent to which government institutions and agencies should be represented in the GVEP Working Group (WG).

They felt that only the MEWD representatives should be members of the GVEP WG. CORE facilitators and other participants provided several reasons why other ministries, such as Ministry of Education, Ministry of Health, Ministry of Agriculture and Co-operatives, and Ministry of Local Government and Housing, need to be members of this WG.

4) It would be very helpful to find a way to bring the GVEP to the attention of local Zambian donors. It is very likely that these donors would be interested in participating and coordinating their activities and programs with the GVEP National Action Plan. Therefore, the stakeholders agreed to allocate a slot for a representative of this group to be a member of the GVEP WG.
5) International and regional private-sector interested in energy service delivery interventions in Zambia need to be identified and approached. Little has been done in this respect, and work needs to be done to assess the interest level of various stakeholders and to reach out to this group in a timely manner.

4.2. Sri Lanka – Highlights and Results

CORE began its work in Sri Lanka in October 2003 through an initial strategy meeting with the then Secretary of the Ministry of Power and Energy (MP&E). It was at this meeting that CORE initiated its support to the development of a GVEP Action Plan for the Government of Sri Lanka (GOSL). Subsequent to this meeting, a formal letter was sent to the MP&E Secretary from the USAID/Sri Lanka Mission Director, specifying the main components of GVEP Action Plan support to the Ministry and GOSL. The Sri Lanka Mission also appointed a local facilitator to support CORE with its assistance to GOSL. In response to these efforts the Ministry established a GVEP Secretariat.

Starting in November 2003, CORE and its local partner institution, the Energy Forum, began work the Ministry of Power and Energy. Specifically, the following tasks were addressed:

- Conduct a review and assessment of the current state of rural electrification (RE) and rural energy services (RES) and the role of various entities in implementing a multi-sector approach to rural development.
- Help the MP&E to establish a multi-sector GVEP Working Group via the initiation of technical consultations among all major RE and RES stakeholders.
- Assist the Working Group in the development of an initial Action Plan for enhancing its participation in the GVEP movement.
- Conduct Technical Consultation on “Formalization of the GVEP Working Group and Planning for the National GVEP Action Plan,” in May 2004.

An important part of the GVEP mandate is that linkages should be established between national GVEP Action Plans and national Poverty Reduction Strategy Papers (PRSPs). Sri Lanka has developed an extensive PRSP that has been endorsed by the multilateral development banks and the IMF, and is part of GOSL's overall economic reform and development program titled "*Regaining Sri Lanka*".

In support of the above noted efforts the CORE/Energy Forum team conducted the following activities with the support of the local counterparts:

- Helped organize meetings with a wide range of stakeholders to build an increased understanding of and support for GVEP participation.
- Provided analysis of Sri Lanka's existing poverty reduction programs to determine potential linkages to be supported under the GVEP Action Plan.

On March 22, 2004 an inaugural Meeting of the Sri Lanka GVEP Working Group was held at the Ministry of Power and Energy. A decision was made to circulate CORE's planned Interim Report on "GVEP Support to Sri Lanka on Action plan Development" so that CORE could receive preliminary feedback from members of the Working Group. It was also suggested that CORE and Energy Forum analyze the data and provide suggestions on further actions.

The Interim Report dated April 8, 2004 documents the analysis that had been performed by CORE and the Energy Forum. This report was initially intended to help prepare for the National Multi-Stakeholder Workshop. However, by documenting it early the report was used by the GVEP Working Group to prepare for its May 2004 Technical Consultation. It is hoped that the National Multi-Stakeholder Workshop can be conducted shortly after this meeting to allow the Working Group to fully incorporate national-level poverty priorities into the GVEP Action Plan development process from the beginning of its work.

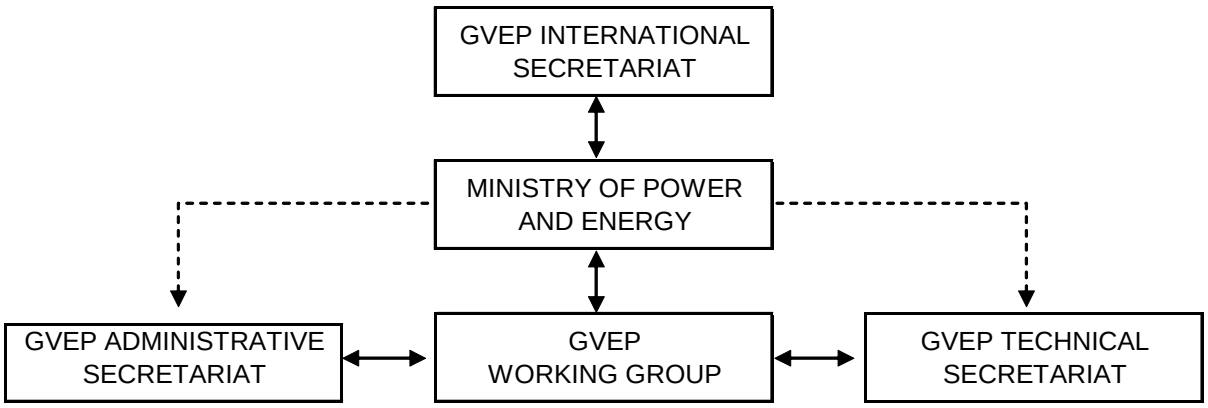
On May 27, 2004 CORE facilitated a technical consultation (TC) meeting with the candidates slated to be members of the Sri Lanka GVEP Working Group on "Formalization of the GVEP Working Group in Sri Lanka and Planning for the National GVEP Action Plan". The TC was also facilitated by the Sri Lanka Energy Forum. A total of 24 stakeholder representatives participated. The participants represented a combination of the initial GVEP Working Group members constituted under the previous Government and other GVEP stakeholders.

The TC was designed as two plenary working meetings intended to accomplish two basic goals: (i) recommendation of an operating modality for the Working Group for preparing an initial GVEP Action Plan, and (ii) identification of initial areas of focus for the development of specific GVEP Action Plan projects. The outcomes of these meetings are outlined below.

Working Group Operating Modality: The first plenary session involved three groups that deliberated and then presented to all participants their recommendations regarding different aspects of Working Group operation. The main recommendations relating to Working Group operating modality emerging from the session were as follows:

Working Group Structure: The TC participants recommended the creation of a two component Working Group Secretariat as shown in Exhibit II-16. They also recommended that the Energy Conservation Fund within the Ministry of Power and Energy and the Energy Forum provide the staff for the Administrative and Technical Secretariats.

Exhibit II-16: Proposed GVEP Working Group Overall Structure



It is visualized that the GVEP International Secretariat will work with their donor contacts while the Sri Lanka GVEP Secretariat, on behalf of the Working Group, will work with local (Sri Lanka) donor representatives. Early agreement with the International GVEP Secretariat over funding arrangements is considered essential for moving forward with Action Plan preparation.

Working Group Tasks: The meetings led to agreement that the Working Group tasks should included those listed in Exhibit II-17.

Exhibit II-17: Key Tasks Proposed for the GVEP Working Group

Key GVEP Working Group Tasks
♦ Identifying key GVEP stakeholders
♦ GVEP Action Plan preparation and Government vetting
♦ Convening of national multi-stakeholder GVEP workshops
♦ Coordination of GVEP planning/implementation/monitoring and evaluation of implementation effectiveness, including coordination with senior Government officials
♦ Developing planning mechanisms
♦ Developing a fair and transparent decision making process and process management
♦ Marketing of the GVEP Action Plan to donors
♦ Involving and engaging peripheral organizations in GVEP planning and implementation
♦ Managing GVEP communications and media coordination

Working Group Planning Approaches and Mechanisms: The GVEP Working Group in a reconvened form should include, in addition to representatives from key ministries, private sector and relevant NGO representatives. The Working Group will need to form several subcommittees in key Action Plan focus areas.

Working Group Operation and Involvement of GVEP Stakeholders in Action Plan Development: The Working Group should conduct activities listed in Exhibit II-18.

Exhibit II-18: Working Group Tasks

Key GVEP Working Group Tasks
♦ Develop a comprehensive Action Plan preparation management plan
♦ Serve as liaison with relevant regional (local government) bodies
♦ Obtain services of consultants to carry out specific assignments under Secretariat management
♦ Seek Action Plan preparation funding from the GVEP Technical Secretariat and other potential sources

It was also recommended that input and feedback from GVEP stakeholders in the planning process should be sought through: (i) national multi-stakeholder Workshops; (ii) informal meetings; (iii) surveys; (iv) special studies; and, (v) written submissions.

Immediate Working Group Operational Issues: It was also determined that the Working Group should consider similarities and differences between regions in terms of culture, livelihoods, language, as well as sources of energy, agricultural and industrial variations, and geography and climate. In addressing infrastructure issues under GVEP, the Working Group needs to consider questions regarding communications, information access, and transportation. The Secretariat also needs to identify planning resource requirements and potential Action Plan preparation funding sources. Potential funding sources include the national budget, provincial councils, special project donors, NGOs, private sector investors, banks and other stakeholders.

Approaches to Identifying and Preparing GVEP Action Plan Projects: The second plenary session consisted of two groups that deliberated and then presented their recommendations to all participants for discussion. The outcome of the second plenary session was (i) an agreement on the five key sectors – agriculture, industry, transport, education and health – to consider in the development of projects linking energy services with poverty reduction, (ii) the identification of a series of energy-related issues within each of the sectors and recommendations on project designs and implementation methods in light of these issues, and (iii) agreement on the information needs in the selected sectors for planning and determination of potential information sources.

5. Complete List of Activities

Exhibit II-19 provides a complete list of activities and deliverables completed under this Sub-Task of the overall Task Order.

Exhibit II-19: List of Activities

No	Type of Activity	Title	Location	Date
1	Progress Report	Discussions on the GVEP Program in Zambia	Zambia	May 2003
2	Consultations	In-country consultations on coordinating GVEP activities	Zambia	May 19-23, 2003
3	Strategy Meeting	GVEP Action Plan development support to Sri Lanka through a meeting with the Secretary of the Ministry of Power and Energy	Sri Lanka	October 2003
4	Technical Consultations	Establishing the GVEP Working Group in Zambia and Planning for the National GVEP Action Plan	Zambia	March 24, 2004
5	Consultations	Formation of Sri Lanka's GVEP Working Group	Sri Lanka	March 2004
6	Interim Report	Global Village Energy Partnership Technical Support to Sri Lanka on Action Plan Development	Sri Lanka	April 8, 2004
7	Progress Report	Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership (GVEP) Initiative	Zambia	May 27, 2004
8	Technical Consultations	Formalization of the GVEP Working Group and Planning for the National GVEP Action Plan	Sri Lanka	May 27, 2004
9	Final Report	Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership (GVEP) Initiative	Zambia	July 6, 2004

6. Follow-up Activities and Results Review

The goals and objectives of the GVEP initiative pose an immense challenge not only to the national stakeholders but also to the donor community and the international and regional private investors and industries. The enabling of open local energy services delivery markets is crucial to successful implementation of the GVEP approach. Further, the development of these markets involves and requires the engagement of all actors, from rural and poor consumers to Governments, multilateral and bilateral development agencies, private sector, and the international technology industries. While all stakeholders

are eager for growing access to modern energy services, the process associated with creating functioning markets will take time. Finally, the investments needed to achieve GVEP objectives are large and mobilization of the financing is an essential prerequisite to achieving the GVEP goals.

Private participation and market dynamics are expected to be able to take over as a primary force in the process at some point in the future. The key question is what can be done prior to this market development. Building capacity and developing plans while providing the environment for open and transparent free markets for energy services delivery has begun to show some initial results in both Zambia and Sri Lanka. This is particularly true in the cases when local participation and bottom up approaches are being implemented. This requires an extensive level of effort and substantial participation from local NGO and stakeholder associations while the foreign expertise provides strategic assistance to facilitate the maturing of local institutions to be able to carry the process forward on their own.

6.1. Zambia – Follow-up

At the end of the March 24, 2004 Technical Consultation, participants agreed on the following next steps:

1) Facilitation of meetings with representatives of NGOs, the private sector, consumer associations, and other stakeholder organizations in order to begin the process of selecting members of the GVEP WG.
2) Preparation of a proposal that includes recommendations as to membership in the GVEP WG to be approved by the Minister of MEWD.
3) Preparation of the Terms of Reference for the Working Group and its sub-groups based on external consulting support.
4) Organization of the first GVEP WG meeting with a detailed agenda with support from external consultants.

From a broader perspective, it is clear that the government of Zambia needs assistance in the development of a comprehensive long-term GVEP National Action Plan and in capacity building during the implementation phase. The areas of immediate follow-up assistance in this regard include:

1) Technical support in the formation of the GVEP Working Group and in conducting the first formal meeting of the Working Group to discuss activities and schedules for the development of a national GVEP Action Plan.
2) Support the design and facilitation of the development of the GVEP National Action Plan. The intervention in this area would require the involvement of local consultants and NGOs that could substantially contribute to the “buy-in” process by local stakeholders. This will provide for greater commitment by the local stakeholder institutions in the GVEP process.
3) Support to internalize and/or marry the GVEP National Action Plan with the country’s national development plans, particularly with the PRSP. Integration of the GVEP

National Action Plan under the umbrella of an overall national development plan and mid-term budgeting program would be the best outcome that the GVEP could catalyze.

4) Assistance to build effective and transparent institutions to take over the national energy service extension program development and carry forward its implementation process. This is the most difficult area of assistance and requires the largest part of the external institutional and capacity building assistance that could be made available to Zambia. The design, development, and operationalization of the recently decreed Rural Electrification Authority REA are key examples of this type of assistance.

The CORE Team believes that USAID can play a strategic role in this process for Zambia. By providing assistance, at a minimum, to the design and development of the institutional capacity at the REA, USAID will be able to assist Zambia in embarking upon a large-scale rural and peri-urban energy service delivery program. The Increased Access to Energy Services (IAES) program that the Zambian Government is preparing in cooperation with the World Bank would be the first large initiative to implement elements of the GVEP approach and would likely be at least partially implemented by the REA. Therefore, cooperation and close coordination between the USAID and the World Bank would be highly beneficial to this assistance.

6.2. Sri Lanka – Follow-up

The scale of the existing donor assistance programs and the considerable local professional resources available imply that Sri Lanka will be capable of rapidly implementing a signification GVEP program once its Action Plan is completed. Sri Lankan government officials, therefore, attach a high priority to the preparation of the Action Plan and are desirous of increasing their dialogue with the GVEP Technical Secretariat.

Specific immediate areas where technical assistance would be beneficial include:

1) Development of GVEP Working Group and Secretariat Action Plan Preparation, Working, Monitoring, and Reporting Procedures.
2) Establish and document the operating modality and procedures for the Working Group and define its full suite of planning responsibilities.
3) Support to identify potential GVEP projects and develop a prioritization methodology.
4) Facilitation for an Initial Sri Lanka Multi-Stakeholders Workshop (The snap national election called in February meant that the planned initial Multi-Stakeholder Workshop had to be delayed).
5) Identification and recruiting of Action Plan consultants.

D. ENERGY SECTOR POLICY AND INSTITUTIONAL REFORM IN ALBANIA

1. Background

CORE's work in Albania under the recently closed Task Order – Private Sector Participation in Clean Energy Development, Management & Operations – was highly integrated with its extensive previous work in Albania. Under the previous contract, CORE worked with USAID in Albania for nearly two years and facilitated significant changes in the country's energy sector over the period.

Through the earlier Task Order – Support for Commercialization, Training and Utility Advisor Services for Albania – spanning the period from October 2001 to July 2003, CORE working with USAID supported capacity building, training, and institutional strengthening advisory services to KESH and the MI&E. This work was focused on a number of areas:

Assistance to KESH and MI&E: This program focused on the reform and restructuring of KESH to increase operational efficiency (in billing, collection and system planning, for example), to address the unbundling of transmission from generation at KESH hydropower and thermal power operations, and to prepare the power sector for private sector investment. In addition, CORE directly assisted the MI&E in the area of national energy policy and strategy development and implementation, and power sector reform. This work also included training in the process of developing small privately owned hydro stations and power sales contracts, the requirements of regulatory bodies in evaluating and analyzing investment options, and the necessary components of action plans for implementing new policies in a power sector undergoing commercialization and reform.

Assistance in coordination with donor agencies: Capacity building assistance was provided by CORE in coordination with the World Bank, the EBRD, and the National Electric Utility of Italy (ENEL). CORE's support included preparing KESH for adhering to the World Bank's conditionalities for two new power loans for the country – a $35 million loan for power system interconnection improvements and the previously noted $100 million loan for construction of a new thermal power station at Vlora.

Sponsored various activities: Through targeted training programs, Workshops, roundtables, invitational travel, and on-the-ground assistance, CORE assisted in enhancing the GoA's capacity to address power sector reform issues ranging from technical and restructuring problems to economic and financial issues to deficiencies in human resource management.

Assistance in development of Power Sector Policy Statement (PSPS): Under this initial project CORE International and Pierce Atwood (PA), a parallel USAID partner that has helped the country to address power sector regulatory issues, jointly developed the Albanian Power Sector Policy Statement (PSPS). The proposed PSPS was submitted for discussions in February 2002 and by March 2002, the government agreed to implement it. Continued donor support to Albania was subsequently made conditional upon the implementation of the PSPS.

In March 2002, an order was issued to the then newly-created MI&E to begin implementing the PSPS. The MI&E was also asked to submit an Action Plan to address PSPS implementation. The goal of action plan was to articulate specific activities and milestones to be achieved by KESH, MI&E, and ERE. CORE worked with the MI&E to develop and present a detailed Consolidated Action Plan for PSPS Implementation. The next step was to develop three detailed individual Action Plans one each for the MI&E, KESH and ERE. These were to include a description of activities, a delineation of responsibilities, timelines and schedules, and a reporting structure and format. CORE worked with MI&E and KESH (PA worked with the ERE) and these plans were developed and adopted by each institution as well as by the Task Force, which was chaired by the Minister at MI&E. These plans have served as the guiding documents in KESH, MI&E, and ERE for PSPS implementation.

Additionally, a Secretariat was established within the MI&E to coordinate the policy implementation process. KESH also created an institutional structure to allow for smooth policy implementation, and through USAID's continued support, CORE focus of assistance was to provide training and capacity building to both Secretariats – within the Ministry and KESH. Similar support was provided by PA to ERE under separate contracts.

Conducted a needs assessment survey: In late-2002 CORE completed a comprehensive Capacity Building and Training Needs Assessment which extended out through the year 2007. The Needs Assessment report was consistent with the planned timeframe for the PSPS implementation, and included training and capacity building as priority needs for KESH and MI&E in the first year of PSPS implementation. A substantial part of these needs were addressed by CORE activities between August 2002 and July 2003.

Advice on the Athens MoU compliance: In November 2002, Albania signed the earlier noted Athens Memorandum, the primary objective of which is the creation of the Southeast European (SEE) integrated regional electricity market. Shortly after signing the Athens MoU, the MI&E invited CORE International to provide advice on the Transmission System Operator requirements and implementation requirement of the Athens MoU, and to provide guidance as to a time frame during which these could be accomplished. This led to the preparation of a preliminary "road map" for KESH restructuring, which was presented to the MI&E for review. Based on MI&E feedback, CORE organized a Roundtable on proposed reform steps that was convened in Tirana in January 2003. The Roundtable focused on the decisions, planning, and implementation activities and resources that would be required to accomplish KESH restructuring to create a Transmission Systems Operator.

Numerous reports: In addition to the tasks outlined above CORE has prepared scores of issue papers and white papers on a wide variety of subjects in support of its work in Albania as shown in Exhibit II-20.

Exhibit II-20: Papers and Reports Prepared by CORE

Paper Topics
♦ Utility restructuring and unbundling
♦ The role of IPPs in the Albania power sector
♦ The commercialization of KESH
♦ Draft Power Sector Policy Statement (PSPS)
♦ Action plans to support implementation and monitoring of the PSPS
♦ Terms of reference for feasibility studies to generate donor financing
♦ Documentation to improve quality of service and reduce technical losses
♦ Best practices in project management, monitoring and evaluation
♦ Reform of financial and debt service management
♦ Negotiating strategies between KESH and regional utilities and power traders
♦ Support in consumer relations and customer service strategies
♦ Support in establishing public hearing formats and parliamentary testimonies
♦ Wholesale market development and Albania's participation in the REM
♦ Development of a National Energy Strategy
♦ Guidance to the GoA on compliance with the Athens MoU

Public participation strategy assistance: In its previous work, CORE assisted in the development of strategies to bring about public participation, public outreach, consumer relations and a customer focus in the power sector. In its early work CORE worked with local NGOs and donors to conduct Seminars to emphasize the importance and benefits of stakeholder engagement and consumer participation in public sector governance. Consequently, a number of visible results have been observed:

- More newspaper discussions of energy issues
- Many TV press Conferences and commentaries on energy sector problems and achievements
- A large number of NGO-sponsored meetings and forums where energy issues are discussed and debated
- Public hearings on energy issues initiated by the energy regulator, ERE, and the Parliament
- Policy of "open doors" at KESH, the national utility where the PR and consumer service departments have been strengthened

Support for new legislation: One outcome associated with CORE's activities in Albania included the passage of a new law in November 2002 which permitted, for the first time, development of privately-funded power generation projects. While the legislation only allows for investment in plants not exceeding 5 MW, it has opened the way for private sector led energy development and management and should pave the way for greater private sector participation in Albania's power sector. Through its technical assistance and

training activities CORE also supported the development and promulgation of the Energy Law of 2003 as well as legal reforms allowing for the entry of independent power producers (IPPs) into the market. CORE helped facilitate extensive dialogue with a broad stakeholder community and government leaders in this regard.

2. Key Issues

Over the past four years the Government of Albania (GoA) has embarked on a path of development and reform within its energy and power sectors. However, the move to a market-based economy since the early 1990's in Albania has not been characterized by a smooth transition. Numerous factors have served to slow the pace of reforms.

Briefly, the key issues affecting the Albanian energy sector include:

- The nascent and relatively underdeveloped state of Albania's energy sector legal, regulatory and development agencies.
- The relatively underdeveloped and poorly managed and maintained condition of the country's power infrastructure. The lack of adequate investment in electricity infrastructure to keep pace with growing demand and the subsequent strain on existing assets.
- Reliance on hydropower as the almost sole source of national power generation, including the over reliance on power generation from the same river system.
- Financial distress of the national power utility company, and the subsequent need for significant government subsidies to maintain its operations. The vertically-integrated structure of KESH, the state utility, and the resulting lack of transparency and efficiency of its operations.
- Below-cost tariffs, which further aggravate KESH's poor financial condition.
- High transmission and distribution losses, high non-technical losses.
- Low bill collection levels.

These issues are described in further detail below:

One state-run power company: In the energy area the provision of electricity has been managed primarily by one large state-funded generation, transmission and distribution company. Not only has this corporate structure been extremely inefficient, but it has also been accompanied by a sharp decline in investment, poor maintenance of industry assets, and the deterioration in industry infrastructure through the lack of good management practices.

Lack of institutional and regulatory mechanisms: Among the factors weighing on the Albanian power sector has been a lack of institutional and regulatory mechanisms to allow for the development of the sector and the inefficient management of existing industry infrastructure. Up until 2001 the country had no formal Ministry of Energy, an ineffective sector regulatory authority, no national strategy or policies for the development of the industry, no legal structure to guide industry practices, and no legal mechanisms to allow for new investment in the sector.

Demand has accelerated while capacity has not grown: Demand for power has grown sharply over the last decade however investment in new generation and transmission capacity over the past twenty years has been marginal with no significant new additions. As a result the state-owned utility (KESH) has suffered frequent grid congestion, unscheduled power cuts and load shedding, and malfunctioning transformers. The lack of interconnections with neighboring countries with excess power has prohibited power imports and further aggravated the situation. Actual production capacity is also well below installed capacity due to a number of physical, technical and administrative problems. Prior to 2000, KESH experienced technical and non-technical losses of over 40%.

Tariff rate below the cost of production: Tariff rates had been set well below the cost of production, which has resulted in poor financial performance and extraordinarily high debt levels. The illegal use of electricity and non-payment of bills has catalyzed excess growth in demand for power. Prior to 2000, KESH maintained a collection rate of only 30%. As a result of below-cost tariffs and high non-payment rates, the Albanian government has historically provided subsidies to KESH. Prior to 2000, KESH was provided with over US$150 million in annual subsidies, a result of which had been that KESH was cut-off from IMF and the World Bank funding.

Over-reliance on hydropower: Another significant weakness in the Albanian power sector is that over 96% of the country's generation capacity is based on hydropower, representing a significant lack of energy diversity. Furthermore, Albania's three largest hydropower plants are all situated on the Drini River Cascade, which could leave all three plants simultaneously vulnerable to changes in weather, water-table conditions and/or adverse hydrology. In fact, unseasonably dry weather conditions have resulted in a decline in hydropower generation capacity in recent years. In order to reduce its dependence on hydropower the government has made a decision to construct a 120 MW oil/gas driven thermal power plant in Vlora. The World Bank, the European Investment Bank and the European Bank for Reconstruction and Development have agreed to co-finance $100 million of the project.

In order to address the multiple issues plaguing the Albanian power sector, the Albanian government began to develop (and ultimately approved in early 2002) the Power Sector Policy Statement (PSPS). The Statement was developed, with the assistance of USAID, CORE International and Pierce Atwood. The overarching goal of the PSPS is to build a power market that provides for reliable, safe, and adequate electric supply at reasonable prices in an economically and environmentally sound manner in accordance with accepted commercial and market principles and the rule of law. The thrust of the PSPS is to initiate institutional reforms that will more clearly define the policy-making and regulatory roles of various government entities. Albania has taken a number of steps in this regard.

Strengthening of regulatory authority: Albania has committed itself to begin implementing necessary legal and regulatory reforms and to strengthen the Electricity Regulatory Authority (ERE), which will serve to separate the government from performing regulatory activities. This should help create a market structure that will strengthen commercial operations through privatization and attract needed private investment.

Strengthening of KESH operational efficiency: The government is also committed to supporting KESH in its efforts to improve collection rates and in reducing technical and non-technical losses. Beginning in late 2000 the Italian power utility ENEL has provided KESH with management assistance in areas concerning reorganization, technical and non-technical loss reduction and tariff reform. As a key component of the PSPS, since 2003, KESH has been reorganized into three departments along functional lines of generation, transmission and distribution. The separate departments are maintained by KESH with further measures planned to establish commercial relationships among them. The separation of operational and financial accounts for these three departments is also underway.

Rationalization of power tariffs: The rationalization of electricity tariffs is another reform step critical for the future development of the power sector. In order to minimize the adverse effects of this reform, the PSPS requires the Ministry of Labor and Social Affairs and the Ministry of Finance, to create a mechanism to ease the impact of rate increases on low-income earners through established minimum levels of service. The PSPS envisages approval of legislation requiring the Ministry of Industry and Energy (MI&E) to prepare, through the National Energy Agency (NEA), and submit to the Council of Ministers a comprehensive national energy strategy relating to all energy sub-sectors and to monitor, review and periodically update specific elements of that strategy.

Increased focus on conservation: The government is also committed to establishing a legal mandate for the preparation of a comprehensive energy conservation plan proposing demand-side measures for consumer groups, the promotion of measures to restrict uneconomic uses of electricity by sending correct price signals as well as enhancing the use of other fuels, especially LPG and kerosene, as alternative sources for heating and cooking.

Allowing for regional market integration: The PSPS also calls for the adoption of regulations providing for third party access to transmission and distribution facilities. This framework is expected to include the adoption of a grid code, to provide for reliable and stable operations of transmission and distribution networks, and power system dispatch. Market rules and procedures within the PSPS are in harmony with the European Union Electricity Directive 96/92 (promulgated in 1996) and the Athens MoU I (signed in late-2002) and Athens MoU II (late-2003) regarding regional European power sector market opening and access.[1]

[1] Directive 96/92 aims to establish a common set of systems, procedures and rules among all member states of the European Commission (EC), as regards the generation, transmission and distribution of electricity and in this way provides for an integration of these functions across state borders. The Athens MoU I and the amended MoU II establish a similar set of standards as the Directive 96/92 for the countries of South East Europe (SEE) including Albania. The Athens process has been initiated by the EC. The purpose is to establish electricity market models across the SEE region that are compatible with each other and with systems and models in use within EC member states. Once this is adopted, neighboring nations will have created institutions that will allow for the operation of an integrated electricity market across the region. Such a market will operate in line with EU policies, with an open, liberal and transparent electricity market with third party access and consumer choice as to electricity

3. CORE International Task Order Assignments

During the period from July 2003 to June 2004, CORE continued to provide assistance to KESH, the MI&E, and the National Agency of Energy (NAE) under a Sub-Task to Task Order No. 3. This assistance was provided on-the-ground in Albania by CORE experts working with various energy agencies in several key areas. The assistance also included development of a four-day Workshop on Program Management: Planning, Monitoring, and Control which was held in Tirana, Albania in May 2004.

The objectives of CORE's on-the-ground consulting support to the MI&E, the NAE, and KESH under this sub-task were to:

Provide planning and policy implementation management support to MI&E in the implementation of the Power Sector Policy Statement (PSPS) and regional market participation: CORE senior experts advised MI&E on key issues affecting the implementation of the PSPS, including the development of Ministry's capacity to prepare, implement, and monitor various aspects of the Policy Statement. The capacity building component included the previously noted four-day Workshop for the Task Force Secretariat on Program Management: Planning, Monitoring and Control, held in Tirana in May 2004. The event was also attended by managers from KESH, NAE, and ERE. CORE's assistance included identification of action items for the improvement of PSPS implementation monitoring process. Additionally, an energy sector webpage and a monthly/quarterly newsletter template were designed for the Task Force Secretariat.

Provide a Resident Advisor for financial and accounting capacity building at KESH: Under this Task, CORE provided the services of Dr. Barry Schaeffer, Senior Financial Analyst, as a resident capacity building advisor for the period from January 15 to May 31, 2004. The advisor assisted KESH management and staff in the development and implementation of modern management methods for collections, cost and revenue tracking, cash flow management, and general financial management of KESH. He also acted as an advisor to the General Director of KESH on fiscal and financial management and planning.

Provide planning and advice for the implementation of Athens MoU I and MoU II requirements: CORE senior experts assisted the MI&E with the development of an implementation plan for the activities required under the Athens MoU II, and provided guidance on various other issues surrounding implementation of the plan. Deliverables included an updated plan for the activities required under the revised Athens MoU II. This included assistance in the development of the Country Action Plan and the Albanian contribution to the Regional Action Plan. CORE also provided topical advisory service papers as requested by the MI&E regarding Ministry requirements under the MoU.

supplier. The Athens MoU sets an ambitious timetable of achieving full market opening by 2005. It is widely recognized, however that this timetable is unrealistically rapid. Discussions are currently underway on a revised timetable, as well as on transforming the status of the MoU into a legally binding treaty. It is expected the Albanian national power market will be integrated into the SEE Regional Electricity Market (REM) by year-end 2007.

Provide technical advisory services to the MI&E on Power Sector Restructuring and the Restructuring Plan prepared by KESH: CORE experts provided advice on sector restructuring to the office of the Director General for Electroenergy and the Deputy Minister, who chairs the KESH Supervisory Board. CORE reviewed and analyzed the Restructuring Plan prepared by KESH with respect to its content, proposed restructuring model and its conformity with schedule and provisions contained in the PSPS and the Athens MoU.

4. Key Program Highlights and Results

CORE has worked in Albania under the EETP IQC on two separate Task Orders. The first Task Order – Support for Commercialization, Training and Utility Advisor Services for Albania – spanned the period from October 2001 to July 2003. The second Task Order – Private Sector Participation in Clean Energy Development, Management & Operations – spanned the period from July 2003 to June 2004. Both of these Task Orders focused on assistance across a wide range of areas most of which can be viewed as a continuum between the two tasks.

Exhibit II-21 summarizes the results that Albania has achieved in its reform process and CORE has been a very integral part of the process along with Pierce Atwood, ENEL, and the Albanian counterparts.

Exhibit II-21: Results Achieved in Albania

Energy Sector Setting in 2000, when CORE Began its Work in Albania	Policy, Regulatory and Institutional Reform Activities Conducted by CORE and Results Achieved by the Albanian Government – May 2004
1. No Ministry of Energy	1. Energy affairs were buried in a department within the Ministry of Public Economy and Privatization. A new Ministry of Industry and Energy was established by the Parliament in 2001 to focus on policy and strategy in the energy sector.
2. No independent regulatory authority	2. An independent regulator was established by an Act of parliament in 2002 to address regulatory requirements of the energy sector.
3. No Power Sector Policy	3. CORE participated in the development of the Power Sector Policy Statement (PSPS) which was formally approved and promulgated by the Prime Minister on late 2002.
4. No National Energy Strategy	4. CORE worked with the National Agency of Energy in Albania and developed a National Energy Strategy. This strategy was formally approved and announced by the prime Minister in 2003.
5. No Energy Law	5. An Energy law was primarily written by Pierce Atwood with support from CORE and was passed in 2003.

6. No Legal Provision for Private Sector Participation in Power	6. CORE facilitated including training the regulators and testifying in the Parliament along side the regulators for the passage of another Law to permit small scale IPPs – Less than 5 MW cogeneration and hydropower facilities to enter the energy market.
7. A vertically integrated inefficient and near bankrupt utility with over 40% losses and 30% collections Excessive Dependence of Hydropower ((98% of the system is based on hydro with the three largest plants on a single cascade on the Drini River	7. A utility restructuring and unbundling plan was developed in 2002 8. A team of CORE and the Italian utility ENEL was put in place to develop and implement measures to reduce losses in increase collections. Today the collections are over 87% and losses are 12.5%. 9. CORE developed TORs for a high priority investment project in regional interconnection upgrades, USTDA financed the feasibility study, and World Bank provided a loan for $30 million to invest in systems to make interconnections with Macedonia and Montenegro making more power available to Albania 10. CORE developed a supply diversification strategy and assisted the Ministry in presenting it to the Cabinet and the parliament which was approved. CORE developed TORs for the feasibility of a 100 MW thermal power plant at Vlora Port, USTDA financed the feasibility study, and World Bank, EBRD, and EIB provided a loan for $100 million loan for the project signed in April 2004.
8. No regional approach to the development and management of the power sector and a lack of participation in the regional strategy	11. Over a two-year period, CORE closely worked with the Ministry of Industry and Energy and regional institutions in SEE to give a more regional approach to Albania's power sector development. As a result, the following has been achieved: - Albania is an active member of the Stability Pact and the planning group for the design of the Regional Electricity Market (REM) in SEE - Albania is a signatory of Athens Memorandum I and the Athens Memorandum II and in June 2004, it will chair the next meeting of the Athens MoU Process
9. Poor Financial Management at the National Utility, KESH	12. For the last 8 months, CORE has provided Dr. Barry Schaeffer as the Lead Financial Officer and advisor to the CEO of KESH in the development and implementation of an internationally recognized financial management system

10. Poor Institutional Structure within the Government	13. Design and establishment of an Inter-Ministerial Task Force on Power Sector Reform 14. Design and establishment of a Secretariat for Power Sector Policy Statement implementation monitoring within the Ministry of Industry and Energy with an Action Plan including milestones and schedule 15. Design and establishment of a Secretariat for Power Sector Policy Statement implementation within KESH and the regulatory entity, ERE, with an Action Plan for each of them including milestones and schedule 16. Restructuring of the virtually dormant and politicized National Agency of Energy as an independent think tank type institution in charge of long-term energy planning 17. Introduction of the culture for ERE for holding public hearings and the government and industry representatives testifying in the Parliament on public debate on legislative reform in the energy sector. 18. Strengthening and formalization of human resource functions within the Ministry and the utility and a series of capacity building activities based best practices in HR 19. Training courses, Workshops, roundtables, role-playing exercises, retreats, and other activities to enhance the capacity of energy sector professionals and workforce in all of the above areas

5. Complete List of Activities:

This Sub-Task activity for Energy Sector Policy and Institutional Reform in Albania spanned the period July 2003 to June 2004. Support activities provided to Albania are included in Exhibit II-22:

Exhibit II-22: List of Activities

No	Type of Activity	Title	Location	Date
1	Consultations	A Series of Consultation Assignments	Albania	July 2003 – June 2004
2	Workshop	Program Management: Planning, Monitoring and Control	Albania	May 10-13, 2004

Workshop on Program Management: Planning, Monitoring and Control: This four-day Workshop brought together managers and decision makers from Albania's key energy sector authorities including KESH, MI&E, ERE and the National Agency for Energy (NAE). The Workshop included presentations and participatory role playing exercises to aid participants in their understanding of the recently promulgated Albanian PSPS. The goal of this Policy Statement is to provide a more stable energy sector through:

- Increased security and reliability of energy supply
- Effective regulatory environment
- Increased energy efficiency
- Restructuring of KESH
- Introduction of a competitive market

The Workshop was designed and developed with the support and guidance of USAID. It was delivered in close cooperation with USAID, the MI&E, NEA. KESH, and ERE. The Workshop contributed to an improved understanding of the concepts and practices of good management. It also resulted in improved working relationships between MI&E, KESH, NAE and ERE by having them work together on several classroom assignments.

Workshop on Program Management: Planning, Monitoring, and Control
May 10-13, 2004
Tirana- Albania
Private Sector Development Task Order

"These four days were like my second college. I learned a lot. I am young and want to learn more. I work for the regulator which is very challenging, but I feel better now that I have learned so much on program management. I learned one thing more: I know a little and I need to learn much more."

Mr. Elis Sala
Specialist
Electricity Regulatory Commission
Albania

6. Follow-Up Activities

The CORE Team recommends the following major follow-up action items in order to ensure that the reform process in Albania continues and the capacity of the key institutions is continuously enhanced to take on future energy sector management challenges:

- Establishment of an Albanian Team to review the PSPS implementation monitoring processes and systems and develop a proposal for improving the existing system. This Team may include one representative from MI&E, KESH, ERE, NAE, and, potentially, the EEC
- Governance of the energy sector through policy making, regulation and market development
- Building institutional and individual capacity to enable stakeholders to govern the energy sector
- Increasing public understanding and involvement in decision-making on energy issues

As USAID continues supporting above noted efforts it would be anticipated that the following issues would become potential areas of future assistance to Albania:

- Preparation of the power distribution and generation sectors for potential privatization. Attracting IPP investors
- Working with the Regional Electricity Market members to ensure that market rules and grid codes are consistent, allowing for seamless integration with the regional market
- Establishing tariffs that fully cover the costs of production
- Assisting in the operation of the TSO, including establishing a process of financial settlements and new dispatch center operations
- Promoting the use of alternative sources of energy such as LPG, solar and wind and promotion of energy efficiency
- Implementation of National Energy Strategy programs
- Promotion of public participation through public hearings and public awareness campaigns

E. POWER SECTOR DISTRIBUTION REFORM IN INDIA

1. Background

India is the second most populated country in the world. Its power sector has an installed capacity of over 100,000 MW and serves about 80 million customers. The sector is diverse with a large number of central and state level government entities managing generation, transmission, and distribution. Except for a small amount of private power generation introduced during the late 1990s, the entire power sector is organized as a group of government owned vertically integrated monopolies.

India's power sector is characterized by inadequate and inefficient power supply. The Ministry of Power (MoP) has estimated that throughout the decade of the 1990s, India was in need of an additional 10,000 MW of new capacity in order to meet its electricity demand. During 2000-2001, the total energy shortage was estimated at 39,816 million units of energy and the peak shortage was estimated at 10,157 MW (approximately 13% of the country's installed capacity). At the state level, the peak shortage was as high as 30% in many cases, resulting in both scheduled and unscheduled power outages. Given this chronic shortfall the Government of India (GoI) in 1991 opened up the power sector for private investment in new generating capacity. In spite of various incentives offered by the government, private investment did not occur as anticipated. The most critical inhibitor to private sector investment in India's power sector throughout the 1991-2000 period was, and currently continues to be, a lack of security for investment recovery. Poor management practices are ingrained in the State Electricity Boards (SEBs), especially in collections, performance monitoring, and operational control. Under-investment in distribution assets, inadequate renovation and maintenance, excess manpower, and poor fiscal discipline are common. As a result, they have entered a vicious cycle of under-investment, and are unable to attract capital to improve operational performance.

In the transmission and distribution (T&D) sector the problems have continued to increase with the net result of huge recurring sector losses. To put it in perspective, the T&D losses are estimated at over 50% in many Indian states amounting to about 2% of India's GDP. These commercial losses have historically doubled every 3 years.

The distribution losses in India's power sector occur on both sides of the energy meter – the utility side as well as the consumer side. On the utility side, the main causes for the energy losses are non-standard and antiquated distribution engineering practices, inefficient and overloaded distribution equipment, faulty and poor maintenance practices, a lack of investment in system upgrade, faulty meters, and poor commercial management and accounting practices. At the consumer end, the problems leading to avoidable energy and revenue losses are lack of meters, prevalence of flat rate tariffs over metered tariffs, non-payment, theft, illegal connections, a lack of consumer education in the rural sector, rampant political interference, and inefficient electricity use. The situation has become even more serious due to increasingly tight State budgetary resources that have constrained supply expansion and investment in upgrading T&D systems.

The rural sector in India is very different from the urban sector mainly due to differences in consumer profile, rural energy end-use practice, flat tariffs, a lack of meters and collections, a lack of institutional infrastructure, political interference (particularly in the farming sector, a large user of energy for pumping), and a lack of consumer education and participation in electricity distribution. Given all these differences, rural electrification suffers from two syndromes: a constant need for subsidy, and a lack of interest by the private sector due to inherent investment risks.

The electricity load in the rural sector is a major cause of the electric power sector's financial problems. The dimensions of the rural supply problem are poorly quantified, a factor further complicating the design of solutions. Part of the quantification problem is attributable to the SEBs' use of rural electricity consumption as a convenient hiding place for both technical losses occurring elsewhere in their systems and a significant portion of the electricity theft by non-rural consumers. Such misallocation of electricity losses is made convenient by the widespread use of flat rates for rural consumers and, mentioned earlier, lack of adequate metering both for rural consumers and the rural electricity distribution networks.

Huge losses have made the SEBs financially insolvent with huge liabilities to the Central government. In summary, the following facts provide the context of the seriousness of electricity distribution problems throughout India:

- The State Electricity Boards (SEBs) and distribution companies (Discoms) are responsible for distributing 97% of the electricity in the country. The 40-50% distribution losses are simply way too excessive.
- The SEBs generally experience poor morale and capacity of thousands of technicians and workers.
- A number of technical and system problems plague the performance of the SEBs. There are widespread frequency fluctuations which cause tripping in the system as well as damage to the end-user equipment.
- India has a low high-voltage to low-voltage ratio, about 1:3, compared to a ratio of 1:1 in most other countries. The technical losses tend to be much higher in the low-voltage segment. Moreover, theft and pilferage through tapping directly into the feeders is much easier in that segment.
- The sub-transmission and distribution system is substandard. The load management is poor or non-existent. The demand is not regulated through means of time-of-day metering and pricing, causing under-frequency problems.
- The SEBs generally do not conform to grid codes/practices, often overdrawing and causing grid failures. There are no standards that have to be adhered to, only recommended guidelines. To make matters worse, there is no organization with the authority to supervise and penalize.
- The load dispatch process in most states is not automated. This lack of computerization leads to inefficient real-time data collection, control, and monitoring. The net result is sub-optimal planning and wasteful use of electricity. The low level of use of information technology extends further to meter reading, invoicing and collections. This results in inaccurate billing and high receivables.

- A total of 64% of the electricity sold to the domestic and agricultural customers generated 38% of the revenues, whereas the remaining 36% of the electricity sold to the industrial and commercial consumers and railways generated 62% of the total revenues.
- Within the domestic and agricultural sector, the total supply cost was Rs. 347 billion. Un-metered supply and theft were estimated at Rs. 259 billion; the gross subsidy was Rs. 251 billion and the overall distribution efficiency was approximately 34%.
- Productivity at the SEBs is approximately 27%. This low level of productivity is a direct result of a number of factors including poor organizational practices, over staffing, inefficient utilization of manpower, and a virtual absence of human resources development and human resources management programs.
- The poor financial condition of the SEBs has not only resulted in a poor electricity sector but has also begun to threaten the financial conditions of various states.
- In most of the SEBs, there is a virtual absence of any serious customer relations management program. As a result, thousands of customer complaints largely go ignored resulting in very poor customer confidence. Furthermore, the poor quality and reliability of power supply adds to the low level of customer satisfaction.
- There are no mechanisms through which consumers can participate in any of the planning and management functions of the SEBs. For rural customers, the problem is even worse as they are far removed from the overall chain of electricity supply and distribution.
- With few exceptions the issue of sector governance at the SEB level continues to be a major challenge. The monopolistic nature of the SEBs since the 1950s had resulted in (i) a lack of transparency and accountability, (ii) a shift of costs of social welfare from the rate-payer to the tax-payer, (iii) a lack of relationship between tariff and collections to the cost of supply, (iv) and an overall lack of investment needed for even the basic needs of system upgrading and maintenance.
- The state distribution utilities face even more formidable challenges in serving rural customers. Rural electricity distribution networks are often implemented to meet political and social objectives rather than on the basis of sound economic principles and least cost planning. As a result, low-voltage lines carry huge loads over long distances resulting in very high energy losses and are easy targets for power theft and illegal connections. In addition, huge subsidies result in very low cost recovery.
- Uncontrolled use of oversized water pumps to maximize water pumping has not only resulted in inefficient use of water but also excessive use of electricity. All of this is further compounded by the absence of any effective programs to influence consumer behavior and develop commercial discipline.

An analysis prepared by McKinsey & Company with the Confederation of Indian Industry (CII) suggests that if the productivity of the Indian power sector is brought up to its demonstrated potential, the sector can be restored to financial health without removing current subsidies or increasing prices. The report specifically targets T&D, where the opportunities for improving efficiency and improving productivity are significant. In the case of metering, the report estimates that the one-time cost of installing meters at all un-metered customer locations in India would be approximately Rs. 30 billion ($600 million).

This cost is only a fraction of the cost of power theft, approximately Rs. 120-150 billion each year ($ 2.4 billion-3.0 billion).

2. Key Issues

Mobilizing private sector investments in new generating capacity was one of the key objectives of the GoI during the early stages of the country's power sector program in 1993. For reasons described in the previous section, this reform program did not succeed. As a result, only 5% of proposed power plants capacity reached financial closure. In early 2000, the GoI shifted its reform strategy to focus on financially strengthening its state utilities (SEBs), which are the customers of any potential private investors. During the late 1990s, a few States began to initiate power sector reforms, predominantly as a response by the states' political leadership to consumer pressure for the need to improve quality and reliability, and to reduce the cost of service of the power supply.

Under the Accelerated Power Development Program (APDP), the GoI disbursed Rs. 1,000 crores during the fiscal year 2000-2001 to various states, based on a demonstration by the states of achievement of specific reforms included under the APDP scheme. All of these funds were utilized for the upgrading of various distribution circles. The government plans to continue this reform process through the year 2012 with additional annual budget inputs. The program is being managed by the MoP in coordination with the National Thermal Power Corporation (NTPC) and the Power Grid Corporation of India (PGCI). A key component of the program is an incentive program to promote revenue increases by the utilities for actual cash loss reduction through matching grants.

The key reform measures being considered as part of the Accelerated Power Development and Reform Program (APDRP, the successor of APDP) include the following:

- Establishment of operational State Electricity Regulatory Commissions (SERCs)
- Specific steps towards tariff rationalization through proposals to the SERCs for setting up tariffs that reflect cost recovery
- Establishment of separate profit centers through restructuring of generation, transmission, and distribution and introduction of commercial operating procedures to make the system accountable and profitable
- Specific system improvements designed to improve customer service through the provision of reliable high quality electricity
- New initiatives aimed at improving the efficiency of both urban and rural electrification and disaggregating of rural electricity delivery through more efficient models such as franchises, cooperatives, user associations, NGOs, etc.
- Introduction of modern and efficient metering, billing, and collection systems for all distribution circles with the ultimate objective to achieve 100 percent metering
- Promotion of demand side management and end use efficiency including comprehensive consumer education

In addition to the reform measures, the capacity building focus of the program includes specific interventions to strengthen the capacity of the SEBs and Discoms in managing a

host of sector activities aimed at overall efficiency improvement and revenue collection enhancement. Specifically, some of the activities being contemplated under the APDRP include the following:

- Improvement in the data collection and analysis capacity of the SEBs and Discoms up to the 11 kV feeder level
- Approaches to commercial operation, specifically cost accounting and improvement in revenue collections through metering, billing, and collections
- Energy accounting, energy auditing, and technical loss assessment introduction
- System planning, demand forecast, network expansion planning, trouble call management, and centralized power supply monitoring and control system
- Project design, project management, and investment decision making
- Introduction of adequate management information systems and GIS based mapping systems

The APDRP encompasses all key components of the power sector reform process and is a significant step undertaken by the GoI to leverage reforms at the state levels where the losses are the maximum and the opportunities for significant efficiency gains are the highest.

In 2002 USAID/India Mission started a new strategy for the period of 2003-2007 aimed at helping India accelerate and complete its developmental agenda of poverty alleviation. New activity in Distribution Reforms (DR) intended to provide the means for addressing the technical, commercial and attendant social issues through the design and execution of pilot projects that would test and validate several options. USAID planned to strategically apply targeted amounts of investment and technical assistance to coordinate and leverage the many ongoing activities related to distribution reform, utility demand side management and rural power distribution. This would compliment the critical reform activities being undertaken by the GoI through the APDRP program, by the multilateral development banks (such as the ASTAE led AIJ-Agricultural DSM Project in Andhra Pradesh), and bilateral organizations such as DfID. The new DR approach was intended also to link ongoing USAID/India activities such as Energy Conservation Commercialization Project (ECO), Greenhouse Gas Pollution Prevention Program (GEP), and the WENEXA Project.

The new USAID activity was supposed to be enabled by the active participation of lead non-banking financial institutions such as Infrastructure Development Finance Corporation (IDFC) and Infrastructure Leasing and Financial Services, Ltd. (IL&FS) during the program implementation phase. It was also supposed to coordinate with smaller financial institutions such as SREI and others to facilitate links with Non-Governmental Organizations (NGOs) and local communities.

The overall programmatic goal was to demonstrate commercially viable electricity distribution systems[2] that provide reliable power of sufficient quality to consumers and to

[2] Establishing this type of system within several distribution circles will entail multiple activities. Examples include high-voltage system engineering improvements, enhancing metering, billing, and collections functions; decentralizing energy generation through distributed generation at the tail end of the grid, reducing

establish a commercial framework and a replicable methodology adopted by Indian and international financing institutions for providing non-recourse financing for DR projects, activities and programs.

The objectives of the USAID DR program at the time were to:

- Establish the framework, institutional capacity and project development functions
- Enable implementation of several full-scale commercially replicable DR initiatives in key reform states in India

The following were the expected accomplishments:

- Credible support to the Indian power sector distribution reforms aimed at addressing state fiscal deficits
- Capacity building of Indian utility staff and local APDRP Contractors in the planning and design of efficient distribution systems
- Design of non-recourse financing activity in an Indian NBFI to support preparation, planning, financing, construction, commissioning and monitoring and evaluation in select distribution circles
- Evaluation and market assessment for distribution engineering hardware, software and commercial systems, and
- Advancing community participatory approaches through the design of rural distribution cooperatives

3. CORE International Task Order Assignments

During 2002 the USAID Mission in India was preparing a project for the 2003-07 time period aimed at helping India accelerate its developmental agenda of poverty alleviation. The USAID Mission at that time was working in support of power distribution reforms in order to help address the above noted issues. In order to better understand the various technical, commercial, and social issues impacting the system, the Mission initiated the design of a Distribution Reform (DR) Project as the means for addressing the technical, commercial, and attendant social issues affecting the sector through the execution and testing of a number of pilot reform projects. In support of this effort, USAID requested that CORE conduct a detailed assessment of the distribution problem and highlight opportunities for reform. CORE evaluated a number of State Electricity Boards (SEBs) and privatized distribution utilities and outlined technical issues indigenous to India's power distribution systems. CORE's work also highlighted economic, social, and political factors that need to be addressed as part of reform. This analysis provided USAID with a more informed basis for developing its interventions and defining activities to support the government's distribution reform initiatives. USAID utilized CORE's report in drawing up

pressure on the grid through demand-side management to minimize equipment failure, improving institutional support through commercial energy market establishment and attracting private sector investment, linking local communities in partnership with utility companies, and facilitating closer ties among government, private sector, and consumers. These changes will also serve to reduce greenhouse gases through improvements in energy efficiency.

the objectives of its future assistance program in India. This led to the design of the Distribution Reforms Upgrades and Management (DRUM) program. The program was largely based on recommendations contained in CORE's assessment report. The DRUM is being launched with the purpose of demonstrating best commercial and technological practices for improving the quality and reliability of "last mile" power distribution in selected urban and rural Indian distribution circles.

A special feature of the activities being contemplated by USAID was its focus on enhancing customer relations and overall utility efficiency improvement in both the urban and rural sectors. In the case of rural pilot projects, USAID planned to include the role of village level communities, co-operatives, and private entrepreneurs in managing the business of rural power distribution.

4. Key Program Highlights and Results

The DRUM Project is being launched with the purpose to demonstrate best commercial and technological practices that improve the quality and reliability of "last mile" power distribution in selected urban and rural distribution circles in the country. The DRUM project has four main program components:

- Component 1: National Strategy and Alternative Financing
- Component 2: State Planning and Design
- Component 3: Distribution Reform Pilot Projects
- Component 4: Water-Energy Nexus Activity (WENEXA) (not discussed in this report)

The following are the highlights of CORE's work in support of the USAID DRUM Project design effort:

Component 1: National Strategy and Alternative Financing

At the national level, DRUM will support distribution level reforms through the following two initiatives:

1) Support for Distribution Reform & Alternative Financing (This component will be executed by Rural Utilities Services (RUS) through a Participating Agency Services Agreement (PASA) with the U.S. Department of Agriculture-Foreign Agriculture Services)

2) Distribution Business Management and Reform Training

As a part of the national strategy, it is proposed to provide training to 20,000-25,000 distribution utility engineers, managers, personnel, policy makers and regulatory commissions of various states. The training activity would be regionally spread and is expected to cover most of the Indian states. The proposed training would be delivered through a number of geographically dispersed Indian institutions engaged in power sector and distribution reform activities. The Ministry of Power has provided a list of select Indian

institutions initially nominated for delivery of distribution training. Based on experience and review of needs, more institutions can subsequently be included in the list of Indian institutions mandated to deliver distribution business management, reform and regulation training. It is envisaged that each of the institutions would be able to deliver training in technical, managerial, and business as well as other supportive functions. However, it is possible that some of the training institutions may focus on an area of their key competence.

Component 2: State Planning and Design

At the state level, DRUM will support the following initiatives:

1) Enhancing commercial orientation and consumer friendliness of electric utilities and other stakeholders
2) Support for implementation provisions of Electricity Act 2003 as consistent with the program objectives
3) Providing training and capacity building to advance distribution reforms including conducting training needs analysis
4) Implementation support for regulatory and legal frameworks for reducing electrical theft
5) Commercial and financial risk management
6) Technological interventions for theft control including mapping of distribution networks in selected states, in part to identify high-loss points in power delivery systems, prepaid meters, etc.
7) Disseminating engineering standards for equipments, systems and practices to ensure better technical performance and safety standards
8) Developing capacity of electric utilities to deal with disasters
9) Using IT to enhance efficiency and performance of distribution business
10) Sharing "lessons learned" from distribution demonstration projects to facilitate replications of successful interventions

Component 3: Distribution Reform Pilot Projects

The centerpiece of DRUM will be demonstration pilot projects in rural and urban areas that demonstrate models of excellence in distribution through technology upgrade, capacity building, improving technical efficiency, cost recovery and customer functions in local power distribution units. The pilot projects will demonstrate best technological, institutional, and commercial practices for wider replication. For localized demonstration projects, illustrative activities will include:

1) Improving commercial functions (metering, billing and collection systems) to build revenues, cut commercial losses and improve customer service and friendliness
2) Defining "model distribution system" in Indian context
3) Completing rigorous cost benefit analyses of proposed engineering and equipment upgrades as part of improved planning processes
4) Procuring and installing infrastructure upgrades and retrofits (such as high voltage distribution systems, efficient transformers, information technology tools, etc.) to improve the quality and reliability of power delivery and minimize losses

5) Training in efficient distribution system management and operation
6) Exploring and implementing alternative models for management of distribution business and promoting interaction between distribution units and their customers via village electricity committees, franchises, energy services companies, consumer call centers, and NGOs to manage "last mile" connections to new customers and improve customer relations
7) Investing in and encouraging end-use energy efficiency technologies such as more efficient agricultural water pumps, or better information on peak use periods

The distribution circles will serve as models of excellence and permit the showcasing of the high quality and reliability of power delivery and customer service through the application of efficient technologies, systems, business values and practices. A special feature of the project will be its focus on enhancing customer relations and the role of village level communities, co-operatives, and private entrepreneurs in managing the business of rural power distribution. Further, options such as distributed generation will be investigated for their cost-effectiveness and reliability of supply including other grid-side benefits. In addition, efforts will be linked to co-benefits in terms of air quality control and greenhouse gas mitigation.

5. Complete List of Activities

This Task Order sub activity involved the analysis of the current on-the-ground situation in India in respect to distribution reform issues on both sides of the meter-consumer side and utility/feeder side. It involved a field mission, which looked at these issues in the urban setting and the rural setting. The Electricity Distribution Reform Review and Assessment Report completed by CORE International (two volumes, Volume I: Main Report and Volume II: Annexes) provides an in-depth review of the magnitude and seriousness of the electricity distribution problem in India and documents current and planned reform initiatives. The Report also provides sample analyses to illustrate the differences between urban and rural distribution and the need for very different approaches for electricity distribution reform and efficiency improvements for the two sectors.

The following system improvements that would result in reduced technical losses and enable commercial losses to be controlled were reviewed for potential application in distribution circles in urban and rural areas:

- Conversion of low-voltage lines to high-voltage lines
- Reconductoring of high-voltage and low-voltage lines
- Replacement of bare conductor low-voltage lines by insulated conductor lines
- Replacement of large 3 phase distribution transformers by smaller energy efficient 3 phase or single phase transformers
- Single-phase distribution in congested areas, and meters at customer premises

CORE's analysis concluded that rural distribution projects are very different from urban projects and may require a substantially different approach for distribution reform. The differences in urban and rural distribution reform were highlighted by the following results:

1) While investment per energy input is in the range of 0.7 -1.8 Rs/ kWh per year for urban area projects, it is in the range of 3.4-11.1 Rs/ kWh per year for rural area projects, i.e. roughly about 5 times more.
2) Similarly, while investment per unit of energy savings varies between 4.8-14.7 Rs/ kWh per year for urban area projects, it varies between 7.3-37.8 Rs/ kWh per year saved for rural area projects, i.e. roughly about 2 times more.
3) Whereas the simple payback period varies between 1.5-6.2 years for urban area projects, it varies between 3.1-24.8 years for rural area projects.
4) Furthermore, the analysis concludes that the overall range of variation of these parameters for rural area projects is much more than for urban area projects. The range for investment per unit of energy input and investment per unit of energy savings is about 3-5 times. The range for payback period for rural projects is about 8 times more than that for urban projects.

CORE further concluded that for rural area projects, the lowest payback period is expected to be about 3 years under close to ideal circumstances. For most of the cases considered, the payback period is quite high and would be unacceptable. Only projects with investment per unit of energy input less than around 5 Rs/kWh per year or investment per unit of energy savings less than around 15 Rs/kWh per year would result in payback period being less than 6-7 years, which may be considered reasonable.

The USAID/CORE report led to the project design for a new bilateral USAID program for DRUM (described in the previous chapter). The results from this work are anticipated to result in a number of accomplishments, the most notable of which are mentioned below:

- Increased utilization of (APDRP) funds and leverage of USAID investments towards distribution circle modernization in selected reform states
- Reduction in State fiscal deficit as a result of reduced subsidies to cover (SEB) operating losses
- Creation of alternative financing windows in Indian (DFIs) (e. g. PFC, IDFC), and other institutions for urban and rural distribution projects in order to provide long-term debt and/or credit enhancement guarantees
- Passage of anti-theft legislation in the State parliaments
- Introduction of accounting and management practices and fiscal discipline and best practices for commercial operations of SEBs and Discoms
- More effective social outreach and stakeholder participation resulting in educated customers and, thus improved collections
- More self sustained systems through implementing successful rural electrification models such as consumer cooperatives, producer cooperatives, franchises, and NGOs
- Gains in energy efficiency as well as water use efficiency through extensive consumer education and social outreach

On an aggregate basis, the project is expected to result in benefits both at the individual pilot project level and in accelerating the distribution reform process in India widely through the potential replication of the pilot projects.

6. Follow-up Activities and Results Review

Several months following the completion and release of CORE's Electricity Distribution Reform Review and Assessment Report, a new Electricity Act of 2003 was adopted. It gives a serious boost to the overall reform efforts and augments programs initiated by the GoI and USAID. The Electricity Act contains several valuable provisions that very often are not included in similar acts in other countries. Among others, it gives guidance in the following areas:

- Professional conflict of interest
- Open regulatory meetings
- License termination
- Open access to transmission networks
- Customer protection
- Grievance process and dispute resolution
- Elimination of theft of service
- Penalties

The area that has a direct bearing on the potential success of any new intervention by USAID is the current status of the regulatory regime in India. The Electricity Regulatory Commissions (SERCs) established in the Reform States are relatively new. To date, their main activities have been related to tariff setting and the issuance of licenses. Review of the Electricity Acts for the Reform States indicates that the same regulations and performance and safety standards apply to all electricity supply licensees. The license conditions for a Discom serving a major metropolitan region with diverse consumer groups are the same as those that apply to a rural electricity supply co-operative serving rural residential and agriculture consumers. From a regulatory standpoint, given the significant differences between urban and rural electricity distribution requirements, load densities, and the growing consideration to applying different management modalities to urban and rural distribution, this may not represent the best approach for addressing the basic rural electricity distribution problem. There is precedence for successful consideration of separate regulations for rural distribution networks (Bangladesh, USA). It should be noted that while the Reform State Electricity Acts do not specifically provide for separate types of licenses for different types of electricity distributors they do not prohibit them.

Therefore, a component of any new USAID activity should be devoted to exploring with the State Electricity Regulatory Commissions the potential benefits of crafting different types of licenses and regulations for fundamentally different types of electricity distribution entities based on experience from the pilot projects. The main beneficiary of such regulation would be rural electricity distribution entities because of potential start-up and operating cost savings. The most stringent license provisions for obvious reasons should always be applied to large distribution entities serving urban loads. On the other hand, urban

Discoms may be benefited if the urban pilot distribution projects can be used to promote incentive based tariffs or the division of urban load in order to differentiate customers by the reliability of electricity supply.

The SERCs, in most of the states, need considerable capacity building in regulatory affairs that will foster and accelerate the reform process. Potential areas for regulatory improvements that might result from the pilot projects under a new USAID activity may include the following:

- Improved targeting and design of subsidies, one of the issues that is addressed by the Electricity Act of 2003 in a rather weak way
- Proposals for design and implementation of incentive based regulation
- Proposals to provide incentives for investment in rural electricity supply and in upgrading/modernizing urban electricity supply
- Quantification of the importance of transmission grid open access and banking to electricity distribution entities
- Proposals for design and implementation of tariffs that differentiate customers by the reliability of electricity supply
- Proposal for regulatory provisions on load management
- Regulatory provisions for promoting DSM
- Proposal to reasonably reduce construction and performance standards for rural electricity distribution to reduce costs
- Development of simpler and less costly financial reporting requirements for rural electricity distribution entities
- Resolution of regulatory conflicts between multiple regulatory bodies having jurisdiction over electricity distribution, and streamlining of regulation

While the Electricity Act of 2003 is a great document, it is equally critical to have up-to-date and complete electricity acts adopted for all states. Consequently, the SERCs have to keep their rules and regulations in compliance with those acts. USAID, in its DRUM supported training and technical assistance component that targets development and capacity building of regulatory personnel, should place emphasis on importance of development and implementation of such rules and regulations. At a minimum, a well functioning SERC should have in place and available for public inspection the following documents:

Regarding internal operation of the Commission:

Code of professional and ethical conduct: Definition of do's and don'ts of the employees of the Commission, including the Chairman and the Members. The main provisions should include the prohibition of investment in energy sector enterprises, of concurrent employment while working at the Commission and of nepotism inside and outside of the Commission.

Procedures for conducting open meetings and collegiate decision making: The basic rules for conducting open meetings and interacting with the public would define proper

procedures to facilitate their smooth and efficient conduct. An emphasis should be placed on equal status and equal voting rights of each Member in decisions of the Commission and on increase of the confidence of the parties involved in the regulatory decision making process.

Regarding the relations between the Commission and the subjects of regulation:

Procedures for handling public and confidential information: The ability to preserve the confidentiality of various documents is a key function of the Commission that has to be trusted with such information by the regulated entities and investors.

Procedures for public participation: The essence of an open and unbiased regulatory process is the participation of all parties involved in the operation of the energy sector, including the public. These procedures should define the principles of equal participation as well as encourage the public to become a part of the regulatory environment.

Rules of ex-parte communication: These rules should define the form of communication between the parties in the regulatory proceedings that are inappropriate and thus discouraged.

Procedures for interacting with the press and mass media: These procedures should be based on the principles of open and current communication about regulatory issues.

Procedures for handling complaints and resolving disputes: The customers and the energy enterprises have the right to seek Commission's assistance in resolving complaints and disputes between each other should other ways of dispute resolution fail. The procedures should outline all steps involved in information and evidence collection, cross-examination of witnesses and reaching a resolution by the Commission.

Procedures for filing materials and responding to commission's request for information: The Commission should have the authority to request and receive information regarding the operation of the energy enterprises. The procedures should define the format and timing of providing information to the Commission on a regular basis as well as when specifically requested.

Procedures for tariff change: Tariff change is an inevitable part of the regulatory process. The procedures should outline the application for a tariff change, the documents that need to be filed by the applicant, the time needed by the Commission to consider the application and issue the decision. These procedures may become an integral part of the tariff policy adopted by the SERCs.

Procedures for enforcing commission's decisions, rules and regulations: All rules and regulations issued by the Commission ought to be followed by all energy enterprises regardless of the form of ownership. The procedures should outline the steps that the Commission may take should the regulated entity decide not to follow the Commission's decisions.

Procedures for enforcing the license terms: Each licensee is obligated to follow all of the terms of its license issued by the Commission. The procedures should outline the steps that the Commission may take to bring the licensee in compliance with the license terms and conditions.

Regarding the relationship between the customers and the service providers:

Rules for disconnection of service due to non-payment for services: These procedures should outline the steps that the service provider may take to disconnect the service if the customer has not paid for the service and the service provider has exhausted all options of allowing the customer to pay the debt. The emphasis should be placed on the proper notification procedures as well as alternative options of paying the debt.

Rules for interruption of service due to shortage of energy resources: There may be situations when the service provider has to interrupt the service due to limitations on the generation side. The procedures should define the situations during which the service provider may interrupt the service and the remedies that it has to undertake to prevent future occurrences.

Standards for customer service, including typical service contracts, meter reading and testing procedures, and format and issuance of the utility bills: A uniform, model service contract containing all essential terms defining quality of service has to be developed. It should contain all rights and obligations of both the service provider and the user. In addition, it should specify the terms of installation, use, and service of the meter, including testing procedures at the request of the user. The procedures should also define the timing and frequency of billing for services and format as well as the minimum of the information that has to be included on the utility bill.

It takes time and experience to develop well functioning regulatory bodies. Although the Electricity Act of 2003 mandates proper operation of SERCs, in the absence of its enforcement or in the absence of a consumer watchdog organization monitoring the progress, especially in predominantly rural states, the process may be unnecessarily delayed or even fall off the screen. Therefore, the mere presence of the Electricity Act of 2003 is not sufficient; active assistance from the USAID is necessary to introduce and implement the best national and international practices.

ANNEXES

ANNEX I: SUMMARY TABLES ON PARTICIPATION IN TRAINING ACTIVITIES

Activities	Total participants	Number of women	Percent women
SAPP	84	15	18%
Rural Electrification	189	19	10%
GVEP	61	5	8%
Albania	24	15	63%
Total	358	54	15%

SAPP Activities

Female participation	12%

ORGANIZATION TYPES

	No. of Organizations	Government Agencies	State Power Companies	Private Power Companies	Other State Companies	Regional Groups	Donors
Angola	2	-	2	-	-	-	-
Botswana	3	-	3	-	-	-	-
D.R. Congo	1	-	1	-	-	-	-
Lesotho	1	-	1	-	-	-	-
Malawi	2	1	1	-	-	-	-
Mozambique	5	-	3	2	-	-	-
Namibia	3	1	2	-	-	-	-
South Africa	3	-	3	-	-	-	-
Swaziland	2	-	2	-	-	-	-
Zambia	17	6	4	1	5	-	1
Zimbabwe	4	-	3	-	-	1	-
TOTAL	43	8	25	3	5	1	1

RURAL ELECTRIFICATION Activities

Female participation	10%

ORGANIZATION TYPES

	No. of Organizations	Government Agencies	State Power Companies	Private Power Companies	Other State Companies	Regional Groups	Embassies / Donors	Consulting & Private	Academic	Domestic & NGOs
Angola	1	1	-	-	-	-	-	-	-	-
Botswana	4	2	1	1	-	-	-	-	-	-
D.R. Congo	2	-	1	1	-	-	-	-	-	-
Lesotho	23	8	2	1	-	-	2	3	4	3
Mozambique	6	1	2	-	-	-	3	-	-	-
Namibia	26	10	4	2	3	-	2	5	-	-
South Africa	5	1	2	-	-	-	-	2	-	-
Swaziland	1	-	1	-	-	-	-	-	-	-
Tanzania	1	-	1	-	-	-	-	-	-	-
Zambia	55	29	4	-	6	-	4	3	2	7
Zimbabwe	2	-	-	-	-	2	-	-	-	-
TOTAL	126	52	18	5	9	2	11	13	6	10

GVEP Activities

Female participation	8%

ORGANIZATION TYPES

	No. of Organizations	Government Agencies	Private Banks	Donors	Embassies	Consulting / Technical	Academic	Domestic & NGOs
Zambia	41	19	1	1	2	10	4	4
Sri Lanka	20	13	0	1	0	0	0	6
TOTAL	61	32	1	2	2	10	4	10

ALBANIA Activities

Female participation	63%

ORGANIZATION TYPES

	No. of Organizations	Government Agencies	State Power Companies	Consulting / Technical
TOTAL	6	4	1	1

ANNEX II: LIST OF ALL PARTICIPANTS IN THE VARIOUS TRAINING ACTIVITIES

SAPP EVENTS – LISTS OF PARTICIPANTS

Activity 1: Advanced Electricity Market – Southern Africa Power Pool – Durban, South Africa October 28, 2002 – November 1, 2002

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
Angola	1	Mr. António Ingles Pinto Transmission Manager	ENE Predio Geominas 6e 7 Andares P.O.Box 772 Lunanda, Angola	Ph#Office:+392096/392146 Fax: 392764
Botswana	2	Ms Jamila Kombe Assistant Corporate Planning Engineer	Botswana Power Corp. P.O.Box 48, Gaborone, Botswana	Ph#Office: +2673923411 Ph#Res: +26771416177 Fax: +2673900548 kombej@bpc.bw
Botswana	3	Mr. Spokes Mmadi Makobo Computer Application Engineer	Botswana Power Corp. P.O.Box 48, Gaborone, Botswana	Ph#Office: +2673923411 Fax: +2673900548
Lesotho	4	Mr. Nathaniel Maphathe Divisional Engineer Transmission	LEC Box 423 Maseru 100 Lesotho	Ph#Office:+266 312236 Ph#Res:+ 266 313344 Fax + 266 310544 maphathe@lec.co.ls
Malawi	5	Mr. Binnie Banda System Operations Manager	ESCOM P.O.Box 2047 Blantyre Malawi	Ph#Office: +2651675216 Ph#Res: +2651624160 Cell: +2659961067 bbanda@escommw.com
Mozambique	6	Mr. Ramiro Pereira Operations Manager	HCB P.O. Box 263, Sango	Ph#Office:+258(0)5282297 Ph#Res: +258(0)5282471 Fax: +258(0)5282194/364 Ramiro.sng@hcb.co.za
Mozambique	7	Mr. Carlos A. Yum Corporate Planning Enginner	Electricidade De Mocambique Av.25 de Setembro 12-18-1 andar, Caixa P.O.No. 938 Maputo – Macambique	Ph#Office: 42 9626 Fax: 429552 cyum@edmdipla.co.mz
Mozambique	8	Mr. Sandro Ah chiang Corporate Planning Engineer	Electricidade De Mocambique	Ph#Office: 323144 Fax: 431029
Mozambique	9	Mr. Juliao Pondeca Deputy Executive Director	HCB Avenida 25 de Setembro,420-6,andar Maputo Macambique	Ph#O: + 258 1 350719/20 Fax: + 258 1 314148 hcbmpt@teledata.mz

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
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South Africa	12	Ms. Kuki Ndlela Trading Manager	ESCOM MWP Maxwell Drive Sunninghill, SA	Ph#Office:+27118002248 Ph#Res+27825200928 Fax:+27118005997 kuki.ndlela@escom.co.za
Swaziland	13	Mr. Makhosonke Shongwe Treasury Manager	Swaziland Elecrticity Board P.O. 258 Mbabane, Swaziland	Ph#Office + 268 4042521 Fax: + 268 404 7870
Swaziland	14	Mr. Pius Gumbi System Operations & Control Manager	Swaziland Elecrticity Board P.O. 258 Mbabane Swaziland	Ph#Office + 268 4042521 Ph#Res + 268 6020432 Fax: + 268 404 7870 pngumbi@seb.co.sz
Zambia	15	Mr. Mathew M. Lindunda Technical Services Manager	Kariba North Bank Co. Ltd. Kariba house 32,Cha Cha Road P.O.Box 50194 Lusaka – Zambia	Ph#Office:+260 1 227941-2 Direct : +260 1 234337 Ph#Res:+260 1 231997 Fax: +260 1 225134 lindundam@zamnet.zm
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Zambia	17	Mr. Christopher Nthala Transmission Manager	ZESCO	
Zimbabwe	18	Dr. Lawrence Musaba Co-ordination Centre Manager	Southern African Power Pool PO Box GT897 Harare, ZIMBABWE	Ph#Office:+2634 250560/2/ Fax+263-4-250565/6

Activity 2: Advanced Electricity Market – Southern Africa Power Pool – Durban, South Africa
November 4 – November 8, 2002

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
Angola	1	Mr. João Barradas	ENE	
Botswana	2	Mr. Thema Molubi	BPC	
Botswana	3	Ms. Ontibile Kebonyemotse	BPC	Ph#Office: +267-3-913411 Ph#Res: +267-3-908628 Fax: + 267-3-900548
D.R. Congo	4	Mr. Mbala Musanda Transmission Manager	SNEL	
D.R. Congo	5	Mr. Nkumbi Nkiet Dricteur Charge de la Coordination des Activites Commerciales (CAC)	SNEL 2381, Avenue de la Justice Kinshasa – Gombe B.P.500 Kinshasa I, RDC	Cell # : +243-9980187 Fax: +243-12-33735 tnkumbi@yahoo.fr
D.R. Congo	6	Mr. Lokala J'Ifaso Director of Generation & Transmission	SNEL	
Mozambique	7	Mr. Mario Houana Corporate Planning Engineer	EDM	
Namibia	8	Mr. Bertholdt Mbuere. Transmission Manager	NAMPOWER	Ph#O:+264-61-2052227 Ph#Res: +264-81-1247813 Fax: +264-61-2052334 mbuere@nampower.co.na
Namibia	9	Mr. Cosmos Auckmeb Senior Load Controller	NAMPOWER	
Namibia	10	Mr. Wouter Behr Assist. System Controller	NAMPOWER	Ph#O:+264-61-2052345
Swaziland	11	Mr. Makhosonke Shongwe	SEB	
Zambia	12	Mr. Alex Mabuju Matale Senior Manager Distribution Development	ZESCO Stand 6949 Great East Road P.O Box 33304, Lusaka, Zambia	Ph#O:+ 260-1-228084 -97 Fax: + 260-1-226351 Zesco@Zesco.co.zm
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Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
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Zambia	15	Mr. Linus Chanda Senior Operations Manager	KNBC	
Zimbabwe	16	Mr. Anjan Bose Senior Engineer	ZESA National Control Center Harare	Ph#Office: 263-4-773341-4 Ph#Res: + 263-4-308018 Fax: + 263-4-758412 anjan@zesa.co.zw
Zimbabwe	17	Mr. Paddy Claypole Energy Trading Manager	ZESA	Ph#Office:263-4-774508/42 Ph#Res: +63-4-496044 Fax: + 263-4-774545 office:paddy@zesa.co.zw
Zimbabwe	18	Mr. Marsden Sibanda Commercial Manager	ZPC	
Zimbabwe	19	Mr. William Balet Senior Advisor	SAPP CC	

Activity 3: Workshop on Developing SAPP through Advanced Electricity Trading
July 24 – 25, 2003 – Lusaka – Zambia

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
Malawi	1	Ms. Eunice H. Potani Deputy Director for Economic Services	National Electricty Council Sunny Side, Symth Road Box 3038 Blantyre- Malawi	Ph#O:+ 265 1 636541 / 540 Ph#Res + 265 1 620541 epotani@necomw.com
Namibia	2	Mr. Frank E. Hinda Financial Analyst	Electricity Control Board, Windhoek, 1, Aviation Road, MOM&E Building, P O Box 2923, Namibia	Ph#Office: +264 61 231666 Ph#Res: + 081 1217 3738 Fax: + 264 61 231993 fhinda@ecb.org.na
Zambia	3	Mr. Chanda Musonda Economic Analyst	ERB, Premium House, 8th Floor Nasser Road P.O.Box 37631 Lusaka, Zambia	Ph#Office : + 260 1 236002 Ph#Res: + 260 1 250809 Fax: + 260 1 236003 cmusondo@erb.org.zm

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
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Zambia	5	Mr. James Manda Inspector – Electricity	ERB, Premium House, 8th Floor Nasser Road, P.O.Box 37631, Lusaka, Zambia	Ph#Office: + 260 1 236002 Ph#Res:+ 260 97 887952 Fax: +260 1 236033 jmanda@erb.org.zm
Zambia	6	Mr. Joseph M. Kapika Inspector (Electricity)	ERB, Premium House, 8th Floor Nasser Road, P.O.Box 37631, Lusaka, Zambia	Ph#Office: + 260 1 236002 Fax: + 260 1 236003
Zambia	7	Mr. L. Shantebe Chiinda Manager REFA	ERB, Premium House, 8th Floor, Nasser Road P.O.Box 37631 Lusaka, Zambia	
Zambia	8	Mr. Mutumboi Mundia Financial Analyst	ERB, Premium House, 8th Floor Nasser Road P.O.Box 37631 Lusaka, Zambia	Ph#Office: +260 1 236002 Ph#Res: +260 1 235934 Fax: + 260 1 236003 mundia@erb.org.zm

Activity 4: Course on SAPP Advanced Power Trading
July 28-31, 2003 – Lusaka, Zambia

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Mozambique	3	Mr. Nhumaio CA Engineer	HCB Songo, Tete, Mazambique	Ph#Office: 258 052 82207 Ph#Res: 258 082 316266 Fax: 258 052 82194 claudino.nhumaio.sng@teledata.mz

Mozambique	4	Mr. Pedro Nguelume Economist	EDM AV : 25 September No: 1218	Ph#Office: 2581323 / 149 Ph#Res: 258 823 13718 Fax: 258 143 1029 nguelusp@yahoo.com
Mozambique	5	Mr. Sandro Ah Chiang Astt. Corporate Planning Engineer	EDM AV : 25 September No: 1218	Ph#Office: 323144 Ph#Res: 082795693 Fax: 431029 chiang@edmdipla.co.za
Mozambique	6	Mr. Suleimanne Mussa Combo Economist	HCB Mapvto. AV 25 Set	Ph#Office: 258135728 Fax: 258582111
Namibia	7	Mr. Marco Triebner Operational Analyst	Nampower Generation Namibia	Ph#Office: 26461 2052212 Fax: 264 61 2052372 marco.triebner@nampower.co.na
Namibia	8	Mr. Werrver Graupe Manager Trading	Nampower Generation Namibia	Ph#Office: 26461 2052331 Ph#Res: 26461 227572 Fax: 264 61 2052372
Namibia	9	Mr. Rinus Carstens Manager Generation	Nampower Generation Namibia	Ph#Office: 26461 2052331 Ph#Res: 26461 227572 Fax: 264 61 2052372
South Africa	10	Ms. Kuki Ndlela Senior Engineering Technician	ESKOM MWP Maxwell Drive, Sunninghill Johannesburg, South Africa	Ph#Office: 27118002248 Ph#Res: 27825200928 Fax: 27118005997 kuki.ndlela@eskom.co.za
South Africa	11	Ms. Tshepo Moeti Senior Business Analyst	ESKOM MWP Maxwell Drive, Sunninghill Johannesburg, South Africa	Ph#Office: 27118006046 Ph#Res: 27826440251 Fax: 27118002244 tshepo.moeti@eskom.co.za
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Zambia	13	Mr. Maurice Njobvu	ZESCO Box 33304 Lusaka, Zambia	Ph#Office: 260 1 222824 Ph#Res: 260 97 743579 Fax: 260 1 225470
Zimbabwe	14	Anjan Bose Senior Engineer	ZESA National Control Center Harare	Ph#Office: 263 4 773341 /4 Ph#Res: 263 4 308018 Fax: 263 4 758412 anhan@zesa.co.zw
Zimbabwe	15	Mrs. Ferida Matambo Senior Accountant	ZESA Head Office P O Box – 637 Harare	Ph#Office: 263 4 774508/ 25 Ph#Res: 263 4 498731 Fax: 263 4 756179 fmatambo@zesr.co.zw

Zimbabwe	16	Mr.Elisha Mutambudzi Finance Officer	SAPP CC 17th Floor Intermarket Life Centre CNR 2nd/ Jason Mayo Ave	Ph#Office: 250563/4 Ph#Res: 491255 Fax: 250565/6 elisha@sapp.com
Zimbabwe	17	Mr. Linus Chanda Operational Manger		
Zimbabwe	18	Ms. Moira Chisvo Finance Officer	SAPP CC 17th Floor Intermarket Life Centre CNR 2nd/ Jasan Mayo Ave	Ph#Office: 250563/4 Ph#Res: 023 233277 Fax: 250565/6 moira@sapp.co.za

Activity 5: Course on Issues in Realizing Wholesale Electric Power Competition Through Private Sector Ownership – Zambia
July 15-20, 2001

Country	No	Name & Designation	Organization, Address
Zambia	1	Mr. Brian K. Tembo	Zambia Privatization Agency
Zambia	2	Mrs. Langiwe H. Chandi	Department of Energy
Zambia	3	Mr. M. Lindunda	Kariba North Bank Company, Ltd.
Zambia	4	Mr. C. Mwenda	Kariba North Bank Company, Ltd.
Zambia	5	Mr. Steven Phiri	OPPPI
Zambia	6	Mr. Chris Kasanda	ZESCO Limited
Zambia	7	Mr. Chris Nthala	ZESCO Limited
Zambia	8	Mr. Likando Mukumbuta	U.S.A.I.D.
Zambia	9	Mr. R. Lwiindi	Copperbelt Energy Corporation
Zambia	10	Mr. H. Sindowe	Copperbelt Energy Corporation
Zambia	11	Mr. Hapenga M. Kabeta	Zambia Competition Commission
Zambia	12	Mr. Peter C. Munthali, Commissioner	Energy Regulation Board
Zambia	13	Col. Nkunga C. Mulenga, Commissioner	Energy Regulation Board
Zambia	14	Mr. Moses K. Zama, Executive Director	Energy Regulation Board
Zambia	15	Mr. Silvester H. Hibajene, Technical Director	Energy Regulation Board
Zambia	16	Mr. Andrew N. Kamanga, Manager – REFA	Energy Regulation Board
Zambia	17	Ms. Mwape Mondoloka, Legal Counsel	Energy Regulation Board
Zambia	18	Mr. L. Shantebe Chiinda, Economic Analyst (1)	Energy Regulation Board
Zambia	19	Mr. Mukanda, Economic Analyst (2)	Energy Regulation Board

Zambia	20	Ms. Mutumboi Mundia, Financial Analyst	Energy Regulation Board
Zambia	21	Mr. James Manda, Inspector – Electricity	Energy Regulation Board

RURAL ELECTRIFICATION EVENTS – LISTS OF PARTICIPANTS

Activity 1: Regional Conference on Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries
Windhoek, Namibia – April 15-16, 2004

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
Angola	1	Mr. Francisco Talino National Director of Energy	Ministry of Energy and Water Affairs Rua Rainha Ginga 210 1st Floor, P.O. Box 2229 Angola	Ph#Office: + 244 2 391839 Ph#Res: + 244 2 675 272 Cell : + 244 9 503983 Fax: + 244 2 393249
Angola	2	Mr. José Alves Salgueiro Senior Officer Planning Division	Ministry of Energy and Water Affairs 4de Fevereiro Ave – 105 P.O. Box 2229, Angola	Ph#Office: + 244 2 394 799 Cell: + 244 91 510633 Fax: + 244 91 33 4461
Botswana	3	Mr. Alban Motsepe Manager – Rural Division	Botswana Power Corporation, P.O. Box 48, Gaborone, Botswana	Ph#Office: + 267 3913591 Fax: + 267 3953300 motsepea@bpc.bw
Botswana	4	Mr. Duncan Kgame Marketing and Electrification Engineer	Botswana Power Corporation	Ph#Office: + 267 3607008 Fax: + 267 3607074 email :
Botswana	5	Mr. Thuso Cyril Matshameko Senior Energy Engineer	Department of Energy Ministry of Minerals, Energy and Water Resources Private Bag 00378 Gaborone, Botswana	Ph#Office: + 267 3914221 / 3640214 Fax: + 267 3914201 tmatshameko@gov.bw
D.R. Congo	6	Mr. Kabulo Ilunga Director of Engineering Services	Société Nationale d'Electricité (SNEL) N° 52 Av. Ranzav Kinshasa, D.R. Congo	Ph#Office: + 243 81 7005454 Fax: + 243 813 010382
Lesotho	7	Mrs. Palesa Sematlane Corporate Services Director	Lesotho Electricity Corp. PO Box 423 Maseru, Lesotho	Ph#Office: + 266 22 327 444 + 266 22 312 236
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Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
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Mozambique	10	Ms. Ingrid Dana Embassy secretary	Norwegian Embassy, Av. Julius Nyerere Maputo, Mozambique	Cell : + 25882 302772
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Mozambique	12	Mr. Pascoal Alberto Bacela National Director of Energy	Ministry of Mineral Resources and Energy AV 25 De Setembro, 1218- Maputo, Mozambique	Ph#Office: + 258 1 307 126 Cell : + 258 82 310 887 Fax: + 258 13 030 63 pbacela@tropical.co.mz
Namibia	13	Mr. Ferdinand Diener Strategic Executive Electricity	City of Windhoek P.O. Box 5011, Windhoek Namibia	Fax: + 264 61 290 2494
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Namibia	16	Mr. Fritz Jeske Director	BICON PO Box 2310 Windhoek, Namibia	Ph#Office: + 264 61 275 120 Fax: + 264 61 224863
Namibia	17	Mr. Gerhard Coeln General Manager – Energy	Municipality of Walvis Bay Private bag 5017 Walvis Bay, Namibia	Ph#Office: + 264 64 217600 Ph#Res: + 264 64 203840 Cell : + 264 81 1220804
Namibia	18	Mr. Gerrit Clarke Power Engineer	ECB Namibia	
Namibia	19	Mr. Leon Hanekom Chief Engineer Systems	City of Windhoek P.O. Box 5011, Windhoek Namibia	Ph#Office: + 264 61 2902300 Fax: + 264 61 290 2494

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
Namibia	20	Mr. P. Haripare Chairperson	CENORED Namibia	Ph#Office: + 064 302231 Ph#Res: + 0811 226752
Namibia	21	Prof, Prem Jain Chief Technical Advisor	UNDP/GEF/ Ministry of Mines and Energy Directorate of Energy Private Bag 13297, Windhoek, Namibia	Ph#Office: + 264 61 284 8160 Ph#Res: 264 61 258 639 Cell: + 264 81 294 8939 Fax: + 264 61 284 2000
Namibia	22	Mr. Rojas Manyane Engineer – Quality Control	ECB P.O. Box 2923 Windhoek	Ph#Office: + 264 374 308 Cell: + 264 81 289 7951
Namibia	23	Mr. Uli Von Seydlitz Managing Director	EMCON PO Box 1900 Windhoek, Namibia	Ph#Office: + 264 61 224 725 Fax: + 264 61 233207
South Africa	24	Mr. Chris F Bosch Managing Director	Rural Maintenance (Pty) Ltd 156 Kleine Str, Meuw Muckceneuk Pretoria, South Africa	Ph#Office: + 27 12 460 4990 Ph#Res: + 27 82 44 27432 Fax: + 27 12 460 6388
South Africa	25	Mr. E. C. Lambrecht Director	Rural Maintenance (Pty) Ltd 156 Kleine Str, Meuw Muckceneuk Pretoria, South Africa	Ph#Office: + 27 12 460 4990 Cell: + 27 82 900 9936 Fax: + 27 12 460 6388 emile@rmmsrural.com
South Africa	26	Mr. Gavin Watson Investment Officer	E+Co Africa South Africa	Ph#Office: + 270 12 998-8280 Fax: + 27 12 998-8401
South Africa	27	Mr. Isaac Sokopo Corporate Specialist Electrification & Regulation Distribution Division	ESKOM P.O. Box 3374, Rivonia Johannesburg – 2128 South Africa	Ph#Office: + 2711 800 3871 Ph#Res: + 2711 787 6690 Fax: + 2711 800 3937 Isaac.sokopo@eskom.co.za
South Africa	28	Mr. Mongezi Ntsokolo Managing Director Distribution Division	ESKOM Johannesburg South Africa	Ph#Office: + 2711 800 2094 Fax: + 2711 800 3597
Tanzania	29	Mr. Eugene Kazururu Rural Electrification Engineer	TANESCO P.O. Box 9024 Dar Es Salaam Tanzania	Ph#Office: + 255 22 2451133/ 39 Extn: 2413 Cell: + 255 741 462 575 Fax: + 255 22 245 1149

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
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Zambia	31	Prof. J. M. Mwenechanya	Energy Regulation Board P.O. Box 37631 Lusaka, Zambia	Ph#Office: + 260 1 236002 Ph#Res: + 260 1 260125 jorry@zamnet.zm
Zambia	32	Mr. Joseph Mwelwa Kapika Inspector Electricity	Energy Regulation Board P.O. Box 37631 Lusaka, Zambia	Ph#Office: + 260 1 23 6002 Ph#Res: + 260 1 22 4846 Cell : + 260 96 750 120 Fax: + 260 1236003
Zambia	33	Mr. Oscar Kalumiana Assistant Director	Department of Energy P.O. Box 51254, Lusaka, Zambia	Ph#Office: + 260 1 254491 Ph#Res: + 260 95 819453 Fax: + 260 1 252339
Zimbabwe	34	Mr. Alison Chikova System Studies Supervisor	SAPP Coordination Center P.O. Box GT 897 Graniteside Harare, Zimbabwe	Ph#Office: + 263 4 250563 Cell: + 263 91 239514 Fax: + 262 4 250565 / 6
Zimbabwe	35	Dr. Lawrence Musaba Director	SAPP Coordination Center P.O. Box GT 897 Harare, Zimbabwe	Ph#Office: + 263 4 230369 Ph#Res: + 263 4 495249 Cell: + 263 11 418637 Fax: + 263 4 250565
Speakers	36	Mr. B. Kanetsi Director	Department of Energy, Ministry of Energy and Natural Resources Maseru, Lesotho	Ph#Office: + 266 22 316 784 Fax: + 266 22 310 360
Speakers	37	Joseph S. Iita Permanent Secretary	Mines and Energy 1 Aviation Road Private Bag 13297 Windhoek, Namibia	

Activity 2: Workshop – Issues and Options for Rural Electrification in SAPP Member Countries April 7–9, 2003

Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
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Country	No	Name & Designation	Organization, Address	Ph#Office:/ Ph#Res:/Fax: email office:
Botswana	2	Mr. D. Kgame	BPC Bostswana	Ph#Office:+2673607008 Fax: +2673953300 kgame@bpc.bw
Botswana	3	Mr. Thuso C. Matshameko Energy Engineer	Energy Affairs Division, Botswana	Ph#Office:+26739114221 Fax: +2673914201 tmatshameko@gov.bw
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Activity 3: Workshop – Issues and Options for Rural Electrification Planning in Lesotho
April 10–12, 2003

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Activity 4: Workshop on Enhancing the Environment for IPPs in the Reforming Namibia Power Sector
USAID Energy and Environment Training Program
Windhoek, Namibia – April 13-14, 2004

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Activity 5: Workshop & Roundtable on Issues and Options for Rural Electrification in Zambia
Lusaka – Zambia: May 10, 2002

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Activity 6: Workshop on Enhancing Energy Sector Policy and Reform Process in Zambia
March 22 – 23, 2004

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Zambia	4	Mr. D. M. Mauzu Private Consultant	

Zambia	5	Mr. David H. Mulemwa Deputy Permanent Secretary	Central Province
Zambia	6	Mr. E. C. Katai, Director	Department of Planning & Information
Zambia	7	Prof. Francis D. Yamba, Director	Centre for Energy Environment & Engineering
Zambia	8	Mr. Gary G. Loop, Chief Executive	Copperbelt Energy Corporation
Zambia	9	Mr. Geoffrey Musonda Senior Energy Officer	Department of Energy
Zambia	10	Mr. Henson Sindowe Executive Director – Business Development	Copperbelt Energy Corporation
Zambia	11	Prof. J. M. Mwenechanya, Chairman	Energy Regulation Board
Zambia	12	Mr. John K. Wright, Manager	Office Promoting Private Power Investments
Zambia	13	Mr. K. E. Kachansa, General Manager	Lunsemfya Hyrdo Power Company
Zambia	14	Mr. Kevin J. Chapman, Director	Copperbelt Energy Corporation
Zambia	15	Mr. M. Maimbo, Deputy Director	Zambia Information Services
Zambia	16	Mr. Oscar Kalumiana, Assistant Director	Department of Energy
Zambia	17	Mr. Pedro De-Figreiredo	Swedish Embassy
Zambia	18	Mr. Peter. Chola, Assistant Director	Department of Water Affairs
Zambia	19	Mr. Romance C. Sampa Private Consultant	E P A Services Limited
Zambia	20	Mr. Rueben Nyambose, Director	Human Resource & Administration
Zambia	21	Mr. Silverster Hibajene, Executive Director	Energy Regulation Board
Zambia	22	Mrs. Sonile K Musonda	Zambia Consumers Association

GVEP – LIST OF PARTICIPANTS

GVEP Activity 1: Technical Consultation: Establishing the GVEP Working Group in Zambia and Planning for the National GVEP Action Plan
March 24, 2004, Lusaka, Zambia

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GVEP Activity 2: Technical Consultation – Formalization of the GVEP Working Group in Sri Lanka and Planning for the National GVEP Action Plan
May 27, 2004 – Sri Lanka

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Albania – Workshop on Program Management: Planning, Monitoring and Control
(May 10-13, 2004)

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ANNEX III: LIST OF PARTICIPATING ORGANIZATIONS

1. Regional Electricity Market and Trading – Southern African Power Pool, and 2. Rural Energy Services

SADC Regional

1. Regional Electricity Regulators' Association (RERA)
2. Southern Africa Power Pool Coordination Center (SAPP CC)

Angola

1. Empresa Nacional de Electricidade (ENE)

Botswana

1. Botswana Power Corporation

Lesotho

1. Department of Energy, Ministry of Natural Resources
2. Department of Energy Power Section
3. Dylec Lesotho (PTY) Ltd
4. Electricity Consultants
5. Khalema Redeby & Associates (KRA)
6. Lesotho Consumer Organisation
7. Lesotho Electrical Contractors Association
8. Lesotho Electricity Corporation
9. Lesotho Solar Energy Society
10. Lesotho Telecommunication Authority
11. Ministry of Communication
12. Ministry of Finance and Development Planning
13. Ministry of Local Government
14. Ministry of Finance and Development Planning
15. Power Affairs Division, Department of Energy, Ministry of Natural Resources
16. Privatization Unit, Ministry of Finance and Development Planning
17. Solar Matla
18. Strategic Planning Division Telecommunications Authority

Malawi

1. Electricity Supply Commision
2. National Electricty Council

Mozambique

1. Cahora Bassa Hydroelectric Company (HCB)
2. Electricidade de Mozambique (EDM)

Namibia

1. Electricity Control Board
2. Nampower Generation

South Africa

1. ESKOM

Swaziland

1. Swaziland Electricity Board

Zambia

1. Centre for Energy Environment & Engineering
2. Copperbelt Energy Corporation (CEC)
3. Department of Energy
14. Ministry of Energy and Water Development
15. Ministry of Finance and National Planning
16. Ministry of Tourism, Environment and Natural Resources

4. Department of Planning & Information
5. Department of Water Affairs
6. Development Bank of Zambia
7. E.P.A. Services, Ltd.
8. Economic Association of Zambia
9. Energy Regulation Board
10. Kariba North Bank Company, Ltd. (KNBC)
11. Lunsemfya Hyrdo Power Company Ltd
12. Ministry of Agriculture and Cooperatives
13. Ministry of Commerce, Trade and Industry
17. Northern Electricity Corporation (PVT) Limited (NESCO)
18. Office for Promoting Private Power Investments
19. University of Zambia
20. Zambia Competition Commission
21. Zambia Consumers Association
22. Zambia Information Services
23. Zambia National Farmers Union (ZNFU)
24. Zambia Privatization Agency
25. ZESCO, Ltd.

Zimbabwe

1. Zimbabwe Electricity Supply Authority (ZESA)

3. Global Village Energy Partnership Program

Sri Lanka

1. Energy Forum
2. Ministry of Power and Energy

Zambia

1. Department of Electrical and Electronic Engineering, School of Engineering, University of Zambia
2. Energy and Environment Concerns for Zambia
3. Energy and Environment Organization (ZENGO)
4. Envirocare International, Ltd.
5. Environment Protection and Awareness Society (EPAS)
6. Extended Hand Community Foundation (EHCOF)
7. Kenmore International Products
8. Lubuto Consulting Engineers
9. Miczo Bankers Trust
10. Ministry of Communications and Transport of Zambia
11. Ministry of Energy and Water Development of Zambia
12. Ministry of Industries and Cooperatives of Zambia
13. Ministry of Tourism Environment and Natural Resources of Zambia
14. Multi Techniques, Ltd.
15. Power Investment Company
16. Solarfields (Z), Ltd.
17. University of Zambia
18. Water Marks Technical Services, Ltd.
19. Zambia Ministry of Health
20. Zampower Engineering, Ltd.

4. Energy Sector Policy and Institutional Reform in Albania

Albania

1. ERE (Regulator)
2. KESH (National Utility)
3. MI&E (Ministry of Industry and Energy)
4. NAE (National Agency for Energy)
5. Task Force Secretariat of the Ministry of Industry and Energy

5. Power Sector Distribution Reform in India

India

1. Andhra Pradesh Electricity Regulatory Commission
2. Andhra Pradesh Power Generation Corporation Ltd.
3. BSES Management Institute
4. Central Board of Irrigation & Power
5. Central Electricity Regulatory Commission
6. Central Ground Water Authority
7. Central Power Research Institute
8. Department for International Development
9. Energy Economy & Environmental Consultants
10. Global Energy Consulting Engineers
11. Haryana Electricity Regulatory Commission
12. Hyderabad Metropolitan Water Supply and Sewage Board
13. ICICI
14. Indian Institute of Management Bangalore
15. Institute of International Education
16. INTESCO Asia Ltd.
17. Karnataka Electricity Regulatory Commission
18. Karnataka Power Corporation Ltd.
19. Karnataka Power Transmission Corporation Ltd.
20. Maharashtra Electricity Regulatory Commission
21. Ministry of Power
22. Municipal Corporation of Hyderabad
23. National Power Training Institute
24. Power Finance Corporation
25. Power Management Institute
26. Tetra Tech EM Inc.
27. Transmission Corporation of Andhra Pradesh, Ltd.

ANNEX IV: COMPLETE LIST OF ALL TASK ORDER ACTIVITIES

1. Regional Electricity Market and Trading – Southern African Power Pool

No	Type of Activity	Title	Location	Date
1	Course	Issues in Realizing Wholesale Electric Power Competition Through Private Sector Ownership	Zambia	July 15-20, 2001
2	Course	Advanced Electricity Market SAPP	South Africa	Oct 28-Nov 1 and Nov 4-8, 2002
3	Seminar	The Treatment of Ancillary Services SAPP	Mozambique	Feb 20, 2003
4	Workshop	Developing SAPP Through Advanced Electricity Trading	Zambia	July 24-25, 2003
5	Course	SAPP Advanced Power Trading	Zambia	July 28-31, 2003
6	Workshop	Participation in NARUC Workshop on IPP/PPA	South Africa	April 30-May 9, 2004

2. Rural Energy Services

No	Type of Activity	Title	Location	Date
1	Workshop/ Roundtable	Issues and Options for Rural Electrification in Zambia	Zambia	May 10, 2002
2	Workshop	Issues and Options for Rural Electrification in SAPP Member Countries	Lesotho	April 7-9, 2003
3	Workshop	Issues and Options for Rural Electrification Planning in Lesotho	Lesotho	April 10-12, 2003
4	Workshop	Enhancing Energy Sector Policy and Reform Process in Zambia	Zambia	March 22-23, 2004
5	Workshop	Enhancing the Environment for IPPs in the Reforming Namibia Power Sector	Namibia	April 13-14, 2004
6	Conference	Enabling Environment for Private Participation in Rural Energy Service Delivery and Financing in the SADC Countries	Namibia	April 15-16, 2004

3. Global Village Energy Partnership Program

No	Type of Activity	Title	Location	Date
1	Progress Report	Discussions on the GVEP Program in Zambia	Zambia	May 2003
2	Consultations	In-country consultations on coordinating GVEP activities	Zambia	May 19-23, 2003
3	Strategy Meeting	GVEP Action Plan development support to Sri Lanka through a meeting with the Secretary of the Ministry of Power and Energy	Sri Lanka	October 2003
4	Technical Consultations	Establishing the GVEP Working Group in Zambia and Planning for the National GVEP Action Plan	Zambia	March 24, 2004
5	Consultations	Formation of Sri Lanka's GVEP Working Group	Sri Lanka	March 2004
6	Interim Report	Global Village Energy Partnership Technical Support to Sri Lanka on Action Plan Development	Sri Lanka	April 8, 2004
7	Progress Report	Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership (GVEP) Initiative	Zambia	May 27, 2004
8	Technical Consultations	Formalization of the GVEP Working Group and Planning for the National GVEP Action Plan	Sri Lanka	May 27, 2004
9	Final Report	Energy Service Delivery in Zambia: Status and Opportunities for Enhancement in the Context of the Global Village Energy Partnership (GVEP) Initiative	Zambia	July 6, 2004

4. Energy Sector Policy and Institutional Reform in Albania

No	Type of Activity	Title	Location	Date
1	Consultations	A Series of Consultation Assignments	Albania	July 2003 – June 2004
2	Workshop	Program Management: Planning, Monitoring and Control	Albania	May 10-13, 2004

5. Power Sector Distribution Reform in India

No	Type of Activity	Title	Location	Date
1	Report	India Electricity Distribution Reform and Assessment	India	September 18, 2002