REPUBLIC OF ZAMBIA

THE NECESSITY OF SUSTAINED HOST GOVERNMENT COMMITMENT AND ENGAGEMENT FOR SUCCESS IN RURAL ENERGY PROGRAMS

THE CASE OF ZAMBIA WITH THE PREPARATION OF A NEW PROGRAM FOR INCREASED ACCESS TO ENERGY SERVICES AND PARTICIPATION IN THE GLOBAL VILLAGE ENERGY PARTNERSHIP

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ABSTRACT

Zambia, with a population of about 10 million, aims to achieve substantial progress in increasing modern energy services to its people, particularly the rural population. Zambia's strategy is to follow a bottom-up approach and involve all major local stakeholders in designing and developing its program of rural energy service delivery for poverty alleviation. The desired modern energy services are meant to support sustained poverty alleviation and economic growth of the country. The preferred strategy is to work closely with donors, private sector financiers, industry and civil society to enhance the potential for the success of its rural energy delivery strategy.

By working in partnership with the World Bank, USAID, SIDA, and other donors and by active participation in the GVEP initiative as well as by engaging all stakeholder groups in the process, the Government of the Republic of Zambia (GRZ) believes that substantial progress may be achieved in a fast-track basis. Development of a clear roadmap for the future is important. Progress to date with the preparatory process is promising. Zambia hopes that its rural population will begin to see soon real progress in the area of increased access to modern energy services delivery for sustained economic and social development. The roles of stakeholder including the Government are critical to making this process a success.

1.0 INTRODUCTION

In Zambia over 70% of the population is described as poor. Most of these people depend strongly on traditional fuels (primarily woodfuel) to meet their daily energy needs, and access to affordable electricity and other modern sources of energy remains a developmental challenge. Extensive use of traditional fuels disadvantages poor households particularly in rural and peri-urban areas who spend more effort and resources on each unit of energy obtained.

Although Zambia is well endowed with indigenous energy resources, the availability of modern energy services to cater for the entire population of about 10 million remains a far off cry. Among the present sources of energy, woodfuel in the form of charcoal and firewood contributes 79%, electricity 10%, petroleum products 9% and coal 2% of the total energy consumed. At national level, the average access level to electricity is about 20%.

The existing National Energy Policy (NEP) of 1994 is the main document dictating the changes and developments in the energy sector. The policy document contains measures for each energy sub sector, outlines strategies for implementation and identifies the legal framework needed to implement the policy. It establishes a regulatory framework to protect consumer interest, investors and the environment. Its main objective is "*to promote optimum supply and utilisation of energy, especially indigenous forms, to facilitate the socio-economic development of the country and maintenance of a safe and health environment".* The Government of the Republic of Zambia (GRZ) is currently engaged in a process top review the NEP so as to have a policy document that responds to the current challenges of the energy sector.

However, despite the creative approaches on the policy front, the challenge of taking power to rural areas still remains formidable given the relatively very high capital costs, and low financial returns compared to corresponding urban projects. This is because most of the rural areas have scattered concentration of population with little or no major productive economic activities. Many of the rural areas are also remote from the national electricity grid, making it even more costly to extend the power lines.

To accelerate the rate of electrification in rural areas, a Rural Electrification Fund (REF) was established in 1995 in the Ministry of Energy & Water Development (MEWD). The fund, financed by a 3% levy on electricity is meant to finance the costs of extending the electricity grid

within reach of consumers. Despite the existence of the fund in the past 9 years, Zambia has not seen any changes in the level of rural access to electricity, which has remained at 2%.

2.0 ZAMBIAN GOVERNMENT COMMITMENT TO ENHANCING RURAL ENERGY DELIVERY

The GRZ has placed high priority to providing energy for sustainable poverty alleviation and economic growth of the country. Its policy is to work closely with donors, private sector financiers, industry and civil society to enhance the potential for the success of its rural energy for poverty alleviation program.

GRZ's goal is to increase the rural electricity access for poverty alleviation and economic growth from the current 2% to 15% within 10 years. Poverty alleviation remains the major challenge. In recent years, this political and social challenge is getting translated into policies and initiatives that increasingly consider the critical role of modern energy services in improving the livelihood of the vast majority of poor Zambians. Increased awareness of the direct correlation of lack of energy with the level of poverty and the quality of life among the communities, local NGOs and governments, and other stakeholders is creating a momentum for them to participate in the process of planning and financing for poverty alleviation and human development.

Because the Zambian stakeholders (government, civil society, communities, and private sector) are appreciating the way energy impacts other sectors such as health, education, labor productivity, and social life, increasing the access of modern clean energy to the consumers is seen as a direct need for increasing the overall quality of life and alleviating poverty.

3.0 IMPLEMENTATION OF A NEW APPROACH - ENGAGING STAKEHOLDER AND PUBLIC PARTICIPATION THROUGH A BOTTOM UP DRIVEN PROCESS

Zambia's strategy is to follow a bottom-up approach and involve all major local stakeholders and the general public in designing and developing its future program of rural energy service delivery for poverty alleviation. In this context, in early 2003, a Rural Electrification Working Group (REWG) was established and mobilized, to design and develop relevant policy, regulatory, institutional, and funding recommendations for the GRZ. REWG included participants from all major stakeholders in the rural electrification (RE) process such as:

(i) Government ministries, agencies, and ZESCO,
(ii) Private sector,
(iii) Consumer associations
(iv) The energy regulator, and
(v) The civil society.

The REWG had a mandate and a clear mission to develop a comprehensive proposal on Zambia's rural energy policy approaches and respective institutional arrangement for RE policy implementation.

After submitting its recommendations to the Government in August 2003, this working group is in transition to expanding and becoming a national Global Village Energy Partnership (GVEP) working group and be an important partner in the designing, development and implementation monitoring of actionable plans and investment programs for extending access of modern energy services, particularly to the rural population in Zambia.

Zambia has made the decision to having an institution solely dedicated to rural electrification. This arrangement is deemed necessary in order to attract external financing for rural electrification particularly from bilateral cooperating partners (and potentially from private sector) who are always concerned that their support may be diverted by governments to other

priority areas. Hence, GRZ enacted a bill for the establishment of a Rural Electrification Authority (REA) in December 2003. The functions, responsibilities, and along commercial lines of operations of the REA will provide for independence, transparency, and accountability to stakeholders and the general public.

4.0 GOVERNMENT AND THE WORLD BANK ARE PREPARING A NEW PROGRAM ON INCREASING ACCESS TO MODERN ENERGY SERVICES

In 2003, the Government of Zambia and the World Bank began the work on the designing and developing of a comprehensive program for increasing access to modern energy services. The program is expected to cost around US$ 100 million. This program is titled "Increased Access to Energy Services (IAES) Program, and it is scheduled to begin implementing by September 2005.

4.1 Program Concept

The benefits of rural electrification can be significantly increased by working with other sectors (such as health, education, and water), so that services in these sectors can also be improved once electricity and information and communication technologies (ICTs) (which need electricity) become available. The concept of this program is designed to reflect the importance of the cross-sectoral nature of rural development and the vital role of improved energy services in that process. Furthermore, as the proactive promotion of income generation activities by various small and medium enterprises increases the overall economic and social development is enhanced. This further enhanced local participation in rural energy service delivery and increases consumer confidence and acceptance of government's rural energy policies and programs.

4.2 Program components

The proposed program contains two major components: (1) TA and capacity building, and (2) co-financing in investment projects to be undertaken by competitively selected project eligible entities, which could include communities (e.g., rural cooperatives), public/private power utilities, private energy service providers, and NGOs.

The investment projects would be in the areas of:

- Electricity, for (i) grid extension and infilling, (ii) independent grid supply using RET such as small and mini hydropower, and (iii) solar PV systems, and

- ICTs, for (i) extension of basic telephony, (ii) extension of Internet to district headquarters, and (iii) extension of ICTs to selected rural institutions

4.3 Details of electrification projects

Larger power generation projects - typically larger than 2 MW. This type of projects may be connected to ZESCO's (national utility) grid or be stand-alone.

Smaller power generation projects - typically less than 2 MW. Parties other than ZESCO, with some local initiative, would typically undertake these projects. These projects will focus on:

- *Renewable energy based independent mini-grids*, and

- *Grid connected or grid connectable.* As there are some sites that are already connected to the ZESCO grid, but ZESCO is unable to extend the reticulation network to serve nearby consumers, this intensification would increase access at a relatively low cost. Furthermore, there are some sites that are already using some form of diesel-generated power, but are not connected to the grid because of the distance/cost

involved in linking them. The costs of connecting them as well as extended reticulation network would be covered under this program.

Solar PVs - These systems would be used to serve households and institutions in remote areas that cannot be served by the main grid or the independent grids, as follows:

- *Households.* The program would focus on providing smaller systems (10-30 Watt-peak) that would be more affordable to the poorer households. The project would be neutral with respect to the institutional model (e.g., energy Service Companies (ESCOs), vendors, etc.). It is estimated that about 15,000-20,000 rural households could be served in this manner, and

- *Institutions.* The project would potentially support (i) about 400 government health and education institutions selected by the health and education authorities, and (ii) about 400 other institutions, including those from other official agencies.

The Government passed the necessary legislation for establishment of a Rural Electrification Authority (REA) in December 2003. This new institution will engage in the implementation of GRZ's rural electrification program. The plan is for GRZ to propose to the World Bank that REA become one of the institutions implementing at least the rural part of IAES Program. This will require substantial assistance by the Bank and support by the GRZ to the development and operationalization of the REA.

5.0 GLOBAL VILLAGE ENERGY PARTNERSHIP - ZAMBIA'S APPROACH, PROGRESS, AND EXPECTATIONS

Zambia is one of the first partner countries that joined the Global Village Energy Partnership (GVEP) launched on August 31, 2002 at the World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa to help achieve the internationally recognized Millennium Development Goals.

Since then, Zambia has made substantial progress towards its active participation and contribution to the Partnership, as well as in organizing and mobilizing its intellectual resources in setting the stage for a wide intervention in the country's poverty alleviation through the provision of increased access to modern energy services.

The United States Agency for International Development (USAID) has been providing technical assistance and capacity building support to the Government of Zambia through CORE International in designing approaches to increased modern energy services to the country's rural population and increased participation by the Zambians in the Global Village Energy Partnership (GVEP) Program.

5.1 Zambia's Rationale and Approach – Modern Energy Services for Poverty Alleviation

As mentioned in the introduction of this paper, poverty alleviation is the major challenge for Zambia. From the energy perspective, Zambia's approach to this issue is based on the rationale that people are better off when access to electricity and other modern energy services is offered for the purposes of (i) increasing labor productivity and employment, and (ii) human and social development (improving health, education, social life, and democracy). For achieving this in a sustainable manner, efficient and environmentally friendly utilization of local energy resources is considered critical.

5.2. Zambia's Four-Step Process for Participation in the GVEP

Because of the large number of stakeholder due to the nature of the rural energy, Zambia has adapted a four-step preparatory process for participation in the GVEP, as follows.

Step 1: Solicitation of local, regional, and international partners in the GVEP spirit, and formalization and institutionalization of an in-country GVEP 'movement' by establishing adequate structures and organizing their 'development through energizing' work at the national and provincial levels.

Step 2: Design and development of policies, regulations, institutions, and financing mechanisms that will allow for results-oriented implementation of programs, thereby, substantially enhancing the process of increasing access to modern energy services by rural populations.

Step 3: Incorporating the above measures in the country's national development plans, and its policy and programs for poverty alleviation, growth, and social development, such as in the Poverty Reduction Strategy Paper (PRSP).

Step 4: Design and development of result-oriented actionable plans for the implementation of the above policies and plans.

Realizing the critical need for and role of financing for the sustainable provision of modern energy services in an affordable market environment, Zambia's policy is to ***walk*** together with donors, the private sector, and the civil society throughout this four-step process. This approach is considered critical to the success of Zambia's participation in the GVEP initiative.

5.3 Zambia's Progress in its GVEP Preparatory Process

Since mid 2003, USAID[1], through CORE International, Inc., has provided direct strategic support GRZ in advancing its actions towards an effective participation in the GVEP. The following are the major results achieved by Zambia in this context:

a) A Rural Electrification Working Group (REWG) was established in early 2003. Given its mandate, in August 2003, the REWG submitted to GRZ a roadmap and an actionable plan on rural electrification in Zambia. This actionable document includes the following:

- Analysis the status of RE in Zambia and identifies major barriers to the RE process
- Approach to the development of a new RE policy to be integrated in the national energy sector policy
- Process for the establishment of a new institutional structure for RE, namely a Rural Electrification Authority (REA)
- Best practices in the development of regulatory mechanisms for RE
- A new financing mechanisms for RE development including private sector participation
- A detailed Action Plan for increasing access of commercial energy to the country's rural population for the period July 2003 – June 2005

As a first result, legislation for establishing of the REA has been passed.

b) The identified immediate steps to be taken by the GRZ in the process of rural electrification have been presented to the GRZ and donors such as SIDA (Sweden). SIDA is considering providing funding for the initial actions required to opetationalize the REA the possibility of funding the establishment of a Unit, initially within the Department of Energy, expected to further develop the approach for the proposed Rural Electrification Authority (REA) as an independent rural electrification implementation agency.

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[1] *Substantial support for this process has also been received from the Swedish International Cooperation Agency (SIDA)*

c) After extensive discussions and preparatory work, the REWG is transitioned into a national GVEP working group (WG) by also expanding its stakeholder participation. The DoE[2]/GRZ has taken the following preparatory steps:

- Solicited, in the national press, expressions of interest from institutional and individual stakeholders with an interest in poverty alleviation and social development as these are impacted by the provision of modern rural energy services.

- Established within the DoE a national GVEP technical secretariat in charge of coordinating Zambia's GVEP activities including, information exchange and management, public awareness campaign, and coordination of the work of the National GVEP Working Group.

- Solicited support form the GVEP Technical Secretariat in Washington D.C. The DoE and REWG have prepared and submitted an initial support program whose major activities include the development by the Zambian GVEP Working Group of an GVEP action plan, conducting of a public awareness campaign on the GVEP, and establishing of a GVEP-Zambia website.

- Conducted, on 24th March 2004, technical consultations among in-country GVEP stakeholders on the establishment of the Zambian GVEP WG, identifying its scope of work, and developing appropriate institutional arrangement for GVEP WG work facilitation. As e result of this consultation: (i) goal and objectives of GVEP WG were identified, (ii) a total of 16 institutions were identified to be represented in the GVEP WG, as well as six sub-WG were identified necessary to support the work of the GVEP WG in performing its objectives, (iii) key elements of a master GVEP action plan were identified, and (iv) next steps were identified for nominating GVEP WG members and formalizing it.

6.0 ROADMAP FOR THE FUTURE

Zambia believes that a clear vision and understanding of future steps are critical to a fast-track process preparation for enhancing the provision of modern energy services in the country. For this reason, a roadmap including the following major elements and steps has been identified:

a) Assign adequate attention, in the immediate term, to increasing rural electrification energy service delivery in Zambia. This will require focusing on (i) enhancing rural energy policy institutional arrangements for program implementation; (ii) designing an appropriate rural electrification regulatory framework; (iii) planning and arranging for rural energy program funding; and (iv) testing of rural electrification/energy business models and technologies. Zambia is in the process of reviewing of the 1994 National Energy Policy, and has set a target to complete this review during 2004. The updated policy will provide for policy guidelines on all these areas. This is expected to facilitate and expedite the process of rural electrification and access to modern energy services in Zambia.

b) The establishment and operationalization of the REA is assigned high priority by the GRZ and all major stakeholders. For this reason Zambian authorities are planning to work closely with stakeholders and donors including the World Bank, USAID, and SIDA to make this happen. Zambia recognizes recognize the need for allocating substantial effort to the REA. GRZ is committed to do whatever is expected to, and believes that

[2] Department of Energy

the abovementioned and other donors will provide support to accomplish the operationalization of REA successfully.

c) A new paradigm in dealing with increasing energy services to rural populations focuses on the implementation of a bottom up approach and enhancing the participation of local stakeholders and public in general in the process. The following three major elements are to be considered critical to successful design and development of sustainable energy service delivery programs for poverty alleviation and social development of rural populations in Zambia:

- implementation of bottom-up approach to the participatory process of the assessment of rural communities' energy needs, selection of appropriate technologies, and development of local institutional and organizational setups for service delivery;

- utilization of energy services primarily for income generating activities; and

- implementation of an integrated approach in rural services delivery by "bundling" energy projects with other rural infrastructure services such as water, health, and education.

d) Zambian energy sector stakeholders believe that there is plenty of room to improving the process of increasing the sustainable delivery of modern energy services. They all acknowledge the role that needs to be played by the private sector in this process. So the GRZ is planning on creating an enabling environment for private sector (particularly the local ones) participation in modern energy services delivery in Zambia. In order to make this happen, there is need to design and implement open and transparent rules, practices, and mechanisms for rural energy projects design, development, tendering, and implementation. Most of these principles will be materialized in the designing and operationalization of the REA and enhancement of the existing Rural Electrification Fund (REF) in Zambia. It is hoped that in this way, donors and private sector (including local commercial banks) will show interest and participate in this process by providing also substantial funding.

SUSTAINED HOST GOVERNMENT COMMITMENT AND ENGAGEMENT FOR SUCCESS IN RURAL ENERGY PROJECTS

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NATIONAL CONTEXT

- Population – 10 million
- GDP Growth rate (2000) – 3.5%
- GNP per capita (2001) - $342
- Urban Electrification – 48%
- Rural Electrification – 2%
- Share of modern energy – 19%

ENERGY SECTOR GOALS

1. Rural electrification – increase from 2% to 15% in 10 years
2. Urban Electrification - – increase from 45% to 78% in 10 years
3. Charcoal consumption – reduce by 400,000 tonnes in 10 years
4. Re-introduce LPG in households
5. Increase generation capacity
6. Increase power exports
7. Increase regional interconnectivity

RURAL ELECRIFICATION – AN ENGAGEMENT PROCESS

1. Follow bottom up approach
2. In Early 2003, Government formed a Rural Electrification Working Group (REWG) composed of:
    - Government & related agencies
    - Private sector
    - Consumer associations
    - Energy Regulator
    - Civil society

➢ **Mandate** – develop comprehensive strategy on rural energy policy approaches & institutional arrangement

RURAL ELECRIFICATION – AN ENGAGEMENT PROCESS

- **REWG transformed into Global Village Energy Partnership (GVEP) Working Group (WG) in March 2004 with extended representation.**

➢ Mandate

- **Assess options, Plan & monitor multi-disciplinary energy projects under the GVEP Program**
- **Advice on establishment and operation of the Rural Electrification Authority (REA)**
- **Assist Government Steering Committee on plans, implementation and monitoring of the Increased Access to Energy Services Project (IAES)**

INCREASED ACCESS TO ENERGY SERVICES (IAES) PROJECT– A PARADIGM SHIFT

- **Project Approach**
  - **Rural electrification benefits significantly increased by working with other sectors:**
    - **Health**
    - **Education**
    - **Water, etc**
  - **Rural development is cross-sectoral**
  - **Promotion of income generating activities**

GVEP – ZAMBIA'S APPROACH

- **Rationale**
  - **Poverty alleviation – people are better off with access to electricity and other modern energy sources; for:**
    - **Increasing productivity and employment**
    - **Human & Social development (improving health, education, social life & democracy)**

GVEP ZAMBIA - A 4 STEP APPROACH

- **Approach required to large number of stakeholders in rural energy**
- **Step 1:**
  - **Solicitation of local, national, regional & international partners in GVEP spirit**
- **Step 2:**
  - **Design and develop policies, regulations, institutions and financing mechanisms that allow for result oriented implementation programs**

GVEP ZAMBIA - A 4 STEP APPROACH

- **Approach required to large number of stakeholders in rural energy**
- **Step 3:**
  - **Incorporate above measures in country's national development plans**
- **Step 4:**
  - **Design and develop result oriented action plans**

❖ **Important – *walk* together with donors, private sector and civil society in all 4 steps**

GVEP ZAMBIA – PREP PROCESS

- **Actions taken:**
  - ✓ Formation of REWG
  - ✓ Identify immediate steps for Govt and Donor action
  - ✓ Formation of GVEP-WG
- **Focus for the future**
  - ✓ Assign adequate attention, in the immediate term to increasing rural energy service delivery
  - ✓ Establishment & operationalisation of the Rural Electrification Authority
  - ✓ A new paradigm shift – bottom up approach, energy for income generating activities, bundling energy projects with rural infrastructure services