



EAC Strategy to Scale-Up Access to Modern Energy Services



**Tanzania Country Report
and Implementation
Workplan**

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Finias B Magessa

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ABBREVIATIONS

BP	British Petroleum
COSTECH	Commission for Science and Technology
DED	District Executive Director
EAC	East African Community
EE	Energy Efficiency
EU	European Union
EWURA	Energy and Water Utilities Regulatory Authority
FINNIDA	Finnish Development Agency
GEF	Global Environment Facility
GTZ	Germany Technical Cooperation
GVEP	Global Village Energy Partnership
IPP	Independent Power Producers
IPTL	Independent Power Tanzania Limited
Kg	Kilogram
LCC	Life Cycle Cost
LPG	Liquefied Petroleum Gas
MATIU	Ministry of Agriculture Training Institute Ukiriguru
MCC	Millennium Challenge Corporation
MEM	Ministry of Energy and Minerals
MFEA	Ministry of Finance
MNRT	Ministry of Natural Resources and Tourism
MoH	Ministry of Health
MPSE	Ministry of Planning, Statistics and Empowerment
MT	Metric Ton
MW	Megawatt
NEMC	National Environment Management Council
NGO	Non Government Organization
NORAD	Norwegian Development Agency
NSGRP	National Strategy for Growth and Reduction of Poverty
ProBEC	Programme for Biomass Energy Conservation
PV	Photo Voltaic
RE	Renewable Energy
REA	Rural Energy Agency
REF	Rural Energy Fund
Sida	Swedish Development Agency
SME	Small and Medium Enterprises
SWOT	Strength Weakness Opportunities Threats
TANESCO	Tanzania Electric Supply Company
TaTEDO	Tanzania Traditional Energy Development and Environment Organization
TEDAP	Tanzania Electricity Development Access Programme
TBS	Tanzania Bureau of Standards Programme
TZS	Tanzania Shilling
UN	United Nations
UNDP	United Nations Development
US\$	United State of America Dollar
VAT	Value Added Tax
WB	World Bank
WHO	World Health Organization
WUWE	West Usambara Women Education

1.0 BASELINE ENERGY ACCESS DATA

The EAC Secretariat is facilitating implementation of the Regional Strategy for Scaling up Access to Modern Energy Services. In order to embark on with the implementation of the strategy, a National Focal Point and Consultant for each of the 5 countries in the East African Community were nominated and hired respectively. This report is a result of the collaboration and consultations between the National Consultant for Tanzania with the Focal Point (MEM), members of the Tanzania Rural Energy Working Group, other stakeholders and review of various relevant documents.

In chapter 1, the report describes the energy baseline data for Tanzania in connection with the four targets to be addressed by the EAC strategy which includes scaling up of modern cooking services, electrification of urban and peri urban areas, electrification of rural institutions and use of modern motive power for productive uses. Chapter 2 of the report gives a SWOT analysis of the energy situation pertinent to the for EAC targets under consideration. Chapter 3 offers key findings from the assessment and subsequent outputs. Chapter 4 provides a draft work plan for implementation of the EAC Modern energy scaling up strategy. The last part, Chapter 5 has annexes including Contacted individuals /agencies and list of references reviewed.

It is anticipated that, the implementation of the work plan will yield a tremendous impact on the ground, in terms of mainstreaming energy access in national planning and budgeting processes, development of pro poor energy policies and frameworks, strengthening capacity to deliver energy services, and in identification of high potential related business models.

1.1 Target 1: Modern Cooking Services

1.1.1 Energy Resources

Tanzania is endowed with abundant energy resources including biomass, solar radiation, wind, flowing rivers, geothermal and coal. Some of these energy resources may be exploited to provide and improve availability of modern cooking energy services to majority of Tanzanians. To date the following are estimates of the status of use of modern energy services for cooking in Tanzania:

- About 40% of Dar es salaam City with more than 3 million residents use improved charcoal stoves and only less than 20 % use improved firewood stoves;
- According to WHO, nearly 28,000 deaths are attributable annually to indoor air pollution from solid fuel use which is responsible for 4.4 % of Tanzania's national burden of disease (2002).
- Estimation of users of modern biomass cooking stoves (charcoal and firewood) in other urban areas is put at about 20%;
- TaTEDO documentation estimates about 15,000 improved charcoal stoves are produced by the private sector in Dar es Salaam and sold in the entire country monthly. However, the Ministry of Energy Minerals considers this TaTEDO estimate to be a little bit on the high side. Supply of improved charcoal stoves from other regions of Tanzania is less than 1000 per month.
- Less than 3% of households in rural areas use modern biomass cooking services

- Kerosene is utilized for cooking and estimates are put at less than 10% in urban areas and less than 1% in rural areas mainly by salaried employees.
- Electricity is less used for cooking. Availability and reliability of documented data on cooking using electricity is questionable, but it is not above 30% in urban areas and it is almost none in rural areas.
- According to a WHO study, the introduction of Liquefied Petroleum Gas (LPG) despite initial investment costs can result in a 7-fold return on investment. In Tanzania there is an emerging and growing demand of LPG in cooking processes but currently limited to city dwellers and within high and middle class income earners. It is estimated that sales of LPG in Tanzania in 2005, 2006 and 2007 were about MT 4500, 5200, and 6300. While employing LPG in cooking is growing, the rate is not good enough to significantly and timely relieve burden on biomass resources. Assuming the current maximum adoption rate and business as usual and that 40% of families and commercial settings in Tanzania owns and use only one LPG gas cylinder, it will take more than 32 years to get the market segment under consideration using LPG for cooking.
- There is also natural gas locally available in Tanzania but its distribution infrastructure is underdeveloped to make a difference in modern cooking processes at commercial and household level. About 15% of the natural gas is used in industries for thermal processes and the remaining 85% is used for power generation. Plans are underway to develop infrastructure of using the gas for cooking in Dar es Salaam.
- Other available cooking energy sources in Tanzania whose utilization level is not well documented include briquettes, motopoa, solar cookers and coal.
- About 70,000 gas containers are currently circulating in Tanzania, mostly in Dar es Salaam, Arusha, Moshi, Mwanza, Tanga and Morogoro regions. The use in other areas is still limited. Gas cylinders range from 3kg for small households consumptions to 40kg for commercial applications such as restaurants and hotels.
- Currently Tanzania has no operating refinery and available LPG storage facilities is limited to about MT 1500 with underdeveloped distribution infrastructure which includes 3 Tanzania Railway Corporation (TRC) wagons (only one is operating), 4 flat belts and about six trucks.
- There exist 20% VAT on LPG cookers and other accessories such as regulators.

Some other important features of cooking services include overdependence on biomass resource which has resulted into fast dwindling of biomass reserves (forests) in the country. The National Forest Policy of 1998 estimates deforestation rate ranging from 135,000 – 500,000 hectares per annum, of which many experts feel the estimate is on the high side. Another study conducted by IRA in collaboration with Forest and Beekeeping Department in 2004 named Forest in Figures, estimates deforestation at 92,000 hectares per annum, which calls for harmonization or explanations on assumptions and methodologies used to establish such figures. The MNRT estimate 97.9% of total wood consumed in Tanzania to be on wood biomass (charcoal and firewood). Estimated total wood fuel consumption in Tanzania in 2005 is put at 46.2 million cubic metres of solid round wood.

Table 1 below highlights regional forest resources Distribution by 2005

Region	Total Forest Land ha	Total population 2002	Forest area per person/ha	Biomass fuel scarcity Ranking
Arusha	2,471,120	2,333,435	1.06	Severe
Manyara	Not available	Not available	Not available	Not available
Dar es salaam	2,607	2,497,940	0.00	Severe
Coast	2,436,839	889,154	2.74	Not reported
Dodoma	2,361,781	1,698,996	1.39	Moderate
Iringa	826,831	1,495,333	0.55	Severe
Kagera	309,814	2,033,888	0.15	Severe
Kigoma	1,706,000	1,679,109	1.02	Severe
Kilimanjaro	209,124	1,381,149	0.15	Severe
Lindi	4,340,270	791,306	5.48	Not reported
Mara	4,673	1,368,602	0.00	Severe
Mbeya	1,046,565	2,070,046	0.51	Severe
Morogoro	1,841,189	1,759,809	1.05	Not reported
Mtwara	857,143	1,128,523	0.76	Severe
Mwanza	157,858	2,942,148	0.05	Severe
Rukwa	4,902,583	1,141,743	4.29	Not reported
Ruvuma	874,989	1,117,166	0.78	Severe
Shinyanga	958,475	2,805,580	0.34	Severe
Singida	1,057,444	1,090,758	0.97	Severe
Tabora	5,304,438	1,717,908	3.09	Moderate
Tanga	1,885,749	1,642,015	1.15	Not reported
TOTAL	33,555,492	33,586,607	1.00	
Source: MNRT 2006				

Because of traditional ways of free collection and use of biomass (firewood in rural areas) and unrealistic low cost consideration of charcoal production and free collected firewood, other alternative sources of cooking energy have been considered expensive though in some cases they are currently turning out to be cheaper even than biomass options. From use point of view, in Dar es Salaam a bag of charcoal of between 40-60 Kg in December 2007 was about TZS 30,000 and could suffice cooking requirement of 6-10 per month. On the other hand, LPG gas container of 15 kg was sold at about TZS 28,000 (cheaper) in the same month and could suffice cooking energy requirements of the above mentioned family.

Other important features include growing strong demand for other alternative cooking services (commercial sector and households) due to dwindling forest reserves and stringent policies currently imposed on the use of biomass resources by the MNRT. There is however, a growing threat for increased adoption of petroleum cooking products due to ever hiking prices including kerosene and LPG.

1.1.2 Institutional Framework, Players and Activities

A number of institutions related to modern cooking services exist and somehow assist with planning, development and implementation of initiatives related to modern cooking

energy services. While these institutions have done a significant job in awareness creation within some target communities, the highest achievement in adoption is still limited to 40% in Dar es Salaam (Chaposa report) and as per other information in section 1.1.1 above. Reliable coordination and documentation of improved stoves data is missing, quality assurance of the produced stoves is also questionable. No legally binding procedure and centralized point where modern cooking energy actors and services information is sent and /or collected. Every actor documents and disseminates such information as per own institution willingness, interests, donor requirements and for publicizing their existence and when marketing their services.

Most Government and private energy actors' institutional arrangement are limited at the national level only. Hardly will you find district representative offices responsible for energy issues. These particularly have limited the wide and effective dissemination of modern energy issues at or near most beneficiaries' level. Another challenge is lack of effective coordination of biomass supply and the end use institutions in which the two are handled under different Ministries i.e. MEM and MNRT. There exist a Rural Energy Working Group but its effectiveness is still limited and meets occasionally and during workshops. Other actors, at the national level that occasionally implement modern cooking energy services in rural areas or at district levels include NGOs and projects such as TaTEDO and ProBEC respectively.

Biomass energy accounts for more than 90% of the cooking resources in Tanzania but the budget allocated by the Government for biomass energy services is limited to less than 1% of the annual energy development budget of the Ministry of Energy and Minerals. Total MEM budget allocation for year 2007/2008 was US\$ 354 millions, of which local contribution is US\$ 197 millions. Of the total MEM budget, only US\$ 194.9 millions go to the energy sector. It is pity to note that of the energy development budget; only about US\$ 300,000 is allocated for renewable energy and energy efficiency. It is further worthy noting that, foreign development partners contribution on RE (biomass integral) is about 400% while contribution on other areas is only 50%. MEM could increase their budget share on Biomass in RE to make it significant. A bigger portion of the budget is allocated to petroleum and electricity energy resources which account for more than 90% of the budget.

Through its network of healthcare providers, community health workers, etc. the Ministry of Health might provide an excellent means of raising awareness about the need to promote cleaner energy services among households, in particular women and children. However, efforts in this regard have so far been limited.

There is REA that is expected to assist in improving modern energy services access in rural areas of Tanzania. However, budget constraints at the start could result in a limited impact on the ground. As an example, the development budget allocated to REA during 2007/2008 was about TZS 10 billion. While this amount is expected to start supporting rural modern energy services requirements including electricity, if spent on LPG only, it can only cater for 80,000 gas containers of 15kg which is only about 2% of the potential required modern cooking services in households and commercial settings. It is only about 5% of urban households in Tanzania.

Due to increased awareness on dwindling forest reserves and acuteness of limited availability of biomass services, leave alone substantial hiking of biomass resource services, LPG use for cooking is starting to gain popularity among urban Tanzanians. The private sector dominates the market which promises sustainability and existence of a growing sales market. Most of these companies are big oil companies including Oryx, BP, Total, Nat Oil and Manjis of Arusha.

Tanzania Petroleum Development Corporation has initiated efforts to promote natural gas locally available in Tanzania for cooking in Dar es Salaam. They are still working on an infrastructure development.

There also exist interested development partners in the biomass sector including NORAD, UN, and GTZ. For many years now NORAD have been supporting biomass activities in Tanzania (TaTEDO, WWF) and forest conservation through MNRT and specific projects. Already NORAD have spent and or committed more than US\$ 10 million on biomass energy and environment initiatives. Through UNDP/GEF, COMPACT and GVEP support on biomass projects in Tanzania have been made. WHO has gathered expertise and offers technical support linked to household energy, indoor air pollution and health. On the other hand, GTZ was commissioned to implement a project worth €1.4 million in Arusha and Kilimanjaro regions which included biomass services promotion. ProBEC through SADC also implemented an improved wood fuel stoves project.

Some challenges include establishment of effective energy sector representation at district and local levels, lack of reliable energy data documentation, uncoordinated update and dissemination system for energy resources data among stakeholders, bureaucracy, donor driven agenda, weak multisectoral holistic approach effective coordination.

1.1.3 Enabling Policies and Frameworks

There exists a national energy policy of 2003. A number of Acts and study reports and findings are available at both the MEM and with other players including development partners (UNDP, NORAD, Sida) and energy NGOs. Existence of interested Development Partners already may create supportive environment for increased use of cooking modern energy services within Tanzania if strategically mainstreamed in their agenda.

However, some challenges such as non existence of documented implementation strategy of the policy and unrealistic budgets hinders sustainable implementation of the policy. On the other hand a lot of studies and research reports are developed without optimal corresponding implementation of actual activities on the ground. Most study findings only create another room for another study and rarely results in numbers of modern cooking units on the ground. There is limited capacity to implement and translate policies for common people to understand and benefit. Cooperation between the MEM and other Ministries that could contribute to scaling up efforts, such as the Ministry of Health, could offer added value but to date has been limited. Also, no concerted communication strategy or multisectoral approach is in place in the respective Ministries. Knowledge on policies and awareness is limited to few at national level and not known to majority who are the beneficiaries. High cost of creating awareness on policies and infrastructure for common people to benefit from energy policy opportunities

Other challenges include lack of charcoal and firewood policy with implementation strategies, legal frameworks and realistic budgets to meet set targets. It is noted that an energy source contributing more than 90% of basic energy in the country is still regarded as informal and has no particular policy. There exist about US\$ 400 million/ annum circulating in charcoal businesses, which if made formal, through registration and licensing could benefit the Government through taxes. Bureaucracy, governance and donor driven agenda also adversely influence effectiveness of other policies on the ground.

1.1.4 Appropriate Financial Mechanisms

There exists no simple explicit local energy financing mechanisms. Some of international mechanisms that have benefited Tanzanian companies include AREED and E&CO both coordinated by TaTEDO which have extended loans to energy actors in the country, biomass inclusive. Local Banks are still skeptical to investing in cooking services unless linked to LPG through a petroleum company. These financing are mainly dealers financing and not consumer financing. Presence of interested development partners mentioned above could benefit innovative financial arrangements, establishment of incentive policies, strategies and frameworks if strategically mainstreamed in their agenda. Currently there is limited capital base for implementation of related cooking energy projects, limited accessibility to local financial supports from local institutions, limited capacity to access energy financing and credit schemes, bureaucracy, governance capabilities and donor driven agenda. Limited budgets of actors and institutions of ongoing initiatives is also a challenge weakness.

1.1.5 Codes and Standards

There are no stove standards in Tanzania but some drafts reported at and by ProBEC and TBS. Standards and norms for LPG aspects of safety and health and natural gas, if prepared, could assist smooth running of the cooking industry. As an example, an Oryx regulator does not fit on Total gas cylinder, nor on Alpha gas cylinder, and on many others.

1.2 Target 2: Modern Energy Services for Urban and Peri -Urban Poor

1.2.1 Energy Resources

Local availability of energy resources for electricity services including hydro power, natural gas, coal and petroleum have the potential to benefit extension of grid connections to urban and peri urban communities. Current hydro power resource exploitation is put at less than 13% of the available potential. Total installed capacity (hydro and thermal) is about 1219MW. The total number of customers' connected to the grid is put at about 660,000 connections. Annual connections are still limited to 36,000 connections per annum which is equivalent to 3,000 connections per month. Assuming equal distribution of the installations per month in regions, only about 142 connections are made in each region per month. Considering that roughly each region has four districts, only about 35 connections are made in each district per month, which is roughly about one connection per day in each district. Number of connections made does not tally with invested capital base made by TANESCO in such districts. Regardless of new connection bureaucracy at TANESCO, applications for new connection are more than 100,000 per annum, which suggest an existence of a strong demand for the service.

Other important features of resources for modern energy services for peri urban and urban electrification include limited exploitation and distribution capacity, weather dependence of hydro resource and overdependence on biomass resource for traditional energy services. On the other hand, high cost of grid extension and connections and hiking petroleum products adversely impact on the pace of exploitation and extension of grid services to the communities under consideration. It costs more than US\$ 10,000 for extension of high transmission line of 132kW per each kilometer.

1.2.2 Institutional Framework, Players and Activities

Availability of local expertise at TANESCO for hydro and thermal power generation, transmission and distribution of grid electricity for more than 40 years benefit undertakings for grid extension and distribution. More than 80% of district headquarters are already connected to National grid either through the national grid or through isolated grids. TANESCO has an established transmission line and operational offices with experts to more than 80% districts of the country.

Recently, involvement of the private sector (Artumas, Songas, IPTL, AGGREKO) has gained speed. They generate and supply electricity to TANESCO. The Government through the Ministry of Energy and Minerals subsidize TANESCO to facilitate smooth running of its operations. EWURA is working on ongoing efforts to introduce standardized power purchase agreements to encourage IPPs and private sector participation through simplified negotiations of electricity price between them and TANESCO. Existence of interested Development Partners (Sida, WB, ADB, GEF) gives platform for support of peri urban electrification. Over the years Sida has supported electrification of district headquarters. The WB and AfDB have also supported generation side to increase capacity. On the other hand, the WB and GEF are currently supporting a programme named Tanzania Electricity Development Access Programme (TEDAP) with about US\$ 111.5 million for grid stabilization and maintenance in selected regions and for of grid power supply.

Other features of the players and institution arrangement include unreliable under developed and old infrastructure to connect more peri urban and urban customers, under developed EWURA staffing (only about 32 in Dar es Salaam) and lack of powers for UWURA to enforce actions, limited capacity to meet country's demand and expertise requirements, bureaucracy, lack of good governance, donor driven agenda and budget constraints of involved institutions and for infrastructure development. Large geographical coverage of the country and high cost of grid extension, connections infrastructure development adversely impact on the speed of expansion services

1.2.3 Enabling Policies

The National Energy Policy of 2003 supports electrification of Tanzanians including those in peri urban areas. The legal framework supports private sector participation although the old electricity act gives monopoly to TANESCO to generate, transmit and distribute electricity to customers. The act is outdated and MEM has already prepared a bill to a new electricity act which will allow for IPPs who could as well transmit and distribute power to customers.

It is worth noting that all investments in Tanzania, including those in the energy sector, registered with TIC, are subject to Tax incentives on capital goods. Operational EWURA facilitates level playing ground for all involved parties. The Government has also facilitated availability of a Standardized Power Purchase Agreement to motivate more private sector investments in collaboration with EWURA. Efforts should be intensified to extend EWURA's mandate to enforce.

1.2.4 Appropriate Financial Mechanisms

There exist some programmes to electrify peri urban and urban areas under MEM. Existence of interested Development Partners and Banks including Sida, WB, and ADB, has been so strategic to electrification of most district headquarters under rural electrification programme of TANESCO. TEDAP is one among other MEM initiatives that will stabilize electricity in some regions which will allow for more connections. Millennium Challenge Corporation is another programme where Kigoma region will benefit with hydro power supply which will allow for more connections. Already participation of the private sector suggests a growing market and part financing could be mobilized from the private sector themselves. However, deliberate efforts are needed to address bureaucracy in energy investment processes (registration, licenses, etc), limited capital base of most potential investors for implementation of related projects, limited awareness to local financial institutions to support such initiatives, limited energy financing schemes, good governance and limited budgets of responsible institutions.

Realistic energy budgets should take care of the size of the country and level of the size of the problem and potential benefits to address poverty bondages in such peri urban communities.

1.2.5 Codes and Standards

There exist standards and code of practice for connecting customers to the grid. EWURA has been established to take care of regulation requirements within the sector. However the main challenge is the enforcement of the standards and codes of practice in consideration of the human resource sufficiency at TBS and EWURA.

1.3 Target 3: Modern Energy Services for Rural Institutions

1.3.1 Energy Resources

Availability of solar energy, wind, micro hydro, just to mention but a few, can be used for electricity supply in rural public institutions of Tanzania.

As of June 2007, all registered Government secondary schools (91) had some sort of supply of electricity. However, hardly 1% of community government secondary schools totaling 2,715, most of which are in rural areas, do not have any form of electricity. On the other hand, more than 80% of the remaining 679 private secondary schools including seminaries have some form of electricity supply.

On the other hand, Tanzania has more than 3,000 health facilities in rural communities including health centres and dispensaries, most of which (about 95%) do not have any form of electricity. There exist ongoing initiatives on awareness creation about alternative energy resources for rural electrification.

Some important features of electrification using available energy resources include limited energy resource exploitation capacity, limited applications of such isolated systems, limited capacity and capital base for equipment procurement to translate solar energy to electricity, limited capacity and awareness to calculate Life Cycle Cost (LCC) for energy options.

1.3.2 Institutional Framework, Players and Activities

Rural electrification is spearheaded by the Ministry of Energy and Minerals. The established REA/REF is slowly gaining momentum will effectively deal with increasing access of modern power in rural areas including education and health facilities. However, studies are needed to establish sites that will be electrified through grid electricity and those which will go for other technologies including solar. In order to make significant impact, the budget subsidy from the Government and other development partners must be increased as the starting subsidy of US\$ 10 million could only install about 1,000 solar systems costing US\$ 10,000 each in a country with more than 2,500 secondary schools with energy requirements exceeding US\$ 10,000. Due to uncoordinated efforts of different actors, the number of rural social facilities installed with solar PV systems could not be easily established precisely.

Existing TANESCO district offices and private suppliers of electricity in mini and isolated grids in rural settlements have the potential to provide electricity to public institutions when proper arrangements and incentives are provided.

Existence of local expertise within local organizations and associations in Tanzania (University of Dar es salaam, TASEA, NGOs) for capacity building and awareness creation on solar electricity services in the country is strength. The existing effective participation of private sector in stocking, installing and maintaining solar systems (REX, Umeme Jua, ENSOL, Sollatek, Aglex, RESCO, Davis & Shirtliff, Chloride Exide, Ensol (T) Ltd) suggests sustainability of solar energy for isolated rural electrification needs. Hiking petrol products as an alternative power option is an advantage to the solar PV systems market in rural electrification.

Interested development partners for rural electrification initiatives (Sida, WB, UN, EU, Clinton Foundation) suggests for possible increased support. Sida has supported a solar project in Tanzania worth about US\$ 3 million for solar PV market development. UNDP/GEF is supporting a rural transformation of solar PV markets project in Tanzania worth about US\$ 2.5 million. The Clinton foundation is supporting installation of solar systems to rural health facilities in Tanzania starting with Mtwara and Lindi regions. All these projects are geared to supply electricity to rural communities and improve social services and livelihoods.

Some challenges to the rural electrification under consideration include exorbitant grid extension and distribution costs, high initial cost of solar equipment and appliances, equipment not locally made, and low initial cost of alternative power options such as gen-sets. Lack of consideration of LCC in customers' choice for energy options, suggest for awareness raising campaigns and capacity building so that decision should not be based on initial cost consideration only.

Other challenges include under developed delivery infrastructure of services network within the private sector to rural communities, limited capacity to meet country's demand and expertise requirements, weak capital base of most existing solar companies and lack of awareness and limited purchasing power of most rural institutions.

TASEA is another strength which serves the solar industry as a platform for networking, information sharing, capacity building and awareness creation.

1.3.3 Enabling Policies

The National Energy Policy supports rural electrification. The framework currently allows legally private sector participation in modern energy services activities. Operational REA stands to benefit more rural electrification initiatives through concession and incentives to project developers and end users (consumer financing).

Some challenges in consideration of the size of the country include budget constraints, limited awareness on energy as a necessary input in development activities. Others include limited awareness and documentation on rural electrification best practices to rural decision and policy makers. Planners and budgeters need to be willing to bear the high cost of creating awareness on policies and infrastructure development to rural communities in order to benefit such rural institutions and the general public.

1.3.4 Appropriate Financial Mechanisms

Most development partners (Sida, WB, UN, EU, GTZ) are already and willing to support improvement of the education, health and water sectors in rural Tanzania, as such, they stand to financially support electrification of such facilities. Existence of some ongoing rural electrification projects and activities including TEDAP, MCC, Sida/MEM and UNDP/MEM solar PV Projects positively impact on rural electrification initiative in Tanzania. Practicing private sector must be willing to share some responsibilities to facilitate rural electrification. REA/REF is another potential source for rural electrification financing.

Challenges include limited capital base of most current implementing actors, limited awareness of local financial institutions to support such initiatives, limited energy credit facilities and financing schemes, bureaucracy in financing institutions, lack of good governance and the large size of the country which require a substantial investment.

1.3.5 Codes and Standards

Already standards for conventional electricity exist. Those for solar PV systems have been prepared for East Africa and await to be gazetted to become operational. Efforts should be made to enforce them and possibly extend the capacity for TBS and EWURA enforcers to district levels where most electrification and systems will be installed.

1.4 Target 4: Motive Power for Productive Uses

1.4.1 Energy Resources

Animal, flowing water, wind and petroleum products have been used in motive power provision in rural communities of Tanzania. Easy availability of equipment required for transforming energy resource to motive power is an advantage to the sector. Strong

demand of motive power for potential productive activities (agro processing, livestock, wood, fishing, and mining) in rural areas is an opportunity that needs capturing to ensure reliable availability and sustainability for majority rural communities.

Experience indicates some applications of motive power for productive uses in rural communities of Tanzania in areas of cereal milling, dehusking, fishing gears, wood works and mining initiatives. Overdependence on human energy in most parts of the country adversely impact on the need for motive power.

Sophisticated motive power for productive uses could face expertise and technological know how requirements from actors. Challenges include high initial cost involved for some technologies and high operational cost.

1.4.2 Institutional Framework, Players and Activities

The Ministry of Energy and Minerals is interested in promotion and dissemination of motive power for productive uses in rural areas although it is only available at the national level lacking follow up offices and strategies at the district level.

Operational REA will significantly impact positively on the use of motive power for productive uses in rural communities if supported by adequate realistic budgets and frameworks to meet the set targets.

There is at least a use of motive power for productive uses funded by the private actors in most villages. However, high initial and running costs of such investments adversely influence their adoption rates.

Challenges include under developed infrastructure, REA/REF with budget constraints, limited capacity to meet country's demand and expertise requirements, large geographical coverage of the country, high initial cost and imported equipment and sometimes fuel used

1.4.3 Enabling Policies

The National Energy policy supports motive power in rural areas. So is the NSGRP and Rural Development Strategy. REA is a catalyst framework and support in the process. Challenges include weak capital base of the rural private sector, government budget constraints towards the direction, uncoordinated efforts, limited and unreliable accessibility of petroleum products in rural areas.

1.4.4 Appropriate Financial Mechanisms

Experience has shown that ownership of motive power for productive uses are realized though cash sale purchases and or hire purchase arrangements. Rarely rural private sector gets loans from banking institutions.

A number of SACCOs are coming up in rural areas. They could be used as source of funds for procuring motive power for productive uses if strategically supported by the Government through policy and incentives.

Interested Development Partners and Banks (e.g Sida, WB, UN, EU) stand to support such initiatives. Already there exist some ongoing demonstration of innovative arrangements promoting motive power for multiple applications and services in rural areas by TaTEDO and GVEP project through the use of Multifunctional Platforms Agro processing, fishing and mining industry stands to benefit from motive power initiatives in rural communities and hence justification for their support.

Weaknesses include limited capital base for implementation of related projects, limited awareness of local financial institutions to support such initiatives, limited energy financing schemes and limited budgets of responsible institutions

1.4.5 Codes and Standards

No standards are available in Tanzania for motive power supply.

2.0 SWOT ANALYSIS FOR THE FOUR EAC TARGETS

2.1 Target 1: Modern Cooking Services

Tanzania is endowed with abundant energy resources and access that could be employed in modern energy cooking technologies and services for the poor. Such resources include biomass, solar, coal and natural gas. It is encouraging to learn that already there exist availability of local expertise and experience for construction, distribution and use of such technologies. On going initiatives include those of the Government (MEM, MNRT) civil societies (TaTEDO, ProBEC, COSTECH, WUWE), and private companies (Oryx, BP, Manji's, Total and Nat oil). Interested development partners (NORAD, UN, EU, GTZ) provides a room for support of initiatives to promote such modern cooking services for the poor. The above mentioned development partners have frequently and are still supporting biomass energy services through government programmes and civil societies. NORAD, EU and UNDP have supported improved biomass stoves for more than 8 years with more than US\$ 3 million. GTZ through a project named ProBEC has spent closer to US\$ 300,000 on biomass in Tanzania. Initiatives on modern cooking for the poor stands further to benefit from the already operational REA and several vast studies reports that exist within players and stakeholders on cooking services and practices.

Unfortunately all these efforts are very small/ insignificant in consideration of the percentage of Tanzanians requiring modern cooking energy services and the burden imposed on the environment by continued use of poor or traditional cooking services and technologies. Biomass cooking stoves, which is employed by more than 90% of Tanzanians, has no specific policy and the national budget allocated is less than 1% of the MEM energy development budget. While MEM total Budget for 2007/8 is about US\$354 million, energy component has US\$194.9 million. Out of the energy component only about US\$ 300,000 is allocated for Renewable Energy (RE) and Energy Efficiency (EE). Taking into consideration that biomass is only one component of RE, its allocation is likely to be not more than US\$ 100,000. As such the biomass budget is less than 0.03% of the MEM total budget and is less than 0.06% of the MEM energy component budget. If business remains as usual we can not expect any significant impact on the ground. Something beyond business as usual MUST happen to change the scenario.

On the other hand, in priority documents of the government such as NSGRP, biomass energy is also not explicitly given its weight in relation to the percentage it serves in cooking processes of Tanzanians. As a result forest reserves are dwindling at a pace that is threatening (about 400,000 hectares) per annum.

Although development partners mentioned above are willing to support initiatives in the direction of improved cooking services, ongoing efforts are not coordinated and documentation is not necessarily friendly for other players and actors to make use of, as it mostly addresses requirements of the responsible donor. No central place one could get updated realistic information and data on what is happening in the country regarding biomass technologies and services, let alone other modern cooking technologies such as LPG and solar.

MEM is lacks a documented implementation strategy and programmes for the entire policy. As such programmes that have been prepared to address the policy are piece-meal. When this is combined with budget constraints, no significant impact reaches the poor on the ground.

Good governance and programmes away from donor driven agenda will assist further poor Tanzanians with accessibility to modern cooking technologies and services.

A lot of studies on modern cooking technology have been carried out but with little implementation. Some of these studies should be implemented before undertaking further studies.

The following table gives more information of the SWOT analysis in a table format specifically considering Energy Resources, Institutional capacity, policy and legal framework and financial capacity on Target 1 regarding modern energy cooking.

<p>Strength</p> <ul style="list-style-type: none"> • Availability of various energy resources for cooking • Strong demand of modern cooking services (commercial sector and households) • Ongoing experience on the use of charcoal in Tanzania • Availability of local expertise for construction of various modern biomass cooking stoves • Ongoing initiatives in modern biomass cooking services (TaTEDO, PROBEC, COSTECH, MEM) • Emerging and interested private sector disseminating LPG (Oryx, BP, Manji's, Total and Nat oil) • Good will of the Ministry of Energy and policy support • Operational REA • Interested development partners (NORAD, UN, EU, GTZ) • A number of relevant reports and study findings 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Expensive and poor means of transforming energy resources to useful forms • Overdependence on biomass resource • Dwindling biomass reserves (forests) • No energy sector representation at regional, district and local levels • No reliable documentation, updating and dissemination system for energy resources data among stakeholders • Bureaucracy • Poor governance • Donor driven agenda • Weak and ineffective multisectoral holistic approach and coordination • No documented strategy for implementing the national energy policy • A lot of studies and research reports without optimal corresponding actual activities on the ground • Limited capacity to implement and translate policies to common people • Budget and negligible constraints to implement policies • No biomass policy and negligible budget allocation • Limited local financiers • Limited budgets of responsible participating parties • Limited storage and distribution infrastructure for modern biomass stoves, LPG and Natural Gas
<p>Opportunities</p> <ul style="list-style-type: none"> • Existence of several energy resources such as solar, coal and petroleum deposits • Growing market of LPG (more than 70,000 cylinders circulating) • REA • Interested development partners • Potential cooperation between Ministry of Energy and Ministry of Health to leverage programmatic actions on household energy and health especially regarding awareness raising through the health sector and capacity building 	<p>Threats</p> <ul style="list-style-type: none"> • High cost of developing energy resources into useful forms • Expensive petroleum products including kerosene • High cost of developing energy expertise capacity and institutional infrastructure • Knowledge on policies and awareness is limited to few at national level and not beneficiaries • High cost of creating awareness on policies and infrastructure for common people to benefit from energy policy opportunities • Big volume of the country • High cost involved in financing such initiative

2.2 Target 2: Modern Energy Services for Urban and Peri-Urban Poor

About 80% of the 10% Tanzanians connected to the grid live in urban areas. A short drive into peri urban areas from such connected towns will immediately reveal that majority of households is not connected. Even in most electrified peri urban settlements, only 50-60% of such settlements are connected. As of now, only about 660,000 customers are connected to the grid. The number of new connections by TANESCO per annum is still limited to 36,000. This fact calls for a new push and parallel intervention to get more Tanzanians electrified.

Some private companies (Artumas) have already started operating isolated grids and are planning to connect new customers in Mtwara and Lindi. Such efforts, after an in depth scrutiny, need to be encouraged by the government as they relax some load of electrification from TANESCO. Policies and legal frameworks providing incentives to such actors and encouraging more private sector participation will make a difference. As such, the electricity act that will give more room for private sector participation in generation, transmission and distribution of electricity should be worked out in order to speed up the electrification process.

Energy being on top of the agenda for most development partners (UN, WB, EU), the government and private sector stands to benefit from their support. In order to make a difference, electrification through business as usual (centralized generation and distribution), must be reviewed by promoting private sector participation through encouragement and development of decentralized mini grid systems. Such promotion could effectively benefit from well developed energy infrastructure at district levels, which also require increased budget. Currently energy coordination activities are done at national level only. Energy budgets are prepared in Dar es salaam City by Dar es Salaam dwellers where electrification is about 59%, which is the highest regional electrification figure in the country. Energy coordination and budget development from local demands perspectives could make a difference.

Energy (electricity) is an important input in most development and economic activities. However, it is not explicitly featuring in priority documents with adequate budgets to make a difference on the ground. Most good policy statements are not supported by realistic budgets and strategies and frameworks to transform them to projects. If all relevant sectors and districts in need of electricity for implementation of their programmes and activities would indicate their energy sources and needs and allocate adequate budgets, it would make a significant impact on the ground. Energy budget would increase and so is the speed of electrification.

Electrification especially when involving private sector requires regulation. Recently EWURA complained of having no powers to deal with some untrustworthy business people in the petroleum industry. A stronger EWURA, with mandate, authority and autonomy is a necessary. On the other hand, EWURA has limited number of staff (about 40) mostly located in Dar es Salaam and a limited budget to suffice representation to other levels such as districts where most people are. This is not a healthy situation for an important entity like EWURA. Further more, bureaucracy in decision making adversely affects electrification efforts. As an example, a model power purchase agreement that is meant to simplify negotiations and contracting power purchase agreements between IPP

and TANESCO was drafted and spent significant amounts of money, but has not yet been effected.

The following table gives more information of the SWOT analysis in a table format specifically considering Energy Resources, Institutional capacity, policy and legal framework and financial capacity and Standards regarding Target 2 on electrification of peri urban areas.

<p>Strength</p> <ul style="list-style-type: none"> • Local availability of various energy resources for modern energy services including hydro electric, biomass and natural gas for grid connection • Strong demand (commercial sector and households) • Availability of local expertise and experience for hydro and thermal power generation, transmission and distribution • Legal effective participation of private sector (Artumas, Songas, IPTL, AGGREKO) • Interested Ministry of Energy and Minerals • Operational EWURA • REA • Standardized power purchase agreements • Interested development partners (Sida, WB, UN, EU, GTZ) • Policy support • Existence of some ongoing activities 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Limited local exploitation and distribution capacity • Whether dependence • Overdependence on biomass resource • Dwindling biomass reserves-forests • Under developed infrastructure, • Under developed EWURA mandate and authority • National budget constraints to meet country's demand and expertise requirements • Bureaucracy • Good governance • Donor driven agenda • Limited installed capacity to suffice urban and peri urban requirements • Electrification of urban and peri urban budgeting not realistic in planning • Limited capital base of the local private sector to participate • Limited energy financing schemes
<p>Opportunities</p> <ul style="list-style-type: none"> • Existence of several energy resources such as wind, solar, coal and petroleum deposits for electricity generation • Legal participation of the private sector • Interested development partners • Standardized power purchase agreement • Expensive petroleum products 	<p>Threats</p> <ul style="list-style-type: none"> • High cost of grid extension and connections • Policies and awareness limited to few potential players at national and international level and not known to majority local beneficiaries • High cost of creating awareness on policies and infrastructure for common people to benefit from energy policy opportunities • Big volume of the country • High cost involved in financing such initiative

2.3 Target 3: Modern Energy Services for Rural Institutions

Tanzania is endowed with abundance of energy resources enough to provide power for the entire country. However, technological limitation, expertise and resource capabilities adversely affect transformation of these resources into useful form of modern energy for communities. While solar is abundantly available in Tanzania, solar modules and most of the associated accessories are expensive. On the other hand, while biomass is plenty in some rural areas of Tanzania, gasification technologies and electrification generation from such biomass in Tanzania is still very limited.

Most Tanzanians are not aware on some modern energy services and technologies; as such their choices are limited to what they only know about energy which does not necessarily include locally potential modern energy resources. Majority of Tanzanians are unaware of making use of Life Cycle Cost analysis when deciding energy options for use. As such, most do buy cheaper conventional energy sources like gensets and end up paying large amounts of money on operational costs, which eventually when evaluated over the life cycle of the system, is more than the once considered expensive renewable energy source.

A casual survey on actors and providers of rural energy technologies and services reveals that the majority are based in Dar es Salaam, Mwanza and Arusha cities. Most of them have no branches and or distribution channels in other regions and districts. As such, potential customers are only accessible to such information when they get contacts to those cities, which is not friendly for dissemination purposes. It is interesting to note that even tender information on rural facilities is easily accessible in cities where newspapers and websites are timely read and accessible. So is the government energy sector, which is only concentrated in Dar es Salaam at MEM.

Electrification of rural institutions and populations mostly receives political promises that are not supported by realistic budgets to get things done as per targets.

Most companies in the private sector are willing to participate in rural electrification but are adversely impacted by their limited financial capabilities to carry out marketing in rural areas and to hire a sizeable workforce to cover several geographical boundaries. This is aggravated by lack of conducive financing mechanisms and schemes for the energy sector.

Establishment of REA is good news to rural energy initiatives but its budget for rural energy development needs to be increased much by various development partners including the Government of Tanzania, WB, UN, Embassies, Private Sector, among others. The first commitment of the United Republic of Tanzania (MEM) of about US\$10 million is low when considered that rural electrification is only about 2%.

It is also too early to guarantee effectiveness of REA operations and its legal framework for implementation. Efforts are necessary to facilitate conducive and encouraging atmosphere to existing and new rural energy actors to benefit from the Agency.

Strategic planning could benefit rural energy industry actors in Tanzania from the interested development partners willing to support energy projects for community development and poverty reduction.

The following table gives more information of the SWOT analysis in a table format specifically considering Energy Resources, Institutional capacity, policy and legal framework, financial capacity and Standards regarding Target 3 on electrification of rural social facilities.

<p>Strength</p> <ul style="list-style-type: none"> • Local availability of various energy resources for electricity including solar energy • Strong demand by rural institutions (Less than 1% of rural schools and health facilities are electrified) • Interested Ministry of Energy and Minerals • Availability of local expertise within local organizations • Operational REA • Existence of ongoing initiatives • Effective legal participation of private sector in rural electrification • Policy support on rural electrification • Interested development partners (Sida, WB, UN, EU, GTZ) 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Limited technological and resources capacity for exploitation of energy resources • Limited capacity and awareness to decide on energy options • Under developed delivery infrastructure within the private sector • National budgetary constraints to meet country's electrification demands and expertise requirements • Weak capital base of most participating companies/actors • Limited purchasing power of most Tanzanians and institutions • No energy sector representation at regional, district and local levels • Energy as a strategic input to any development not adequately mainstreamed in national priority documents, plans and budgets • Limited local financing of energy initiatives and businesses • Bureaucracy in financing institutions
<p>Opportunities</p> <ul style="list-style-type: none"> • Existence of ongoing awareness and capacity building initiatives (UNDP/MEM, Sida/MEM) • Legal recognition for private sector participation • Rising costs of petrol products as an alternative power option • Strong demand • Interested development partners (Sida, WB, UN, EU, GTZ) • High running costs of some conventional rural electricity supply options • High cost for grid extension to rural communities 	<p>Threats</p> <ul style="list-style-type: none"> • High initial cost of most rural energy equipment and appliances • Most equipment not locally made • Low initial cost of alternative energy options • Big volume of the country • High cost of building delivery networks and maintenance infrastructure • High cost of creating awareness on policies and infrastructure for rural institutions and the general public • High cost involved in financing such initiative

2.4 Target 4: Motive Power for Productive Uses

Rural communities are endowed with processing activities that have been and or stand to benefit from modern energy services. More than 3000 milling and de-husking machines are employed in rural Tanzania communities. However, human energy has remained a dominant energy source for productive activities in rural communities. Peasants are obliged to sell their raw produce at low prices in fear of destruction by time, rodents or weather. Availability of appropriate motive power would ensure processing of raw produce and hence adding value to such products and attain higher prices.

Motive power needs some expertise, capital and modern energy source to operate. Provision of motive power is one thing and use of motive power is a different thing. Limited availability of relevant promotional packages for motive power applications in rural areas hinders socio economic development and sustainability of the same. One would expect promotion of motive power for productive use to go as a package with providers of benefiting machineries and equipment, financing and loan schemes accessibility.

REA's young age (operational not more than a year ago), staffing size (about 30 staff only) and limited budget constrain its performance in the motive power industry and other relevant areas. Weak capital base of the private sector also adversely impact on the development of motive power for productive uses.

Effective coordination of efforts could assist in reducing most duplication of efforts. Networking and effective information dissemination could benefit the industry.

The following table gives more information of the SWOT analysis in a table format specifically considering Energy Resources, Institutional capacity, policy and legal framework, financial capacity and standards regarding Target 4 on motive power for productive uses

<p>Strength</p> <ul style="list-style-type: none"> • Availability of animal, flowing water and petroleum products used in motive power provision • Availability of equipment required for transforming of energy resource to motive power • Strong demand from potential productive activities (agro processing, livestock, wood, fishing, mining) • Interested Ministry of Energy and Minerals • Operational REA • Interested development partners (Sida, WB, UN, EU, GTZ) • Policy support • Existence of some ongoing initiatives by the private sector • Availability of local expertise on most such services 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Limited experience on some technologies • Overdependence on biomass resource • Under developed infrastructure • A nascent REA • National budget constraints to meet country's demand and expertise requirements • Weak base of the private sector and other participating parties • Limited base for awareness creation on best practices • Energy as a strategic input to any development initiative not adequately mainstreamed in national priority documents, plans and budgets • Uncoordinated efforts • Limited awareness and local energy financing to support such initiatives
<p>Opportunities</p> <ul style="list-style-type: none"> • Existence of several energy resources such as wind, coal and petroleum deposits for motive power generation • Strong demand for motive power in agro processing industry, wood, livestock, fishing and small mining • Interested development partners • High cost of grid extension to rural communities 	<p>Threats</p> <ul style="list-style-type: none"> • High initial cost involved • Expensive petroleum products • High cost for capacity building • Most equipment and sometimes fuel used imported • High cost of creating awareness on such initiatives and potentials for other productive uses • High cost involved in financing such initiative

3.0 KEY FINDINGS FROM THE ASSESSMENT AND SUBSEQUENT OUTPUTS

3.1 Institutional and capacity challenges and gaps to be addressed

The following are identified institutional capacity challenges and gaps that needs to be addressed:

- Charcoal and firewood dominates cooking services in Tanzania to a tune of 90% but lacks policy and implementation strategy with legal frameworks and realistic budgets to formalize the industry from which the government could in turn get revenue through taxes and licensing.
- Planners and budgeters at MFEA and at other strategic Ministries, such as the Ministry of Health, Ministry of Education, etc, are not necessarily informed on the importance of mainstreaming energy in priority planning documents with allocation of adequate realistic budgets to realize set targets in policies.
- Energy coordination at district and local levels is key to success of any modern energy dissemination strategies
- There is lack of effective incentive policies, strategies, frameworks and capacity for energy actors in Tanzania.
- Efforts should be made to make local financial institutions aware of energy investments in order to become willing to take part in financing
- A number of development partners exist who need to be strategically approached to support the four targets of the EAC Strategy on scaling up access to modern energy services.
- The Government should work out ways to build capital base of local actors on modern energy services to take part in investments.
- A number of energy studies and planning have already been conducted and reports are available in MEM and civil societies; Tanzania now needs implementation and not more studies and planning forever. Tanzania needs MEGAWATTS and not MEGAWORDS.

3.2 Summary of Preferred draft actions to address the gaps

Target	Major Players/ Implementers	Proposed actions	Targeted Output
1. Mainstreaming energy	MEM/ PMO-LARG/ MFEA, NGOs/ CBOs/ Private companies/ Consultant	Mainstream energy in national planning and budgeting processes for necessary allocation to make impact Establish energy coordination activities at district and local level Identify and promote expansion of actual dissemination of effective energy cooking delivery services	THE 4 TARGETS ARE INTEGRATED IN ALL RELEVANT SECTORS/STRATEGIES AND BUDGETS
2. POLICY AND FRAMEWORKS	MEM/ EAC/ MFEA/ PMO-LARG/ NGOs/ private sector/ Consultant	Establish GAPS within service Providers/ EWURA to contribute to the 4 targets (technical, Economic, policy, legal, etc) Assess financing options for service providers to address the 4 targets & identify effective ones	SERVICE PROVIDERS ARE CONTRIBUTING TOWARDS MEETING THE FOUR TARGETS

		Identify appropriate incentives and provide support to service providers	
3. POLICY AND FRAMEWORKS	MEM/ EAC/ MFEA/ PMO-LARG/ NGOs/ private sector/ Consultant	Develop coordination system for energy at all levels Establish energy coordination activities at district and local level	ACTIONS TOWARDS MEETING THE TARGETS ARE COORDINATED, MONITORED & ASSESSED AT ALL LEVELS (CROSS - SECTOR COORDINATION)
4. POLICY AND FRAMEWORKS	MEM/ EAC/ MFEA/ PMO-LARG/ NGOs/ private sector	Select and promote appropriate technologies meeting standards including low cost technologies Identify appropriate incentives and promote support to end users	ENERGY SERVICES MEET END-USER DEMAND (COST, QUALITY & LIFE - CYCLE)
5. CAPACITY BUILDING	MEM/ EAC/ MFEA/ PMO-LARG/ NGOs/ private sector/ consultant	Facilitate tailor made capacity building activities to the public sector for the 4 energy targets	THE PUBLIC SECTOR HAS THE CAPACITY TO PLAN, FACILITATE IMPLEMENTATION AND ENFORCE, MONITOR, LEGAL AND REGULATORY FRAMEWORKS WITH REGARD TO MEET TARGETS
6. CAPACITY BUILDING	MEM/ EAC/ MFEA/ PMO-LARG/ NGOs/ private sector/ Consultant	Facilitate tailor made capacity building activities to service providers of the 4 energy targets	<i>SERVICE PROVIDERS HAVE THE HUMAN & ORGANIZATIONAL CAPACITY TO DELIVER ENERGY SERVICES SUSTAINABLE MANNER</i>
7. BUSINESS MODELS	MEM/ EAC/ MFEA/ PMO-LARG/ NGOs/ private sector/ Consultant	Selection and implementation of existing business models (and new to Tanzania) to be replicated, monitored and evaluated Assess the necessary organizational capacity of the service provider for the business model (availability need for training capacity) Continuously communicate to responsible actors recommendations regarding the necessary institutional framework to support business models (including pro-poor policy frameworks and capacity building)	DELIVERY BUSINESS MODELS TO ROLL OUT HAVE BEEN ASSESSED AND SELECTED

3.3 National Validation Workshop

It is worth to note that both the baseline report, SWOT analysis, key findings on gaps and an original 24 months implementation action plan was presented to a national stakeholders validation workshop, in which comments and inputs were provided to enrich the document. For more details, a summary of the national validation workshop is attached to this document as Annex 3. One may wish to know that the following 24 months action plan is a new version which was adopted at a regional workshop in Arusha in March 2008. The original plan was modified by actors and stakeholders to suit the need of both the EAC nations and supporting development partners.

4.0 IMPLEMENTATION WORK PLAN FOR 24 MONTHS

STRATEGY	OUTPUT	SN	ACTIVITIES	INDICATORS	RESPONSIBLE	TIME FRAME	BUDGET (US\$)	ASSUMPTION
MAINSTREAMING ENERGY	THE 4 TARGETS ARE INTEGRATED IN ALL RELEVANT SECTORS/ STRATEGIES AND BUDGETS	1.1	Establish Gaps for integration of 4 targets in relevant sectors	Report on GAPS	MEM/ consultant	Q1	20,000	
		1.2	Categorize the GAPS in the relevant sectors (Political, Economical, Environment, Business)	Gaps categories report	MEM/ Consultant	Q1	10,000	
		1.3	Develop education packages to address GAPS & dissemination	Educational packages	MEM/ Consultant	Q2	50,000	
		1.4	Lobby and advocate for energy mainstreaming in relevant sectors	Meetings, workshops, articles, invitations	MEM/MFEAEA/PMO-LARG	Q1-Q8	100,000	
		1.5	Facilitate operationalization of integration in relevant sectors	Coverage of 4 targets in sector documents & budgets	MEM	Q5	100,000	
		1.6	Facilitate monitoring and evaluation of the integration in relevant sectors	Monitoring and evaluation report	MEM/ Consultant	Q1-Q8	50,000	
POLICY AND FRAMEWORKS	SERVICE PROVIDERS ARE CONTRIBUTING TOWARDS MEETING THE FOUR TARGETS	2.1	Prepare inventory of available and potential service providers to achieve the four targets	Inventory	MEM/ Consultant	Q1	30,000	
		2.2	Establish GAPS within service Providers/ EWURA to contribute to the 4 targets (technical, Economic, policy, legal, etc)	Gaps report	MEM/ Consultant	Q2	10,000	
		2.3	Categorize GAPS & potential solutions/benefits within actors	Gaps categories report	MEM/ Consultant	Q2	30,000	
		2.4	Conduct a series of events to communicate potential solutions and benefits to actors and potential actors	Meetings, workshops, articles, invitations, TV and radio programmes	MEM	Q3-Q7	100,000	
		2.5	Assess financing options for service providers to address the 4 targets & identify effective ones	Assessment report	MEM/ Consultant	Q3	50,000	
		2.6	Provide support to financing sources to avail funds to service providers	Supports to financing institutes & service providers	MEM/ EAC/ MFEAEA/ NGOs/ private sector	Q4-Q7	200,000	
		2.7	Identify other appropriate incentives and provide support to service providers	legal, framework, policy and social incentives	MEM/ consultant	Q4	100,000	

		2.8	Facilitate monitoring and evaluation of service providers contribution in meeting the 4 targets	Monitoring and evaluation report	MEM/ consultant	Q1-Q8	50,000	
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STRATEGY	OUTPUT	SN	ACTIVITIES	INDICATORS	RESPONSIBLE	TIME FRAME	BUDGET	ASSUMPTION
POLICY & FRAMEWORK	ACTIONS TOWARDS MEETING THE TARGETS ARE COORDINATED, MONITORED & ASSESSED AT ALL LEVELS (CROSS - SECTOR COORDINATION)	3.1	Identify key sectors and appropriate coordination relevant to the 4 targets	Report on linkages and gaps in coordination	MEM/ PMO-LARG, Consultant	Q1	20,000	
		3.2	Assess functions and linkages of key sector & organizations relevant to 4 targets	Report on linkages and gaps in coordination	MEM/ PMO-LARG/ Consultant	Q1 & Q2	50,000	
		3.3	Explore suitable energy coordination system at all levels to achieve targets	Comparison of energy coordination systems	MEM/ PMO-LARG, Consultant/ MFEAEA	Q2	30,000	
		3.4	Develop coordination system for energy at all levels	Energy coordination system in place	MEM/ PMO-LARG, Consultant/ MFEAEA	Q3	100,000	
		3.5	Facilitate operationalization of the energy system at all levels	Operational energy coordination system	MEM/ PMO-LARG, Consultant/ MFEAEA	Q5 -Q7	150,000	
		3.6	Facilitate monitoring and evaluation of the developed energy coordination system	Monitoring and evaluation report	MEM/ consultant	Q1-Q8	50,000	
	ENERGY SERVICES MEET END-USER DEMAND (COST, QUALITY & LIFE - CYCLE)	4.1	Conduct needs assessment of end - users options in the four targets	Needs assessment report	MEM/ PMO-LARG/ Consultant	Q2	50,000	
		4.2	Carry out inventory of available technologies to meet the 4 targets	Inventory	MEM/ PMO-LARG/ Consultant	Q3	30,000	
			Assess existence of standards	Assessment report	MEM/ PMO-LARG/ Consultant/ TBS/ EAC	Q4	30,000	
		4.3						
		4.4	Select and promote appropriate technologies meeting standards including low cost technologies	Training, workshops, media programmes, report	MEM/ PMO-LARG/ Consultant/ TBS	Q4-Q7	100,000	
		4.5	Assess end - user financing sources/ options for support	Assessment report	MEM/ consultant	Q4-Q7	30,000	
		4.6	Identify other appropriate incentives and promote support to end users	Legal, framework, policy and social incentives	MEM/ consultant	Q6	200,000	

		4.7	Facilitate monitoring and evaluation	Monitoring and evaluation report	MEM/ consultant	Q1-Q8	50,000	
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STRATEGY	OUTPUT	SN	ACTIVITIES	INDICATORS	RESPONSIBLE	TIME FRAME	BUDGET	ASSUMPTION	
CAPACITY BUILDING	THE PUBLIC SECTOR HAS THE CAPACITY TO PLAN, FACILITAE IMPLEMENTATION AND ENFORCE, MONITOR, LEGAL AND REGULATORY FRAMEWORKS WITH REGARD TO MEET TARGETS	5.1	Assess public sector capacity	Assessment report	MEM/ consultant	Q3	30,000		
		5.2	Categorize capacity development needs and identify trainers	Report	MEM/ consultant	Q4	10,000		
		5.3	Facilitate tailor made capacity building activities	training, workshops, media programmes, exhibitions, demonstrations	MEM/ Consultant/ TBS/ PMO-LARG	Q5-Q7	200,000		
		5.4	Facilitate monitoring and evaluation	Monitoring and evaluation report	MEM/ Consultant	Q1-Q8	50,000		
	<i>SERVICE PROVIDERS HAVE THE HUMAN & ORGANIZATIONAL CAPACITY TO DELIVER ENERGY SERVICES SUSTAINABLE MANNER</i>	6.1	Assess human resource capacity to identify capacity building needs	Assessment report	MEM/ Consultant	Q2	30,000	Management capacity of TANESCO is being addressed by other programmes	
		6.2	Categorize capacity development needs and identify trainers	Capacity needs assessment report	MEM/ Consultant	Q3	20,000		
		6.3	Facilitate tailor made capacity building activities	training, workshops, media programmes, exhibitions, demonstrations	MEM/ Consultant/ PMO-LARG	Q4-Q7	200,000		
		6.4	Facilitate monitoring and evaluation	Monitoring and evaluation report	MEM/ Consultant	Q1-Q8	50,000		
	BUSINESS MODELS	DELIVERY BUSINESS MODELS TO ROLL OUT HAVE BEEN ASSESSED AND SELECTED	7.1	Establish sustainability criteria for up- scalable EASUP delivery models	Criteria	MEM/MFEAEA/PMO-LARG/ Consultant	Q1	40,000	Access and collaboration with ongoing projects relevant to assessing delivery models
			7.2	Carry out inventory of existing business models for Tanzania	Inventory	MEM/ Consultant	Q2	50,000	
7.3			Select existing business models in Tanzania to monitor and evaluate	A list of business models for rolling forward	MEM/ PMO-LARG	Q2	30,000		
7.4			Selection and implementation of existing business models to be replicated, monitored and evaluated	Operational selected business models	MEM/ PMO-LARG	Q3	200,000		

	SN	ACTIVITIES	INDICATORS	RESPONSIBLE	TIME FRAME	BUDGET	ASSUMPTION
	7.5	Selection and implementation of new (to Tanzania) business models to be monitored and evaluated	Operational selected business models	MEM/ PMO-LARG	Q3	100,000	
	7.6	Assessment of business models	Assessment report	MEM/ PMO-LARG/ Consultant	Q4	50,000	
	7.7	Preparation of data /information collection instruments	Data collection tools	MEM/ Consultant	Q4	30,000	
	7.8	Collection of data (monitoring)	Report	Consultant	Q1-Q8	50,000	
	7.9	Assess the necessary organizational capacity of the service provider for the business model (availability need for training capacity)	Organizational capacity assessment report	MEM/ Consultant	Q5	50,000	
	7.10	Assess the necessary pro-poor institutional framework for the business model to be scaled up (financing requirements)	Assessment report	MEM/ Consultant	Q6	50,000	
	7.11	Continuously communicate to responsible actors recommendations regarding the necessary institutional framework to support business models (including pro-poor policy frameworks and capacity building)	Operational networking and information dissemination system	MEM/ PMO-LARG/ MFEAEA/ Media	Q1-Q8	50,000	
TOTAL PROPOSED BUDGET						3,080,000	

5.0 ANNEXES

5.1 Annex 1: List of Individuals and agencies contacted and particulars

SN	Name of Individuals Contacted	Organization/Agency	Particulars
1.	Eng. Ngosi Mwhava	MEM	Assistant Commissioner for Renewable Energy
2.	Eng. Hosea Mbise	MEM	Asst. Commissioner for Energy Development
3.	Hezron Kajange	Ministry of Education and Vocational training	Head Policy and Planning Section
4.	Savinus Kessy	UNDP	Energy and Environment
5.	Alice Mushi	Clinton Foundation	Ministry of Health and Social Welfare
6.	Arfaxad Ndilanha	ProBEC	Project coordinator
7.	Bariki Kaale	UNDP/GVEP	Project Coordinator
8.	Boniface Hanga	Sida/MEM project	Local Project coordinator
9.	Bosco Seleman	TANESCO	Planning Executive Engineer
10.	Dr. Lutengano Mwakahesya	REA	Director General
11.	Hamis Mikate	ENSOL (T) Limited	Managing Director
12.	Pepijn Steemers	Umeme Jual Limited	Managing Director
13.	Francis Kibhisa	Rex Investment	Managing Director
14.	Isidory Fitwangile	UNDP/MEM solar project	Project Coordinator
15.	Jensen Shuma	TaTEDO	Information Manager
16.	Godfrey Sanga	TaTEDO	Sustainable Energy Department Manager
17.	Peter Gathercole	Artumas	Managing Director
18.	Edward Shilogile	MNRT	Forest officer
19.	Paul Kiwele	MEM	Renewable Energy Officer
20.	Hamis Kashushu	BP	Technician
21.	Hamis Ramadhan	Oryx	LPG Marketing Manager
22.	Boniface Kashangaki	TaTEDO	Charcoal and Firewood stoves officer
23.	Dr. Cuthbert Kimambo	CoET, UDSM	Senior Lecturer
24.	Pius Nambiza	Norwegian Embassy	Projects officer
25.	Francis Songela	Care International	Projects officer
26.	Dr. Yahya Ipuge	Clinton Foundation	Country Director
27.	Mark Hankins	Consultant	Asst. Team Leader
28.	Paul Kirai	Consultant	Team Leader

5.2 Annex 2: Key Reference Documents Used

- Strategy, “Strategy on Scaling up Access to Modern Energy Services: In Order to Achieve Millennium Development Goals”, EAC, Arusha (2006)
- Report, “Poverty and Human Development Report”, Research and Analysis Working Group Mkuki na Nyota Publishers, Dar es Salaam (2005),
- Policy, “The National Energy Policy” Ministry of Energy and Minerals, URT, Dar es Salaam (2003),
- Strategy, Rural Development Strategy” Prime Ministers Office “URT, Dar es Salaam (2001)
- Strategy, “The National Poverty Eradication Strategy” Vice President’s Office “URT, Dar es Salaam (1998)
- Report, “Annual Report for 2006/2007” TaTEDO, TaTEDO, Dar es Salaam (2007)
- Paper, “Artumas Power Company Profile and Activities in relation to CDM projects”, Peter Gathercole, Dar es Salaam, January 21st and 22nd 2008
- Policy, “National Forest Policy” MNRT, URT, Dar es Salaam (1998)
- Strategy, “National Strategy for Growth and Reduction of Poverty (NSGRP)” Vice President’s Office, URT, Dar es Salaam (2005)
- Report, “Final report on: Reviewing Coverage of Energy issues in Sector Policies and Strategies” Stephen Mwakifamba, GVEP/UNDP, Dar es Salaam (2006).
- Report, “Tanzania Rural Electrification Study: Master Plan and Programme Report” Decon, Sweco, Inter Consult, MEM/URT, Dar es Salaam (2005).
- Report, “Monitoring and Evaluation of Rural Energy Development in Kigoma” Bariki Kaale UDP/GVEP, Dar es Salaam, (2007).
- Report, “Proceedings of the Workshop on Mainstreaming Energy in Sector Policies Conducted at Court Yard Hotel in April 2007” Bariki Kaale, GVEP/MEM, Dar es Salaam (2006).
- Report, “Charcoal Potential in Southern Africa (CHAPOSA)” Misana, et al, Dar es Salaam (2000)
- National Data, “Basic Education Statistics in Tanzania (BEST) 2003- 2007”, The Ministry of Education and Vocational Training, URT, Dar es Salaam (2007)
- Report, “Standardized Power Purchase Agreement (PPA) for Small Power Projects in Tanzania”, Prof. Steven Ferry, Boston, 2007
- Report, “Transformation of Rural Photovoltaic (PV) Market in Tanzania URT/03/G31/A/1G/99: Preparation for UNDP/GEF Evaluation” Douglas Banks, et al, UNDP/MEM, Dar es Salaam (2006)
- Report, “Transformation of Rural PhotoVoltaic (PV) Market in Tanzania”, Hassan Wardi, UNDP/MEM, Dar es Salaam (2007)

Thesis, “Challenges and Prospects of Market Expansion for Renewable Energy Technologies in Tanzania – A Case Study of a Rural Electrification Project through Solar Photovoltaic Systems in Mwanza Region”, Rowland Okereke, Flensburg (2007).

5.3 Annex 3: Summary of National Validation Workshop Proceedings



EAC Strategy to Scale-Up Access to Modern Energy Services

**Proceedings of
Validation Workshop Organized by EAC Focal Point (MEM) in
collaboration with National Consultant
On 31st January 2008**

Prepared By:

Eng. Finias B. Magessa

P.O.Box 34269,

Dar Es Salaam, Tanzania

Tel: (255) 784 816537

Email: finiasm@yahoo.com

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1. INTRODUCTION AND OBJECTIVE

EAC is planning to implement a strategy for scaling up modern energy services in East Africa. The scaling up strategy, which was finalized in 2005, needs to be translated to actions. As such national consultants for each EAC countries were hired to update baseline information and conduct a current SWOT analysis for prevailing energy status in regard to the EAC energy scaling up four targets. The consultants were required finally to come up with a 24 months action plan to create conducive atmosphere for the scaling up to take place in a sustainable manner. The validation workshop under consideration was put in place to consider and eventually validate the national baseline report, SWOT analysis and the work plan for the first 24 months worked out by the National Consultant.

2. CHRONOLOGICAL OF EVENTS AND PARTICIPANTS

2.1 EVENT PROGRAMME

The programme of the validation workshop is shown in the table below.

TIME	ACTIVITIES	RESPONSIBLE
08.00	Arrival and Registration	Secretariat
08.30	Welcome remarks and introduction	Chairperson
09.00	Official opening	Commissioner for energy and Petroleum Affairs
09.15	Overview of EAC strategy	Consultant (Assistant team leader)
09.40	Baseline report and SWOT analysis	National Consultant
10.00	Draft Work plan for 24 months	National Consultant
10.30	Tea/ Coffee	All
11.00	Discussion /clarifications	Chairperson
11.15	Working groups	Chairperson
12.15	Group feedbacks	Representatives
13.00	Recommendations	Chairperson
13.15	Wrap up and closing	Chairperson
13.30	Lunch	All

2.2 WORKSHOP PARTICIPANTS

About 35 participants were invited. However, some did not attend including those from TANESCO, University of Dar es salaam, and Ministry of Education.

The table below indicates participants of the Validation workshop.

SN	NAME	POSITION	ORGANIZATION
1	Lameck Hazali		
2	Elda Kaaya		Plant and Oil
3	Daniel Mwakasungula		Ministry of Health
4	Omari Mohamed	Engineer	Energy Department Zanzibar
5	Joyce Kkisamo	Engineer	Tanzania Petroleum Development Corporation
6	Edward Kimakwa		MNRT
7	Estomih Sawe	Executive Director	TaTEDO
8	Eliabi Chodota		Ministry of East Africa
9	Devota Likokola	MP	Special Seats
10	Theophilo Bwakea	Asst. Commissioner for Electricity	Ministry of Energy and Minerals (MEM)
11	Theodore Silinge	Energy Officer	MEM
12	Victor Steven	Energy Officer	MEM
13	Paul Kiwele	Energy Officer	MEM
14	Arfaxad Ndilanha	Project Coordinator	PROBEC
15	James Ngeleja	Principa Engineer	NEMC
16	Mwanamani Kidaya	Geologists	MEM
17	Francis Mkwawa	Scientist	Commission for Science and Technology
18	Leonard Rweyemamu	Director	M&R Enginnering
19	Nicholous Moshi		MEM
20	Marwa Petro		MEM
21	Bariki Kaale	Project Coordinator	GVEP/UNDP
22	Dr. Amani Ngusasu		WWWF
23	Thomas Mnunguli	Head electrical department	Tanzania Bureau of Standards
24	Victor Akim		UNIDO
25	Bashir Mrindoko	Commisioner for Energy and Petroleum Affairs	MEM
26	Hosea Mbise	Principal Engineer (FP)	MEM
27	Ngosi Mwihava	Asst. Commissioner for RE	MEM
28	Mkomwa Masanyika	Energy Officer	MEM
29	Finias Magessa	National Consultant	TASEA
30	Mark Hankins	Consultant (As. Team Leader)	Freelant

3. OPENING

The Commissioner for Energy and Petroleum Affairs, Eng. Bashir Mrindoko officiated the opening of the validation workshop. In his opening note, he underscored the importance of the project to the government and the public at large. He asked the workshop participants, while deliberating on the issues raised in the country report regarding the 4 targets and on the proposed 24 months work plan, to reconsider whether we should go on planning forever or start implementation of the already existing plans. We need MEGAWATTS and not MEGAWORDS.

Finally, he wished participants to take keen interest on the subjects for discussion to come up with a realistic plan that Tanzania will implement through the EAC strategy.

4. PRESENTATIONS

4.1 An Overview of EAC Strategy for Modern Energy Scaling up Project

The assistant team leader of EAC Consulting team on the project, Mark Hankins, presented an overview of EAC strategy for scaling up modern energy services. Mark presented the four targets for scaling up and made it clear that the strategy was first put in place in 2005 and was not a new thing. He informed the fact that the strategy implementation for the first 24 months will dwell on creating conducive atmosphere for scaling up activities. He further clarified the fact that without pressing the correct button which is getting energy at the centre of national planning and budgeting machinery, everything will end up in energy piece meal undertakings without significant impact on the ground. He finally urged all participants to give due consideration to the presentations from the National Consultant and enrich the reports for the betterment of the country.

4.2 Baseline Report and SWOT Analysis of the Four EAC Targets for scaling up

4.2.1 Baseline Report

A draft baseline report on the four identified EAC targets were presented by the National Consultant. The four targeted EAC energy services include modern energy cooking services, electrification of peri urban areas, electrification of rural institutions (schools and health centres), and productive motive power. The baseline report provided for information and facts on status regarding available energy resources, affordability, adoption, resource allocations, challenges and key stakeholders. More details about the baseline are available in the main report of which this Annex 3 is attached.

4.2.2 SWOT Analysis

Presentation of the baseline report was followed by presentation of the SWOT analysis of the situation regarding the four EAC strategy targets. The SWOT analysis identified Strengths, Weaknesses, Opportunities and Threats regarding available energy resources; existing institutional framework, players and activities; situation of enabling policies and frameworks; appropriate financial mechanisms; availability of codes and standards. Detailed information on the SWOT analysis is available in the main report on which this Annex 3 is attached.

4.3 Draft EAC Action Plan for implementation of the strategy for 24 months

The SWOT analysis above provided base and information for the Tanzanian action plan that was proposed for implementation for 24 months. The action plan covered four areas for each of set EAC targets which included mainstream energy access in national development planning and budget, developing pro-poor energy policies and regulatory frameworks, strengthening national capacity to deliver energy services to the poor, and identification of high potential business models for effective dissemination. However, a regional meeting on harmonizing the strategy under consideration, conducted in Arusha in March 2008, resulted into replacement of the original 24 month action plan considered by the National Validation Workshop by the current attached 24 months action plan in section 4 of the main report on which this Annex 3 is attached.

5. DISCUSSION

Participants had time to contribute to the presented information, from the opening speech, baseline report, SWOT analysis and the EAC draft Action Plan for implementation of the strategy for the next 24 months. Eng. James Ngeleja of National Environment Management Council (NEMC) cautioned that baseline information on energy in the country is known to most players. So is some of the information in the SWOT analysis; key questions to be address is how to get these energy initiatives to the target groups at local level. He was surprised that after passing the strategy at the energy committee in Arusha, we are further planning to embark on creation of conducive environment and not scaling up to realize the target percentages in the documents. Furthermore, Eng. Ngeleja, commented that some of the stakeholders were missing in the group responsible for the implementation of the strategy such as NEMC.

Mr. Bariki Kaale of UNDP/GVEP informed of the fact that scaling up should be prioritized based on potential beneficiaries per technology. He informed that for the foreseeable future, Tanzania will continue to depend on biomass technologies and services for domestic heating requirements. While we are thinking of other modern energy services like LPG and electricity for cooking, improved biomass energy services should be given due consideration.

Mr. Bakari Said of Energy Department of Zanzibar, wondered why we were again going to use a lot of money on studies and not scaling up. He was not happy if more than US\$ 10,000,000 proposed for the strategy will be spend for preparatory activities only and no any scaling up on the ground.

Mr. Estomih Sawe of TaTEDO, attributed lack of energy strategies at district level, to the limited supply, uptake, and use of modern energy services, as most actual implementation of activities and projects take place there. He suggested development of district strategies for modern energy up scaling at district and local levels. Furthermore, he was wondering where the proposed funds will be sourced. He was skeptical of the proposed project implementation plan as fund sources were not yet known. Mr. Sawe also underscored the need for capacity building within actors and users on some modern energy services for a sustainable implementation of the strategy under consideration.

Commenting on some of the issues raised up by participants, the Assistant Commissioner for Renewable Energy, Eng. Ngosi Mwhava, informed that the proposed work plan belonged to the government and inputs from the energy working group participating in the workshop was so important to improve it. Being owners of the document, we should be free to tell EAC what Tanzania needed and this should not be necessarily in line with the proposed actions by the Consultants. He emphasized that, although the proposed actions targeted mostly creation of conducive environment for the scaling up to take off after 24 months, it was important for the actual hardware scaling up activities to go in parallel in the same period as most actors and stakeholders were so tired of continued planning and creation of conducive environment for so long.

Mr. Mark Hankins, a consultant to EAC who is also assistant team leader to the project, informed that as per terms of reference, available funds for the first 24 months were for creation of conducive environment. However, he was optimistic that, with the planned partners meeting that was scheduled for in Kigali, and the proposed donor mapping consultative meeting on EAC modern energy scaling up strategy, a separate fund would be set aside to support actual installation of systems and other hardware scaling up activities to go together with the core objective of the strategy for creation of conducive environment for modern energy scaling up in East Africa. He cautioned that, as consultants, the team was supposed to work as per terms of reference. Comments on hardware scaling up will be communicated in the partners meeting for possible consideration and actions.

A member of parliament, Honourable Ms. Devota Likokola insisted the need of getting out of offices and continued planning meetings to embark on actual scaling up in rural areas. Being a professional banker, she decided to go down to the people where she has established microfinance facility in Ruvuma Region under the name VICOBA. She was willing to influence the VICOBA Management to accommodate modern energy services activities in their products portfolio.

6. GROUP DISCUSSIONS

The plenary discussion was followed up by group discussions which aimed to establish whether planned activities were relevant, realistic and achievable. All the three groups, reported that activities were relevant but most of them were general and it would be better to narrow them down to specific activities. On the targets, all groups thought they were OK but time might not be enough to implement them all.

7. CONCLUSION AND RECOMMENDATIONS

The workshop was conducted as planned. It was attended by most members of the Rural Energy Working Group. 30 participants took part in the validation workshop. The national consultant presented the baseline report, SWOT analysis and draft action plan for the next 24 months. Participation was very active. Comments and inputs as per participants were provided.

On the basis of the comments and inputs from the validation workshop, it is therefore recommended:

- Creation of conducive environment for modern energy scaling up strategy should go together with some actual (hardware) scaling up activities to make sense to most Tanzanians.
- Explicitly, districts strategy for modern energy scaling up in Tanzania is inevitable if we want impact on the ground and should clearly feature in the EAC work plan.
- Incentives for actors and potential users of modern energy services (financing facilities) are inevitable if we want to be successful.
- Capacity building should be given due priority in any endeavor to scale up modern energy services in Tanzania.

8. CLOSING

The workshop was officially closed by the assistant commissioner for Renewable Energy, Eng. Ngosi Mwiwaha by emphasizing that efforts and recommendations should be made to see to it that the implementation of the EAC strategy on scaling up use of modern energy services is twofold in which creation of conducive environment goes together with actual implementation of scaling up activities (hardware part).