THE NATIONAL ENERGY POLICY

REPUBLIC OF ZAMBIA

MINISTRY OF ENERGY AND WATER DEVELOPMENT

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THE NATIONAL ENERGY POLICY

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Table of Contents

FOREWORD

The energy sector in Zambia will continue to play an important part in the development process of the country. It is therefore important that the policy framework in this sector is always responsive to the ever increasing challenges not only in this sector but the economy as a whole.

The First National Energy Policy (NEP) adopted by Cabinet in 1994 was sought to promote optimal supply and utilisation of energy, especially indigenous energy forms, for socio-economic development in a safe and healthy environment. It is clear that the essence of the 1994 policy objectives still remain valid though the social, political, environmental and economic situation has undergone significant changes. The changes have prompted the review of the existing policy and formulation of a new energy policy that takes into account the current situation in the economy and international environment.

The new energy policy sets out Government's intentions in the energy sector that are aimed at ensuring that the sector's potential to drive economic growth and reduce poverty is fully harnessed. The policy therefore provides a guide to decision-makers, policy makers and development managers in government, private sector, Non-Government Organisations, civil society, on Government's intended actions in the energy sector.

The critical review of the 1994 National Energy Policy through an extensive consultative process provided the basis for the design of this new energy policy. The consultative process was key in this process to ensure that the broad views of all stakeholders in the country are taken into account

This new energy policy has gone further in its scope to include an implementation strategy, with an action plan for implementation. It is my sincere hope that the policy document will attract wider reading and reference as it provides an outline of Government actions in the energy sector.

Hon. Felix C. Mutati MP
MINISTER OF ENERGY & WATER DEVELOPMENT

February, 2007

ACKNOWLEDGEMENTS

The review of the 1994 National Energy Policy and the preparation of the new National Energy Policy for Zambia was based on a consultative process involving all major stakeholders in the energy sector. Accordingly due appreciation is being extended to all those stakeholders who participated in the energy sector reforms. These included representatives from the following institutions:

- Traditional Leaders;
- Zambia National Farmers Union;
- Electricity Utilities;
- Research Institutions;
- Cabinet Office
- Provincial Administrations;
- All Government Ministries;
- Non-Governmental Organisations;
- Co-operating Partners;
- Institutions dealing with different aspects of energy

Special thanks go to the Swedish Embassy for all financial support rendered and indeed to the Consultants for their invaluable contributions regarding finalisation of the new policy document.

We wish to acknowledge the participation of all Media institutions and those individuals who contributed to the development of this Policy in one way or the other.

Successful implementation of this Policy will depend on the effective participation of all the above mentioned and all citizens of Zambia.

Dr. Buleti G. Nsemukila (Dr)
Permanent Secretary
MINISTRY OF ENERGY AND WATER DEVELOPMENT

February, 2007

WORKING DEFINITIONS

MEASUREMENTS

Gwh Gigawatt-hour	=	1,000,000 Kilowatt-hour
MW Mewgawatt	=	1,000 Kilowatts
Kgoe	=	Kilogrames of oil equivalent

* Tonne Oil Equivalent (TOE) describes the energy content of one metric tonne of crude oil, which is equivalent to 41.87 Giga joules or 11,630 kilowatt hours (kWh).

CONVERSION FACTORS

Product	Specific Gravity	Heat Content GJ/Tonne
Arabian Light	0.858	42.62
Arabian Berri	0.86	42.62
Oman Blend	0.856	42.62
Iranian Heavy	0.87	42.62
Dubai Crude	0.856	42.62
Whole Naptha	0.697	43.96
Condensate (n.f.d.)	0.78	42.71
Crude (n.f.d)	0.78	42.71
L. P. G.	0.545	45.43
Regular Petrol	0.733	43.13
Premium Petrol	0.747	42.92
Kerosine	0.796	43.34
Jet Al	0.7965	43.34
L.S.G.	0.828	42.83
Diesel	0.8495	42.75
L.F.O.	0.9395	40.95
H.F.O.	0.949	40.82
Bitumen MC 30	0.93	42.71
Bitumen MC 80	1.022	42.71
Firewood		15.5
Charcoal		32.6
Coal (Zambian)		27.21

ACRONYMS

CDM	Clean Development Mechanism
CEEEZ	Centre for Energy Environment and Engineering Zambia
CSO	Central Statistical Office
DOE	Department of Energy
ECZ	Environmental Council of Zambia
EIA	Environmental Impact Assessment
EPPCA	Environmental Protection and Pollution Control Act
ERB	Energy Regulation Board
ESCO	Energy Service Companies
GDP	Gross Domestic Product
GWh	Gigawatt hour
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
KWh	Kilowatt hour
LPG	Liquefied Petroleum Gas
MEWD	Ministry of Energy and Water Development
MFNP	Ministry of Finance and National Planning
MW	Megawatt
NDP	National Development Plan
NEAP	National Environmental Action Plan
NEP	National Energy Policy
NGOs	Non-Governmental Organisations
OMCs	Oil Marketing Companies
OPPPI	Office for Promotion of Private Power Investment
PRSP	Poverty Reduction Strategy Paper
PV	Photovoltaic
RE	Renewable Energy
REA	Rural Electrification Authority
REF	Rural Electrification Fund
RES	Renewable Energy Sources
RETs	Renewable Energy Technologies
SADC	Southern African Development Community
SAPP	Southern African Power Pool
SPM	Single Point Mooring

STI	Sexually Transmitted Infections
TB	Tuberculosis
TNDP	Transitional National Development Plan
TOE	Tonne Oil Equivalent
VAT	Value Added Tax
VCT	Voluntary Counseling and Testing
ZCC	Zambia Competition Commission

CHAPTER

One

INTRODUCTION

The first National Energy Policy (NEP) formulated in 1994 sought *to promote optimal supply and utilisation of energy, especially indigenous energy forms, for socio-economic development in a safe and health environment.* While the essence of the 1994 Energy Policy objectives remains valid, the social, political, environmental and economic situation has undergone significant changes. Moreover, through implementation of the 2002 Poverty Reduction Strategy Paper initiatives and other related programmes , a new awareness of the integrated nature of energy in economic development has arisen. This prompted the review of existing policy and formulation of this new National Energy Policy that takes into account the current scenario not only in the energy sector, the entire economy but also the regional and international environment.

The new energy policy sets out the Government's intentions in the energy sector that are aimed at ensuring that the sector's latent potential to drive economic growth and reduce poverty is fully harnessed. This policy document is, therefore, a guide to decision-makers, policy makers and development managers in government, private sector, Non-Government Organisations, civil society, on Government's intended actions in the energy sector.

Thus the new energy policy is designed on the basis of a critical review of the 1994 NEP and the current social, economic and environmental situation through an extensive consultative process that encompassed a wide cross-section of individuals and institutions in the country inclusive of urban and rural areas.

Some of the key issues that have emerged include the need for the new policy to recognise the cross cutting nature of energy. While availability of energy services are not a direct human need, their availability enables the effective provision of direct human needs like food. Critical social services like health and education can not be provided in the absence of reliable and affordable energy services. The energy policy further takes account of important issues such as the high incidence of poverty, the HIV/AIDS epidemic, gender, environment and household energy, rural electrification and the role of bio-fuels in Zambia's future energy mix.

The energy policy document is divided into six chapters. Chapter One is introductory, while Chapter Two provides a critical review of the existing situation. The Third Chapter outlines the rationale for reviewing the existing energy policy. Chapter Four contains the vision and the guiding principals for the management of the energy sector. Chapter Five indicates the policy measures required to attain the set objectives, and the last Chapter provides the mechanisms for effective policy implementation.

CHAPTER
Two

SITUATION ANALYSIS

2.1 Energy Situation in Zambia

Zambia is richly endowed with a wide range of indigenous energy sources, particularly woodlands and forests, hydropower, coal and renewable sources of energy. Petroleum is the only energy resource that is currently wholly imported.

2.1.1 Biomass

Biomass energy is the form of energy from organic matter such as wood fuel (firewood and charcoal), agricultural wastes, forestry waste, industrial/municipal organic wastes, energy crops & products and animal waste. Biomass energy, wood fuel in particular, significantly contributes to total energy consumption. The other biomass energy resources that are being promoted are gel fuel, biofuels and biogas.

2.1.1.1 Woodfuel

Woodlands and forests are estimated to cover about 50 million hectares or 66 percent of Zambia's total land area. The main sources of woodfuel are natural woodlands and agricultural lands. Given the very low income levels and the abundance of wood resources, it is foreseen that woodfuel (firewood and charcoal) would continue to dominate Zambia's energy consumption. In 2004, it accounted for over 70% of total national energy consumption. Households accounted for about 88% of woodfuel consumption. Cooking and heating are the major household uses of woodfuel. According to figures within the Ministry of Energy and Water Development 60.9% of households used firewood for cooking and 24.3% used charcoal while only 13.8% used electricity. The figures further showed that in rural areas, 87.7% use wood for cooking, 9.5% used charcoal and only 1.5% used electricity.

Although there is no immediate woodfuel crisis in most parts of Zambia, woodfuel can no longer be thought of as a renewable resource because consumption rates are overtaking sustainable yields as a result of inefficient production and use and increasing population. Woodlands meet both energy and non-energy needs. If current trends of woodland depletion continue an "energy crisis" that will affect the majority of the people is likely to occur in the near future. This is in addition to desertification, which is already threatening some parts of the country.

2.1.1.2 Bio fuels

Biofuels are fuels from energy crops like sugar cane, sweet sorghum, cassava to produce ethanol and jathropha to produce biodiesel. The utilisation of biofuels has now been recognised as an effective way of fulfilling the country's energy requirements considering the disruptions in petroleum supply which are being experienced on the international market. It is for this reason, that the world is now

considering bio-fuels as an alternative to petroleum to ensure security of supply and stabilisation of prices of fuels.

2.1.1.3 Gel Fuel

Gel fuel is an energy source that is made from sugar molasses. The desire is to promote the gel fuel as an alternative to woodfuel use which has negative impact in the environment.

2.1.1.4 Briquettes

Briquettes are small fuel bricks made from compressed material, often from agriculture residues, saw dust, waste paper, etc. The briquettes will be used for domestic use from cow dung, coal and other agricultural residuals.

2.1.1.5 Biogas

Biogas is an inflammable gas which is 50-70% methane. It is obtained when organic matter is digested or fermented anaerobically (absence of oxygen) by various groups of micro-organisms. Biogas can be produced from human waste, cattle, goat, sheep, poultry and pig manure, night soil, grass leaves, water weed and certain industrial wastes

2.1.3 Electricity

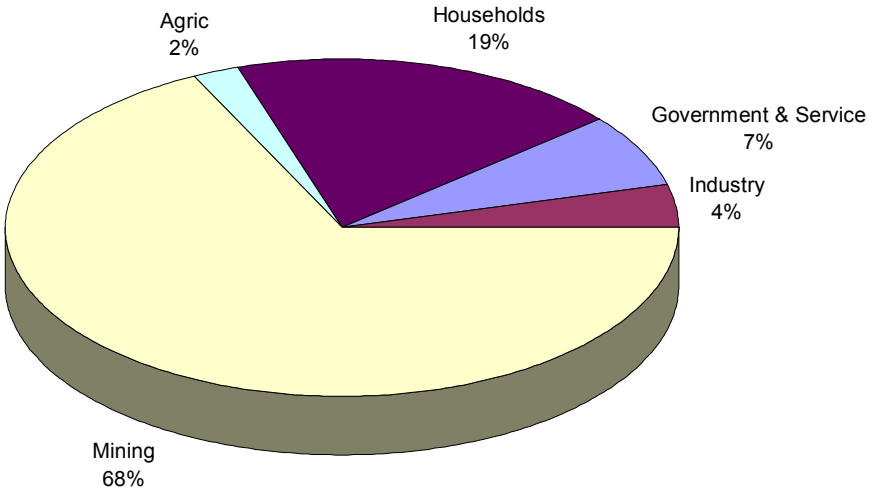
Electricity is the second most important energy source after woodfuel contributing 10% to the national energy supply. The country's hydropower resource potential stands at an estimated 6,000 Mega Watts (MW) while the installed capacity is a mere 1,786 MW as indicated in the table below.

Table 3: Current installed Electricity Generation Capacity

No.	Description	Capacity (MW)	Type
1	Kafue Gorge	900	Hydro
2	Kariba North Bank	600	Hydro
3	Victoria Falls	108	Hydro
4	Lunsemfwa & Mulungushi	38	Hydro
5	Small Hydros	24	Hydro
6	Isolated Generation	10	Diesel
7	Gas Turbine (stand by)	80	Gas
	Total installed capacity	**1,760**	

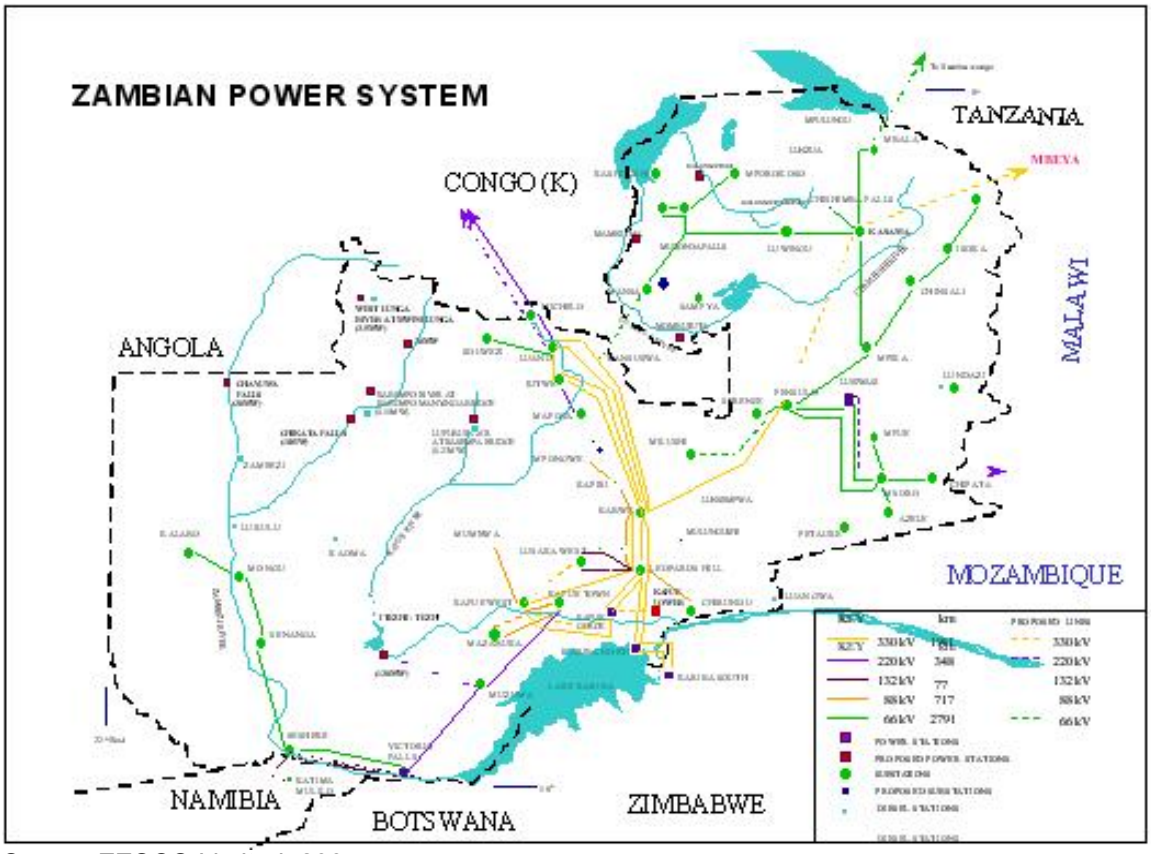
Hydroelectric plants represent 99 percent of electricity production in the country with the major sources being Kafue Gorge, Kariba North Bank and Victoria Falls Power Stations. With a projected electricity demand growth estimated at 100 MW per annum, the country is expected to experience a power deficit by 2008. The country's electricity is predominately consumed by the mines whilst only 22% of the population have access to electricity leaving the majority to depend on woodfuel for their household energy needs.

Figure 1: Electricity Consumption by User Group



Zambia's national power system, grid layout and interconnections with other countries are shown in Figure 2. The Zambian power system is a vital part of the Southern Africa Power Pool (SAPP) through interconnections at high voltage to several countries in the region. This factor and the potential to increase the available hydropower puts Zambia in a good position to export power and provide transmission services to other countries. However, an appropriate market structure is required to facilitate private sector investment in generation and transmission.

Figure 2.1: Zambian Power System, National Grid, and Interconnections



Source: ZESCO Limited, 2004

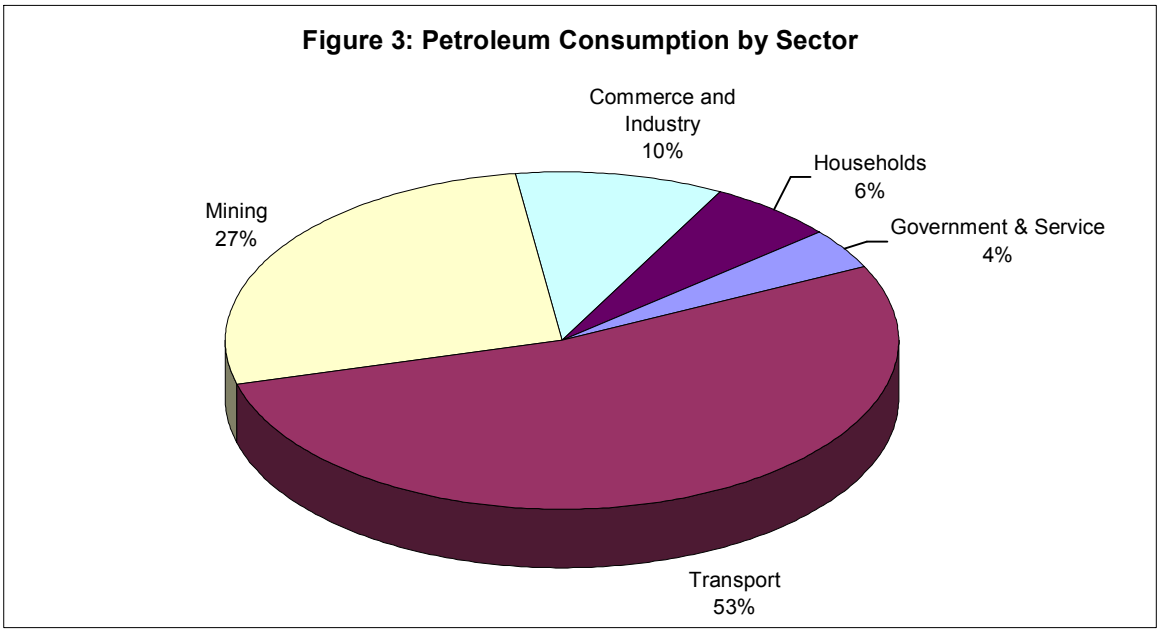
2.1.4 Petroleum

Zambia imports all its petroleum requirements which contribute 9% to the national energy demand. Petroleum is a key input in the Mining and Transport sectors on which trade and commerce depend. Established infrastructure for petroleum import and processing include the 1,706-kilometre pipeline which runs from Dar-es-Salaam in Tanzania to Ndola, a Petroleum Refinery with a design capacity of 800, 000 tonnes per annum and the Ndola Fuel Terminal.

The procurement of petroleum feedstock for processing at the refinery is done through international competitive bidding. The feedstock is transported through the pipeline to the refinery. The finished products are marketed and distributed by privately owned Oil Marketing Companies (OMCs).

In terms of petroleum consumption, the transport sector (53%) is the biggest consumer of the petroleum products followed by the mining industry (27%) as shown in the Figure 3 below.

Figure 3: Petroleum Consumption by Sector



2.1.5 Coal

Proven coal deposits are estimated to be over 30 million tonnes . Probable coal reserves at Luangwa North, Luano, Lukusashi in the Luangwa Valley and Kahare, Chunga, Lubaba in the Western trough system are believed to be in the region of several hundred million tonnes though more exploration work is required to ascertain the exact nature and extent of the deposits.

Currently Zambia has two coal mines. The major one was once government owned and has a capacity of 1 million tons per year. However, despite the large reserves, the contribution of coal to total energy has been declining over the years due to the lack of capitalisation in the industry which resulted in production constraints at the main mine and also the reduced demand in the mining industry.

According to the 2005 statistics, the consumption of coal in Zambia is confined to the mining industry (37%), commerce and industry (48%), and the government and service sectors (15%).

2.1.6 Renewable Sources of Energy

Renewable energy sources are increasingly being used but still remain insignificant in terms of contribution to the total national energy supply. For the purpose of this energy policy, renewable energy sources include the following: solar (thermal and photovoltaic); minil/micro-hydro; biomass (agricultural wastes, forestry waste, industrial/municipal organic wastes, energy crops & products and animal waste); geothermal, and wind.

These sources have great potential for electricity production and use in the transport sector. Despite this potential, in relative terms, Renewable Energy Technologies (RETs) and small-scale energy systems have high investment capital costs, which need guarantees of long-term stable income streams to ensure financial viability. Fiscal incentives and some form of smart subsidies would enable the development of renewable energy projects and make them financially attractive for private participation.

Data is not readily available on the resource potential or the production and consumption of these resources. While wood, petroleum and hydropower will continue to be the major energy sources, for a long time, Zambia's rich potential in these sources of energy needs to be fully exploited. Table 4 summarizes the availability and potential for the utilization of renewable energy sources and technologies.

Table 4: Availability and utilization of renewable sources in Zambia

Renewable Energy Source/Technology	Opportunities/Use	Resource Availability	Potential Energy Output
Solar	Thermal (water heating), Electricity (water pumping, lighting, refrigeration)	6-8 sunshine hours	5.5 kWh/m^2/day (modest potential especially for limited irrigation)
Wind	Electricity, Mechanical (water pumping)	Average 3m/s	Good potential, especially for irrigation
Micro-hydro	Small grids for electricity supply	Reasonably extensive	Requires elaboration and quantification
Biomass *(combustion and Gasification)*	Electricity generation	Agro wastes Forest wastes Sawmill wastes	Requires elaboration and quantification
Biomass *(biomethanation)*	Electricity generation Heating and cooking	Animal waste Municipal and Industrial waste Waste water	Potential requires elaboration
Biomass *(extraction, processing for transport)*	Ethanol for blending with gasoline to replace lead as octane enhancer Biodiesel for stationary engines	Sugarcane Sweet sorghum Jatropha	Requires elaboration and quantification
Biomass *(for household energy)*	Improved charcoal production Improved biomass stove	Sawmill wastes and indigenous trees from sustainable forest management	Reasonably extensive
Geothermal	Electricity generation	Hot springs	Requires elaboration and quantification

Source: Centre for Energy, Environment and Engineering (Z) Limited, 2004

The potential energy output for solar is 5.5 kWh/m2/day (modest potential especially for limited irrigation). As for the other Renewable energy sources, their potential need to be elaborated and quantified.

Detailed information on the available renewable energy resources and technologies is indicated below:

2.1.6.1 Mini/Micro Hydro

Zambia has a number of potential sites on smaller rivers suitable for local small-scale power generation. The most advantageous places for such development are in the North-Western and the Northern parts of the country, because of the topography of the terrain, the geology of the ground, the highest rainfall figures in the country.

Suitable sites have been identified by collecting information on rivers with sufficient Perennial flows. Based on these studies, the hydropower potential has been determined for some of these sites as indicated in Table 5 below.

Table 5: Some small-scale hydro potential

No.	RiverBasin	Site	River	Capacity, kW
1	Zambezi	Zambezi falls	Zambezi	to be determined
2	Zambezi	Chavuma falls	Zambezi	10-20,000
3	Zambezi	Sachibondo	Luakela	600
4	Zambezi	Mwinilunga	West Lunga	2,500
5	Zambezi	Kapembe	Kabompo	To be determined
6	Zambezi	Chikata falls	Kabompo	3,000
7	Kafue	Kasempa	Lufupa	230
8	Kafue	Mutanda	Lunga	400
9	Kafue	Kelongwa	Lunga	To be determined
10	Chambeshi	Chandaweyaya	Chambeshi	To be determined
11	Chambeshi	Mbesuma ferry	Chambeshi	To be determined
12	Chambeshi	Shiwang'andu	Manshya	1,000kW

2.1.6.2 Solar

Various institutions such as Non-Governmental Organisations, Churches, the private sectors and Government ministries such as Health and Education have been involved in the dissemination of solar energy technologies. The Government through the Ministry of Energy and Water Development (MEWD) has also incorporated the use of solar energy in the rural electrification programme. So far, 400 households have been installed with solar photovoltaic (PV) systems under the Energy Service Companies (ESCOs) pilot project in three Districts of Eastern Province. In addition, several schools and Chief's Palaces in various parts of the country have been electrified using solar energy.

2.1.6.3 Wind Energy

At an average speed of 2.5 metres per second, the wind regime in Zambia can mainly be used for water pumping for household use and irrigation. However, in areas were the wind speeds is above 5 meters per second, the wind regime can be used for electricity generation. There are currently no Government projects in this area but potential sites have been identified for pilot projects.

2.1.6.4 Geothermal

Zambia has more than eighty (80) hot springs spread in different parts of the country. Whilst the potential of most of these identified springs has not been examined in great detail, analysis of available data points to good prospects for exploiting geothermal reserves in most parts of the country.

At present there is no geothermal generation. However, following an initiative with the Italian Government in the mid 1980's, Kapisya Hot Springs at Rufunsa was developed to the extent that 2 x 120kW turbines were installed in 1987. Though the Kapisya installation is not operational, efforts are being made to revive the plant.

2.1.7 Energy Management

Energy Management refers to the control and use of energy efficiently in industry and domestic applications aimed at reducing energy consumption without sacrificing productivity or increasing costs. At present, very little is being done in the area of energy management. It is therefore an area that required more attention during this phase of policy implementation.

2.1.8 Energy Pricing

Energy pricing is a fundamental tool when it comes to fair and equitable supply of energy resources. The prices of firewood, charcoal, coal and renewable energy technologies are currently market driven. However, the pricing mechanisms for electricity and petroleum are as reflected below:

a) Electricity: Bulk trade of electricity is determined by bilateral contracts. The parties to the contracts negotiate prices that are subject to the approval of the Energy Regulation Board (ERB). Retail supply to households, commercial entities and industry is governed by the Electricity Act. Currently retail prices include costs for generation, transmission, distribution and supply and are uniformly applied across the country. The prices are regulated in accordance with the Electricity Act and Energy Regulation Act; and,
b) Petroleum: Currently the pricing consists of the Refinery Gate cost, government taxes, ERB fees, fuel levy, transport, Oil Marketing Companies (OMC) and dealer margins. The pricing of petroleum products is largely liberalized with the role of the ERB being that of setting the pricing formula and monitoring compliance.
c) Although, Liquefied Petroleum Gas (LPG) Heavy Fuel Oil (HFO), Light Fuel Oil (LFO), bitumen and Low Sulphur Fuel Oil (LSFO) are a petroleum product, the pricing is currently determined by the petroleum refinery. Significant price variances between bulk supply and retail LPG are of major concern.

2.1.9 Institutional and Legal Framework

Government's liberalisation of various sectors of the Zambian economy at the beginning of the 1990s was the main driving force of reforms in the energy sector. The current institutional and legal framework for the energy sector is a result of the liberalisation and reform process that started with the NEP1994. New laws were enacted to facilitate liberalisation and ensure consistency of practices in the energy sector with other sectors. In addition new institutions were also created through different laws and statutory instruments. However, there are some gaps, areas of duplication and overlap.

The 2007 NEP will therefore seek to review and rationalise the mandate, role, functions and relationships of all energy sector institutions in order to address all the short comings. The end result will be a clear separation of policy making, efficient regulatory where it is easier to enforce regulation and implementation functions. Where necessary clearly defined joint and co-jurisdiction will be encouraged.

The current legal and institutional framework in the various energy sub-sectors is as indicated below:

Sub-Sector	Legal Instrument
Biomass	• Forestry Act • Environmental Protection and Pollution Control Act • Energy Regulation Act
Electricity	• Electricity Act • Rural Electrification Act • Water Act • Environmental Protection and Pollution Control Act • Energy Regulation Act
Petroleum	• Petroleum Act • Petroleum Production and Exploration Act • Energy Regulation Act • Environmental Protection and Pollution Control Act
Coal	• Mines and Minerals Act • Energy Regulation Act • Environmental Protection and Pollution Control Act
Renewable Energy	• Rural Electrification Act • Electricity Act • Energy Regulation Act

2.1.10 Household Energy

The Household sector is the largest consumer of energy, mainly woodfuel. This energy policy seeks to reduce dependence on woodfuel and ensure sustainable provision of affordable, reliable modern energy services to rural and urban households as a means to raising productivity and standards of living.

CHAPTER
Three

RATIONALE

3.1 Revision of the National Energy Policy 1994

The 1994 NEP played an important role in guiding developments in the energy sector and several successes have been scored. One of its major mandates was ensuring that it was in line with the macro–economic policy and therefore provided for more private sector participation. For example Government completely withdrew from the marketing and distribution of petroleum products. However, the 1994 NEP policy now has gaps such as the HIV/AIDS pandemic and its impact on the sector and the issue of private sector participation in the electricity industry which needs to be addressed. More significantly there have been changes at international, national and sector level which have made it prudent to review the existing policy. Other factors that have necessitated the revision of the 1994 NEP include:

- The Government recognises that men and women have different energy needs and requirements and respond differently to development initiatives. Therefore, mainstreaming gender into the energy policy becomes a critical tool for promoting efficient allocation of resources and also promoting equity.
- HIV/AIDS has had a devastating impact in all sectors including the energy, as such it has become necessary for the energy policy to address this issue.
- In order to promote sustainable development, need has arisen for measures to be put in place to ensure that environmental issues are addressed adequately.
- The government is promoting alternative energy sources such as gel fuel, biofuels and LPG. The expansion of the energy mix will facilitate increased provision of modern energy services. In addition the introduction of biofuels is expected to reduce the high dependence and importation cost of petroleum especially for the transport sector and other areas where grid electricity may not be available. The promotion of these sources requires a comprehensive legal framework.
- The new policy document intends to encourage more players in the development of the electricity industry through an institutional and legal framework that promotes easy access to the electricity supply industry both at producer, supplier and customer end.

3.2 Macro-economic Policy Issues

Energy is an important input in any production process, therefore the policy document will ensure that it reflects the critical role that energy plays in poverty reduction and national development including its linkage to all the other sectors. In order to address the country's unsatisfactory economic performance, the country has reverted to periodic planning under the National Development Plan for the period 2006 to 2010 which focuses upon economic stabilization and support for programmes aimed at wealth creation.

3.3 Millennium Development Goals

Whilst the eight UN Millennium Development Goals define the main areas of global concern that affect development objectives and related activities, the goals that are of major relevance to the National Energy Policy are Goal No 1, *Eradicate extreme poverty and hunger;* Goal No 3. *Promote Gender equality and empower women* Goal No 6. *Combat HIV/AIDS, malaria and other diseases;* Goal No 7, take measures to *Ensure environmental sustainability*. The Revised National Energy Policy covers the socio-economic issues that impact on energy as provided under the Millennium Development Goals.

3.4 Vision 2030

Vision 2030 articulates the appropriate national sector goals and targets and calls for the implementation of sustainable social economic development policies and actions. It is based on Policy oriented research on key national strategic issues and on a process of discussion and dialogue with the private sector, civil society and general citizenry on the long term goals and the future of Zambia.

The vision will be the basis for interface by all sectors and will provide direction for short and medium terms plans. The vision will be operationalised through the implementation of the five national development plans beginning with the Fifth National Development Plan covering the period 2006-2011. In this respect this National Energy Policy is tailored to take into account the objectives of Vision 2030.

The formulation and implementation of the new NEP is expected to yield the outcomes listed below:

- Increased access to energy, particularly in rural areas by among other options facilitating the availability of suitable energy forms;
- Integrated development that will promote the cross sectoral linkages between the energy sector and other economic sectors such as agriculture, trade and industry, transport, information and communications technology, health and education, among other;
- Security of supply of energy in the country;
- Efficient production and utilization of energy;
- Minimise the negative environmental and health effects from energy production, transportation and use;
- Reduced dependence on imported petroleum to locally available energy supplies;
- Develop and nurture mutually beneficial co-operation in the energy sector with other countries and international organisations;
- Pricing mechanism that is cost reflective; and,
- Promote utilisation of renewable energy.

CHAPTER
Four

VISION AND GUIDING PRINCIPLES

4.1 Vision

"To provide well developed, managed, reliable and sustainable energy resources for the improvement of the quality of life of all Zambians"

4.2 Guiding Principles

a) Development of appropriate energy technologies and resource to enhance development
b) Pursue technical regulation instead of economic regulation
c) Reflect all current and future energy supply needs of the country and should account for the differing energy needs of various users
d) Human resource development for effective implementation of energy programmes;
e) Optimum energy efficiency at the production, transformation and end-use levels
f) Provide incentives to enhance the performance of the energy sector
g) Integrating energy development into national development interventions and strategies;
h) Autonomy of the sector regulator while at the same time ensure that it is efficient and accountable in its operations;
i) Resource mobilization for development of the energy sector;
j) Partnership with the private sector, civil society and community groups;
k) Participation of Zambian citizens in all aspects of the energy industry, including ownership structures.

POLICY MEASURES AND IMPLEMENTATION

5.1 Overall Energy Policy Objectives and Measures

The aim of the 2007 NEP is to create conditions that will ensure the availability of adequate supply of energy from various sources, which are dependable, at the lowest economic, financial, social and environmental cost consistent with national development goals.

The NEP policies in the various energy sub-sectors are highlighted in the sections that follow.

5.2 Biomass

5.2.1 Objective

This policy seeks to ensure environmentally sustainable exploitation of the biomass resource by ensuring efficiency through better management and introduction of new technologies i.e. bio fuels and gel fuel. The following are the policy measures for specific types of Biomass:

5.2.2 Policy Measures and Strategies

a) To apply Appropriate Financial and Fiscal Instruments for stimulating the production and use of Biomass through:

   (i) formulation of a comprehensive and innovative financing mechanism to include smart subsidies, low interest loans, loan guarantees, Clean Development Mechanism (CDM), etc;
   (ii) provision of tax incentives and waiver on duty and VAT on Biomass energy capital equipment;

b) To raise public awareness on the benefits and opportunities of other Biomass energy and develop capacity for their implementation through:

   (i) provision of information to stakeholders (financiers, planners, politicians and general public) on the benefits and opportunities of biomass energy;
   (ii) creation of awareness and education about the potential of Biomass energy through dissemination of information regarding the economic, environmental and social benefits of Biomass energy technologies and applications;
   (iii) supporting training institutions in the area of system design, installation and maintenance;
   (iv) project development of biomass energy technologies, and providing agriculture support to farmers wishing to grow energy crops (such as Jatropha, sugar cane and sweet sorghum);
   (v) Build capacity in biomass gasifiers technology.

c) To develop the regulatory framework of Biomass through:

(i) building the capacity of stakeholders and government authorities to regulate Biomass sub sector;
(ii) establishing a coordinating mechanism between institutions responsible of energy, agriculture and forestry;
(iii) reviewing and amending appropriate legislation to cater for biofuels

5.2.2.1 Woodfuel (Firewood and charcoal)

a) To ensure better management of woodlands and forests as a sustainable source of woodfuel through:

(i) working out management programmes for indigenous forest resources with stakeholders such as those in forestry and the agriculture;
(ii) training of technical staff and extension workers from wildlife agriculture and forestry;
(iii) encouraging the establishment of forest plantations/wood lots in critically wood deficit areas;
(iv) tree planting programmes to be organised by relevant institutions in forestry and energy;
(v) continuous monitoring of activities of the industry such as price trends, volumes of production and consumption;
(vi) encouraging the supply of modern energy to small rural farmers and thereby increase the productivity of existing cropland and reducing the need to engage in slash and burn agriculture, a major source of deforestation; and,
(vii) effective regulation of the woodfuel sector.

b) To improve the technology of charcoal production and utilization through:

(i) training of charcoal producers in better organisation and management of charcoal production using the traditional kiln method;
(ii) encouraging the adoption of other production techniques which are more efficient and cost effective;
(iii) development of stoves that are efficient and convenient to users and which produce minimal emissions;
(iv) ensuring that stove testing and certification is undertaken on all new designs coming on the market;
(v) ensuring that information on emission levels and efficiency of stoves is disseminated to promote public awareness;
(vi) facilitate participation of various stakeholders such as Gender and Development, Non-governmental organisations, industry, researchers and other Government Departments in stove development and dissemination.

c) To promote appropriate alternatives to woodfuel and reduce its consumption through:

(i) encourage use of other renewable sources of energy; and
(ii) encourage the use of kerosene, LPG and millennium gel as a

household fuel and agricultural fuel for activities such as flue-cured tobacco as a means of reducing that industry's consumption of woodfuel.

d) To encourage utilisation of agro, forest and sawmill residues for combustion and gasification through:

   (i) the growing of woodlots; and
   (ii) promoting Biomass combustion and gasification technologies.

e) To improve government revenue collection from the woodfuel industry through:

   (i) the involvement of stakeholders such as traditional leaders, and Government Departments in revenue collection and appropriation.

f) To establish community based woodfuel resource management systems through:

   (i) establishment of appropriate mechanisms for utilising money collected by the government through reforestation projects and establishment of woodlots; and
   (ii) harmonisation of woodfuel resource management with other existing community based natural resource management schemes.

5.2.2.2 Biofuels

The following are the policy measures for biofuels:

a) Using biofuels in the national fuel mix:

   (i) Introduce alcohol as a blend with petrol
   (ii) Introduce bio-diesel as a straight or blend with diesel and for use in the transport and other productive uses.

b) Ensure security of supply and stabilisation of prices of fuels by promoting the utilisation of bio-fuels for transport as an alternative to petroleum by:

   (i) Support the growing of energy crops
   (ii) Support investment in biofuels through appropriate incentives.
   (iii) Support the participation of Zambians in the biofuels industry as are shareholders
   (iv) ensuring that use of biofuels for the market is given priority

c) To ensure availability of data and information on market demand, resource assessment and applicability of biofuels by:

   (i) undertaking studies on the economic feasibility of using biofuels for

transport (e.g., ethanol and bio-diesel)

(ii) undertaking studies on needs/demand, resource and technology assessments of biofuels

(iii) building capacity to monitor and regulate Biofuel exploitation and development;

(iv) Building capacity in all institutions involved in the biofuels programme.

d) Provide a legal and institutional framework for the biofuels sub-sector that:

(i) provides for the regulation of the sub-sector

(ii) defines the rules and guidelines for entry and exit into the sub-sector

(iii) protects local people involved in the sector against exploitation

(iv) ensures security of investments in the sub-sector

(v) makes provision for other necessary actions intended to create a conducive environment for business in the sub-sector

(vi) Shareholding by Zambians in the investment of biofuels should be in accordance the Citizen Empowerment Act;

(vii) A cost line in the price of petroleum products, i.e. 0.5% could be channelled towards the Biofuels Fund to promote the Biofuels Development Programme.

(viii) Funding should be made available to local investors and farmers to promote equity participation of the Biofuels programme

(ix) Protects the environment against invasive species.

(x) Provide for waste disposal

(xi) EIA should be a requirement for all major biofuels projects

(xii) Existing biofuels ventures should undergo EIA

(xiii) No further land should be allocated or expanded until impacts of Jatropha and alien species on the environment are established beyond doubt.

(xiv) Production of Biofuels should be done under the correct environmental management.

e) Support investment in Biofuels industry through appropriate:

(i) **Incentives:**

- Provision of Biofuels incentives in line with Acts such as the Zambia Development Agency (ZDA) Act and any other relevant Legal instruments ;
- Tailor-made incentives for Biofuels should be introduced if ZDA Act is not adequate,

(ii) **Standards:**

- Provision of standards for energy crops, biofuels quality and blending ratios
- Biofuels Standards should be developed in line with the provisions of the ERB Act
- Plant material for Biofuels, should be registered under the Ministry of Agricultural

(iii) **Research:**

- Support research and development into all new/alien species of energy crops and their cultivation cycles/process before being widely promoted to establish any negative impacts on the environment;
- Promote research to determine which type/species of energy crops would give the best quality and yield of Biofuels;
- Provide Funds and support research and development of breeding, testing and agronomy of plants suitable for Biofuels.
- Stimulate of research and development into the innovation and appropriate local technology for the extraction and processing of Biofuels; and,

(iv) **Implementation Strategy**

- A biofuels implementation programme should be formulated in order to accomplish the biofuels policy objectives.

5.2.2.3 Other Forms of Biomass Energy Resources

The following are the policy measures for other Biomass energy resources

a) To promote other forms of Biomass energy as an alternative to woodfuel use which has negative impact in the environment by:

(i) Investigate the production and utilisation of briquettes to satisfy energy needs.
(ii) Promote the use of gel fuel as a household energy
(iii) Promote the use biogas as a source of energy for cooking, lighting and other uses.
(iv) Build capacity of project implementers in biomass gasifiers and other technologies.

5.3 Electricity

The Ministry shall be responsible for ensuring that the national electricity demand is satisfied and also that timely availability of power to meet the needs of the country.

5.3.1 Objective

The policy seeks to expand generation and transmission capacity and also increase accessibility to electricity and private sector participation.

5.3.2 Policy measures and strategies

Consequently the policy measures and strategies to achieve the above objective are highlighted below:

a) Increase generation and transmission capacity for local and regional markets by:

   (i) encouraging the development of identified potential hydro sites through a transparent mechanism-taking cognisance of the public interest;
   (ii) promoting local and foreign investment;
   (iii) Encouraging need to develop diversity in generation and transmission
   (iv) Promoting the need for increased interconnection with neighbouring states in accordance with NEPAD to achieve regional optimization.
   (v) adopting an open-access transmission regime;
   (vi) developing a policy framework for transmission pricing keeping in mind the objectives of open access and increased export and trade.
   (vii) move towards cost reflective tariffs
   (viii) Developing and implementing a licensing regime that is compatible with an open access regime and that it is conducive to better regulation of the electricity sub sector

b) Improve accessibility and service delivery to households, Small & Medium Scale Entrepreneurs (SMEs) through:

   (i) enacting appropriate legislation for public and private sector investment and participation in the power sector
   (ii) application of smart subsidy mechanisms (transparent, targeted, practical and benefit-based subsidies).
   (iii) Isolated grid systems with cost reflective tariffs

c) Improve accessibility and service delivery to agriculture, tourism, manufacturing, mining and other commercial activities by:

   (i) reinforcing and rehabilitating the distribution system in order to enhance quality of supply, increase efficiency and reduce cost;
   (ii) providing electricity to identified farm blocks;
   (iii) promoting use of electricity for irrigation where it is economically feasible and in agro processing; and,
   (iv) providing electricity infrastructure for new mining activities and promotion of cogeneration in mining facilities
   (v) Access to social services like schools and health centres.

d) Improve Legislation and institutional framework through:

   (i) enacting appropriate legislation for investment in the power sector;
   (ii) strengthening the capacity of relevant institutions in the Energy sector; and,
   (iii) reviewing and appropriately amending the relevant legislation.

e) Enhance collaboration between industry, learning and training institutions through:

   (i) upgrading the testing, training and research infrastructure in line

with technological developments in the electricity sub-sector;
(ii) capacity building of professionals and other experts in the energy and support institutions; and
(iii) knowledge transfer of new technology and practices.

5.4 Petroleum

5.4.1 Objective

The policy seeks to ensure an adequate, reliable and affordable supply of petroleum products at internationally competitive and fair prices and also the reduction in importation costs related to petroleum.

5.4.2 Policy Measure and Strategies

a) Enhance security and cost effectiveness of supply of petroleum by:

(i) attracting investment in the exploration and development of indigenous hydrocarbon resources;
(ii) facilitating the acquisition of geological and geophysical data for assessing the petroleum potential of the country;
(iii) building capacity in the relevant institutions to monitor and regulate petroleum exploration and development;
(iv) diversifying the shareholding structure in the petroleum refinery to include other investors;
(v) Establishing and maintaining strategic stocks of feedstock and refined products
(vi) enhancing regional cooperation in the importation of petroleum to improve security of supply;
(vii) assessing alternative international sources of petroleum supply as well as alternative procurement and pricing mechanisms to reduce cost and supply vulnerability;
(viii) facilitating the blending of petrol with ethanol;
(ix) effective management of the Single Point Mooring (SPM) through Government-to-government cooperation between Zambia and Tanzania;
(x) rehabilitating the existing petroleum infrastructure and running their operations on commercial basis; and,
(xi) ensuring that the Pipeline continues to be governed, operated and run as agreed between the Zambian and Tanzania Governments.

b) To promote the participation of Zambians in the Petroleum Industry through:

(i) ensuring that Zambians hold shares in the OMCs

c) Improve efficiency in the petroleum industry by:

(i) promoting full capacity utilization of existing petroleum infrastructure through the export of surplus petroleum products; and
(ii) encouraging investment in the modernisation of the energy infrastructure through appropriate incentives.

d) Promote health and environmental safety in the petroleum sector through:

(i) transitioning from leaded to unleaded petrol in line with regional and international commitments;
(ii) encouraging bio-fuels as a fuel additive;
(iii) promoting the use of kerosene and LPG as substitutes to charcoal;
(iv) ensuring the operations of the Refinery and Pipeline are environmentally friendly;
(v) formulating policy and standards on the quality of fuels including reducing sulphur content in diesel and
(vi) ensuring retail outlets adhere to environmental, safety and service standards.

e) To improve petroleum pricing by:

(i) reviewing the current petroleum pricing formula to reflect existing arrangements in the market;
(ii) engaging in long-term supply contracts ;
(iii) ensuring full price deregulation and competition at the pump;
(iv) setting up a subsidy mechanism to mitigate high petroleum prices in rural areas; and
(v) encouraging low cost petroleum retailing in rural areas through the lease of government service stations.

f) Ensure prompt response to and minimisation of possible emergencies and disasters by:

(i) Putting in place early warning systems and mitigation measures; and
(ii) regular reviewing of emergency systems.

5.5 Coal

5.5.1 Objective

To increase the contribution of coal as an energy resource to social and economic development.

5.5.2 Policy Measures and Strategies

a) Stimulate the production and utilisation of coal by:

(i) attracting local and foreign investment;
(ii) promoting coal briquettes as a household energy;
(iii) commercialize the production of coal briquettes;
(iv) promoting the exploitation and use of coal bed Methane; and
(v) Support Investigations on the competitiveness of coal as a generating resource
(vi) developing separate legislation on production and exploitation of coal.

b) Encourage further exploration of other coal deposits by:

(i) strengthening the capacity of appropriate institutions in hydrocarbon exploration; and
(ii) developing appropriate incentives for coal exploration activities.
(iii) Promote the exploitation of Uranium for developmental activities.

5.6 Uranium

5.6.1 Objective

To promote the exploitation of Uranium as an energy resource for social and economic development.

5.6.2 Policy Measures and Strategies

a) Stimulate the exploration and utilisation of Uranium by:

(i) Supporting Investigations on the competitiveness of Uranium as a generating resource
(ii) Promoting the exploitation and use of Uranium for social and developmental activities;
(iii) Developing separate legislation on the exploration and utilisation of Uranium.
(iv) Attracting local and foreign investment.

5.7 Renewable Energy Sources (RES)

5.7.1 Objective

The objective of this policy is to address barriers to wider dissemination of RES and also to increase their deployment.

5.7.2 Policy Measures and Strategies

a) Ensure availability of data and information on market demand, resource assessment and applicability of Renewable Energy Technologies (RETS) by:

(i) undertaking studies on needs/demand, resource and technology assessments of RETs; and,
(ii) undertaking studies on the economic feasibility of using biofuels (e.g., ethanol and bio-diesel)

b) Strengthen the Institutional Framework for Research and Development, and promotion of RETS by:

(i) establishing a co-ordinating agency for RETs;
(ii) development of a mechanism for integration of RETs with institutions involved in developmental activities;

(iii) integrating RETs policy in poverty reduction programs; and
(iv) strengthening the capacity of the Rural Electrification Authority (REA) in the application of RETs.

c) Appropriate Financial and Fiscal Instruments for stimulating the implementation of RETs through:

(i) formulation of a comprehensive and innovative financing mechanism;
(ii) provision of tax incentives and waiver on duty and VAT on renewable energy capital equipment;
(iii) ensuring of an equitable level of national resources is invested in renewable energy technologies; and

d) Continue promotion, enhancement, development and deployment of RETs through:

(i) encouragement and support of local systems design, assembly and manufacture of components of renewable energy technologies; and,
(ii) promotion of the development and implementation of standards and codes for appropriate use of renewable energy technologies.

e) Raise public awareness of the benefits and opportunities of RETs and develop capacity for their implementation through:

(i) creation of awareness and education about the potential of renewable energy through dissemination of information regarding the economic, environmental and social benefits of renewable energy technologies and applications;
(ii) supporting training institutions in the area of system design, installation and maintenance;
(iii) to actively involve women in decision making and planning in renewable energy programmes and activities; and
(iv) inclusion of basic principles of RETs in school curriculum.

f) Promote renewable energy technologies for electricity generation through:

(i) encouraging research on utilization of available technologies;
(ii) encouraging of pilot projects

5.8 Rural Energy Provision

5.8.1 Objective

The policy seeks to increase access to affordable energy in rural areas to reduce poverty and promote economic growth.

5.8.2 Policy Measures and Strategies

a) Increase supply of cost effective energy for rural income generation activities through:

(i) developing a Rural Electrification Master Plan;
(ii) developing smart subsidies for energy in rural areas;
(iii) Promoting the development of energy businesses in rural areas by:

- providing appropriate incentives to rural energy businesses;
- providing technical information and support to rural energy entrepreneurs;
- creating awareness among investors of Government programs to promote rural energy supply;
- creating innovative micro-credit financial instruments;
- supporting applied research and development of modern energy services.

b) Integrate energy in development programmes by:

(i) linking provision of energy services to income generating projects and programmes;
(ii) supporting training institutions to create awareness of the role of modern energy services in socio-economic development;
(iii) hold routine meetings to ensure that all government agencies coordinate their energy interface and more effectively; and,
(iv) mainstreaming gender in energy provision programmes.

c) Promote the dissemination and utilisation of modern energy services to rural households through:

(i) specifically target provision of energy to productive house based economic activities such as home-based industries in order to directly raise household incomes; and,
(ii) supporting training and technical assistance to households to allow them to use modern energy for income generating activities.

5.9 Energy Management

5.9.1 Objective

The policy seeks to promote efficient use of energy resources, and substitution.

5.9.2 Policy Measures and Strategies

Promote efficient energy use practices in all sectors of the economy by:

(i) mounting publicity campaigns on energy conservation;
(ii) encouraging energy suppliers to provide information to clients on the efficient use of energy technologies that they market;
(iii) encouraging institutions to develop energy conservation policies and programmes;
(iv) influencing policy on approval of building design code and construction that requires less energy for heating, cooling and lighting;
(v) encouraging the use of energy efficient equipment and other

domestic appliances through physical demonstrations; and

(vi) encouraging research and development in energy efficient equipment.

Substitute, wherever possible, local energy resources for imported ones by:

(i) increasing the contribution of renewable energy in the country's energy mix;
(ii) promoting the blending of petroleum with locally produced ethanol; and
(iii) encouraging the use of renewable sources of energy to meet some industrial, commercial and household energy needs.

Popularise energy management through:

(i) liaising with training providers to incorporate energy conservation concepts and practical activities in education curricula;
(ii) influencing of Policy for the Development of appropriate infrastructure for less energy consuming transportation systems; and
(iii) encouraging the use of bicycles, public transport and other less energy consuming transport systems.

Encourage the use of energy efficient equipment through:

(i) promulgation of equipment and appliance standards,
(ii) provision of appropriate fiscal incentives; and
(iii) provision of technical information on energy savings and other benefits.

Promote energy efficiency labelling and benchmarking by:

(i) encouraging establishment of guidelines on performance standards of energy intensive equipment;
(ii) encouraging regular energy audits in industry, commercial and
(iii) strengthen consultancy services in the field of energy efficiency;
(iv) formulate and facilitate implementation of pilot projects and demonstration projects for promotion of efficient use of energy; and
(v) prepare educational curriculum on efficient use of energy and its conservation for educational institutions, boards, universities or autonomous bodies and coordinate with them for inclusion of such curriculum in their syllabus.

5.10 Household Energy

5.10.1 Objective

This energy policy seeks to reduce dependence on woodfuel and ensure sustainable provision of affordable, reliable modern energy services to rural and urban households as a means of raising productivity and standards of living.

5.10.2 Policy Measures and Strategies

a) Promote substitution of woodfuel as a household fuel with alternative sources of energy by:

   (i) Encourage alternative fuels such as LPG and Gel fuel; and
   (ii) wherever possible encourage people to grow energy crops.

b) Promote energy conservation and substitution through:

   (i) provision of incentives to encourage energy conservation and substitution;
   (ii) encouraging efficient end-use technologies and household energy practices; and
   (iii) encourage the use of renewable energy to meet some household energy needs.

c) Promote the use of efficient cook stoves by:

   (i) Providing innovative financing schemes designed to reduce the first cost problem for low income households.

d) Promote Coal and Biomass briquetting as household energy by:

   (i) setting up of small and medium scale enterprises to develop the briquetting technology;
   (ii) encouraging Research and Development for briquetting of biomass, for example, bagasse, maize and cotton stalks, and by-products of milling and brewing processes; and
   (iii) encouraging the use of briquetting products through practical demonstrations and pilot schemes.

5.11 Energy Pricing

5.11.1 Objective

To ensure that energy prices reflect costs of providing energy and also to take into account principles of fairness and equity.

The objectives of the electricity tariff structure are:

- To have a tariff that best reflects the economic cost and promotes efficient use of electricity to encourage less consumption during the peak period
- To secure financial status of the power utilities which will enable future expansion of their operations
- To devise a mechanism for electricity tariff adjustment that is flexible and automatic to be more responsive to both local and international economic and market dynamics
- To have a tariff which takes into consideration the differences in cost of electricity generated based on different fuel sources.

5.11.2 Policy Measures and Strategies

(i) Promote the use of market prices where feasible.
(ii) where market pricing is not feasible or desirable, to ensure that mandated or regulated prices include allocation of costs among consumers according to the burden they impose on the delivery system;
(iii) Promoting a reasonable degree of stability and avoiding large price fluctuations from year to year;
(iv) Providing a minimum level of service to consumers who are unable to afford the full cost; ; and,
(v) where prices are administered (regulation or promulgation), provide a reasonable return on investment, as defined by regulation.

5.12 Crosscutting Issues

To mainstream cross cutting issues such as HIV/AIDS, gender and the environment into energy planning, programmes, projects and activities.

5.12.1 Gender

Objective - The overall objective is to promote gender balance in energy planning, management and utilization to ease burden of poverty on all vulnerable groups especially women, at household, community and national level.

Specific policy measures are:

a) Enhance access and control of productive resources through:

(i) Ensuring balanced representation of men and women at all levels and in all spheres of energy development and management;
(ii) Undertaking gender analysis in order to develop gender sensitive programmes
(iii) Promoting affirmative action where feasible to enhance the participation of women in the energy sector.
(iv) Introducing energy in school curriculum and encourage the girl child to participate.
(v) Facilitating accessibility to the most appropriate sources of energy at minimum cost for the benefit of both men and women
(vi) promotion of research in gender and energy.

b) Enhance women's participation in decision-making processes by:

(i) Meeting the target of 30% women representation according to the SADC protocol of
(ii) ensuring gender perspectives are taken into consideration in the design and implementation of energy projects and programmes;
(iii) increasing access of women to information, control, utilisation of resources, education, communication; and
(iv) conservation of safer and affordable forms of energy among vulnerable groups especially women.

c) Promote links between energy activities and income generating ventures through:

   (i) reducing the capital contribution charged to vulnerable groups; and
   (ii) provision of favourable payment terms for start up capital to vulnerable groups.

d) Harmonize legislation on energy with regional and international instruments on energy and gender by:

   (i) ensuring that the existing local related policies and legislation are in conformity with regional and international instruments on gender and Energy; and
   (ii) sensitising women on local, regional and international protocols on energy and gender.

5.12.2 HIV/AIDS

Objective – To maintain and strengthen existing programmes to minimise the negative impact of HIV/AIDS and reduce new infections in the energy sector.

Specific policy measures are:

a) Reduce new HIV/AIDS infections through:

   (i) encouraging the introduction of preventive and support programmes of HIV/AIDS among members of staff at place of work and communities in which energy projects are implemented; and
   (ii) intensifying and continuing HIV/AIDS awareness among staff of various energy institutions.
   (iii) Increase access to modern energy services reduce the vulnerability of women to infection especially in areas where energy is scarce.

b) Promote healthy and positive living by:

   (i) extending support to people living with HIV/AIDS in the energy sector and in communities where energy projects are implemented; and
   (ii) ensuring information on STIs / HIV/AIDs is disseminated to men and women on transmission and prevention and availability of remedial measures.

c) Put in place an efficient and effective monitoring, evaluation and surveillance system by:

   (i) strengthening capacity of HIV/AIDS focal persons at the work place and in communities where energy projects are implemented; and
   (ii) establishing reporting and feedback systems at places of work.

5.12.3 Environment

Objective - To ensure that all energy sources are produced, transported, stored and utilised in an environmentally friendly manner.

The policy measures to address energy and environmental issues include the reduced consumption of wood fuel, increasing utilisation of renewable energy sources and promotion of energy management as outlined in the respective sub-sectors.

5.13 Institutional and Legal Issues

5.13.1 Objective

This policy seeks to review and strengthen existing institutions and legal framework.

5.13.2 Policy Measures and Strategies

a) Enhance corporate governance and accountability in Energy institutions through:

   (i) ensuring that boards of public energy institutions are composed of professionally qualified and competent individuals;
   (ii) ensuring stakeholder representation and protection;
   (iii) ensuring autonomy of board and management from the government;
   (iv) ensuring transparency in the conduct of public business.

b) Create consumer and investor confidence by:

   (i) regularly reviewing the performance of the energy sector and introducing appropriate legal and institutional reforms to improve performance;
   (ii) making the operations of regulatory bodies more transparent; and
   (iii) publicising the regulations and operations of the regulatory bodies.

c) Enhance economic competitiveness and efficiency in energy production, supply and delivery by:

   (i) ensuring autonomy of regulatory agencies in determining and interpretation of the provisions of regulatory obligations;
   (ii) discouraging uncompetitive practices; and
   (iii) ensuring compliance with provisions of the energy legislation and supporting laws.

d) Facilitate the building of capacity in energy institutions through:

(i) support appropriate capacity building programmes; and
(ii) performance review of staff and institutions in the energy sector.

CHAPTER

Six

INSTITUTIONAL FRAMEWORK AND IMPLEMENTATION

6.1 Institutional framework

The effective implementation of the National Energy Policy will be greatly enhanced through the participation of all key stakeholders. This Policy will provide a way forward for the creation and or revision of the legal and institutional framework under which the Government can fulfil its objective of creating wealth for all, thus improving the quality of life of the Zambian people.

The key stakeholders in the energy sector are:

- Ministry of Energy and Water Development;
- Rural Electrification Authority;
- Electricity Utilities;
- Energy Regulation Board;
- Private Institutions involved in development of energy resources;
- Environmental Council of Zambia;
- The Chambers of Mines;
- The Zambia Chamber of Commerce and Industry;
- Research institutions;
- Ministry of Finance and National Planning;
- the Ministry of Tourism, Environment and Natural Resources;
- the Ministry of Agricultural and Cooperatives;
- the Ministry of Local Government and Housing;
- the Ministry of Communications and Transport;
- Ministry of Mines and Minerals Development
- Ministry of Health;
- Ministry of Justice;
- Ministry of Foreign Affairs;
- The Decentralization Secretariat;
- Farmer's Associations and Unions;

The stakeholders should ensure that energy resources management and development policies stipulated under the specific sub-sectors in this policy are enshrined in sector policies and are internalised and integrated in their sector plans.

The Ministries and statutory bodies shall ensure that they execute policy provisions within the context and confines of their legal mandates. The Ministry responsible for energy as the lead institution in the water sector has the following responsibilities under this policy:

(a) promulgation, in consultation with other stakeholders, appropriate energy sector policies that will facilitate the proper management and development of the resource in accordance with the guiding principles under this Policy;

(b) implementation of the National Energy Policy;

(c) coordination of all policy implementation functions of a sector and cross sector nature;

(d) develop, in collaboration with other stakeholders, a National Energy Resources Strategy and Plan;

(e) monitor and evaluate the implementation of the strategies specified by the various Ministries relating to energy resources management and development;

(f) take the lead role in any energy sector advisory group;

(g) ensure that all cross-sector issues are addressed by respective institutions;

6.2 Legal and regulatory framework

The current legal framework for energy resource management and development is governed by various Acts of Parliament such as the following:

- the Constitution;
- the Electricity Act;
- the Energy Regulation Act;
- the Rural Electrification Act;
- the Environmental Protection and Pollution Control Act;
- the Zambezi River Authority Act;
- the Local Government Act;
- the Forestry Act;
- the Land Act;
- the Mines and Mineral Act.

The provisions of the above laws are in the main complementary to the policy objectives for energy resources management and development which will enhance collaboration and cooperation between the key stakeholders.

The majority of the above Laws generally deal with effective and sustainable energy exploitation and utilization. The effective management of energy resources requires an adequate legal and regulatory framework which promotes efficient, effective, sustainable and participatory management of the national energy resources.

For the effective implementation of objectives and strategies outlined in this Policy the following measures shall be undertaken:

- an effective regulatory framework that provides guidance to all actors shall be developed;

- the harmonisation of all energy related legislation shall be carried out;

- a clear mechanism for enforcement of the legal framework shall be developed; and

- capacity for the enforcement of the legal and regulatory provisions shall be built.

6.3 Data information and reporting

The efficient management and development of energy resources will depend on accurate and reliable information systems that facilitate optimized decision making. In order to achieve this, the following measures shall be undertaken:

- the establishment and maintenance of an adequate data capturing system for all energy resources;

- regular assessment of energy resources shall be undertaken; and
- regular updating and dissemination of information systems on energy resources shall be established to enable exchange of information with players in other relevant sectors.

6.4 Financing and Private Sector Participation

There is need to attract more investment for improved energy infrastructure development and management of the resource in order to enhance economic growth and make the resource available to all. In order to achieve this, the following measures shall be implemented:

- development of economically viable infrastructure that are self financing shall be prioritised to ensure sustainability;
- an enabling environment that attracts funding and full private sector participation shall be created.

6.5 Community participation

It has become inevitable that communities should be involved at all stages of energy resource development and management. The views of stakeholders are valuable in reaching decisions and providing the basis for support in the management of water resources. In order to achieve this, the following measures shall be implemented:

- train communities in community energy project identification, formulation and implementation so as to equip them with appropriate knowledge and skill;
- introduce participatory techniques in energy resources management programs, including the enhancement of the role of members of the disadvantaged groups, youth and other members of local communities; and
- create awareness and support from the general public and key decision makers on the best practices for management and development of the energy resources;

6.6 Gender

The management and development of energy resources at the grass root level requires the effective participation of both gender in the decision- making process. Further, women are known to play a vital role in the provision and management energy resources in the rural areas, they need to take proactive decisions on how these resources are managed and developed. In order to achieve this, the following measures shall be implemented:

- accelerate the representation of women at all levels and in all spheres of energy development and management activities;

- ensure gender balance by defining the key roles played by women, men and children so that there is no gender discrimination in the ownership and management of the various energy projects;

- based on the National Gender Policy principles, goals and objectives, gender mainstreaming in water sector programmes will be articulated to the full involvement of women in the development and implementation of the energy policy and the related energy sector project activities;

- gender consideration in the use and management of energy resources shall be incorporated.

6.7 HIV/AIDS

The HIV/AIDS pandemic has impacted negatively on the energy sector and has contributed to the low human resource capacity and productivity in the energy sector. There is need to maintain and strengthen existing programmes to minimise the negative impact of HIV/AIDS in the energy sector. In order to achieve this objective the Ministry shall implement its policy on HIV/AIDS.

6.8 Research and Development

The sustainable management of energy resources is largely dependant on maintaining and developing recognised capabilities in the field of energy research. The Government will therefore maintain and develop research capabilities in the energy sector and shall implement the following measures:

- encouraging interdisciplinary and participatory research approaches that provide linkages between technology and communities; and,
- supporting the standardisation of methods of data collection and processing both at national and regional levels for use by the SADC countries.

6.9 Capacity building

There is need to build capacity in the energy sector in order to support the legal and institutional frame work as provided in this policy. To achieve this objective the following measures shall be implemented:

- recruitment and training of personnel in the relevant fields shall be applied at all levels;
- create incentives aimed at retaining skilled manpower; and, develop a system for evaluating personnel performance and productivity.

6.10 Monitoring and evaluation

In order to ensure that the policy measures and strategies as stipulated in this policy are carried out, an effective monitoring and evaluating system needs to be put in place. The Ministry shall develop verifiable indicators for the purpose of ensuring that the objectives of this Policy are being achieved.