THE REPUBLIC OF UGANDA

Ministry of Energy and Mineral Development

Draft National Energy Policy

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Contents

List of Acronyms

AEC	Atomic Energy Council
CDAP	Community Development Action Plan
CNDPF	Comprehensive National Development Planning Framework policy
COMESA	Common Market for Eastern and Southern Africa
DRC	Democratic Republic of Congo
EAPP	Eastern Africa Power Pool
EPRTF	Energy Policy Review Task Force
ERA	Electricity Regulatory Authority
FHH	Female Headed Households
GBV	Gender Based Violence
GHG	Greenhouse Gas
GSDD	Gender, Sex and Age Disaggregated
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
ICSC	Implementation Coordination Steering Committee
IRP	Integrated Resource Plan
LG	Local Government
LPG	Liquefied petroleum gas
MHH	Male Headed Households
MEMD	Ministry of Energy and Mineral Development
MoFPED	Ministry of Finance Planning and Economic Development
MOGLSD	Ministry of Gender, Labour and Social Development
MSME	Micro, Small and Medium Enterprise
NDP	National Development Plan
NEMA	National Environment Management Authority
NPA	National Planning Authority
PEAP	Poverty Eradication Action Plan

PCC	Policy Coordination Committee
PLWHIV	Persons Living with HIV
PWD	Person with disability
RAP	Resettlement Action Plan
RED	Renewable Energy Department
RESP	Rural Electrification Strategy and Plan
RET	Renewable Energy Technology
TICC	Technical Implementation Coordination Committee
SDG	Sustainable Development Goal
SEforALL	Sustainable Energy for All Initiative
SSIP	Sector Strategic Investment Plan
SWG	Sector Working Group
UEDCL	Uganda Electricity Distribution Company Limited
UEDCL	Uganda Electricity Generation Company Limited
UETCL	Uganda Electricity Transmission Company Limited
UN	United Nations
UNHS	Uganda National Housing Survey
USEA	Uganda Solar Energy Association

1. Introduction

1.1. Background

The Government has implemented the first Energy Policy for Uganda since 2002 as the primary guiding document for the country's energy sector. The Energy sector is directly linked to other sectors of the economy and generally provides their lifeblood. The sector is a major contributor to national development and Government revenues, and its performance impacts the performance of other sectors.

The Uganda Vision 2040 states that "Ugandans aspire to have access to clean, affordable and reliable energy sources to facilitate industrialisation". This commitment was further reaffirmed in the second National Development Plan (NDP II) (2015/2016 to 2019/2020), which prioritized energy as critical for Uganda's aspirations for Vision 2040 and the attainment of upper middle-income status.

Since 2002, there have been several developments and changes nationally and internationally that have impacted the energy landscape of Uganda. The country's Gross Domestic Product (GDP) has quadrupled, averaging approximately 6% growth per annum over the past two decades. The population grew from 25.72 million in 2002 to 34.6 million in 2014 and is projected to reach 100 million by 2050. The achievement of the Vision 2040 targets and the UN Sustainable Development Goals (SDGs) will largely depend on the Government's ability to address the major social, economic and infrastructural challenges facing its growing population.

The Energy Policy 2002 has presided over important sector reforms, achievements and technological advancements. The revised Energy Policy aims to consolidate these achievements, align the policy framework with recent international, regional and national developments and commitments, and ensure that the Government is well positioned to address the new and emerging socio-economic challenges of the energy sector in the coming decade.

1.2. Situational Analysis

1.2.1. Performance of the Energy Policy 2002

The broad objectives of the Energy Policy for Uganda (2002) were to: establish the availability, potential and demand of various energy resources; increase access to modern affordable and reliable energy services; improve energy governance and administration; stimulate economic development; and manage energy-related environmental impacts. Other key focus areas were to harmonize sector activities; integrate resource planning by

addressing both demand side and supply side issues; ensure compatibility with global and regional policies; develop the necessary regulatory framework; build capacity of the sector; and promote private sector participation.

The government has made significant achievements on the objectives set out in the Energy Policy (2002). The achievements include: increased electricity generation capacity from 317 MW (2002) to 1,182 MW (May 2019) resulting in a supply/demand surplus; increased electricity access from 5% (2002) to 28% (2019); reduction in electricity losses from over 35% (2002) to 17.4% (2017); dominance of renewable energy in the national energy mix; enabling environment for private sector investments; increased energy sector contribution to the national GDP; increased efficiency initiatives in the biomass sub-sector; liberalization and improved sector regulation; increased awareness of environmental compliance; and enactment of various legislation and policy instruments to improve sector governance.

Despite the achievements, the Government recognizes the considerable efforts still required to achieve the targets of the Sustainable Development Goals (SDGs) and Vision 2040. The key gaps identified in the Energy Policy (2002) are presented in Section 1.3.

1.2.2. Energy and Development

Achieving the right balance between energy, economy and the environment leads to sustainable development. While hydropower predominantly facilitates renewable energy access for social and productive use on the grid, domestic and off-grid agricultural and industrial activities are still powered primarily by biomass and fossil fuels. The government's commitment to reduce greenhouse gas emissions and improve environmental sustainability will require a shift towards cleaner energy sources and practices.

Under the Vision 2040, the Government plans to transform the country from predominantly low income to competitive upper middle income, reaching a per capita GDP of USD 9,500 by 2040. The Vision acknowledges energy as one of the key fundamentals required to harness the country's opportunities and drive the industrial and service sectors. Strong growth in the national economy is bound to increase the demand for energy and thus, open the sector for further development. Ensuring effective strategies in the development of energy resources and delivery of energy services will be essential to achieving the targeted socio-economic transformation.

1.2.3. Legislative and Policy Framework

The legislative framework of the energy sector is comprised of the 1995 Constitution of the Republic of Uganda (as amended) and the following laws and statutory instruments: the Electricity Act (1999) provides the regulatory framework for the electricity sub-sector; the

Petroleum Supply Act (2003) ensures an adequate, reliable and affordable supply of quality petroleum products; the Atomic Energy Act (2008) regulates the promotion and development of nuclear energy for use in power generation and other peaceful purposes; the Petroleum Act (2013) operationalizes the National oil and Gas policy; and the Biofuels Act (2018) regulates the production, storage and transportation of biofuels and blending of biofuels with petroleum products.

The policy framework is comprised of the Energy Policy (2002) whose goal is "to meet the energy needs of Uganda's population for social and economic development in an environmentally sustainable manner"; the Renewable Energy Policy (2007) which aims to increase the share of renewable energy in the national energy mix; the National Oil and Gas Policy (2008) whose goal is to use the country's oil and gas resources to contribute to early achievement of poverty eradication; and the Electricity Connections Policy (2018) which aims to increase access and provide cleaner energy for Ugandans.

The sector's mandate is also governed by other sector policies, including the Gender Policy (2007), Climate Change Policy (2015), Environment and Social Safeguards Policy (2018), etc. The Climate Change Policy (2015) supports energy policy implementation through the promotion and development of new clean energy technologies to reduce Greenhouse Gas (GHG) emissions. Through its Nationally Determined Contributions (NDC), Uganda has committed to reduce its emissions by 22 percent by 2030.

The sector also ascribes to international and regional legal and policy frameworks that Uganda is a party to, e.g. the UN SDGs, Sustainable Energy for All (SEforAll), East African Community laws and policies, among others. The integration of gender and equity considerations into policies, programmes and projects fosters women involvement in policy development and the advancement of human rights.

1.2.4. Energy Balance

As of 2019, biomass contributes 88% of the total primary energy consumed through firewood, charcoal and crop residues; electricity contributes approximately 2%; while fossil fuels (oil products) account for 10% of the national energy mix.

Transport consumes 90% of oil products whereas kerosene use in households consumes 6%. The rate of electricity connectivity access is 28% (June 2019), with total installed generation capacity at 1,182 MW (May 2019) and peak electricity demand approximately 650 MW. Households comprise the largest overall energy consumer group, followed by industry and transportation.

1.3. Rationale for the Energy Policy Review

Several socio-economic changes and technological advancements during the implementation of the Energy Policy over the past two decades have necessitated the current policy revision. The rationale for the revision is presented below.

Since 2002, Uganda has developed and become a party to new national and international guiding frameworks. The revised policy considers the aspirations and targets of the Vision 2040 (2012), UN SDGs (2015) and SEforAll initiative (2012), Paris Agreement (2016), etc.

The 2002 policy needed a stronger focus on biomass as the primary energy source in order to curb inefficient use and related environmental degradation. The policy also had limited consideration for off-grid energy solutions, climate change mitigation actions and emergency thermal power generation during the energy crisis. Additional provisions for financing, communication and Monitoring and Evaluation were required.

There have been important market changes in the energy sector since 2002. The electricity sub-sector has shifted from generation capacity shortages between 2002 and 2012 to the current anticipated surplus of power generation compared to demand. The Government is now focused on the development of domestic demand and regional power trade. Other changes in market orientation include a progression from primarily private sector led growth to Public Private Partnerships (PPPs), and increased public financing of sector developments aimed at increasing affordability.

Uganda's population has grown steadily since 2002 and the country is ranked as having the second youngest population in the world according to the UN (2015). Energy plans and targets have to be aligned with the changes in national demographics to ensure effective and equitable energy service delivery over the next decade.

The revised Energy Policy aims to have a stronger focus on gender and climate change mainstreaming in sector activities. Considerations for occupational health and safety mainstreaming will likewise be important.

1.4. Scope of the Policy

This Energy Policy covers the following sub-sectors: Renewable Energy, Clean Cooking, Electrical Power, Rural Electrification and Access, Energy Efficiency and Conservation, Nuclear Energy and selected cross cutting issues. Petroleum is covered under the National Oil and Gas Policy (2008), currently under review, and related statutory instruments.

1.5. Problem Statement

The following are the key issues facing the energy sector:

i) Low levels of access to affordable and modern energy services

Uganda has one of the lowest electrification rates in Africa with a current access rate of 28%. There is limited productive use of electricity especially in rural areas which negatively affects demand growth, affordability and uptake. Low demand growth compared to planned generation capacity is likely to exert pressure on consumer tariffs. Affordability is also impacted by other factors including pricing that is in turn affected by foreign exchange rate fluctuations, inflation and the performance of energy service providers. Additionally, there is low access to modern energy sources and services, e.g. solar home systems, LPG, biogas and improved cookstoves, for lighting, heating and clean cooking.

ii) Constrained economic development due to inadequate energy sector investments

Energy drives economic development. The sustained industrial growth aspired to by the Vision 2040 will require steady energy supply and matching infrastructure investments. Several areas gazetted as industrial parks have limited or unstable electricity supply leading to suppressed demand in industries and inability to expand output and increase demand. There is generally inadequate financing of energy programmes and commercial banks have limited involvement in the provision of long-term lending for energy projects. The availability of public or commercial credit and financing is critical to timely investments in necessary energy infrastructure and delivery of sustainable development.

iii) Unreliable energy supply infrastructure

The development of national electricity demand and creation of regional export markets is a key focus area of the Government, given the country's anticipated large generation surplus in the short to medium term. Constraints in transmission and distribution limit the domestic utilization and regional export of existing generation supply and increase the cost of service from unutilized capacity. The expansion and reinforcement of transmission and distribution infrastructure will be pivotal to enhancing the quality and reliability of the electricity supply industry, towards creating demand and new markets.

iv) Environmental degradation due to unsustainable utilization of biomass energy resources

The widespread dependence on biomass energy resources for cooking and heating using inefficient methods, such as traditional cookstoves, has resulted in rapid forest depletion for firewood and charcoal, among others. The rate of deforestation was estimated to be 0.8% per annum in 2016, equivalent to a loss of about 50,000 hectares of forest per year[1]. The estimated total annual demand for woody biomass (firewood and charcoal) of 53 million tonnes in 2013 exceeded the sustainable annual supply of 26 million tonnes[2], creating a huge deficit. Improving efficiency in the entire biomass energy supply chain, from charcoal production processes to cookstoves used in households, will be needed to mitigate this problem.

v) Inefficient utilization of energy

There have been significant advances in energy efficiency and conservation in the country over the past decade, largely driven by targeted Government initiatives. However, the sector is still characterised by inefficiencies on the supply and demand sides, with relatively high losses in transmission and distribution, and proliferation of substandard energy equipment and practices on the demand side. Additionally, initiatives have been largely focused on urban utilities and consumers with limited outreach to the rural population. Inefficient use of energy aggravates high energy costs for supply and consumption, and limits the productive use of energy in both urban and rural areas.

vi) Inadequate technical capacity and lack of integrated planning

There is a shortage of skilled manpower and targeted research and development (R&D), which undermines the sector's long-term sustainability. Many government and private sector institutions lack R&D facilities. The uptake and integration of energy studies and research in institutions of higher learning will be important to ensure improved long-term productivity and sustainability of the sector.

The lack of integrated planning of energy projects and programmes creates conflict and competing interests among institutions and sub-sectors. Inadequate coordination and information sharing among the various government institutions, projects and the private

[1] MEMD 2016
[2] Biomass Energy Strategy (2013) and National Charcoal Survey 2016

sector result in inconsistent energy data and hinders sector-wide planning. Structures and systems for integrated energy planning and monitoring of projects that consider government goals as well as regional and international energy commitments are necessary.

vii) Vulnerability to climate change

The energy sector is vulnerable to adverse changes in climate which could disrupt energy supply, including hydropower, biomass and biofuels supply, among others. Climate change impacts include increased frequency and intensity of droughts, floods, glacial melting, landslides and heat waves. A key potential risk is the electricity sector's high dependence on hydropower which is prone to climate change impacts. There is need to optimize the energy mix to mitigate climate change risks.

viii) Insufficient public awareness

There is insufficient public awareness of the potential, opportunities and economic benefits of various energy resources and technologies, as well as sector activities and programmes. This contributes to the low uptake of modern energy services. Information and data on energy supply and demand for all types and sources is not widely available or adequately disseminated. Additionally, there is a lack of recognition of women as key players in energy technology use and innovation.

2. Energy Policy Direction

2.1. Vision

To develop, strategically manage and safeguard the rational and sustainable exploitation and equitable utilization of energy resources for social and economic development.

2.2. Mission

To ensure reliable, adequate and sustainable exploitation, management and equitable utilization of energy resources.

2.3. Main Goal

To meet the energy needs of the Ugandan population by providing adequate and reliable energy supply for socio-economic growth and sustainable development.

2.4. Objectives

2.4.1. Overall Objective

To ensure sustainable development and utilization of energy resources, services and products by all Ugandans towards transformation of the national economy.

2.4.2. Specific Objectives

The specific objectives are to:

a) Increase access to reliable, affordable and modern energy services
b) Stimulate economic development
c) Improve the security and reliability of energy supply
d) Manage environmental impacts of energy exploitation and consumption
e) Promote efficiency and conservation in energy supply and utilization
f) Improve energy sector governance, capacity building and integrated planning
g) Promote renewable and alternative energy sources
h) Raise public awareness on energy resources, services and programmes

2.5. Guiding Principles

The energy policy is underpinned by the following guiding principles:

- **Transparency:** Development of strong and robust frameworks that enhance transparency, predictability and security
- **Sustainability:** Ensuring sustainable energy services delivery and utilization of energy resources, strengthening local technical capacity and raising public awareness
- **Environment consciousness:** Active promotion of the sustainable management of the environment and natural resources
- **Health and safety:** Advocating for sound health and safety in the development and implementation of energy activities and projects
- **Gender and equity responsiveness:** Mainstreaming gender, equity, human rights, culture and inclusiveness in the energy sector
- **Partnerships:** Engagement of all partners in the design, implementation, monitoring and evaluation of energy programmes
- **Continuous research and development:** Supporting the development of scientific research

3. Priority Areas and Strategic Interventions

Concerted efforts will be required to successfully implement and achieve the goals and objectives of this Energy Policy. The strategic interventions and policy actions for each priority area are outlined below.

a) Increase access to reliable, affordable and modern energy services

i) Reinforce and expand the electricity grid, based on service territory electrification master plans, for increased grid densification and intensification
ii) Promote and pilot the innovative development and scale up of off-grid renewable energy supply systems
iii) Develop enabling regulatory frameworks to attract and sustain private sector participation, including community groups and financial institutions, in the provision of energy services
iv) Develop and implement financial support mechanisms, including targeted subsidies, for both energy service providers and consumers
v) Promote the use of appropriate or low-cost energy supply technologies and products through appropriate fiscal, tariff-based and other incentives
vi) Promote productive use of energy for increased uptake and affordability of energy services in collaboration with other government agencies
vii) Incubate demand until grid extension is justifiable for industrial loads by promoting mini-grid and off-grid installations

b) Stimulate economic development

i) Attract investments into the energy sector by providing appropriate fiscal and tariff-based incentives
ii) Build adequate transmission and distribution infrastructure to supply industrial parks
iii) Encourage competition within energy markets
iv) Manage and develop energy demand for sustainable development and economic growth through pricing based on economic costs and more efficient use of energy
v) Promote appropriate energy solutions for improved agricultural production and value addition

c) Improve the security and reliability of energy supply

i) Expand transmission and distribution infrastructure towards increasing reliable electricity access, developing new demand and unlocking suppressed demand
ii) Legislate and strictly enforce stringent punitive measures against theft and vandalism of energy infrastructure, equipment and materials
iii) Create an enabling environment for Public-Private Partnerships in energy resource financing and development for effective supply and service delivery
iv) Promote regional energy trade and co-operation including the development of necessary interconnection infrastructure
v) Facilitate investments in smart-grid technologies to improve power system reliability

d) Manage environmental impacts of energy exploitation and consumption

i) Promote cleaner fuels and technologies substitution for cooking and heating, e.g. LPG and biogas, as well as renewable energy technologies such as micro-hydro and pico-solar for lighting in households and institutions
ii) Promote more efficient charcoal production and use practices to ensure the sustainable consumption of biomass resources and mitigate rapid forest depletion
iii) Enforce compliance with environmental and social standards and laws governing the energy sector, including the planning, design and implementation of energy projects
iv) Facilitate the development or adoption of standards for equipment, products, protective equipment, facilities and operating practices in the energy sector to ensure safe operations
v) Package and disseminate information on environmental, social, safety and health issues in communities affected by energy projects

e) Promote efficiency and conservation in energy supply and utilization

i) Develop and enforce regulations, standards and codes that mandate energy efficiency practices across all sectors of the economy
ii) Facilitate and incentivise efficient biomass conversion and end-use technologies
iii) Promote commercial financing of demand side management initiatives in industries, micro, small and medium enterprises (MSMEs) and the transport sector
iv) Develop an effective communication and dissemination strategy on energy efficiency and conservation for consumers
v) Promote the institutionalisation of demand-side energy management programmes, such as regular energy audits, in high energy consuming facilities and utilities

vi) Develop and adopt an effective standards and labelling scheme for common energy appliances and products, including biomass products such as charcoal

f) Improve Energy Sector Governance, capacity building and integrated planning

i) Develop a sector-wide **Integrated Resource Plan (IRP)** to optimize development of domestic energy resources for the most economic value

ii) Develop, strengthen and continuously improve legal, institutional and regulatory frameworks to respond to prevailing conditions, and clarify roles and mandates

iii) Establish and strengthen decentralized coordination at District Local Government levels to support the promotion of clean energy investments at the lowest level

iv) Promote transparent, even-handed and predictable regulation of the energy sector, and utilize domestic and regional cooperation opportunities to minimize energy costs and tariffs

v) Improve effectiveness in the sector by promoting competitive development, procurement and delivery of energy services

vi) Train and retain local human resource for the energy sector through effective capacity building and appropriate incentives

vii) Develop and implement an energy research and development strategy

viii) Integrate energy studies into curricula of educational institutions, especially technical & vocational institutions

g) Promote renewable and alternative energy sources

i) Diversify the energy mix of energy supply options, including power generation to mitigate reliance on any single source

ii) Mainstream climate change mitigation, adaptation and resilience into all energy sector planning, activities, projects and programmes

iii) Conduct Renewable Energy resource assessments

iv) Facilitate market development of renewable energy technologies

v) Promote the use of renewable energy technologies through appropriate pricing policies and tax incentives

vi) Encourage local manufacturing of renewable energy technologies through establishing renewable energy credit facilities & establishing sales promotion funds for manufacturers

vii) Develop a framework for integration and net metering of rooftop solar PV on the grid

viii) Promote the development of appropriate local capacity for installation, maintenance and operation of basic renewable energy technologies

ix) Encourage financial institutions to provide credit facilities for renewable energy through fiscal and other incentives

h) Raise public awareness on energy resources, services and programmes

i) Prepare and maintain up-to-date databases across sub-sectors on energy resource potential, supply and demand, pricing, etc.

ii) Intensify provision of consumer information, education and technical advice in the use and conservation of energy

iii) Package and disseminate information on potential projects for investment

iv) Disseminate information on the benefits and opportunities of various energy resources, services and technologies

v) Mainstream gender into energy sector activities and programmes to enhance the contribution of women in innovations and technologies for clean energy access

4 Sub-Sector Issues, Policy Statements and Strategies

4.1 Renewable Energy

Key Issues

a) Inadequate information and data on renewable energy resources including wind and small hydropower
b) High upfront costs for the development of renewable energy resources and technologies
c) Limited access to affordable credit and financing for renewable energy projects and technologies
d) Inadequate legal, regulatory & institutional frameworks in place
e) Limited enforcement of quality standards for renewable energy technologies and products.

Policy Statement

The Government shall promote the sustainable development and utilisation of all renewable energy resources in a socially and environmentally responsible manner.

Strategies

1. Conduct national renewable energy resource assessments including small hydropower and wind energy resources.
2. Promote technology transfer in the development of renewable energy projects through regional demonstration centres
3. Promote local financing of renewable energy projects and support public private partnerships
4. Support small and micro-enterprises through fiscal incentives on selected renewable energy technologies
5. Develop comprehensive legal, regulatory and institutional frameworks for effective and sustainable renewable energy development and utilization
6. Conduct public awareness campaigns on the environmental, social and economic benefits of renewable energy

7. Establish and enforce appropriate standards for modern renewable energy technologies

4.1.1. Biomass

Key Issues

a) Limited information on available biomass energy resources
b) Inadequate supply of feedstock for biomass energy production
c) Inadequate standardization and certification of biomass products
d) Unsustainable production and utilization of solid biomass fuels in households, institutions, commerce and industry, particularly through traditional technologies
e) Inadequate institutional coordination for the sustainable production and utilization of solid biomass
f) Underdeveloped market for efficient biomass energy technologies utilisation
g) Lack of biofuels market-demand development
h) Limited knowledge on potential feedstock sources for biofuels production
i) High price of power ethanol compared to other competing uses of bio-ethanol
j) Lack of legislation and regulations to manage gaseous biomass
k) Socio-cultural reservations against use of gaseous biomass produced from faecal matter
l) High cost of gasification technologies hindering private investment and use

Policy Statement

The Government shall promote sustainable biomass energy production and utilization across all sectors

Strategies

General

1. Support biomass resource assessment to evaluate the potential for proper planning
2. Work with other MDAs to promote growth of feedstock and dedicated tree woodlots for commercial biomass energy production
3. Promote the standardization, certification, labelling and packaging of biomass technologies and fuels

Solid Biomass

1. Develop appropriate legislation and regulations to promote and govern use of solid biomass along its entire value chain in a sustainable, modern and clean manner
2. Mainstream sustainable biomass energy production into the environment, health and economic sectors
3. Encourage farmers to grow trees for charcoal through identification and provision of suitable fast-growing tree species, supported with appropriate silvicultural practices
4. Promote standardised commercialization of charcoal and reduce hardwood species depletion through appropriate valuation by weight instead of unspecified volumes
5. Promote the use of more efficient solid biomass alternatives, e.g. briquettes
6. Streamline and implement coordination between Ministries, Departments, Agencies (MDAs) and other institutions to enforce regulations in management of solid biomass production and utilisation
7. Provide incentives to companies that fabricate efficient charcoal and firewood stoves in rural and urban areas
8. Promote use of efficient charcoal and brick production kilns, e.g. casamance, retorts, Hoffman kiln
9. Support investments in efficient solid biomass production, processing and conversion technologies, e.g. charcoal retorts
10. Support market development, entrepreneurship and SMEs for sustainable biomass energy technologies and products

Liquid Biomass

1. Promote the deployment and adoption of technologies that utilize liquid biomass, e.g. ethanol stoves
2. Develop appropriate regulations to support the use of biofuels in the domestic, transport and commercial sectors
3. Promote the development of the liquid biofuels market, and provide incentives for private sector investment
4. Perform detailed feasibility studies on biofuels feedstock and map site suitability
5. Support resource assessments to evaluate the production potential of liquid biofuels
6. Provide tax incentives for power ethanol to enhance affordability

Gaseous Biomass / Gasification

1. Develop comprehensive standards for production and use of gaseous biomass
2. Support biomass resource assessment to evaluate the production potential of gaseous biofuels
3. Promote inter-fuel substitution in households and industry by creating and maintaining appropriate taxation systems
4. Promote biogas production and use for small and large scale thermal and electrical applications
5. Promote household and institutional biogas and bio-latrine installations
6. Promote research and development in thermal gasification technologies

4.1.2. Solar Energy

This section focuses on *grid connected solar PV power* and *solar thermal technologies*. Solar Home Systems (SHS) are covered under Off-Grid Electricity Access.

Key Issues

a) Lack of an enabling framework for the export and sale of surplus captive power from self-generation by facilities to the national grid
b) Inappropriate system standards, faulty installations, importation of sub-standard systems and poor aftersales service for solar thermal systems

Policy Statement

The Government shall promote the optimal development of grid solar PV through integrated resource planning, and widespread use of solar thermal technologies in compliance with regulations and standards.

Strategies

1. Base investments in large solar PV generation on technical studies that ensure that the national grid has adequate flexibility to absorb the generated power
2. Incorporate storage into large solar PV generation where it is financially viable
3. Develop a framework for the export of surplus captive power from self-generating facilities to the national grid through direct sales or net metering
4. Provide tax incentives and waivers for solar thermal equipment

5. Promote local innovations in solar thermal technologies
6. Develop and enforce standards and existing building codes for appropriate use of solar thermal technologies

4.1.3. Geothermal Energy

Uganda has the potential to develop its geothermal resources to provide both electrical power and thermal energy for heating and industrial processes.

Key Issues

a) Inadequate institutional, legal and regulatory framework for the development of geothermal resources
b) High geological risk in upstream exploration stages
c) High upfront costs of geothermal resource development
d) Limited available financing for investments in upstream exploration
e) Inadequate resource data and information to guide decision making
f) Limited local government and community participation in resource development

Policy Statements

The Government shall promote the sustainable commercial development of geothermal resources based on an integrated resource plan

Strategies

1. Establish and strengthen the institutional, legislative and regulatory framework for the geothermal industry
2. Develop a Geothermal Resources Master Plan to guide optimised resource development
3. Establish a Geothermal Communication Strategy to raise public awareness and engage communities affected by geothermal development
4. Formulate innovative financing mechanisms for private geothermal resource development through provision of fiscal and other incentives
5. Government to carry out feasibility studies and take over geothermal resource exploration
6. Support and solicit funding for the management of geothermal exploration risk and attract investors.

4.1.4. Waste to Energy

Appropriate waste-to-energy technologies, e.g. briquetting, power generation from biogas or incineration, can be used to provide alternative energy sources for cooking and electricity while providing effective waste management solutions.

Key Issues

a) Inadequate data and information on the quantity of municipal waste and its potential energy output and market
b) Inadequate waste collection and poorly managed dumping sites hindering waste to energy conversion especially outside Kampala
c) High cost of technologies to convert agro-waste into useful energy
d) Lack of wastewater and faecal sludge management facilities in many urban areas and fewer with energy recovery systems

Policy Statement

The Government shall promote the collection and processing of municipal waste streams as alternative sources of energy.

Strategies

i) Undertake feasibility studies to determine the economic potential for waste to energy in collaboration with relevant Ministries, Agencies and Municipal Authorities
ii) Develop regulatory frameworks to address management and utilisation of municipal waste to energy, in collaboration with municipal authorities

4.2 Clean cooking

The use of inefficient cooking devices combined with unsuitable cooking spaces is responsible for 8.2 percent of infant deaths in Uganda[3]. This is due to exposure to indoor air pollution (IAP) resulting from use of unclean inefficient fuels, predominantly charcoal and fuelwood. Clean cooking fuels and technologies include improved cookstoves, ethanol,

[3] GVEP International, 2012

LPG, solar, biogas and electricity. There is less than 5% uptake of clean cooking technologies and fuels in Uganda (ESMAP 2019).

Key Issues

a) Relatively high cost of clean cooking technologies and equipment relative to traditional dominant biomass
b) Unreliable supply of clean energy technologies
c) Lack of financing schemes for purchase of clean or improved cookstoves and other clean technologies
d) Insufficient gender-awareness in the promotion of clean cooking

Policy Statements

The Government shall promote the uptake and sustained use of clean, modern cooking technologies.

Strategies

1. Develop and enforce a comprehensive legal, regulatory and commercial framework for the clean cooking sector
2. Promote local manufacture of clean cooking equipment, fuels and accessories
3. Provide fiscal incentives e.g. subsidies, loans and tax incentives to the clean cooking sector to encourage private sector involvement
4. Support the growth of women as promoters, suppliers, leaders and manufactures of clean cooking equipment and resources
5. Promote financing schemes for clean cooking fuels and equipment through loans from targeted microfinance institution, banks, SACCOs or other agencies
6. Establish and implement national standards, labelling and certification programs for the clean cooking sector

4.1.5. Liquid Petroleum Gas (LPG)

Key Issues

a) Inadequate regulations, technical standards and certification of LPG cylinders and accessories
b) Lack of safety standards for LPG filling stations

c) High upfront costs for LPG cylinders, accessories and products
d) Lack of financing schemes for starter-kit LPG accessories for potential users
e) Inadequate market development for LPG has led to limited investments, unreliable supply, over-reliance on imports and limited service points especially in rural areas

Policy Statements

The Government shall promote access to affordable, reliable and clean LPG energy services.

Strategies

1. Develop, monitor and enforce comprehensive LPG regulations and standards
2. Develop a framework for cylinder and accessory equipment certification
3. Create awareness by undertaking training and information dissemination on the use of LPG, including health and safety tips
4. Develop technical capacity on LPG services and assess the possibility of a universal valve policy
5. Support the development of Central and Regional LPG storage and distribution infrastructure facilities to ensure availability of stock for sustainable supply
6. Provide incentives for increased LPG usage, including free starter-kits distribution for first time users
7. Promote investments in LPG service points in peri-urban and rural areas

4.3 Electrical Power

Key Issues

General

a) Cumbersome land acquisition processes for electrical power infrastructure
b) Inadequate technical capacity to implement and supervise electric power projects
c) Disintegrated planning, coordination and supervision in the electricity supply industry
d) Suppressed demand especially in urban areas due to unreliable electricity supply

Generation

a) Inadequate planning framework for sequencing power generation in line with transmission and distribution infrastructure, and demand forecasts
b) High dependence on hydropower generation which is prone to adverse climate changes

Transmission

a) Relatively high electricity transmission losses
b) Rampant vandalism of transmission electricity equipment
c) Inadequate public funding for the development of transmission infrastructure
d) Inadequate framework to evacuate embedded generation through intermediate networks
e) Transmission infrastructure development is out of tandem with generation capacity development
f) Inadequate reliability on the transmission system due to prevalence of radial, rather than ring, networks
g) Monopoly in bulk purchase and sale of power limits investments and increases costs to the System Operator
h) Inadequate interconnection infrastructure for electricity exports to all neighbouring countries.
i) Inadequate security of power supply

Distribution

a) High electricity distribution losses
b) Poor reliability of the network
c) High consumer tariffs
d) Theft and vandalism of distribution electricity equipment
e) Inadequate standardization and regulation of equipment, including energy meters and electricity poles, across distribution utilities and service providers
f) Uncoordinated industrial investments hinder timely and adequate implementation of required distribution infrastructure

Policy Statement

The Government shall promote safe, reliable and sustainable electricity supply based on integrated planning, and facilitate stable regional electricity trade.

Strategies

General

1. Develop mechanisms for effective community engagement on land acquisition and timely compensation payments to energy project affected persons to mitigate delays
2. Set up and support skilling and training centres for capacity building in the electrical power sub-sector
3. Enhance transmission and distribution infrastructure to improve grid reliability, unlock suppressed demand, and facilitate industrialisation and power exports
4. Facilitate integrated planning and coordination among generation, transmission and distribution entities for infrastructure expansion and demand development
5. Legislate and enforce more stringent punitive measures against vandalism of electricity infrastructure

Generation

1. Promote development of alternative generation sources based on an integrated resource plan to diversify the energy mix and mitigate over-reliance on hydropower

Transmission

1. Promote and implement measures to reduce transmission losses
2. Nationalize measures to curb vandalism of transmission infrastructure to involve mainstream security agencies including the Police Force
3. Undertake feasibility studies for transmission projects to enable packaging and timely implementation
4. Facilitate PPPs to attract private sector investments in transmission infrastructure
5. Develop comprehensive legal and regulatory frameworks for evacuation of embedded generation through intermediate networks
6. Facilitate investments in adequate redundancy to improve reliability
7. Put in place mechanisms to enable embedded generators to sell generated energy directly to distribution utilities and large consumers

8. Develop interconnection infrastructure to facilitate exports to neighbouring countries and enhance security of supply

Distribution

1. Promote productive use of electricity in electrified areas to develop demand
2. Develop frameworks to incentivize performance and use of quality construction materials by utilities for improved reliability
3. Support innovative strategies for distribution losses reduction
4. Implement innovative measures to curb electricity theft by consumers
5. Promote and enforce standardization and regulation of all equipment used by distribution utilities, particularly energy meters and wooden poles
6. Provide rebates to customers who invest in infrastructure that also benefits other businesses and premises
7. Improve coordination of industrial developments between utilities and other MDAs to ensure timely and adequate distribution infrastructure implementation

4.4 Electricity Access and Rural Electrification

The current level of rural electrification in Uganda is significantly low; only 8% of rural residences have grid connectivity, 3% have solar home systems, 28% rely on solar lighting systems or solar lanterns and less than 1% are electrified through mini-grids [4].

Key Issues

General

a) Low levels of national electricity access
b) Limited access to financing for supply chains and end-users in rural electrification
c) Limited productive use of energy constrains demand growth

On-Grid Access

a) Costly grid extension to sparsely populated settlements with low energy consumption

[4] UBOS, ERT III Baseline Survey Findings, 2018

b) Limited incentives for rural service providers to make timely and affordable connections to the national grid
c) Inability of Service Providers to leverage sizeable financing to stock adequate connections materials
d) Limited financial and technical capacity in the management of rural distribution concessions operated by the private sector
e) Limited ability to pay for house wiring hinders connectivity to the grid
f) Overlapping mandates in rural distribution assets ownership

Mini-Grids Access

a) High costs of setting up mini-grids that result in high end-user tariffs compared to the national grid

Standalone Off-Grid Systems

a) Inconsistent component standards, faulty installations and importation of sub-standard products for standalone off-grid systems
b) Limited capacity for operation and maintenance of off-grid systems
c) Lack of a strong (self-)regulatory environment for off-grid private sector players
d) Low uptake of efficient electrical appliances in off-grid areas

Policy Statement

The Government shall facilitate provision of reliable, stable and equitable electricity services to rural consumers towards achieving universal access by 2030.

Strategies

General

1. Ensure that grid and off-grid electrification follows up-to-date Master Plans
2. Subsidize connection charges for eligible consumers within the low voltage network
3. Develop appropriate support mechanisms for private sector rural electrification initiatives without undermining the market delivery approach
4. Support greater financing provision by local commercial institutions for innovative rural electrification solutions
5. Promote productive use of electricity in all rural electrification initiatives

On-Grid Access

1. Deploy low cost grid extension technologies
2. Promote grid densification and intensification while ensuring equitable service provision across the country
3. Facilitate acquisition of connections materials by service providers to meet increased connection targets through capacity building and institutional strengthening
4. Develop and enforce regulations and guidelines for effective governance of rural distribution concessions
5. Apply appropriate technical standards and low-cost technology options for customers with limited ability to pay for house wiring
6. Facilitate three-phase customer connections through provision of credit
7. Streamline ownership and handover of distribution assets constructed for rural electrification

Mini-Grids

1. Develop a comprehensive legal, regulatory and commercial framework for mini-grids, including tariff policy, subsidies, grid arrival, technical specifications, quality of service standards and consumer protection
2. Promote bundled mini-grid tenders to increase economies of scale, optimise tariffs and procure competent mini-grid developers
3. Develop appropriate financing mechanisms to ensure investments viability for mini-grid developers
4. Provide financing and support for connections & government-owned distribution infrastructure
5. Develop tariff setting methodologies appropriate for mini-grids
6. Collect and disseminate market data to prospective mini-grid developers, and undertake pre-feasibility studies for identified sites to minimize investment risk

Stand-Alone Off-Grid Systems

1. Formulate and enforce quality standards for components, installation, maintenance and after-sales service of standalone energy technologies

2. Develop appropriate mechanisms to mitigate the negative environmental effects of off-grid electronic waste
3. Support organisations mandated to enforce standards and link the burden of responsibility with other enforcement organisations (e.g. the police and judiciary)
4. Enhance affordability of standalone solar systems by providing appropriate incentives
5. Formulate comprehensive and innovative financing mechanisms to extend credit to unserved customers and SMEs
6. Strengthen the capacity of the private sector for self-regulation under the relevant umbrella associations
7. Encourage the off-grid efficient products market by developing product quality standards for off-grid equipment

4.5 Energy Efficiency and Conservation

The UN SEforALL target is to double the global rate of energy efficiency improvement by 2030. Accordingly, the Government's goal is to improve energy efficiency by a minimum of 20% by 2030. This section considers interventions for cross-sectoral Demand Side Management (households, institutions, industry and commerce), agriculture and Transport.

4.5.1. Cross-Sectoral Demand Side Management

Key Issues

a) Inefficient energy consuming products and equipment on the market
b) High upfront costs of energy efficient products and equipment
c) Limited access to affordable capital and end-user financing for energy efficient interventions and equipment
d) Low levels of awareness regarding the benefits of energy efficiency
e) Use of inefficient cooking technologies
f) Inefficient building construction practices in households and institutions result in high energy costs
g) Use of inefficient technologies and practices leading to wasteful energy consumption in industries and commercial facilities
h) Limited technical capacity for energy auditing and management in industries and commercial facilities

Policy Statement

Government shall put in place an enabling framework to promote energy efficiency across all sectors of the economy.

Strategies

1. Develop standards and regulations for energy efficiency across all sub-sectors including biomass cooking technologies
2. Implement incentives to promote uptake of energy efficient products and equipment
3. Mobilize access to affordable financing for energy efficiency programmes
4. Put in place a communication and dissemination strategy for energy efficiency
5. Build capacity through energy efficiency training programmes for the public and private sectors
6. Support the establishment of energy efficiency research and development facilities
7. Promote and incentivise switching from biomass to alternative efficient fuels and technologies, e.g. LPG, biogas, electric pressure cookers, solar cookers, etc.
8. Support the enforcement of energy efficiency standards for buildings
9. Designate and regulate energy usage among high energy consuming industries
10. Promote the implementation of Energy Management Systems (EMS) in high energy consuming facilities
11. Promote the undertaking of energy audits for designated energy consumers
12. Support the implementation of the Building Code to promote energy efficiency in commercial buildings
13. Support and encourage the construction of buildings with minimal or net-zero energy consumption
14. Promote the establishment of Energy Service Companies (ESCOs)
15. Establish a certification programme for energy auditors and the accreditation of inspectors for energy efficiency standards

4.5.2. Transport

Given that transport consumes 90% of imported oil products, efficiency initiatives in the sector will contribute to improved energy security and balance of trade.

Key Issues

a) Lack of knowledge and awareness regarding fuel efficiency, clean and electric mobility

b) Dominance of old and energy inefficient engines in motorised transport resulting in increased fuel consumption and high emissions
c) Inadequate mass transit system resulting in increased traffic congestion and high energy consumption per passenger
d) Increased use of two- and three-wheelers resulting in higher inefficient use of fuel and emissions
e) Inadequate and poor infrastructure to facilitate the use of more energy efficient modes of transport
f) Lack of infrastructure to facilitate the introduction, use and scale up of clean and electric mobility

Policy Statement

The Government shall promote clean mobility and energy efficiency in the transport sector and facilitate investments in related infrastructure.

Strategies

1. Conduct information and public awareness campaigns on fuel efficiency and cleaner mobility
2. Develop and enforce fuel efficiency regulations and standards for the transport sector
3. Promote continuous development of cleaner fuel standards
4. Promote fuel efficiency in the transport sector
5. Promote cleaner motorised and non-motorised transport, e.g. electric and hybrid vehicles, electric two- and three-wheelers
6. Promote and facilitate development of infrastructure for cleaner and electric mobility
7. Introduce fuel economy labelling for all motorised transport
8. Develop public sector guidelines that promote acquisition of cleaner and fuel-efficient motorised transport
9. Promote the development of infrastructure for mass transportation that promotes fuel efficiency and the use of cleaner energy

4.5.3. Agriculture

Agriculture contributes 24% to Uganda's national GDP[5]. The country's aspirations for increased mechanization and value addition in agriculture will increase the importance of efficient energy use in order to raise the sector's contribution to national development.

Key Issues

a) Use of inefficient motors and other agricultural machinery
b) Inadequate conversion of agricultural waste to energy

Policy Statement

Government shall promote energy efficiency in agricultural methods, practices and technologies.

Strategies

1. Promote energy efficient practices such as drip irrigation to minimize energy use
2. Promote optimisation of pump sizes to take peak and off-peak season water requirements into consideration
3. Provide financial incentives and grants to agricultural producers to encourage uptake of energy efficient technologies, machinery and practices
4. Promote deployment of renewable energy systems (such as off-grid solar PV) to reduce fossil fuel use in agriculture
5. Promote fuel efficiency in agricultural applications

4.6 Nuclear Energy

The Treaty on the Non-proliferation of nuclear weapons (NPT) affirms Uganda's inalienable right to research, develop, produce and use nuclear energy for peaceful purposes.

Issues

a) Inadequate legal, institutional and regulatory frameworks for nuclear energy development
b) Limited public awareness of nuclear energy technologies
c) Limited local suppliers of goods and services for the nuclear industry

[5] National Housing and Population Census, 2014.

d) Inadequate arrangements to handle radiological emergencies
e) High upfront capital costs for nuclear power development
f) Limited knowledge on the quantity, quality and extraction cost of nuclear fuel
g) Over-dependence on imports for supply of radioisotopes for medical, research and industrial applications
h) Lack of large-scale irradiation infrastructure for sterilization of agricultural produce

Policy Statements

The Government shall promote the sustainable, peaceful and safe development of the nuclear power and energy industry.

Strategies

1. Enact comprehensive nuclear legislation and strengthen institutional frameworks to promote and regulate power and non-power applications of nuclear energy
2. Raise public awareness on power and non-power applications of nuclear energy and support nuclear research and development
3. Apply existing environmental protection legislation and regulations in implementing the country's nuclear energy programme
4. Adopt and adapt international treaties, protocols and conventions on nuclear safety, security, safeguards, physical protection and nuclear liability
5. Support the certification and registration of all nuclear industry workers in line with established requirements
6. Pursue bilateral and multilateral cooperation in the nuclear industry considering regional and international obligations
7. Develop radiological emergency preparedness and response arrangements
8. Conduct detailed technical and economic studies for the nuclear power project
9. Develop infrastructure for nuclear power generation and establish funding mechanisms for decommissioning, spent fuel and radioactive waste management
10. Develop financing mechanisms for public/private sector participation in nuclear power development, and support local supplier participation in the nuclear industry
11. Conduct feasibility studies for nuclear fuel resources exploration and production
12. Develop national frameworks for the management of radioactive waste
13. Support the establishment of radioisotope production and irradiation facilities

5 Cross Cutting Issues

5.1 Gender and Equity Mainstreaming

Understanding the effect of different energy sources and technologies on women, men, youth and persons with disabilities (PWDs) is key to effective gender and equity mainstreaming in the energy sector.

4.5.4. Gender Mainstreaming, Youth Inclusion and Refugees

Uganda's initiatives on reducing gender inequalities and improving opportunities for the youth have resulted in social protection programmes such as the Uganda Entrepreneurship Programme (UWEP) and the Youth Livelihoods Programme (YLP), among others. Gender inequalities limit the ability of women and girls to fully participate in, and benefit from energy programmes. As of August 2019, Uganda hosted over 1.3 million refugees and asylum seekers in 12 Districts. Like host communities, refugees face similar challenges to access sustainable, modern and efficient energy services.

Key Issues

a) Lack of a gender strategy for the energy sector and limited capacity to undertake regular gender analyses for energy projects
b) Limited awareness of the value of gender mainstreaming in the energy sector
c) Low representation and participation of women in the energy sector, particularly in management positions and as entrepreneurs, contractors, etc.
d) Vulnerability of women and girls to sexual and gender-based violence (SGBV) around energy project sites, at work places and during biomass collection
e) Inconsistency in the generation of gender, sex and age disaggregated energy statistics (GSDD)
f) Limited financing and credit for youth to engage in innovation and entrepreneurship in energy products and services

Policy Statements

The Government shall promote gender mainstreaming and youth inclusiveness in all energy planning, programming and projects, including refugee host communities.

Strategies

1. Develop and build capacity on gender equality, women's empowerment, gender analysis and gender audits in the energy sector
2. Provide guidelines and technical support on gender-responsive planning and budgeting
3. Develop and implement a Sustainable Energy Response Plan for refugees and host communities under the Comprehensive Refugee Response Framework
4. Ensure Gender and Sex Disaggregated Data collection and highlight GSDD in sector communications and policy statements
5. Support affirmative action to increase female participation in the energy sector in employment, entrepreneurship and senior management
6. Promote career guidance and role models mentoring programmes in schools and tertiary institutions to increase uptake of science subjects by girls.
7. Institute measures that require contractors to incorporate local content in their employment scheme targeting young people, both male and female
8. Develop local energy sector workforce and skills through internships and apprenticeships involving young people
9. Develop credit and financing mechanisms for young energy entrepreneurs

4.5.5. Persons with Disabilities (PWDs)

Persons with disabilities comprised 14% of Uganda's population according to the National Population and Housing Census 2014. The PWDs face significant challenges in attaining financial independence, full societal inclusion and development, and unfettered access to clean and sustainable energy.

Key Issues

a) Limited access to electricity necessary for powering the assistive gadgets or technologies needed by PWDs and more so in their educational environments
b) Prolonged exposure to unclean energy emissions due to limited mobility that renders many PWDs largely home-bound
c) Limited opportunities for active participation, employment and engagement in the energy sector due in part to limited training and capacity building opportunities

d) Unaffordability of clean, safe and modern forms of energy due to lower income levels and additional expenses incurred due to disabilities
e) Inadequate gender and sex disaggregated energy-related data on PWDs

Policy statements

The Government shall promote and facilitate the provision of affordable, clean and modern energy infrastructure and services to persons with disabilities.

Strategies

1. Establish institutions or measures to provide energy related training and skills development for PWDs
2. Institute measures that require large energy sector companies or organizations to include PWDs in their recruitment strategies
3. Set up energy-related fiscal incentives and waivers for households as well as educational and health institutions for PWDs
4. Carry out a baseline study for PWDs and energy
5. Promote coordinated planning targeting PWDs between the main Ministries for PWDs and energy namely MOGLSD, Ministry of Education, Ministry of Health and MEMD

5.2 Occupational Safety and Health

Occupational safety and health (OSH) refer to the anticipation, recognition, evaluation and control of hazards that could impair the health and wellbeing of workers, considering the possible impact on the surrounding communities and the general environment.

Key Issues

a) Limited awareness and appreciation of OSH issues in the public and private sectors
b) Increased health and safety risks in energy project areas
c) Inadequate technical capacity in OSH

Policy Statement

The Government shall promote occupational safety and health in energy resources development and service delivery.

Strategies

1. Implement and enforce OSH Administration (OSHA) Standards in the design, construction and operation of energy projects
2. Undertake regular monitoring and supervision of OSHA compliance in energy projects
3. Develop monitoring plans and strategies specifically for OSH issues
4. Carry out awareness campaigns and capacity building on OSH targeting the public and private sectors, and including local communities
5. Develop Health Impact Assessments as well as Risk Assessment and Management Plans for energy projects

5.3 Environment and Natural Resources

The energy sector is a major contributor to environmental degradation and pollution worldwide. Adverse environmental impacts can arise during energy resource extraction, exploitation, conversion, transportation, storage, usage and disposal.

Key Issues

a) Indoor and outdoor air, water and noise pollution, and landscape deformation as a result of energy activities
b) Energy projects impact on biodiversity and ecosystems
c) Involuntary displacement of energy project affected persons results in lengthy resettlement processes and protracted negotiations that delay project implementation
d) Other economic activities within catchment areas impact on energy projects
e) Energy projects impact on physio-cultural heritage and resources, e.g. tourism and spiritual sites/objects
f) Waste generation and disposal issues, including solar e-waste

Policy Statements

Government shall promote and enforce environmental and social impact mitigation and compliance in the development and utilization of energy resources

Strategies

1. Develop and implement NEMA-certified Environment and Social Impact Assessments for energy projects
2. Promote the use of cleaner more efficient fuels and substitution of biomass and fossil fuels for gas or electricity
3. Develop and implement biodiversity management plans, ensure payment for ecosystem services through biodiversity offsets, and enforce environmental restoration of energy project sites
4. Develop a resettlement action framework, ensure timely implementation of resettlement action plans and swift, transparent and equitable compensation for acquired land
5. Develop and implement Livelihood Restoration Plans, Community development action plans (CDAPs), and catchment management plans
6. Develop and enforce implementation of physio-cultural management plans in collaboration with other MDAs
7. Undertake compliance monitoring and enforcement, including the appropriate disposal of energy-related waste
8. Undertake Cumulative Impact Assessments and Strategic Environmental Assessments of energy plans, programmes, projects and policies

5.4 HIV and AIDS

Increase in HIV prevalence puts social and economic burden on the energy sector manifested through increased morbidity and mortality of the labour force, loss of productivity and increased medical and labour costs.

Issues

a) Limited Access to HIV/AIDS information and services
b) Inadequate technical capacity to plan and implement HIV and AIDS
c) Lack of baseline data to guide HIV/AIDS Planning
d) Limited financial resources to support HIV and AIDS response
e) Lack of HIV/AIDS Monitoring and Evaluation System

Policy Statement

The Government shall promote the development of institutional and technical capacity to plan for and implement HIV/AIDS intervention programmes in the energy sector.

Strategies

1) Raise awareness on HIV risk, prevention, treatment and psychosocial support to empower communities with knowledge and skills to reduce the spread of HIV
2) Mobilize and sensitize energy project contractors on HIV prevention and its benefits and provide HIV and AIDS implementation guidelines
3) Support HIV testing and counseling services at workplaces, in projects and communities
4) Implement social welfare schemes specifically for persons living with HIV (PLWHIV), staff and their families
5) Mainstream HIV and AIDS in sectoral policies, plans, projects and budgets
6) Develop and implement an energy sector HIV and AIDS Action Plan with M&E aligned to the priorities of the National HIV and AIDS Strategic Plan
7) Mobilize internal and external resources to support implementation of the HIV and AIDS Action Plan and ensure sustainability of the HIV/AIDS response
8) Build partnerships, networks and collaborations for enhanced HIV response
9) Ensure inclusion of variables for collecting HIV and AIDS baseline data in all Environment and Social Impact Assessments for energy project

6 Policy Linkages

6.1 International Policy Linkages

The energy sector aspires to the Sustainable Development Goals of the UN's 2030 Agenda for Sustainable Development. Uganda is also a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) 1992 aimed at mitigating the effects of climate change. The Paris Agreement 2016 defines a global concerted effort to prevent temperatures from rising 2 degrees above pre-industrialisation levels.

Uganda ratified the United Nations Convention to Combat Desertification (UNCCD) 1994 that targets avoidance and mitigation of desertification or land degradation and drought, through sustainable land and water resources management. Uganda is a member of the Statute of the International Atomic Energy Agency (IAEA) 1957, which includes treaties and conventions on Nuclear Safety and the Physical Protection of Nuclear Material.

6.2 Regional Policy Linkages

The Uganda Government is cognizant of energy sector-relevant policies, strategies and plans of regional bodies such as the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA), Southern African Development Community (SADC) and Economic Commission for West African States (ECOWAS). The EAC treaty calls for Partner States to adopt common policies for the development, conservation and management of energy resources. Relevant policies include the EAC Private Sector Development (PSD) Strategy (2006), EAC Climate Change Policy (2011), EAC Industrialisation Policy (2012), EAC Cross-Border Electrification Policy (2014), EAC Energy Security Policy Framework (2018), among others. Uganda is also party to policies of the African Union, e.g. the African Convention on the Conservation of Nature and Natural Resources (1968), Convention of the African Energy Commission (2001) and the African Union Gender Policy 2009.

6.3 National Policy Linkages

The successful implementation of the Energy Policy will contribute to and require the support of other national policies. National Policies and plans relevant to the energy sector include the Uganda Forestry Policy (2001), Gender Policy (2007), Policy on HIV/AIDS (2007), Climate Change Policy (2015), Environment and Social Safeguards Policy (2018), Agriculture Policy (2013), Transport Master Plan (2008-2023), Health Policy (2010), Land Policy (2013) and the National Strategy for Private Sector Development (2017/18-2021/22), to mention a few.

7 Implementation Framework and Strategies for Partnership

7.1 Coordination and Leadership Framework

A well-defined coordination and leadership framework is needed for the main sector players to focus not only on meeting the energy needs of a growing population, but also to address the institutional and legal challenges hindering sustainable development and effective utilization of energy resources.

7.1.1. Institutional Arrangements

The Cabinet provides overall policy direction, and implementation is done by the sector agencies. The Ministry of Energy and Mineral Development oversees the regulatory institutions that in turn supervise the government institutions and independent providers in the sector. The political leadership of the Ministry consists of the Minister of Energy and Mineral Development and two Ministers of State, for Energy and Mineral Development. The Permanent Secretary is the Chief Executive Officer of the Ministry assisted by the Directors and Heads of Department. The key sector agencies are briefly described below.

Ministry of Energy and Mineral Development

The Ministry provides overall policy direction and guidance in the development and exploitation of energy, mineral, oil and gas resources. It creates an enabling environment to attract investment in the development, provision and utilization of energy resources. The Ministry also acquires, processes and interprets technical data to establish the energy resource potential of the country. It is also mandated to inspect, regulate, monitor and evaluate activities of private companies in the energy sector to ensure rational and sustainable development, exploitation and use of energy resources

Electricity Regulatory Authority

The Electricity Regulatory Authority (ERA) is a statutory body that was established under the Electricity Act, 1999 (Cap. 145) as an independent regulator of the power sub-sector. Its main function is to regulate the generation, transmission, distribution, sale, export and import of electricity. ERA is also responsible for issuing and regulating compliance with licenses, establishing tariff structures, approving rates of charges and terms and conditions for electricity services by transmission and distribution companies. The Authority also oversees the Rural Electrification Board and the Electricity Consumer Committees.

Atomic Energy Council

The Atomic Energy Council (AEC) was established by the Atomic Energy Act, 2008 with the mandate to regulate the peaceful applications of ionising radiation. The AEC developed the Atomic Energy Regulations, 2012 that revoked and replaced the Atomic Energy (Ionising Radiation Protection) Standards Regulations. The AEC is also responsible for: protection and safety of individuals, society and the environment from the dangers resulting from ionising radiation; production and use of radiation sources and the management of radioactive waste; compliance with international safety requirements for the use of ionising radiation, radiation protection and security of radioactive sources.

Electricity Disputes Tribunal

The Electricity Disputes Tribunal (EDT) was established by the Electricity Act, 1999 to undertake arbitration of cases in the electricity sector. Stakeholders that are dissatisfied with ERA's decisions may appeal to the tribunal. Apart from receiving, hearing and adjudicating disagreements from consumers relating to the electricity sector, the tribunal also settles disputes between the consumers and other government institutions since it has the powers of the High Court of Uganda. Any witness before the Tribunal has the same immunities and privileges as if he or she was a witness before the National High Court.

Rural Electrification Board

The Rural Electrification Board (REB) was established in 1998 to manage the Rural Electrification Fund (REF) on behalf of the Ministry of Energy and Mineral Development. The REB is responsible for the provision of subsidies to support rural electrification projects.

Rural Electrification Agency

The Rural Electrification Agency (REA) is a semi-autonomous body that was established in 2003 as the Secretariat of the REB responsible for managing the implementation of rural electrification projects. The REB also provides it with policy guidance. It is mandated to facilitate the government's goal of increasing rural electrification in the country.

Uganda Electricity Generation Company Ltd

The Uganda Electricity Generation Company Ltd. (UEGCL) is a Government limited liability Company (by guarantee) incorporated in March 2001. The Company's major functional areas include concessioning and monitoring the concessioned facilities to ensure quality and reliable electricity generation. It was initially incorporated to take over the activities of the Uganda Electricity Board but its activities have since increased to encompass project development. This includes the development of Hydro Power Stations and other renewable energy projects.

Uganda Electricity Transmission Company Ltd

The Uganda Electricity Transmission Company Ltd (UETCL) is a public limited company incorporated in March 2001. UETCL owns and operates the transmission infrastructure above 33 kV. It is responsible for the transmission, dispatch, bulk electricity purchases from generators and the export and import of electricity. The mandate of UETCL also includes coordinating the power system to achieve balance between supply and demand.

The Uganda Electricity Distribution Company Ltd

The Uganda Electricity Distribution Company Ltd (UEDCL) is a state-owned company incorporated in March 2001. UEDCL owns the grid–connected electricity distribution infrastructure operating at 33 kV and below. It is responsible for the operation and maintenance of non-concessioned distribution network infrastructure, as well as the retail function that includes metering and billing.

The Uganda Energy Credit Capitalisation Company

The Uganda Energy Credit Capitalisation Company (UECCC) was operationalized in 2009 to manage and administer the Uganda Energy Credit Capitalization Trust. A major objective of the Trust is to provide financial, technical and other support to unlock renewable energy and/or rural electrification projects for development. The Company is mandated to mobilize resources to capitalize the Trust in order to contribute to the sector's financing requirements, with focus on facilitating private sector participation.

The Directorate of Water Development

The Directorate of Water Development (DWD) under the Ministry of Water and Environment is responsible for managing the water resources of Uganda in an integrated and sustainable manner. The agency is responsible for securing and providing water of adequate quantity and quality for all social and economic needs for the present and the future.

Key partner Ministries include those in charge of water and environment, finance and economic development, agriculture, education, works and transport, science and technological innovation, trade and industry.

7.1.2. National and Sector Coordination

Sector Working Groups (SWGs) are responsible for the implementation of policy activities for each sector according to the National Development Plan, under the oversight of the Policy Coordination Committee (PCC), Implementation Coordination Steering Committee (ICSC) and Technical Implementation Coordination Committee (TICC) under the Office of the Prime Minister. The SWG is a task-oriented group comprised of high-level technical

officers of MDAs in the sector, representatives of CSOs, Local Governments, private sector institutions and representatives of development partners. The Energy and Minerals Development Sector Working Group (EMD SWG) is responsible for the Energy Sector.

7.2 Implementation Stages

The success of the policy is anchored on its implementation plan and strategies. The development and implementation of results-oriented action plans and programmes are vital. The targets and activities are classified according to time-scale (short, medium, long-term). The implementation plan shall establish the controls necessary to achieve the policy objectives and monitoring progress. Basing on the information obtained from the controls, implementation of strategic changes may be necessary to remain in harmony with changes in the strategies.

The implementation stages should clearly follow the policy arrangement. For each policy component the implementation stage should start by analysing the issues and their linkage to the policy statements. The activities must clearly be guided by the strategies and actions put in place to address the issues. The actions are followed properly to be in line with the issues aiming at getting measurable outcomes. The policy outcomes shall be assessed using the indicators by carrying out monitoring and evaluation after the specified time frames stipulated in the policy strategies.

The proper assessment will also entail carrying out a SWOT analysis. For internal analysis of the energy policy performance a detailed analysis of the strengths, weaknesses, opportunities and threats must be carried out. The assessment is to measure the level of maximisation of the opportunities and strengths and the level of minimisation of the weaknesses and threats.

7.3 Implementation Drivers

Implementation drivers are processes that can be influenced to improve competence and to create a more collaborative organizational and systems environment for practice of the policy. Also, drivers can be considered as the factors that promote and support the efficient and effective implementation of the energy policy. Implementation drivers are the key components of capacity and the functional infrastructure supports that enable success of the policy programs and strategies. For the purpose of implementing the energy policy successfully, the implementation drivers for each section will be linked properly to the policy issues, strategies, outcomes and indicators to avoid contradictions in achieving the policy objectives.

The government working together with partners and stakeholders will put up reliable and valid measures of implementation which will be essential in planning effective implementation supports, helping to assess progress toward implementation capacity, and conducting rigorous research on implementation. The three categories of Implementation Drivers considered in this policy are Competency, Organization, and Leadership.

Competency Drivers: The government will put up mechanisms to develop, improve and sustain the ability of staff members especially in the Ministry of Energy and Mineral Development and other stakeholders (partner ministries, educational institutions, industries etc.) to implement the policy. The government will work together with academic institutions and training facilities to develop training programmes geared towards the implementation of different components of the policy. The government shall ensure capacity building in the energy sector is prioritised in the country.

Institution or Organization Drivers: A conducive working environment and plays a significant role in the success of implementation of an energy policy. The government will ensure that there are mechanisms to create and sustain cordial organizational and system environments for effective energy services. The availability and distribution of resources must be put into consideration when implementing the policy. The government shall put in place mechanisms to stimulate and spur economic development which will justify demand for energy and development of the sector. Resource mobilisation and distribution will be properly managed in the implementation of this policy. This will be accomplished using a variety of channels and approaches with different stakeholders having different responsibilities. Consideration will be given to environmental laws and policies and good environmental management systems and plans shall be supported.

Leadership Drivers: The government shall focus on providing the right leadership strategies for the various types of leadership challenges in the energy sector. The government should be in position to address leadership challenges which are likely to emerge as part of the change management process needed to make decisions, provide guidance, and support organizational functioning. In this regard it will be important to work with a strong team of people who are ready to establish and implement realistic short-term, medium-term and long-term strategies, to seek and lobby international supporting programs and policies, and to set up sustainable financing mechanisms and policies.

Furthermore, the legislation and an enabling environment should be given special attention when considering the Implementation Drivers: decentralisation Policy and Act; relative peace and geo-political stability in the region; regional cooperation and integration through EAC and AU; fair Trading and Competitions; investment Promotion Act; and private Enterprise (privatisation) Act.

8 Communication Strategies

8.1 Information, Education, Communication and Dissemination

Statistics for the energy sector will be collected initially as a baseline for determining sector status and thereafter on a periodic regular basis. This and other energy sector data will be entered into an Energy Information Management System that will serve as a data bank for energy information. This information will be made publicly available and should include data on energy resources and exploitation opportunities, feasibility studies, funding etc.

Regular updating of the MEMD website with energy-related information, annual sector statements by the ministry, online publishing of EIAs and other reports, communication of and online uploads of policy and regulation documents will be done. Public awareness and advocacy campaigns on sector standards, programmes and initiatives will be undertaken, and print, broadcast and electronic media deployed to disseminate sector information to the public and key stakeholders.

Occasional workshops will be held to educate the public and relevant stakeholders on issues such as standards, capacity building ventures, R&D and innovation priorities, community and individual rights pertaining to energy projects, pilot project outcomes and successes. MEMD may also delegate and assign specific awareness and advocacy activities, roles or responsibilities to regulatory bodies, MDAs and other energy sector stakeholders where this is appropriate and beneficial for implementation of the policy.

Education of the public and various stakeholders will also be done through promoting energy courses at secondary and tertiary institutions as well as via capacity building centres.

8.2 Feedback Mechanisms

In order to satisfy the evolving requirements of stakeholders, monitoring of stakeholder needs and reactions on the policy will be important. As the government scope increases and demand for information grows, changes and updates to the policy will be required to during its implementation. A two-way communication on energy-related matters between government and non-state stakeholders shall be institutionalised by facilitating opportunities for public dialogue, knowledge sharing and enabling information flows right from the grassroot levels. Management of stakeholders' expectations throughout policy implementation will be equally important. Hearing from stakeholders during policy development and implementation will provide valuable information regarding existing and emerging issues.

These communication activities will promote and inform evidence-based planning at all levels to bolster efficient energy production and utilization. The Ministry of Energy and Mineral Development, together with the relevant government institutions, will use this information to debate and provide appropriate feedback on Government strategies for further developing the sector. The government will therefore integrate a feedback mechanism to accomplish this collection of data throughout the policy dissemination process. Strategies to improve stakeholder feedback will include;

- Share the policy widely in order to stimulate debate and where possible, utilise social media to facilitate instant feedback
- Be open to consultations
- Critically evaluate the performance of energy projects and technologies in order to avoid replicating investments in low performing technologies
- Avoiding replication of trial projects until at least five years of success have been observed
- Minimize repeating technical concepts that have been tried earlier in the country or elsewhere in the East and Southern African region and have not been successful
- Develop innovative ways that all stakeholders can be engaged, then simplify the relevant communication channels and make them readily accessible
- Collaborate and establish a favourable environment, communication and networking among sectoral institutions, energy developers and consumers
- Develop a networked plan and performance exchange system among the national and regional energy institutes

As well as informal discussions and public consultations on specific proposals, the Ministry will also consult more generally at least twice yearly with representatives of external stakeholders in the energy sector. These consultations will be used to present and receive feedback on on-going activities under the National Energy Policy, progress with implementation of plans and policies and preliminary proposals on new or revised plans and policies. The consultations will be conducted through the existing stakeholder forums. All material presented and minutes of the consultations will be made publicly available.

9 Monitoring and Evaluation

The energy sector is a dynamic sector that is subject to fluxes and transitions in technology, policies, resources availability, governance and management as well as national priorities. These changes are due not only to national or local factors but also international trends and pressures. Hence the development and implementation of an energy policy is not a one-time process but rather requires constant review, assessment and adaptation. The monitoring and evaluation findings are fed back into the policy review and implementation process.

Development of a monitoring and evaluation (M&E) framework is critical to the successful implementation of the energy policy. The indicators that have been specified for the various policy statements, strategies and outcomes will be used to assess how effectively the policy is being implemented.

Baseline data and indicators will be established at the onset and used to gauge progress in achieving the expected outcomes according to stipulated timeframes. Thereafter periodic assessments and progress reviews will be necessary, which will entail regular updating of the energy statistics and national energy data bank.

Periodic performance reports will be stipulated on quarterly, semi-annual and annual basis that detail the level of progress in implementation, the effects, benefits and impacts of the policy, including any unintended impacts. The reporting mechanisms, roles and responsibilities of the pertinent parties will be clearly specified at central, regional and district levels, and any necessary related capacity building facilitated. The annual reports that should include financial information and updated indicator results will form the basis for readjustment and realignment of energy sector programmes and strategies for policy implementation.

If necessary and subject to sufficient consultations, any urgent or significant issues or challenges identified during the M&E that impede the effective implementation of the policy should be expeditiously addressed by the pertinent stakeholder(s).

Updated energy statistics and data will be collected annually and used in the M&E process. These statistics will also be made publicly available.

With MEMD as the overall party responsible for coordinating and overseeing M&E of the energy policy, input will also be sought from other stakeholders including other MDAs, civil society, the public sector, etc. The Government should establish a special unit within MEMD to oversee policy monitoring and evaluation. The Government should also issue annual reports on the developments in the energy sector and the progress in meeting the policy targets.

9.1 Policy Review and Audit

The policy's 10-year planning horizon allows for the assessment of long-term scenarios and impacts, with frequent reviews of the document as circumstances change. To encourage an open and proactive approach to identifying issues, and to reduce the need for amendments being developed in a piecemeal way, the government will periodically review the policy. The Ministry will follow a continuous improvement cycle to ensure this policy remains relevant and up to date. This cycle will include, but will not be limited to, initiating and endorsing impact evaluations and interim policy reviews in conjunction with regular performance assessments using the indicators outlined in the policy. Therefore, a policy review will be undertaken at least once every three years.

The purpose will also be to identify policy gaps which may come through consultation with government institutions and sector stakeholders, or changes in the macro political environment. In order to capture useful information from the policy review cycles, the government will;

- Through Ministry of Energy and Mineral Development, initiate the review process. The policy shall be reviewed when there are changes in Government policy, such as changes in the national energy policy or implementation strategy
- The policy will be reviewed occasionally to ensure that it remains feasible in the face of changes in the socio-economic, macro-economic, political and environmental conditions.
- Although the review shall be technical, the process will be participatory, considering stakeholders' opinions and interests
- The formulation or reformulation of the energy policy consequent upon such reviews shall be accompanied by a new implementation work plan

The Policy management will be housed at the Ministry of Energy and Mineral Development premises and the policy custodian and day-to-day contact in relation to policy review will be the Permanent Secretary.

10 Financing Mechanisms

The energy sector still faces challenges of financing. An appropriate mix of financing resources from private, government, bilateral and multilateral partners is vital for successful implementation of the policy. Financing of the energy sector is by a combination of Government, Private Sector and Development Partners.

The Government finances the energy sector through four programmes, namely (a) Energy Planning, Management and Infrastructure Development; (b) Petroleum Exploration, Development and Production; (c) Petroleum Supply, Infrastructure and Regulation; (e) Policy, Planning and Support Services. Government budget allocations to the energy sector are aligned with the NDP projections and aspirations. Development Partner support is by a mixture of grants and commercial and concessional loans. Private Sector financing comes through individual/corporate initiatives or Public Private Partnerships with Government.

The government has also successfully mobilized domestic currency financing by establishing syndicates of commercial banks and large surplus institutions to finance PPPs in the sector. The development of innovative financing mechanisms, such as energy debt funds, through the existing programmes will continue to be a key focus area. **Table 1** illustrates the current provision and sources of financing.

Table 1: Financing Sources for Strategic Partnerships

Service Sectors	Sources of funding	
	Public	**Private**

Public Services
• Government institutions
	• Government of Uganda (central and local government through taxation)
	• Donors/Development Partners
	  ○ Central Budget Support
	  ○ District Budget Support
	  ○ Multilateral and bilateral projects and programs channelled through central or local government
		• Individual entrepreneurs
		• NGO supported projects and programs

Private Services • Domestic private sector • International private sector	• Government subsidies or cost support to private sector • Contractual arrangements/PPPs with the private sector • Participation in government-funded programs • Multi-lateral and bilateral projects and programs channelled through central or local government	• Household (user fees) • Donations (internal and external) • Income generating activities • Fundraising • NGO-supported projects and programmes

11 Stakeholder Roles and Responsibilities

11.1 Central Government

The government of Uganda is responsible for formulating and enacting legislation, policies and regulations for the energy sector and ensuring their enforcement. It is the responsibility of the government to ensure that the energy policy is developed, implemented, monitored and evaluated. The government will coordinate all stakeholders' activities and ensure that energy projects and activities adhere to the national laws and strategies. The government will implement a use or lose policy, ensuring that prospective energy developers are prevented from holding a given energy resource indefinitely, without developing it within the stipulated time limits.

The stages of the energy policy cycle include preparation, implementation and review, follow-up, and correction of deviations. It is the responsibility of the government to ensure provision of human resources with the right skills to implement the policy through all the stages of its cycle. To achieve this the Government will work closely with various ministries, departments and agencies, local authorities, civil society, the private sector, research and academic organisations, and its citizens.

Government will promote the efficient and sustainable use of energy in the country. The government will create more favourable conditions for local enterprises to do energy business in the country including ensuring transparency and equity. For example, the legal and regulatory framework for developing energy activities and projects will be continually streamlined to attract more local private investors and operators, promote new energy projects and encourage innovative ideas.

Government shall develop provisions to ensure that meeting local satisfaction and needs are the central role of new energy investments. To be incorporated into concession agreements, new policy measures may include standardizing "local content" guidelines suitable for different categories of projects, incorporating clear language on requirements into PPAs, and systematically monitoring compliance for local content participation. The government will set up standards for all energy systems, products and services. It will ensure adherence to the standards for quality service.

The government shall promote innovation and creative ideas in the energy sector. It will enforce local manufacturing and appropriate fiscal policies promoting local manufacturing of systems and components, with emphasis on job creation and favourable tax regimes for energy technology innovations during the pre-commercialisation stage.

11.2 Local Governments

The Ministry of Local Government is responsible for Government's current decentralization initiative, which is in line with the development of democracy in the country. Conceptually, the process is to realize sustainable development under the control and management of the people who are directly affected, thus ensuring better coordination of development efforts and full participation of communities in poverty reduction efforts.

Local governments, given their mandate of managing and implementing policies on the use of land, water, buildings and waste as well as their long-term commitment to the development of a given locality, are uniquely positioned to drive forward the Government's energy strategies and plans. Consideration should be given to the potential necessity of adaptation and customization to local environments, requirements, cultures and expertise.

The effective implementation of the energy policy will require capacity building and empowerment of Local Government structures. Local governments have the authority and mandate to monitor and coordinate the implementation of distinct enabling policies to drive local economic developments. Municipalities and districts are responsible for ensuring that the local resources and infrastructure are put to proper and sustainable use. Local governments have direct responsibility for all decentralized service delivery, including those that may be related to energy at the grassroots. This includes national programs to scale up sustainable energy consumption.

Without contradicting the national law, local governments will be responsible for the development of by-laws to guide the development and utilization of local energy resources and systems in a sustainable manner. Local governments will be responsible for close supervision and monitoring of large government projects for the benefit of the local community and country at large. They will take full responsibility for promotion and implementation of government energy programmes. They shall coordinate and supervise all energy utilities working in the local government area to ensure good service delivery to communities. Local governments shall also enforce laws on energy development and use.

Setting up of an energy department at the local government offices responsible for coordination and supervision of all energy related projects in the area will be necessary. The department structure will be guided by the Local Government Act. Ensuring all national legislative laws governing the energy sector are properly implemented without contravening the constitution of Uganda shall be a mandate of local governments.

Close coordination between the local and central governments, a supportive and enabling regulatory environment, plus access to long term, low-cost and reliable funding will be critical for successful implementation of the energy policy at local government level.

11.3 Development Partners

Key challenges in energy projects development include inadequate funding, lack of continuity in the funding of projects, low foreign investment from a highly competitive international finance market, inadequate adoption of the most cost-effective energy supply options for the country, low foreign exchange earnings from energy product exports and inadequate local development of energy technologies.

Development partners play an important role in assisting the government through technical support and guidance, programmes and projects, as well as funding and budgetary support to develop, implement, monitor, supervise and evaluate the policy implementation.

The government shall seek funding from development partners for specific programmes and/or projects especially in areas less attractive to the private sector and complement self-help groups and private sector efforts in rural electrification projects.

The development partners shall be encouraged to provide or establish financial facilities for financing energy related projects at minimal interest rates especially for renewable energy and energy efficiency projects.

11.4 Private Sector

The private sector includes financial institutions, independent power producers (IPPs), private sector organisations and other energy-based private companies. They play the crucial role of investing capital and other resources into the energy sector, producing and selling energy technologies and products, consuming energy and thus generating government revenue. The manufacturing and agricultural sectors consume significant amounts of energy and hence create energy demand. They in some cases also serve as energy producers, e.g. through co-generation by sugar factories. The private sector is responsible for minimising and mitigating any adverse environmental impacts of energy exploration, production, use and disposal.

Government will pursue public-private partnerships (PPPs) to access much needed financial, technological and human resources that are critical for the growth of the energy sector. Government will create and maintain a conducive and enabling legal, regulatory, fiscal, tax, political and infrastructural environment to allow the private sector to flourish and implement the energy policy sustainably and with accountability. Government will investigate and publicise energy investment opportunities and provide feasibility study and other advisory support to potential private sector investors, as well as capacity building assistance to the private and public sectors.

11.5 Civil Society

Civil society includes non-governmental organisations and other civil sector organisations. They play a critical role in creating awareness, disseminating information, and serving as intermediaries for communicating needs, expectations, capabilities and culpability between society, government and the private sector. Civil society is instrumental in ensuring that social, economic and political obligations are met, and any shortcomings duly raised.

Government will harness the civil society in developing, implementing, monitoring, evaluating and reviewing the socio-economic and environmental impacts of the energy sector plans and programmes.

Being cognisant that development partners sometimes channel their funding through the civil society-led projects and programmes, government will harness the contribution that the civil society can thus provide by facilitating a conducive environment for such energy-related projects and programmes, subject to them meeting the pertinent regulatory requirements.

Government will also support capacity building and awareness creation related to energy among civil society.

7.1.3. The Media

The media is responsible for publicising information on the energy sector to educate the public and other stakeholders. The media thus has the responsibility of being able to understand the issues related to the energy sector, and not just the economic, financial and political issues, but also the science and policy aspects, and to communicate these objectively, clearly and accurately. Government will utilise the media in creating awareness about energy sector issues and programmes. It will also involve the media in the policy development and other stages of the policy life cycle.

7.1.4. Research organisations and Academia

Research organisations and academia play a significant role in developing energy solutions that address the specific energy needs of the country and sustainably exploit the use of available resources. They also need to keep abreast of research developments regionally and internationally and adopt best practices that are customised for the local situation and utilise indigenous resources.

Government will provide funding to support research initiatives and promote the development and dissemination of locally adapted and designed solutions and technologies. It will also fund training and skilling on these, to attain an adequately equipped, skilled and trained energy workforce that is not technology-locked in their expertise.

11.6 Local Communities

Local communities play an important role in monitoring environmental effects of energy projects and programmes and holding the responsible parties to account. It is thus crucial to communicate with community members and enlist the support of their leaders in creating awareness about the responsibilities of the project implementers in avoiding and limiting any environmental damage.

The local communities need to be involved and sensitized from the initial stages of energy projects implementation to increase their participation in and contribution to the projects, as well as minimise potential conflicts or rejection of the energy technologies and projects. Local leaders are also essential in ensuring that compensation is done with minimal hitches.

The community should also ensure that energy infrastructure is kept safe and not vandalised to achieve its expected operational lifetime and maximise the utility and benefits they gain from the energy products, technology and infrastructure.

The government will endeavour to maximise the amount of community involvement and prioritise the provision of social services in energy programmes. It should also promote inclusion of local labour and the sustainable use of local resources where possible.