THE REVOLUTIONARY GOVERNMENT OF ZANZIBAR

MINISTRY OF WATER, ENERGY AND MINERALS

ZANZIBAR ENERGY POLICY

APRIL 2025

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FOREWORD

The Revolutionary Government of Zanzibar (RGoZ) recognizes the importance of energy as a key factor in the socio-economic development of Zanzibar.

The Sustainable Development Goals (SDGs)- 2030, Zanzibar Development Vision 2050, Zanzibar Development Plan (ZADEP) 2021-2026 and Chama Cha Mapinduzi (CCM) Manifesto 2020-2025 emphasizes the importance of renewable energy to support reliability and affordability in energy supply and Clean Energy as per Government aspiration towards a Blue Economy.

The RGoZ intends to expand energy generation and distribution and bring about transformation from the use of traditional energy (wood-based) towards modern energy such as electricity, petroleum, gas and renewable energy sources like wind and sustainable uses of biofuel for the development and prosperity of the people of Zanzibar.

This Zanzibar Energy Policy of 2025 is aimed at providing guidance, predictability, accessibility, affordability, accountability and transparency to stakeholders regarding the overriding principles, strategic priorities and policy goals to achieve the vision for the energy sector.

This document provides a comprehensive strategy for planning, organizing and mobilizing adequate human, material and financial resources required for supporting the energy sector of Zanzibar.

The energy sector in Zanzibar faces inadequate internal sources of power generation, dilapidated electricity distribution, inadequacy of transmission line capacity to meet the current demand levels, technical complexity in renewable energy grid integration, and inadequate petroleum product infrastructure. These factors cause disruptions, power outages, and fuel crises, which affect the socio-economic development of Zanzibar.

The Energy Policy will promote sustainable energy generation, accessibility, reliability, affordability, efficiency, and demand-side management applications through automation.

It will also promote proactive preparation for the deployment of emerging types of demand, such as energy vehicles, by introducing appropriate incentive mechanisms and undertaking energy development programs.

The Government wishes to emphasize the great importance of energy investment projects and support private sector involvement to reach the Upper Middle-Income Economy through sustainable and inclusive socio-economic development by 2050.

SHAIB HASSAN KADUARA

MINISTER OF WATER, ENERGY AND MINERALS

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Ministry of Water, Energy, and Minerals acknowledges the collaboration efforts of Energy stakeholders, including communities, Ministries, Departments, Agencies, Institutions, Local Governments, Non-Governmental Organizations (NGOs), the Private Sector, Development, Partners, and academia. Their involvement and input are highly appreciated for formulating Zanzibar Energy Policy (ZEP) 2025.

In addition, we profoundly appreciate Development Partners, particularly the Swedish International Development Cooperation Agency (SIDA) and the World Bank (WB), for their invaluable technical and financial support in reviewing the Zanzibar Energy Policy 2009. We look forward to collaborating with all partners in implementing the New Energy Policy, which aims to foster the development and sustainability of the energy sector.

Lastly, we extend thanks to the Ministry of Water, Energy, and Minerals' technical team for their commitment to fine-tuning and producing Energy Policy.

JOSEPH J. KILANGI

PRINCIPAL SECRETARY,
MINISTRY OF WATER, ENERGY AND MINERALS

ACRONYMS

CDM	Clean Development Mechanisms
DoEM	Department of Energy and Minerals
EMP	Electrification Master Plan
FDI	Foreign Direct Investment
GHG	Greenhouse Gases
GWh	Giga Watt hour
HBS	Households Budget Survey
IMO	International Maritime Organization
IPP	Independent Power Producer
IRP	Integrated Resource Plan
LPG	Liquefied Petroleum Gas
MDGs	Millennium Development Goals
MW	Megawatt
NGOs	Non-Government Organizations
PPP	Public Private Partnerships
PV	Photovoltaic (solar cells)
PwDs	People with Disabilities
RE	Renewable Energy
RGoZ	Revolutionary Government of Zanzibar
SDG	Sustainable Development Goal
STEM	Science, Technology, Engineering, and Mathematics
SWOT	Strengths, Weaknesses, Opportunities and Threats
WtE	Waste to Energy
ZADEP	Zanzibar Development Plan
ZAWA	Zanzibar Water Authority
ZBS	Zanzibar Bureau of Standards
ZESTA	Zanzibar Energy Sector Transformation and Access
ZECO	Zanzibar Electricity Corporation
ZEP	Zanzibar Energy Policy
ZESS	Zanzibar Energy Sector Support
ZPDC	Zanzibar Petroleum Development Company
ZPRA	Zanzibar Petroleum Regulatory Authority
ZURA	Zanzibar Utility Regulatory Authority

DEFINITION OF KEYWORDS

Distribution: delivering electricity from a high voltage transmission system to consumers.

Electricity: a form of energy resulting from the flow of electric charge.

Electricity Access: refers to the ability of individuals, households, or communities within a 500-meter radius of existing electricity infrastructure (such as a grid or mini-grid) to obtain and utilize safe, reliable, affordable, and sufficient electricity services for essential activities.

Electricity Connection: An Electricity connection refers to the physical and operational linkage of a household, business, or facility to an electricity supply system.

Electricity Consumer: any authority, company, person, or body of persons supplied or entitled to be supplied with electrical energy or by a licensed electricity undertaking.

Energy Access: ability of individuals and communities to obtain affordable, reliable, and sustainable energy services.

Energy Efficiency: using less energy to achieve the desired output and reducing energy consumption without sacrificing productivity or increasing costs.

Energy Security: is the ability of a country to ensure a reliable and affordable supply of energy resources to meet demand.

Fossil Fuel: hydrocarbon-containing material such as coal, oil, and natural gas formed naturally in the earth's crust from the remains of dead plants and animals.

Independence Power Producers (IPP): a non-public utility that owns or operates facilities for electricity generation and sells to utilities and end users under contracts, often for the life of the electricity generation plant.

Indigenous Energy: energy produced from domestic, naturally occurring geothermal, natural gas, hydro, and other renewable energy sources like solar.

Modern Energy: energy with a higher heating or energy content value than traditional biomass based on petroleum, electricity, or any other energy type with commercialized market channels.

Net Metering System: a metering and billing mechanism that credits or compensates renewable energy system owners for energy they supply to the grid.

Renewable Energy: energy from natural sources that are replenished faster than they are consumed, including hydro, bioenergy, geothermal, solar, and wind.

Transmission: supply of electricity from power plants (sources) to distribution systems.

Waste to Energy: the process of generating energy in the form of electricity and/or heat from the primary treatment of waste or the processing of waste into a fuel source.

Chapter

1

Introduction

INTRODUCTION

1.1 Background Information

Zanzibar is an archipelago in the Indian Ocean, comprising two principal islands-Unguja and Pemba-along with smaller islets. Situated off the East African coast between latitudes 5 and 6 degrees South and longitudes 39.5 and 40 degrees East, the archipelago encompasses a total surface area of 2,654 square kilometres, with Unguja covering 1,666 square kilometres and Pemba spanning 988 square kilometres.

The expansion of socioeconomic activities such as tourism and investment, driven by population growth, has increased daily energy demand. According to the 2022 Population and Housing Census, Zanzibar's population is 1,889,773, with an annual growth rate of 3.7%. The demographic composition shows a female majority at 51.6% and a male population of 48.4%. The Zanzibar Energy Policy (ZEP) 2009 established a comprehensive framework for advancing the energy sector, encompassing social, economic, and political dimensions. This policy framework addresses short-term, medium-term, and long-term national development objectives.

The implementation of the 2009 ZEP has facilitated the establishment of key regulatory bodies, including the Zanzibar Utilities Regulatory Authority (ZURA) under Act No. 7 of 2013, the Zanzibar Petroleum Regulatory Authority (ZPRA) under Act No. 6 of 2016, and the Zanzibar Petroleum Development Company (ZPDC) pursuant to Section 32(1) of Act No. 6 of 2016. Significant progress has been achieved in electricity supply and accessibility. Notable infrastructural developments include the installation and commissioning of a 100MW (132kV) submarine cable spanning 70.5 kilometers from Ras-Kiromoni (Dar es Salaam) to Ras Fumba (Unguja) in 2012 and an 89.4-kilometer, 20MW (33kV) submarine cable from Mnyanjani (Tanga) to Ras Mkumbuu (Pemba) in 2010.

These infrastructure investments have contributed to a 13 per cent increase in household electricity connectivity, rising from 44.2% in 2014/2015 to 57.0% in 2019/2020. Recent global advancements in renewable energy technologies and industrialization, technological innovation, and climate change considerations have sparked increased private sector interest in energy services generation, distribution, and supply.

This development also presents opportunities for participation in regional power markets, including the Eastern Africa Power Pool (EAPP) and Southern African Power Pool (SAPP). Zanzibar possesses considerable potential for developing a local energy supply, particularly through wind,

solar, and biofuel resources. Utilizing indigenous renewable energy sources offers significant local employment opportunities. The ongoing economic transformation, aligned with Zanzibar Development Vision 2050 and encompassing the Blue Economy Agenda, presents opportunities across various sectors, including industry, transportation, tourism, property development, and agriculture.

Furthermore, increasing domestic wealth and middle-class expansion will drive further energy demand growth. Therefore, this policy aims to provide comprehensive strategies and guidance for strengthening the energy sector by enhancing the energy mix, security, accessibility, reliability, affordability, and sustainability of energy supply while establishing an effective regulatory framework.

1.2 Scope of the Policy

The Zanzibar Energy Policy encompasses the following key areas:

i. **Electricity**: addresses matters pertaining to power generation, transmission, distribution, and supply.
ii. **Renewable Energy**: encompasses investment opportunities in renewable energy, grid integration complexities, and adopting and implementing technologies and practices.
iii. **Energy Efficiency**: includes adopting and implementing energy-efficient technologies and practices.
iv. **Modern Energy**: addresses investment requirements and the transition from charcoal and wood-based technologies to modern energy solutions.
v. **Petroleum Product**: encompasses midstream and downstream activities, while upstream activities will be addressed under the Zanzibar Oil and Gas (Upstream) Policy.
vi. **Energy Security and Reliability**: focuses on energy source diversification, infrastructure resilience, and emergency preparedness protocols.
vii. **Community participation** is included in all policy review and implementation processes.
viii. **Cross-cutting issues**: include gender and social inclusion, environmental and climate change, institutional coordination, private sector participation, communicable and non-communicable diseases, people with disabilities, and Energy trans–boundary matters.

1.3 Policy Linkages

The effective implementation of the Energy Policy requires coordination with various global, regional, and national frameworks. These essential linkages are detailed below:

1.3.1 International Policy Linkages

1.3.1.1 Sustainable Development Goals (SDGs) 2030

The policy aligns with SDG 7, which advocates universal access to affordable, reliable, sustainable, and modern energy. This goal emphasizes increasing renewable energy's share in the global energy mix and enhancing energy efficiency by 2030.

1.3.2 Regional Policy Linkage

1.3.2.1 Africa Development Agenda -2063

The policy supports the agenda's priority areas in renewable energy development, as outlined in Aspiration 1, which focuses on establishing environmentally sustainable and climate-resilient economies and communities.

1.3.3 National Policy Linkages

1.3.3.1 Zanzibar Development Vision - 2050

The Vision promotes the adoption of renewable energy technology with the objective of achieving increased power "independence and reliability through the diversification of energy sources."

1.3.3.2 Zanzibar Development Plan (ZADEP) 2021-2026

This plan articulates energy development aspirations through sustainable and diversified energy sources, including the exploration and adoption of domestically generated energy.

1.3.3.3 Zanzibar Industrial Policy (2019-2029)

It encourages the production and use of clean energy technology (e.g., electrical power from renewable, industrial, and municipal waste).

1.3.3.4 Chama Cha Mapinduzi (CCM) Election Manifesto 2020-2025

In accordance with provisions 174-175, the government prioritizes research in oil, gas, and renewable energy while emphasizing universal electricity access across all streets and villages.

1.3.3.5 Zanzibar Water and Sanitation Policy (2025)

It develops and promotes alternative renewable energy sources to support groundwater pumping.

1.3.3.6 Dar es Salaam Declaration by the Africa heads of state energy summit (2025)

It advocates for providing access to electricity for 300 million people in Africa by 2030.

1.3.3.7 Zanzibar Green Legacy Programme (2023)

This programme inspires, enables, and mobilizes all people, communities, and stakeholders through their active involvement in planting trees and foliage to improve the environment for a future green Zanzibar. It promotes alternative sources of energy as a key intervention area.

1.3.3.8 Zanzibar Blue Economy Policy (2022)

It promotes the development of offshore sources of RE through investment in capacity building, research and development, sustainable financing of RE development, environmental conservation, and climate adaptation.

1.3.3.9 Zanzibar Tourism Policy (2017)

It advocates for renewable energy utilization as a crucial strategy for protecting tourism resources, including biodiversity, natural resources, landscapes, and seascapes.

1.3.3.10 Zanzibar Oil and Gas (Upstream) Policy (2016)

It integrates renewable energy, low carbon emissions, and energy efficiency technologies in the production, supply and use of energy in Zanzibar.

1.3.3.11 Zanzibar Gender Policy (2016)

It promotes development and use of alternative sources of energy and use.

1.3.3.12 Zanzibar Climate Change Strategy (2014)

It promotes renewable and affordable energy sources, including public awareness and energy efficiency appliances.

1.3.3.13 Zanzibar Public-Private Partnership Policy (2014)

It provides the foundation for Public-Private Partnerships (PPP) projects, fostering a conducive environment for development projects, including the energy sector.

1.3.3.14 Zanzibar Environmental Policy (2013)

It promotes the use of reliable, renewable, and affordable sources of energy.

1.3.3.15 Zanzibar Disaster Management Policy (2011)

It emphasizes the protection of coastal zones and coral reefs while strengthening food and energy security and minimizing energy-related incidents.

1.3.3.16 Zanzibar Health Policy (2010)
It emphasizes the implementation of modern and clean energy solutions to support a healthy population with equitable access to healthcare services.

1.3.3.17 Zanzibar Employment Policy (2009)
It promotes job creation through the adoption of renewable energy while ensuring sustainable environmental conservation.

1.3.3.18 Zanzibar Transport Policy (2008)
It acknowledges the fundamental role of efficient transport infrastructure in leveraging diverse energy sources, while positioning the transport sector as a key stakeholder in energy sector development.

1.3.3.19 Zanzibar National Housing Policy (2006)
It acknowledges energy accessibility's critical impact on quality of life by prioritizing energy infrastructure development to ensure improved housing conditions for all residents.

1.3.3.20 Zanzibar Trade Policy (2006)
It emphasises the necessity of adequate energy supply for commercial and domestic purposes to support economic development.

1.3.3.21 Zanzibar Small and Medium Enterprise Policy (2005)
It promotes financial arrangements through the banking system and micro-finance institutes available for investments in energy efficiency and the generation of renewable energy.

1.3.3.22 Zanzibar Investment Policy (2005)
It promotes diversification of exploited energy resources considering biomass resources for energy use.

1.3.3.23 Zanzibar Agricultural Sector Policy (2003)
It promotes reliable, affordable and environmentally sound alternative energy supplies to reduce the use of wood for energy.

1.3.3.24 Zanzibar Forest Policy (1995)
It encourages the use of alternative energy sources to reduce the consumption of wood fuel by households and large-scale consumers.

Chapter

2

Situational Analysis of Key Energy Issues

SITUATIONAL ANALYSIS OF KEY ENERGY ISSUES

2.1 Electricity Generation, Transmission, Distribution and Supply

2.1.1 Generation

The power in Zanzibar relies on imported electricity from mainland Tanzania through submarine cables, with a current capacity of 145MW for Unguja and 20MW for Pemba. These transmission systems are approaching their operational limits. The electricity demand has increased substantially, with Unguja's peak demand reaching 120.0MW (83% of capacity) and Pemba's steadily rising to 13.1MW (65.5% of capacity). This situation is particularly concerning, given the complete absence of functional backup power generation systems.

With anticipated demand to reach 277 MW and 380 MW by 2030 and 2045, respectively, in Unguja and 33.5 MW and 63.0 MW by 2030 and 2045, respectively, in Pemba, serious investment in power generation will be required over the next five years.

The development of energy-related projects in Zanzibar, particularly for the investment in power generation, has faced a critical challenge in the absence of the Energy Act, leading to regulatory uncertainties and operational challenges. This situation is further complicated by legal conflicts between the existing institutions under the Ministry of Water, Energy, and Minerals, specifically the ZURA Act No. 7 of 2013 and the ZECO Act No. 3 of 2006. The ZURA Act allows investors to generate and sell electricity directly to consumers, while the ZECO Act permits generation but restricts direct sales. This inconsistency creates confusion for investors.

A noteworthy development is the ongoing 18MW solar power plant project supported by the World Bank. While this project marks an important step toward diversifying Zanzibar's energy sources and establishing energy independence through renewable technologies, its capacity alone is insufficient to meet current demand. Scaling up solar (and wind) farms necessitates large expanses of land to operate effectively, which is particularly challenging in densely populated areas.

The combination of inadequate generation capacity and non-functional diesel generators underscores the urgent need for a comprehensive strategy addressing immediate energy security concerns and long-term sustainability. Immediate assessment and decisive action are imperative to avert a potential energy system failure in Zanzibar.

Major challenges in electricity generation include:

i. The Absence of internal power generation sources makes Zanzibar much more vulnerable to supply disruptions.
ii. Limited land availability for large-scale solar and wind projects.
iii. Limited technical capacity in managing and implementing the private sector's power generation projects.

2.1.2 Transmission

The Zanzibar power transmission network comprises a new 132kV/100MW cable, an old 132kV/ 45MW cable serving Unguja, and a 33kV/20MW cable serving Pemba. Currently, the Revolutionary Government of Zanzibar is implementing the World Bank-funded project Zanzibar Energy Sector Transformation and Access (ZESTA), which includes the construction of a 132kV transmission line extending 100 kilometres from Welezo and Ubago to Makunduchi and Mtemwe. These infrastructure developments are designed to accommodate future power generation integration and address growing demand while ensuring sustainable electricity access.

Major challenges in transmission include:

i. Inefficient electricity performance due to dilapidated infrastructures
ii. Insufficient transmission line capacity to meet current demand levels.
iii. Existing submarine cables are strained due to the increasing demand for electricity.

2.1.3 Distribution and Supply

The distribution networks across Unguja and Pemba operate on a 33kV and 11kV system, stepping down to 400V for the low-voltage grid. The ongoing ZESTA project aims to enhance and reinforce the electricity distribution network through improved metering systems and expanded household access. These improvements are essential for ensuring reliable and efficient power distribution while addressing growing demand across Zanzibar.

Progress toward the ZADEP 2021/2026 target of achieving 85% connectivity and 100% access by 2025/2026 continues, with notable improvements already achieved. Connectivity rate has increased by 13 percentage points, rising from 44.2% in 2014/2015 to 57.0% in 2019/2020.

In early 2022, a major advancement in accessibility was achieved by lowering connection charges from TZS 460,000 to TZS 200,000, thereby making electricity more affordable for households in Zanzibar.

The major challenges of distribution and supply include:

i. A dilapidated electricity distribution system is impeding the effective and reliable delivery of electricity to consumers and businesses, leading to operational inefficiencies and service disruptions.
ii. High system losses and grid instability hinder efficient and reliable electricity distribution and adversely impact the grid's overall performance and sustainability.
iii. The slow adoption of advanced digital technologies hampers the optimization of power distribution and management systems, reducing operational efficiency and limited real-time monitoring and control capacity.
iv. Limited connectivity to electricity poses challenges, particularly in terms of reaching underserved communities and ensuring a reliable power supply for essential services and economic activities.

2.2 Renewable Energy

Renewable Energy presents immense potential for enhancing sustainability, addressing climate change challenges, and strengthening energy security in Zanzibar. Due to the existing electricity generation and transmission challenges, Zanzibar is actively pursuing diversified energy sources to ensure a reliable power supply. Despite the Government's comprehensive feasibility study of wind and solar resources conducted in 2017, the large-scale adoption of renewable energy technologies in Zanzibar remains limited.

The government currently operates two solar off-grid systems with installed capacities of 80.1 kW and 50 kW in the Kokota and Njau islets, respectively. The private sector has demonstrated initiative in renewable energy investments, with several hotels installing independent solar power systems to reduce dependence on the national grid. Additionally, two private solar projects with capacities of 30 MW in Unguja and 15 MW in Pemba are under development, while an 18 MW public-owned project in Unguja is in its initial implementation phase.

These solar initiatives are complemented by an ambitious wind power project recently signed by the government, which aims to generate 100 MW in Unguja and 20 MW in Pemba. The combined capacity of these projects, totalling 183 MW across both islands, will enhance the reliability of power supply, support economic growth, improve social services, and contribute to Zanzibar's commitment to clean energy transition. The transition to renewable energy reduces greenhouse emissions, which creates opportunities for Zanzibar to benefit from carbon credit.

Despite this development, several challenges continue to hinder the large-scale implementation of renewable energy in Zanzibar. One of the most pressing issues is land scarcity. Zanzibar's high population density and competing land uses for residential, agricultural, and tourism activities significantly constrain the availability of suitable land for large-scale renewable energy projects.

On the contrary, the RGoZ is firmly committed to expanding renewable energy utilization by implementing net metering. This initiative will allow both residential and commercial renewable energy generators, particularly those using solar power systems, to contribute surplus energy to the grid and receive appropriate credits on their electricity bills. However, several challenges hinder its implementation, including regulatory and policy gaps.

Meanwhile, mini-grid and off-grid systems are crucial in providing electricity to remote areas where grid expansion is not feasible. These decentralized systems, powered by solar, wind, and hybrid technologies, support communities, businesses, and institutions in such areas. Nevertheless, the growth of these systems faces significant hurdles, such as high setup costs, limited financing options, and maintenance challenges. Addressing these issues will be essential for expanding renewable energy access and ensuring its long-term sustainability in Zanzibar.

Major challenges facing renewable energy include:

i. High initial costs for financing renewable energy
ii. Technical complexity in renewable energy grid integration
iii. Lack of legal and regulatory framework for the effective implementation of net metering and mini-grids.
iv. Lack of scientific labs and equipment to test and pilot renewable energy investments
v. Low public awareness of potential renewable energy applications.

2.3 Affordability and Accessibility

Zanzibar's low-income households suffer from high upfront energy costs, including electricity connections and appliances associated with modern energy services. While access to electricity is relatively good, access to LPG is insufficient. In addition, modern energy consumption costs remain a challenge. According to the Zanzibar Household Budget Survey of 2019-2020, electricity access has increased by 13 percentage points, from 44.2% in 2014/2015 to 57.0% in 2019/2020. A significant step toward improved accessibility was taken in early 2022 by reducing connection charges from TZS 460,000 to TZS 200,000, making electricity more affordable for Zanzibar households.

However, the affordability and accessibility to modern energy have several challenges, including:

i. Lack of affordability to pay for electricity connection charges and modern energy appliances.
ii. Low awareness of the utilization of modern energy among individuals, businesses and institutions.
iii. Limited coordination between institutions regarding programs related to modern energy.

2.4 Waste to Energy (WtE)

Zanzibar faces increasing waste generation due to rising urbanization, tourism growth, and evolving consumption patterns. According to the Solid Waste Management Baseline Report of Zanzibar (2018), the estimated waste generation volume in 2018 was 238,712 tons, projected to reach 321,655 tons in 2028 and 405,156 tons by 2038. Currently, Local Government Authorities manage less than 50% of the total waste generated, with the remaining portion being irregularly managed or indiscriminately disposed of. This situation prompted the Revolutionary Government of Zanzibar to develop the National Solid Waste Management Strategy (2022) to ensure proper waste management for environmental and public health security.
Zanzibar faces growing waste management challenges, including limited landfill capacity and collection and segregation systems, which raise environmental and health concerns. Waste to Energy (WtE) technology offers promising solutions to address these challenges through efficiently converting waste into electric heat.

However, the adoption of WtE technology in Zanzibar faces several challenges, including:

i. Inadequate capacity to effectively manage (handling, collection, segregation, disposal, recycling, reuse, and treatment, including energy waste) solid waste generated.
ii. Waste is absent in energy guidelines and framework.
iii. Lack of public awareness and support for the benefits of waste-to-energy systems.
iv. Lack of technical expertise to assess and implement the most suitable technological solution.

2.5 Energy Efficiency and Conservation

Zanzibar has supported the development and promotion of energy-efficient appliances for the household and service sectors. However, a high degree of energy-inefficient appliances still dominates these sectors. The transition rate to energy-efficient appliances in urban areas is estimated to be higher than in rural areas. With the support of the World Bank, the

Ministry of Water, Energy, and Minerals has developed an Energy Efficiency Strategy as a component of the ZESTA project for the management of electricity consumption.

The Plan is designed for implementation over five years (2024-2029), though significant effort is still required to achieve broader deployment of energy efficiency technologies.

Zanzibar is experiencing low adaptation of energy conservation, especially in public buildings. The Ministry of Water, Energy and Minerals, therefore, plans workshops to increase public awareness of energy conservation.

Major challenges in energy efficiency include:

i. Low public awareness and adoption of energy-efficient appliances and practices.
ii. Improper utilization of electricity in public buildings puts a strain on the electricity infrastructure and increases operating costs for the government.
iii. Low importation and utilization of energy-efficient technologies.
iv. Lack of digital tools for collecting and analysing energy efficiency data.
v. Lack of "time of use tariff" to impact end-user energy consumption behaviours to reduce consumption during peak periods; and
vi. Lack of regulations, guidelines, and standards for energy efficiency equipment and appliances.

2.6 Modern Energy

Zanzibar intends to transition society from charcoal and wood-based cooking energy (traditional fuel) to modern energy use while ensuring reliable, affordable, and equitable access. Statistical evidence shows progress in this transition: the proportion of households using firewood for cooking decreased from 61.6% in 2014/2015 to 52.8% in 2019/2020. During the same period, household charcoal usage increased slightly from 32.6% to 34.1%. Industrial gas usage witnessed significant growth, rising from 1.1% in 2014/2015 to 7.7% in 2019/2020.

As part of Zanzibar's efforts to promote modern energy sources such as LPG, the Government, through private-sector collaboration, has established a 1,388-ton LPG storage facility at Mangapwani. Currently, five companies import and supply gas in Zanzibar: Oryx Gas Tanzania Limited, TP Company Limited (V-Gas), Lake Gas Limited, Taifa Gas Tanzania Limited, and Al-Nabahan Gas Supplied (O-Gas). For 2023/2024, ZURA reported gas imports of 8,365,632 kg, and the use of the gas reached 8,488,799 kg.

Major challenges in the adoption of modern energy include:

i. High initial investment cost to consumer and supplier
ii. Limited public awareness regarding modern energy benefits and applications.
iii. Insufficient access to modern energy appliances, particularly in rural areas.
iv. Absence of Modern Energy guidelines.

2.7 Petroleum Midstream and Downstream

The petroleum products market is predominantly operated by the private sector. Zanzibar's growing economic activities have driven increased fuel demand, with importation reaching 212.7 million litres in 2023 and consumption rising to 206.1 million litres. Introducing the Bulk Procurement System (BPS) has enhanced fuel importation efficiency. Infrastructure improvements include private sector investment in new storage facilities at Mangapwani for local consumption, bunkering, and transhipment, with total storage capacity reaching 21 million litres in 2023.

Zanzibar's strategic location in the western Indian Ocean presents significant opportunities for establishing a petroleum business hub. However, these geographical advantages remain underutilized within the context of the blue economy.

Major challenges facing petroleum midstream and downstream include:

i. Presence of substandard storage facilities
ii. Inadequate petroleum products infrastructure.

2.8 Energy Security

Zanzibar's energy landscape is characterized by increasing dependence on external sources, primarily from mainland Tanzania via submarine cables. Between 2010 and 2024, Unguja's electricity imports increased by 91%, reaching an average of 39 GWh/month. Similarly, Pemba's imports grew by approximately 77%, averaging 4.6 GWh/month in 2024. Beyond electricity, Zanzibar imports substantial quantities of petroleum products.

During 2023/2024, oil imports through the Bulk Procurement System totalled 185,525,066 litres. LPG imports during the same period reached 8,365,632 kg. This growing reliance on imported energy underscores the need for diversification (energy mix) and enhanced energy security measures. A resilient energy system is essential to meet increasing demand while minimizing risks associated with external source dependence.

Major challenges facing energy security are:

i. The sole dependence on electricity supplied by the Tanzania mainland through submarine cables, whose current capacity is insufficient to meet the growing demand of businesses and residents.
ii. Inadequate framework for integrating renewable energy sources into the national grid.
iii. Unreliable power backup in a sustained and catastrophic power outage.
iv. Lack of fault detection in the transmission network during a power disruption.
v. Inadequate infrastructure for offloading and loading petroleum products has contributed to reoccurring shortages over the last 15 years.

2.9 Financial and Economic Creation

Effective revenue management can transform a corporation's financial performance into a commercially viable entity capable of efficiently meeting growing energy demands. Sound revenue collection and management practices are essential for ensuring the energy sector's sustainability. The Zanzibar Electricity Corporation (ZECO), an autonomous entity, operates through revenue collection from connected customers for electrical energy supply, encompassing commercial functions including sales, metering, and billing. However, the Corporation faces significant financial performance challenges.

The lower percentages of financial management can be attributed to several factors, including:

i. Non-payment of substantial electricity debt from the government and private institutions.
ii. Illegal connections, meter bypassing, and unauthorized electricity use (power theft).
iii. Limited coverage in certain regions.

2.10 Research and Development

Research and Development is a key driver of technological innovations that can enhance sustainability, adoption, affordability, productivity, and other aspects of the energy sector. Data collection is vital for R&D activities, and adequate, quality data enables the Government and other sector stakeholders to make effective decisions. Despite the government's comprehensive feasibility study of wind and solar resources conducted in 2017, comprehensive research has not been conducted in Zanzibar for the energy sector. This makes the Government of Zanzibar keep a special budget for making the Research and development of energy sectors.

Major challenges in Research and Development include:

i. Insufficient financial and human skills, capacity, and expertise in innovation research.
ii. There is a low level of R&D in energy-related issues.
iii. Limited data management systems for Research and Development.

2.11 Cross-Cutting Issue

2.11.1 Gender and social inclusion

The Government has promoted gender equity in the energy sector to ensure maximum engagement and participation of women. According to the ZESTA five-year Gender Work Plan, the overall percentage of women in Zanzibar's energy sector institutions stands at 20.4% (29.4% in DoEM, 17.7% in ZECO and 41.4% in ZURA). Despite efforts to improve the existing situation undertaken by private sectors like Barefoot College Zanzibar which trains women who have little to no formal education to become solar technicians, additional measures are required to eliminate bias in employment opportunities, particularly in technical and engineering fields, and to consider the unique needs and roles of different gender and social groups in the design and implementation of sector programs and projects.

Major challenges for gender mainstreaming:

i. Low participating rate of women in energy sector activities, particularly in technical and leadership roles; and
ii. Female participation in energy-related subjects is limited at higher academic institutions.

2.11.2 Environment and Climate Change

Climate and natural hazards threaten Zanzibar's electricity services, including rising temperatures, flooding, droughts, and strong winds. Rising temperatures and drought reduce generation, while flooding and strong winds damage infrastructure. These hazards jeopardize the sustainability of the current energy infrastructure, which relies heavily on a single power supply from mainland Tanzania through ageing submarine cables. Unguja and Pemba islands depend on these fragile connections, making them vulnerable to supply disruptions and hydropower variability caused by droughts on the mainland, which unreliable power backup facilities exacerbate. To address these challenges, there is a pressing need to enhance the resilience of the energy infrastructure and diversify energy sources, particularly by harnessing Zanzibar's untapped solar potential, which could significantly contribute to local energy generation. Integrating climate and disaster risk management into Zanzibar's energy strategies is crucial for building a sustainable and reliable future and fostering climate adaptation.

Climate change poses significant risks to future electricity generation. Alterations in precipitation, river flow, surface water evaporation, and rising temperatures threaten hydroelectric power production. Increased temperatures lead to higher electricity demand during hot seasons for cooling and water pumping. Additionally, peak demand may rise due to more frequent heat waves. A study on Zanzibar (Watkiss et al., 2012) indicates a strong correlation between monthly average temperatures and electricity consumption in Unguja.

2.11.3 Institutional Coordination

Institutional coordination in the energy sector ensures alignment, communication, and collaboration among various entities to create a more reliable, sustainable, and efficient energy system. The complexity of the energy sector, the need for a mix of private and public actors, long-term planning, and the challenges posed by global issues like climate change make coordination between all actors more important. Meanwhile, clear and well-coordinated regulations and Regulatory bodies ensure that energy markets operate efficiently, with transparency and fairness, with domestic and international laws, particularly when energy systems are interconnected across borders. An appropriately designed, transparent and coordinated institutional framework for the energy sector is critical for achieving energy policy goals and supporting Zanzibar's development goal of sustainable energy for all. This requires collective awareness, appropriate allocation of responsibilities, effective coordination in planning and management, consistent communication, and collaborative systematic progress monitoring. The energy sector intersects with the development and growth of other sectors of the economy, such as tourism, manufacturing, health, transport, education, ICT, agriculture, and household consumption. Currently, coordination among energy-related institutions has not reached optimal levels. This ineffective coordination results in incomplete and sometimes contradictory information and data, hampering efficient and effective planning and forecasting activities necessary for sustainable growth in the energy sector.

2.11.4 Promoting Private Sector Participation

The private sector plays a crucial role in the energy sector by providing substantial capital investment and the appropriate technologies needed for development. The Revolutionary Government of Zanzibar is committed to collaborating with the private sector to promote growth, build capacity, and facilitate projects, including public-private partnership (PPP) arrangements for implementing energy initiatives. As of now, the RGoZ has granted the private sector the authority to lead the importation and distribution of petroleum products and infrastructure improvement

for reliability, sustainability, and market competition. Meanwhile, the RGoZ has allowed investors to generate electricity, aiming to address the growing demand for reliable power supply. The private sector is expected to enhance the energy landscape through service delivery and infrastructure development, which includes grid expansion, distribution and transmission networks, and power plants. Additionally, private companies bring technical expertise, capacity building, and knowledge transfer, all essential for sustainable development. Their investment in energy infrastructure—such as renewable energy projects and distribution networks—is vital for expanding access to electricity and improving the reliability of energy supply.

As the world shifts towards sustainable energy sources, private sector investment in renewable energy projects becomes increasingly important for Zanzibar to meet its energy needs while minimizing environmental impact. The government has established several PPP frameworks to attract this vital investment, including the Public Private Partnership Policy of 2014, the Public Private Partnership Act No. 8 of 2015, the Public Private Partnership Regulation of 2017, and the PPP Operational Guideline of 2018. By fostering collaboration between the public and private sectors, the government aims to achieve greater accessibility, reliability, and sustainability in energy services. Furthermore, it is committed to facilitating private sector participation throughout all phases of energy project development and delivery, encompassing construction, financing, installation, maintenance, and operations, particularly in the electricity supply and clean cooking sectors.

To attract investors, Zanzibar offers various incentives for energy investments. Through the East Africa Custom Management Act of 2004, the Government provides zero import duty for renewable energy equipment and appliances, exempting investors from import duties of energy-related materials during the project implementation, thereby reducing the initial investment burden. Additionally, land lease benefits are available for any investors.

The government also facilitates regulatory support, streamlining license processes and helping investors ensure smooth project implementation.

Despite the government's efforts, several key challenges continue to hinder private participation in the energy sector, including:

i. Regulatory Framework: While the government has established PPP frameworks, navigating the regulatory environment remains complex and time-consuming.

ii. Limited access to financial institutions and investment capital can impede the development of necessary infrastructure and renewable energy initiatives.
iii. Limited local expertise and awareness of public-private partnership opportunities.
iv. Delays in tariff adjustments and unclear strategic investment priorities create uncertainty for investors and stakeholders.
v. Significant concerns regarding project bankability, particularly related to risk allocation, deter potential investments.

2.11.5 Communicable and Non-Communicable Diseases

The energy sector has significant implications for both communicable and non-communicable diseases. Poor air quality, driven by fossil fuel use in electricity generation and transportation, exacerbates respiratory diseases such as pneumonia, asthma, chronic obstructive pulmonary disease (COPD) and cancer, which are particularly dangerous in communities that rely on traditional biomass for cooking. Fueled by energy-related greenhouse gas emissions, climate change also expands the range of vector-borne diseases like malaria and dengue. Furthermore, inadequate energy access in healthcare facilities can hinder disease control efforts, such as vaccination and treatment.

The transition to cleaner energy sources, such as renewables, offers significant health benefits by reducing harmful air pollutants and mitigating climate change impacts. This shift can decrease the prevalence of respiratory and cardiovascular diseases, improve living conditions, and enhance access to essential services like healthcare. However, the energy transition must also address potential health risks associated with the extraction of materials for renewable technologies and ensure that vulnerable populations are not left behind regarding energy access. A sustainable energy system can ultimately improve global public health outcomes, reducing communicable and non-communicable disease burdens.

The main challenges regarding the energy sector include:

i. Harmful air pollution contributes to respiratory and cardiovascular diseases due to fossil fuels.
ii. Rural and low-income communities continue to rely on harmful traditional energy sources (e.g. kerosene or wood for cooking).
iii. Environmental and Health Impacts of Renewable Energy technologies such as solar panels, wind turbines, and batteries.

2.11.6 People with Disabilities

The limited participation of people with disabilities in the energy sector represents a missed opportunity for the industry and society to develop a diverse and innovative workforce. Their unique perspectives and problem-solving abilities can drive positive change and lead to creative solutions. Moreover, addressing their specific needs and challenges is a matter of social responsibility and a strategic move toward a more inclusive and sustainable energy future.

Major challenges facing people with disabilities include:

i. Limited awareness and capacity regarding energy-related issues.
ii. People with disabilities are not considered enough in energy sector project planning and related initiatives.
iii. Designing inclusive infrastructure facilities and renewable energy systems

2.11.7 Energy Trans-Boundary Matters (Energy Integration)

As the world increasingly shifts towards sustainable energy, Zanzibar is strategically positioning itself to capitalize on regional cooperation and energy trade with neighboring countries, aiming to secure a reliable and diversified energy supply. However, managing energy across borders presents a distinct set of challenges that necessitate meticulous planning, regulatory alignment, and the development of robust infrastructure.

Transboundary energy issues present significant challenges; they also offer opportunities for deeper cooperation, economic integration, and sustainable development in the energy sector. Effective governance and collaborative approaches ensure that countries and communities benefit from shared energy resources. Zanzibar suffers from ineffective and non-proactive collaborative approaches in managing energy transboundary matters through bilateral and multilateral engagement. As such, the lack of coordination between Zanzibar and neighboring countries in areas such as resource management, policy alignment, and energy trade present a major hindrance to fully realizing the benefits of shared energy resources.

Major challenges facing Energy Trans-Boundary Matters include:

i. Presence of insufficient transmission lines and interconnection facilities between Zanzibar and neighboring countries, which limits the ability to import or export electricity effectively.
ii. Ineffective and non-proactive collaborative approaches in management of energy trans-boundary matters through bilateral and multilateral engagement.

Chapter

3

Policy Vision, Mission and Guiding Principle

POLICY VISION, MISSION AND GUIDING PRINCIPLES

3.1 Rationale for Reviewing the Zanzibar Energy Policy

The review of Zanzibar's Energy Policy 2009 is timely, given the significant institutional reforms and sector changes over the past decade. The establishment of the Zanzibar Utilities Regulatory Authority (ZURA) and the Zanzibar Petroleum Regulatory Authority (ZPRA) has fundamentally transformed the energy sector's governance structure, transferring regulatory responsibilities from ministry oversight to specialized institutions.

This institutional evolution and the government's strategic shift toward private sector participation in power utility management have created new dynamics requiring updated policy frameworks. The review addresses critical requirements for achieving a reliable, sustainable, and accessible national grid while aligning with regional and international energy development goals, including provisions for smart grid technologies, improved distribution networks, and innovative solutions for urban and rural electrification.

3.2 Vision

The energy sector's vision is to achieve sufficient, reliable, and sustainable energy that powers Zanzibar's economy and enhances the quality of life for all.

3.3 Mission

To improve energy sector governance by creating an enabling environment in Zanzibar that ensures improved access, reliability, affordability, sustainability of energy supply and climate resilience through policy and regulation.

3.4 Overall Objective for the Energy Policy

To provide guidance, predictability, accountability, and transparency to stakeholders regarding the overarching principles, strategic priorities, and policy goals necessary to achieve the Vision and Mission for the energy sector.

3.5 Specific Objectives

The specific objectives of this Zanzibar Energy Policy are:

i. To promote a diversified, local power generation mix to reduce dependence on external sources.
ii. To upgrade the electricity transmission network to enhance service quality and deliver reliable and affordable electricity.

iii. To enhance electricity access, connectivity and reinforce the electricity distribution network to achieve improved reliability and efficiency of power supply.
iv. To promote investment in renewable energy resources to reduce reliance on the National Grid by allowing consumers to generate electricity and receive credits for surplus energy fed back into the grid.
v. To promote sustainable energy production, comprehensive equipment lifecycle management (sourcing, recycling, disposal), and optimizing land use through multi-purpose applications.
vi. To promote proper use of energy for effective and efficient management of energy consumption.
vii. To promote investment in renewable energy resources and reduce reliance on the National Grid,. Additionally, consumers will receive credits for any surplus energy they feed back into the grid, incentivizing sustainable practices and fostering energy independence.
viii. To endorse mechanisms to adopt adequate infrastructure and storage facilities to maximize the storage of petroleum products.
ix. To implement measures to increase energy security and reliability.
x. To adopt effective measures to mitigate and adopt climate resilience in the energy sector.
xi. To strengthen the sectoral coordinated and logical institutional set-up with clear and consistent to ensure the participation of all stakeholders.
xii. To promote research for development to explore adequate and quality data for effective decision-making.
xiii. To promote inclusive initiatives for people with special needs to participate in the energy sector development.
xiv. To promote energy transboundary matters.

3.6 Policy Guiding Principles

This policy is developed with the following key guiding principles:

a. Development: Economic and social development requires secured and reliable power, which is an essential tool for the country's prosperity. This policy encourages the overall development of the energy sector to enhance people's economic and social empowerment.
b. Sustainability: The economic transformation towards the blue economy must not inhibit the energy development and environmental needs of future generations. This policy focuses on developing sustainable energy resources that will benefit the current generation and create a sustainable future.
c. Affordability: The viability of energy projects must move parallel with energy affordability to provide Zanzibar with cleaner, greener, and cheaper energy options.

d. Accessibility: This is a prerequisite of human development, and it is in line with the United Nations Sustainable Energy for All (SE4ALL) program, which aims to reduce the carbon intensity of energy and increase energy access to make it available to everyone.
e. Gender equity: Women's participation in the energy sector and the broader economy across energy sub-sectors. Women and men must effectively participate in the decision-making process while managing and developing energy resources at the local level.
f. Research for Innovation: Research, development, dissemination, and human resources capacity development are key to the development of the energy sector.
g. Environment-friendly: The policy intends to implement resolutions on global climate concerns by utilizing renewable energy resources for power generation, encouraging energy efficiency, and using solid waste management.
h. Climate change: All energy sector interventions and technological innovations must be climate resilient.
i. Good Governance: Ensuring sustainable, transparent, and efficient management of energy resources.

Chapter

4

Policy Issues, Statements and Strategies

POLICY ISSUES, STATEMENTS AND STRATEGIES

4.1 Electricity Generation, Transmission, and Distribution

4.1.1 Electricity Generation

Policy Issue: Absence of local power generation sources.

Policy Statement: The Government shall promote and manage alternative solutions for power generation and accelerate the implementation of new power projects.

Implementation Strategies

i. Promote alternative solutions for power generation.
ii. Strengthen the capacity of the submarine cables or other power generation options to address the higher demand and ensure reliable electricity supply in Zanzibar.
iii. Strengthen the institution's capacity to manage private power generation projects.

4.1.2 Electricity Transmission

Policy Issue: Inefficient electricity performance due to dilapidated infrastructure that causes power losses and inadequate transmission capacity.

Policy Statement: The Government shall improve the electricity infrastructure to enhance the quality, reliability, and affordability of the electricity supply.

Implementation strategies

i. Strengthen, expand and digitalize the power transmission infrastructure to ensure reliable and sufficient electricity supply across Zanzibar.
ii. Establish guidelines and standards for the energy sector's electrical equipment, machines and appliances.

4.1.3 Electricity Distribution and supply

Policy Issue: Deteriorating distribution infrastructure, high system losses, inefficient distribution systems, and low connectivity rate.

Policy Statement: The government shall enhance the reliability of electricity access, connectivity, and power supply.

Implementation Strategies

i. Strengthen investment in the construction, rehabilitation, and expansion of the distribution and supply network and reduce technical loss.
ii. Promote digital tools and systems for real-time electricity distribution and supply monitoring to reduce commercial loss.

4.2 Renewable Energy

Policy Issue: Limited land availability for renewable energy projects, high initial investment costs, technical complexity in grid integration and lack of legal frameworks, including mini-grid and net metering regulations.

Policy Statement: The government shall encourage the exploitation of indigenous renewable energy technologies as an alternative source of energy generation.

Implementation Strategies

i. Conduct a land use mapping and suitability analysis to identify potential areas for renewable energy projects.
ii. Strengthen innovative financing mechanisms, such as green bonds and project finance, to attract investment in renewable energy technologies.
iii. Strengthen the establishment of scientific laboratories.
iv. Strengthen mechanisms to address complexity in grid integration.
v. Advance the development of net-metering regulations.
vi. Enhance the exploitation of indigenous renewable energy as an alternative source for power generation.

4.3 Affordability and Accessibility

Policy Issue: Zanzibar's low-income households suffer from high upfront energy costs, including electricity connections and access to modern energy services, including LPG. Additionally, the consumption costs of modern energy remain a challenge.

Policy Statement: The Government shall create an enabling environment for the gradual transition from traditional to modern energy sources through well-designed and targeted incentive schemes and support mechanisms.

Implementation Strategies

i. Promote awareness of the utilization of modern energy among individuals, businesses and institutions.
ii. Ensure effective coordination between institutions regarding programs related to modern energy and guidelines.
iii. Revise and approve the Zanzibar Electrification Master Plan 2018 (based on least-cost principles and with a clear role for private-sector participation) and prepare an associated implementation strategy by June 2027 and every five years thereafter.
iv. The rural electrification programme will be strengthened to extend the electricity network to all parts of Zanzibar.
v. Work with development partners and other stakeholders to design well-targeted subsidy or incentive programmes to improve access to and affordability of modern energy services.
vi. Pursue financing solutions and mechanisms to enhance the local population´s access to modern energy technologies and appliances.

4.4 Waste to Energy (WtE)

Policy Issue: Limited technical capacity and awareness of legal frameworks for managing and converting waste to energy.

Policy Statement: The government shall ensure effective waste management and innovative ways to convert waste into alternative energy sources.

Implementation Strategies

i. Promote effective waste management and technological infrastructures for waste processing and use as alternative energy sources.
ii. Strengthen sectorial coordination between sectors related to waste management.
iii. Strengthen staff and stakeholders' awareness of managing and converting waste to energy.
iv. Strengthen legal frameworks, guidelines, and arrangements for managing and utilizing municipal Waste to Energy.
v. Enhance capacity building for intensive labour with technology required in management, operations, and maintenance.

4.5 Energy Efficiency

Policy Issue: Lack of effective and efficient management of energy consumption leads to a loss of energy resources.

Policy Statement: The government shall promote adopting energy efficiency initiatives and demand-side management measures.

Implementation Strategies

i. Strengthen the application of supportive energy efficiency frameworks.
ii. Enhance awareness of energy-efficient equipment and practices.
iii. Ensure the reduction of high initial costs caused by energy-efficient equipment, appliances, and machinery.

4.6 Modern Energy

Policy Issue: The transition from charcoal and wood-based energy use to modern energy while ensuring reliable, affordable, and accessible energy suffers from high upfront costs and limited energy awareness, including appliances associated with modern energy services. Thus, people largely rely on traditional forms of energy, which have significant negative health and environmental implications.

Policy Statement: The government shall create an environment that will enable a gradual transition from traditional to climate-friendly modern energy sources through well-designed and targeted incentive schemes and support mechanisms.

Implementation Strategies

i. Enhance incentive mechanisms to reduce the cost and increase the availability of modern energy sources.
ii. Promote an awareness program on the utilization of modern energy, the deployment of LPG, and distribution networks of modern energy appliances.
iii. Develop a clean cooking strategy and action plan for Zanzibar.

4.7 Petroleum Midstream and Downstream

Policy Issue: The existing storage infrastructure for petroleum products is inadequate to meet the rapidly growing demand.

Policy Statement: The Government shall ensure there are adequate storage facilities and offloading infrastructure for petroleum products.

Implementation Strategies

i. Enhance the meaningful involvement of private sector investment in standard storage capacity.

ii. Promote private sector investment and participation in investment of petroleum products infrastructures.

4.8 Energy Security

Policy Issue: Reliance on imported energy highlights Zanzibar's need for diversification and increased energy security. Unreliable power backup in the event of a sustained and catastrophic power outage remains a concern in the power sector.

Policy Statement: The Government shall pursue measures to increase energy security and reliability.

Implementation Strategies

i. Strengthen the capacity of submarine cables to provide sustainable electricity in Zanzibar.
ii. Ensure timely execution of energy projects in alignment with the Integrated Resource Plan/Power Master Plan, which will be developed based on least-cost principles.
iii. Establish a robust Emergency Response Plan and reliable power backup.
iv. Prepare and adopt a climate resilience plan for the power sector.
v. Strengthen the capability of transmission networks during events of power disruption.
vi. Strengthen the capacity of off-loading and loading-petroleum infrastructure.

4.9 Financial and Economic Creation

Policy Issue: Ineffective Revenue collection and management to cover the cost-of-service delivery in the Energy Sector.

Policy Statement: The government shall strengthen transparent financial management to tackle systemic non-payment issues and ensure a sustainable and efficient Energy Sector.

Implementation Strategies

i. Endorse and adopt the Payment Restructuring Program.
ii. Implement Smart Grid Technology and Real-Time Monitoring.
iii. Promote Distributed Solar and Off-Grid Energy Solutions.

4.10 Research and Development

Policy Issue: Insufficient capacity for conducting research and development in the energy sector.

Policy Statement: The Government shall promote research and development for the sustainable energy sector.

Implementation Strategies

i. Strengthen the capacity to conduct research and development for the energy sector.
ii. Promote Government and Private finance in energy research.
iii. Encourage technologies and innovation on significant challenges in the energy sector.
iv. Promote mechanisms for the development of an innovative data management system.

4.11 Cross-Cutting Issues and Mainstreaming

4.11.1 Gender Mainstreaming and Social Inclusion

Policy Issues: Limited participation of women and youth and inclusion of vulnerable groups, including people with disability, in the energy sector to ensure gender equity across the value chain.

Policy Statement: The Government shall promote gender mainstreaming in the energy sector.

Implementation Strategies

i. Promote opportunities for women in STEM.
ii. Strengthen the capacity of staff and stakeholders in results-based M&E systems and data quality assurance.
iii. Strengthen the capacity of women and men in gender-sensitive program design.

4.11.2 Environment and Climate Change

Policy Issue: Zanzibar, like the global community, suffers from the negative effects of climate change due to its high reliance on biomass, rapid deforestation, and lack of renewable energy alternatives.

Policy Statement: The Government shall adopt effective measures to mitigate and adopt climate resilience in the energy sector

Implementation Strategies

i. Strengthen mechanisms to reduce the high reliance on biomass and rapid deforestation in the community.
ii. Promote the use of renewable energy alternatives.
iii. Promote carbon pricing and carbon markets.
iv. Encouraging Climate-Smart Finance and Investment.
v. Enhance energy efficiency and conservation.
vi. Stimulate technological innovation and behavior change.
vii. Strengthen the capacity of sector agencies in emergency response and disaster preparedness to mitigate the impacts of climate events.
viii. Identify and implement priority investments and policy and regulatory reforms to strengthen the power sector's climate resilience.

4.11.3 Institutional Coordination Regulatory Framework

Policy Issue: Zanzibar's energy sector experiences inadequate coordination mechanisms among stakeholders.

Policy Statement: The Government shall maintain a well-coordinated and logical institutional setup with clear and consistent roles, responsibilities, and reporting lines among public institutions and other stakeholders.

Implementation Strategy

i. Enhance coordination mechanisms among stakeholders in the energy sector.
ii. Promote knowledge sharing among institutions to foster innovation and improve policy effectiveness.

4.11.4 Promote Private Sector Participation

Policy Issues: Complex and time-consuming PPP frameworks, inconsistent policies or bureaucratic hurdles, limited access to financial institutions and investment capital, and constraints on market Competition.

Policy Statement: The government shall implement strategic interventions among domestic and private investors and development partners to enhance private participation in the energy sector's programs and projects.

Implementation strategies

i. Assess, define, and implement actions required to strengthen PPP legal and regulatory frameworks for attracting and supporting investments across the energy-sector value chain.

ii. Develop legal, institutional, regulatory, procurement and contractual framework for renewable energy development.
iii. Ensure cost-reflective tariffs to attract private investments.
iv. Prepare, adopt, and regularly update the Integrated Resource Plan/ Power Master Plan.

4.11.5 Communicable and Non-Communicable Diseases

Policy Issue: Lack of access to clean energy contributes to poor health outcomes in the energy sector workforce.

Policy Statement: The government shall ensure sustainable and clean energy to improve the health of the energy sector workforce.

Implementation Strategies
i. Facilitate transition to modern, efficient cooking and electricity technologies in urban and rural areas.
ii. Strengthen awareness campaigns for disease prevention in workplaces and rural communities.
iii. Strengthen the capacity and skills of the workforce and rural communities to respond to HIV/AIDS and other diseases.

4.11.6 People with Disability

Policy Issue: People with disabilities have limited employment opportunities and limited awareness of their potential and capacity in the energy sector.

Policy Statement: The government shall promote the participation of people with disabilities in different energy projects.

Implementation Strategies
i. Promote PwD Awareness in the energy sector.
ii. Strengthen the capacity of PwDs in the energy sector.
iii. Create employment opportunities for people with disabilities in the energy sector.

4.11.7 Energy Trans-Boundary Matters (Energy Integration)

Policy Issue: Insufficient transmission lines and interconnections limit cross-border electricity trade and regional energy security; there is ineffective and lack of proactive approaches in energy transboundary matters.

Policy Statement: The Government shall ensure effective and proactive collaborative management of energy transboundary matters through bilateral and multilateral engagement.

Implementation Strategies

i. Invest in regional energy infrastructure development with a focus on creating interconnections, modernizing energy infrastructure, and scaling up generation capacity.
ii. Ensure the risks and impacts associated with energy projects are properly reflected in bilateral and multilateral agreements.
iii. Promote collaboration on regional initiatives to mitigate the impacts of energy programs and projects.

Chapter

5

Legal and Institutional Framework

INSTITUTIONAL AND LEGAL FRAMEWORK

5.1 Institutional Framework

Well-established and healthy institutional frameworks are mainly required for the effective and successful implementation of this Energy Policy's vision, mission, policy statement, and strategies.

The institutional framework outlines the significant responsibilities of essential institutions in carrying out the Energy Policy. The primary actors involved in policy implementation encompass the Ministry responsible for Energy, other Ministries, Departments and Agencies, Local Government Authorities (LGAs), Zanzibar Utilities Regulatory Authority (ZURA), Zanzibar Electricity Corporation (ZECO), Academic and Civil Societies and Communities. The roles of key institutions in the implementation of this policy are explained below:

5.2 Legal Framework

The management of the energy sector development is governed by numerous instruments, including but not limited to the Zanzibar Electricity Corporation Act No.3 of 2006, the Zanzibar Utilities Regulatory Authority Act No. 7 of 2013 and the Zanzibar Local Government Authority Act 2014. In accordance with the institutional arrangements set up under the Zanzibar Energy Policy of 2025, the Government shall facilitate the review and amendment of various legislations, regulations and guidelines relating to energy provision to develop appropriate, broad-based and comprehensive regulatory frameworks.

5.3 Role of Key Stakeholders

The institutions of other sectors will also be important in implementing this policy.

5.3.1 The Ministry Responsible for Energy

The Ministry responsible for Energy is responsible for formulating policy, monitoring and managing the energy sector. Its main role will be to carry out the following roles:

i. Develop action plans and programmes to ensure the effective implementation of the energy policy.
ii. Prepare a supportive environment for transparent, accountable, sustainable, inclusive, and participatory processes in the sector to implement policy.
iii. Ensure clear-cut boundaries of jurisdiction in the sector.
iv. Provide pertinent information about energy before the Government and House of Representatives oversight committees.

v. Effectively oversee regulatory authorities and other state-owned energy-related institutions to ensure the implementation of energy-related policies and respective legislations.
vi. Ensure integrated planning and coordination between the energy sector and other sectors of the economy.
vii. Ensuring public awareness of energy-related activities.

5.3.2 Zanzibar Utilities Regulatory Authority (ZURA)

ZURA is a multi-sectoral regulator established under Section 11 of the Zanzibar Utilities Regulatory Authority Act No. 7 of 2013, responsible for technical and economic regulation of Zanzibar's water and energy sector.

Its core functions are to:

i. Ensure that all utility suppliers provide adequate service and have the means to finance their activities.
ii. Prepare codes of conduct, reporting requirements, schemes of services, licensee regulation, and any other action necessary to regulate utilities effectively.
iii. Facilitate and encourage private sector participation, fair competition, and participation in investments in public utilities.
iv. Ensure public utilities' compliance with the laws governing their activities.

5.3.3 Zanzibar Electricity Corporation (ZECO) and other power producers

ZECO is the state-owned utility company responsible for transmitting and distributing electricity in Zanzibar. Its core responsibilities are:

i. Establishing, acquiring, maintaining, and operating works and undertakings for generating, transmitting, transforming, distributing, and supplying electricity to consumers in Zanzibar.
ii. Investigating new or additional facilities for generating and supplying electricity within Zanzibar.
iii. To enter contracts with any public, local authority or any person for the purchase and supply of electricity or any other purpose
iv. To enter into agreements for the purchase of electricity in bulk from independent power producers within or outside Zanzibar for resale to consumers
v. To allow consumers to supply surplus renewable energy to the grid and receive credit for the energy fed back to the grid.
vi. To carry on all such activities as it may appear to the corporation to be requisite, advantageous or in connection with exercising its functions.

5.3.4 Zanzibar Petroleum (Upstream) Regulatory Authority (ZPRA)

ZPRA is the independent regulatory body for upstream petroleum activities. According to the Petroleum policy, it will have the following roles:

i. Implementing the approved legal and regulatory framework on oil and gas.
ii. Monitoring, reporting and verification of the petroleum operations.
iii. Monitoring and operationalization of the issued licenses and their related activities.
iv. Acquisition and management of primary technical data.
v. Implement proper management of royalties, revenues, and taxes from petroleum activities.
vi. Enforcement of laws and regulations related to the contract terms for petroleum activities.
vii. Ensuring health, safety, environmental and labour standards in oil and gas operations.
viii. Ensuring optimal utilization of existing and planned infrastructure.
ix. Implement the integrated approach in multi-sectorial involvement in operational safeguards and performance checks.

5.3.5 Zanzibar Petroleum Development Company (ZPDC)

As stated in the Petroleum Policy, Zanzibar will have to gradually acquire and handle its commercial interest in petroleum development and move away from relying on external investors in exploration and production activities. The specific roles of ZPDC, as set out in the Petroleum Policy, shall include:

i. Managing the business aspects of surveying, exploration, and production on behalf of the state.
ii. Participate in co-ventures and partnerships with other oil companies.
iii. Survey, explore and appraise new upstream, midstream, and downstream ventures.

5.3.6 Zanzibar Planning Commission (ZPC)

The Zanzibar Planning Commission (ZPC) plays a prominent role in ensuring an integrated planning approach for inclusive economic growth in the energy sector and all other key sectors.

5.3.7 Ministry Responsible for Finance

The ministry responsible for Finance and its respective institutions plays an important role in all energy sub-sectors. Their responsibilities include:

i. Determination of levies, taxes and credits on energy products and services.

ii. Monitoring, verifying, and reporting the fiscal regime (licensing, agreements, rentals, royalties) and economic issues associated with energy-related activities.
iii. Implement accounting standards and procedures for energy-related activities.
iv. Ensuring efficient, transparent, and accountable collection and management of revenues.
v. Provide a mechanism for collecting energy-related taxes, levies, and fees in Zanzibar.
vi. Monitoring and assessing the impacts of energy revenues on the economy.
vii. Coordinating and securing state grants and other funds for energy-related investments, programmes and projects.
viii. Funds are disbursed to public institutions, national programmes, and projects according to the annual set budgets.

5.3.8 Ministry Responsible for Investments

i. In liaison with relevant Ministries and other Authorities, determine investment opportunities available in the country and the modality of accessing them.
ii. Improve the business environment by undertaking activities that may be necessary to promote Zanzibar as an attractive base for investment and business.

5.3.9 Ministry Responsible for Local Governments

This institution will be linked to the implementation of the Energy Policy in the following roles:

i. Implementing social safeguards on land acquisition, displacement, stakeholder engagement, and community consultations regarding energy-related activities.
ii. Integration of energy activities in local governments' plans and programs.
iii. Mobilisation of community support towards corporate social responsibility.
iv. Management of issues of waste management coming from energy-related activities.

5.3.10 Ministry Responsible for Land

This institution will be linked to the Energy Policy in the following roles:

i. Integrating the energy sector into urban and rural planning policy, strategies, and programs.

ii. Implementation of the National Land Use Plans and demarcation of spatial boundaries separating petroleum locations and other energy activities from tourism hotspots.
iii. Develop sustainable land management capacity and protect ecologically sensitive areas and heritage sites.

5.3.11 Ministry Responsible for Environment

This institution will be linked to the Energy Policy in the following roles:

i. Ensuring that energy activities conform to the requirements of the laws, regulations, and best practices related to the industry's environmental management and performance.
ii. Overseeing the implementation of environmental and social assessments for energy programmes and projects.
iii. Monitoring energy projects' environmental attributes (air, water, biodiversity, soil quality assessment).
iv. Strengthening environmental auditing, environmental management systems, and inspection protocols for energy projects and programmes.
v. Mainstreaming strategic Climate Change Adaptation action plans in the energy sector.

5.3.12 Ministry Responsible for Disaster Management

This institution will be linked to the energy policy in the following roles:

i. Ensure that the national disaster management policy and action plan documents are integrated into the energy sector's environment, health, and safety (HSE) systems.
ii. Integrating risk assessment, financing, and investment into energy activities.

5.3.13 Ministry Responsible for Health

The roles of this institution in the energy sector include:

i. Ensuring the implementation of public and community health policies, plans, and programs in the energy sector, including HIV/AIDS.
ii. Collaborating with the energy sector to promote public health and raise awareness of the environmental and health impacts of traditional energy use.

5.3.14 Ministry Responsible for Water

The roles of this institution in the energy sector include:

i. Ensuring that energy-related activities are in harmony with the policies, plans and programs that support sustainable environmental conservation and the protection of water resources.

5.3.15 Ministry Responsible for Communication and Transportation

This institution has a significant and supportive role in the development of the energy sector through:

i. Ensuring the implementation of the National Transport Master Plan that addresses the requirements of energy-related activities.
ii. Supporting the development of communication and transportation infrastructure for energy activities.

5.3.16 Ministry Responsible for Agriculture

This institution plays a prominent role in ensuring the conservation and protection of agricultural lands by implementing the responsible ministry's policies, strategies, programs, and action plans.

5.3.17 Ministry Responsible for Blue Economy and Fisheries

This institution will be linked to energy in the following roles:

i. Ensuring conservation and protection of artisanal and deep-sea fishing from the energy sector's potentially polluting or marine degradation activities.
ii. Safeguarding the rights of the fishers and their respective fish landing sites from the potentially adverse impacts of the energy sector.
iii. Facilitating support in protecting biodiversity and marine migratory species from the adverse effects of offshore energy projects.

5.3.18 Ministry Responsible for Forestry

The roles of this institution concerning energy will include:

i. Strengthening the protection of forest reserves, mangrove biodiversity, and national parks, promoting climate adaptation, and implementing reforestation and afforestation programs.
ii. Restrain illegal logging for charcoal production and illegal importation of charcoal and firewood.
iii. Support continued efforts to safeguard the social forestry biomes and community management forest areas (COFMAs).
iv. Ensuring the protection of flora and fauna of ecological concerns under the Red Data Book.
v. Ensuring sustainable exploitation and utilization of earth materials (murram, rocks, sand, limestone) for the construction of energy-related infrastructure.

5..3.19 Ministry Responsible for Tourism

The Ministry responsible for Tourism has a significant and supportive role in the development of the energy sector through:

i. Ensuring that energy activities are in harmony with the development of tourism infrastructure, operation of tourist services, plans, and programs.
ii. Facilitating the implementation of sustainable tourism focused on protecting and conserving ecosystems, including beach layouts, coral reefs, lagoons, and the marine environment.

5.3.20 Ministry Responsible for Trade and Industry

This institution will be linked to the energy sector in the following roles:

i. Promoting a long-term economic pathway towards energy-related industrial investments in the country.
ii. Set standards for energy products, appliances, machinery, and vehicles.

5.3.21 Ministry Responsible for Information Technology

The role of this institution concerning energy includes:

i. Supporting an enabling ICT environment for data transmission and storage for energy activities.
ii. Ensuring the availability of the ICT infrastructure is necessary for communicating data and voice in energy activities.
iii. Promoting the use of ICT for the development and management of smart grids, energy efficiency monitoring, and integration of renewable energy sources into the energy system.

5.3.22 Ministry Responsible for Education

The role of this institution in implementing the Energy Policy will include:

i. Promoting advanced education and vocational training development for the energy sector.
ii. Supporting public awareness and knowledge on energy activities, including energy efficiency and safe use of energy-related products.

5.3.23 Ministry Responsible for Standards and Quality

The role of this institution in implementing the Energy Policy will include:

i. Establish, publish, promote, amend, or modify from time to time an updated version of a standard for the energy quality, quantities, and units of measurement to be used, which shall conform with the latest version of the international system of units.
ii. Undertake measures for energy quality control, quality assurance, and certification of commodities, services, and environment of all descriptions, as well as promote standardization in industry and trade.

iii. Plan or provide facilities for the examination and testing of energy-related commodities and any material or substance from or with which, and how, they may be manufactured, produced, processed, or treated.
iv. Recognize any accredited or approved institution in Zanzibar or outside which is engaged in the standardization of any energy related article or process or the improvement of the quality of any article or process.
v. Cooperate with regional and international organizations in all matters related to standardization and quality assurance and represent the country.
vi. Establish and enforce standards for integrating renewable energy systems, such as solar, in new constructions and infrastructure projects to promote sustainable energy use and the adoption of net metering.

5.3.24 Ministry Responsible for Employment

The role of this institution is to promote job creation through the adoption of renewable energy while ensuring sustainable environmental conservation.

5.3.25 Ministry Responsible for Gender

This institution plays a prominent role in ensuring that policies, plans, and programs regarding gender issues are integrated into the energy sector.

5.3.26 Role of the Civil Society

Civil society has a prominent role in ensuring that civil society organizations (CSOs), non-governmental organisations (NGOs), and community-based organizations (CBOs) play a greater role in promoting responsible advocacy in the energy sector. The civil society plays a central role in engaging local communities to implement CSR programs, local content programmes, awareness creation and enhancing positive dialogue within the sector. Furthermore, CSOs, NGOs, and CBOs can contribute greatly to ensuring accountability concerning energy issues. The media also plays an important role in monitoring policy implementation and informing the public.

5.3.27 Role of the Private Sector

The private sector has a critical role to play in the energy sector's performance:

i. Financing energy projects in power generation, building legal, financial, and technical capabilities, and developing and improving infrastructure and facilities.
ii. To deliver efficient investment and improve supply services to power sector customers.
iii. Promoting innovation and adoption of renewable energy technologies, contributing to the production of indigenous power and participating in net metering.

iv. Supporting the capacity building of local businesses and workforce development to ensure long-term sustainability and local content.
v. Contributing to climate adaptation and mitigation efforts through energy efficiency and sustainable practices that reduce the sector's carbon footprint.

5.3.28 Role of Media and Community

The media and community play significant roles in promoting national development and defusing information to influence and persuade public opinion and social actors on energy transition and the benefits of a low-carbon economy.

5.3.29 Zanzibar Presidential Delivery Bureau (ZPDB)

Ensure that government policies and projects are implemented by working hand in hand with its departments, frontline agencies, and independent contractors.

Chapter

6

Monitoring and Evaluation Framework

MONITORING AND EVALUATION FRAMEWORK

6.1 Monitoring

The policy implementation strategies will direct the monitoring activities associated with the Energy Policy. The Policy Implementation Plan will be developed based on the policy statements and strategies outlined in the policy. The plan will be developed through the consultative process and indicate the required activities, expected outputs, indicators, implementing institutions, resources, and timeframe for the implementation.

6.2 Evaluation

Implementation, monitoring, and coordination of the policy will be spearheaded by the Ministry responsible for Energy. The impact of the policy measures outlined in the Energy Policy will be monitored and assessed over time against benchmarks established in the implementation strategies and in line with the policy goals. Monitoring and evaluation exercises need to be conducted periodically. The following key tools will guide monitoring and evaluation:

i. Policy Implementation Strategy
ii. Zanzibar Power Master Plan (2025 - 2050)
iii. Energy Efficiency Master plan
iv. Electrification Master Plan
v. ZURA Act No. 7 of 2013
vi. ZECO Act No.3 of 2006
vii. Ministry responsible for Energy Strategic Plan

6.3 Policy Review

The Ministry responsible for energy shall conduct a Zanzibar Energy Policy review after five (5) years or when the need for review arises. Monitoring and evaluation outcomes and stakeholder feedback shall inform the review for necessary course correction.

6.4 Resources Mobilization

The implementation of this policy will be based on the government's central budget. The Ministry responsible for Energy will seek and organize other key sources of funding through Development Partners and donations from other energy stakeholders.

In addition to promoting the use of renewable energy, the Ministry responsible for Energy must coordinate access to various financial opportunities pertinent to the adoption of clean energy. However, to secure the green basket fund, the Government seeks to meet carbon credit criteria by prioritizing and encouraging the use of renewable energy.

6.5 Communication Strategy

To raise awareness of this Energy Policy, different communication strategies will be used to ensure that the broader community benefits from its adoption. These strategies shall include social media, newspapers, brochures, radio, television, and live drama performances. Community meetings will also be the main strategy for providing awareness to the large population at a minimum cost.