REPUBLIC OF KENYA

MINISTRY OF ENERGY AND PETROLEUM

STRATEGIC PLAN 2023-2027

KENYA 2030

JUNE 2024

Ministry of Energy and Petroleum	
Vision	A regional leader in provision of energy and petroleum for sustainable development
Mission	To promote access to clean, renewable, reliable and competitive energy and petroleum products and services through sustainable exploitation and management of energy and petroleum resources in Kenya
Core Values	Professionalism and Integrity Transparency and accountability Innovativeness Stakeholder participation Customer centric Teamwork and Commitment Sustainability Inclusivity
🏢	Kawi Complex, Off Red Cross Rd, Nairobi, South C
✉	P. O. Box 30582 – 00100 Nairobi Kenya info@energy.go.ke
☎	**Tel:** +254 (0) 20 4841000
Website	www.energy.go.ke
	https://www.facebook.com/energyminke
	@EnergyMinK

Foreword



The Energy and Petroleum sector in Kenya has significantly grown over the years in the midst of global shifts and transitions in generation and use. The sector is recognized as one of the key enablers in accelerating development of key sectors of the Country's economy. Notably, the demand for the various types of energy products has been growing over the years. This has necessitated continuous production and distribution of energy and petroleum products.

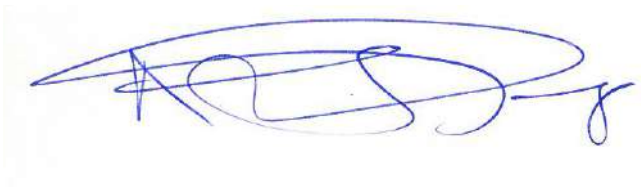
During the period 2018-2022, the sector registered significant achievements in power generation; transmission and electricity access as well as promoting transition to clean energy solutions; Exploration and Commercialization of the Oil and Gas Discoveries; Capacity Development for Oil and Gas; and Management of Petroleum Products. Specifically, installed electricity generation capacity increased by a net 40.9% from 2,351MW in July 2018 to 3,312MW, including the 200MW imported from Ethiopia. The contribution of renewable energy to the energy mix as at the end of the period was over 93%. In the same period 1,561.3Km route length (2,937.62km circuit route) of transmission line and 8 high voltage substation were constructed. The 641Km 500kV HVDC Ethiopia-Kenya Interconnector was completed. A total of 2.43 million customers were connected to the grid, pushing the overall connectivity from 6.78million to 9.21million customers and access rate to 75 per cent in the country. In addition, 4,088 public facilities were connected to electricity.

In pursuit of exploration and development of oil and gas discoveries, a total of 415,032 barrels of crude oil were produced out of which 414,777 barrels were exported under Early Oil Pilot Scheme. In addition, preliminary activities towards the construction of an 824 KM Lokichar-Lamu Crude Oil pipeline were undertaken. To enhance access to Liquified Petroleum Gas (LPG) by low income earning households, 35,000 6Kg LPG cylinders complete with burners and grills were distributed on a pilot basis.

The Ministry's Strategic Plan 2023-2027 is aligned to the Kenya Vision 2030 and its Fourth Medium Term Plan priorities. This is stipulated under the infrastructure pillar towards implementing the Bottom-up Economic Transformation Agenda (BETA), East Africa Community Agenda 2050, African Union Agenda 2063 and UN Agenda 2030 for Sustainable Development. It provides the Ministry with a clear strategy framework for executing its mandate and tracking its performance against set targets in pursuit of the envisioned socio-economic development.

In recognition of the increasing demand for energy and petroleum products and services, during the period 2023-2027, the Ministry will endeavour to increase and expand exploration and development of Oil and Gas discoveries as well as other untapped energy resources; increase power generation and access; and develop renewable energy. While doing this, the Ministry will exploit global technological advancement and regional integration. The Ministry commits to: Enhance energy generation mix; promote adoption of clean cooking solutions including the use of LPG; promote e-mobility; improve power reliability and competitiveness; and increase electricity connectivity especially in off-grid areas. The Ministry will further endeavour to expand the tax base, improve our foreign exchange balance and inclusive growth, promote exploitation and development of energy and petroleum resources as well as environmental conservation.

Finally, we commit to ensure full implementation of the plan towards achievement of the commitments made herein. The Ministry will strive to develop and implement policies and strategies that will enhance access to competitive, reliable, quality, safe and sustainable energy. It will offer leadership and coordinated efforts to the sector in order to realize the Strategic Plan objectives.



Hon James Opiyo Wandayi, EGH
CABINET SECRETARY

Preface and Acknowledgement



Mr. Alex K. Wachira, CBS



Mr. Mohamed Liban

The Ministry of Energy and Petroleum Strategic Plan 2023-2027 is the Fifth-Generation Strategic Plan which succeed the fourth generation Strategic Plan 2018-2022. Emerging from the situation analysis of the previous Strategic Plan, the Ministry identified four strategic issues from which four strategic goals were developed. These goals will be implemented through the following four Key Result Areas (KRAs); Energy and Petroleum Resource Development, Promotion and Commercialization; Access to energy and petroleum products and services: Environmental Sustainability in the sector; and Enabling Environment for the growth of the sector.

The Ministry of Energy and Petroleum developed its Strategic Plan in line with the *Revised Guidelines for preparation of Fifth-Generation Strategic Plans 2023-2027, June 2023,* from the State Department for Economic Planning (SDEP). The formulation of this Strategic Plan was a highly consultative and participatory process involving key stakeholders in the sector. This involved a review of implementation of the 2018-2022 Strategic Plans for the Ministry of Energy and the Ministry of Petroleum and Mining. The plan was validated by both internal and external stakeholders to inform its finalization, publication and dissemination for implementation.

Special thanks go to the Cabinet Secretary, Mr. Davis Chirchir for the strategic leadership and guidance throughout the preparation of the Plan.

We wish to thank all the Heads of Directorates and Departments, Chief Executive Officers of State Corporations under the Ministry and staff within the Energy Sector whose contributions informed the development of this Plan. Special recognition goes to the Ministerial Technical Working Committee under leadership of the Central Planning and Project Monitoring Departments from the respective two State Departments for their commitment and dedication in the preparation of this plan.

Finally, thanks to all our external stakeholders including representatives of Development Partners, National and County Governments, Civil Society and membership organizations, Private and Public Sector whose input further enriched the plan. In line with the Ministry's mandate on energy and petroleum policies formulation and implementation, we commit to

execute appropriate measures. We will further provide the necessary leadership and support to ensure successful delivery of the commitments in this plan in line with other Government's plans with a focus on the BETA.

This Plan is available for reference under downloads on the Ministry of Energy and Petroleum website www.energy.go.ke.

Alex K. Wachira, CBS
PRINCIPAL SECRETARY
STATE DEPARTMENT FOR ENERGY

Mohamed Liban
PRINCIPAL SECRETARY
STATE DEPARTMENT FOR PETROLEUM

Table of Contents

FOREWORD III

PREFACE AND ACKNOWLEDGEMENT V

LIST OF TABLES X

LIST OF FIGURES XI

ACRONYMS AND ABBREVIATIONS XIII

EXECUTIVE SUMMARY XVI

CHAPTER ONE 1

1. INTRODUCTION 1

1.0 OVERVIEW 1
1.1 STRATEGY AS AN IMPERATIVE FOR ORGANISATIONAL SUCCESS 1
1.2 THE CONTEXT OF THE STRATEGIC PLANNING 1
1.2.1 UNITED NATIONS 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT 1
1.2.2 AFRICAN UNION AGENDA 2063 2
1.2.3 EAST AFRICA COMMUNITY VISION 2050 3
1.2.4 CONSTITUTION OF KENYA 3
1.2.5 KENYA VISION 2030, BOTTOM-UP ECONOMIC TRANSFORMATION AGENDA AND FOURTH MEDIUM TERM PLAN 3
1.2.6 SECTOR POLICIES AND LAWS 4
1.3 HISTORY OF THE MINISTRY 5
1.4 METHODOLOGY OF DEVELOPING THE STRATEGIC PLAN 6

CHAPTER TWO 7

2. STRATEGIC DIRECTION 7

2.0 OVERVIEW 7
2.1 MANDATE 7
2.2 VISION STATEMENT 7
2.3 MISSION STATEMENT 7
2.4 STRATEGIC GOALS 7
2.5 CORE VALUES 8
2.6 QUALITY POLICY STATEMENT 8

CHAPTER THREE 9

3. SITUATIONAL AND STAKEHOLDER ANALYSES 9

3.0 OVERVIEW 9
3.1 SITUATIONAL ANALYSIS 9
3.1.1 EXTERNAL ENVIRONMENT 9
3.1.1.1 MACRO-ENVIRONMENT 9
3.1.1.2 MICRO-ENVIRONMENT 11
3.1.2 SUMMARY OF OPPORTUNITIES AND THREATS 13
3.1.3 INTERNAL ENVIRONMENT 14
3.1.3.1 GOVERNANCE AND ADMINISTRATIVE STRUCTURES 14
3.1.3.2 INTERNAL BUSINESS PROCESSES 14
3.1.3.3 RESOURCES AND CAPABILITIES 14

3.1.4 SUMMARY OF STRENGTHS AND WEAKNESSES 15
3.1.5 ANALYSIS OF PAST PERFORMANCE 15
3.1.5.1 KEY ACHIEVEMENTS 15
3.1.5.2 CHALLENGES 27
3.1.5.3 LESSONS LEARNT 27
3.2 STAKEHOLDER ANALYSIS 28

CHAPTER FOUR 33

4. STRATEGIC ISSUES, GOALS AND KEY RESULT AREAS 33

4.0 OVERVIEW 33
4.1 STRATEGIC ISSUES 33
4.2 STRATEGIC GOALS 33
4.3 KEY RESULTS AREAS 33

CHAPTER FIVE: 35

5. STRATEGIC OBJECTIVES AND STRATEGIES 35

5.0 OVERVIEW 35
5.1 STRATEGIC OBJECTIVES 35
5.2 STRATEGIC CHOICES 37

CHAPTER SIX: 39

6. IMPLEMENTATION AND COORDINATION FRAMEWORK 39

6.0 OVERVIEW 39
6.1 IMPLEMENTATION PLAN 39
6.1.1 THE ACTION PLAN 39
6.1.2 ANNUAL WORK PLAN AND BUDGET 67
6.1.3 PERFORMANCE CONTRACTING 67
6.2 COORDINATION FRAMEWORK 67
6.2.1 INSTITUTIONAL FRAMEWORK 67
6.2.1.1 STRUCTURE OF THE MINISTRY OF ENERGY AND PETROLEUM 67
6.2.1.1.1 DIRECTORATES/DEPARTMENTS/UNITS AND STATE CORPORATIONS UNDER THE MINISTRY 67
6.2.1.1.2 FUNCTIONS OF CABINET SECRETARY, PRINCIPAL SECRETARY, CHIEF ADMINISTRATIVE SECRETARY, DEPARTMENTS AND UNITS 70
6.2.2 STAFF ESTABLISHMENT, SKILLS SET AND COMPETENCE DEVELOPMENT 79
6.2.2.1 Skills Set and Competence Development 82
6.2.3 LEADERSHIP 82
6.2.4 SYSTEM AND PROCEDURES 85
6.3 RISK MANAGEMENT FRAMEWORK 86

CHAPTER SEVEN 90

7. RESOURCE REQUIREMENTS AND MOBILISATION STRATEGIES 90

7.0 OVERVIEW 90
7.1 FINANCIAL REQUIREMENTS 90
7.2 RESOURCE MOBILIZATION STRATEGIES 91
7.3 RESOURCE MANAGEMENT 91

CHAPTER EIGHT 92

8. MONITORING, EVALUATION AND REPORTING FRAMEWORK **92**

8.0 OVERVIEW 92
8.1 MONITORING FRAMEWORK 92
8.2 PERFORMANCE STANDARDS 92
8.3 EVALUATION FRAMEWORK 92
8.3.1 MID-TERM EVALUATION 94
8.3.2 END-TERM EVALUATION 94
8.4 REPORTING FRAMEWORK AND FEEDBACK MECHANISM 94

ANNEXES **96**

ANNEX I: ***TABLE 6.3 SKILLS SET AND COMPETENCE DEVELOPMENT*** 96
ANNEX II: QUARTERLY PROGRESS REPORTING TEMPLATE 116
ANNEX III: ANNUAL PROGRESS REPORTING TEMPLATE 117
ANNEX IV: EVALUATION REPORTING TEMPLATE 117

List of Tables

Table 3.1: Analysis of Macro-environment 9
Table 3.2: Summary of Opportunities and Threats 13
Table 3.3: Summary of Strengths and Weaknesses 15
Table 3.4: Generation Capacity: Installed Capacity and Effective Capacity 16
Table 3.5 List of Ongoing Transmission Lines 19
Table 3.6: Stakeholder Analysis 29
Table 4.1: Strategic Issues, Goals and Key Result Areas 33
Table 5.1: Outcomes Annual Projections 36
Table 5.2: Strategic Objectives and Strategies 37
Table 6.1: Action Plan Implementation Matrix 40
Table 6.2: Staff Establishment (Cadre, Optimal, In-post and Variance) 79
Table 6.2.1: Summary of Sector Staff Establishment 81
Table 6.3: Skills Set and Competence Development 981
Table 6.4: MEMBERSHIP TO SMLC 835
Table 6.5: Risk Management Framework 887
Table 7.1: Financial Requirements for Implementing the Strategic Plan 902
Table 7.2: Resource Gaps 902
Table 8.1: Outcome Performance Matrix 935

List of Figures

Figure 3.1: Installed generation capacity in percentage by technology as at June 2023 16
Figure 3.2: Energy generation mix in percentage as at June 2023 17
Figure 3.3: Energy generation mix from Jan 2023 to June 2023 from different technologies 23
Figure 6.1: Ministerial Proposed Organizational Structure 69

Definition of Concepts and Terminologies

Ancillary Services - Variety of operations beyond generation and transmission that are required to maintain grid stability and security.

Cross-cutting Issues - Matters that have relative significance across the range of Key Results Areas underpinned in this Strategic Plan.

Flagship Projects - These are projects with high impact in terms of employment creation, increasing country/county competitiveness, revenue generation, etc. They are derived from the Kenya Vision 2030 (and its MTPs).

Emerging Issues - This refers to recent occurrences /events /phenomena which might impact the sector negatively or positively. They include environmental, policy, legal, technological, economic, political, social and cultural.

Green Climate Fund (GCF) - A fund that was established to limit or reduce greenhouse gas (GHG) emissions in developing countries, and to help vulnerable societies adapt to the unavoidable impacts of climate change.

Integrated Development Planning - A process through which efforts of national and devolved levels of government and other relevant stakeholders are coordinated at local level, through which economic, social, environmental, legal and spatial aspects of development are brought together to produce a plan that meets the needs and sets the targets for the benefit of local communities.

Local Content - Kenyan materials and workforce used in production.

Mainstreaming - Integration of cross cutting actions into various stages of decision making by sectors.

Monitoring - Is a continuous assessment that aims at providing all stakeholders with early detailed information on the progress or delay of the ongoing assessed activities. It is an oversight of the activity's implementation stage.

Ullage – The empty space in a fuel tank.

Intertie- An interconnection permitting passage of current between two or more electric utility systems.

Acronyms and Abbreviations

AG	Attorney General
AI	Artificial Intelligence
BETA	Bottom – Up Economic Transformation Agenda
CAIDI	Customer Average Interruption Duration Index
CCG	Clean Cooking Gas
CEO	Chief Executive Officer
CIPU	Critical Infrastructure Police Unit
CSOs	Civil Society Organization
CSR	Corporate Social Responsibility
DG	Director General
EDMS	Electronic Document Management System
EMS	Energy Management Systems
EOPS	Early Oil Pilot Scheme
EPRA	Energy and Petroleum Regulatory Authority
EPT	Energy and Petroleum Tribunal
ESCO	Energy Service Companies
ESIA	Environmental Social Impact Assessment
FDP	Field Development Plan
FEED	Front End Engineering and Design
GDC	Geothermal Development Company
GoK	Government of Kenya
GWh	Gigawatt hour
HFO	Heavy Fuel Oils
HRM&D	Human Resource Management and Development
HV	High Voltage
HVDC	High Voltage Direct Current
IAEA	International Atomic Energy Agency
ICT	Information Communication Technology
IDF	Import Declaration Forms
IGAs	Investment Grade Audits
INEP	Integrated National Energy Plan
IOCs	International Oil Companies
IPP	Independent Power Producers
KAM	Kenya Association of Manufacturers
KEFRI	Kenya Forestry Research Institute
KenGen	Kenya Electricity Generating Company
KETRACO	Kenya Electricity Transmission Company
KFS	Kenya Forest Services
KJV	Kenya Joint Venture
KM	Kilometre
KNRR	Kenya Nuclear Research Reactor
KOSAP	Kenya Off-Grid Solar Access Project
KPC	Kenya Pipeline Company Limited
KPLC	Kenya Power and Lighting Company
KPRL	Kenya Petroleum Refineries Limited
KRAs	Key Results Areas

Kv	Kilo Volt
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
M&E	Monitoring and Evaluation
MD	Managing Director
MEPS	Minimum Energy Performance Standard
MICDE	The Ministry of Information, Communications and The Digital Economy
MIOG	Morendat Institute of Oil and Gas
MITI	Ministry Trade and Industry
MoE	Ministry of Education
MoE&P	Ministry of Energy and Petroleum
MoECC&F	Ministry of Environment, Climate Change and Forestry
MoI&NA	Ministry of Interior and National Administration
MoLPWH&UD	Ministry of Lands, Public Works, Housing and Urban Development
MoR&T	Ministry of Roads and Transport
MSD	Medium Speed Diesel
MT	Metric Tonnes
MTEF	Medium Term Expenditure Framework
MTP	Medium Term Plan
MV	Megavolt
MW	Mega Watt
MWe	Mega Watt of Steam equivalent
NEMA	National Environmental Management Authority
NGLs	Natural Gas Liquids
NITA	National Industrial Training Authority
NOCK	National Oil Corporation of Kenya
NSCC	National System Control Centre
NUPAC	National Upstream Advisory Committee
NuPEA	Nuclear Power Energy Agency
OMC	Oil Marketing Companies
OTS	Open Tender System
PC	Performance Contract
PCS	Public Service Commission
PDLF	Petroleum Development Levy Fund
PESTELE	Political, Economic, Social, Environmental, Technological, Legal Ethical
PIM	Public Investment Management
PIPS	Petroleum Integrated Planning System
PMS	Performance Management System
PPA	Power Purchasing Agreement
PPP	Public Private Partnership
PSC	Public Service Commission
PSCs	Production Sharing Contracts
PVs	Photovoltaic Systems
R&D	Research and Development
RAP	Resettlement Action Plan
RE	Renewable Energy
REREC	Rural Electrification and Renewable Energy Corporation
RETNET	Reinforcement of Electricity Transmission Network

RETs	Renewable Energy Technologies
ROI	Return on Investment
S/S	Substation
SAGAs	Semi-Autonomous Government Agencies
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SCM	Supply Chain Management
SDBT	State Department for Broadcasting and Telecommunications
SDE	State Department for Energy
SDGs	Sustainable Development Goals
SDP	State Department for Petroleum
SDPS	State Department for Public Service
SDPW	State Department for Public Works
SEIA	Strategic Environmental Impact Assessment
SESA	Strategic Environmental and Social Assessment
SLDP	Strategic Leadership Development Program
SLO	State Law Office
SP	Strategic Plan
SQL	Structured Query Language
STATCOM	Static Synchronous Compensator
SWH	Solar Water Heating
SWOT	Strengths Weaknesses Opportunities and Threat
TNA	Training Needs Assessment
TNT	The National Treasury
ToU	Time of Use
TVET	Technical and Vocational Education and Training
TVETA	Technical and Vocational Education and Training Authority
USD	US Dollars
VAT	Value Added Tax
VEEMA	Virtual Environment for Emergency Management and Analysis
VRE	Variable Renewable Energy

Executive Summary

The Ministry of Energy and Petroleum has developed a strategic plan spanning the period 2023-2027 with the mission "to promote access to clean, renewable, reliable and competitive energy and petroleum product and services through sustainable exploitation and management of energy and petroleum resources in Kenya". This aligns with its vision of becoming "a regional leader in the provision of energy and petroleum for sustainable development".

During the 2018-2022 planning period the following key achievements were realised in the Energy sub-sector as at June 2023:

a) In power generation, a net 961MW of power was installed increasing installed generation capacity by 40.9% from 2,351MW in 2018 to 3,312 MW against a target of 4,821MW with over 79.4% coming from renewable energy. The contribution of renewable energy to the energy mix as at the end of the period was over 93%. 95 geothermal wells were drilled in Olkaria, Menengai and Baringo-Silali availing 296.7MWe.
b) To expand and upgrade the national electricity grid, 1,561.3Km route length (2,937.6km circuit route) and 8 high voltage substation of transmission lines were constructed; 500kV High Voltage Direct Current (HVDC) interconnector line spanning over 1,100Km from Ethiopia to Kenya comprising a Kenyan portion of 641 Km was constructed with converter sub-station at Suswa to promote regional power; 6,280Km of medium voltage distribution lines and 52 distribution substations were constructed; the number of customers connected to electricity increased by 2.43million from 6.78million in July 2018 to 9.21million raising connectivity rate to 75% both on-grid and off-grid;
c) In promoting the alternative renewable energy technologies, the following were installed: 1,737 Solar PV systems in public institutions; 26 mini-grids; 75 water pumping solar PV systems for community boreholes; 170,027 standalone solar home systems; 6 Institutional and 743 domestic biogas plants in various parts of the country; 5 energy efficient charcoal kilns in energy centres; and 11,095 clean cooking units were disseminated. In addition, 1,652 hectares of hydro dam catchments were afforested and 402 woodlots established, and the Energy Act, 2019 was passed to strengthen policy, legal and institutional framework in the Energy sub-sector.

Under the Petroleum sub-sector, the following key achievements were realised during the 2018-2022 period:

d) A total of 415,032 barrels of crude oil were produced, trucked and delivered to Kenya Petroleum Refineries Limited (KPRL) storage terminal under Early Oil Pilot Scheme (EOPS), of which 414,777 barrels were exported; review of the draft South Lokichar Basin Field Development Plan to inform the development of the oil fields and optimization of the production strategy; development of a draft National Petroleum Master Plan; testing of 103,796 samples of petroleum products from different petroleum distribution points to ensure quality assurance of petroleum products in the market; and procurement of 319,341 6kg LPG cylinders, 72,000 2-burner cookers, 350,000 burners, 350,000 grills, and 60,000 hosepipes for distribution to low-income households while

35,000 6kg LPG cylinders complete with burners and grills were distributed in Kajiado and Machakos Counties on pilot basis.

e) In addition, identification of the Lokichar-Lamu Crude Oil pipeline route, Front End Engineering & Design (FEED), Environmental Social Impact Assessment (ESIA), land survey and demarcation for the pipeline route were undertaken; Upgraded Morendat Institute of Oil and Gas (MIOG) Campuses in Nairobi, Naivasha and Eldoret to Centres of Excellence in Oil and Gas where the institution was accredited by National Examination Board of Occupational Safety and Health (NEBOSH) to provide International General Certification in Safety Courses and upgraded the infrastructure in the three campuses and trained 2,537 officers from various institutions in various courses; The National Oil and Gas Seismic Processing Centre was also established where seismic legacy data was transcripted from old format to modern industry format both by media and file system; the National Data Centre for Oil and Gas was modernised; and the Geochemical and Petrophysical laboratory was constructed.

f) In ensuring security of supply of refined petroleum products, the Ministry expanded and commissioned the national pipeline network by a 20-inch Mombasa-Nairobi Pipeline (Line 5) with a design flow-rate of 1,000m^3/hr to enhance evacuation of petroleum products from Mombasa to Nairobi. Further, the 14-inch Mombasa-Nairobi Pipeline (Line 1) was decommissioned as it was no longer safe to operate having been in service for over 42 years against a design life of approximately 25 years. Additionally, a total of 33,658,000 Metric Tonnes (MT) of petroleum fuels were imported to the country and for the region; an additional storage of 149,872m^3 through construction of storage tanks with a capacity of 133,000m^3 in Nairobi and conversion of crude oil tanks of capacity of 16,872m^3 at KPRL to handle refined products.

g) The Petroleum Act, 2019 and its attendant regulations namely Petroleum (Liquefied Petroleum Gas) Regulations 2019, Petroleum (Pricing) Regulations, 2022 and Petroleum (Importation) Regulations, 2023 were developed.

The challenges the sector encountered during the period under review include: System Power Losses (Technical and commercial losses), high cost of extending energy and petroleum infrastructure to remote areas ,vandalism of energy and petroleum infrastructure, inaccessible infrastructure and insecurity in areas with high energy and petroleum development potential, unstable geo-political environment, complexity in land and right of way acquisition, diversion of fuel meant for transit, long lead time between project conceptualization and realisation, Community/stakeholders resistance to programmes and projects, and litigations leading to project delays and increased project costs.

Some of the emerging issues during the implementation included: The COVID-19 Pandemic that affected implementation of programmes and projects; world economic recession; emerging technologies in the sector such as E-mobility; Green hydrogen; Artificial Intelligence; Machine learning; Internet of Things; ancillary services costing; and international conflicts.

In consideration of the above challenges, the 2023-2027 plan has identified four strategic issues from which four strategic goals were developed to be implemented through four Key Result Areas (KRAs). To achieve these goals and targets, investments in energy and petroleum focus on programmes and projects with the overall objective of; enhancing electricity access, improving energy and petroleum security, ensuring environmental sustainability, promoting investments in oil and gas exploration, developing and commercialising Kenya's Petroleum resources, ensuring compliance with quality standards for refined petroleum products, enhancing service delivery and creating an enabling environment for the sector development. These will be achieved through continuous review of the cost of power and petroleum products, enhancing reliability and sustainability while factoring in emerging issues and trends.

The sector aims at expanding and strengthening energy and petroleum infrastructure whilst undertaking policy, legal and institutional reforms to support the economy and sustain its growth. Cross-cutting issues which include gender, climate change and disaster management among others will be mainstreamed to enhance inclusivity, security and environmental sustainability.

The following milestones are targeted during the implementation of this plan;

The Energy sub sector plans to focus on among other areas: increase the installed capacity to 3976.8MW; construct a total of 2,930Km route length of high voltage power transmission lines with 4,600KM circuit length and 36 high voltage substations; construct 31 distribution substations and upgrade 23 transmission substations as well as construct 1,183Km associated HV & MV Lines; Connect to electricity 2.3 million additional customers and 30,000 public facilities; Install 248 mini grids; and install 75,000 lanterns under the Public Lighting Project; drill 111 geothermal wells; and continue with nuclear energy development. Power supply reliability will be enhanced through system reinforcement, use of modern technologies, enhanced feeder refurbishment, preventive maintenance on the distribution network, automation of the grid (Smart Metering) and integrated security system to safeguard energy infrastructure against vandalism. Measures will also be taken to enhance promotion and development of alternative renewable energy technologies as well as enhancing energy efficiency and conservation. The subsector will also carry out feasibility study on pumped storage to enhance energy storage and automate transmission asset condition monitoring management system.

The Petroleum sub sector on the other hand will focus on : Exploration and Commercialization of the Oil and Gas discoveries; Capacity development for the extractive sector; Lokichar-Lamu Crude Oil Pipeline; Security of Supply of Petroleum Products through enhancement of Petroleum Products Pipeline Capacity, Expansion of National Pipeline Network and enhancement of Petroleum Products Storage Capacity; Quality Assurance of Petroleum Products; National LPG Enhancement Project; Development of Liquefied Petroleum Bulk Gas Storage Facilities; Gas to Wire Initiative in Block 9, Anza Basin; Geological Mapping, among others.

On the policy, legal and institutional framework, Energy Policy 2018 (under review), Energy Act, 2019 (under amendment) and the Petroleum Act, 2019 will be implemented in line with the ongoing reforms in the sector. In addition, finalisation of 32 regulations to operationalize the Energy Act, 2019 will be realised while attendant regulations to the Petroleum Act 2019 namely Petroleum (Pricing) Regulations, 2022 and Petroleum (Importation) Regulations will be implemented. Relevant regional and international conventions, treaties, protocols, bilateral agreements will also be ratified. Regulatory framework for ancillary services and Electricity Connection Policy will be developed.

A number of cross cutting issues identified as relevant to all aspects of energy and petroleum development will be mainstreamed in line with the changing social economic environment. These include; climate change, environmental sustainability, gender concerns, vulnerable groups and disaster risk reduction.

The Strategic Plan is divided into eight chapters. Chapter One provides the literature on strategy as an imperative for organisational success; Chapter Two discusses the strategic direction of the Strategic Plan, mandate of the Ministry, vision and mission statements, strategic goals and core values; Chapter Three presents the situational and stakeholder analyses as well as summary of opportunities, threats, strengths and weaknesses; Chapter Four focuses on strategic issues , goals and Key Result Areas; Chapter Five provides the strategic objectives and strategies; Chapter Six focuses on the implementation and coordination framework; Chapter Seven provides the resource requirements and mobilisation strategies while Chapter Eight presents the Monitoring, Evaluation and Learning Frameworks.

To implement the strategic plan effectively and efficiently, both financial and technical resources are required. An estimated total financial requirement of **Kshs. 2,544,471.37 million** is required. To raise these resources the Ministry will mobilise funding from GoK, development partners, leverage on ICT, engage the private sector through the Public Private Partnership (PPP), and collaborate with relevant stakeholders to realise the technical resources required.

To enhance successful implementation of the Plan, the Ministry will develop a robust Monitoring, Evaluation and Reporting (MER) Framework to track progress, access performance and inform evidence-based decision making.

CHAPTER ONE

1. INTRODUCTION

1.0 Overview

This chapter provides the context of strategic planning where national, regional and international development priorities and frameworks were taken into consideration. It also provides an overview of the policies and legislations guiding the Ministry's operations, a brief history of the Ministry and its mandate, and the methodology used in developing the Plan.

1.1 Strategy as an imperative for organisational success

This Strategic Plan will be the Ministry's blueprint that outlines programmes, projects and activities, for the period 2023-2027. It directs the Ministry's in pursuing its vision of becoming a regional leader in provision of energy and petroleum for sustainable development. The Plan also outlines the goals, strategic objectives, Key Results Areas, and expected outcomes over the implementation period. This Plan will guide the Ministry in making informed decisions on utilisation of resources for optimal results and lead to more efficient and impactful policies and programmes.

Implementation of this Plan will focus on exploitation of energy and petroleum resources; universal access to modern energy and petroleum products and services; environmental conservation and energy efficiency; and strengthen legal, policy and institutional regulatory framework. This will be done while ensuring everyone in the ministry is working towards this common goal.

1.2 The Context of the Strategic Planning

Development of this plan was guided by national development priorities, regional and international development frameworks namely; the United Nations 2030 Agenda for Sustainable Development, African Union Agenda 2063, East African Community Vision 2050, the Constitution of Kenya, Kenya Vision 2030, Bottom-Up Economic Transformation Agenda, the Fourth Medium Term Plan and the sector Policies and Legislations.

This Plan is aligned to the following national development priorities, regional and international development frameworks:

1.2.1 United Nations 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future.

The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The 17 Goals are all interconnected and geared towards leaving no one behind.

The Ministry contributes more to SDG 7 that seeks to ensure access to affordable, reliable, sustainable and modern energy for all. Target 7.1 of SDG 7 is crucial for vulnerable people to meet diverse basic services, such as access to drinking water and sanitation (target 6.1), access to health care (targets 3.7 and 3.8), access to education (target 4.1), access to information (target 9.c) and access to adequate and safe housing (target 11.1) with important contribution to reducing poverty in all its dimensions (target 1.2).

Affordable, sustainable, and clean energy uptake is a precondition for the achievement of SDG 5 on gender equality and empowerment of all women and girls which contribute to new opportunities for economic growth (SDG 8) and reduction in greenhouse gas emissions (target 13.1). Equally energy use efficiency (target 7.3) would contribute to economic growth (target 8.4) with a significant impact on the environment (target 13.1) and at the same time would improve economic productivity (target 8.2).

The increase in the use of renewable energy (target 7.2) is critical in strengthening resilience and adaptive capacity to climate-related hazards (target 13.1). It contributes to reducing contamination of hazardous chemicals in air, water and land (target 12.4), with significant impact on reducing the number of deaths and illness due to pollution (target 3.9). Investments in technological innovation towards SDG 7 would stimulate innovations for water efficiency in water-pumping and irrigation systems (target 6.4), and would stimulate creation of new jobs (target 8.5), decarbonize the transport sector allowing better air quality in cities (target 11.2), ensure sustainable production and consumption patterns (target 12.a) and reduce fuel consumption with environmental benefits (targets 12.c and 13.2).

1.2.2 African Union Agenda 2063

African Union Agenda 2063 ‘The Africa We Want’ is a blueprint and masterplan for inclusive growth, sustainable development and a strategy to optimise the use of Africa’s resources for the benefit of all Africans. One of the aspirations of Agenda 2063 is A Prosperous Africa, based on Inclusive Growth and Sustainable Development, where countries are expected to ensure adoption of Science, Technology and Innovations in manufacturing/industrialization and value addition for enhanced transformation of their economies.

On energy, the Agenda 2063 aims at ensuring Africa realises its full potential in energy production, and in the foreseeable future provide energy to other regions in demand. The energy vision in this regard involves the utilisation of the continent’s energy sources to foster economic growth and eradicate energy poverty.

In line with the Vision of Agenda 2063 and the ‘Just Energy Transition’ declaration of the Africa Union, the Ministry will promote, exploit and develop energy resources in the country that include fossil fuels and renewable energy resources while protecting the environment to promote Africa's social economic development.

1.2.3 East Africa Community Vision 2050

The Vision aims at making the region a global competitive upper-middle income region with a high quality of life for its population based on the principles of inclusivity and accountability. It lays out a broad East Africa's perspective in which the region optimizes the utility of its resources to narrow the gap in terms of social wellbeing and productivity. This vision will be realized through long-term transformation, value addition and growth of infrastructure and transport; energy and information technology; and industrialization sectors needed for accelerating momentum for sustained growth over the long term.

The East African Community has developed a Policy on Energy and Petroleum, whose objective is to ensure sustainable, adequate, affordable, competitive, secure and reliable supply of energy to meet regional needs at the least cost, while protecting and conserving the environment. The region will emphasize access, capacity, efficiency and sustainability of energy. In line with the Vision, the Ministry is enhancing exploration and development of energy and petroleum resources in the country; and development of energy and petroleum infrastructure networks to enhance access to energy and petroleum products and services in the region. The development of regional power pooling transmission interconnectors, Kenya-Tanzania Natural Gas Pipeline, Kenya-Uganda-Rwanda-Burundi oil products pipeline and Lokichar-Lamu Crude Oil Pipeline are ongoing; while renewable energy, e-mobility, green hydrogen, and energy efficiency and conservation technologies have been adopted.

1.2.4 Constitution of Kenya

The Constitution of Kenya, vests the ownership of natural resources in the national government in trust for the people of Kenya. The Constitution also establishes several principles which are applied in energy and petroleum exploration and development. These include the national values and principles of governance (Article 10), protection and promotion of the right to protect the environment for the benefit of present and future generations (Article 42(a)), obligations in respect of the environment (Article 69(1)), protection and promotion of consumer rights (Article 46), principles of public finance (Article 201), among others. These constitutional principles are more particularly prescribed in legislation including the Energy Act, 2019 and Petroleum Act, 2019 and regulations to operationalise the two Acts. The Acts provide the framework for the contracting, exploration, development of energy and petroleum resources and utilization of the products and services.

1.2.5 Kenya Vision 2030, Bottom-Up Economic Transformation Agenda and Fourth Medium Term Plan

Under Vision 2030, Kenya aims to become "a middle-income, newly-industrializing country offering a high quality of life to all its citizens in a secure environment", built on the economic, social and political pillars. The Vision 2030 has identified energy as an enabler to the realization of its objective. The Ministry will enhance optimal exploitation and

utilization of energy and petroleum resources while increasing investment in infrastructure for production and commercialization of the resources thus contributing to the country's economic growth and transformation.

The Government has adopted the Bottom-up Economic Transformation Agenda (BETA) whose main objective is to improve the livelihoods and welfare of Kenyans. In line with this, the Government aims to implement policies and structural reforms and promote investment in the five Sectors namely: Agriculture; Micro Small and Medium Enterprise Economy; Housing and Settlement; Health Care; and Digital Superhighway and Creative Economy that are expected to have the highest impact to the masses at the base of the economic pyramid. The implementation of this priority programme/projects will contribute to the realization of the six (6) objectives: Bringing down the cost of living, eradicating hunger, creating jobs, expanding the tax base, improving our foreign exchange balance and inclusive growth.

Under BETA, the Ministry commits to: turn around Kenya Power by delinking government development initiatives, leaving Kenya Power to operate on commercial principles; accelerate geothermal resources; develop liquified natural gas storage facilities; support the rollout of e-mobility; improve power reliability; accelerate electricity connectivity in off-grid areas; initiate a policy, regulatory and financing framework for off-grid community owned development projects (mini and micro grids); support establishment of a single consumer protection oversight agency; and provide financial and tax incentives for public service vehicles and commercial transporters to convert to electric vehicles.

In order to expand the tax base, improve our foreign exchange balance and inclusive growth the Ministry will promote exploitation and development of energy and petroleum resources such as oil, gas, coal, wind, solar, geothermal, hydro, green hydrogen and nuclear.

1.2.6 Sector Policies and Laws

The policies and legislations that guide the operations of the Ministry are: Energy Policy 2018, Gender Policy in Energy, 2018; the Petroleum Act, 2019, the Energy Act, 2019 and the Petroleum Development Fund Act, 1991. The Petroleum Act, 2019 has three (3) attendant regulations namely; *the Petroleum (Liquefied Petroleum Gas) Regulations, 2019, the Petroleum (Pricing) Regulations, 2022 Petroleum (Importation) Regulations, 2023, Petroleum (Exploration and Production) Regulations, 1984, Energy (Petroleum Strategic Stock) Regulations, 2008; Energy (Minimum Operational Stock) Regulations, 2008; Petroleum Development Levy Order, 2020;* The Energy Act, 2019 has eleven (11) attendant regulations namely: *the Energy (Appliances Energy Performance and Labelling) Regulations, 2016; Energy (Energy Management) Regulations, 2012; Energy (Solar Photovoltic System) Regulations, 2012; the Electric Power (Electrical Installation Works) Rules, 2006; the Energy (Complaints and Disputes Resolution) Regulations, 2012; the Energy (Electrical Licensing) Regulations, 2012; Kenya National Distribution Grid Code; Kenya National Transmission Grid-Code; the Feed-in-Tariff, 2021; Benchmark Tariffs for Solar Renewable Energy Auctions Policy, 2021; and Benchmark*

Generation Tariff for Geothermal Power, 2021. The Ministry has signed treaties with the International Renewable Energy Agency (IRENA) and International Solar Alliance (ISA). These Acts, Regulations and policies provide the legal, institutional and regulatory context under which the strategic plan will be implemented.

The treaties are aimed at promoting a widespread adoption and sustainable use of all forms of renewable energy in the pursuit of sustainable development energy access, security and low carbon economic growth and prosperity.

1.3 History of the Ministry

The Ministry of Energy was established in 1976 and has evolved over time. In 2015 during the reorganization of Government, the Ministry of Energy was renamed the Ministry of Energy and Petroleum comprising two State Departments; the State Department for Petroleum and the State Department for Energy dealing with petroleum and energy matters respectively. In 2018, the State Department for Petroleum was merged with the Ministry of Mining to form the Ministry of Petroleum and Mining.

In the organization of government in November 2023 vide Executive Order No. 2; the State Department for Petroleum was merged with the Ministry of Energy to form the Ministry of Energy and Petroleum with two State Departments namely: the State Department for Energy and the State Department for Petroleum.

The functions of the Ministry of Energy and Petroleum are as follows:

State Department for Energy

i) National Energy Policy Development and Management;
ii) Thermal Power Development;
iii) Rural Electrification Programme;
iv) Energy Regulation, Security and Conservation;
v) Hydropower Development;
vi) Geothermal Exploration and Development; and
vii) Promotion of Renewable Energy.

State Department for Petroleum

i) Petroleum Policy;
ii) Strategic Petroleum Stock Management;
iii) Management of Upstream Petroleum Products Marketing;
iv) Oil and Gas Exploration Policy Development;
v) Oil/Gas Sector Capacity Development;
vi) Petroleum Products Import/Export Marketing Policy Management;
vii) Licensing of Petroleum Marketing and Handling; and
viii) Quality Control of Petroleum Products.

The following are the State Corporations/Institutions under the Ministry of Energy and Petroleum:

State Department for Energy

i) Kenya Electricity Generating Company PLC (KenGen);
ii) Nuclear Power and Energy Agency (NuPEA);
iii) Rural Electrification and Renewable Energy Corporation (REREC);
iv) Energy and Petroleum Regulatory Authority (EPRA);
v) Kenya Power and Lighting Company PLC (KPLC);
vi) Kenya Electricity Transmission Company (KETRACO); and
vii) Geothermal Development Company (GDC).

State Department for Petroleum

i) National Oil Corporation of Kenya (NOCK),
ii) Kenya Pipeline Company (KPC) Limited;
iii) Kenya Petroleum Refineries Limited (KPRL); and
iv) Petroleum Development Levy Fund (PDLF).

1.4 Methodology of Developing the Strategic Plan

The development of this Strategic Plan commenced with the formation of a Ministerial Technical Working Committee (MTWC), which spearheaded the process of preparing the Plan under the leadership of the Top Management in the Ministry. The process involved preparation of a draft Strategic Plan for the period 2023-2027 where a review of implementation of the 2018-2022 Strategic Plans for the Ministry of Energy and the Ministry of Petroleum and Mining was undertaken, and a strategic framework for the 2023-2027 period was developed. The process also involved sharing of the draft Plan with the internal and external stakeholders for validation and feedback; incorporation of stakeholders' views; and finalization, publishing and dissemination.

CHAPTER TWO

2. STRATEGIC DIRECTION

2.0 Overview

This chapter presents the mandate of the Ministry, the vision statement which gives the Ministry's aspiration for the future and the mission statement that articulates the purpose of the Ministry. Further, it presents the strategic goals to be realized by addressing the strategic issues in the sector, the core values that guide the Ministry's operations and the quality policy statement.

2.1 Mandate

The mandate of the Ministry of Energy and Petroleum as anchored in the Executive Order No.2 of November, 2023 is:

i) National Energy Policy Development and Management;
ii) Thermal Power Development;
iii) Rural Electrification Programme;
iv) Energy Regulation, Security and Conservation;
v) Hydropower Development;
vi) Geothermal Exploration and Development;
vii) Promotion of Renewable Energy;
viii) Petroleum Policy;
ix) Strategic Petroleum Stock Management;
x) Management of Upstream Petroleum Products Marketing;
xi) Oil and Gas Exploration Policy Development;
xii) Oil/Gas Sector Capacity Development;
xiii) Petroleum Products Import/Export Marketing Policy Management;
xiv) Licensing of Petroleum Marketing and Handling; and
xv) Quality Control of Petroleum Products.

2.2 Vision Statement

A regional leader in provision of energy and petroleum for sustainable development

2.3 Mission Statement

To promote access to clean, renewable, reliable and competitive energy and petroleum products and services through sustainable exploitation and management of energy and petroleum resources in Kenya

2.4 Strategic Goals

The Ministry has identified four Goals that will guide its operations and decisions during the 2023-2027 period. These include:

i) Sustainably exploited Energy and Petroleum resources;
ii) Universal access to modern energy and petroleum products and services;
iii) Sustainable environment and energy efficiency; and
iv) Strong legal, policy and institutional framework.

2.5 Core Values

The Ministry will adhere to the following core values in the discharge of its core mandate;

i. Professionalism and Integrity through adherence to high standards of professional competence and ethics;
ii. Transparency and accountability through enhancing openness, sharing of information and taking responsibility;
iii. Innovativeness by promoting creativity and reward new solutions and ideas in creating values for customers and stakeholders;
iv. Stakeholder participation by involving stakeholders in implementation of programmes and projects;
v. Customer centric by putting the needs of customers first in service delivery;
vi. Teamwork and Commitment by promoting collaboration and information sharing;
vii. Sustainability through adoption of best practices to ensure efficient management of resources; and
viii. Inclusivity and impartiality by ensuring participation and equitable sharing of benefits.

2.6 Quality Policy Statement

The Ministry is committed to facilitating the provision of quality goods and services geared towards satisfying the needs and expectations of our esteemed customers. In this regard, the Ministry commits to: facilitate provision of clean, renewable, competitive, and reliable energy and petroleum products and services for national development while protecting the environment; formulate and implement policy, legal and regulatory frameworks for energy and petroleum; and promote efficient utilization and conservation of energy and petroleum products.

The Ministry commits to adhere to the highest quality standards as stipulated in the Citizen's Service Delivery Charter, undertake business process reengineering with a view of continuous improvement in service delivery and implement the strategies outlined in this Strategic Plan.

CHAPTER THREE
3. SITUATIONAL AND STAKEHOLDER ANALYSES

3.0 Overview

This chapter entails situational and stakeholders' analyses. The situational analysis provides an analysis of external environment (macro-environment, micro-environment, industry environment, market analysis); Summary of opportunities and threats; Internal environment (governance and administrative structures, internal business processes, and resources and capabilities), summary of strengths and weaknesses; and analysis of past performance (key achievements, challenges and lesson learnt).

3.1 Situational Analysis

Situational analysis comprises external environment, summary of opportunities and threats, internal environment, summary of strength and weaknesses and analysis of past performance. This is discussed below.

3.1.1 External Environment

The external environment discussed in this section entails analysis of macro-environment and micro-environment.

3.1.1.1 Macro-environment

The macro-environment is analysed using Political, Economic, Social, Technological, Ecological and Legal (PESTEL) factors as shown in ***Table 3.1: Analysis of Macro-environment Table 3.1*** below.

Table 3.1: Analysis of Macro-environment

CATEGORY	FACTOR	DESCRIPTION
Political	Political stability	• Creates a conducive environment for investment in the sector • Local politics influence implementation of programmes and projects
	International boundary disputes with Kenya neighbours	• Stoppage of energy and petroleum resource exploitation and development
	International relations	• Support in implementation of programmes and projects • Availability of market for energy and petroleum products and services • Regional competition among countries
	Foreign trade policy	• Facilitates trade in energy and petroleum products and services

CATEGORY	FACTOR	DESCRIPTION
	Regional Integration	• Active participation in regional energy and petroleum programmes and projects • Lobbying for fast-tracking of cross border projects in the regional bodies
	Change of Government development priorities	• Alignment of programmes and projects to government priorities • Enhance political goodwill through stakeholder participation and engagement.
	Devolution of Government	• Enhance active involvement by national and county governments in the project implementation process • Integrated national energy planning and implementation
Economic	Exchange rates	• Affects the costs of energy and petroleum inputs, products and services
	Economic growth	• Have effects on demand for energy and petroleum products and services.
	Inflation	• Impacts cost of infrastructural development and prices of energy and petroleum products. • Affects consumer purchasing power
	Interest rate	• Affects debt financing for infrastructural development for Programmes and projects
	Competing Government priorities for the limited resources	• Ensure innovative resource mobilization and efficient utilization of funds
	High cost of land for projects	• Undertake participatory feasibility studies and community engagements. • A multi-sectoral approach to land acquisition for public infrastructure projects
	Government fiscal policies	• Influences the demand and supply of energy and petroleum products and services • Tax incentives encourage investment and trade
Social	Demographics	• Influence demand for energy and petroleum products and services • Maximize utilization of existing infrastructure
	Education level	• Expertise in implementation of programmes and projects • Ease of engaging lobby groups on energy and petroleum programmes and projects
	Social license	• Enhances project support by the public and communities
	Cultural stability	• Cultural sites and beliefs impact on project implementation
	Mainstream and social media influence	• Influences public perception on energy and petroleum programmes and projects • Enhances information sharing and communication

CATEGORY	FACTOR	DESCRIPTION
Technological	Internet connectivity	• Facilitates effective monitoring of organization's operations • Enhances communication within and outside the organization • Creates opportunity to enhance adoption of emerging technology • Cyber threats
	Innovation and Advancement in technology	• Facilitates solutions to enhance efficiency and effectiveness
	Intermittencies in the power system	• There are opportunities in use of technology for their integration to the power system • Causes grid instability thus affecting power reliability
Environmental	Natural disasters	• Leads to infrastructural damage • Potential invocation of force majeure on contractual obligations
	Pollution and other externalities	• Derails or leads to termination of implementation of programmes and projects • Causes escalations in costs of programmes and projects
	Climate change	• Affects availability and reliability of resources
	Environmental activism	• Influences implementation of programmes and projects
Legal	Health and safety Laws	• Safeguards health and safety in operations and products
	Import and export laws	• Facilitate importation and exportation of goods, products and services.
	Competition laws	• Encourage fair competition among industry players
	Consumer protection laws	• Quality assurance of products and services
	Land and environmental laws and policies	• Provides a framework for land acquisition and use for programmes and projects
	Global, regional and national policy changes	• Affects access to programmes and projects funding, market for products and services, and project implementation
Ethical	National values and principles of governance	• Promote good governance • Enhance sustainable development

3.1.1.2 Micro-environment

Micro-environment encompasses internal factors such as consumers, employees, stakeholders, suppliers and media, marketing intermediaries, general public, workers and their union. Some of the internal factors are as discussed below.

a) Suppliers

Energy and petroleum value chain has a variety of suppliers ranging from common user items to highly specialized goods and services. Most of the common user items are readily available in the market with many having substitutes. However, highly specialized goods and services are mainly procured from specific suppliers both within and outside the country.

b) Customers

Adoption and uptake of energy and petroleum products and services is determined by cost, availability, reliability, quality, safety and cultural factors among others. These parameters differ from one region to another within the country. Consumers of energy and petroleum products and services can be categorised into households/domestic, commercial, industrial and transport. Commercial, industrial and transport are large scale consumers of energy and petroleum products and services while households/domestic are small scale.

c) Labour market

Various skills are required for optimal exploitation of energy and petroleum resources. These include skills such as human resource, development and management, financial analysis and modelling, risk management, project management and planning, communication, ICT, engineering, artificial intelligence (AI) among others. Some of these skills are readily available within the country and are utilized by the Ministry to execute its mandate. Technical areas such as exploration and development, power generation, transmission and distribution and resource assessment, require highly specialised skills and expertise. However, these skills are scarce and therefore sourced from outside the country to bridge the gap.

d) General Public

General public forms a major stakeholder constituency in the implementation of energy and petroleum programmes and projects. Some of these projects require sites and wayleaves, which call for community and stakeholder engagements in compensation of persons affected by projects, conservation of environment and cultural sites, among others. The public plays a key role in these engagements and in provision of the required labour force. In addition, public perception on energy and petroleum products and services is key to their uptake and adoption.

e) Creditors

The Ministry's programmes and projects are capital intensive and require enormous financial and technical resources. The Government funding is not adequate to cater for the resource requirements and therefore additional resources are mobilised from other sources. These sources include development partners, international organisations and the private

sector. Access to credit facilities comes with different terms and conditions that the Ministry is required to comply with.

3.1.2 Summary of Opportunities and Threats

The summary of opportunities and threats is presented in ***Table 3.2*** below.

Table 3.2: Summary of Opportunities and Threats

Environmental Factor	Opportunities	Threats
Political	• Policy support by the Government. • Political goodwill and stability. • Support from other Ministries Departments Agencies and County Governments (MDACs) • Goodwill from development partners, international agencies, private sector and Civil Society Organizations to support the sector programmes and projects.	• Policy changes • Geopolitical conflicts • Conflicts between and among MDACs • Regulatory burden
Economic	• Oil and Gas discoveries in the country • A fairly well-developed Infrastructure • Vast sedimentary basin covering 83% of the country surface area for exploration and development of oil and gas • A variety of untapped energy resources for exploitation and development • Ready and growing domestic and regional demand for Energy and Petroleum products and services	• Unsustainable resource exploitation • Volatility of the local currency • Volatility of commodity prices • Global economic recession • Inadequate road infrastructure in remote exploration areas
Social	• Corporate Social Responsibility • Social media and engagements (SMP)	• Insecurity and vandalism of infrastructure. • Activism and Protests • Negative public perceptions • Unmet stakeholder expectations
Technological	• Global technological advancement • Automation and Efficiency • Data analytics and insights	• Grid defection • Dependency on technology providers • Cyber attacks • Rapid Technological changes • Skill gaps • Privacy concerns
Legal	• Existing policies, Laws and regulations	• Litigations • Compliance challenges
Ecological	• Adopting sustainable practices and	• Climate change and natural

	products • Subsidies for eco-friendly actions	disasters • Compliance costs

3.1.3 Internal Environment

This section entails analyses of governance and administrative structures, internal business processes, and resources and capabilities

3.1.3.1 Governance and Administrative Structures

The Ministry is headed by the Cabinet Secretary and assisted by two Principal Secretaries each responsible for a State Department. The Cabinet Secretary provides overall policy and strategic direction and is also responsible for strengthening institutions to effectively operationalize their mandate. The Principal Secretaries are the Accounting Officers of the respective State Departments and are responsible for effective administration and management of the Directorates/Divisions/Units.

Each State Department consists of technical directorates, and administrative and support Departments/Units. The technical directorates, and Administrative and Support Departments /Units are headed by Secretaries/Commissioners/Directors, who report to the Principal Secretary. In addition, the State Department for Energy has seven State Corporations while the State Department for Petroleum has four state corporations. Each State Corporation is headed by a Chief Executive Officer who reports to the Principal Secretary of the respective State Department.

3.1.3.2 Internal Business Processes

The Ministry's internal business processes and systems are designed to ensure efficient energy management, resource utilization, policy formulation, and infrastructure development. These processes include: Policy Formulation and Planning; Regulatory Framework and Compliance; Licensing and Permitting; Resource Exploration and Management; Renewable Energy Development and Integration; Infrastructure Development; Energy Efficiency and Conservation; Stakeholder Engagement; Data Collection and Analysis; Research and Innovation; procurement; monitoring, evaluation and reporting; and complaints and feedback mechanisms among others. Some of these processes are manual and require a lot of documentation while others are automated and digitized. The Ministry continuously upgrades and updates its processes and systems depending on technological advancements and needs.

3.1.3.3 Resources and capabilities

The Ministry has tangible resources which include financial, physical infrastructure and human resources and intangible resources which include skills, innovation, creativity, customer loyalty, employee motivation, networks, alliances and reputation. These resources are valuable for the realization of the Ministry's mandate. The tangible resources can be imitated at a cost. However, the intangible resources are scarce, inimitable and not substitutable thus require enormous resources and time to develop. The Ministry has over

the years developed both the tangible and intangible resources though there are still resource gaps that need to be addressed for optimal functioning.

3.1.4 Summary of Strengths and Weaknesses

Table 3.3: Summary of Strengths and Weaknesses

Factor	Strengths	Weaknesses
Governance and Administrative structures	• Elaborate legal, policy and institutional framework • Well defined roles and responsibilities • Compliance structures • Proper performance management system • Supportive leadership • Clear mandate and vision	• Inadequate feedback and complaints handling mechanisms • Weak succession planning and management
Internal Business Processes	• Advancement in specialized equipment and new technologies • Resource optimization • Process scalability	• Inadequate ICT equipment • Lack of an integrated Monitoring and Evaluation Framework • Inadequate specialized equipment and technologies
Resources and Capabilities	• Skilled manpower • Improved resource mobilization strategy	• Lack of centralized data and information for planning and decision making • Inadequate Human Resource • Inadequate knowledge management

3.1.5 Analysis of Past Performance

3.1.5.1 Key Achievements

A. Energy Key Achievements

a) Power Generation

i) Growth in Electricity Demand and Generation Capacity

Kenya's energy demand growth during MTP III was as a result of factors such as population increase, urbanization, extensive electrification projects, and continuous growth in the manufacturing, agricultural, and other sectors. During the period, the sector targeted to increase the peak demand to 3,348MW. The total installed capacity was projected to increase to 5,221MW generated from the following sources; 917 MW Hydro, 1,565MW Geothermal, 560 MW Thermal, 442 MW Solar, 826 MW Wind, 185 MW Biomass, 328MW Coal and 400MW Import.

The generation capacity expanded with the installed capacity increasing by 40.9% from 2,351MW in July 2018 to 3,312MW as at June 2023. Renewable energy sources

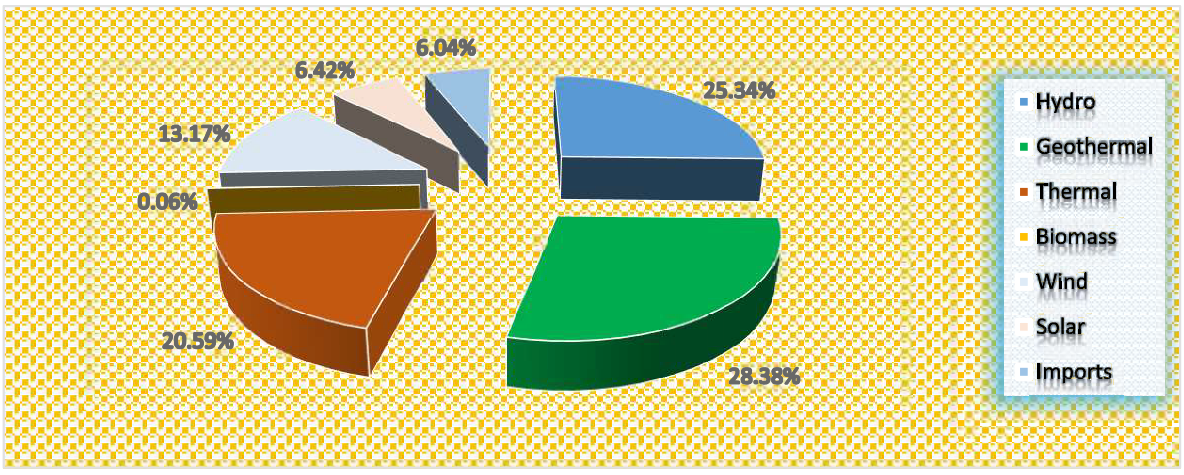
(geothermal, hydro, wind and solar) contributed 79.4% of the total installed capacity as indicated in ***Table 3.4***.

Table 3.4: Generation Capacity: Installed Capacity and Effective Capacity

Generation Type	July 2018		June 2023		
	Installed MW	Effective MW	Installed MW	Effective MW	Percentage (%) Contribution (Effective)
Hydro	826	805	839	810	25.84%
Geothermal	663	657	940	841	26.82%
Thermal (MSD)	716	690	586	566	18.06%
Thermal (GT)	60	55	60	56	1.79%
Wind	26	26	436	426	13.57%
Biomass	28	24	2	2	0.06%
Solar	-	-	210	210	6.70%
Ethiopia Imports			200	200	6.38%
Interconnected System	**2,319**	**2,256**	**3,273**	**3,112**	**99.20%**
Off grid thermal	30	21	36	23	0.73%
Off grid Solar	0.66	0.49	1	0	0.00%
Off grid Wind	0.55	0.52	2	2	0.06%
Sub-Total-Off grid system	31.2	22.01	38	25	0.80%
Total Capacity MW	**2,351**	**2,278**	**3,312**	**3,137**	**100.00%**

Contribution of individual energy technologies to the total installed capacity is as shown in ***Figure 3.1***.

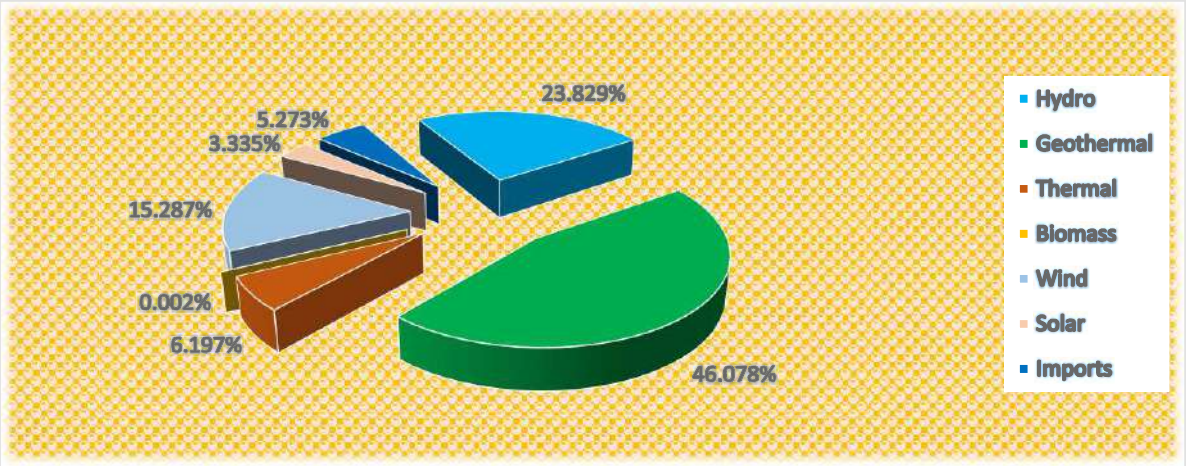
Figure 3.1: Installed generation capacity in percentage by technology as at June 2023



Key projects that were completed during the period includes: Geothermal projects- 172.3MW Olkaria V, 86MW Olkaria 1 AU 6, 25MW Geothermal projects Wellheads; Wind Plants- 300MW Lake Turkana Wind Power and 100MW Kipeto wind; Solar Plants- 40MW Malindi solar group, 40MW Cedate, 40MW Selenkei, 50MW Garissa Solar and 40MW Alten; and small hydro's-0.51MW Kianthumbi, 3.6MW KTDA (North Mathioya Metumi), 2MW Gura KTDA, 0.5MW Chania KTDA; and 200MW Ethiopia Import.

During the period, the peak demand increased from 1,812MW in July 2018 to 2,134MW in June 2023. The generation mix as at June 2023 is as shown in ***Figure 3.2*** with 93.8% of the energy mix coming from renewable sources.

Figure 3.2: Energy generation mix in percentage as at June 2023



ii) Geothermal Steam Development

The sector targeted to drill 290 geothermal wells with steam equivalent of 1,200MWe. This was to be realized from Olkaria, Menengai and Baringo-Silali geothermal fields. During the five-year period, construction of the 35 MW power plant started at Menengai. 6 wells were drilled at Menengai, 15 wells drilled at Paka and 2 exploration wells drilled at Korosi.

In addition to the development of steam for power generation, the sector initiated and completed five pilot steam direct use projects at Menengai namely; heated greenhouse, heated aquaculture ponds, geothermal powered pasteurizer, geothermal powered laundry and geothermal powered grain dryer.

iii) Nuclear Power Development

The target was to develop policies and legislation, undertake public awareness, identify suitable sites for the construction of nuclear power plants; carry out research, development and innovation on energy technologies as well as capacity building for nuclear power development programmes.

During the period, the following were achieved: Two nuclear power plant sites (potential and preferred) were identified, including the acquisition of 65 acres of land for the KNRR

site at Konza metropolis; 95 civic/public education forums on nuclear energy were conducted; 196 personnel trained on nuclear related courses locally and internationally; National Nuclear Policy developed; Nuclear Regulatory Act, 2019 was enacted; The Strategic Environmental & Social Assessment (SESA) was completed; The Energy Sector and Research and Capacity Building Directorate was established in N*u*PEA to coordinate the research, capacity building and innovation efforts of the Energy and Petroleum sub-sectors; Developed Human resource capacity building master plan and implementation framework in the energy and petroleum sector; the fourth Country Programme Framework for 2017–2022 which identifies priority areas for transfer of nuclear technology and support for the development of the Nuclear Power Programme from the International Atomic Energy Agency (IAEA) was signed and successfully implemented; Feasibility study for the Kenya Nuclear Research Reactor Project(KNRRP) was done; and developed a coordination framework for R&D in the energy and petroleum sector.

iv) Coal Power Development

The Sector targeted to construct the Lamu Coal-fired power plant in the period 2018-2022, develop a Resettlement Action Plan (RAP) in Mui Basin and undertake exploration drilling for Coal and Coal Bed Methane in Kwale, Kilifi and Taita Taveta Counties, initiate Coal exploration in South of Mui Basin and undertake feasibility studies for the Kitui/Mui coal-fired power plants.

During the period, the following achievements were realized: five (5) coal exploration wells were drilled in Kwale county; community and stakeholders' engagements were undertaken in the Mui Basin Coal projects in the eastern region; Concessioning for coal blocks A, B, C & D in Mui Basin was progressed; Benefit Sharing Agreements developed to guide further development of the coal blocks; and land adjudication and resettlement commenced.

b) Transmission Network Expansion and Upgrade

The high voltage (132kV, 220kV and 400kV) electricity transmission network in Kenya has a circuit length of 9,011km. The Ministry targeted to increase the circuit length by installing 5,121 kms of high voltage transmission lines and 77 substations. During the period under review, 2,937.62Km of circuit length transmission lines and 8 substations were completed and energized as follows: 435.6Km 400kV Loiyangalani-Suswa; 46km 132kV Mwingi-Kitui; 42Km 132kV Sultan Hamud-Wote; 309Km 400/220/132kV Olkaria -Lessos - Kisumu; 68Km 132kV Olkaria-Narok; 6.75Km 220kV Embakasi-Athi-river underground cable; 11.56km 220kV Embakasi-Athi-river (Overhead) and 1.5Km 220kV Olkaria IV – Olkaria V; and 641Km 500kV HVDC Ethiopia-Kenya Interconnector.

In addition, the 96Km 400kV Kenya-Tanzania regional interconnectors is at an advanced stage of completion while 132km 400kV Lessos Tororo interconnectors is under implementation.

Table 3.5 List of Ongoing Transmission Lines

SNo.	Project Name	Line Route Length (Km)	Voltage (Kilovolts)
1	Lessos-Kabarnet and 132kV Kabarnet substation	65	132
2	Kenya-Tanzania interconnector	96	400
3	Isinya –Namanga with 132kV Isinya and Namanga substations	96	132
4	Kitui-Wote	66	132
5	Nanyuki-Rumuruti and 132kV Rumuruti substation	79	132
6	Isiolo-Nanyuki	70	132
7	Isinya-Konza with 400kV Konza substation including step down to 66kV and 132 intertie between Konza 400/132 and Konza 132/33	45	400
8	Sondu- Ndhiwa with 132kV Thurbuoro substation	69	132
9	Rabai –Bomani- Kilifi with 132kV New Kilifi substation	67	132
10	Awendo-Isebania with 132kV Masaba substation	50	132
11	Nanyuki -Isiolo UG Cable	5	132
12	Nanyuki - Rumuruti UG Cable	14.5	132
13	Sultan Hamud- merueshi-Loitoktok	120	132
14	Turkwel-Orthum-Kitale	135	220
15	Kamburu-Embu-Thika with 220kV Embu, Thika and Maai Mahiu substations	150	220
16	Rabai-Bamburi-Kilifi	61	132
17	Makindu Substation		400/220
18	Mariakani substation		400/220
19	Nairobi Ring Sub-Stations (Kimuka, Malaa)		220/66
20	System Reinforcement (Isinya & Nairobi North S/S)		
21	National System Control Centre		

c) Power Distribution and Supply

i. Distribution Network Expansion and Upgrade

The targets for the period under review were: construction of 116 new primary distribution substations and 1,244 Km of associated 66kV and 33kV lines as well as 20 new bulk supply substations.

During the period, 56 distribution substations were completed that increased performance and eased the distribution of power through load growth, technical power losses reduction and alternative supply points; and 6,462Km of medium voltage lines were constructed thereby extending the medium voltage network length to 87,359 Km.

ii. Electricity Access

In the 2018-2022 period, the Ministry targeted to connect 5 million new households to electricity through grid and off-grid solutions, where 1.27 million households in 14 underserved counties were to be connected to isolated mini-grids through the Kenya Off-grid Solar Access Project (KOSAP) and 3.73 million households were to be connected under the Last Mile Connectivity Project (LMCP). In addition, 15,739 public facilities comprising 6,178 trading centers, 1,760 secondary schools, 1,673 health centers, 1,813 administrative centers and 4,315 water points were to be connected to electricity.

The achievements for the period include: connection of 2.43 million customers to the grid thus pushing the overall connectivity to 9.21 million customers as at June, 2023. This translates to about 75% both on-grid and off-grid electricity access rate for the country. The growth in connectivity was facilitated by electrification of all public facilities in the country, last mile connectivity project, national street lighting program and Global Partnership on Output-Based Aid (GPOBA) targeting high population density areas in informal settlements.

In addition, 4,088 public facilities were connected to electricity comprising 3,322 markets, villages, beaches, administration offices and trading centres; 102 Secondary schools; 400 primary schools; 85 dispensaries; 134 Bore Holes/water points; 37 Tea Buying Centres; and 8 Coffee factories.

iii. Improved power supply reliability

During the period, the following were targeted to be carried out to improve power reliability: Network automation, system reinforcement and use of modern technologies; System audits to identify weak points in the network; accurate calculation and monitoring of System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI) and System Average Interruption Duration Index (SAIDI) power supply quality indices using the completed Facility Database system; Line Maintenance in the distribution network; and automation of distribution network. In addition, overhead distribution power lines across major towns and their environs were to be replaced with underground distribution power lines to reduce vandalism, destruction of trees, improve aesthetics in our towns and reduce outages.

In the period under review, power supply reliability improved from a CAIDI of 4.4 in 2017 to 2.24 as at June, 2023. This was as a result of: refurbishment and upgrade of distribution system; automation of power systems and mechanization of labour-intensive technical operations; and implementation of Supervisory Control and Data Acquisition (SCADA) system, live line maintenance and Advanced Distribution Management System projects aimed at reducing the number of outages and providing flexibility during maintenance.

iv. Public Lighting Project

This project was initiated in 2014 to facilitate a 24-hour economy, improve security and market the country as the preferred investment and tourism destination. In the 2018-2022 period, 71,310 lanterns were installed along public roads, markets and beaches bringing the total number to 193,583 lanterns as at June 2023 across the country since the project inception. The county governments are responsible for operation and maintenance of the lanterns.

d) Alternative Energy Technologies

The Ministry targeted to undertake the following measures to enhance promotion and development of renewable energy as an alternative source of energy: preparation of a renewable energy resources inventory and resource map; formulation of a national strategy for coordinating research in renewable energy; promoting the use of municipal waste for energy production; promoting the development of appropriate local capacity for basic renewable technologies such as bio-digesters, solar systems and small hydro turbines; harnessing opportunities offered under clean development mechanism; access to carbon credit trading to promote development; exploitation of renewable energy sources; promoting international co-operation on programmes focusing on renewable energy sources and climate change.

Achievements for the period under review include: 16 energy centres demonstrated the use of 6 renewable energy technologies namely: solar Photovoltaic (PV) (installation of standalone solar PV systems), solar-thermal, biogas, charcoal kilns, biomass production (tree nurseries) and promotion of alternative clean cooking solutions (improved cook stoves and fireless cookers); installation of 1,737 Solar PV systems in public institutions, 26 solar mini-grids, 7 isolated diesel stations and 75 water pumping solar PV systems, and 118 wind masts in various parts of the country and maintained annually; Maintenance of one community small hydro power plant at Ngerechi in Murang'a County; undertook 103 general energy audits and 105 investment grade energy audits; installation of 6 institutional and 740 domestic biogas plants in various parts of the country; afforestation of 1,652 hectares of hydro dam catchments; establishment of 402 woodlots; installation of 5 energy efficient charcoal kilns in energy centres; completion of one biodiesel unit; installation 170,027 standalone solar home systems; and dissemination of 11,095 improved stoves.

e) Policy, Legal and Institutional Reforms

New developments and growth in technologies has necessitated the energy sector to undergo transformation. This has led to the enactment of new laws, development of policies and regulations as well as review of the existing policies and regulations.

During the period under review, the following were achieved under policy, legal and institutional reforms: development of the Energy Policy, 2018 and the Energy Act, 2019, Gender policy in Energy (2019), Bioenergy strategy (2020), Kenya National Energy Efficiency and Conservation Strategy (2020), and the Kenya National Electrification

Strategy (2018); and Nuclear Regulatory Act, 2019. In addition, the Cost of Service and Power Market studies were completed; review of Systems Operations and Dispatch guidelines was undertaken; adoption of Time of Use (ToU) tariffs targeting commercial and industrial consumers was introduced; and system losses audit aimed at identifying key areas contributing to losses was carried out.

Further, the following licenses were processed: Power Undertaking licenses (130 generation; one transmission; 28 generation, distribution and supply for mini-grids; 6 distribution and supply; and 28 generation and retail supply for commercial and industrial customers; electrical installation licenses (6,518 electrical worker and 2,881 electrical contractor licenses); and issued licenses to 1,684 solar PVs technicians, 1,759 solar PVs contractors, 57 energy auditors and 34 energy audit firms.

f) Cross Cutting Issues

i. Monitoring and Evaluation of Energy Projects

Supervisory and technical Monitoring and validation of power generation, transmission and distribution projects continued. More emphasis was put on electricity connectivity projects such as the Last Mile Connectivity and connection to public facilities. These monitoring and evaluation (M&E) exercises assisted the sector in fast-tracking implementation and minimizing unnecessary interference in programmes and projects progress.

ii. Gender, youth and disability mainstreaming

Energy interventions impact men, women, youth and persons with disabilities differently, as they have distinct roles, responsibilities and voices within their households, markets and communities. This leads to differences in their access, control and use of energy, as well as the impact of energy services on their lives. The target for the sector was to mainstream gender, youth and disability in the Ministry's policies and legal framework.

During the period the Ministry and its entities; Implemented the Access to Government Procurement Opportunities (AGPO) Program to facilitate the youth, women and persons with disabilities owned enterprises to be able to participate in government procurement; Developed and implemented the Gender Policy whose objective is to mainstream gender at the policy, institutional and programmes levels.

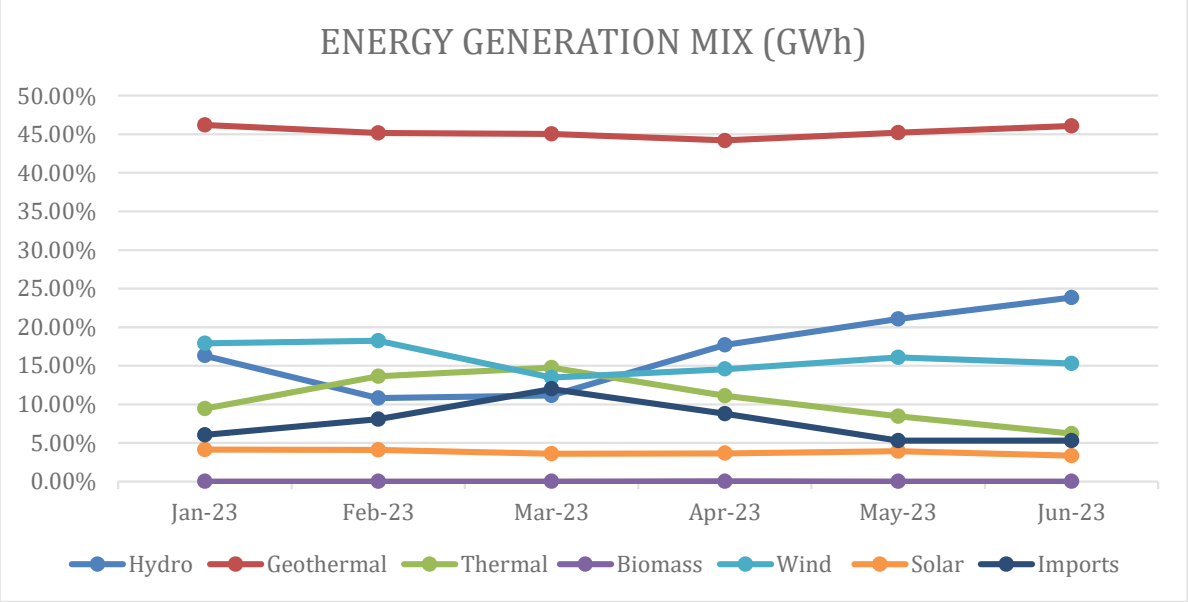
iii. Climate change

There is over-dependence on unsustainable wood-fuel and other forms of biomass as a primary source of energy in the country. The use of low-quality energy options and inefficient devices pose health risks to households. Energy plays a key role in enhancing adaptive capacity and resilience to climate change. Environmental Management in the energy sector is critical to ensuring sustainability in the energy value chain. Electricity generation, transmission and use pose various dangers to human life and the environment.

Increased installation of renewable energy technologies such as hydropower, wind, solar PV and geothermal continued which enabled the sector to make a major contribution towards the global net zero emissions goal and the national targets as contained in the Nationally Determined Contributions.

Renewable sources of energy contributed 93% of the energy generation mix as at June 2023as shown in *Figure 3.3*.

Figure 3.3: Energy generation mix from Jan 2023 to June 2023 from different technologies



B. Petroleum Key Achievements 2018-2022

i) Exploration and Commercialization of the Oil and Gas Discoveries

This programme targeted drilling of 20 exploratory and appraisal wells to ascertain commercial viability of oil reserves; drilling of 450 production and re-injection wells; oil and gas exploration, development, production and utilization; finalize South Lokichar Field Development Plan; and market Kenya's oil and gas potential to promote and facilitate investment opportunities in the country.

During the period under review, the following milestones were realized: drilled 10 appraisal wells within the South Lokichar Sub-Basin and 2 exploratory wells in the Lamu Basin; acquired, processed and interpreted preliminary Geological and Geophysical data in Blocks L19A and L16 in Lamu Basin; undertook preliminary evaluation of gas prospects in Kipeto, Kajiado County and Solai, Nakuru County in the Tertiary Rift Basin; organized and hosted the 9th East African Petroleum Conference and Exhibition 2019; participated in 20 regional and international conferences to market Kenya's exploration acreage to potential investors; undertook a Feasibility Study on the proposed Floating Storage and Regasification Unit (FSRU) in Mombasa.

The Ministry also undertook Environmental and Social Impact Assessment (ESIA) for the proposed 92 Km water pipeline and Upstream Development Area, Project disclosure and **stakeholder engagement and community sensitization for the proposed water pipeline; and** modernized the National Data Center for oil and gas through digitization, cataloguing and storage of physical data sets in a centralized system; system upgrade and data migration; and deployment of Petroleum Integrated Planning System (PIPS) for monitoring compliance and enforcement of Production Sharing Contracts (PSCs).

ii) Early Oil Pilot Scheme Project

The project's objective was to establish Kenya as an oil exporter commencing with testing the international market. The project aimed at testing the reservoirs for sustained productivity, producing 2,000 barrels of crude oil per day and trucking the crude oil from South Lokichar to Mombasa for export.

During the review period: the Ministry produced and trucked 415,032 barrels of crude oil to Kenya Petroleum Refineries Limited (KPRL) storage terminal, of which 414,777 barrels were exported to the international market; modified KPRL facilities for receipt, storage and exportation of crude oil; licensed midstream facilities and processes for the Early Oil Pilot Scheme (EOPS); reviewed and approved licenses for use of tank-tainers to transport the crude oil from Lokichar to Mombasa by road; licensed production facility for EOPS to facilitate production to test the international marketability of the Kenyan crude; consolidated and managed drill waste cuttings within the South Lokichar Oil Fields; updated the South Lokichar dynamic models using data obtained from EOPS production; and audited EOPS costs to ascertain the credibility of recoverable costs as submitted by Kenya Joint Venture (KJV) Partners.

iii) Capacity Development for Oil and Gas

The Ministry through the Kenya Petroleum Technical Assistance Project (KEPTAP) targeted to enhance the capacity of institutions for effective management and administration of oil and gas resources.

During the period under review, 848 officers from both public and non-state institutions were trained in various courses, developed a National Communication Strategy for the project; and undertook consultancies on; Geoscience Data Acquisition, Interpretation and promotion Plan, Hydrocarbon Resources Audit and Cost Recovery Audit for Blocks 10BB and 13T, and Transactions Advisory Services for petroleum transactions and negotiations.

iv) Construction of Lokichar-Lamu Crude Oil Pipeline

The Ministry in partnership with the Kenya Joint Venture (KJV) targeted to develop an 824 km crude oil pipeline to transport the crude oil from Lokichar to Lamu for export. During the period under review the following were achieved: Completed Front-End Engineering Design; identified the crude oil pipeline route; undertook Environmental and Social Impact Assessment (ESIA) for the project; completed land survey and demarcation for the pipeline

route; and developed a draft Land Acquisition Plan and Resettlement Framework. In addition, stakeholder and community engagements and sensitization on compulsory land acquisition for the Pipeline Corridor were undertaken.

v) National Liquefied Petroleum Gas Enhancement Project (Mwananchi LPG Project)

The project aimed at promoting use of clean energy by increasing LPG per capita consumption from 2 kg to 15 kg. During the period under review, the Ministry procured 319,241 6-kg LPG cylinders fitted with camping valves, 72,000 2-burner cook stoves, 60,000 1.5m long flex rubber hose pipes for distribution to low-income households. A total of 35,000 6-kg LPG cylinders complete with burners and grills were distributed in Kajiado and Machakos counties on pilot basis.

vi) Enhancement of Petroleum Products Storage Capacity in Mombasa

The project targeted to increase storage capacity for importation of petroleum products by providing an additional ullage of 100,000m3, to meet the growing demand. During the review period, an additional storage of 149,872m3 was provided through construction of storage tanks with a capacity of 133,000m3 in Nairobi and conversion of one storage tank of 16,872m3 in KPRL from crude oil handling to Automotive Gas Oil.

vii) Expansion of National Pipeline Network

Expansion of the pipeline to key towns was an initiative aimed at spreading the benefits of petroleum product transportation through the pipeline countrywide. During the review period, a 20-inch Mombasa-Nairobi Pipeline (Line 5) with a design flow-rate of 1,000m3/hr was completed and commissioned to enhance evacuation of petroleum products from Mombasa to Nairobi. Operation of the new pipeline enabled creation of ullage at the imports storage facilities, particularly at Kipevu Oil Storage Facility resulting in faster turnaround of vessels and reduction of demurrage costs. Further, the 14-inch Mombasa – Nairobi Pipeline (Line 1) was decommissioned as it was no longer safe to operate having been in service for over 42 years against a design life of approximately 25 years. Rail loading facilities with a capacity of 1,144m3 per day were installed in Kisumu to facilitate loading via rail.

viii) Center of Excellence in Oil and Gas

The project targeted establishment of a Center of Excellence in Oil and Gas at the Morendat Institute of Oil and Gas (MIOG) to bridge the skills gap and build capacity in pipeline management, oil and gas operations and maintenance for Kenya and the region.

During the review period, the following was achieved: Morendat Institute received accreditation by Technical and Vocational Education and Training Authority (TVETA) and the Curriculum Development Assessment and Certification Council to be an Examination and Assessment Center for curricula for Competency Based Education and Training

courses; the institution was accredited by National Examination Board of Occupational Safety and Health (NEBOSH) to provide International General Certification in Safety Courses; constructed classes in Nairobi, Eldoret and Naivasha campuses; installed smart classroom technology with over 2,500 library resources; acquired mobile welding booths, state of the art fire rescue equipment, and quality control laboratory equipment to be used for training; Kenya Pipeline Company (KPC) in partnership with National Industrial Training Authority (NITA) reviewed curricula for firefighting, welding and quality control to conform with NITA standards to issue NITA Certificates; trained 2,537 officers from various institutions in safety, health and environment, firefighting, pipeline operations and maintenance; and corporate courses.

ix) Development of a Regional Hub for Upstream Petroleum Services

The growing scope of petroleum exploration activities presented an opportunity for the country to become a regional hub for upstream services. A National Oil and Gas Seismic Processing Center was established and equipped with both hardware and software to provide specialized upstream services on processing of upstream data for value addition. In addition, a Geochemical and Petro-physical Laboratory was completed and equipped.

x) Quality Assurance of Petroleum Products

The Petroleum Act, 2019 mandates the Energy and Petroleum Regulatory Authority (EPRA) to monitor the quality of petroleum products offered for sale in the local market to prevent motor fuel adulteration or dumping of export-bound motor fuels.

During the review period, the Ministry tested 103,796 samples in various petroleum dispensing sites; introduced anti-adulteration levy to deter motor fuel adulteration using domestic kerosene; and acquired 2 LPG quality testing equipment to enhance the country's capacity to monitor compliance to LPG quality standards.

xi) Security of Supply of Petroleum Products

The Ministry's role is to ensure there is no stock-out of petroleum products through implementation of the Open Tender System (OTS) for importation of refined petroleum products into the country. During the review period, a total of 33,658,000 Metric Tonnes (MT) of petroleum products were imported for the country and the region.

xii) Service delivery improvement

The Ministry carried out the following towards enhancement of service delivery: developed and implemented the Third MTP and Strategic Plan for the period 2018-2022, and reported on their implementation; adhered to the organization's performance management framework and financial management framework; continuously reviewed the governance mechanisms to enhance prudence in utilization of financial resources. In addition, the Local Area Network (LAN) was upgraded to the latest technology; a Firewall for internet security and Virtual Environment for Emergency Management and Analysis (VEEMA) backup system

was deployed and installed; an Electronic Document Management System (EDMS) was developed, staff trained on its use and piloted digitization of documents; developed a proposal on the establishment of a Departmental library; collected and collated information materials for the Library; procured goods including specialized equipment for petroleum operations, services, and works as per the annual procurement plans, and maintained an assets register.

Further, the Ministry developed a Communications Strategy for the Early Oil Pilot Scheme; produced a documentary on Petroleum operations to promote investment in the Extractive Sector in Kenya. 577 staff were trained in various areas and another 43 recruited. A Scheme of Service for Petroleum Personnel was developed to enhance the human resource capacity. The Petroleum Act, 2019 and its attendant regulations namely Petroleum (Pricing) Regulations, 2022 and Petroleum (Importation) Regulations, 2023 were developed. Toward strengthening the institutional capacity, the structure of National Oil Corporation of Kenya was reviewed to expand its petroleum upstream function and the following institutions were created: National Upstream Advisory Committee (NUPAC) and the Energy and Petroleum Tribunal (EPT).

3.1.5.2 Challenges

Challenges in the implementation of the Strategic Plan 2018-2022

- Sub-optimal power system losses (Technical and commercial losses)
- High cost of extending energy and petroleum infrastructure to remote areas
- Vandalism of energy and petroleum infrastructure
- Funding and Budgetary Constraint
- Human Resource constraints
- Unstable Geo Political Environment
- Complexity in land and right of way acquisition
- Inadequate specialized technical capacity in the sector
- Diversion of fuel meant for transit
- Long lead time between project conceptualization and realization
- Community/stakeholders resistance to programmes and project
- Litigations leading to project delays and increased project costs
- Moratorium on PPA negotiations.

3.1.5.3 Lessons Learnt

- Leveraging on technology and digitization of services has a significant impact in mitigating against pandemics such as COVID-19;
- There is need to expand resource mobilization for investment in fossil fuel exploitation. The following lessons were learned during implementation of programmes and projects in the planning period under review;
- There is a need for wide stakeholder consultations and analysis before adoption and implementation of new programmes/projects, policies, and global commitments and obligations;
- There is a need to introduce an ancillary services market to optimize integration of Variable Renewable Energy (VRE) in the power system;

- Systematic planning is necessary when setting targets for projects where timelines required for planning, designing, tendering, and construction must be taken into account;
- Collaboration between the Ministry of Energy and Petroleum and the relevant Ministries, Counties, Departments and Agencies (MCDAs) is key in enhancing efficiency in issuance of permits, approvals and licenses for timely investments in the sector;
- The sector needs to be adaptive to the geopolitical, social, technological, environmental and economic changes to manage competing interest especially from renewables at the global level; and
- There is a need to continuously review risk management strategies.

3.2 Stakeholder Analysis

The sector has various stakeholders across all sectors of the economy. ***Table 3.6*** shows the key stakeholders, their roles and expectations as well as the expectation of the Ministry.

Table 3.6: Stakeholder Analysis

	Stakeholder	Role	Expectation of Stakeholder	Expectation of the Ministry
1.	Energy and Petroleum Resource Exploration Companies	Exploration of energy and petroleum resources	• Availability of quality data and information. • Timely approval of development plans and issuance of licenses and permits • Timely facilitation of legislated exemptions • Facilitate land access	• Undertake exploration and commercialization of resources • Corporate Social Responsibilities (CSR) • Compliance with national legislations
2.	Oil Marketing Companies (OMCs)	Importation and distribution of petroleum products	• Effective implementation and management of importation of refined petroleum products • Provision of enabling environment	• Secure and reliable supply of petroleum products in the local and regional markets • Compliance to products quality standards and import regulations
3.	Independent power Producers (IPPs)	Power generation	• Timely purchase of generated energy • Adherence to the Power Purchase Agreements (PPAs) • A stable and reliable grid • Consistent and predictable Policies to enable investments in the Sector	• Reliable, quality and affordable power • Adherence to the PPAs
4.	Contractors, Suppliers and Consultants	Provision of goods and services	• Undertake transparent and accountable procurement process • Timely processing of payments • Provision of clear contract terms and specifications	• Meet contractual obligations • Competitive and fair pricing • Adherence to the terms and specifications of the contract
5.	Energy and Petroleum Regulatory Authority (EPRA)	Regulate energy and petroleum sector	• Provision of adequate budgets • Timely approval of regulations • Timely policy guidance	• Effective economic and technical regulation of the sector • Prudent utilization of funds
6.	Energy and Petroleum Tribunal	Arbitrate on disputes in Energy and Petroleum Sector	• Timely information to facilitate dispute resolution	• Timely resolution of disputes

	Stakeholder	Role	Expectation of Stakeholder	Expectation of the Ministry
7.	State Corporations under the Ministry	Implement Energy and Petroleum programmes and projects	• Guidance on policy direction and decisions • Timely release of funds	• Complement delivery of the Ministry's mandate • Prudent utilization of funds
8.	National Environmental Management Authority (NEMA)	Monitor and enforce compliance of environmental regulations	• Compliance with environmental management regulations • Collaboration on climate change mitigation measures to ensure sound environmental conservation as per the strategic goal 3.	• Timely approval of ESIAs for projects • Conduct environmental audits during and post projects lifetime • Provide technical guidance on environmental management • Undertake Strategic Environmental and Social Assessment (SESA) for the sector • Stakeholder sensitization on environmental issues
9.	State Department for Lands and Physical Planning and National Land Commission	Management of land resource	• Timely provision of information on targeted areas for implementation of programmes and projects • Provide logistical and financial support in the land acquisition process	• Facilitate acquisition of land for the sector programmes and projects
10.	Research and academic institutions	Conduct research and provide education and training	• Partnership and collaboration in innovation, research and development • Application of research findings in policy formulation and decision making	• Undertake research in the Sector • Development and implementation of curricula responsive to the capacity needs of the sector
11.	Civil Society Organizations (CSOs)	Representation of their constituencies in policy formulation, programmes and Project implementation, advocacy and serve as a check in governance practices	• Facilitate their participation in policy formulation and implementation of programmes and projects • Accountability and transparency in programmes project implementation	• Participation in policy formulation and implementation of programmes and projects • Advocacy for programmes and projects • Support sector initiatives
12.	Ministries, Departments and	Policy formulation and Programme/ Project	• Timely sharing of data and information in line with Access to Information Act 2016	• Compliance with the sector policies and regulations

	Stakeholder	Role	Expectation of Stakeholder	Expectation of the Ministry
	Agencies	implementation as per their mandate	• Compliance with relevant policies and regulations • Collaboration in implementation of their respective mandate	• Collaboration in implementation of the sector mandate • Timely approval of permits, licenses and clearances
13.	The National Treasury and Economic Planning	Resource mobilization, national planning and project monitoring and evaluation	• Prudent utilization of resources • Timely budget preparation and execution • Programmes and projects Planning, Implementation, Monitoring and Evaluation	• Provision of adequate budget • Timely approval of programmes and projects • Timely approval of the budget and release of funds. • Capacity building on planning and budgeting
14.	Kenya Ports Authority (KPA) Kenya Revenue Authority (KRA)	• Manage and operate the ports • Assess, collect and account for all revenues	• Timely sharing of imports/exports data, information and schedules on energy and petroleum • Compliance with relevant policies and regulations	• Timely berthing of petroleum products vessels • Facilitate timely clearance of goods for export and import • Timely provision of data and information on energy and petroleum imports and exports
15.	Development Partners	Provide financial and technical resources, Participate in policy formulation, programmes and Project, and implementation and advocacy	• Prudent utilization of resources • Timely completion of programmes and projects and reporting	• Provision of timely financial and technical support
16.	Relevant Professional Bodies and Associations	Develop, support, regulate and promote professional standards	• Collaboration in implementation of sector programmes and projects • Collaboration in policy formulation and development of regulations • Compliance to professional ethics and	• Provision of relevant professional and technical standards • Maintain high professional standards through self-regulation • Provide sector data, information, reports

	Stakeholder	Role	Expectation of Stakeholder	Expectation of the Ministry
			standards • Provide sector data, information, reports and studies	and studies • Provide capacity building for the sector
17.	Parliament (The National Assembly and The Senate)	Represent, Legislate and oversight	• Operationalize laws and other legislative instruments • Initiate drafting of relevant bills • Timely response to parliamentary questions	• Enactment of laws and regulations for the sector • Effective representation and oversight • Approval of the budget • Ratification of treaties, conventions and development plans
18.	Judiciary/ Independent offices	Resolve disputes in a just manner with a view to protecting the rights and liberties of all.	• Proper documentation during applications • Compliance to relevant laws	• Timely settlement of disputes.
19.	County Governments	Policy formulation, Programme/Project implementation and resource mobilization	• Policy and legal direction in the sector • Collaborate in the development and implementation of Integrated National Energy Plan (INEP) and petroleum programmes and projects	• Collaborate in the development and implementation of County Energy Plans (CEPs) and petroleum programmes and projects
20.	General public/ Consumers of the sector products and services	Utilize the Energy and Petroleum products and services	• Reliable, quality and affordable energy and petroleum products and services • Timely sharing of data and information in line with Access to Information Act 2016	• Uptake and adoption of Energy and Petroleum products and services • Timely feedback on energy and petroleum products and services • Timely payment for products and services • Compliance with sector policies, regulations and standards
21.	Media	Inform, educate and entertain	• Provide timely and relevant data and information • Cooperation and partnership in dissemination of information	• Accurate reporting on energy and petroleum matters • Cooperation and partnership in dissemination of information

CHAPTER FOUR

4. STRATEGIC ISSUES, GOALS AND KEY RESULT AREAS

4.0 Overview

This chapter presents the strategic issues, strategic goals and key result areas. The strategic issues are fundamental challenges that affect the delivery of the Ministry's mandate and form the basis for the formulation of its strategic goals. The strategic goals are a direct outcome of the strategic issues, each of which is directly related to the Vision and Mission. Finally, the Key Result Areas linking to the attainment of strategic goals have been identified.

4.1 Strategic Issues

a) Under exploited Energy and Petroleum Resources
b) Inadequate access to energy and petroleum products and services
c) Environmental degradation and impact of climate change
d) Inadequate legal, policy and institutional framework

4.2 Strategic Goals

The Ministry has identified four broad goals that would enable it to realize its Mission and thereby it's Vision. The goals are a direct outcome of the strategic issues each of which is directly related to the Vision and Mission. The goals include:

a) Sustainably exploited Energy and Petroleum resources;
b) Universal access to modern energy and petroleum products and services;
c) Sustainable environment and energy efficiency; and
d) Strong legal, policy and institutional framework.

4.3 Key Results Areas

The Ministry has determined the key result areas (KRAs) linked to the goals in the strategic plan. ***Table 4.1*** shows the key result areas against the strategic issues and goals.

Table 4.1: Strategic Issues, Goals and Key Result Areas

Strategic Issues	Goals	KRAs
Under exploited Energy and Petroleum Resources	Sustainably exploited Energy and Petroleum resources	**KRA 1**: Energy and Petroleum Resource Development, Promotion and Commercialization
Inadequate access to energy and petroleum products and services	Universal access to modern energy and petroleum products and services	**KRA 2**: Access to energy and petroleum products and services

Environmental degradation and impact of climate change	Sustainable environment and energy efficiency	**KRA 3**: Environmental Sustainability in the sector
Inadequate legal, policy and institutional regulatory framework	Strong legal, policy and institutional regulatory framework	**KRA 4**: Enabling Environment for the growth of the sector

CHAPTER FIVE:

5. STRATEGIC OBJECTIVES AND STRATEGIES

5.0 Overview

This chapter presents the performance projections, strategic objectives and strategic choices. The performance projections provide 5-year projections for the identified KRAs that are realistically achievable under the prevailing circumstances on a year-to-year basis. The strategic objectives are Specific, Measurable, Attainable, Realistic and Time-bound (SMART) and guided by the KRAs and strategic goals. Strategic choices were made ensuring one or more high level strategies will be pursued to achieve strategic objectives.

5.1 Strategic Objectives

The strategic objectives are set and adopt the Sustainable Balanced Scorecard. The Sustainable Balanced Scorecard perspectives include financial performance, customer focus, internal business processes, learning and growth, social justice, and environmental performance. The strategic objectives for energy and petroleum sector are;

i) To enhance exploitation of energy and petroleum resources;
ii) To enhance access to clean, renewable, reliable and competitive energy and petroleum products and services;
iii) To ensure uninterrupted availability of energy services and petroleum products;
iv) To enhance environmental conservation; and
v) To improve legal, policy and Institutional regulatory framework.

Table 5.1: Outcomes Annual Projections

			Projections				
Strategic Objective	**Outcome**	**Outcome Indicator**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
KRA 1: Energy and Petroleum Resource Development, Promotion and Commercialization							
S.O. 1.1: To enhance exploitation of energy and petroleum resources	Enhanced exploitation of energy and petroleum resources	1. Installed Power Generation Capacity (MW) ***from local resources***)	3112	3112	3273	3324	3682
		2. Investment in petroleum blocks (Kshs. millions)	915	1,563	1,628	125,968	145,319
KRA 2: Access to energy and petroleum products and services							
S.O. 2.1: To enhance access to clean, renewable, reliable and competitive energy and petroleum products and services	Enhanced access to clean, renewable, reliable and competitive energy and petroleum products and services	1. Electricity Access Rate (% households)	75	80	85	90	95
		2. Proportion of households using clean cooking solutions	40	60	80	90	100
		3. Proportion (%) of public learning institutions using LPG	14	20	30	40	50
		4. Average LPG consumption per capita No. (Kg/yr)	7	8	9	9.5	10
		5. Quantity of petroleum products imported (million. metric tonnes)	6.69	6.96	7.24	7.53	7.83
S.O. 2.2: To ensure uninterrupted availability of energy sources and petroleum products	Improved stability in the availability of energy sources and petroleum products	1. Customer Average Interruption Duration Index (CAIDI)	3.53	2.45	1.36	1.35	1.25
		2. System Average Interruption Duration Index (SAIDI)	5.00	3.25	1.50	1.40	1.29
		3. System Average Interruption Frequency Index (SAIFI)	2.15	1.63	1.10	1.097	1.08
		4. Petroleum products strategic reserves (No. of Days)	-	-	-	-	30
KRA 3: Environmental Sustainability in the sector							
S.O. 3.1: To enhance environmental conservation	Enhanced environmental conservation	1. The renewable energy share in the total national installed electricity generation capacity (%)	80.75	80.62	85.22	85.92	82.13
		2. The proportion of renewable in electricity generation mix (%)	93	94	95	96	98

			Projections				
Strategic Objective	**Outcome**	**Outcome Indicator**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
		3. Re-afforestation of degraded catchment areas (Hectares)	1,640	1,840	2,040	2,240	2,440
		4. Compliance with environmental and social safeguards (%)	100	100	100	100	100
		5. Energy efficiency / Energy intensity (%)	3	3	3	3	3
KRA 4: Enabling Environment for the Growth of the Sector							
S.O. 4.1: To improve legal, policy and Institutional regulatory framework	Enhanced sector coordination and management	1. Number of reviewed/developed Policies	2	-	-	-	-
		2. Number of reviewed Acts	-	2	1	-	-
		3. Number of Regulations reviewed/developed	10	6	6	8	10
		4. Customer Satisfaction Index	75	75	80	80	85
		5. Number of reviewed and implemented organizational structures	2	-	2	-	-
		6. Number of officers trained	300	300	300	300	300

5.2 Strategic Choices

The Energy and Petroleum sector strategies are as tabulated below;

Table 5.2: Strategic Objectives and Strategies

Key Result Area	Strategic Objective	Strategy
KRA 1: Energy and Petroleum Resource Development, Promotion and Commercialization	1.1 To enhance exploitation of energy and petroleum resources	1.1.1. Map and assess energy and petroleum resources 1.1.2. Promote investment in energy and petroleum resources 1.1.3. Develop and commercialize Energy and Petroleum resources

Key Result Area	Strategic Objective	Strategy
KRA 2: Access to energy and petroleum products and services	2.1 To enhance access to clean, renewable, reliable and competitive energy and petroleum products and services	2.1.1. Expand and upgrade energy and petroleum infrastructure 2.1.2. Enhance management of supply of energy and petroleum products and services 2.1.3. Accelerate development and procurement of competitive sources of energy 2.1.4. Promote uptake and adoption of clean energy solutions
	2.2. To ensure uninterrupted availability of energy sources and petroleum products	2.2.1. Collaborate to develop regional energy and petroleum programmes and projects 2.2.2. Enhance security of energy and petroleum infrastructure 2.2.3. Maintain strategic stocks for critical infrastructure and petroleum products
KRA 3: Environmental Sustainability in the sector	3.1 To enhance environmental conservation	3.1.1. Implement energy efficiency and conservation in buildings, industries, utilities, households and the transport sector. 3.1.2. Promote renewable energy sources 3.1.3. Implement environmental conservation programmes
KRA 4: Enabling Environment for the growth of the sector	4.1 To improve legal, policy and Institutional regulatory framework	4.1.1. Strengthen legal and policy framework 4.1.2. Integrated Energy Planning (INEP) 4.1.3. Strengthen human resource capacity 4.1.4. Enhance ICT in the sector 4.1.5. Enhance research, development and innovation 4.1.6. Enhance resource mobilization and management (Finance, Strategy, Procurement and Accounts, Audit) 4.1.7. Mainstreaming of gender, Persons with Disabilities and other vulnerable groups in policy programmes and projects in the sector

CHAPTER SIX:

6. IMPLEMENTATION AND COORDINATION FRAMEWORK

6.0 Overview

This chapter presents the implementation plan, the coordination framework and the risk management plan.

6.1 Implementation Plan

The energy and petroleum sector implementation plan describes how the Strategic Plan will be operationalised. The plan provides an exhaustive description of the various components of the strategic Plan. These include the action plan, budgeting, and performance contracting.

6.1.1 The Action Plan

The action plan for the Strategic plan is anchored in the implementation matrix in ***Table 6.1***.

Table 6.1: Action Plan Implementation Matrix

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
Strategic Issue 1: Under exploited energy and petroleum resources																
Strategic Goal 1: Sustainably exploited Energy and Petroleum resources																
KRA 1: Energy and Petroleum Resource Development, Promotion and Commercialization																
Outcome 1: Enhanced exploitation of Energy and petroleum resources																
Strategic Objective 1: To enhance exploitation of energy and petroleum resources																
Map and assess energy and petroleum resources	Map and quantify energy resources (Coal, nuclear, geothermal, wind, small hydro, solar, biomass, waste resource)	Resource map/maps	No. of resource maps developed	9	3	6	-	-	-	295	285	285	245	250	MOEP GDC, REREC, KENGEN	County Governments, KFS, KEFRI,
			No. of resource maps reviewed	9	-	-	-	-	9							
	Install and Maintain wind masts and Data loggers	Wind Masts & Data Loggers	No. of Wind Masts & Data Loggers installed and maintained	615	123	123	123	123	123	30.0	30.0	30.1	30.1	30.1	MoEP	
	Acquire geoscientific data for geothermal resources	Geothermal Geoscientific data acquired	No. of geothermal resource prospects from which data has been acquired	5	1	1	1	1	1	170	160	160	120	120	SDE	-
	Acquire geoscientific data for coal resources	Coal geoscientific data	No. of coal exploration wells drilled	49	-	4	15	15	15	50	115	115	115	120	SDE	-

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	Acquire geoscientific data for nuclear resources	Nuclear geoscientific data	No. of nuclear geoscientific reports	5	1	1	1	1	1	25	25	25	25	30	SDE	-
	Acquire Geoscientific data for oil and gas resource assessment	Geoscientific data acquired (onshore)	Area (km2) for which geoscientific data has been acquired	13,310	1,310	3,000	3,000	3,000	3,000	170	130	130	150	150	SDP	-
		3D Multi-client data acquired (offshore)	Area (km2) for which 3D Multi-client data has been acquired	14,000	-	-	14,000	-	-	5	5				SDP	-
	Implement power market study recommendations	Updating of planning software	New software acquired and training conducted	1	-	1	-	-	-						SDE	MICDE
		Net metering regulations developed and gazetted	% progress in development	100	80	100	-	-	-	5	-	-	-	-	SDE,EPRA	SLO
		Transfer of system operations from KPLC to KETRACO	% implementation of the transfer process	100	40	60	100	-	-	-	30,000	10	-	-	SDE, KPLC, KETRACO	PCS

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		Development and approval of revised rules for operation of the system and the market	% progress of development of the rules	100	-	-	20	60	100	-	-	30	30	-	SDE, KPLC, KETRACO, EPRA	-
	Digitize and automate the grid to make it smart	15 Distribution substations connected to SCADA/EMS	No. of distribution substations connected to SCADA/EMS	15	10	5	-	-	-	155	75	-	-	-	SDE, KPLC	-
	Live line maintenance	28Nos. truck mounted aerial platforms maintained	No. of platforms maintained	140	28	28	28	28	28	2	2	2	2	2	SDE, KPLC	-
Promote investment in energy and petroleum resources	Undertake coal blocks concessioning	Land adjudication for Mui Basin for Block A and B	Proportion (%) of land adjudication process completed	100	25	45	65	85	100	40	45	45	30	30	SDE	
		Benefit Sharing Agreement for Block A	No.	1	-	1										

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		and B														
	Develop a strategy for acceleration of Geothermal development	Geothermal strategy	No. of Geothermal strategies	1	-	1	-	-	-	10	20				SDE	-
	Participate in Energy Investment events	Conferences held	No. of energy investor conferences	10	2	2	2	2	2	10	10	10	10	10	SDE	-
	Review and reconstitute Petroleum blocks	Petroleum blocks reviewed and reconstituted	No. of Petroleum Blocks Gazetted	5	5	-	-	-	-	10					SDP	-
			Revised block map	1	1	-	-	-	-	10	5				SDP	-
	Promote petroleum blocks	Petroleum blocks marketed	No. of blocks marketed	15	3	3	3	3	3	20	50	20	50	20	SDP	-
	Conduct bid rounds	Bid rounds conducted	No. of bid rounds conducted	2	-	1	-	1	-		30		30		SDP	-
			No. of Production Sharing Contracts signed	10	-	-	5	-	5			20		20	SDP	-
	Promote multi-client data acquisition	Multi-client company contract	Multi-client company contracted	1	1	-	-	-	-	5					SDP	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	programme (offshore)	signed														
Develop and commercialize Energy and Petroleum resources	Drill geothermal wells for steam development	Geothermal Wells drilled	No. of geothermal development Wells drilled	111	8	22	28	27	26	6,117	14,759	20,130	20,881	21,454	SDE, GDC, KenGen	
		MWe of geothermal steam availed	MWe of geothermal steam available for conversion	374	40	80	100	93	75						SDE, GDC, KenGen	
	Install Wellhead unit for drilling	Wellhead unit Installed	Proportion (%) completion of wellhead unit installation	100	-	-	50	-	100	-	240	840	120		SDE, GDC, KenGen	-
	Promote Direct-Use of geothermal resources	Establishment of Green Energy Industrial Park	% completion of Green Energy Park	100	20	40	70	90	100	2,020	3,030	3,030	1,010	1,010	SDE, KenGen	MITI
		Establishment of a Geothermal Resource Park in Menengai	% Completion of Geothermal Resource Park	100	-	30	50	70	100		250	250	200	150	SDE, GDC	-
	Implement energy projects under the PPP framework	PPP projects implemented	No. of PPP projects implemented	4	-	-	1	-	3	4,125	16,125	12,125	4,125	4,125	SDE, KETRACO	TNT

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	Approval of the South Lokichar FDP	FDP approved	Approved FDP	1	1	-	-	-	-	100					SDP, EPRA	-
		Surface facilities constructed	Proportion (%) of surface facilities constructed	50	-	-	-	20	50				37,177	55,766	SDP	-
		Development Wells drilled	No. of development well drilled	105	-	-	-	55	50				21,976	19,978	SDP	-
	Develop 824 KM-20-inch Lokichar-Lamu Crude Oil Pipeline	824 KM-20-inch Lokichar-Lamu Crude Oil Pipeline developed	Proportion (%) of the Pipeline preliminary activities undertaken	100	40	60	100	-	-	951	873	878			SDP	-
			Proportion (%) of the crude oil Pipeline constructed	60	-	-	-	30	60				60,072	60,072	SDP	-
	Conduct land inspection and survey for petroleum operations	Area (ha) of land inspected, surveyed and acquired	No. of hectares of land inspected and surveyed for the make-up water pipeline	260	100	160	-	-	-	50	90				SDP	-
			No. of hectares of land acquired	17,000	-	-	17,000	-	-			500			SDP	-
	Development of make-up water	90KM 24-inch	% completion of the	100	40	70	100	-	-	60	50	50			SDP	-

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	pipeline from Turkwel dam to CPF	Lokichar-Turkwel water pipeline developed	preliminary activities for the make-up water pipeline													
			Proportion (%) of make-up water pipeline constructed	100	-	-	-	50	100				6,003	6,003	SDP	-
	Appraisal and commercialization of natural gas discoveries	Blocks 9 and L8 appraised	No. of Blocks appraised	2	-	1			1		690	690	690	3,450	SDP	-
KRA 1: TOTAL RESOURCE REQUIREMENT										**10,300**	**50,959**	**27,240**	**153,081**	**168,655**	**410,235**	
Strategic issue 2: Inadequate access to energy and petroleum products and services																
Strategic Goal 2: Universal access to modern energy and petroleum products and services																
Key Result Area 2: Access to energy and petroleum products and services																
Outcome 2.1: Enhanced access to clean, renewable, reliable and competitive energy and petroleum products and services																
Strategic Objective 2.1: To enhance access to clean, renewable, reliable and competitive energy and petroleum products and services																
Expand and upgrade energy and petroleum infrastructure	Generation capacity expansion	Additional Generation capacity installed	MW installed from Geothermal	441	-	-	161	-	280	12,203	37,592	36,715	14,453	25,512	SDE, KenGen, IPPs	
			MW installed from Wind	200	-	-	-	-	200	-	2,200	5,500	2,200	-	SDE, KenGen, IPPs	-
			MW installed from Solar	42.5	-	-	-	42.5	-	-	756	1,512	4,537	756	SDE/KenGen/IP	-

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
															Ps	
			MW installed from Hydro	8.6	-	-	-	8.6	-	200	1,320	1,760	880	240	SDE/KenGen/IPPs	-
			MW Electricity imports	200	-	-	-	200	-	-	4,837	12,092	4,837	2,418	SDE, KPLC	
	Conduct technical feasibility study on Electrical energy reserves	A technical feasibility study conducted	No. of Studies conducted	1	1					100					SDE	
		100 MW/ 200MWH Battery Energy Storage System	% Completion of the Battery Energy Storage System	100	-	30	50	80	100	-	4,500-	4,500	9,000	2,700	SDE, KenGen, IPPs	
	Raise Masinga Dam to increase energy storage	Masinga Dam raised by 1.5 metres	% completion of raising of Masinga Dam	100	-	20	70	90	100	-	460	1,150	345	345	KenGen	
	Install green hydrogen plant	Green hydrogen plant installed	Proportion (%) completion of preliminary activities and installation of the green hydrogen plant	100	10	30	60	70	100	50	150	50	150	150	SDE, KenGen, KPLC	
	Undertake feasibility studies on conversion of	Feasibility Studies undertaken	No. of Feasibility Studies	1	-	-	1	-	-			100			SDE	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	Heavy Fuel Oils (HFO) fired plants to run on Natural Gas		undertaken													
	Expand transmission network	Transmission lines and associated Substations constructed	KM of transmission lines constructed	2,930 route length (4,600 Km circuit length)	1,159	338	457	1,200	1,445	98,500	20,900	62,000	105,000	81,500	KETRACO	
			No. of substations constructed	36	12	3	6	10	5						KETRACO	
	Automation of transmission asset condition monitoring management system	Asset condition monitoring management system implemented	% level of implementation	100	10	10	10	20	50	15	15	15	30	75	KETRACO	
	Expand distribution network	Substations Constructed and associated KM of Lines	KM of distribution lines completed	1,183	236.6	236.6	236.6	236.6	236.6	3750	4500	5532	2746	1000	KPLC /REREC	
			No. of New substations constructed	31	7	7	6	6	5						KPLC /REREC	
	Install Mini grid &	Mini-grids	No. of Mini-	248	50	50	50	50	48	8,10	5,60	6,10	5,00	5,000	REREC,	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	off-grid solutions (KOSAP and hybridization projects)	Constructed	grids constructed							0	0	0	0		KPLC	
		Community Boreholes Solar-Powered	No. of Community Boreholes Solar-Powered	4000	800	800	800	800	800	4,000	4,000	4,000	4,000	4,000	SDE, REREC	
		Solar Stand-alone Systems installed	No. of solar Stand-alone Systems installed	823	165	165	165	165	163	3,292	3,292	3,292	3,292	3,292	KPLC, REREC	
		Mini-grids retrofitted	No. of retrofitted Mini-grids	23	-	-	11	7	5	1,000	1,500	580	-	-	KPLC	
	Rehabilitate and maintain existing energy centres	Energy centres rehabilitated and maintained	No. of energy centres rehabilitated and maintained	16	16	16	16	16	16	60	60	60	60	80	REREC	
	Expand Energy centres from 16 to 47	Energy centres completed	No. of Energy centres completed	31	3	8	8	8	4	15,000	42,000	43,000	43,000	22,000	REREC	
	Accelerate electrification in rural areas	Public facilities electrified	No. of public facilities electrified	30,000	6,000	6,000	6,000	6,000	6,000	30,000	30,000	30,000	30,000	30,000	REREC	
		Transformers installed	No. of transformers installed	90,000	18,000	18,000	18,000	18,000	18,000	63,000	63,000	63,000	63,000	63,000	REREC	
	Increase customer connections	New customers	No of customers	2,300,000	580,000	650,000	470,000	300,000	300,000	15,000	19,000	14,000	8,000	8,000	KPLC	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		connections	connected													
	Provide Public Street lighting	Street Lighting project implemented	No. of lanterns installed	75,000	15,000	15,000	15,000	15,000	15,000	2,000	2,000	2,000	2,000	2,000	KPLC	
	Reinforce the transmission network	Transmission network availed	% Transmission network maintained	100	100	100	100	100	100	75	75	83	87	91	KETRACO	
	Maintain Solar Systems in public primary schools	Solar system maintained	Proportion (%) of Solar Systems maintained	100	100	100	100	100	100	225	225	225	225	225	SDE, REREC	
	Implement power market study recommendations	Planning software updated	New planning software acquired	1	-	1	-	-	-		10				SDE	
		System operations transferred from KPLC to KETRACO	% implementation of the transfer process	100	40	60	100	-	-		30,000	10			SDE, KPLC, KETRACO	
	Digitize and automate the grid to make it smart	Distribution substations connected to SCADA/EMS	No. of distribution substations connected to SCADA/EMS	15	10	5	-	-	-	155	75				SDE, KPLC	
	Live line maintenance	Truck mounted aerial	No. of platforms maintained	28	28	28	28	28	28	2	2	2	2	2	SDE, KPLC	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		platforms maintained														
	Construct 20-Inch 450 Km Mombasa -Nairobi Oil pipeline	20-Inch 450 Km Mombasa - Nairobi Oil pipeline constructed	Proportion (%) completion of construction the Oil pipeline	100		40	53	7			9,947	12,659	1,362		KPC	SDP
	Provide additional storage capacity for petroleum products	300,000 M3 additional storage capacity in Kipevu Oil and Changamwe provided	Proportion (%) construction of storage facilities	100	50	37	13			3,736	2,778	958			KPC	SDP
	Conduct monitoring of capacity enhancement projects for petroleum products	Monitoring exercises on capacity enhancement projects conducted	No. of Monitoring exercises conducted	20	4	4	4	4	4	35	35	35	35	35	EPRA	SDP
Enhance management of supply of energy and petroleum products and services	Develop and implement ancillary services market	Ancillary services market developed	Proportion (%) completion of Ancillary services market	100	20	100				50	115				SDE, EPRA	KenGen
	Conduct industry engagements on	Industry engagement	No. of Industry engagements	180	36	36	36	36	36	30	30	30	30	30	SDP	-

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	petroleum products supply chain logistics	s conducted														
	Ensure quality of petroleum products is maintained	Quality of imported petroleum products ascertained	Proportion (%) compliance with quality standards	100	100	100	100	100	100	10	10	10	10	10	EPRA	SDP
		Monthly random test visits at petroleum dispensing sites conducted	No. of monthly random test visits conducted	60	12	12	12	12	12	15	15	15	15	15	EPRA	SDP
Accelerate development and procurement of competitive sources of energy	Undertake preliminary activities on development of Kenya-Tanzania Natural Gas Pipeline	Preliminary activities on Natural Gas Pipeline undertaken	Proportion (%) of preliminary activities undertaken	100	15	60	100	-	-	100	120	80			SDP	-
Promote uptake and adoption of clean energy solutions	Feasibility studies on clean cooking solutions	Feasibility study reports	No. of feasibility study reports done	5	1	1	1	1	1						SDE	
	Development and implementation of the National clean	National Clean Cooking	National Clean Cooking Strategy	1	-	1	-	-	-	70	70	70	70	60	SDE	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	cooking strategy	Strategy														
	Facilitate the transition of public institutions from using firewood and charcoal for cooking to cleaner forms of cooking solutions.	Public institutions transitioned to clean cooking	No. of public institutions transitioned to clean cooking	37,500	7,500	7,500	7,500	7,500	7,500	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	MoEP, REREC	
	Distribute cookstoves to vulnerable households	Cookstoves distributed	No. of cookstoves distributed	1,000,000	200,000	200,000	200,000	200,000	200,000	250	250	200	150	150	MoEP, MoH, Ministry of Gender	
	Construct biogas demonstration units	Biogas demonstration units	No. of biogas demonstration units	2,000	400	400	400	400	400	585	585	585	585	585	MOEP, REREC, Development Partners, Private Sector & CSOs	
	Construction of biogas plants in public Secondary schools and Pilot program on households.	Biogas plants in public Secondary schools and Pilot program on households	No. of biogas plants	347	67	75	75	70	60	60.0	60.0	60.0	60.0	60.0	SDE, REREC	
	Adapt clean	Public	No. of public	37,500	750	750	750	750	750	183	183	178	173	1720	MoEP	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	cooking solutions	institutions and Households transitioned to clean cooking	institutions transitioned		0	0	0	0	0	5	2	2	0			
	Provide infrastructure for Clean Cooking Gas (CCG) for public learning institutions	Public learning institutions provided with infrastructure for CCG	No. of public learning institutions provided with infrastructure	3,970	100	500	500	500	500	733	3,165	3,165	3,165	3,165	SDP	-
	Procure and distribute LPG cylinders and accessories supplied to low-income Households	LPG cylinders and accessories supplied to low-income Households	No. of low-income Households supplied with LPG cylinders and accessories	500,000	100,000	100,000	100,000	100,000	100,000	1,040	1,000	1,000	1,000	1,000	NOCK	SDP
Outcome 2.2: Improved stability in the availability of energy sources and petroleum products																
Strategic Objective 2.2: To ensure uninterrupted availability of energy sources and petroleum products																
Collaborate to develop regional energy and petroleum programmes and projects	Construct interconnector infrastructure	Regional interconnectors infrastructure projects constructed	No. of interconnector projects completed	2	1	0	0	0	1	1,381	0	2,620	6,550	3,930	KETRACO	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
Enhance security of energy and petroleum infrastructure	Physical surveillance, use of drones, cyber security,	Minimal interruptions	No. of incidences	0	0	0	0	0	0	20	20	20	20	20	MoEP KPC, NOCK, EPRA, KenGen KETRACO, KPLC, REREC, NuPEA, GDC	MoI&NA
	Strengthen energy police unit	Minimal interruptions	No. of incidences	0	0	0	0	0	0	20	20	20	20	20	MoEP	MoI&NA
	Optimize system operation and dispatch	RETNET-National System Control Centre (NSCC)	% Project completion	100	10	30	30	40	0	520	330	2020	1500	0	KETRACO	
Maintain strategic stocks for critical infrastructure and petroleum products	Procure and maintain optimal levels of critical stocks of power transmission	Optimal levels of critical stocks of power transmission maintained	Proportion (%) levels of critical stocks	100	100	100	100	100	100	500	500	500	500	500	KETRACO	
	Accelerate the development of nuclear for electricity	Infrastructure for generation	% Establishment of infrastructure	100	30	15	30	20	5	800	1000	1400	2000	2000	MoE/NUPEA	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	generation	of electricity from nuclear sources developed	(for each of the 19) areas to support nuclear electricity generation													
KRA 2: TOTAL RESOURCE REQUIREMENT										**260,794**	**263,585**	**287,862**	**300,105**	**978,491**	**2,090,837**	
Strategic issue 3: Environmental degradation and impact of climate change																
Strategic Goal 3: Sustainable environment and energy efficiency																
Key Result Area 3: Environmental Sustainability in the sector																
Outcome 3.1: Enhanced environmental conservation																
Strategic Objective 3: To enhance environmental conservation																
Implement energy efficiency and conservation in buildings, industries, utilities, households and transport sector	Promote energy efficiency and conservation in households	Increased uptake of efficient electric appliances, and e-cooking	% uptake of efficient electric appliances and e-cooking	100	30	70	100	-	-	130	130				MoEP /KPLC	MoLPW H&UD KAM
		Minimum Energy Performance Standard (MEPS) Developed	No. of MEPS developed and adopted	10	2	2	2	2	2	20	60	70	40	40	SDE, EPRA	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		Electric charging stations developed	No. of Vehicle charging stations	41	1	5	10	15	10	10	50	100	150	100	SDE,RE REC,Ke NGEN, KPLC, KETRA CO	MoR&T
	Promote energy efficiency and conservation in utilities	Reduced system losses	% Reduction in Commercial Losses	5	1	1	1	1	1						KPLC, KETRA CO	
			% Reduction in technical Losses	2.5%	0.5	0.5	0.5	0.5	0.5	287	117	377	792	524	KPLC, KETRA CO	
		Super ESCO established ESCOs financing model developed	No. of super ESCOs established No. of ESCO financing model developed	1	0	0	0	0	1	100. 0	50.0	50.0	50.0	50.0	MoEP & KPLC	
	Promote energy efficiency and conservation in buildings	Public Buildings retrofitted with energy efficient appliances	No. of public Buildings retrofitted with energy efficient appliances	10	2	2	2	2	2	10	302	200	80	20	SDE, KPLC	
	Improvement of Energy Efficiency (EE) in the industry & Agriculture	Investment Grade Audits (IGAs)	No. of IGAs conducted	100	20	20	20	20	20	888	890	881	876	861	SDE	KAM

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	Strengthen institutions responsible for Energy Efficiency in Kenya	Enhanced capacity of Centre for Energy Efficiency and Conservation (CEEC)	% review of MoU between MoE and KAM	100	0	20	50	100	0	18.0	33.0	28.0	33.0	18.0	SDE	
	Enhance efficiency and conservation of energy	Improved charcoal kilns	No. of energy efficient charcoal kilns installed	50	5	9	12	12	12	7	15	20	20	20	SDE	
	Install energy saving stoves in public institutions	Installed energy saving stoves	No. of installed energy saving stoves	200	40	40	40	40	40	80.0	80.0	80.0	80.0	80.0	MoEP	MoE & MoH
Promote renewable energy sources	Install biofuel plants	Biofuel plants installed	No. of Biofuel plants installed	2				1	1	10	30	30	20	10	SDE REREC	
	Install charcoal kilns	Charcoal Kilns installed	No. of Charcoal kilns installed	300	10	100	100	80	10	30	300	300	270	30	SDE REREC	
	Install demonstration biogas plants in public secondary schools.	Biogas plants installed in public Secondary schools	No. of Biogas plants installed in public Secondary schools	347	70	70	70	70	67	62	62	62	62	52	SDE REREC	MoE
	Install demonstration	Household biogas	No. of household	47	7	15	15	10		42	90	90	60		SDE REREC	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	biogas plants in households	systems installed	biogas systems installed													
Implement environmental conservation programmes	To rehabilitate and protect Hydro dam catchments and riparian from degradation	Hectares of degraded hydro dam catchments	No. of hectares	1,500	259	288	317	318	318	180	250	300	300	300	SDE	MoECC &F KFS
	Establishment of Woodlots	Woodlots established	No. of woodlots established	500	100	100	100	100	100	100	100	100	100	100	SDE, KenGen	MoECC F KFS
KRA 3: TOTAL RESOURCE REQUIREMENT										**2,014**	**2,709**	**2,738**	**2,833**	**1,581**	**11,875**	
Strategic issue 4: Inadequate legal, policy and institutional regulatory framework																
Strategic Goal 4: Strong legal, policy and institutional regulatory framework																
Key Result Area 4: Enabling Environment for the growth of the sector																
Outcome 4: Enhanced sector coordination and management																
Strategic Objective 4: To improve legal, policy and institutional regulatory framework																
Strengthen legal and policy framework	Review National Energy Policy 2018	National Energy Policy reviewed	Reviewed National Energy Policy	1		1				20	20				SDE	AG Parliament
	Finalize the development of National Petroleum Policy	National Petroleum Policy developed	National Petroleum Policy	1	1	-	-	-	-	15					SDP	AG Parliament
	Review the Energy Act, 2019, Petroleum Act, 2019 and Petroleum	Energy Act, 2019, Petroleum Act, 2019 and	Energy Act, 2019, Petroleum Act, 2019 and Petroleum	3			2	1		10	45	20			SDE/SDP	AG Parliament

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	Development Levy Fund Act, 1991	Petroleum Development Levy Fund Act, 1991 reviewed	Development Levy Fund Act, 1991													
	Develop Regulations under the Energy Act 2019	Gazetted Regulations	No. of Regulations approved and gazetted	32	22	5	5	0	0	124	62	62	0	0	SDE, EPRA	AG Parliament
	Develop regulations under the Petroleum Act, 2019	Petroleum regulations developed	No. of petroleum regulations	5	1	1	1	1	1	5	5	5	5	5	EPRA SDP	AG Parliament
	Develop National Petroleum Master Plan	National Petroleum Master Plan developed	National Petroleum Master Plan	1		1					15				SDP	
	Legal compliance audits	Legal Compliance Audits completed	No. of Legal Compliance Audit Reports	10	2	2	2	2	2	30	30	30	30	30	MoEP	AG
	Development of Sector Plans	2023-2027 Strategic Plan Reviewed	No. of Strategic Plan reviews	2	-	-	1	-	1			10		10	MoEP	SDEP
		MTP V (2028-2032) prepared	MTP V (2028-2032)	1	-	-	-	-	1					30	MoEP	SDEP
		2028-2032 Ministerial Strategic	2028-2032 Ministerial Strategic Plan	1	-	-	-	-	1					40	MoEP	SDEP

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		Plan prepared														
	Develop a Monitoring and Evaluation Framework	M&E Framework Developed	M&E Framework	1	-	1	-	-	-		20				SDE, SDP	SDEP
		Quarterly Monitoring and Evaluation (M&E) of projects undertaken	No. of M&E Reports	20	4	4	4	4	4	12	12	12	12	12	MoEP	SDEP
Integrated Energy Planning	Promote Integrated Energy Planning in the country	County Energy Plans (CEPs)	No. of County Energy Plans (CEPs)	47	47	47	47	47	47	-	-	-	-	-	County Governments	MoEP
		National Energy Service Providers Plans	No. of National Energy Service Providers Plans	7	7	7	7	7	7	-	-	-	-	-	SDE SAGAs	MoEP
		INEP	INEP developed	1	-	-	-	-	1	200	200	200	200	200	MoEP	County Governments
Strengthen human resource capacity	Human resource capacity building	Officers trained annually	No. of officers trained annually	1500	300	300	300	300	300	25	25	25	25	25	MoEP	SDPS
		Conduct Training	Training needs assessment	4		2			2		5			5	MoEP	SDPS

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
		Needs Assessments (TNA)	report													
	Career Planning and Succession Management in the sector	Officers recruited	No. of officers recruited	250	50	50	50	50	50	60	60	60	60	60	MoEP	PSC SDPS
		Officers promoted	No. of officers promoted	200	25	25	25	25	25	10	10	10	10	10	MoEP	PSC
	Review the organizational structures for the sector	Organizational Structures Reviewed	No. of Organizational Structures Reviewed	2	2	-				6					MoEP	PSC
	Develop Career progression guidelines for Ministry personnel	Career progression Guidelines developed	Career guidelines developed	2	1	-	-	-	1	3.5	-	-	-	3.5	MoEP	PSC
	Manage transport services	Functional vehicles maintained	No. of functional vehicles maintained	65	57	60	61	62	63	140	150	153	155	158	MoEP	SDPW
		Vehicles acquired	No. of New vehicles acquired	15	3	3	3	3	3	30	30	30	30	30	MoEP	SDPW
Enhance ICT in the sector	Develop a Communication Strategies	Communication strategies developed	No. of communication strategies developed	2	1	1	-	-	-	10	10	-	-	-	MoEP	SDBT
	Develop Communication Policies	Communication policies developed	No.of communication policies	2	1	1	-	-	-	10	10	-	-	-	MoEP	SDBT

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
			developed													
	Develop Public Participation Strategy	Public Participation strategy developed	No.of Public Participation strategies developed	2	1	1	-	-	-	10	10	-	-	-	MoEP	SDSS
	Develop a data management and governance framework	Data management and governance framework developed	Data management and governance framework	2		2					6				MoEP	MICDE
	Develop ICT Policy	ICT Policy developed	ICT Policies	2		2					6				MoEP	MICDE
	Upgrade ICT infrastructure	ICT infrastructure developed	Proportion (%) of ICT infrastructure upgraded	60	40	45	50	55	60	18	30	30	15	15	MoEP	MICDE
	Develop ministerial website	Ministerial website	Ministerial website	1	1					2	1	1	1	1	MoEP	MICDE
	Digitalize Energy and Petroleum services	Energy and Petroleum services digitalized	Proportion (%.) of services digitalized	100	20	30	50	70	100	40	40	40	40	40	MoEP	MICDE
	Electronic Document Management System (EDMS) for State Departments	EDMS established	No. of EDMS	4,000	900	1,000	800	800	500	2	2	2	2	1	MoEP	MICDE
	Establish/upgrade libraries	Libraries established	Proportion (%) of the library	100	60	70	80	90	100	4	2	2	2	2	MoEP	SDfCH

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
			established/upgraded													
	Establish a ministerial geospatial unit	Geospatial unit developed	Geospatial unit	1	1	-	-	-	-	10	10	10	10	10	MoEP	
Enhance research, development and innovation	Development and upgrade Centres of Excellence in Energy Sector	centres of excellence developed	No. of Centres of excellence	2				1	1	2020	3472	3603	1865	1010	KenGen GDC	MoEP
	Develop a framework for collaborative research and development for the Energy sector	Research and Development Framework for the Energy sector	Research and Development Framework	1		1					10				MOEP/ NuPEA	
	Establish the Nuclear Research Reactor	Nuclear Research Reactor Installed	% Completion	30	5	5	5	5	10	-	118	100	5135	5135	MoE/NuPEA	
	Hold annual innovation awards	Annual Innovations awards	No. of Innovation awards done	5	1	1	1	1	1	50	50	50	50	50	ALL	
Enhance resource mobilization and management	Prepare a resource mobilization strategy for the sector	Resource mobilization strategy prepared	Resource mobilization strategy	1		1					4				MoEP	
	Comply with financial and	Unqualified audit report	No. of reports	5	1	1	1	1	1	5	5	5	5	5	SDP	TNT

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	procurement laws															
	Coordinate the preparation of the Institutional Risk Management Policy Framework	Institutional Risk Management Policy Framework	No. of Institutional Risk Management Policy Frameworks	2	1	-	-	1	-	10			10		SDP	
	Undertake Risk Assessment	Institutional Risk Register prepared	No. of institutional Risk Registers	2	1	-	-	1	-	8	3	3	8	3	SDP	
	Prepare Annual Medium Term Expenditure Framework (MTEF) Budgets	Annual Budgets prepared	No. of budgets prepared	5	1	1	1	1	1	15	15	15	15	15	SDP	
Mainstream Gender, PWDs, youth and other vulnerable groups in policies, programmes and projects in the sector	Develop gender mainstreaming policies	Gender Mainstreaming Policies developed	Gender Mainstreaming Policies	4	1	3	-	-	-	4	8	-	-	-	MoEP	

Strategy	Key Activities	Expected outputs	Output indicators	Target for 5 years	Target					Budget (kes. Mn)					Responsibility	
					Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Lead	Support
	Develop, Implement and Promote Social Standards	Energy Sector Social Standards	A developed Energy Sector Social Standards	1	-	1				10	20				MoEP	
	Gender mainstreaming in programmes and projects	6Kg LPG cylinders distributed to low-income households	No. of 6kg LPG cylinders distributed	300,000	60,000	60,000	60,000	60,000	60,000	400	400	400	400	400	MoEP	
		Clean cooking solutions	no. of clean cooking solutions distributed	150,000	30,000	30000	30,000	30,000	30,000	50	50	50	50	50	MoEP	Development partners
KRA 4: RESOURCE REQUIREMENT										**3,340**	**4,896**	**4,857**	**8,064**	**7,281**	**28,438**	
TOTAL RESOURCE REQUIREMENT FOR THE FOUR KRASs IN THE STRATEGIC PLAN										273,580	317,629	319536	456,268	1,148,953		

6.1.2 Annual Work Plan and Budget

The Ministry commits to extract and cost annual work plans from the action plan implementation matrix in table 6.1 of this strategic plan. The Ministry's annual work plans will adopt activity-based costing and aligned to the annual budgets. The costed annual work plans will be prepared at the beginning of every financial year.

6.1.3 Performance Contracting

To enhance implementation of the Strategic Plan and achievement of its objectives, performance contract targets will be drawn from the implementation matrix provided in Table 6.1. The Ministry will ensure that each staff contributes to the implementation of this strategic plan and realization of the Vision of the Ministry through aligning individual SPAS targets to the Ministry's performance Contract.

6.2 Coordination Framework

The Ministry coordination framework entails the Institutional framework; staffing levels; skills set and competency development; leadership; and systems and procedures.

6.2.1 Institutional Framework

The institutional framework for the Ministry involves the organization structure, policy, rules and regulations that support the implementation of its strategic initiatives.

6.2.1.1 Structure of the Ministry of Energy and Petroleum

6.2.1.1.1 Directorates/Departments/Units and State Corporations under the Ministry

a) Structure of the State Department for Energy

The State Department comprises three technical Directorates namely; Electrical Power Development, Renewable Energy and Geo-Exploration. The State Corporations/Agencies include Energy and Petroleum Regulatory Authority(EPRA), Kenya Power & Lighting Company(KPLC), Kenya Electricity Generating Company (KenGen), Rural Electrification and Renewable Energy Corporation(REREC), Kenya Electricity Transmission Company Limited(KETRACO), Nuclear Power and Energy Agency (NuPEA), Geothermal Development Company Limited (GDC)and The Energy and Petroleum Tribunal, In addition, the State Department has ten Administration and support services departments/units

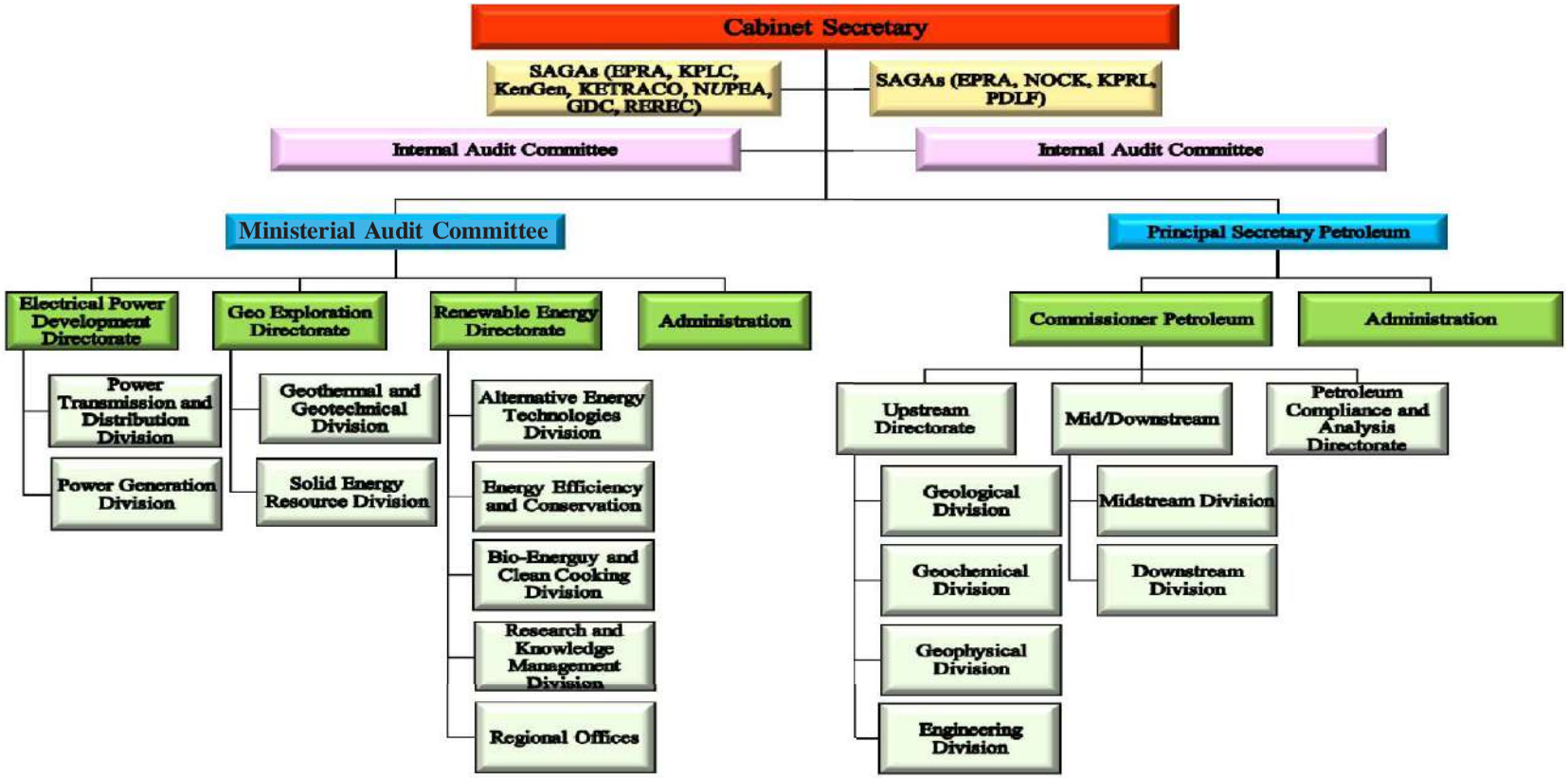
b) Structure of the State Department for Petroleum

The State Department for Petroleum has three Technical Directorates under the Office of the Commissioner for Petroleum namely: the Upstream Directorate, the Mid/Downstream Directorate and Petroleum Compliance and Analysis Directorate. The Upstream Directorate has four (4) Divisions namely: Geological Division;

Chemical Division; Geophysical Division and Engineering Division; the Mid/Downstream Directorate has two (2) Divisions namely; Midstream and Downstream with three (3) Sections namely; Standards Enforcement, Infrastructure Development and Petroleum Technology; while the Petroleum Compliance and Analysis Directorate has seven (7) Technical Divisions namely: Petroleum Legal & Compliance; Petroleum Audit & Risk Analysis; Petroleum Economic Analysis; Petroleum Environmental Analysis; Petroleum Finance Analysis; Petroleum Communications & Marketing; and Social Development Analysis. There are three (3) Semi-Autonomous Government Agencies (SAGAs) namely: Kenya Pipeline Company (KPC); National Oil Corporation of Kenya (NOCK) and Kenya Petroleum Refineries Limited (KPRL). The technical operations of the State Department are supported by the Petroleum Development Levy Fund (PDLF) and eleven (11) Administrative Support Units/Departments.

Organizational Structure the Ministry of Energy and Petroleum.

Figure 6.1: Ministerial Organizational Structure



6.2.1.1.2 Functions of Cabinet Secretary, Principal Secretary, Chief Administrative Secretary, Departments and Units

The following are the respective functions of various offices in the Ministry:

a. Office of the Cabinet Secretary

The functions of the Office of the Cabinet Secretary:

i) Providing policy and strategic direction to the Ministry and strengthening institutions to effectively operationalize their mandate;
ii) Formulating, presenting and articulating Cabinet Memoranda, Sessional Papers and other policy issues emanating from the Ministry to the Cabinet, National Assembly, Senate or any other fora;
iii) Providing parliament with full and regular reports concerning matters under his/her control;
iv) Responding to questions touching on the Ministry to the National Assembly and Senate committees; and
v) Appointing Board members of Public Institutions falling under the Ministry in accordance with the respective statutes.

b. Office of the Principal Secretary:

The Principal Secretary is the Accounting Officer of the State Department for Petroleum and is responsible for effective administration and management of the Directorates/Divisions. The role of the Principal Secretary is to direct and coordinate the general functioning of the State Department within the operational guidelines of government policies and ensure effective delivery of its mandate.

The specific functions of the Office of Principal Secretary are:

i) Implement government policies and the Strategic Plan for the State Department for Petroleum;
ii) Facilitate the achievement of the goals and objectives of Government and Intergovernmental programs and projects;
iii) Develop and implement an effective performance management system;
iv) Ensure efficient and effective utilization of Financial, Human and other Resources in the State Department and submit regular statutory reports as required; and
v) Promote values and principles spelt out in Articles 10 and 232 of the Constitution of Kenya in the operations of the State Department.

c. Technical Directorates in the State Department for Energy

I. Directorate of Electrical Power Development

i) Develop and review electrical energy policy formulation and development;
ii) Coordinate updating of the Least Cost Power Development Plan;
iii) Coordinate tariff policy formulation;

iv) Initiate development of technical standards in electrical power;
v) Undertaking regional power studies;
vi) Appraisal and review of feasibility studies on national electrical power projects;
vii) Coordinate National Energy Power planning; and
viii) Monitoring and evaluation of Generation, Transmission, Distribution and Rural Electrification Projects.

II. Directorate of Renewable Energy

i) Development and review of policies, strategies and guidelines for Renewable and energy efficiency and conservation;
ii) Promotion of renewable energy and energy efficiency and conservation technologies;
iii) Coordination of research in renewable energy and energy efficiency.
iv) Provision of an enabling framework for the efficient and sustainable production, distribution and marketing of Alternative Energy and Bioenergy Technologies.
v) Promotion of development of appropriate local capacity for the manufacture, installation, maintenance and operation of renewable technologies.
vi) Establishing linkages with international partners on programmes focusing on renewable energy and energy efficiency technologies.
vii) Harness opportunities offered under climate change programmes and projects to promote the development and exploitation of renewable energy, and energy efficiency and conservation;
viii) Monitoring and evaluation of renewable energy, energy efficiency and conservation projects.
ix) Collaboration with international, regional and local stakeholders in the harmonization of renewable energy policies and standards.
x) Promotion of off-grid and decentralized electrical systems and hybrids for electricity access.
xi) Feed-in-tariff policy development, promotion and review.
xii) Initiate the development of performance standards and labels for energy efficient equipment and appliance.
xiii) Promotion of Private Sector participation in the development of renewable energy initiatives;
xiv) Administration of the Kenya Energy Sector Environment and Social Responsibility Program (KEEP) Fund.

III. Directorate of Geo-Exploration

i) Formulation of Policy, legal and regulatory framework for exploration and production of geo-energy resources;
ii) Coordinating the establishment of the African Geothermal Centre of Excellence and overseeing its operations;
iii) Donor coordination partnerships and sourcing of funds for geo-energy resources development;
iv) Development of proposals for geo-energy resources development;

v) Coordinating the implementation of the National Geothermal Strategy;
vi) Undertaking geological, geophysical and geo-chemical resource assessment of geo-energy resources;
vii) Acquisition, analysis, collation and interpretation of geological geophysical and geochemical data on geo-energy resources;
viii) Coordination and supervision of exploratory drilling operations in prospective areas;
ix) Licensing of acreage for geo-energy resources;
x) Negotiation and licensing of geo-energy exploration and production;
xi) Exercise oversight over geo-energy resources licensees and SAGAs under the Ministry for statutory compliance;
xii) Stakeholder engagement for geo-energy resource development;
xiii) Custodian to licenses and Benefit Sharing Agreements

d. Technical Directorates in the State Department for Petroleum

Office of the Commissioner, Petroleum

i) Develop and review policies, legal and regulatory framework for spearheading upstream and mid/downstream petroleum operations;
ii) Develop and review fiscal and contractual terms for oil and gas;
iii) Assess Oil and Gas Potential in Kenya's Exploration Blocks;
iv) Ensure the security of supply of petroleum products;
v) Monitor the implementation of agreed solutions on short, mid, and long-term downstream petroleum challenges identified by Stakeholders;
vi) Negotiate the Production Sharing Contracts (PSCs);
vii) Develop capacity in areas of Petroleum Geosciences, Petroleum Engineering, Petroleum Economics, Petroleum Accounting, Petroleum Resource Appraisal & Management and Procurement techniques;
viii) Enforce Environmental Protection and Management regulations in liaison with National Environmental Management Authority (NEMA);
ix) Ensure the build-up of local content capacity in line with national policy goals;
x) Develop and update of an oil & gas master plan for exploration, development, production and marketing of the produced oil & gas;
xi) Develop and review modalities and strategies for licensing of blocks in bid rounds and custodian of all signed PSCs; and
xii) Promote and facilitate investment opportunities for oil and gas.

The Office of the Commissioner, Petroleum is organized into the following three (3) Directorates;

I. Upstream Directorate;
II. Mid/Downstream Directorate; and
III. Petroleum Analysis and Compliance Division

I. Upstream Directorate

i) Approval of work programmes and budgets of oil companies;
ii) Plan, design and implement oil & gas projects and programs;
iii) Undertake technical audit and evaluate geological, geophysical, geochemical and drilling work programs;
iv) Overall coordination, monitoring and making recommendations on quality of data;
v) Ensure smooth implementation of petroleum programmes within the country;
vi) Coordinate licensing of petroleum blocks through bidding rounds;
vii) Monitor and supervise exploration, appraisal, development and production operations in all licensed blocks;
viii) Coordinate sensitization and awareness creation of local communities and other stakeholders in areas of petroleum operations;
ix) Promote existing Petroleum Exploration potential in the Country's blocks to prospective oil & gas exploration and production companies;
x) Liaise with Treasury and Kenya Revenue Authority to facilitate exemptions on payment of Duty, Import Declaration Forms (IDF) and Value Added Tax (VAT) by oil companies;
xi) Repackage all technical data acquired in the Country's Petroleum Exploration blocks on basis of individual basins;
xii) Prepare programmes for active participation in interactive regional and international data exchange and technology transfer forums;
xiii) Develop strategies and work programs to effectively handle the increasing volume of work activities associated with upward trends in exploration, development, production and marketing of discovered oil & gas resources;
xiv) Monitor and report on company payments and due dates for these payments;
xv) Monitor the submission of quarterly and annual reports by the Oil Companies;
xvi) Monitor due dates for relinquishment of acreage by Oil Companies;
xvii) Ensure presentation of work Programs and budgets for licensed blocks;
xviii) Coordinate the review of block sizes downwards and initiation of process leading to preparation of demarcation of blocks;
xix) Generate new block boundary coordinates in preparation of revised petroleum exploration block maps and gazettement as new blocks; and
xx) Coordinate capacity building initiatives (institutional and technical skills development) for Upstream Petroleum operations.

II. The Mid/Downstream Directorate

i) Implement policies and regulations on efficient and cost-effective importation/exportation, transportation, storage and distribution of petroleum products;
ii) Establish Petroleum fuels supply chain monitoring systems to ensure security of supply and efficient distribution of petroleum products;
iii) Monitor the implementation of mid/downstream petroleum programmes;

iv) Coordinate, develop and review terms and conditions for importation of refined petroleum products and exportation of crude oil;
v) Provide information on importation and exportation, transportation, storage and distribution of petroleum products.
vi) Monitor petroleum stock levels in various depots across the country to avoid stock-outs;
vii) Undertake economic and financial appraisal and planning for various infrastructure requirements for oil and gas storage and transportation for both crude and refined products;
viii) Review quality standards of various petroleum products in accordance with international recognized norms in collaboration with Kenya Bureau of Standards;
ix) Coordinate various agencies involved in importation of refined petroleum products into the country;
x) Ensure optimal utilization of petroleum handling and storage facilities;
xi) Coordinate capacity building initiatives (institutional and technical skills development) for mid/downstream petroleum operations; and
xii) Develop policies for use of Natural Gas Liquids (NGLs) produced from oil and gas fractionating plants.

III. Petroleum Compliance and Analysis Directorate

i) Develop, review and implement petroleum laws, policies, regulations, guidelines and permits and other relevant legal documents to govern the compliance and analysis function;
ii) Monitor compliance with reporting, transparency and accountability frameworks in the Upstream petroleum sector in accordance with the Petroleum Act, 2019 and other relevant laws;
iii) Coordinate petroleum agreements/contracts negotiation with potential contractors and investors to ensure that they are fair, equitable, transparent and competitive;
iv) Implement oil and gas budgetary and financial management policies, strategies and programs;
v) Review and advise tax authority on transfer pricing and capital gain during farm-out/farm-in petroleum licensing;
vi) Undertake financial analysis and modelling of new investment opportunities and petroleum projects;
vii) Oversee preparation of net cash-flow projections by analysing the main components of cash-flow for oil and gas investments (production, price, revenue, operating costs, capital costs, abandonment costs and fiscal costs);
viii) Review and advice on the approval of IOCs' annual work programme and budgets for petroleum operations;
ix) Guide the review and provide administrative advice on the implementation of Environmental and Social Impact Assessment (ESIA) reports for proposed petroleum projects;

x) Review the disaster preparedness, emergency response and management guidelines and mechanisms for the petroleum sector;
xi) Establish Petroleum fuels supply chain monitoring systems to ensure security of supply and efficient distribution of petroleum products locally and regionally;
xii) Implement petroleum cost recovery audit policies, strategies, procedures and guidelines;
xiii) Develop, review and guide the implementation of oil and gas Risk Management policies, processes, procedures and guidelines;
xiv) Audit cost recovery statements submitted by oil companies and advise the management on the audit findings;
xv) Develop and review of petroleum operations risk assessment framework and risk register;
xvi) Initiate and coordinate review of communications and marketing policies, strategies and programs emphasizing local content for petroleum exploration, development and production.
xvii) Manage expectations to ensure harmony for smooth petroleum operations by timely identification of possible gaps in communication between the Government, licensed oil companies and local Communities and other stakeholders;
xviii) Develop grievance and dispute resolution mechanisms in regard to exploration, development, production and marketing of oil and gas;
xix) Enhance visibility of the petroleum industry and build stakeholder trust through positive public communication programs;
xx) Develop content for documentaries and publications on oil and gas investment opportunities in the country;
xxi) Oversee negotiations on CSR programs between the oil companies and the stakeholders.

e. Administrative and support Services

I. Administration Unit

i) Co-ordination and stewardship of Government business and responding to emerging policy and development initiatives;
ii) Promotion of statehood and nationhood;
iii) Policy formulation, analysis and general administration;
iv) Office management; management of staff in areas of deployment;
v) Responding to parliamentary business;
vi) Co-ordination of official and state functions; preparation of reports, speeches and briefs;
vii) Arbitration of disputes;
viii) Customer care;
ix) Responding to emerging issues and initiatives such as the Kenya Vision 2030 and Sustainable development goals;
x) Implementation and follow ups of Presidential directives with respective sectors; inter-ministerial liaison;

xi) Promotion of ethics and integrity;
xii) Management of public resources and assets;
xiii) Promotion of the Government image; and
xiv) Promotion of good governance.

II. Records Unit

i) Receipt and custody of all records received from external and internal organizations;
ii) Develop/review of File classification and indexing;
iii) Dissemination and storage for information/records;
iv) Survey and appraisal of records for disposal, preservation or retention in collaboration with Kenya National Archives and Documentation Services (KNADS);
v) Identification of proper storage equipment for records;
vi) Digitization of records; and
vii) Development of records management policy/procedure manual in line with the laid down regulations.

III. Library Unit

i) Collection of information materials generated within the State Department and acquisition of new information materials from outside the organization;
ii) Provide users with access to information and dissemination of the same proactively (Selective Dissemination of Information);
iii) Facilitate research to users on various areas especially those related to petroleum issues;
iv) Planning and implementation of the library budget; and
v) Maintenance and overall running of the daily operations of the library.

IV. Finance Unit

i) Processing of estimates for the program budget;
ii) Prioritization of programs and activities for results-based allocation of resources;
iii) Issuance of Authority to Incur Expenditure;
iv) Expenditure and revenue forecasts;
v) Monitoring of revenue and expenditure;
vi) Prioritization of projects and activities for the purpose of financial allocations in the budget.
vii) Oversight of commitment of funds and expenditure trends, in line with Treasury Circulars;
viii) Budget monitoring and reporting;
ix) Reallocations within Budgeted Heads and programs;
x) The overall financial management and control of voted funds; and
xi) Offering strategic leadership on all matters pertaining to financial management.

V. Central Planning and Project Monitoring Department

i) Coordinate the formulation, implementation and review of national and sectoral development plans, policies and strategies;
ii) Ensure linkage between the national and sectoral policies, plans and budgets;
iii) Monitor, evaluate and report progress on implementation of the national development blueprints, policies, programmes and projects;
iv) Coordinate implementation and report on the State Department Strategic plan and performance contract;
v) Uploading, updating information and generating the State Department projects/programme reports in the Electronic National Integrated Monitoring and Evaluation System;
vi) Conduct Sector-specific economic analysis and research on topical and emerging socio-economic issues to inform policy formulation and planning;
vii) Ensuring conformity to norms and standards on economic development planning;
viii) Preparation of periodic sector-specific progress reports;
ix) Conducting impact assessment of the State Department programmes and projects;
x) Coordination of pre-feasibility and feasibility studies in the State Department;
xi) Updating and maintaining a Knowledge Management Repository;
xii) Collect and analyse data for public expenditure tracking surveys programmes and projects evaluations;
xiii) Coordinate implementation of international commitments, regional integration issues including Sustainable Development Goals and African Agenda 2063, and economic partnerships;
xiv) Ensuring timely, efficient and effective implementation of programmes and projects; and
xv) Secretariat to project committees and enforcing compliance to Public Investment Management (PIM) guidelines; among other functions.

VI. Human Resource Management and Development Unit

i) Planning for the human resource requirements of the State Department;
ii) Management of recruitment, compensation, maintenance and separation of human resources;
iii) Implementation of human resource management policies, rules and regulations;
iv) Coordination of development and review of Schemes of Service administered by the State Department;
v) Implementation of performance management;
vi) Identification of skills requirements;
vii) Formulation and implementation of the human resource development plan;
viii) Coordinate the implementation of training programmes;
ix) Secretariat to Human Resource Management Advisory Committee;
x) Secretariat to Employee Performance Management Committee;

xi) Coordination of internship and attachment programmes in the State Department; and
xii) Monitoring and evaluation of training programmes.

VII. Information and Communications Technology Unit

i) Maintaining ICT standards within State Department;
ii) Spearheading e-Government initiatives in the Service delivery;
iii) ICT User support;
iv) Systems analysis and design;
v) Provision of technical and operational support for systems and infrastructure including networks, websites, email systems, databases, and applications;
vi) Development and implementation of computerized information systems;
vii) ICT security Controls;
viii) Formulation, implementation, and coordination of ICT policies, strategies, and programs; and
ix) Provision of advisory services to the Ministry on all matters related to ICT.

VIII. Supply Chain Management Unit

i) Preparation of Annual Procurement and Asset Disposal Plans;
ii) Procurement of goods, works and services;
iii) Disposal of idle assets;
iv) Inventory Control;
v) Asset and Stores management;
vi) Contract Administration;
vii) Provision of advice on procurement related matters; and
viii) Reporting on affirmative action.

IX. Accounts Unit

i) Processing and making payments of financial transactions;
ii) Production of financial reports;
iii) Maintenance of accounting records;
iv) Management of the cash flow;
v) Preparation of final accounts; and
vi) Preparation of audit responses to accounting matters.

X. Internal Audit Unit

i) Provide consultancy services to management on internal controls, risk management and corporate governance;
ii) Conduct audit assignments to assess whether risks are appropriately identified and managed;
iii) Monitor implementation of internal audit recommendations;
iv) Review the effectiveness and efficiency of internal controls; and
v) Undertake compliance and value for money audits.

XI. Public Communications Unit

i) Improve and maintain a positive corporate image of the State Department for Petroleum (SDP);
ii) Building awareness and understanding on Ministry's programmes;
iii) Improve internal communication;
iv) Maintenance of external communication with sector stakeholders; and
v) Enhance partnership with the media.

XII. Legal Unit

i) Provision of legal services to the State Department;
ii) Coordination of development and implementation of legislations and policies; and
iii) Ensure compliance with the Constitution and other legislations.

XIII. Gender Unit

i) Gender Policy Development and Implementation in the Sector;
ii) Building the capacity of officers in the Ministry on gender mainstreaming;
iii) Monitoring gender responsiveness in policies, projects and programs in the Energy Sector;
iv) Monitoring and reporting on Ministry's Compliance with the constitutional provisions on gender inclusivity and equity;
v) Conduct periodic Gender impact assessments in projects in the Energy Sector;
vi) Establish Gender data management system;
vii) Development of Policies and Programs on Gender Based Violence; and
viii) Reporting to the National Gender and Equality Commission on the Ministry's compliance level on gender mainstreaming.

6.2.2 Staff Establishment, Skills Set and Competence Development

The Ministry's staff, skills and competency requirements for the implementation of this strategic plan are as follows.

Table 6.2: Staff Establishment (Cadre, Optimal, In-post and Variance)

Cadre	Approved Establishment (A)	Proposed Staffing Levels (B)	In-Post (C)	Variance D = (B - C)
A. TOP LEADERSHIP				
Cabinet Secretaries	1	1	1	0
Principal Secretaries	2	2	2	0
B. STATE DEPARTMENT FOR ENERGY				
1. Electrical Power Development Directorate				
Electrical Engineers	20	14	11	3
Electrical Technicians	0	6	6	0
Mechanical Engineers	21	21	11	9
2. Renewable Energy Directorate				

Cadre	Approved Establishment (A)	Proposed Staffing Levels (B)	In-Post (C)	Variance D = (B - C)
Renewable Energy Officers	55	-	23	-32
Renewable Energy Assistants-Energy Centers	0	-	1	+1
Artisans	0	-	1	+1
Civilian Security Wardens	0	-	0	0
Groundsmen/Guarden Assistants	0	-	0	0
3. Geo – Exploration Directorate				
Geologists	18	-	8	-10
Engineers – Mining	4	-	1	-3
Geo-Physicists	5	-	2	-3
Geo-Chemists	5	-	2	-3
Laboratory Technologists	0	-	0	0
Drilling Personnel	1	-	4	+3
Cartographers	1	-	2	+1
GIS Technologists	3	3	0	-3
Environmental Compliance Personnel	4	4	0	-4
4. Administrative and Support services				
Administration	3	7	7	+4
Library Personnel	1	1	1	0
Office Administrative Services Personnel	7	15	45	+30
Records Management Officers	3	3	3	0
Clerical Officers	4	10	20	+16
Machine Operators	0	0	0	0
Drivers	21	15	19	-3
Charge Hands	2	2	2	0
Support Staff	8	10	26	+16
HRM Officers/ Assistants	6	7	12	+6
Supply Chain Management Services	3	7	10	+7
Finance Officers	3	5	5	+2
Accountants	7	12	15	+8
Information Communication Technology	2	5	5	+3
Public Communication Officers & Assistants	2	3	3	+1
Economists/Statisticians	2	8	6	+4
Legal Officers	2	2	2	0
C. STATE DEPARTMENT FOR PETROLEUM				
1. Directorate of Petroleum				
Commissioner for Petroleum	1	1	0	-1
Petroleum geologist personnel	24	24	12	-12
Petroleum Geophysical Personnel	23	23	8	-15
Petroleum Geochemical Analysis Personnel	23	23	3	-20
Petroleum Engineering Personnel	29	29	2	-27
Petroleum Chemical Engineer personnel	7	7	1	-6
Petroleum Mechanical l Engineer personnel	6	6	2	-4
Petroleum Technology personnel	27	27	11	-16
Petroleum Environmental Analysis personnel	6	6	2	-4
Petroleum Economic Analysis Personnel	6	6	1	-5
Petroleum Communication and Marketing Personnel	4	4	0	-4

Cadre	Approved Establishment (A)	Proposed Staffing Levels (B)	In-Post (C)	Variance D = (B - C)
Petroleum Legal and Compliance Personnel	2	2	0	-2
Petroleum Finance Analysis Personnel	2	2	0	-2
Petroleum Audit and Risk Analysis Personnel	6	6	2	-4
Social Development Analysts Personnel	6	6	0	-6
2. Administrative and Support services				
Administration personnel	8	8	7	-1
Library Personnel	3	3	1	-2
Office Administrators personnel	14	14	1	-13
Assistant Office Administrators	15	15	11	-4
Office Administrative Assistants personnel	5	5	5	0
Records Management personnel	18	18	6	-12
Clerical personnel	30	30	16	-14
Drivers personnel	42	42	21	-21
Cleaning/Support Staff	45	45	15	-30
Civilian Security Warden personnel	13	13	0	-13
Information Communication Technology personnel	10	10	6	-4
Legal Officers personnel	2	2	2	0
Public Communications Personnel	12	12	6	-6
Human Resource Management & Development personnel	18	18	8	-10
Finance Officers personnel	5	5	4	-1
Accountant personnel	11	11	12	1
Supply Chain Management Services personnel	13	13	9	-4
Economists/Statisticians	2	6	5	-1

The current staff establishment is faced with the following weaknesses;

a) Most of the labour force in the technical departments is nearing exit due to challenges in succession management.
b) Compliance with the 30:70 ratio for technical to support in the staff establishment due to a significant exodus of technical workforce to the SAGAs.

Table 6.2.1: Summary of Sector Staff Establishment

SUMMARY	Authorized/Optimal (B)	In post (C)	Variance D=(B-C)
State Department for Energy	217	189	-28
State Department for Petroleum	425	177	-247
EPRA	424	158	266
KPLC	13,417	10,000	3417
KenGen	3,167	2,604	563
REREC	1,118	623	495
GDC	2,010	1,084	926

KETRACO	910	520	390
NuPEA	147	84	63
NOCK	268	172	-96
KPC	1,589	1,369	-220
KPRL	-	-	
Total	**23,634**	**17,056**	**5,451**

6.2.2.1 Skills Set and Competence Development

Table 6.3: Captured as Annex 1

6.2.3 Leadership

The Ministry's strategic plan 2023 to 2027 is cascaded into five strategic themes. These are:

I. Energy and Petroleum Access
II. Energy and Petroleum resources and development
III. Electricity
IV. Bioenergy
V. Energy and Petroleum Efficiency and Conservation

The Ministry shall form strategic theme teams to implement the above five thematic areas as follows:

a) The Strategic Ministerial Leadership Committee (SMLC)

The Ministry shall establish a Strategic Ministerial Leadership Committee (SMLC). The committee will be chaired by the Cabinet Secretary. The mandate of SMLC will include:

i. Provide strategic leadership and governance oversight towards the realization of energy and petroleum sector objectives.
ii. Deliberate and approve the recommendations submitted by the Technical Committees
iii. Set out the energy and petroleum sector planning objectives.
iv. Ensure adequacy of information and data for energy and petroleum planning.
v. Review periodic progress reports on the implementation of agreed targets in the strategic plan.
vi. Resource mobilization, with allocation and distribution of mobilized resources necessary for the implementation of the strategic plan.
vii. Promote coordinated technical support and policy dialogue on strategic sector issues with government, development partners, Faith Based Organizations, Non-governmental Organizations (NGOs) and Civil society and private sector partners at both national and county levels.
viii. Ensure effective oversight through receiving and reviewing regular reports from the Technical Committees.

The membership of the Committee shall be drawn from the MoEP (SDE and SDP), EPRA, KenGen, REREC, KPLC, KETRACO, GDC, NuPEA,KPC ,KPRLand NOCK as detailed below.

Table 6.4: MEMBERSHIP TO SMLC

No.	Organization	Position
1.	Cabinet Secretary, Energy and Petroleum	Chair
2.	Principal Secretary, State Department for Energy	Member
3.	Principal Secretary, State Department for Petroleum	Member
4.	Chairperson of the Council of Governors	Member
5.	Chairperson of Energy and Petroleum Committees in Council of Governors	Member
6.	DG, Energy & Petroleum Regulatory Authority	Member
7.	MD&CEO, Kenya Electricity Generating Company PLC	Member
8.	CEO, Rural Electrification & Renewable Energy Corporation	Member
9.	MD&CEO, Kenya Power & Lighting Company PLC	Member
10.	MD&CEO, Kenya Electricity Transmission Company	Member
11.	CEO, Geothermal Development Company	Member
12.	CEO, Nuclear Power & Energy Agency	Member
13.	CEO, National Oil Cooperation of Kenya	Member
14.	MD, Kenya Pipeline Company	Member
15.	MD, Kenya Petroleum Refineries Limited	Member
16.	Director of Planning-State Department for Energy	Secretary
17.	Director of Planning -State Department for Petroleum	Secretary
18.	Heads of Technical directorates in the Energy and Petroleum ministry	Members
19.	Representative of Kenya Association of Manufacturers	Member
20.	Representative of Kenya Private Sector Alliance	Member
21.	Not more than Five (5) Co-opted member from both State and Non-State Actors	Co-opted member

b) Strategic Ministerial Leadership Committee (SMLC) Secretariat

The Central Planning and Project Monitoring Departments from the State Department for Energy and the State Department for Petroleum shall jointly form the secretariat for the Strategic Ministerial Leadership Committee. The joint Secretariate will coordinate day to day implementation of the Strategic plan.

The mandate of the joint secretariat shall include;

i. Provide guidance on coordination and responsibilities on data collection, format, collation, analysis management, storage and sharing to support the implementation of the Strategic plan
ii. Coordinate formulation, implementation and review of energy and petroleum sector development plans, policies and strategies relevant to the implementation of the strategic plan.
iii. Develop guidance on coordination and roles/responsibilities on data access from non-energy datasets providers like KNBS, KFS
iv. Undertake short-term and long-term forecasting, simulations and optimization of energy projects using appropriate tools.
v. Consolidate the list of committed projects and their implementation timeframes.
vi. Develop screening mechanisms for project identification in the energy and petroleum sector based on least cost principles.
vii. Develop frameworks for regional energy and petroleum integration as appropriate.
viii. Undertake monitoring and evaluation of the implementation of the Strategic Plan, and prepare and submit the progress report to the Cabinet Secretary for publishing within three months after the end of each financial year.
ix. Conduct impact assessments for energy and petroleum programmes and projects.
x. Develop a framework to guide the selection of the appropriate technology to meet energy and petroleum demand.
xi. Provide technical data, statistics, and information to policy makers in the energy and petroleum sector as may be appropriate from time to time.
xii. Initiate research in consultation with the relevant Agency to inform policy and decision making in the energy and petroleum sector.
xiii. Strengthen linkages and synergy with other sectors of the economy.
xiv. Identify and propose capacity building areas relevant in the energy and petroleum sector.
xv. Undertake any other tasks that may be assigned by the Cabinet Secretary for Energy.

c) National Energy and Petroleum Strategic Technical Sub Committees (NEPSTCs)

The SMLC will establish the technical sub committees as appropriate to address specific energy themes or issue. These sub committees are;

i. Energy and Petroleum Access Technical sub committee
ii. Energy and Petroleum resources and development Technical Sub Committee
iii. Electricity Technical Sub Committee
iv. Bioenergy Technical Sub Committee
v. Energy and Petroleum Efficiency and Conservation Technical Sub Committee

The committees will be answerable to the respective Principal Secretaries. The mandates of the Technical Sub Committees of the SMLC include:

i. Collect collate and analyse data relevant for energy planning.
ii. Identify appropriate tools necessary for forecasting, simulations or optimization in the course of planning.
iii. Identify training needs and submit to the Principal Secretaries for implementation.
iv. Identify screening criteria for programmes, projects, policies, strategies and interventions.
v. Undertake short- and long-term load forecast in the power sector.

vi. Prepare and evaluate the list of committed projects and their implementation.
vii. Prepare guidelines for specific thematic data requirement (rationale, format, collection, validation, storage and sharing).
viii. Assist and advice the Cabinet Secretary in his leadership for data access and governance.
ix. Undertake a screening process for generation technologies and rank candidate projects based on least cost principles.
x. Prepare short and long run marginal costs in generation transmission and distribution
xi. Prepare a short- and long-term expansion Programme in generation and a least cost target network in transmission based on economic and engineering principles that ensures value for money.
xii. Develop plans for regional interconnections as appropriate.
xiii. Prepare and update a Medium-Term Plan and a Long-Term Plan in alternating years, ensuring that each update takes into consideration changes in the economy, demography, technologies and the global trends as the case may be.
xiv. Present the MTP and LTP to the Principal Secretaries for guidance and endorsement
xv. Undertake frequent monitoring and evaluation of ongoing generation, transmission and distribution projects, flagging out areas of concern whenever identified in a timely manner.
xvi. Provide technical data, statistics, and information policy makers in the power sector as may be appropriate from time to time.
xvii. Any other assignment that may be given by the Principal Secretaries

The Technical committees will bring together representatives of key sector partners to provide technical-level strategic leadership and direction and will have delegated authority of the Cabinet Secretary for Energy to guide and contribute to the development and implementation of policy decisions, strategic directions and key interventions that will lead to realization and attained of energy objectives as given by SMLC and anchored in the strategic plan.
The Members of the Technical committee will be appointed by the Cabinet Secretary and its membership shall be drawn from the following organizations based on their competence and expertise. For non-state actors they will be required to have provided the profile of their programmes/projects/activities to the Cabinet Secretary. For effective engagement the non-state actors are advised to form associations.

i. The Ministry of Energy and Petroleum.
ii. Energy and Petroleum Sector State Corporations.
iii. The Council of Governors.
iv. Other government Ministries, Departments and Agencies relevant to energy.
v. Development Partners.
vi. Private Sector.

Non-governmental organizations.

6.2.4 System and Procedures

The Ministry is reviewing its internal system, processes and standard operating procedures required for efficient and effective implementation of the strategic plan. Some of these reviews include:

i. The staff establishment and organizational structure to attain the optimal levels.
ii. Onboarding of services onto the e-citizen platform is in progress.
iii. Automation of business processes is in progress.
iv. Legal policy, regulatory and institutional framework

6.3 Risk Management Framework

The Ministry has identified, described and categorised the risks that may hinder the realisation of the strategic plan. The risks are categorised and prioritised based on the likelihood of occurrence and expected impact with suggested actions for mitigation, monitoring and reporting of those risks.

Table 6.5: Risk Management Framework

	Risk	Likelihood (L/M/H)	Severity (L/M/H)	Overall Risk Level(L/M/H)	Mitigation Measure
1.	Decline in Geothermal energy resources	L	H	M	• Undertake continuous data collection geo-thermal field performance • Enhance fluid reinjection for reservoir sustainability
2.	Crude Oil Price Volatility	H	H	H	• Review the terms of the Production Sharing Contracts to create an efficient permitting process • Provide tax incentives on investments in upstream projects
3.	Unplanned outage of power	H	M	M	• Replacement of ageing power systems
4.	Failure of power transmission lines	M	H	M	• Enhance surveillance and maintenance
5.	Failure of power distribution lines	M	M	L	• Enhance surveillance, maintenance and modernize the distribution system
6.	Power losses	H	M	M	• System reinforcement, maintenance of the transmission and distribution system • Ensure the use of quality materials and workmanship in construction
7.	Challenges in integrating Variable Renewable Energies (VREs) into the grid	M	M	M	• Installation of Battery and pumped storage • Implementation of Automatic Generation Control (AGC) and STATCOMs
8.	Pollution (Oil spills, exploration wastes)	L	H	L	• Ensure compliance with Oil Spill Mutual Aid Group (OSMAG) requirements; • Develop regulations and ensure compliance through spot checks • Undertake regular inspection to ensure proper maintenance of plant and equipment • Monitor and ensure compliance of disaster recovery plan & Business Continuity Plans

	Risk	Likelihood (L/M/H)	Severity (L/M/H)	Overall Risk Level(L/M/H)	Mitigation Measure
9.	Non-achievement of set programme and project targets	M	M	M	• Periodic monitoring and evaluation of projects to track implementation of projects and programmes
10.	High staff turnover	M	M	M	• Implement Career progression framework and Succession planning and management • Implement staff motivation measures • Undertake Employee job satisfaction surveys and implement its recommendations
11.	Inadequate human capacity	M	L	M	• Recruitment • Training & Capacity Development
12.	Inadequate monitoring, evaluation and corrective interventions of projects and programmes	M	M	M	• Mobilise adequate resources for monitoring and evaluation of the projects • Establish an oversight mechanism for monitoring and evaluation recommendations. • Undertake continuous Capacity building of the M&E team within the Energy sector
13.	Community resistance to projects	H	H	H	• Conduct community sensitization campaigns • Initiate and implement community development projects • Engagement with local leaders
14.	Infrastructural damage	L	H	M	• Enhance enforcement of laws and regulations • Critical infrastructure protection
15.	Financial risks	M	M	M	• Encourage public private partnership • Involvement of development partners in project implementation • Periodic Monitoring, Evaluation of ongoing projects • Results-based auditing • Undertake corruption risk assessments • Mobilisation of diverse financial resources

	Risk	Likelihood (L/M/H)	Severity (L/M/H)	Overall Risk Level(L/M/H)	Mitigation Measure
16.	Non-compliance with policy and legal obligations	M	M	L	• Periodic evaluation of compliance to policies, laws and regulations • Monitor compliance with the terms of contracts
17.	Litigation	M	L	L	• Ensure prudent contract preparation and management • Effective Stakeholder management • Mediation
18.	Unavailability of accurate, adequate and consistent information and data	M	M	M	• Verify information at source • Establish and operationalize an integrated central database for the Sector • Regular update of information and data on the websites
19.	Unqualified practitioners in the installation of Renewable Energy Technologies	M	L	L	• Fast-tract finalisation of the regulations • Enforcement of existing regulations • Enhance Monitoring and supervision of the contractors
20.	Information insecurity	H	H	H	• Implement cyber-security measures • Use multi-factor authentication (MFA) for access to sensitive systems and information.
21.	Technological obsolescence	H	M	M	• Updates on technological trends and advancements • Partnership with technology providers for long-term support and upgrade options

CHAPTER SEVEN

7. RESOURCE REQUIREMENTS AND MOBILISATION STRATEGIES

7.0 Overview

This Chapter presents the Financial Resources required to implement the Strategic Plan over the 2023-2027 period, the resources gaps and the strategies that will be used to raise funds to bridge this gap. The Chapter also presents resource management measures for efficient, effective and economic utilisation of available resources to facilitate realisation of the set goals and strategies.

7.1 Financial Requirements

Table 7.1: Financial Requirements for Implementing the Strategic Plan

	Cost item	Projected Resource Requirements (KShs. Million)					
		2023/24	2024/25	2025/26	2026/27	2027/28	Total
1.	**KRA 1:** Energy and Petroleum Resource Development, Promotion & Commercialization	10,300	50,959	27,240	153,081	168,655	410,235
2.	**KRA 2:** Access to energy and petroleum products and services	260,794	263,585	287,862	300,105	978,491	2,090,837
3.	**KRA 3:** Environmental Sustainability in the sector	2,014	2,709	2,738	2,833	1,581	11,875
4.	**KRA 4:** Enabling Environment for the growth of the sector	3,340	4,896	4,857	8,064	7,281	28,438
5.	Administrative and support services	499	688.82	603	636.95	658.6	3,086.37
	Total	**276,947**	**322,838**	**323,300**	**464,720**	**1,156,667**	**2,544,471.37**

Table 7.2: Resource Gaps

Financial Year	Estimated Financial Requirements (Kshs. Mn)	Petroleum MTEF Allocations	Energy Estimated MTEF Allocations (Kshs. Mn)	Totals (Energy +Petroleum	Variance (Kshs. Mn
2023/24	276,947	3,646	136,409	140,055	136,892
2024/25	322,838	5,223	63,735	68,958	253,880
2025/26	323,300	6,599	68,039	74,638	248,662
2026/27	464,720	117,316	68,390	185,706	279,014
2027/28	1,156,667	135,867	70,000	205,867	950,800
Total	**2,544,471.37**	**268,651**	**406,573**	**675,224**	**1,869,248.37**

7.2 Resource Mobilization Strategies

The Ministry will embark on the following measures to raise the requisite resources for implementation of programmes and projects identified in this plan:

i. Active participation in the national budgeting process and lobbying for additional resources from the National Treasury;
ii. Strengthening of linkages with development partners;
iii. Leverage on geo-scientific data to generate revenue and attract investment in exploration;
iv. Pursue Public Private Partnerships for enhanced projects implementation; and
v. Explore carbon trading for Renewable Energy.

7.3 Resource Management

The Ministry will ensure efficient, effective and economic utilisation of available resources as per the financial legislations to facilitate the achievement of the set objectives. Priority will be given to financing and implementation of initiatives aligned to BETA whose impact will lead to lowering the cost of living, eradication of hunger, expansion of tax base, improvement of foreign exchange balance and inclusive growth.

Towards this, the following measures will be put in place:

i) Resource planning Data driven resource allocation based on capacity and skills;
ii) Resource forecasting;
iii) Resource levelling to determine the underused and resources gaps; and
iv) Monitor utilisation of resources.

CHAPTER EIGHT

8. MONITORING, EVALUATION AND REPORTING FRAMEWORK

8.0 Overview

This chapter presents a framework for Monitoring, Evaluation and Reporting the implementation of the Strategic Plan during the planned period. The framework will ensure implementation of this Strategic Plan is undertaken according to budget/cost, time, and scope.

8.1 Monitoring Framework

Monitoring is a continuous function entailing systematic collection and analysis of data on the specified indicators to establish the extent of progress on achievement of the Ministry's objectives and utilisation of the allocated funds. Monitoring reports will be prepared quarterly and annually to highlight the extent of progress against the set targets as well as document the challenges, recommendations and lessons learnt. Directorates/ Departments/Units will be required to develop annual work-plans and budgets aligned to the Strategic Plan. They will also be expected to ensure their performance contract targets and performance appraisals are aligned to the work-plans. The Ministry will develop a Monitoring and Evaluation Framework to guide monitoring in the sector. This framework will be aligned to the national monitoring and evaluation frameworks.

8.2 Performance Standards

The Monitoring and Evaluation Framework will be based on both national and international accepted norms and standards. Key performance indicators identified at the outcome, output and efficiency level will be applied in tracking performance of the strategic plan. The Central Planning and Project Monitoring Departments will coordinate the identification of the monitoring and evaluation standards that will inform the Monitoring and Evaluation Framework.

8.3 Evaluation Framework

Evaluation will involve a systematic and objective process of assessing the level and extent of achievement of the strategic objectives and attainment of the strategic goals along the respective Key Result Areas (KRAs). The policies include their design, implementation and results with regard to their relevancy, efficiency, effectiveness, impact and sustainability.

This will provide an opportunity to ascertain if the interventions are coherent with the strategic objectives and implemented in an efficient manner. The Ministry will develop a Monitoring and Evaluation Framework to guide evaluation in the sector.

The assessment will analyse the outcome indicators, targets and baseline as summarised in ***Table 8.1*** below.

Table 8.1: Outcome Performance Matrix

Key Result Area	Outcome	Outcome Indicator	Baseline		Target	
			Value	Year	Mid-Term Period	End-Term Period
KRA 1: Energy and Petroleum Resource Development, Promotion and Commercialization	Enhanced exploitation of energy and petroleum resources	Installed Power Generation Capacity (MW)	**3112**	2023	3273	3682
		Investment in petroleum blocks (Kshs. millions)	**915**	2023	915	145,319
KRA 2: Access to energy and petroleum products and services	Enhanced access to clean, renewable, reliable and competitive energy and petroleum products and services	Electricity Access Rate (% households)	**75**	2023	85	95
		Proportion (%) of households using clean cooking solutions.	**40**	2023	80	100
		Proportion (%) of public learning institutions using LPG	**8**	2022	30	50
		Average LPG consumption per capita No. (Kg/yr)	**6.59**	2022	9	10
		Quantity of petroleum products imported (million. metric tonnes)	**6.69**	2023	20.89	36.25
	Improved stability in the availability of energy sources and petroleum products	Customer Average Interruption Duration Index (CAIDI)	**3.53**	2023	1.36	1.25
		System Average Interruption Duration Index (SAIDI)	**5.00**	2023	1.50	1.29
		System Average Interruption Frequency Index (SAIFI)	**2.15**	2023	1.10	1.O8
		Petroleum products strategic reserves (No. of Days)	**-**	2023	-	30
KRA 3: Environmental Sustainability in the sector	Enhanced environmental conservation	The renewable energy share in the total national installed electricity generation	**73**	2022	85.22	82.13

Key Result Area	Outcome	Outcome Indicator	Baseline		Target	
			Value	Year	Mid-Term Period	End-Term Period
		capacity (%)				
		The proportion (%) of renewable in electricity generation mix	**93**	2022	95	98
		Compliance with environmental and social safeguards (%)	**100**	2023	100	100
		Energy efficiency	**3**	2020	3	3
	Enhanced sector coordination and management	Number of reviewed/developed Policies	**1**	2018	2	2
		Number of reviewed Acts	**-**	-	2	3
		Number of Regulations reviewed/developed	**1**	2022	20	40
		Customer Satisfaction Index	**-**	-	75	85
		Number of reviewed and implemented organisational structures	**2**	2018	2	2
		Number of officers trained	**577**	2022	900	1,500

8.3.1 Mid-Term Evaluation

The Ministry will conduct Mid-term evaluation of this Strategic Plan to examine the progress towards achieving the set targets and make modifications to ensure the set objectives are realised within the strategic plan period. This evaluation will be guided by the Kenya Evaluation Guidelines 2020 and the Kenya Norms and Standards for M&E.

8.3.2 End-Term Evaluation

The Ministry will conduct end-term evaluation to take stock of the overall implementation of the Strategic Plan. This will assist in drawing conclusions, distilling lessons learned and building a knowledge base to inform future planning and decision making. This evaluation will be guided by the Kenya Evaluation Guidelines 2020 and the Kenya Norms and Standards for M&E.

8.4 Reporting Framework and Feedback Mechanism

The Ministry will prepare quarterly progress reports, annual progress reports and evaluation reports for the strategic plan as per the reporting templates as provided by the State Department for Planning. The Central Planning and Project Monitoring Departments of the

two State Departments will coordinate the reporting and dissemination of monitoring and evaluation results. Directorates/Departments/Units will be required to develop annual work-plans and budgets aligned to the Strategic Plan. They will also be expected to ensure their performance contract targets and performance appraisals are aligned to the work-plans and prepare project implementation progress reports as per their mandate and submit the same to their respective CPPMD for consolidation.

The Ministry will also establish relevant committees to support monitoring and evaluation functions as specified in the monitoring and Evaluation Policy. Learning will be integrated into every aspect of programme/project design and implementation where the ultimate goal is to create a culture of learning within the Ministry. The information generated from M&E will be reflected upon and intentionally used to continuously improve the achievement of results. Learning will provide information on what worked and what needs adjustment during the implementation process to improve on the subsequent processes to enhance effectiveness. This will involve identification, documentation and dissemination of best practices.

Reporting on the progress of Key monitoring reports for decision making shall be timely prepared and shared with the respective users as shown in the table below:

ANNEXES

Annex I*: Table 6.3 Skills Set and Competence Development*

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
1.	**Electrical & Mechanical Engineers**	• Bachelor's Degree in Electrical Engineering, Mechanical Engineering or any other relevant and equivalent qualification from a recognized institution • Registered by Engineers Board of Kenya as Graduate Engineer • Current Valid Annual Practicing License from the Engineers Registration Board of Kenya • Corporate Member with the institution of Engineers of Kenya • Management Course lasting not less than four (4) weeks from a recognized institution • Strategic Leadership Development Course lasting not less than six (6) weeks from a recognized institution.	**Academic Qualification** • Masters of Infrastructure Management • MSC Energy Management • MSC Renewable Energy • BSC Mechanical Engineering • BSC Electrical and Electronics Engineering • BSC Mechanical and Production Engineering • Higher Diploma in Electrical Engineering (power option) • Diploma in Electrical Engineering (power option) **Professional Qualification** • Registered Graduate Engineer • Environmental impact assessment and audit • Certified tracer and radiation application operator • Licensed Electrician • Other skills • Strategic Leadership Development • Senior Management • Project Development and Management • Project Financial and Economic Analysis • Project Monitoring and Evaluation • Productivity improvement	• Nuclear Law • Strategic Leadership Development course • Finance Management Course • Performance management course • Data analytics • Project Management Course • Research Skills Development Course • Presentation and communication skills courses • Contract management Course • Communication/Public Speaking Skills Course • Public Sector Financial Management Course • Nuclear Financing Models • Project management course, • Administrative Skills Course • Record Management Course • Report and Minute writing • Etiquette & protocol Course • Nuclear fundamentals course • Data analytics • Transformative leadership course • Policy formulation implementation and analysis course. • Nuclear Power Plant Site identification/Characterization.	**Recruit/sponsor/train officers if eligible with/for:** • Nuclear Law • Strategic Leadership Development course • Finance Management Course • Data analytics • Project Management Course • Research Skills Development Course • Performance management course • Presentation and communication skills courses • Contract management Course • Communication/Public Speaking Skills Course • Public Sector Financial Management Course • Nuclear Financing Models • Project management course, • Administrative Skills Course • Record Management Course • Report and Minute writing • Etiquette & protocol Course • Nuclear fundamentals course • Data analytics • Transformative leadership course • Policy formulation implementation and analysis course. • Nuclear Power Plant Site

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
			using Kaizen and Total Quality Management • Power planning • MS Office • AutoCAD design software • Management course for technical middle level managers • Operation maintenance and testing of distribution transformers • Solar Energy Technology and energy efficiency • Solar power generation- Grid enabling • Designing and managing Public and Private Partnerships projects • Economic and financial appraisal of energy projects • Solar photovoltaic application for developing countries • Wind turbine technology and applications • Renewable energy and its uses • Lean Management • Plumber and pipe fitter grade 2 • Engineering software, • Drawing • Lathe operations • Welding • Electrical installation	• Training on Radiation Protection • Nuclear Power Plant Environmental Impact Assessment • Emergency planning for Nuclear Power Plants • Fundamentals and Safety Culture • Mentorship • Conflict Management • Talent Management • Coaching and Mentoring • Risk Management • Monitoring and Evaluation • Public Finance Management • Budgeting • Change management course • Workforce Planning & Modelling Proficiency • Nuclear Financing Models • Compensation, Benefit Administration & Reward Management course • Information System Security Management, • Effective Stakeholder engagement training • Audit and Risk Assurance Course • Integrated Management System (IMS) Course • Training on Protocol, • Training on QMS,	identification/Characterization. • Training on Radiation Protection • Nuclear Power Plant Environmental Impact Assessment • Emergency planning for Nuclear Power Plants • Fundamentals and Safety Culture • Mentorship • Conflict Management • Talent Management • Coaching and Mentoring • Risk Management • Monitoring and Evaluation • Public Finance Management • Budgeting • Change management course • Workforce Planning & Modelling Proficiency • Nuclear Financing Models • Compensation, Benefit Administration & Reward Management course • Information System Security Management, • Effective Stakeholder engagement training • Audit and Risk Assurance Course • Integrated Management System (IMS) Course • Training on Protocol, • Training on QMS
2.	**Renewable Energy**	• Master's degree in any of the following disciplines; Energy,	**Academic Qualifications** • PhD Strategic Management	• Emerging Renewable Energy Technologies	• For officers with Mismatch of skills recruited with Bachelor

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
	Officers and Renewable Energy Assistants	chemistry, Bio-Chemistry, Forestry, Agriculture, Environmental Sciences from a recognized institution • Bachelor's Degree in any of the following disciplines Energy, Chemistry, Bio-chemistry, Forestry, Agriculture, Environmental Science or • Diploma in any of the following disciplines: Agriculture, Forestry, Electrical/Chemical/ Mechanical/ Energy Engineering and Environmental sciences or equivalent qualification from a recognized Institution • Bachelor of Science/ Bachelor of Technology Degree in Mechanical/ Chemical/ Electrical/Energy Engineering or equivalent qualifications from a recognized institution. • Registration by Engineers Registration Board of Kenya as an Engineer and possessing of a current practicing license. • Management course lasting not less than four (4) weeks from a recognized institution.	• PhD Environmental Governance and management • Master of Energy and resources • Master of Business Administration • MSC Geo-information for Natural Resource Management • Masters of Agricultural Science in Agro-bio–Resources Science and Technology (sustainable development) • MSC Occupation Safety and Health • Masters in Environmental planning and management • MSC Computer based information systems • Master of Arts Environmental planning and management • Master of philosophy in Environmental planning and management • MSC Disaster Management • BSC Electrical and Electronic Engineering • BSC Biological Sciences • BSC Agricultural Engineering • BSC Agriculture • BSC Appropriate technology • BSC Environmental Science • Bachelor of Environmental studies (Environmental resource conservation.) • BSC Agriculture • BSC Mechanical Engineering	• Project proposal development, Contract Management, • Advanced Public Finance Management • Project Management • GIS, IS Security Monitoring and Evaluation, • GIS and GPS, Data Management • Pre- Retirement • Project Risk Management, • Contract Management, • Computer Proficiency and AUTOCAD • Policy Planning for Energy efficiency and conservation, • Rural Energy Project Planning and Management, • Renewable energy and energy efficiency • Energy Audits, • Gender and Energy training, • Masters in Project Management, • Strategic Leadership Development Program (SLDP) • Feasibility studies and project management • Departmental Occupational Test, Drilling and Operation Management • Geothermal training on geophysical/geochemical instrumentation • Training on underground	of Education, • Train/sponsor with/for; • Emerging Renewable Energy Technologies • • Policy Planning for Energy efficiency and conservation, • Rural Energy Project Planning and Management, • Renewable energy and energy efficiency • Energy Audits, • Gender and Energy training, • • Recruit /sponsor/ train / if eligible officers with /for; • Emerging Renewable Energy Technologies • Project proposal development, Contract Management, • Advanced Public Finance Management • Project Management • GIS, IS Security Monitoring and Evaluation, • GIS and GPS, Data Management • Pre- Retirement • Project Risk Management, • Contract Management, • Computer Proficiency and AUTOCAD • Policy Planning for Energy efficiency and conservation, • Rural Energy Project Planning and Management, • Renewable energy and energy

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
			• Bachelor of Education • Diploma in technical education (Mechanical Engineering-Production.) • Diploma Environmental studies • Diploma in Environmental Resource Management **Professional Qualifications** • Registered Engineer (EBK) • GIS and Remote Sensing • Environmental Impact Assessment • Certificate in Energy modelling for Africa • Project Management, Monitoring and Control • Small hydropower policy and regulations • Vegetable production and Irrigation • Farm power and land tillage • Project planning and farm management • Agro-processing and storage structures • Management seminar for Lecturers • Peer Educator • Fire safety Auditing (DOSHS Licensed) • Certified Public Accountant (Level 1) • Renewable Energy Technology • Certificate in solar PV • Certificate in Biogas	hydro drilling technologies • Civil engineering and underground water technologies • Monitoring and Evaluation of Projects & interpretation using current technology • Disaster preparedness • Supervisory skills development • Sustainable Development Goals • Ethics, Values & Integrity development • Reservoir Management and Green Energy • Geothermal, geophysical instrumentation and data processing analysis / Oasis Montag software training • All hands-on geophysics surveying methods and techniques, • Climate change and risk management, • Project Planning, Management &Implementation • Senior managerial studies, • Research work and development, SDGS, • Work ethics and work integrity • Geothermal and geophysical data analysis and processing, Reservoir work and management.	efficiency • Energy Audits, • Gender and Energy training, • Masters in Project Management, • Strategic Leadership Development Program (SLDP) • Feasibility studies and project management • Departmental Occupational Test, Drilling and Operation Management • Geothermal training on geophysical/geochemical instrumentation • Training on underground hydro drilling technologies • Civil engineering and underground water technologies • Monitoring and Evaluation of Projects & interpretation using current technology • Disaster preparedness • Supervisory skills development • Sustainable Development Goals • Ethics, Values & Integrity development • Reservoir Management and Green Energy • Geothermal, geophysical instrumentation and data processing analysis / Oasis Montage software training • All hands-on geophysics surveying methods and

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
			technology • Certificate in cook stove technology • Certificate on public private partnership projects • Quality Management System ISO- certification. • Project risk management • Trainer of trainers on energy statistics • Advanced feasibility analysis of projects • Geographic Information systems • Nursery Management • Small hydropower resource assessment and planning • International Computer Driving License **Other Skills** • Strategic Leadership and Development • Project Planning and Management • Rural Electrification using renewable energy technologies • Senior Management • Information communication technology • Disaster Management • Environmental Modelling • Management of Public Resources • Policy Formulation • Implementation of National Programme and projects	• GIS/QGIS software training, Geo soft software training for data analysis. • Advanced GIS Analysis tools, Remote Sensing, • Database Development and Management, EIA & Audit, Climate Change, Green Energy • Earth Resource (ER) Mapper • Advanced GIS Analysis tools, Handheld GPS and Mobile mapping tools, • Remote Sensing, Database Development and Management, • Records Management	techniques, • Climate change and risk management, • Project Planning, Management &Implementation • Senior managerial studies, • Research work and development, SDGS, • Work ethics and work integrity • Geothermal and geophysical data analysis and processing, Reservoir work and management. • GIS/QGIS software training, Geo soft software training for data analysis. • Advanced GIS Analysis tools, Remote Sensing, • Database Development and Management, EIA & Audit, Climate Change, Green Energy • Earth Resource (ER) Mapper • Advanced GIS Analysis tools, Handheld GPS and Mobile mapping tools, • Remote Sensing, Database Development and Management, • Records Management

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
			• Agricultural Machinery Management • Environmental water and sanitation management • Climate change adaptation and mitigation • Planning and Implementation of Sustainable Rural development projects • Human Resource Management • Resource Mobilisation • Change Management • Wind technology energy and energy efficiency • Entrepreneurship and rebranding of Technical and vocational education institutes • Rehabilitation of Water catchments • Energy Efficiency and conservation. • Gender mainstreaming in Energy sector • Theory, construction and maintenance of energy saving wood stove • Agroforestry research for development • Utility Strategy and regulation • Report writing • Environmental Impact Assessment • Fire safety		

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
3.	**Geologists, Geophysicists& Geochemists**	• Master's degree in any of the following disciplines- Geology, Geochemist, Geophysics, Engineering Geology, Hydrogeology, Environmental Geologists equivalent from a recognized institution. • Bachelor of Science in any of the following, Geology, Geochemist, Geophysics, Engineering Geology, or its equivalent from a recognized institution. • Management course lasting not less than four (4) weeks from a recognized institution.	**Academic Qualifications** • MSC Geo-informatics • MSC Mining Engineering • BSC Geology • BSC Civil Engineering • Bachelor of Technology in Technical and Applied Physics • Diploma in cartography • Diploma in water engineering **Professional Qualifications** • Registered Geologist • Project Management • Environmental Impact Assessment/ Audit • Post graduate diploma-Minex • Project formulation and feasibility studies analysis. • Other Skills • Remote sensing • Relational database management • Data analysis • Report writing and presentation • Strategic planning • Policy research and Analysis • Geographic Information systems • Strategic Leadership • Communication skills • Drilling • Calibration • Simulation and coding • Hydro geological survey • Mapping • Urban and regional planning	• Negotiation of Project Agreements, • Joint Development Agreements, • Policy and Governance, All Government Approach • Project Management, Monitoring and Evaluation. • Project Formulation & Feasibility Studies Analysis • EIA & Audit, Energy and Environmental Management: Management of Environment and Social Safeguards in Projects, • Corporate Entrepreneurship-Structuring • Negotiating and Managing Concessions, Governance and Public Sector Management • Leadership & Policy Implementation, Transformative Leadership, • MSc. Extractive Resources Research/ Development • Strategic Leadership Development Program (SLDP) Course, • Fundamentals of Negotiation and Negotiation Tools • Database Administration Using SQL Server and Python Programming for geoscientists • Nuclear Non-proliferation and Disarmament • Geological well logging,	Recruit additional competencies if eligible officers with Master's and Bachelor's Degree in; Geophysics, Geochemist, Hydrogeology, Environmental Geologist **Sponsor/train if eligible officers with /for:** • Negotiation of Project Agreements, • Joint Development Agreements, • Policy and Governance, All Government Approach • Project Management, Monitoring and Evaluation. • Project Formulation & Feasibility Studies Analysis • EIA & Audit, Energy and Environmental Management: Management of Environment and Social Safeguards in Projects, • Corporate Entrepreneurship-Structuring • Negotiating and Managing Concessions, Governance and Public Sector Management • Leadership & Policy Implementation, Transformative Leadership, • MSc. Extractive Resources Research/ Development • Strategic Leadership Development Program (SLDP) Course,

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
			• Computer literacy	modelling and analysis.	• Fundamentals of Negotiation and Negotiation Tools • Database Administration Using SQL Server and Python Programming for geoscientists • Nuclear Non-proliferation and Disarmament • Geological well logging, modelling and analysis.
4.	**Drilling Assistants/ Drilling Inspectors**	• Kenya Certificate of secondary Education (K. C.S.E) mean grade D+ and a minimum of C- in either physics, Chemistry or Mathematics. • A pass in the Departmental Occupational Tests 111/11 and 1 for Drillers • A diploma in Civil Engineering or in ground water Technology from the Kenya National Examination Council • The Higher National Diploma in Civil Engineering, Drilling, Earth Science or Ground Water Technology from the Kenya National Examination Council.	• Diploma in water resource management • Certificate in drilling technology	• Drilling techniques and drilling fluids training course • Environmental impact assessment training • Workplace hazard management /risk management • Internal grade test	**Recruit/sponsor/train if eligible officers with/for:** • Monitoring And Evaluation • Budgeting • Conflict Management • Environmental Safety • Strategic Negotiation Skills • Drilling techniques and drilling training course • Environmental impact assess training • Workplace hazard management management • Internal grade test • Mental health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
5.	Commissioner for Petroleum	• Bachelor degree in any of the following disciplines: Petroleum Engineering, Petroleum Engineering Technology, Petroleum Geophysics, Petroleum Geochemistry, Petroleum Geo-science, Mechanical Engineering, Civil Engineering, Chemical Engineering, Petroleum Economics, Geology, Physics, Chemistry, Geophysics, Geochemistry, Exploration Geophysics, Petroleum Geology or its equivalent qualification from a recognized institution; • Master degree in any of the following fields:-Petroleum Engineering, Petroleum Geophysics, Petroleum Geochemistry, Petroleum Geo-science, Petroleum Geology, or its equivalent qualification from a recognized institution; • Certificate in petroleum related course lasting not less than two (2) weeks from a recognized institution; • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution; • Membership of professional body(s) • Certificate in computer application skills from a recognized institution.	• Structuring, contract negotiation and managing concession • Strategic Policy • Transformative leadership • Result based monitoring and impact evaluation; • International Petroleum Business programme	Recruitment and filling of vacant post	
6.	Petroleum Geologist personnel	• Master degree in any of the following disciplines; Petroleum Geo-Science, Petroleum Geology, or Geology, its equivalent qualification from a recognized institution • Bachelor degree in any of the following disciplines, Petroleum	• Petrophysical skills • Petroleum Geophysics skills • Upstream Gas Business skills • Petroleum Project Economics skills • Gas Business Management	• Training and development on Oil & Gas sector	• Train/ sponsor if eligible officers with /for; • Strategic Leadership Development Programme lasting not less than four • First aid skills • Guiding and Counselling

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		Geoscience, Geology, Petroleum Geology or its equivalent qualification from a recognized institution • Certificate in petroleum related course lasting not less than two (2) weeks from a recognized institution. • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution; • Membership of Geological Society of Kenya (GSK) • Registered by the Geologists Registration Board (GRB); • Certificate in computer application skills from a recognized institution.	skills • Transformative leadership skills • Gas to Power essentials skills • Result based monitoring and impact evaluation skills		• Customer care Course • Presentation and • Communication skills course • Protocol and etiquette • Mental health •
7.	Petroleum Geophysical Personnel	• Masters degree in any of the following fields:- Petroleum Geophysics, Applied Geophysics, Geophysics Major, Exploration Geophysics, Petroleum Geoscience, or its equivalent qualification from a recognized institution • Bachelors degree in any of the following disciplines: Physics, Geology, Geophysics, Petroleum Exploration & Production or its equivalent qualification from a recognized institution • Certificate in petroleum related course lasting not less than two (2) weeks from a recognized institution. • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution.	• Field Development evaluation skills • Natural gas Process design skills • Policy Formulation skills • Negotiation skills • Marketing skills in Oil and gas	Training and development on Oil & Gas sector	**Train /sponsor if eligible officers with /for:** • Information system security management • Public sector financial management • Data analytics course • Transformative leadership • Stakeholder engagement • Proficiency in renewable energy financing and economics • Renewable energy management • Customer care Course • Presentation skills courses • Communication Skills • Protocol and etiquette • Life Skills (Emotional &

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		• Membership to a professional body(s) • Certificate in computer application skills from a recognized institution			Social Intelligence
8.	Petroleum Geochemical Analysis Personnel	• Bachelors degree in any of the following disciplines:- Geochemistry, Petroleum Geo-science, Geology, Chemistry, or its equivalent qualification from a recognized institution; • Masters degree in any of the following fields:- Petroleum Geochemistry, Petroleum Geo-science, Petroleum Geology, or its equivalent qualification from a recognized institution; • Certificate in petroleum related course lasting not less than two (2) weeks from a recognized institution; • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution. • Membership to a relevant professional body. • Certificate in computer application skills from a recognized institution.	• Strategic Leadership Development Course • Senior Management course • IHRDC E-Learning • GIS and Remote Sensing program	Training and development on Oil & Gas sector	**Recruit/ sponsor/ train if eligible officers with/ for:** • Talent Management • Conflict Management • Proficiency in in workplace planning • Drug and substance abuse • First aid skills • Mental health • Customer care Course • Presentation and communication skills courses • protocol and etiquette • protocol and etiquette • Life skills (Emotional & Social Intelligence • Mental health • Mentorship & coaching • • 2. Encourage on the job training
9.	Petroleum Engineering Personnel	• Bachelor's Degree in Civil Engineering Mechanical Engineering, Petroleum Engineering, Petroleum Engineering Technology, Chemical Engineering or its equivalent from a recognized institution. • Master's Degree in Petroleum Engineering, Civil Engineering, Chemical Engineering, Mechanical	• Strategic Leadership Development Course • Senior Management course • IHRDC E-Learning • GIS and Remote Sensing program	Training and development on Oil & Gas sector	**Train /sponsor officers with /for:** • Policy formulation • Strategic negotiation skills • Customer care Course • Communication Skills • Protocol and etiquette • Life skills (Emotional & Social Intelligence • Mental health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		Engineering or its equivalent from a recognized institution. • Corporate membership with the Institution of Engineers of Kenya (IEK); • Strategic Leadership and Development Program (SLDP); • Certificate in Senior Management Course (SMC) from Certificate in Project Development and Management (PDM) course			
10.	Petroleum Chemical Engineer personnel	• Masters degree in any of the following fields: -Petroleum Engineering, Civil Engineering, Chemical Engineering, Mechanical Engineering or its equivalent qualification from a recognized institution • Bachelor's degree in any of the following disciplines: Petroleum Engineering, Petroleum Engineering Technology, Mechanical Engineering, Civil Engineering, Chemical Engineering, or its equivalent qualification from a recognized institution • Certificate in petroleum related course lasting not less than two (2) weeks from a recognized institution; • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution; • Membership of Institution of Engineers of Kenya (IEK) or any	• Strategic Leadership Development Course • Senior Management course • IHRDC E-Learning • GIS and Remote Sensing program	Training and development on Oil & Gas sector	**Train /Sponsor if eligible officers with /for:** • Public sector financial management course • Stakeholder engagements • Renewable energy procurement • Mental health • Data analytics • Customer care Course • Communication Skills • protocol and etiquette • Life skills (Emotional & Social Intelligence

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		other relevant professional body; • Registered by the Engineers Board of Kenya (EBK); • Certificate in computer application skills from a recognized institution			
11.	Petroleum Mechanical Engineer personnel 1	• Bachelor's Degree in Mechanical Engineering, or its equivalent from a recognized institution. • Master's Degree in Petroleum Engineering, Mechanical Engineering or its equivalent from a recognized institution	• Integrated Reservoir Management and Field Development Planning • Strategic Leadership Development Course • Senior Management course • IHRDC E-Learning • GIS and Remote Sensing program	Training and development on Oil & Gas sector	**Recruit /train /sponsor if eligible officers with /for:** • Guiding & Counselling skills • Mental health skills • coaching & mentoring skills • proficiency in workplace planning • Life skills (Emotional & Social Intelligence) • Customer care Course • Communication skills courses • protocol and etiquette • Encourage on Job Training
12.	Petroleum Technology personnel	• Diploma, Higher National Diploma Or Bachelor's degree in any of the following fields:- Applied Sciences (Chemistry, Analytical Chemistry, Industrial Chemistry, Civil Engineering, Earth Sciences or any other science related subjects from a recognized institution; Certificate in Computer applications skills from a recognized institution; • Certificate in Management course not less than 4 weeks. •	• Occupational Health and Safety • Instrumentation Technician Operations and Maintenance • Technological Development in Oil and Gas • Geophysics proper Measurements Procedures • Instrument Use, • Data Processing and Interpretation • Applied water Technology in Oil and Gas Production • Field Development skills	Training and development on Oil & Gas sector	• Train/sponsor if eligible with/for; • • Guidance & Counselling • First aid skills • Proficiency in workplace planning • Mental health • Life Skills (Emotional & Social Intelligence) • Customer care Course Communication/Public Speaking Skills Course • Protocol and etiquette

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
13.	Petroleum Environmental Analysis personnel	• Bachelors degree in any of the following disciplines: Environment, Environmental Science, Environmental Geology, Environmental Management, Natural Management or its equivalent qualification from a recognized institution; • • Masters degree in any of the following disciplines:- Environment, Environmental Science, Environmental Geology, Environmental Management, Natural Resources Management or its equivalent qualification from a recognized institution; • Certificate in Health, Safety and Environment related to petroleum or its equivalent qualification lasting not less than two (2) weeks from a recognized institution; • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution; • Certificate in computer application skills from a recognized institution	• Strategic Leadership Development Course • Senior Management course	Training and development on Oil & Gas sector	**Train/ sponsor with/ for:** • Audit and risk assurance course • Integrated management systems (IMS) course • Customer care Course • Communication Skills • Protocol and etiquette • Life skills (Emotional & Social Intelligence • Mental Health
14.	Petroleum Economic Analysis Personnel	• Master's degree (Petroleum Economics) • Bachelor's degree (Economics) • Strategic Leadership Development Program (SLDP) • Petroleum Economic Modeling • Petroleum Project Economics and Risk Analysis	• Strategic Policy and planning for oil and gas service skills • Transformative leadership in implementing oil and gas sector reforms skills • Result based monitoring and impact evaluation in oil and gas skills	Training and development	**Train /sponsor officers with/ for:** • Life skills (Emotional & Social Intelligence) • Customer care Course • Communication skills • Etiquette • Mental health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		• Petroleum Supply Chain management • Petroleum Taxation • Computer applications			
15.	Petroleum Communication and Marketing Personnel	• Master's degree in any of the following disciplines: Journalism, Mass Communication, Marketing, Public Relations, International Relations; Communication and Media or equivalent qualification from a recognized institution. • Bachelor's degree in any of the following disciplines: Journalism, Mass Communication, Marketing, Public Relations, International Relations; Communication and Media or equivalent qualification from a recognized institution • Strategic Leadership Development Program (SLDP) certificate lasting not less than six (6) weeks. • Senior Management Course lasting not less than four (4) weeks from a recognized institution. • Certificate in Oil and Gas Management course lasting not less than two (2) weeks or its equivalent qualification from a recognized institution • Exposure in global Communication/PR trends • Membership to either Public Relations Society of Kenya (PRSK), Marketing Society of Kenya (MSK) or any other relevant professional body.	Vacant	Recruitment and filling of the vacant post	• Train /sponsor with /for; • • Information systems security management • Life skills (Emotional & Social Intelligence) • Customer care Course • Communication skills courses • Communication Skills • Protocol and etiquette • Mental health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		• Decision making • Conflict management • Time management • Negotiation • Marketing • Counselling • Communication • Editorial • People Management • Data acquisition and analysis • Report writing • Presentation • Record/data keeping • Problem-solving • Leadership • Analytical • Integrity • Interpersonal • Emotional intelligence			
16.	Petroleum Legal and Compliance Personnel	• Bachelor of Laws • Post Graduate Diploma from the Council of Legal Education • Senior Management Course • Computer Applications	Vacant	• Recruitment and filling of vacant post	• Train /sponsor officers with /for; • Suitability Test for Grade III for drivers; • First-Aid Certificate Course • Life skills (Emotional & Social Intelligence) • Customer care Course • Communication skills • Protocol and etiquette • Basic mechanics • Mental health • Guiding & Counselling skills
17.	Petroleum Finance Analysis	• Bachelor's degree in any of the following disciplines: Commerce (Accounting option or Finance	Vacant	Recruitment and filling of vacant post	**Train /sponsor officers with /for:** • First-Aid Certificate Course • Life skills (Emotional &

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
	Personnel	option), Business Administration (Accounting option) or its equivalent qualifications from a recognised institution; • Masters degree in oil and gas finance or its equivalent qualification from a recognised institution; • Part III of the Certified Public Accountant(CPA) examination or Part III of the Association for Certified Chartered Accountant (ACCA) or equivalent qualifications from a recognised institution; • Registered with any of the following professional bodies:- Chartered Financial Analyst (CFA), Institute of Public Accountants of Kenya (ICPAK), Association of Certified Fraud Examiners (ACFE) or Institute of Systems and Control Association (ISACA); • Certificate in Strategic Leadership Development Programme lasting not less than six (6) weeks from a recognized institution; • Certificate in Petroleum Finance Modelling and Risk Analysis lasting not less than two (2) weeks from a recognized institution; • Certificate in Oil and Gas Management course lasting not less than two (2) weeks or its equivalent qualification from a recognized institution; • Certificate in computer application			Social Intelligence) • Customer care Course • Communication skills • Protocol and etiquette

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		skills from a recognized institution			
18.	Petroleum Audit and Risk Analysis Personnel	• Master's degree in oil and gas accounting or equivalent qualifications. • Bachelor's degree in any of the following disciplines: Commerce (Accounting option or Finance option), Business Administration (Accounting option) or equivalent qualifications • Part III of the Certified Public Accountant (CPA) examination or Part III of the Association for Certified Chartered Accountant (ACCA) or equivalent qualifications • Certified Information security Auditor (CISA) • Auditing in oil and gas skills: Certificate in any of the following discipline: upstream auditing certification; petroleum auditing; oil and gas management, international oil and gas • Forensic Auditing skills. • Project management skills • Leadership skills: Certificate in Strategic Leadership Development Programme • Risk Management skills. • Management skills: Certificate in senior management course. • Policy formulation skills • Preparation of cabinet Memos • Negotiation Skills • Conflict Resolution and	• Program Based Budgeting skills • Financial Management skills • Strategic Policy and planning for oil and gas service skills	Capacity Build on the identified gaps	**Train/sponsor officers with /for:** • Life skills (Emotional & Social Intelligence) • Customer care Course • Presentation and communication skills courses • Communication/Public Speaking Skills Course • protocol and etiquette • mental health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		management. • Coaching and mentorship skills. • Certificate in computer application skills • Project management skills • Registered with any of the following professional bodies:- Institute of Internal Auditors (IIA), Institute of Public Accountants of Kenya (ICPAK), Association of Certified Fraud Examiners (ACFE) or Institute of Systems and Control Association (ISACA			
19.	Social Development Analysts Personnel	-	Vacant	Recruitment and filling of vacant post	**Train/ sponsor officers with /for:** • Integrated) course records management systems(IRMS • First-Aid Certificate Course • Life skills (Emotional & Social Intelligence) • Customer care Course Communication skills • Mental health •
20.	**Public Communications Officers/Assistants**	-	• Academic Qualifications • MSC. Social Development and Communication • Bachelor of Human Resource Management • Diploma in Public Communication • Other Skills • Monitoring and Evaluation	• Life skills (Emotional & Social Intelligence) • Customer care Course • Presentation and communication skills courses • Communication/Public Speaking Skills Course • Protocol and etiquette	**Train/ sponsor officers with /for:** • Life skills (Emotional & Social Intelligence) • Customer care Course • Presentation and communication skills courses • Communication/Public Speaking Skills Course • protocol and etiquette • mental health
21.	**Administrative Officers**	• Bachelor's Degree in any of Social Science or its equivalent qualification from a recognized	• Academic Qualification • PhD Human Resource Management	• Life skills (Emotional & Social Intelligence) • Customer care Course	**Train/sponsor officers with/ for:** • Drug and substance abuse • Mental health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		University. • Proficiency in Computer Application. • Administrative Officers' Induction Course lasting not less three (3)) months. • Master's Degree or post-Graduation. • Para – Military Course of Administrative Officers. • Administrative Officers Examination. • Advanced Public Administration (APA) certification. • A management course lasting not less than four (4) weeks from a recognized Institution. • A strategic Leadership Development Programme lasting not less than four (4) weeks from a recognised institution.	• Masters in Rural Sociology and Community Development • BA Social Sciences • Bachelor of Arts • BA Economics and Sociology • Other Skills • First Aid • Teaching	• Presentation and communication skills courses • Communication/Public Speaking Skills Course • Protocol and etiquette	• Guiding and Counselling • Compensation benefit, administrative & reward management course • Life skills (Emotional & Social Intelligence) • Customer care Course • Presentation and communication skills courses • Communication/Public Speaking Skills Course • protocol and etiquette
22.	**Accountants**	• Bachelor's degree in Commerce (Accounting or Finance option), Business Administration (Accounting option) from a recognized institution or any other relevant equivalent qualification. • A pass in part 11 and 111 (final) of the certified Public Accountants (CPA) Examination or its recognized equivalent. • Master's degree in any of the following; Commerce, Accounting, Business Administration, Finance or their equivalent to qualification from a recognized institution.	**Academic Qualifications** • Masters of Business Administration • Bachelor of Commerce • BA. Economics and Finance **Professional Qualifications** • Certified Public Accountant **Other Skills** • Senior Management Course • Leadership • Computer Literacy	• Customer care Course • Communication Skills • Protocol and etiquette • Life skills (Emotional & Social Intelligence	**Train/sponsor if eligible officers with/for:** • proficiency in renewable energy financing & economics • Public sector financial management course • Data analytics • Stakeholder engagement • Customer care Course • Communication Skills • Protocol and etiquette • Life skills (Emotional & Social Intelligence • Mental Health

	CADRE	Scheme Requirements	Skills Set	Skills Gap	Competence Development
		• Registration with the Institute of Certified public Accountants of Kenya (ICPAK) and Registration of Accountant Board (RAB) • Management course lasting not less than four (4) weeks • Certificate in Computer applications			

Annex II: Quarterly Progress Reporting Template
Ministry of Energy and Petroleum
Quarterly Progress Report
Quarter Ending ……

Expected Output	Output Indicator	Annual Target (A)	Quarter for Year …..			Cumulative to Date			Remarks	Corrective Intervention
			Target (B)	Actual (C)	Variance (C-B)	Target (E)	Actual (F)	Variance (F-E)		

Annex III: Annual Progress Reporting Template
Ministry of Energy and Petroleum
Annual Progress Report
Year Ending ……

Expected Output	Output Indicator	Achievement for Year …..			Cumulative to Date (Years)			Remarks	Corrective Intervention
		Target (A)	Actual (B)	Variance (B-A)	Target (C)	Actual (D)	Variance (D-C)		

Annex IV: Evaluation Reporting Template

Key Result Area	Outcome	Outcome Indicator	Baseline		Mid-Term Evaluation		End of Plan Period Evaluation		Remarks	Corrective Intervention
			Value	Year	Target	Achievement	Target	Achievement		