MINISTRY OF ENERGY AND PETROLEUM

STATE DEPARTMENT FOR ENERGY

NATIONAL GEOTHERMAL STRATEGY

2026 – 2036

(SUB-ZERO DRAFT)

Foreword

Energy is a critical enabler of Kenya's socio-economic transformation and a cornerstone of the Government's commitment to sustainable, inclusive, and resilient growth. As the country advances the implementation of its national development priorities under Kenya Vision 2030 and its Medium-Term Plans, the Bottom-Up Economic Transformation Agenda (BETA), and its regional and international commitments—including the United Nations 2030 Agenda, Africa Agenda 2063, and the East African Community Vision 2050—geothermal energy continues to play a central role in delivering reliable, affordable, and clean baseload power.

This National Geothermal Strategy sets out a clear, coordinated, framework to guide the accelerated development and optimal utilization of Kenya's vast geothermal resources over the medium to long term. The Strategy identifies priority interventions across the geothermal value chain, including exploration and drilling, power generation, direct-use applications, policy and regulatory reforms, innovative financing mechanisms, and capacity development, with the objective of de-risking investment and enhancing overall sector performance.

The successful implementation of this Strategy will depend on strong collaboration among national and county governments, public institutions, the private sector, development partners, and local communities. The Government remains firmly committed to providing an enabling environment that attracts investment, strengthens institutional capacity, upholds environmental and social safeguards, and promotes equitable benefit-sharing.

I therefore call upon all stakeholders to actively support and participate in the implementation of this Strategy, so that geothermal energy can continue to anchor Kenya's energy transition and make a significant contribution to the country's long-term low-emission development pathway.

HON. J. OPIYO WANDAYI, EGH

CABINET SECRETARY FOR ENERGY & PETROLEUM

Preface

Geothermal energy remains a cornerstone of Kenya's renewable energy agenda and a critical enabler of sustainable economic growth, energy security, and climate resilience. As a reliable, indigenous, and low-emissions baseload resource, geothermal power plays a central role in the country's transition to a low-carbon economy while ensuring all Kenyans have access to reliable, competitive, affordable, and clean energy.

Kenya is endowed with significant geothermal resource potential, currently estimated at 10,000 MWe, mainly from high-temperature prospects. Over the years, Kenya has made remarkable strides in geothermal energy generation, with the current geothermal installed capacity of 943.7 MW and other direct uses. However, challenges remain, especially the huge upfront financial investments required for exploration, geothermal drilling, and infrastructure development, among others.

The National Geothermal Strategy has been developed to address these challenges and provide a coordinated, long-term framework for accelerating the exploration, development, and use of geothermal resources. The Strategy outlines priority actions across the geothermal value chain, including resource assessment, infrastructure development, financing, policy and regulatory reforms, capacity building, and environmental and social safeguards.

The strategy is grounded in Kenya's commitment to achieving the Sustainable Development Goals (SDGs), particularly Goal 7: Affordable and Clean Energy. It also aligns with key local and global frameworks and aspirations, including the Bottom-Up Economic Transformation Agenda (BETA), Kenya Vision 2030, the National Climate Change Action Plan, the Energy policy, the East African Community Vision 2050, the African Union Agenda 2063, and the United Nations 2030 Agenda, among others.

The Government remains fully committed to implementing this Strategy through strong institutional coordination, public-private partnerships, and ongoing stakeholder engagement. Regular monitoring and review will ensure the Strategy remains responsive to technological advances and national development priorities.

I am confident that this Strategy will guide investment, enhance sector performance, and position geothermal energy as a key driver of Kenya's sustainable development.

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PRINCIPAL SECRETARY, STATE DEPARTMENT OF ENERGY

Executive Summary

Kenya's geothermal resource endowment represents a strategic national asset with significant potential to advance energy security, economic competitiveness and the country's climate and development objectives. As demand for reliable, affordable and low-carbon energy continues to grow, the need for a clear, coordinated and investment-enabling framework to guide the long-term development of geothermal resources has become increasingly imperative. The National Geothermal Strategy has therefore been formulated to provide strategic direction, align public and private sector interventions, and address emerging risks and limitations, while unlocking the full value of geothermal resources across power and non-power applications.

This document is firmly anchored in Kenya's constitutional, legal and policy framework, and is fully aligned with regional and global development agendas on energy security, climate action and sustainable industrialization. Over the past seven decades, the Government has implemented a range of deliberate interventions that have positioned geothermal energy as a cornerstone of the national energy mix. These include progressive regulatory reforms, systematic licensing of additional geothermal prospects, public-sector-led mitigation of upstream resource risks through exploratory drilling, targeted fiscal incentives such as tax exemptions on geothermal equipment and machinery, and the mobilization of concessional financing to catalyze project development. Collectively, these initiatives have strengthened investor confidence, promoted capacity additions, and enhanced Kenya's standing as a continental leader in geothermal development.

Despite this notable progress, Kenya's geothermal sector continues to be constrained by a range of structural, operational and financial challenges that limit its full potential. Key among these include non-cost-reflective tariffs, operational complexities in mature fields, protracted approval and procurement processes, skills and capacity gaps, infrastructure and financing impediments, limited local manufacturing, and overreliance on public funding. Additional barriers relate to land acquisition, fragmented data systems, policy and tariff ambiguities for non-power geothermal applications, and insufficient instruments to crowd in private investment, particularly in high-risk exploration. Addressing these gaps is critical to unlocking the next phase of sustainable, inclusive and commercially viable geothermal development in Kenya.

The National Geothermal Strategy aims to provide a coherent and enabling framework to accelerate the sustainable exploitation of Kenya's geothermal resources by strengthening the legal, policy, regulatory and institutional environment; enhancing access to diversified and innovative financing mechanisms; building robust national and regional capacity; and promoting increased local content, skills development, and industrial participation across Kenya's geothermal value chain.

The development of the strategy was undertaken through a structured and consultative five-stage process. The initial phase focused on a comprehensive situational analysis of the key thematic areas: geothermal resource exploitation, sustainable financing for geothermal development, the legal, policy, regulatory and institutional frameworks, and local content and capacity development for geothermal resource development. This phase also defined the overarching strategic direction, guiding principles, priority stakeholders, as well as the implementation, monitoring, evaluation and reporting frameworks that underpin the Strategy.

Subsequent phases comprised extensive stakeholder engagement and technical meetings with both domestic and international experts through targeted workshops and consultative forums. The resulting zero draft was subjected to rigorous review by the Ministry of Energy and Petroleum and relevant development partners. The process was iterative in nature, incorporating feedback at each stage, and culminating in the final Strategy document.

In conclusion, this strategy calls for coordinated action across all stakeholders, sustained commitment from government and development partners, and a rigorous monitoring and evaluation framework to ensure measurable progress, accountability, and adaptive management. The Ministry of Energy and Petroleum shall publicize the strategy, mobilize both technical and financial resources, and provide leadership in its implementation. An Implementation Action Plan will form a base for the success of this strategy, and therefore, its formulation shall be a priority.

Table of Contents

Acronyms and Abbreviations

AfDB	African Development Bank Group
AGPO	Access to Government Procurement Opportunities
BETA	Bottom-Up Economic Transformation Agenda
CAIDI	Customer Average Interruption Duration Index
CSOs	Civil Society Organizations
CSR	Corporate Social Responsibility
DAC	Direct Air Capture
EAC	East African Community
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EPC	Energy Performance Certificate
EPRA	Energy and Petroleum Regulatory Authority
ESG	Environmental, Social and Governance
ESIA	Environmental and Social Impact Assessment
EVs	Electrical Vehicles
GDC	Geothermal Development Company
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GSM	Graded Surveillance Measure
GW	Giga Watts
GWh	Giga Watt hour
ICT	Information and Communication Technology
INEP	Integrated National Energy Plan
IPPs	Independent Power Producers
JICA	Japan International Cooperation Agency
JV	Joint Venture
KAM	Kenya Association of Manufacturers
KenGen	Kenya Electricity Generating Company
KEPSA	Kenya Private Sector Alliance
KETRACO	Kenya Electricity Transmission Company Limited
KFS	Kenya Forest Service
KfW	Kreditanstalt für Wiederaufbau
KRA	Kenya Revenue Authority
KWS	Kenya Wildlife Service
LCPDP	Least Cost Power Development Plan
MoEP	Ministry of Energy & Petroleum

MoU	Memorandum of Understanding
MTREF	Medium Term Revenue and Expenditure Framework
MW	Mega Watts
MWe	Megawatt electrical
NCCAP	National Climate Change Action Plan
NDC	National Determined Contribution
NEMA	National Environment Management Authority
NGAO	National Government Administration Officers
NLC	National Land Commission
PESTLE	Political, Economic, Sociology, Technology, Legal, and Environmental
PISSA	Project Implementation Steam Supply Agreement
PPAs	Power Purchase Agreement
PPP	Public-Private Partnership
PWDs	Persons with Disabilities
REREC	Rural Electrification and Renewable Energy Corporation
SDGs	Sustainable Development Goals
SESA	Strategic Environmental and Social Assessment
SEZs	Special Economic Zones
SWOT	Strengths, Weaknesses, Opportunities and Threats

1 Introduction

1.1. Background Information

Kenya is endowed with a great geothermal resource potential currently estimated at 10,000 MWe mainly from potential high temperature prospects. With an exploration and development history from the 50s, only about 943.7MW[1] has been developed for electricity production and a minimal amount for direct use applications.

Geothermal is the main base load source for Kenya, due to its dispatchable nature, comparatively low cost of production and availability in comparison with other sources available for the country such as hydro, wind and solar.

Despite the potential, benefits and efforts made over the years in the pursuits to accelerate exploration and development of geothermal in the country so as the capture the full benefits of this natural resource, it is generally agreed that the pace has been slow and unsatisfactory. As such, the government has seen the need to develop a structured approach to the development in form of a strategic plan that takes into account lessons learnt. national, regional and global trends and developments in the geothermal domain, and stakeholder needs, in crafting a desired path for the future.

1.2. Rational for the Strategy

Kenya has made considerable progress in geothermal development and a lot of knowledge; human and technical capacities have been attained in the country. The Ministry issued greenfield geothermal resource licenses to accelerate geothermal development in the country. Despite this, the progress towards attaining the intended objective especially confirmation of availability of geothermal resources through drilling wells has been slow. This is attributed to among other factors the huge upfront financial investments required for exploration, geothermal well drilling and infrastructure development. Even in cases where steam has been developed like the Menengai field, power plant construction has been delayed due to inability by developers to reach financial close.

The National Energy Policy 2025–2034 underscores the importance of geothermal for the county's energy strategy and security, the availability of desirable resources that could be exploited. However, development is curtailed by various factors including legal and regulatory, financing, enforcement and compliance. In order to accelerate the development of geothermal resources the policy commits the Government to develop and operationalize the National Geothermal Development Strategy among other initiatives.

[1] Ministry of Energy & Petroleum, "Least Cost Power Development Plan 2024-2043."

1.3. Purpose of the Strategy

This strategy describes the status of the geothermal sector in Kenya, the strategic objectives and choices needed to accelerate geothermal development by defining priority interventions. Effective implementation of the strategy will support the Government to ensure availability of affordable, sustainable and clean energy for all.

This strategy therefore aims to:

(a) To accelerate the exploitation of geothermal resources
(b) To enhance financial resourcing for geothermal resources development
(c) To strengthen legal, policy, regulatory and institutional frameworks to accelerate geothermal development
(d) To expand Kenya's regional capacity (skills, equipment, etc.) and local content (manufacturing, industries, procurement - AGPO) in geothermal resource development.

1.4. Structure of the Strategy document

The strategy document is structured into five chapters: Chapter 1 provides introduction to the document, rational and purpose. Chapter 2 presents a situational analysis consisting of discussion on various issues around geothermal development in Kenya: environmental scan, current status of geothermal development, Strengths, weaknesses, opportunities and threats, PESTEL Analysis, Stakeholder Identification and Expectation and SWOT Matrix. It also discusses what has worked, current challenges, gaps and opportunities as appropriate. Chapter 3 outlines the desired strategic direction arising out of the situational analysis presenting the Strategic Issues, Goals, Objectives and Strategies. Chapter 4 focuses on the implementation framework, specifying the key activities, expected output, output indicator, target, timelines and actor for each strategy. Chapter 5 provides the monitoring, evaluation, and reporting mechanisms for accountability towards achieving policy goals.

2 Situational Analysis

This chapter provides an assessment of the factors and concepts touching on geothermal exploration and development in Kenya that provide the context of realistic and time bound strategies and actions to meet the set objectives.

2.1. Environmental Scan

2.1.1 National Policies, Legal and Institutional Frameworks

Development of geothermal energy cuts across many sectors and domains. This subsection provides for policies, legal and regulatory frameworks at the national, levels that have a bearing on the geothermal sector development in Kenya.

2.1.1.1 Constitution of Kenya 2010

The Constitution of Kenya Article 69 & 71 provides the overarching legal basis for geothermal sector governance. It underpins community participation, equitable resource sharing, environmental protection, prudent exploitation of natural resources, and devolution of energy functions. Geothermal development must therefore comply with constitutional principles such as sustainability, stakeholder engagement, land and resource rights, and environmental stewardship.

2.1.1.2 Kenya Vision 2030 and BETA Agenda

Geothermal energy has been singled out as a key enabler in accordance with Vision 2030 of the nation's long-term development blueprint. Therefore, the goal of this Strategy "Acceleration of Geothermal Development" can be met with the guidelines set below:

2.1.1.3 Natural Resources (Classes of Transactions subject to Ratification) Act (Cap 387B)

The Natural Resources (Classes of Transactions Subject to Ratification) Act gives operational force to Article 71 of the Constitution by ensuring that any significant concession or right granted for the exploitation of Kenya's natural resources cannot proceed without parliamentary approval. It creates a clear boundary between high-impact resource deals that must undergo national oversight and routine licences or low-threshold activities that remain within the mandate of ministries, counties, or private parties. In practice, the Act safeguards national interests by subjecting major extraction, access, or commercial use of strategic natural assets to transparency, accountability, and legislative scrutiny.

2.1.1.4 Energy Act, Cap 314

The Energy Act, Cap. 314 spell the core legal and regulatory framework for geothermal development, covering licensing and permitting for exploration, drilling and resource management, for geothermal direct use and power generation. It promotes efficient and safe resource utilization, transparent licensing. Regulations are currently under development.

The Act mandates the Cabinet Secretary for Energy with formulation of the National Energy Policy, its review every five years and annual reporting at the end of every Financial Year, publication and review of the Integrated National Energy Plan and publication of Energy Resource maps.

The first Energy Policy has been approved by Cabinet in the fourth quarter of 2025 and is ready for implementation. The first geothermal resource map is under drafting by the Ministry and preparations for the first INEP is ongoing following the issuance of Guidelines for the Preparation of Energy Plans and INEP for the period 2023 -2043 by the CS under Energy Circular No. 1 on 25th September, 2025.

2.1.1.5 Government Support Measures in Support of Investment Programmes

The Policy on the Issuance of Government Support Measures in Support of Investment Programmes 2018 This policy outlines the Government of Kenya's practice and stance on the conditions under which Government may make various supports available to implementers of public projects, in order for such investments to be more secure and bankable. It defines what a Government Support Measure is, traces the history of their usage and applications in Kenya, identifies the problems faced under administrative practices supporting their issuance.

2.1.1.6 National Energy Policy 2025–2034

This is first policy under the Energy Act Cap 314. It was approved by Cabinet in Quarter 4 of 2025. The policy identifies several high-level challenges viz

i. Inadequate legal and regulatory framework to:
   a. Enforce geothermal resource licensing and compliance mechanisms to accelerate geothermal development;
   b. Leverage expertise in government institutions to expand the ownership of geothermal power plants in the region;
   c. To prioritize strategic national interests in geothermal resource development and leverage expertise and capacity in public energy institutions.
ii. ii. Inadequate financing for geothermal resource development, slowing down its development;
iii. iii. Sub-optimal energy mix in the system that results in the underutilization of geothermal generation at certain times of the day, leading to steam venting.

It identifies the following opportunities:

i. The country's high geothermal potential can be harnessed to provide baseload supply, enhance power stability, and energy security;
ii. The availability of green financing that can be tapped to de-risk upstream development;

iii. Growing regional demand for technical expertise in geothermal development can generate additional revenue stream.

The policy underscores the importance of geothermal for the county's energy strategy and security and in order to accelerate the development of the geothermal resources commits the Government to develop and operationalize the National Geothermal Development Strategy among other initiatives.

2.1.1.7 Kenya Climate Change Act 2016

The Kenya Climate Change Act, 2016 was enacted to facilitate effective response to climate change and provide a vision for a low carbon and climate resilient development trajectory. The Act requires all national governments and public entities to integrate the climate change action plan into sectoral strategies, action plans and other implementation projections for the assigned legislative and policy functions.

Kenya has adopted a green energy strategy in expanding its generation with an emphasis on renewable sources such as geothermal, hydro, wind and solar; this creates a critical role in moving Kenya towards a green economy trajectory.

2.1.1.8 Kenya National Climate Change Policy 2021

The Kenya National Climate Change Policy focuses on the interlinkage between sustainable development and climate change. Climate change adversely impacts geothermal development and therefore the need for intervening measures that can help to achieve the goal of low carbon climate resilient development.

2.1.1.9 Least Cost Power Development Plan (LCPDP) 2024–2043

The LCPDP 2024-2043 recognizes the role that geothermal power plays in the national energy mix by providing base load power. It therefore commits to accelerating adoption of flexible geothermal technologies in future generation expansion to increase system flexibility and manage venting of steam.

2.1.1.10 Land Act Cap 280

The Land Act Cap 280 gives effect to Chapter 5 of the Constitution of Kenya, to revise, consolidate and rationalize land laws: to provide for the sustainable administration and management of land and land-based resources, and for connected purposes.

2.1.1.11 National Land Commission Act Cap 281

The National Land Commission Act, Cap 281 is established through Article 67 of the Constitution of Kenya to manage public land on behalf of the national and county governments. Section 5 of the Act gives the functions of the Act with respect to management of public land.

2.1.1.12 Competition Act Cap 504

The Competition Act Cap 504 was enacted to promote and safeguard competition in the national economy; to protect consumers from unfair and misleading market conduct. Article 5- Application- "...shall apply to all persons including the Government, state corporations and local authorities in so far as they engage in trade.

2.1.1.13 Environmental Management and Co-ordination Act Cap 387

The Act establishes NEMA. Projects fall under second schedule: Projects to undergo EIA category four (Dams, rivers and water resources) including drilling for the purpose of utilizing ground water resources including geothermal resources. Concession holders shall comply with all relevant provisions of the Environmental Management and Co-ordination Act Cap 387

2.1.1.14 Forest Conservation and Management Act Cap 385

Part IV of the Forest Conservation and Management Act Cap 385 establishes the Kenya Forest Service. Geothermal projects are mostly located in forest areas, especially those of KenGen and GDC. The companies carrying out geothermal projects are directed to comply with all relevant provisions of the Forest Conservation and Management Act Cap 385.

2.1.1.15 Wildlife Conservation and Management Act Cap 376

The Act establishes the Kenya Wildlife Service with the mandate to conserve and manage national parks, wildlife conservation areas, and sanctuaries under its jurisdiction. Some licensees operate within national parks and are therefore required to comply with the Act.

2.1.1.16 Mining Act Cap 306

Section 6 of the Mining Act, Cap. 306, vests ownership of all minerals in the National Government. This relates to section 80(2) of the Energy Act, which provides that any by-product obtained in the production of geothermal resources may be reclaimed for further use or sale. If the by-product is a mineral within the meaning of the law governing mining, the licensee shall exploit it after obtaining a license under that law.

2.1.1.17 Institutional Framework for Geothermal Development

The geothermal value chain in Kenya spans across multiple institutions with specific responsibilities. Key institutions include Cabinet, Legislature, County Governments, Ministry of Energy and Petroleum, The National Treasury, KenGen, GDC, IPPs, and Private Investor, KETRACO, KPLC, EPRA, communities among others. A detailed analysis of the expectations of these and other stakeholder is provided in the Section 2.6 - Stakeholder Identification and Expectation Analysis.

Having many actors, usually governed by individual policies and laws, typically occasions hindrance to project progress occasioned by institutional hurdles around policy formulation and implementation, regulatory provisions, conflicts, benefit sharing etc. There is need to establish a system that will provide synergy and value across the

geothermal value chain to fast track projects and reduce overheads. This can be achieved by for example undertaking a review existing policies, laws and regulations to provide clarity and provide for inadequacies, improving engagement and enhancing benefit sharing.

Additionally, the relevant energy sector entities of KenGen, GDC and KETRACO have through their Strategic Plans have set their own targets. In developing targets under this strategy, this has to be taken into account and may occasion revision of targets by these agencies.

2.1.2 Regional and International Frameworks

At the regional and international level, energy is at the core of economic transformation and improved lifestyles. Geothermal energy scores high due to its environment friendliness. Three frameworks are identified as below:

2.1.2.1 Africa's Agenda 2063

Africa's Agenda 2063 outlines the continent's long-term socio-economic transformation, identifies modern, reliable and affordable energy as a key pillar. Geothermal development contributes to this agenda by providing sustainable baseload power, enabling industrialization, fostering green manufacturing, and enhancing regional power integration through stable renewable energy sources.

2.1.2.2 The East African Community (EAC) Vision 2050

The East Africa Community Vision 2050 recognizes energy as a driver of regional economic growth and prioritizes sustainable, secure and least-cost energy supply. Geothermal development aligns with this vision by supporting regional power trade, stabilizing energy supply across EAC member states, and positioning Kenya as a geothermal hub for East Africa through shared infrastructure, technology transfer and capacity building.

2.1.2.3 United Nation's 2030 Agenda for Sustainable Development Goals

The Government of Kenya's Nationally Determined Contribution (NDC) targets, under the United Nation's 2030 Agenda for Sustainable Development Goals (SDGs), emphasize low-carbon development pathways. Geothermal energy, as a baseload, renewable and clean resource, directly supports these commitments by reducing greenhouse gas emissions, expanding access to clean energy, and strengthening climate resilience within the energy sector.

2.2 Kenya's Electricity Demand Landscape

In the last three years, Kenya has experienced a 2.29% decrease in the installed capacity from 3,312 MW (June 2023) to 3,236 MW (June 2025) owing to retirement of aged plants. Conversely, the peak demand increased from 2,090 MW (June 2023) to 2,307 MW (June 2025) giving a 10.38 % increase.

The peak demand as projected in the long-term national electricity demand forecast for the period 2024 – 2043 is expected to grow from 2,170 MW in 2023 to 8,152 MW, 13,495 MW and 4,996 MW in the reference, vision and low scenario respectively, driven by increased adoptions of electric vehicles and electric cooking, expected flagship projects and projected customer growth of 500,000 annually by 2028.

Kenya will be positioned as a net electricity importer if these two factors are not abetted by adequate and timely pipeline energy projects in the medium and long term.

2.3 Growth of Geothermal in Kenya

2.3.1 Field Development Performance

Nineteen (19) geothermal prospects area documented mainly located in the Rift Valley of Kenya with an estimated potential of 10GW. Each prospect bears unique characteristic defined by resource enthalpy and chemistry; distances to load centers; security status; availability and distance to transmission infrastructure; access to water and physical infrastructure – roads, transmission lines, services.

Development focus has been on electricity generation. Only seven (6) fields (i.e. Olkaria, Eburru, Akiira, Menengai, Korosi, Silali and Paka) have had exploration drilling. Geothermal exploration in Kenya started with drilling of two wells at Olkaria in 1956.

The Government over time has financed and supported to the geothermal sector with an aim to spur development through various efforts including policy and regulatory reforms such as Sessional Paper No. 4 of 2004 on Energy, licensing of more prospects, reduction of upstream risks associated with resource discovery, various tax exemptions for equipment and machinery for geothermal development, concessionary loans to KenGen and GDC and other government support measures.

In the Sessional Paper No. 4 of 2004 on Energy Government recognized that accelerated development of geothermal will require joint efforts from both the public and private sectors. It was also realized that the cost and risks associated with initial upstream development activities in greenfield projects (exploration, exploratory drilling and the assessment of the resource), up to then undertaken jointly by Government and KenGen, are a significant disincentive to private sector investment and if borne by the them would lead to unsustainably high electricity tariffs. To reduce the risks, the paper proposed established the Geothermal Development Company (GDC) as a 100% GoK owned special purpose to undertake these activities and in effect easing KenGen from the same with the aim of availing steam for sale to power producers, including KenGen. GDC was finally incorporated in 2009.

Under the LCPDP 2024-2043, the effective interconnected capacity is projected to rise from 2,170 MW in 2023 to 8,152 MW in 2043 with geothermal expected to contribute

the highest firm capacity to the generation mix averaging 32% annually over the planning period,

Notwithstanding the above, sector growth has continued to be constrained partly due to single offtake and lack of applications in the vicinity. A possible solution that would accelerate the development of the fields would be to cluster the resources along potential investment type based on some economic activity as below.

Cluster	Fields	Potential investment types
The Northern Rift Valley fields	Barrier, Namarunu, Emuruangolak, Silali, Paka, Korosi, Baringo	Green hydrogen, green industries, direct use, industrial park, mining, eco-tourism
The Central Rift Valley fields	Bogoria, Menengai, Eburru, Olkaria, Longonot, Mt. Margaret, Suswa	Grid supply, industrial parks, direct use, green hydrogen, green industries, export
The Southern Rift Valley fields	Magadi-Shompole	Direct use, grid power, export
Western Kenya area	Homa Hills, Homa Bay County	Industrial park, eco-tourism, grid power, direct use (blue economy and aquaculture)
Coastal area Central Kenya	Chyulu, Mwananyamala, Nyambene	Grid power, export direct use (geothermal heat), grid power

2.3.2 Power Purchase Agreements and Applicable Producer Tariffs

Lengthy land acquisition processes, delays in approving cost reflective steam tariffs and complex regulatory procedures continue to constrain project timelines and deter Independent Power Producer (IPP) participation. In addition, litigation risks and regulatory gaps in geothermal direct use applications, brine utilization and geothermal minerals underscore the need for targeted legal and policy reforms to support sector growth.

Reforming the steam tariff framework offers an opportunity to improve transparency, ensure cost reflective pricing and enhance project bankability while clear environmental and social safeguards strengthen investor confidence. Alignment with international climate agreements further expands access to concessional and climate finance.

Possible interventions include:

i. Issuance, together with the geothermal licence, of a forward bankable PPA upon completion of geoscientific studies to secure financing;
ii. Implement cost reflective tariff;
iii. If the industrial power users are not the power developers, the power developers would require off-take guarantees of at least 25 years;
iv. To implement tariff reduction measures towards meeting the target tariff of not more than 7 US Cents by:

a. Providing tax exemptions on geothermal development (drilling, equipment, and associated services);
b. Having longer Power Purchase Agreement of 30 years and above;
c. Facilitating infrastructure development; and
d. Undertaking development power interconnection infrastructure.

2.3.3 Foundational data and information

Accurate data and information of the surface and subsurface geology, socio-economic, land use-land cover is essential for informed planning for geothermal, efficient exploration, resource assessment and resource management.

The performance in the area of data collection and management is inadequate such that there is are consistent datasets covering the country or areas of interest, limited sharing among entities and researchers, different standards, little growth in the overall body of geothermal in Kenya, lack of data for resource monitoring etc.

There is need for the Ministry to create an ecosystem (policies, standards, systems etc.) around data acquisitions and storage, knowledge generation, and access in such a way as to enhance consistency, variety and completeness. The result will be increased investment in the sector.

2.3.4 Residual drilling and exploration risks

Despite the efforts so far put in place to try and address upstream risk, the success has not been satisfactory. New innovative mechanisms need to be explored to fast track the de-risking of all geothermal fields (including private sector ones) by:

i. Government to actively seek innovative financings (grants, green funds, carbon credit) for geoscientific studies (data acquisition) drilling, water supply, roads and infill studies.
ii. Considering policy shift to allow public entities (GDC, KenGen) to form innovative collaborations with IPPs;
iii. Upon de-risking, Government to enter into specific development milestone with the IPPs; and
iv. De-risking constitute equity share by Government.

2.3.5 Extended project development timelines

particularly for new and remote prospects – alongside infrastructure deficits, environmental and social safeguard obligations

2.3.6 land access and community engagement

Effective geothermal development requires robust land access and community engagement policies. Land disputes, cultural sensitivities and community conflicts can significantly delay

project implementation if not addressed through structured consultation and stakeholder engagement frameworks. Increasing expectations for local employment, compensation and benefit sharing underscore the need for clear, transparent and enforceable community benefit sharing mechanisms anchored in national policy.

Inadequate community engagement and weak grievance redress systems heighten the risk of project resistance, infrastructure vandalism and legal disputes thereby increasing operational and security costs. To mitigate these risks, policy frameworks should prioritize early stakeholder engagement, local participation, sound labor relations management and formal community development agreements to strengthen social license to operate and ensure long term project sustainability.

2.3.7 Project bankability

This entails ensuring a project is attractive to investors through documentation acceptable to the investor that provide proven future revenues backed robust contracts such as PPAs, risk allocation, performance guarantees, third-party validation and investor-grade documentation packages.

2.3.8 Financing challenges

Kenya's national geothermal financing framework is anchored in a strategic mix of public and private capital, designed to address the capital-intensive and risk-laden nature of geothermal development. Public financing mechanisms comprising government budgetary allocations, fiscal instruments, and state-backed support have been central to de-risking early-stage activities such as resource exploration, steam field development, and enabling infrastructure. These efforts have been complemented by concessional loans and grants from international development partners, revenues from steam sales, and equity investments by state-owned and private entities. In recent years, the financing landscape has progressively diversified to include innovative instruments such as green financing facilities, government-guaranteed loans, infrastructure bonds, and capital market offerings, reflecting an evolving approach to mobilizing long-term investment for geothermal growth.

Despite all these measures, the geothermal sector continues to face structural financing constraints that align with global industry challenges and require coordinated policy intervention. Key barriers include the high upfront capital requirements and geological risks inherent in exploration, regulatory and permitting complexities, uncertainty and accessibility-related risks associated with far-flung resources and a limited pipeline of bankable exploration and utilization projects. These constraints inhibit the scale and pace of private sector participation and underscore the need for targeted risk-mitigation instruments, streamlined regulatory frameworks, and project preparation support as integral components of the national geothermal strategy.

2.3.9 Organization Capacity around geothermal development

- On the overall, the Country has over the years developed relevant organizational capacity in the areas of human capital (skills, knowledge, experience, and leadership), Systems Processes (policies, procedures, communication, and data management), Financial Resources (budgeting, financial stability, and resource allocation, Technology & Infrastructure (equipment, tools, physical assets, and IT systems). Notably KenGen and GDC own drilling rigs, equipment and associated accessories and each have training facilities for their staff and external customers.

  Despite the achievements made in building technical expertise in the sector, there still exists a gap. There's still a heavy reliance on international expertise in directional drilling, integrated reservoir modelling, long-term resource sustainability assessment, and data-driven resource management. Technical expertise among stakeholders remains uneven, making effective participation in planning, risk allocation, and geothermal project oversight difficult. While donor-supported programs have expanded and strengthened training opportunities, integration of research into practice, coupled with uneven distribution of expertise among stakeholders, remains a constraint on the sector's scalability.

  Possible interventions include;

  i. Maximizing utilization of existing rigs and associated infrastructure in possession of KenGen and GDC for de-risking the geothermal fields by drilling at least 3 wells in each prospect;
  ii. Utilization of KenGen and GDC Training facilities to building more human resources;
  iii. Building accredited laboratories

2.3.10 Emerging Technologies

Science, Technology and Innovation in geothermal energy value chain is focusing on discovery of hidden resources, enhancing efficiency of resource extraction and utilization, lower cost and make marginal projects financially feasible. Thematic areas are:

Exploration - Data acquisition and interpretation utilizing advanced survey techniques, tools and data analytics for precise resource characterization and fault prediction. developed for petroleum exploration being repurposed for geothermal can lead to discovery in areas traditionally not manifesting geothermal;

Advanced drilling methods - enabling deployment of techniques used in petroleum to reach greater depths and directional drilling to access more resource. Innovations like plasma/laser-assisted and rotary-percussion drilling speed penetration in hard rock, lowering costs that once hindered scalability.

Enhanced Geothermal Systems (EGS) – attempt to utilization of hot rocks that do not have intrinsic permeability and hydrothermal fluids by fracturing and circulation water. *Recent progress shows EGS nearing commercialization after decades of refinement, with power purchase agreements surging over tenfold since 2022 and co-production of lithium or direct heat improving viability. Multi-zone stimulation triples flow rates, potentially doubling U.S. geothermal capacity by enhancing existing fields*

Artificial Intelligence & Machine Learning - Artificial intelligence, machine learning and IoT enable real-time monitoring, predictive maintenance, and reservoir modeling in geothermal operations, cutting risks and optimizing efficiency. Ground-source heat pumps achieve 300-600% efficiency with smart controls, reducing CO2 emissions by 50-70% versus fossil fuels. These tools support hybrid systems blending geothermal with solar or wind for grid stability.

2.3.11 Environmental, Social and Governance Issues

Geothermal energy development offers low-carbon benefits but poses environmental risks like gas emissions and social challenges such as community displacement, managed through impact assessments and benefit-sharing globally and in Kenya.

Globally, geothermal projects emit hydrogen sulfide, CO2, and mercury, risking air quality degradation, while fluid discharge causes subsidence, toxic contamination, and acid rain if reinjection fails. In Kenya's Olkaria fields, operations pollute water sources, induce earth tremors, and degrade Hell's Gate National Park with noise, steam, and infrastructure, leading to respiratory illnesses and livestock deaths. Management strategies include reinjection to sustain reservoirs, baseline monitoring, and cumulative impact studies, as seen in a 2025 Kenyan court ruling revoking a Menengai project license for inadequate assessments.

Kenya's Rift Valley projects, like Olkaria, involve forced resettlements without full Free, Prior, and Informed Consent, eroding Maasai cultural sites, livelihoods, and pastoralism via fenced, infertile lands like RAPland. Communities face poverty, job exclusion, nepotism, and ethnic tensions among Maasai, Samburu, and Turkana, exacerbated by evictions such as Lorropil village's 2019 burning. Recent Energy Act royalties aim for revenue sharing, but implementation lags amid corruption claims.

Worldwide, low awareness fuels opposition, with risks of resettlement, cultural loss, and exclusion; East African surveys highlight involuntary moves (25%) and land grabs (14%). Mitigation involves corporate social responsibility for jobs and infrastructure, indigenous plans per World Bank standards, and transparent consultations, though banks like EIB often fall short. Hybrid governance with community representation boosts acceptance and equity.

2.4 Strengths, Weaknesses, Opportunities and Threats for the Geothermal Sector

This section provides the identified the Strengths, Weaknesses, Opportunities and Threats around the geothermal sector in Kenya.

2.4.1 Strengths

The following strengths have been identified in the order of priority.

i. Vast geothermal resource-base across the Rift Valley with a 10GW potential.
ii. Kenya is recognized globally as a geothermal leader with reputable technical experience.
iii. Geothermal provides reliable, low carbon, energy-stable, dispatchable baseload that is essential for grid reliability.
iv. An existing robust and mature policy and regulatory framework that supports geothermal resource investment and development.
v. Competitive long-term cost of geothermal power.
vi. Established institutions that drive geothermal resource development: GDC, KenGen, EPRA, NEMA, MoEP, NLC.
vii. Strong global partnerships and development partner support (GIZ, JICA, KfW, AfDB, World Bank).
viii. Existing expansive pool of technical
ix. l expertise in geothermal technology and power plant development, operation and maintenance,
x. Kenya is currently the regional geothermal training hub.
xi. Existing derisked and proven geothermal fields with infrastructure development

2.4.2 Weaknesses

The following weaknesses have been identified in the order of priority.

i. The absence of a cost-reflective steam tariff, limiting financial sustainability and reducing incentives for private investment in upstream development.
ii. Persistent operational challenges in mature fields-enthalpy variations, drilling complexities, reinjection challenges.
iii. Lengthy procurement, licensing, contracting and approval processes-impacts timelines and cost escalation.
iv. Lack of synergies in the industry results in skill gaps in advanced specialized fields
v. Infrastructure constraints including grid evacuation capacity.
vi. Limited local manufacturing of geothermal components, necessitating high reliance on imports for critical components.
vii. Financing constraints emanating from limited domestic financing options.

viii. Heavy reliance on public funding for upstream development.
ix. Slow land acquisition and compensation processes.
x. Gaps in data integration and sector-wide geo-portal harmonization.
xi. Insufficient policy clarity on development framework and tariffs on heat, direct-use, brine, and mineral extraction.
xii. Limited private sector participation in exploration (high risk) due to insufficient instruments for investment.

2.4.3 Opportunities

The following opportunities have been identified in the order of priority.

i. Growing power demand (both domestic and regional)-industrial/energy parks/special economic zones (SEZs), data centers, E-mobility.
ii. Direct use application opportunities-aquaculture, agro-processing, greenhouse heating
iii. Geo-tourism opportunities-wellness/spa facilities, geo-heritage sites, guided geoscience tours-revenue diversification venture.
iv. Adoption of emerging technologies-hybrid systems, binary systems, directional drilling opportunities, AI-driven modeling to improve the development and management of geothermal resources.
v. Climate financing opportunities -carbon credits, sustainability linked bonds and green bonds - can enhance project viability and finance de-risking activities.
vi. Public-Private Financing and blended financing models to attract private capital and reduce exploration risk-risk sharing.
vii. Blended applications-green hydrogen for fertilizer (ammonia) production.
viii. The growing demand for knowledge and technological exchange from the region as well as the exportation of local expertise and equipment through consultancies.
ix. Exploration of under-explored geothermal prospects beyond the Rift Valley margins.
x. Integration of geothermal into climate resilience and adaptation programs.

2.4.4 Threats

The following threats have been identified in the order of priority.

i. Competing renewable energy technologies-falling costs of solar, wind and hydropower may diminish geothermal's competitive advantage.
ii. Environmental and social conflicts, especially in sensitive ecosystems and community areas (parks, conservation areas).
iii. Financing volatility-global economic downturns/slowdowns
iv. Policy changes, regulatory delays, or shifts in national priorities.

v. Security and disputes in volatile geothermal prospect areas causing delays in approvals.
vi. Reservoir uncertainty-underperforming wells, steam decline events, risk of dry wells.
vii. High upfront capital costs for exploration and drilling limiting acceleration of resource development.
viii. Technological obsolescence and cybersecurity risks.
ix. Increasing investor demands higher risk allocation or returns due to perceived national risk.
x. Geophysical hazards are potentially affecting drilling success and resource sustainability.

2.5 PESTEL Analysis for Kenya's Geothermal Sector

The PESTEL Analysis in Table below provides and identification and analysis of Political, Economic, Social, Technological, Environmental and Legal & Regulatory factors impacting the geothermal sector in Kenya.

Table: PESTEL Analysis impacting the geothermal sector in Kenya

OPPORTUNITIES	THREATS
POLITICAL	
i. Strong alignment with national policy instruments (Vision 2030, BETA, NCCAP) prioritizing renewable baseload and green industrialization. ii. Government commitment to affordable, reliable, and clean energy increases demand for geothermal power. iii. PPP frameworks provide structures for private sector investment in drilling, generation, and direct-use applications. iv. E-mobility and industrial park development policies create new baseload demand. v. Regional stability strengthens Kenya's position as a geothermal technology and training hub vi. Continued government participation in climate fora strengthens	i. Frequent policy and regulatory changes may slow private investment and project execution. ii. Competing political interests between national and county governments may delay land access or approvals. iii. Complex policy environments and overlapping mandates can prolong decision-making. vii. Shifting policy and economic priorities affect long term geothermal planning.

OPPORTUNITIES	THREATS
political will for geothermal expansion and climate-resilient projects.	
ECONOMIC	
i. Rising electricity demand from manufacturing, agro-processing, EVs, ICT infrastructure, and green hydrogen. ii. A cost-reflective steam tariff would strengthen investor confidence and attract private capital into upstream geothermal development. iii. High global oil prices strengthen the competitiveness of geothermal power. iv. Growing demand for direct-use applications such as heating, aquaculture, greenhouses, and industrial process heat. v. Goodwill from development partners supports concessional financing and technical cooperation. vi. Carbon markets and climate finance offer new revenue opportunities for geothermal projects. vii. Expansion in taxation and economic reforms can increase exchequer allocation for public upstream drilling.	i. High national debt limits public financing for exploration and drilling. ii. Non–cost-reflective steam tariffs may undermine the financial sustainability of steam suppliers and slow the pace of geothermal field development. iii. High inflation, currency depreciation, and rising interest rates increase project costs. iv. Investors demand higher returns for perceived exploration risk, impacting project structuring. v. Economic downturns reduce demand for electricity and slow industrial uptake of steam and heat. vi. Limited local manufacturing capacity increases reliance on imported drilling consumables and equipment.
SOCIAL	
i. Geothermal energy is socially accepted as clean and environmentally responsible. ii. Communities recognize geothermal development as a source of employment, training, and socio-economic upliftment. iii. Strong potential for community benefit-sharing programs linked to direct-use industries.	i. Land disputes, community conflicts, and cultural sensitivities may delay project activities. Rising expectations for employment and compensation require structured benefit-sharing frameworks. Labour disputes or dissatisfaction may disrupt operations if management is not

OPPORTUNITIES	THREATS
iv. Availability of local labour (skilled and semi-skilled) supports cost-effective implementation.	proactive. Vandalism of geothermal infrastructure and demands for local participation can pose security and cost risks. Failure to engage communities early may lead to project resistance or legal disputes.
TECHNOLOGICAL	
i. Proven technologies for exploration, drilling, reservoir modelling, and production increase success rates. ii. Digitalization—remote sensing, real-time monitoring, automation—enhances efficiency and decision-making. iii. Binary and hybrid technologies unlock value from low-temperature resources. iv. Technological advances support emerging industries: DAC, mineral recovery, geothermal cooling, and greenhouse heating. v. Kenya's participation in global geothermal innovation partnerships increases access to cutting-edge research.	i. Rapid technological change can render equipment obsolete, increasing costs. ii. Cybersecurity risks threaten energy infrastructure and operational continuity. iii. Interim capacity gaps require continuous investment in human capital and specialized skills. iv. Competition from other renewable technologies (wind, solar + storage) may reduce geothermal's share if costs rise.
LEGAL AND REGULATORY	
i. The Energy Act (2019) and EMCA provide strong regulatory foundations for geothermal development. ii. Reforming the steam tariff framework provides an opportunity to establish transparent, predictable, and cost-aligned pricing that supports project bankability. iii. Clear environmental and social safeguards support sustainable development and investor confidence.	i. Lengthy land acquisition processes impede project timelines. ii. Delays in approving cost-reflective steam tariffs can impede financial closure, discourage private sector participation, and delay project commissioning. iii. Complex regulatory frameworks can delay approvals and discourage IPP participation. iv. Litigation over land, benefits, or environmental impacts increases project risks and costs.

OPPORTUNITIES	THREATS
iv. International climate agreements open additional financing windows for geothermal. v. PPP Act (2021) strengthens legal frameworks for private participation across the value chain.	v. Gaps in legal frameworks for direct-use, brine utilization, and geothermal minerals require regulatory updates.
ENVIRONMENTAL	
i. Strong national and global preference for green energy enhances geothermal's role in decarbonization. ii. Climate change impacts on hydropower strengthen the need for a stable baseload resource. iii. Carbon credits under Article 6 enable new revenue streams. iv. Kenya's abundant volcanic geothermal resources provide long-term development potential.	i. Natural hazards such as seismicity, volcanism, and ground deformation require advanced risk management. ii. Environmental degradation risks (flora, fauna, water systems) necessitate strict compliance. iii. Reclassification of geothermal prospects as protected areas could reduce accessible resources. iv. Climate variability may affect water availability critical for drilling and cooling processes. v. Environmental activism may challenge expansion of geothermal projects in sensitive ecosystems.

2.6 Stakeholder Identification and Expectation Analysis

Table below provides an identification of stakeholders, an analysis of their expectation and the Government of Kenya expectation from for each one

Table: Stakeholder Identification and expectations analysis

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
1	Geothermal Licensees	Exploration of energy resources	i. Availability of quality data and information. ii. Timely approval of development plans and issuance of licenses and permits iii. Timely facilitation of legislated exemptions iv. Facilitate land access	i. Undertake exploration and commercialization of resources Corporate Social Responsibilities (CSR) ii. Compliance with national legislations
2	Independent Power Producers (IPPs)	Power generation	i. Timely purchase of generated energy Adherence to the Power Purchase Agreements (PPAs) ii. A stable and reliable grid iii. Consistent and predictable Policies to enable investments in the Sector	Reliable, quality and affordable power Adherence to the PPAs
3	Energy and Petroleum Regulatory Authority (EPRA)	Regulate energy sector	i. Provision of adequate budgets Timely approval of regulations Timely policy guidance	i. Effective economic and technical regulation of the sector ii. Prudent utilization of funds
4	Energy and Petroleum Tribunal	Arbitrate on disputes in Energy	Timely information to facilitate dispute resolution	Timely resolution of disputes
6	National Environmental Management Authority (NEMA)	Monitor and enforce compliance of environmental regulations	i. Compliance with environmental management regulations ii. Collaboration on climate change mitigation measures to ensure sound environmental conservation.	i. Timely approval of ESIAs for projects Conduct environmental audits during and post projects lifetime ii. Provide technical guidance on environmental management iii. Undertake Strategic Environmental and Social Assessment (SESA) for the sector Stakeholder sensitization on environmental issues
7	State Department for Lands and Physical	i. Management of land resources	i. Timely provision of information on targeted areas for	i. Facilitate the acquisition of land for sector programs and projects

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
	Planning and National Land Commission	ii. Facilitate change of land ownership	implementation of programs and projects ii. Provide logistical and financial support in the land acquisition process iii. Timely submission of land adjudication requirements	ii. Timely facilitation and processing of land adjudication
8	Research and academic institutions	i. Provide education and training ii. Research, development, innovation and strategic collaborations and partnerships. iii. Training and capacity building.	i. Partnership and collaboration in innovation, research and development ii. Application of research findings in policy formulation and decision making	Undertake research in sector development and implementation of curricula responsive to the capacity needs of the sector
9	Civil Society Organizations (CSOs)	i. Representation of their constituencies in policy formulation, programmes and Project implementation, advocacy and serve as a check in governance practices ii. Influence the development and implementation of energy policies through advocacy to ensure inclusivity, sustainability, local content and responsiveness to community needs. iii. Facilitate community participation in energy sector matters, projects and programmes.	i. Facilitate their participation in policy formulation and implementation of programmes and projects ii. Accountability and transparency in programmes project implementation	i. Participation in policy formulation and implementation of programmes and projects ii. Advocacy for programmes and projects support sector initiatives

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		iv. Monitor energy sector activities to promote transparency and good governance.		
10	The National Treasury	i. Resource mobilization ii. National planning and project monitoring and evaluation iii. Approval of programmes and projects. iv. Policy formulation and management of Government financial, accounting and public procurement and asset disposal standards.	i. Prudent utilization of resources ii. Timely budget preparation and execution Programmes and projects Planning, Implementation, Monitoring and Evaluation	i. Provision of adequate budget Timely approval of programmes and projects ii. Timely approval of the budget and release of funds. iii. Capacity building on planning and budgeting
11	Relevant Professional Bodies and Associations	Develop, support, regulate and promote professional standards	i. Collaboration in the implementation of sector programmes and projects ii. Collaboration in policy formulation and development of regulations iii. Compliance to professional ethics and standards iv. Provide sector data, information, reports and studies	i. Provision of relevant professional and technical standards ii. Maintain high professional standards through self-regulation iii. Provide sector data, information, reports and studies iv. Provide capacity building for the sector
12	Parliament (The National Assembly and The Senate)	Represent, Legislate and oversight	i. Operationalize laws and other legislative instruments ii. Initiate drafting of relevant bills iii. Timely response to parliamentary questions	i. Enactment of laws and regulations for the sector ii. Effective representation and oversight approval of the budget iii. Ratification of treaties, conventions and development plans
13	Judiciary/ Independent offices	Resolve disputes in a just manner with a view to	i. Proper documentation during applications	Timely settlement of disputes.

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		protecting the rights and liberties of all.	ii. Compliance to relevant laws	
14	Direct Financing Institutions	i. Provide financial resources through technical assistance, grants, guarantees, facilities, loans and innovative financing mechanisms. ii. Enhance technical and institutional capacities. iii. Facilitation of regional and international partnerships.	i. Prudent utilization and timely absorption of development funds ii. Delivery of projects within stipulated timelines and budgetary allocation iii. Regular reports on project progress and deliverables iv. Accountability and good corporate governance v. Compliance with the Environmental, Social and Governance (ESG) laws vi. Compliance with the governing laws and regulations	i. Prompt approvals and disbursements of funds. ii. Provision of technical support and capacity building iii. Timely, regular and transparent correspondence and engagement in project development and progress
15	Kenya Electricity Generating Company (KenGen)	i. Generation of power from various sources, including geothermal ii. Purchase of steam from GDC steam sales iii. Potential partners in geothermal development	i. Provision of steam for power generation ii. Regular and timely submission of invoices iii. Prompt operation and maintenance of the steam wells and related equipment. iv. Engagement in areas of partnership in geothermal development	i. Prompt payment of invoices on steam charge ii. Prudent and regular correspondence on operation and maintenance requirement iii. Prioritized engagement on joint partnership opportunities in geothermal development iv. Prudent and efficient utilization of supplied steam
16	Kenya Power and Lighting Company	i. Purchase of retail, bulk electricity from licensed generators. Retail selling of power to consumers. ii. Build and maintain the power distribution and	i. Provision of steam for power generation to KenGen and IPP's ii. Regular and timely submission of invoices to KenGen and IPP's	i. Prompt payment of power purchased to power generators. ii. Regular communication on any expected delays in payment or dynamics in power dispatch

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		transmission network. Negotiate PPAs		
17	Kenya Electricity Transmission Company Limited (KETRACO)	i. Provision of transmission connectivity ii. Evacuation of power from generation sites iii. To plan, design, construct, operate and maintain the national high voltage electricity transmission grid and regional power interconnectors. iv. Facilitating national and regional power trading. v. To be the System Operator.	i. Evacuation of power from geothermal power plants ii. Prompt and clear communication on the transmission connection requirements	i. Timely construction and completion of transmission connectivity ii. Prudent operation and maintenance of the transmission connectivity iii. Consistent availability of the transmission system for evacuation of power
18	Rural Electrification and Renewable Energy Corporation (REREC)	i. Expand rural electrification to drive uptake of geothermal electricity ii. Oversee the implementation of the Rural Electrification Programme. iii. Manage the Rural Electrification Programme Fund. iv. Develop and update the rural electrification master plans in consultation with County Governments. v. Support the establishment of Energy Centres in the counties.	i. Timely delivery of projects ii. Collaboration in the implementation of projects iii. Timely and efficient delivery of projects iv. Accountability of the Rural Electrification Programme Fund. v. Collaboration in the development of Rural Electrification Master plans and RPD vi. Collaborations in the establishment of Energy Centres in the counties vii. Collaboration on data collection, analysis and dissemination viii. Collaboration on data collection, analysis and dissemination	i. Expansion of rural electrification to create demand ii. Acceleration connectivity of rural projects. iii. Financial and technical support for implementation of REREC's projects iv. Partnership in development and dissemination of renewable energy technologies v. Facilitate knowledge enhancement through research, capacity building, technology modelling and piloting vi. Collaboration in focused trainings

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		vi. Undertake feasibility studies and maintain data for renewable energy resources. vii. Develop, promote and manage, the research and development and use of renewable energy and technologies (excluding geothermal). viii. Promote the development of appropriate local capacity for the manufacture, installation, maintenance and operation of renewable technologies.	ix. Partnership in development and dissemination of renewable energy technologies	
19	Energy and Petroleum Regulatory Authority (EPRA)	i. Regulate the generation, importation, exportation, transmission, distribution, supply, and use of electrical energy except for licensing of nuclear facilities. ii. Approval of PPAs and PISSA agreements iii. Set, review and adjust electric power tariffs and tariff structures. iv. Issue, renew, modify, suspend, or revoke licenses and permits v. Regulate importation, refining, exportation,	i. Compliance with conditions of licenses or permits. ii. Compliance to set tariffs	i. Timely approvals of licenses, permits, agreements and tariffs. ii. Clear policy approval guidelines

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		transportation, storage and sale of petroleum and petroleum products. vi. Set, review and approve electricity and petroleum tariffs. vii. Monitor the conditions of contractors' operations and their trade practices in consultation with the relevant agencies. viii. Protect consumer, investor and other stakeholder interests. ix. Work with the relevant statutory authorities to formulate, enforce and review environmental, health, safety and quality standards. x. Collect and maintain energy and petroleum data. xi. Ensure that only energy efficient and cost-effective appliances and equipment are imported into the country in collaboration with relevant agencies.		
20	County Governments	i. Issue business license ii. Licensing land use iii. County energy planning iv. Develop County energy policies and regulations	Expansion of economic activities & employment	i. Timely approval of licensing and permits. ii. Provision of utility services. such as project area roads and water iii. Participation in conflict resolution, especially on land matters

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		v. Undertaking County energy functions vi. Joint Marketing of Investment Opportunities		
21	Kenya Revenue Authority (KRA)	Tax Collection and administration	Compliance to statutory requirements relating to taxation	i. Timely provision of tax compliance certificate ii. Provision of tax exemptions where applicable
22	Direct Use Investors, Independent power Producer (IPPs), Joint Venture (JV) Partners, Contractors and Suppliers	i. Develop Direct use projects. ii. Mobilization of funds for Direct Use Investments iii. Ensure consumption of the contracted power/ steam iv. IPP-Steam conversion to electricity v. JV- provide financing or expert in geothermal drilling and development vi. Deliver goods, services and works	i. Provision of steam of the right quantity and quality ii. Compliance to contractual provisions iii. Fairness in award of contracts iv. Clarity in investment processes v. Prompt and transparent communication vi. Guaranteed supply of steam vii. Fair and efficient procurement processes and opportunities viii. Prompt payment for goods delivered and services provided. ix. Amicable resolution of contractual disputes	i. Prompt payments for steam utilized. ii. Compliance to contract terms iii. Professionalism in undertaking their duties iv. Compliance with contractual obligations v. Prompt payment of steam charges vi. Timely supply of quality goods works and services as per specification. vii. Amicable resolution of contractual disputes viii. Timely submission of invoices and supporting documents for payment ix. Compliance with government laws and regulations
23	Landowners	Provide land access rights	Fair and timely land compensation	Uninterrupted access to land upon compensation
24	Local community	i. Support and safeguard projects. ii. Provide human capacity to the project iii. Participation in policy formulation and implementation. iv. Support sector initiatives	i. •Continuous community engagement ii. Involvement in the selection of CSR projects iii. Employment opportunities	i. Project support (Social License) ii. Guard and protect company assets and staff.

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
25	National Government Administration Officers (NGAO)	i. Provision of security in project areas ii. Participate in dispute and conflict resolution. iii. Ensure order and harmony	i. Compliance with government laws and regulations ii. Timely escalation of security issues	i. Prompt response to security issues. ii. Facilitation of peaceful co-existence with local communities
26	Labour Organizations	Champion the welfare of their members	i. Compliance with labour laws, regulations and agreements. ii. Cordial relationship and continuous engagement with labour organizations. iii. Amicable labour dispute resolution	i. Compliance with labour laws, regulations and agreements. ii. Cordial relationship and continuous engagement iii. Amicable labour dispute resolution
27	Ministry of Industrialization, Trade & Industry	i. Issue required license and permits. ii. Investment promotion	i. Compliance with government laws and regulations. i. Regular communication on investment opportunities	i. Promote GDC investment opportunities. ii. Approval of licenses and permits. iii. Favorable policy and regulation
28	Regional Geothermal Organizations and Governments	Collaboration in development of geothermal industry	i. Collaboration and support in geothermal resource development activities ii. Prompt payment of subscriptions	i. Collaboration and support in geothermal resource development activities ii. Prompt payment for services offered
29	Private Sector (KAM, KEPSA, Chamber of Commerce)	i. Invest, own and operate private businesses. ii. Consume power	i. Supply of reliable steam for investment ii. Contribute to lowering the cost of power. iii. Regular engagement and information sharing	i. Investment and partnership in GDC project and activities ii. Support and publicity of GDC project and activities
30	Geothermal Development Company (GDC)	i. Exploration, drilling, development, and management of geothermal resources ii. Supply of steam for power generation and direct-use applications	i. Clear policy direction and strategic guidance for geothermal development ii. Adequate and timely allocation of development funds iii. Timely issuance of licenses, approvals, and authorizations	i. Timely and cost-effective delivery of geothermal projects ii. Prudent and accountable utilization of public resources iii. Regular and accurate reporting on project progress iv. Compliance with national laws, policies, and regulatory requirements

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		iii. De-risking geothermal fields to attract private-sector investment iv. Promotion of geothermal direct-use for industrial and socio-economic development	iv. Support in inter-agency coordination (counties, NLC, Treasury, EPRA) v. Advocacy in Parliament and National Treasury for geothermal priorities vi. Facilitation in resolving land, community, and multi-agency challenges	v. Adequate steam production to support power generation and direct-use investments vi. Professional stakeholder engagement, community relations, and CSR implementation
31	Office of the Attorney General and Department of Justice	i. The principal legal adviser to the Government on all legal matters. ii. Chief legal advisor to the Government and State Corporations iii. Drafting, reviewing, and interpreting laws, contracts, and legal instruments iv. Representing government entities in legal matters and disputes v. Ensuring compliance with constitutional, statutory, and regulatory requirements vi. Supporting negotiation, vetting, and approval of major agreements (e.g., PPAs, steam supply contracts, PPPs, MoUs)	i. Timely submission of legal documents, contracts, and agreements for review and approval ii. Full disclosure of project information required for legal advisory iii. Assurance that geothermal projects comply with existing laws and governance frameworks iv. Early involvement in complex negotiations (IPP contracts, joint ventures, land agreements) v. Adherence to legal advice and guidelines issued by the Attorney General	i. Timely legal review and clearance of contracts, agreements, and policy documents ii. Accurate legal interpretation and advisory on geothermal and energy-sector matters iii. Support in resolving legal disputes involving State agencies, investors, or communities iv. Guidance on legislative reforms affecting geothermal development v. Strong legal backing on inter-agency agreements, land issues, and risk mitigation frameworks
32	Kenya Wildlife Service (KWS)	i. Conservation, protection, and management of wildlife and their habitats	i. Compliance with wildlife conservation laws and environmental safeguards	i. Timely review and approval of permits for geothermal activities within or adjacent to protected areas

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		ii. Regulation of activities within national parks, reserves, and wildlife corridors iii. Ensuring that development activities do not negatively impact wildlife ecosystems iv. Supporting human–wildlife conflict mitigation around protected areas	ii. Early engagement before geothermal exploration or infrastructure development in or near protected areas iii. Submission of ESIA studies detailing mitigation measures for wildlife protection iv. Assurance that geothermal activities will not disrupt wildlife migration routes or habitats v. Support in managing community–wildlife interactions during project development	ii. Technical guidance on biodiversity conservation and wildlife-sensitive project design iii. Collaboration in monitoring environmental impacts around geothermal sites iv. Support in resolving land-use challenges related to wildlife movement and protected areas v. Participation in joint stakeholder engagement when projects affect communities around wildlife zones
33	Ministry of Mining, Blue Economy and Maritime Affairs	i. Development, regulation, and oversight of Kenya's minerals, mining operations, and blue economy resources ii. Administration of mining rights, mineral licensing, and geological data management iii. Promotion of sustainable exploitation of mineral and marine resources iv. Coordination of policies related to mineral exploration, marine ecosystems, and maritime activities	i. Clear coordination on overlapping natural resource zones (subsurface rights, land access, geoscientific data) ii. Transparent sharing of geological and geophysical information relevant to geothermal fields iii. Assurance that geothermal drilling does not interfere with mineral deposits or marine ecosystems iv. Timely communication on planned exploration activities v. Compliance with mining, environmental, and maritime regulations in relevant areas	i. Timely issuance of necessary permits and authorizations where geothermal projects intersect with mining jurisdiction ii. Collaboration in resolving land and subsurface resource overlaps (e.g., mineral rights vs. geothermal rights) iii. Technical support through geological data and expertise iv. Participation in joint oversight of environmentally sensitive zones v. Harmonization of sectoral policies to prevent conflict between mining, geothermal development, and marine conservation
34	Kenya Forest Service (KFS)	i. Management, conservation, and protection of Kenya's forest resources	i. Strict adherence to forest conservation and environmental regulations	i. Timely review and approval of permits for geothermal activities within forest areas ii. Support in facilitating access to forest land for exploration and development

	Stakeholder	Role	Expectation of the Stakeholder	Expectation of the Government of Kenya
		ii. Issuance of permits for activities within forest land iii. Oversight of environmental integrity in forest ecosystems iv. Facilitation of land access within gazetted forest areas	ii. Timely submission of requests for land access, wayleaves, and site occupation iii. Assurance that geothermal activities do not degrade forest ecosystems iv. Transparent ESIA documentation and mitigation plans v. Collaboration on reforestation and environmental restoration programs	iii. Guidance on environmental and biodiversity safeguards iv. Participation in joint monitoring of geothermal sites within forest zones v. Cooperation in resolving land-use conflicts involving forest communities
35	Renewable Energy Resource Advisory Committee	i. Advising the Cabinet Secretary for MoEP on •Criteria for allocation of renewable energy resources •Licensing of renewable energy resource areas •Management and development of renewable energy resources ii. •Advising County Governments on matters relating to renewable energy resources on request	i. Compliance to terms in the geothermal licenses by licensees. ii. Accelerated development of geothermal concession areas. iii. Proper management of concession areas by the licensees.	i. Development of criteria for allocation of renewable energy resources ii. Proper management and accelerated development of concession areas allocated.

3 Strategic Direction

3.1. Strategic Issues, Goals, Objectives and Strategies

Arising from the situational analysis, the following strategic issues are identified:

i. Exploitation of Geothermal Resources
ii. Sustainable financial resourcing for geothermal resource development
iii. Legal, policy, regulatory and institutional framework
iv. Local content/capacity for geothermal resource development

For each of the identified strategic issues, strategic goals have been developed to address the issues as outlined below:

i. Accelerated sustainable exploitation of Geothermal resources
ii. Sustainable financial resourcing for geothermal resource development
iii. Operationalization of the frameworks
iv. Strong legal policy, regulatory and institutional framework
v. Sustained regional leadership in geothermal capacity and local content

Four strategic objectives and several strategies are identified. The strategic objectives are:

i. To accelerate the exploitation of geothermal resources
ii. To enhance financial resourcing for geothermal resources development
iii. To strengthen legal, policy, regulatory and institutional frameworks to accelerate geothermal development
iv. To expand Kenya's regional capacity (skills, equipment, etc.) and local content (manufacturing, industries, procurement - AGPO) in geothermal resource development

Table below summarizes the Strategic issues, strategic goals, strategic objectives and strategies. To accomplish the strategies, an implementation framework has been developed and is presented in Chapter 5 of this document.

Strategic Issues	Strategic Goals	Strategic Objectives	Strategies
1) Exploitation of Geothermal Resources	Accelerated sustainable exploitation of Geothermal resources	To accelerate the exploitation of geothermal resources	i. Increase installed geothermal capacity by 1,413.5MW by 2035 ii. Accelerate the development of green geothermal fields by an additional 1 field every 2 years iii. Fast-track development of geothermal green and brown fields iv. Enhance Public-Public Collaboration in the geothermal energy development value chain v. Implement efficient biodiversity conservation plans in the harnessing of geothermal resources. vi. Strengthen community engagement & CSR vii. Implement ESG frameworks viii. Improve land acquisition processes ix. Increase commercial Direct Use projects (Captive power and heat) x. Exploit other geothermal resource potentials and emerging market opportunities xi. Enhancing private sector participation frameworks xii. Ensure sustainable reservoir management practice by establishing reservoir management guidelines and reporting frameworks for each geothermal field.
2) Sustainable financial resourcing for geothermal resource development	Sustainable financial resourcing for geothermal resource development	To enhance financial resourcing for geothermal resources development	i. Timely deployment of available local capacity to local geothermal prospects ii. Designing innovative financial models to unlock additional financing iii. Packaging investment opportunities to attract local capital iv. Streamlining the turn-around of Procurement and PPP processes to fast-track investments v. Developing innovative and bankable derisking and GSM's to increase private investments vi. Enhance participation and compliance to climate financing to unlock increased funding opportunities like carbon credits, green bonds and sustainability linked bonds vii. Sustain budgeting compliance and planning for Government resources

Strategic Issues	Strategic Goals	Strategic Objectives	Strategies
			viii. Exploit diversification of revenue opportunities to increase revenues for geothermal development ix. Enhance stakeholder engagement for additional resource mobilization
3) Legal, policy, regulatory and institutional framework	i. Operationalization of the frameworks ii. Strong legal policy, regulatory and institutional framework	To strengthen legal, policy, regulatory and institutional frameworks to accelerate geothermal development	i. Enforce the geothermal resource licensing and compliance mechanisms. ii. Attract private sector off-takers and industrial investments for both electricity and direct-use applications. iii. Revocation of concession licenses that have not been developed since issuance and issued to public companies with a good track record in the development of infrastructure to support electricity demand on a first right of refusal basis. iv. Partial allocation of geothermal resource licenses to more than one person to ensure accelerated development of concession areas v. Include in the renewable energy resource regulations the formation of a geothermal energy resource technical advisory committee to advise the renewable energy resource advisory committee on geothermal-related matters vi. Amendment of section 79 (5) (d) of the Energy Act to include the wording "and national" after public. vii. Benchmarking with Indonesia on electricity and steam tariff benchmark purchase prices from geothermal plants. viii. Review of Time of Use modalities in every three-year electricity tariff control periods to reduce curtailment of geothermal energy during off-peak hours to ensure green, sustainable and efficient harnessing of geothermal energy. ix. Compulsory payment of royalties as per the Act by any foreign investors operating within public-owned geothermal concessions with 0% royalty payment provision, to aid in project area community buy-in.

Strategic Issues	Strategic Goals	Strategic Objectives	Strategies
			x. Promote the collocation of special economic zones near geothermal resource areas to leverage on cheap power and direct use xi. Synergize power infrastructure projects to facilitate long term planning of generation, transmission and offtake.
4) Local content/capacity for geothermal resource development	Sustained regional leadership in geothermal capacity and local content	To expand Kenya's regional capacity (skills, equipment, etc.) and local content (manufacturing, industries, procurement - AGPO) in geothermal resource development	i. Have a geothermal centre of excellence for young academicians, innovators, and researchers to experience geothermal first-hand to accelerate research and development and knowledge sharing. ii. Incentivize local innovation in geothermal technologies and solutions; iii. Mainstream gender, PWDs and other vulnerable groups in geothermal projects iv. Enhance knowledge and technology transfer by leveraging international partnerships, academic collaboration, and mentorship to bring in advanced geothermal skills. v. Entrenchment of mandatory local content thresholds for goods and services in Foreign Direct Investment Agreements to leverage local capacity and expertise to accelerate geothermal development for green industrialization and ensure energy security; vi. Create and strengthen strategic partnerships by working with geothermal global agencies, universities and private sector players to grow capacity and innovation. vii. Enhance research and innovation by funding applied geothermal studies viii. Promote regional leadership by positioning Kenya as a geothermal hub offering training and consulting services across Africa. ix. Develop skilled human capital for geothermal resource development by expanding geothermal training, professional development, and succession planning to build a strong local workforce.

Strategic Issues	Strategic Goals	Strategic Objectives	Strategies
			x. Improve geothermal data management by creating a national database on geothermal data to be collected by the Ministry through quarterly and annual reports by licensees xi. Promote local manufacturing of direct-use equipment/Support local assembly of geothermal equipment xii. Promote research and innovation on emerging technology like supercritical technology that produces 10times more energy per volume compared to traditional geothermal energy development. xiii. Value-add opportunities from the clays, and high-purity silica are some of the resources that can be used in cement industry as alternative to clinker and silica in agriculture. xiv. Direct use of geothermal for the tissue industry (tissue drying factories/pulp and paper drying). xv. Improve access to data and insights (strategy that will make it easy to access data and information to right people when needed to enable decision making etc....)

3.2. Guiding Principles

No.	Law/Policy/Regulation	Guiding Principle
1	The Government of Kenya's Nationally Determined Contribution (NDC) targets, under the United Nation's 2030 Agenda for Sustainable Development Goals (SDGs),	Geothermal development contributes to the achievement of Sustainable Development Goal (SDG) 7which seeks to ensure access to affordable, reliable, sustainable and modern energy for all. By increasing the share of renewable energy under Target 7.2, geothermal power enhances energy resilience and supports captive power solutions. Geothermal energy emits minimal greenhouse gases as compared to fossil fuels contributing to SDG 13 on Climate Action. It's a direct method for Kenya to meet its Nationally Determined Contributions (NDCs) under the Paris Agreement. The direct use of Geothermal energy in industries such as greenhouse heating and milk pasteurization contributes towards the achievement of SDG 9 on Industry, Innovation, and Infrastructure by promoting low-carbon industrial processes and reducing the overall carbon footprint. Further, the capture of steam and water, separation of heat and reinjection of water into the earth promotes SDG 12 on Responsible consumption and production by ensuring sustainable resource management.
2	Africa's Agenda 2063	Which outlines the continent's long-term socio-economic transformation, identifies modern, reliable and affordable energy as a key pillar. Geothermal development contributes to this agenda by providing sustainable baseload power, enabling industrialization, fostering green manufacturing, and enhancing regional power integration through stable renewable energy sources.
3	The East African Community (EAC) Vision 2050	Recognizes energy as a driver of regional economic growth and prioritizes sustainable, secure and least-cost energy supply. Geothermal development aligns with this vision by supporting regional power trade, stabilizing energy supply across EAC member states, and positioning Kenya as a geothermal hub for East Africa through shared infrastructure, technology transfer and capacity building.
4	Constitution of Kenya	The Constitution of Kenya, 2010, binds all state organs to uphold national values, protect rights and ensure sustainable resource governance. The constitutional framework requires geothermal entities to operate within devolved structures and guarantee equitable access to services under Articles 6 and 10, while applying the Bill of Rights in a manner that protects vulnerable and marginalized groups as provided in Chapter 4. Operational transparency, public participation and access to information are mandated under Articles 35, 232 and 227, alongside fair labour standards under Article 41 and strong consumer protections under Article 46. Environmentally, geothermal development must comply with Articles 42, 60,62 and 69, which demand sustainable land and natural resource management, conservation, equitable benefit sharing and the right to a clean and healthy environment.

No.	Law/Policy/Regulation	Guiding Principle
		Social rights including health, food security and emergency medical access under Article 43 further shape responsible project planning. Financial prudence under Article 201 and integrity obligations under Chapter Six reinforce accountable stewardship of public resources. Collectively, these provisions form the constitutional backbone that guides responsible, transparent and socially grounded geothermal development in Kenya.
5	Least Cost Power Development Plan (LCPDP) 2024–2043	The Government has placed priority in the development of Geothermal Power. The LCPDP 2024-2043 identifies geothermal power among the most appropriate electricity generation options due to its high capacity factor and is expected to contribute the most to the total firm capacity. It is envisaged that geothermal production will be ramped up during this period with an additional 3,440MW expected to be installed on to the grid by 2043.
6	Energy Policy	Kenya's Energy Policy 2025–2035 positions geothermal as the country's flagship renewable resource, leveraging its estimated 10,000 MW potential across 16 prospects to anchor national energy security, green industrialization and climate commitments. With 988 MW already installed as of December 2024, placing Kenya first in Africa and sixth globally, geothermal development has been driven largely by concessional financing and government investment through KenGen which has developed Olkaria and Eburru concessions and GDC which is currently developing the Menengai concession area and Orpower II in Olkaria. Despite strong technical capacity and growing regional influence, progress is slowed by weak regulatory enforcement of licensing and compliance, inadequate financing and a sub-optimal energy mix that causes underutilization and steam venting. The policy frames geothermal as a baseload stabilizer with major opportunities for decarbonization, industrial heat applications, expanded green financing and exportable technical expertise, positioning it as a central pillar of the country's future energy mix.
7	Vision 2030	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". The vision is anchored on Economic, Social and Political pillars that are critical in achieving the desired socio-economic transformation by 2030. Energy is positioned as a key enabler of the above three pillars. The Geothermal Development Strategy is therefore a vital tool in the acceleration of Power Generation, not only to spur economic growth, but also to meet the needs of the expanding economy.

No.	Law/Policy/Regulation	Guiding Principle
8	BETA/MTP IV	The Government 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. Investment in the Energy sector therefore forms a key enabler for socio economic transformation along the above five sectors. With geothermal resource forming the largest renewable energy endowment for Kenya, this strategy will go a long way in accelerating power generation and electricity availability for the above five sectors.
9	National Climate Change Action Plan (NCCAP 2023-27)	Promote geothermal energy for direct use. Geothermal is increasingly used for base load electricity generation, helping Kenya to increase and maintain reliance on renewable energy as the country increases electricity generation to meet the target of 100% generation from renewable sources, and a 100% access to electricity by 2030. Increases in the generation of energy that reduce greenhouse gas emissions. One of Kenya's certified Clean Development Mechanisms (CDM). The Action Plan aims to train 60 energy experts per year in a form of capacity building.

4 Implementation Framework

This chapter presents in a matrix form the implementation plan. For each of the strategies, the key activities, expected output, output indicator, annual and yearly targets, proposed budget and responsible institution is identified.

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	**KEY ACTIVITY**	**EXPECTED OUTPUT**	**OUTPUT INDICATOR**	**TARGET**											**BUDGET**	**RESPONSIBLE AGENCY**
					FINANCIAL YEAR												
					TOTAL	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**	**33/34**	**34/35**	**35/36**		
1	**OBJECTIVE 1: TO ACCELERATE EXPLOITATION OF GEOTHERMAL RESOURCES**																
1.1	Increase installed geothermal capacity by 1,413.5 MW by 2035	Exploration of geothermal fields	Geothermal field explored	No. of exploration reports	45	4	4	6	5	6	4	5	5	4	2		GDC, KenGen
				No. of geothermal fields explored	5	1		1		1		1		1			MoE
		Drilling of geothermal wells	Wells drilled	No. of geothermal wells drilled	653	46	52	116	63	79	18	20	85	93	81		GDC, KenGen
		Avail the geothermal steam by 2862 MWe by 2036	Equivalent MW of steam availed	MWe of steam availed	2862	211.9	237.9	564	342	267.7	51	51	358.5	422	356		GDC, KenGen
		Construct and commission geothermal powerplants	Installed power generation capacity from geothermal	Additional MW installed	1,663	98	134	280	324	207	100	100	160	160	100		GDC, KenGen
				Additional MW installed from IPPS	12	2	1	1	2	0	0	2	2	0	2		
1.2	Establish strategic partnerships for exploration and generation	Establish public-private collaborations for geothermal exploration and	Public-private collaborations established	No. of public-private collaborations established	3	2	1										
				No. of IPPs engaged													

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	**KEY ACTIVITY**	**EXPECTED OUTPUT**	**OUTPUT INDICATOR**	**TARGET**											**BUDGET**	**RESPONSIBLE AGENCY**
					FINANCIAL YEAR												
					TOTAL	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**	**33/34**	**34/35**	**35/36**		
		generation		No. additional geothermal plants from IPPS													
		Establish public-public collaborations for geothermal exploration and generation	Public-public collaborations established	No. of public-public collaborations established.	3			1		1			1				
1.3	Strengthen community engagement & CSR	Conduct regular community engagement forums and implement CSR programs	Community engagements conducted.	No. of community engagements conducted.	585	60	60	90	75	90	60	75	75	60	30		GDC, KenGen, IPP, MoEP
1.4	Implement biodiversity conservation plans in harnessing of geothermal	Establish and implement biodiversity conservation plans	Biodiversity conservation plans implemented	No. of biodiversity conservation plans implemented	5		1		1		1		1		1		GDC, KenGen

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	resources																
1.5	Implement Environmental, Social and Governance (ESG) frameworks	Integrate ESG reporting, compliance, and monitoring systems across all operations	ESG Frameworks implemented	No. of ESG Frameworks implemented													GDC, KenGen, MoEP
1.6	Improve land acquisition processes	Streamline land acquisition processes through valuation, compensation, and grievance handling	Land acquisition processes re-engineered	Proportion (%) of land acquisition process re-engineered	100%	10	10	20	20	30	20						MoEP
1.7	Increase commercial Direct Use projects (Captive power and heat)	Establish partnerships to implement geothermal steam direct use applications	Geothermal steam direct use partnership implemented	Proportion (%) of geothermal direct use partnerships implemented	238	1	12	12	12	22	27	32	37	42	53	1.5bn?	GDC, KenGen

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
1.8	Exploit other geothermal resource potentials and emerging markets opportunities	Conduct feasibility studies on other geothermal resource applications	Feasibility studies on other geothermal resource applications conducted	No. of feasibility studies on other geothermal applications conducted	12	2	2	1	1	1	1	1	1	1	1	1.4m	SDE, GDC, KenGen
1.9	Rehabilitation of the aging geothermal resource development infrastructure	Maintain and rehabilitate aging geothermal development infrastructure	Geothermal Plants rehabilitated	No. of geothermal Plants rehabilitated	2					2							GDC, KenGen
1.11	Geothermal reservoir management and sustainability	Reservoir modelling	Reservoir models	No. of reservoir models developed	19	2		2	3	3	1	2	2	2	2		
		Drill geothermal make-up wells	Geothermal make-up wells	No. of geothermal make-up wells drilled	112	6	6	6	10	10	10	16	16	16	16		
		Conduct quarterly reservoir monitoring	Quarterly reservoir monitoring conducted	No. of quarterly reservoir monitoring conducted	182	9	9	9	13	13	13	17	33	33	33		

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
2	**OBJECTIVE 2: SUSTAINABLE FINANCIAL RESOURCING FOR GEOTHERMAL RESOURCE DEVELOPMENT**																
2.1	Designing innovative financial models to unlock additional financing like infrastructure bonds	Design and implement innovative financial models	Innovative financial models innovated and implemented	No. of innovative financial models innovated and implemented	1		1										MoEP
2.2	Mobilization of local capital for geothermal resource management	Packaging geothermal resource investment opportunities to attract local capital	Capital mobilized from local sources for geothermal resource development	Amount of capital in KShs. mobilized from local sources for geothermal resource development													MoEP
2.3	Streamlining the turn-around of Procurement and PPP processes to fast-track investments	Re-engineer the procurement and PPP process to reduce the turnaround time and	Procurement and PPP processes re-engineered	Proportion (%) of procurement/PPP processes reengineered	10			5							5		

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
		attract investments															
2.4	Establish innovative and bankable derisking and GSM's to increase private investments	Organize a joint Geothermal Symposium for the sector to attract innovative investments	Private investors mobilized	No. of private investors mobilized	2					1					1		
2.5	Enhance participation and compliance to climate financing to unlock increased funding opportunities like carbon credits, green bonds and sustainability linked bonds	Mobilize capital through climate financing for geothermal resouce development	Capital mobilized through climate financing	Amount in KShs. of capital mobilized through climate financing	200M			100		100							
2.6	Enhance resource mobiliza	Mobilize resources for	Capital mobilized from	Amount in KShs. mobilize	500	50	50	50	50	50	50	50	50	50	50		MoEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	tion for geothermal resource development from Government sources	geothermal resource development through the Government MTEF framework	Government sources	d from GoK sources (Millions)													
				Amount in KShs. mobilized from donor partners (Billions)	13			3				10					MoEP
2.7	Enhance diversification of revenue opportunities to increase revenues for geothermal development	Mobilized resources for geothermal development from various revenue opportunities/streams	Revenue generated for geothermal resource development	Amount of Revenue (KShs.) generated for geothermal resource development													MoEP
2.8	Enhance stakeholder engagement for additional resource mobilization			Amount of Revenue (KShs.) generated for geothermal resource development													MoEP
3	**OBJECTIVE 3: TO STRENGTHEN LEGAL, POLICY, REGULATORY AND INSTITUTIONAL FRAMEWORKS TO ACCELERATE GEOTHERMAL DEVELOPMENT**																
3.1	Enforce the geothermal resourc	Audit of all licencee statuses within	Audit reports	No. of audited licences	%	50	80	100	100	100	100	100	100	100	100		MOEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	e licensing and compliance mechanisms	their concession areas															
3.2	Attract private sector off-takers and industrial investments for both electricity and direct-use applications	Introduce incentives, tariffs, tax breaks	Incentives established	No. of incentives established													MOEP
		Develop a regulatory framework to govern private sector power off-taking	Draft regulation for private sector power off-taking	Private sector power off-taking framework													
		Develop a regulatory framework to govern direct-use applications	Draft regulation for direct-use applications	Direct-use application framework													
3.3	Licensing reforms	Digitalize the geothermal licensin	Licensing portal	Licensing portal	1		1										MoEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
		g process															
		Develop licensing guidelines to guide the licensing process from end to end	Approved licensing guidelines	Approved licensing guidelines	1		1										MoEP
		Enforce royalty payments from foreign investors operating in public-owned geothermal concessions	Enforced royalty payments from foreign investors	Proportion (%) of foreign investors compliant to royalty payments	100	100											MOEP
3.4	Establishment of a geothermal energy resource advisory technical committee to	Appoint a technical committee	Geothermal energy resource technical advisory committee established	Geothermal energy resource technical advisory committee established	1	1											MoEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	advise the renewable energy resource advisory committee on geothermal-related matters																
3.5	Strategic Partnerships	Benchmark with global leaders in geothermal resource development on steam tariff and electricity tariff development	Benchmark meetings conducted	No. of benchmark meetings conducted													
3.6	Review of steam tariff Regime	Review and gazette geothermal steam tariff regime	Geothermal steam tariff regime reviewed and gazetted	Geothermal steam tariff regime reviewed and gazetted	2	1					1						EPRA
3.7	Review and	Review and	Reviewed and	Reviewed and	2	1					1						EPRA

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	gazettement the Time of Use Tariff to reach more consumer categories.	gazette of Time of Use modalities in electricity tariff control periods to reduce curtailment of geothermal energy during off-peak hours to ensure green, sustainable and efficient harnessing of geothermal energy.	gazetted Time of Use Tariff	gazetted Time of Use Tariff													
3.8	Promote the collocation of Special Economic Zones near geothermal resource areas to anchor	Gazette geothermal resource areas as special economic zones	Gazetted geothermal resource areas as special economic zones	No. of geothermal resource areas gazetted as special economic zones	2	2											SEZA

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	energy intensive manufacturing on reliable, low-cost geothermal power, unlock direct use applications such as steam and heat for industrial processes, and slash technical losses through proximity to generation																
4	**OBJECTIVE 4: TO EXPAND KENYA'S REGIONAL CAPACITY (SKILLS, EQUIPMENT, ETC) AND LOCAL CONTENT (MANUFACTURING INDUSTRIES, PROCUREMENT -AGPO) IN GEOTHERMAL RESOURCE DEVELOPMENT**																
4.1	Establish a geothermal centre of excellence for young	Build and operationalize a geothermal centre for training,	A geothermal centre of excellence established	No. of trainees enrolled annually	393	23	30	30	30	30	50	50	50	50	50		GDC, KenGen
				No. of R&D projects completed	85	5	7	5	12	10	7	5	12	10	12		GDC, KenGen

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	academicians, innovators, and researchers to experience geothermal first-hand to accelerate research and development and knowledge sharing.	R&D and innovation		Geothermal centre of excellence established	1	1											GDC, KenGen
4.2	Enhance knowledge and technology transfer by leveraging international partnerships, academic collaboration, and mentorship to	Identify skill gaps within the geothermal energy sector	Skill gap analysis reports	No. of skill gap analysis reports	2		1						1				GDC, KenGen
		Sign bilateral and multilateral MoUs	MOUs	No. of MoUs signed	7	2		2		1			2				GDC, KenGen
		Run exchange programmes	Exchange programs and capacity	No. of exchange programmes	2		2										GDC, KenGen

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	bring in advanced geothermal skills.	and capacity-building workshops with leading geothermal countries	- building workshops implemented	No. of workshops held													GDC, KenGen
4.3	Entrenchment of mandatory local content thresholds for goods and services in Foreign Direct Investment Agreements to leverage local capacity and expertise to accelerate geothermal development for	Ensure compliance to the 40% local content threshold by all local and foreign investors	Compliance to the 40% local content threshold by geothermal investors	Proportion of geothermal investors compliant to the 40% local content threshold	100	100											MoEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	**KEY ACTIVITY**	**EXPECTED OUTPUT**	**OUTPUT INDICATOR**	**TARGET**											**BUDGET**	**RESPONSIBLE AGENCY**
					FINANCIAL YEAR												
					TOTAL	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**	**33/34**	**34/35**	**35/36**		
	green industrialization and ensure energy security																
4.4	Position Kenya as a regional leader in geothermal development, offering training and consultancy services in Africa and beyond	Participate in Geothermal Energy Investment Conferences	International conferences attended	Proportion of International conferences attended	9	2		1	1	1		2		1	1		MoEP, GDC, KenGen
		Convene Annual International Geothermal Energy Investment Conferences	International Geothermal Energy Investment Conferences convened	No. of International Geothermal Energy Investment Conferences convened	2			1				1					MOEP
		Capacity build other nations/ organizations/firms on geothermal development whenever invited	Capacity building invitations attended to	Proportion of Capacity building invitations attended to													MOEP/GDC/KENGEN

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	**KEY ACTIVITY**	**EXPECTED OUTPUT**	**OUTPUT INDICATOR**	**TARGET**											**BUDGET**	**RESPONSIBLE AGENCY**
					FINANCIAL YEAR												
					TOTAL	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**	**33/34**	**34/35**	**35/36**		
4.5	Capacity building, succession planning and management for geothermal resource development	Develop skilled human capital for geothermal resource development by expanding geothermal training, professional development, and succession planning and management to build a strong local workforce.	Skilled human capital developed	No. of officers trained													MOEP
4.6	Create a national geothermal database under the State Department for	Develop a national geothermal database and require quarterly	An established geothermal database	A centralized data repository	2		2										
				An established geothermal portal	1		1										

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
	Energy to improve data integrity and ensure fast, reliable access for sector decision making.	licensee reports		under the SDE's website													
				No. of quarterly and annual reports submitted	0												
4.7	Promote local production of geothermal-related technologies	Support local firms to manufacture, assemble, process and disseminate geothermal-related technologies	Local production of geothermal technologies	No. of local manufacturers supported	600												
4.8	Promote research and innovation on emerging technology e.g. supercritical technol	Collaborate with stakeholders in RDI in geothermal energy development	Partnerships on RDI in geothermal development	No. of partnerships signed on RDI	5	1	1	1	1	1							GDC, KenGen, MoEP
			Stakeholders engaged on RDI in geother	No. of stakeholders engaged on RDI	10	1	1	1	1	1	1	1	1	1	1		GDC, KenGen, MoEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	**KEY ACTIVITY**	**EXPECTED OUTPUT**	**OUTPUT INDICATOR**	**TARGET**											**BUDGET**	**RESPONSIBLE AGENCY**
					FINANCIAL YEAR												
					TOTAL	**26/27**	**27/28**	**28/29**	**29/30**	**30/31**	**31/32**	**32/33**	**33/34**	**34/35**	**35/36**		
	ogy that produces 10times more energy per volume compared to traditional geothermal energy development.		mal development														
		Undertake RDI capacity building in the geothermal energy development.	RDI capacity building undertaken	Total funding allocated to RDI capacity building in geothermal energy development													GDC, KenGen, MoEP
				No. of staff trained on RDI	30	3	3	3	3	3	3	3	3	3	3		GDC, KenGen, MoEP
		Value-add opportunities from the clays, and high-purity silica are some of the resources that can be used in cement industry as alternative to clinker	Value added initiatives undertaken	No. Of value additions undertaken	5	1			1		1		1		1		.GDC, KenGen, MOEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
		and silica in agriculture.															
4.9	Mainstreaming gender equality, diversity and social inclusion in geothermal projects	Establish programmes targeted in creating publica warenes s on gender equality, diversity and social inclusion	GEDSI Programmes/Projects.	No. of GEDSI Programmes/Projects, No. of GEDSI engaged in geothermal energy projects and functions.	10	1	1	1	1	1	1	1	1	1	1		MOEP
		Implement affirmative action in recruitment measures to promote GEDSI balance (minimum 30 percent representation).	Gender, youth and disability inclusion mainstreamed in geothermal sector staffing and project participation	Proportion of geothermal staffing living with disabilities		5	5	5	5	5	5	5	5	5	5		MOEP
				Proportion of women/men supported through targeted employment and capacity	100%												GDC, KenGeb, MOEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																	
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
				- building initiatives.													
				No. of programmes supporting the marginalized/indigenous communities in geothermal area	300	30	30	30	30	30	30	30	30	30	30		GDC, KenGen
		Promote equitable geothermal-related upskilling and re-skilling	Equitable capacity building	Proportion of women/men supported through targeted employment and capacity - building initiatives.	200	20	20	20	20	20	20	20	20	20	20		GDC, KenGen, MoEP
				No. of geothermal-related upskilled and re-skilled	200	20	20	20	20	20	20	20	20	20	20		GDC, KenGen, MoEP

NATIONAL GEOTHERMAL DEVEPMENT STRATEGY IMPLEMENTATION PLAN																		
	STRATEGY	KEY ACTIVITY	EXPECTED OUTPUT	OUTPUT INDICATOR	TARGET											BUDGET	RESPONSIBLE AGENCY
					FINANCIAL YEAR												
					TOTAL	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	35/36		
				Skilled inventory													
		Gender sensitive facilities eg. gym, lactation rooms	Operational facilities	No. of facilities													
		Promote direct use of geothermal energy in rural communities to economically empower women, youth and persons with disabilities.	Increased economic empowerment and livelihood opportunities for GEDSI groups through productive-use applications of geothermal energy.	No. of productive-use projects benefiting women, youth and PWDs	17	1	1	1	2	2	2	2	2	2	2		GDC, KenGen, MoEP
				No. of businesses established through geothermal direct-use initiatives (disaggregated by gender and disability)	52	2	4	4	6	6	6	6	6	6	6		GDC, KenGen, MoEP

5 Monitoring, Evaluation & Reporting Framework

5.1. Overview

This chapter presents the monitoring, evaluation and reporting framework of the Geothermal Strategy. This will involve a systematic and continuous process of collecting and analyzing information based on the indicators, targets and provision of feedback. Table provides an implementation framework that provides the strategies, expected results, performance indicators, means of verification and the estimated cost of implementation for the 10-year duration of the strategy to facilitate monitoring and evaluation. The results of M&E will be used to make corrective actions, improve implementation of activities and inform future reviews of the Strategy.

5.2. Monitoring, Implementation of the strategy

Monitoring the implementation of the plan will act as an early warning system to detect potential bottlenecks and help to make adjustments where necessary. Monitoring will involve collecting and analyzing information relating to the various indicators in the implementation matrix of this strategy. During the strategy period, the State Department will ensure seamless, accurate, timely information, collection and dissemination on implementation using existing mechanisms.

5.3. Evaluation of the Strategy

Evaluation will involve a systematic and objective process of examining the relevance, effectiveness, efficiency and impact (both expected and unexpected) of the strategies. Evaluation will be carried out through formal surveys and assessments and will look at what will be accomplished against the set targets. Three major evaluation activities will be undertaken. These include mid-term evaluation; end- term evaluation and ad hoc evaluation (where necessary).

5.3.1. Mid-Term Evaluation

The State Department for Energy will conduct a mid-term evaluation of this Strategy to examine the progress towards achieving the set targets. The evaluation will be spearheaded by the State Department through the Geo exploration Directorate. This will be undertaken in the fifth year of the Strategy. The recommendations for mid-term evaluation will help in making improvements to the Strategy implementation process.

5.3.2. End-Term Evaluation

End-term evaluation will be conducted at the end of the Strategy period and the achievements, challenges, lessons learnt and recommendation will inform the next cycle of the Geothermal strategic planning process.

5.3.3. Ad hoc Evaluation

Ad hoc evaluation may be commissioned by the Cabinet Secretary, Ministry of Energy and Petroleum, in case of significant and unexplained variance between the planned and achieved performance targets. Such variances will be identified through the regular quarterly and annual reports.

5.4. Reporting

All relevant Directorates in the State Department for Energy and State Corporations in the Geothermal domain will be involved in monitoring and reporting on the progress of achievement of results and objectives based on the key indicators agreed upon in this Innovation Strategy. This will be achieved by ensuring collection and provision of timely and accurate data coordinated by the State Department during the strategy period. The State Agencies, Directorates/Department/Units will be expected to generate reports on a quarterly, bi-annual and annual basis or as outlined in the implementation matrix.

5.5. Geothermal development Strategic Review

This strategy will be reviewed after every ten years or on a need's basis. This review will be conducted through a consultative process involving all relevant stakeholders.