National Cleantech Ecosystem and Private Sector Engagement Strategy for the Kingdom of Lesotho

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Changing the Narrative

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ABBREVIATIONS AND ACRONYMS

Table 1: Abbreviations and acronyms

Abbreviations/ Acronyms	Description
APIs	Application Programming Interfaces
BAU	Business As Usual
CAFI	Competitiveness and Financial Inclusion
CTG	Cleantech Group
ELPSRCETP	Enhancing Lesotho's Private Sector Readiness for a Clean Energy Transition Project
GCF	Green Climate Fund
GCIP	Global Cleantech Innovation Programme
GCII	Global Cleantech Innovation Index
GCR	Global Competitiveness Report
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GoL	Government of Lesotho
ICT	Information and Communications Technology
ILO	International Labour Organization
ITC	International Trade Centre
KPAs	Key Priority Areas
MoEM	Ministry of Energy and Meteorology
MoICSTI	Ministry of Information, Communications, Science, Technology and Innovation
MoET	Ministry of Education and Training
MoTEC	Ministry of Tourism, Environment and Culture
MoTI	Ministry of Trade and Industry
MoU	Memorandum of Understanding
MTCO2e	Metric Tonnes of Carbon dioxide Equivalent
NDC	Nationally Determined Contributions
NGOs	Non-Governmental Organizations
NSDP II	National Strategic Development Plan II
PPPs	Public-Private Partnerships
PV	Photovoltaic
R&D	Research and Development
SADC	Southern African Development Community
SDG	Sustainable Development Goal
SMEs	Small and Medium Enterprises
STEM	Science, Technology, Engineering and Mathematics
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
VC	Venture Capital

EXECUTIVE SUMMARY

The need to improve the cleantech ecosystem in least developed countries such as Lesotho cannot be overemphasised. Cleantech holds immense potential to accelerate sustainable development by addressing critical challenges such as energy access, environmental degradation, and economic inequality. In Lesotho, where reliance on traditional energy sources and resource-intensive industries poses environmental and socio-economic risks, cleantech provides an opportunity to shift toward cleaner, more efficient, and inclusive economic growth. Given the prevailing economic challenges of Lesotho, it is imperative to optimise the gains of the cleantech ecosystem, by harnessing the unique geographic features that exposes the country to several opportunities across the different priority sectors.

A recent report by the GCIP Capacity Building Framework Output for Lesotho in 2024 suggested that Lesotho is still at the Early-Stage Innovation. Other related statistics show that, Lesotho has a low climate change readiness score of 0.307 and a high vulnerability score of 0.481, making it the 138th out of 187 nations vulnerable to climate change. The low readiness score and high vulnerability scores indicate a desperate need for investments and innovations that can cushion the country against climate change. In terms of innovative capacity, pillar 12 of the GCR (2018), Lesotho ranks very low at 132 out of 140 countries. In terms of business dynamism, Lesotho ranks number 118 out of 140 countries in terms of growth of innovative companies. According to the embracing of disruptive ideas, Lesotho ranks number 89 out of 140 countries. These statistics buttress the need for an engagement strategy with the private sector, for the advancement of Lesotho's cleantech ecosystem.

Lesotho's economy is currently guided by the extended NSDP II. Within this strategy document, there are several references that have direct and indirect implications to the development of the cleantech ecosystem in Lesotho. In relation to the cleantech sector, the first outcome (Sustainable Quality Transport Network) is of particular interest together with its relevant KPA - Building Enabling Infrastructure. Besides the NSDP II, there exists other key policy documents that underpin the development of the cleantech ecosystem space in Lesotho which include the NDC (2017), National Electrification Master Plan for Lesotho 2018-2038, Energy Policy 2015-2025 and the 2017 National Climate Change Policy.

In addition to these policies, there exists initiatives that largely drive cleantech and innovation in Lesotho. For example, the Ministry of Natural Resources through the Department of Energy, in collaboration with the UNIDO are currently implementing the Enhancing Lesotho's Private Sector Readiness for a Clean Energy Transition Project, which aim to enhance the readiness of Lesotho's private sector to develop, commercialise, and invest in climate and clean energy solutions. Similarly, the GCIP Lesotho, funded by the GCF supports the growth of early-stage cleantech entrepreneurs, start-ups, and MSMEs, contributing to the development of a robust cleantech ecosystem in the country. However, at the national level, there is no framework or culture that supports cleantech innovation and successful business models that can offer competitive substitutes for the current carbon-intensive products. The need to coordinate ongoing efforts and advance a clearly defined and measurable strategy for the development of the cleantech ecosystem in Lesotho is therefore imperative.

This strategic plan aims to develop the national cleantech ecosystem and stimulate private sector participation in growing cleantech sector that will contribute to the economic growth of the country and create decent jobs. The 12 goals of the strategic plan were identified via the

appraisal of a longlist of over 36 policy mechanisms (developed by the CTG from best practices in advanced cleantech industries globally) through three workshops. In the first workshop, the technical experts of the cleantech ecosystem together with the UNIDO Project Management Team and JETBO RESEARCH CONSULTING went through the longlist of 36 policy mechanisms from 2 policy groupings (Early stage Innovation and Women & Youth policy mechanisms) as designed by the Cleantech Group (CTG), and ranked them by their levels of impact and feasibility. In the second workshop, a more enlarged audience that included other stakeholders from the private sector, civil society, and development aid agencies, validated the outcome of the rating for impact and feasibility of the 36 policy mechanisms that was done in the first workshop. After which, the policy mechanisms with the highest impact and highest feasibility were recognised as the shortlist, constituting the priority policy mechanisms. In workshop 3, the same participants from workshop 2, brainstormed on the selected priority (high impact, high feasibility) policy mechanisms and identified the process, time and challenges for developing and implementing the 12 priority policies. The 6 Key Priority Areas (KPAs) and 12 goals include:

Table 2: The 6 Key Priority Areas (KPAs) and 12 Goals

KPAs	Goals
Coordination and Collaboration	Coordination between government stakeholders
	Collaboration with international R&D partners
	Collaboration with local/international innovation partners
Funding and Financial Support	Stimulating grants & subsidies
	Promoting regional and international funds
Policy and Regulatory Support for attracting foreign experts	Facilitating access to work permits
Ecosystem Strengthening	Developing tools for ecosystem connectivity
	Ensuring robust data
Education and Skill Development	Promoting strong university & training organization partnerships
	Promoting access to STEM education
Inclusivity and Equity	Support for innovation outside of major cities
	Showcasing or spotlighting female/young innovators

The detailed implementation plan, containing actions, timelines, implementation lead, and key performance indicators, is equally discussed per objective and KPA.

BACKGROUND

The cleantech ecosystem has humongous potential in improving climate friendly sustainable growth and development globally. It has the potential to reduce greenhouse gas emissions, improve energy efficiency, lower air and water pollution, improve waste management, and optimize the use of natural resources. The goal of improving the cleantech ecosystem for an economy like Lesotho, resonates with the 7th and 9th Sustainable Development Goal (SDG) which are to promote access to affordable, reliable, sustainable, and modern energy for everyone, and to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

The cleantech ecosystem in Africa is still relatively timid, and the investments in the sector is not commensurate to the sector's needs. The International Energy Agency (2022)[6] posits that, though Africa accounts for around 20% of the world's population, it attracts less than 2% of global investment in clean energy. It further posits that to achieve the region's 2030 energy development and climate goals, energy investment in Africa must double from the USD 90 billion recorded in 2022, if about two-thirds of the spending goes to clean energy. According to the 2022 statistics of the World Bank (2024)[7] data depository, while global access to electricity as a proportion of the population is 91%, that of Sub-Saharan Africa is only 51% and that of Lesotho is even lower at 50%. However, in terms of renewable energy consumption as a percent of total final energy consumption, the world recorded about 19.77% in 2020, while Africa and Lesotho recorded 70.57% and 34.9% respectively for the same year. This highlights the growth potential of renewable energy consumption in Africa, and indicates that Lesotho is only performing at half the capacity of its African peers.

There exist seven key priority sectors according to the Global Cleantech Innovation Programme (GCIP) Innovation Accelerator Guidebook (2023). They include: renewable energy, water efficiency, sustainable buildings, waste beneficiation, energy efficiency, green transportation, and advanced materials & chemicals. In addition, based on the context of Lesotho, it is important to include climate smart agriculture as one of the key priority sectors of the cleantech ecosystem. This is attributable to the scarce arable land of Lesotho and the dire need for climate smart agriculture to address food security concerns. Such cleantech solutions are critical for Lesotho, whose mountainous topography allows for only 9% of arable land and thus leading to huge importation of food (Food and Agriculture Organization, 2024)[8]. Cleantech solutions in Lesotho are imperative to enhance food availability for consumption, energy access & reliability, water management, agricultural productivity, food security, waste management, pollution control, and ultimately climate resilience and adaptation for sustainable growth.

The urgency for intentional growth in cleantech solutions is necessitated by predictions that Lesotho will continue to face extreme weather events such as droughts and floods, variability in rainfall, and rising temperatures, which are likely to have negative environmental repercussions (such as soil erosion, deforestation, droughts, desertification, land degradation, and loss of biodiversity). Agriculture, cattle, health, water resources, and tourism are particularly susceptible industries[9]. According to the United Nations Framework Convention on Climate Change

[6] The International Energy Agency (2022). https://iea.blob.core.windows.net/assets/f76594a5-8a9f-4820-ba3e-2908e03b02a9/FinancingCleanEnergyinAfrica.pdf
[7] World Bank (2024). World Bank Open data. https://data.worldbank.org/
[8] Food and Agriculture Organization. (2024). Climate-Smart Agriculture. https://www.fao.org/climate-smart-agriculture.
[9] World Bank climate knowledge portal (2021). Climate risk country profile. https://climateknowledgeportal.worldbank.org/country-profiles

(UNFCCC), the national GHG emissions for Lesotho by sectors is as follows: 63.59% for the agriculture sector, 30.73% for the energy sector and 5.68% as waste in 2000[10]. Meanwhile, Lesotho's NDC objectives commit to decrease GHG emissions by 10% by 2030 compared to a BAU scenario of 5.713 MTCO2e. The country further intends to achieve another 25% GHG reduction through outside funding, investment, technology transfer, and capacity building. In addition to boosting investment in a renewable energy program for the waste, building construction, and power sectors, the NDC identifies energy efficiency and energy demand management as the primary areas for mitigation.

The extended five-year NSDP II reaffirms Lesotho's commitment to empowering its citizens and the private sector to actively engage in the country's development process. In particular, the energy sector is earmarked for self-sufficiency and export readiness by increasing renewable energy production, expanding electricity access, and improving domestic energy efficiency. Investment in renewable energy is seen as a way to address many of Lesotho's energy sector challenges, as it would help to reduce the country's reliance on electricity imports, reduce fuel imports, and lessen dependence on wood. The NSDP II also aims to decentralize electricity for rural electrification and development, and leverage private sector investment and the diversification of renewable energy sources, such as wind, solar, and micro-hydro. While market adoption remains low, the demonstrated cost effectiveness of localized renewable energy solutions powered by solar photovoltaic (PV), wind, or micro-hydro has a strong potential to provide contemporary energy services to Basotho, who now rely on biomass and kerosene for electricity[11].

The GCF Readiness and Preparatory Support report on Lesotho further posit that the NSDP II encourages innovative and cost-effective technologies for development in its first three key priorities. Lesotho has recorded some small-scale innovation activities. Local higher education institutions have begun initiatives to stimulate innovation and commercialize research in a wide range of items that can generate jobs and support equitable growth. This is in congruence with an emerging tendency among schools to vary from standard teaching techniques and research by engaging important industry actors, with an emphasis on outcomes and innovation.

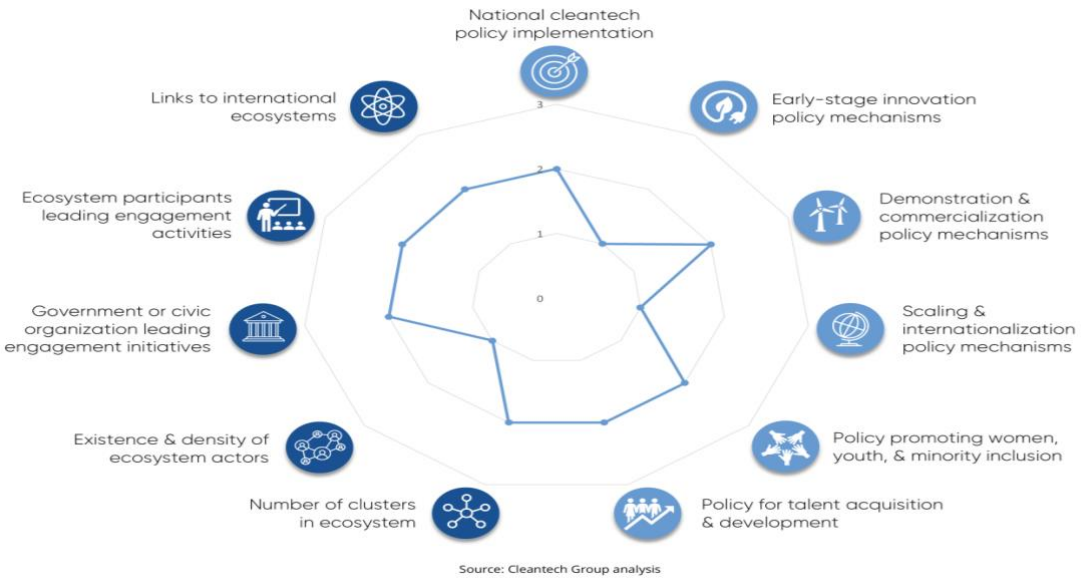
Lesotho’s scenario is indicative of the need for cleantech investments and technologies that can increase the nation's preparedness to climate change. The potential for Lesotho’s private sector, to drive cleantech growth is crucial. However, the private sector in Lesotho is relatively not yet financially buoyant. For example, in 2022, domestic credit to the private sector as a percentage of GDP was only 22.3%, which is lower than the African average of 34.5% and far less than the world average of 147% (World Bank, 2024). Nevertheless, a development of the cleantech sector will simultaneously improve Lesotho’s private sector , giving it more potential to sustain cleantech growth.

[10] UNFCCC, (2014). https://unfccc.int/sites/default/files/lso_ghg_profile.pdf
[11] UNIDO (2019). GCF Readiness and Preparatory Support. Enhancing Lesotho’s private sector readiness for a clean energy transition.

CURRENT STATE OF CLEANTECH IN LESOTHO

A recent report by the GCIP Capacity Building Framework Output for Lesotho suggests that Lesotho's score for its cleantech innovation ecosystem is emerging for three indicators and developing for eight indicators as shown below. Furthermore, for the Innovation Policy dimension, two indicators were ranked as emerging while four indicators were ranked as developing.

Figure 1: Output from GCIP Capacity Building Workshop – Lesotho's cleantech ecosystem



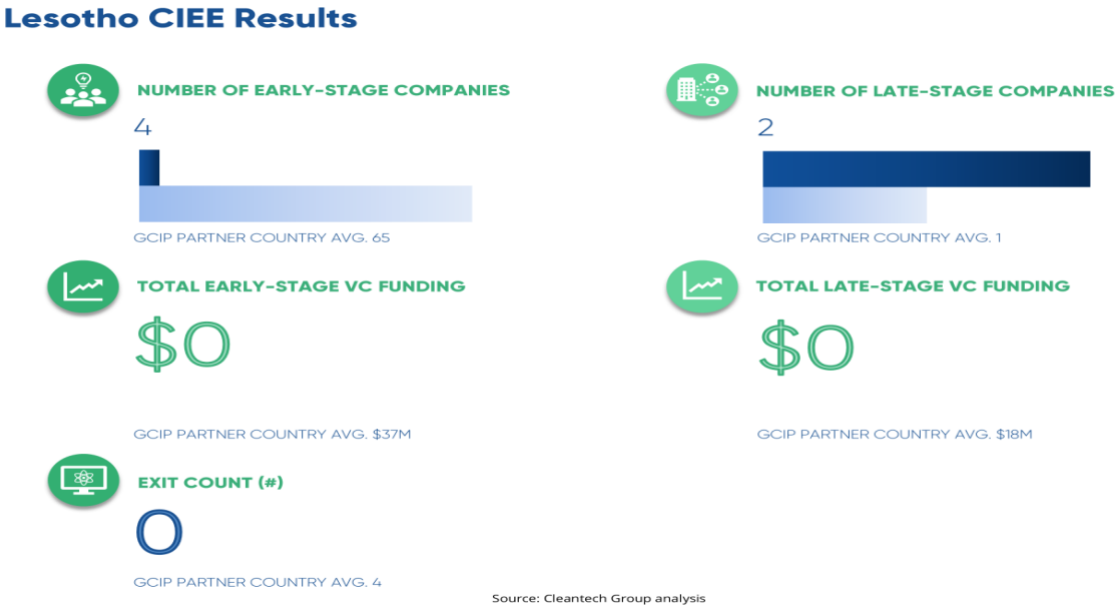
Source: (UNIDO GCII, 2024)

The UNIDO GCII (2024) report further posit that, Lesotho has 4 early-stage cleantech companies which indicates substantial room for growth compared to the GCIP partner country average[12]. Lesotho has 2 late-stage cleantech companies, that is slightly above the GCIP partner country average and both early and late-stage companies have received limited to no VC funding. Summarily, the CTG analysis suggests that Lesotho is still at the Early-Stage Innovation, which is the first of the three stages of the cleantech growth-path. The report considers the need for inclusive policy for women & youth, which is a crosscutting theme for all stages of the ecosystem value chain. Considering policies for the inclusion of women and youth in Lesotho's cleantech ecosystem ensures that marginalised groups are consciously catered for. According to the Cleantech Innovation Cluster Development Framework[13], underrepresented groups such as women, youth and minority founders face a significant disparity in funding and support in the cleantech industry and therefore require dedicated opportunities to increase their presence in leadership roles, on boards of directors, and within Venture Capital (VC) firms, to alter the current status quo. Lesotho VC country coverage is illustrated below:

[12] UNIDO. 2024. Global Cleantech Innovation Index. GCIP Partner Country Innovation Profiles. https://unfccc.int/sites/default/files/lso_ghg_profile.pdf

[13] UNIDO GCIP Cleantech Innovation Cluster Development Framework.pdf

Figure 2: Lesotho VC country coverage



Source: (UNIDO GCII, 2024)

Other related statistics show that, Lesotho has a low climate change readiness score of 0.307 and a high vulnerability score of 0.481, placing it as the 138th out of 187 nations vulnerable to climate change. The low readiness score and high vulnerability scores indicate a desperate need for investments and innovations that can cushion the country against climate change[14]. In terms of innovative capacity, pillar 12 of the GCR (2018), Lesotho ranks very low at 132 out of 140 countries. This reality of low innovative capacity in Lesotho can be linked to the lack of diversity and "Lack of appreciation of technology and innovation by society" identified by the NSDP II (2018 – 2023) as one of the issues that stifle industrialisation in Lesotho. In terms of business dynamism, Lesotho ranks number 118 out of 140 countries in terms of growth of innovative companies. Regarding the embracing of disruptive ideas, Lesotho ranks number 89 out of 140 countries[15]. On multiple indicators of business dynamism, United States, New Zealand, Norway, Israel and Denmark are best performing states.

At the national level, there is no framework or culture that supports cleantech innovation and successful business models that can offer competitive substitutes for the current carbon-intensive products. The situation is compounded by the current legislative and policy framework, which scarcely encourages private-sector investments in the cleantech industry. Furthermore, the current market and culture appear not to be ready for investments in cleantech innovations. For instance, national and international corporations aggressively support the fossil fuel industry, but Lesotho's low power rates make the electricity market unappealing to private investors, particularly when considering the costs of renewable energy or energy efficiency initiatives (UNIDO, 2019).

[14] ND-GAIN, (2024). https://gain-new.crc.nd.edu/country/lesotho/

[15] Global Competitiveness Report. (2018). The Global Competitiveness Report 2018: A project of World Economic Forum. In K. Schwab (Ed.). Geneva: World Economic Forum. Retrieved from http://www3.weforum

RATIONALE FOR PRIVATE SECTOR ENGAGEMENT

Although the private sector's capacity to provide and invest in technology solutions on a commercial basis is believed to be a catalytic factor to achieving Lesotho's climate and clean energy goals, Lesotho's private sector currently has limited capacity to innovate, develop and deploy home-grown technology and business solutions to address climate and energy challenges. While there may be technology innovations and business ideas stemming from universities, research labs, and SMEs, there is no system or culture of support at the national level to nurture a pool of cleantech solutions into profitable business models, which can provide competitive alternatives to carbon-intensive options in the market.

The private sector in Lesotho faces numerous challenges that hinder its growth and development. These include: limited access to finance, inadequate infrastructure, skills gap and workforce challenges, bureaucracy and regulatory barriers, market size and export constraints, dependence on informal trade, high operational costs, corruption and governance issues, limited technology adoption, environmental and climate vulnerabilities, and weak public-private collaboration. These challenges constraint the private sector's ability to thrive independently and collectively. Addressing these challenges requires a coordinated approach involving policy reforms, investment in infrastructure and human capital, and fostering innovation and partnerships.

"Enhancing Lesotho's private sector readiness for a clean energy transition" – a GCF Readiness and Preparatory Support Project for the Kingdom of Lesotho, has the primary aim of enhancing the readiness of Lesotho's private sector to develop, commercialise, and invest in climate and clean energy solutions. It also aims to maximize the economic growth opportunities embedded therein while supporting Lesotho in reaching its NDC targets. Pursuant to this aim and to addressing the contextual cleantech challenges discussed above, this strategy paper seeks to highlight priorities and goals that are necessary in creating a conducive environment for attracting private sector investment for cleantech solutions in Lesotho.

LESOTHO'S CLEANTECH POLICY CONTEXT

Lesotho's economy is currently guided by the NSDP II. Although the strategy was for the period 2018 to 2023, the GoL has extended it for another five years until 2027/28. Within this strategy document, there are several references that have direct and indirect implications to the development of the cleantech ecosystem in Lesotho. For example, some of the outcomes to the KPAs include sustainable commercial agriculture and food security, operational industrial clusters and integrated supply chain, functioning incubation centres and industrial parks, sustainable quality transport network, sustainable energy production and use, sustainable production, use of water resources, and improved sanitation and hygiene, economic-friendly ICT infrastructure, improved quality of built environment, and sustainable solid waste management. These outcomes can be attained mainly with the development of the cleantech ecosystem in Lesotho.

In relation to the cleantech sector, the first outcome (Sustainable Quality Transport Network) is of particular interest together with the KPA - Building Enabling Infrastructure. Through these outcomes and the attributable KPA, it is stated that: "during NSDP II, a large investment project will aim to develop clean energy mini-grids and grid expansion to economic growth zones, with support from the World Bank and Climate Investment Fund." Similarly, in analysing the role of clean energy & clean technologies, the NSDP II considers that "investments

in green energy technologies will reverse the trends in deforestation and soil erosion and enable society to heat homes and cook using cleaner and more efficient technologies. Adoption of green technologies will help rebuild Lesotho's natural capital." These contemplations evidently demonstrate that the GoL has earmarked on cleantech ecosystem as key to the economic development of the Lesotho.

Besides the NSDPII, other key policy documents that underpin the development of the cleantech ecosystem space in Lesotho include the NDC (2017), National Electrification Master Plan for Lesotho 2018-2038, Energy Policy 2015-2025 and the 2017 National Climate Change Policy. The Energy Policy in particular, advocates for increased private sector participation in the energy sector. It also highlights the necessity for investments in clean energy solutions and emphasizes the role of innovation and private investment in advancing Lesotho's energy infrastructure. Meanwhile, the National Climate Change Policy provides strategic direction on climate change issues within the context of sustainable development, by highlighting the importance of adopting clean technologies to mitigate climate change impacts and promote environmental sustainability. These policies provide more detailed directives on broad and specific aspects of the cleantech ecosystem of Lesotho.

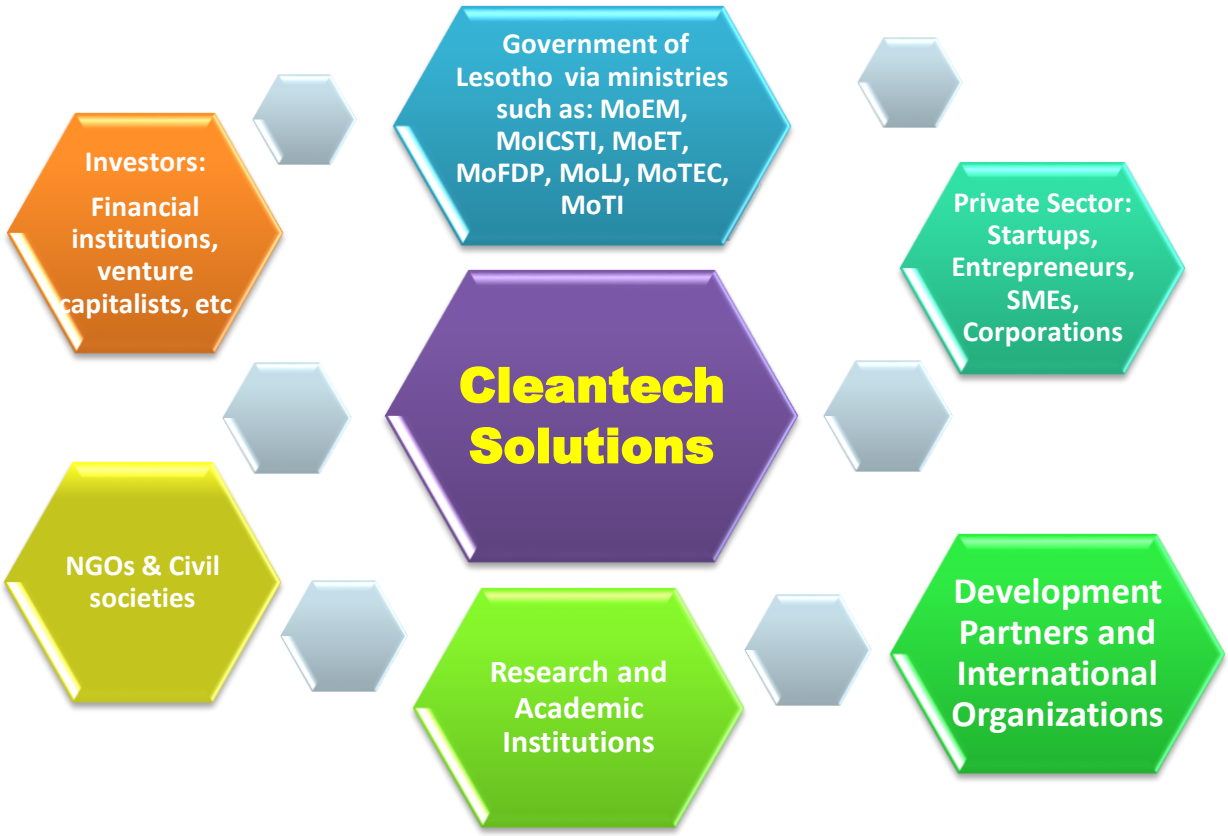
In addition to these policies, there exists initiatives that largely drive cleantech and innovation in Lesotho. For example, the Ministry of Natural Resources through the Department of Energy, in collaboration with the UNIDO are currently implementing the Enhancing Lesotho's Private Sector Readiness for a Clean Energy Transition Project, which aim to enhance the readiness of Lesotho's private sector to develop, commercialise, and invest in climate and clean energy solutions. Similarly, the GCIP Lesotho, funded by the GCF supports the growth of early-stage cleantech entrepreneurs, start-ups, and SMEs, contributing to the development of a robust cleantech ecosystem in the country.

STAKEHOLDER MAPPING AND ENGAGEMENT STRATEGY

Lesotho's cleantech ecosystem recognises at least six groups of cleantech stakeholders. First, the Government which provides the regulatory framework and policy direction for all other stakeholders to operate. This is done via ministries such as: the Ministry of Energy and Meteorology (MoEM), Ministry of Information, Communications, Science, Technology and Innovation (MoICSTI), Ministry of Education and Training (MoET), Ministry of Tourism, Environment and Culture (MoTEC), and Min of Trade and Industry (MoTI). Other key stakeholders include: the private sector (Startups, Entrepreneurs, SMEs, Corporations); investors (Financial institutions, venture capitalists, etc), development partners and international organizations, Non-Governmental Organizations (NGOs) & civil societies as well as research & academic institutions.

The stakeholders are interconnected based on their functions and objectives, especially with respect to the cleantech ecosystem. For example, academic and research institutions need to do research to recommend evidence-based policies or impact assessments to the government, or provide assistance to startups in testing or scaling-up innovative ideas or building human capacity. Meanwhile the academia and researchers require financial support or grants from developing aid agencies to fund research. Similarly, investors and developing aid agencies could provide funding to start-ups, SMEs and corporations in order to promote initiatives in the cleantech space and/or sustain production. Below is a stakeholder mapping of the six relevant stakeholders of the Lesotho cleantech space.

Figure 4: Stakeholder Mapping of the Cleantech sub-section of Lesotho.



Source: *Authors' Computation*

Effective engagement mechanisms foster collaboration, knowledge sharing, and co-creation among stakeholders. Mechanisms that could be instrumental in the development of the cleantech ecosystem of Lesotho include:

a. Partnerships between stakeholders to achieve common goals. For example: collaborations between startups and academic institutions for R&D could enable shared resources and expertise.

b. Joint Ventures to pursue specific cleantech projects could facilitate the deployment of heavy cleantech projects, especially because initial setup cost for some cleantech projects often require huge financial and other resources.

c. Collaborative projects involving multiple stakeholders could facilitate pilot projects or reduce the duplication of efforts among the stakeholders.

d. Knowledge Sharing Platforms for data, research, and best practices will promote a vibrant cleantech ecosystem connectivity.

e. Incubators and accelerators programs to support startups and SMEs with funding, mentorship, and training will build the highly needed human capital for the sector.

f. Policy advocacy and dialogue mechanisms that influence policymaking and ensure alignment with cleantech objectives are critical in creating awareness, especially for the consumers, and all other stakeholders.

KEY PRIORITY AREAS

This strategic plan aims to develop the national cleantech ecosystem and promote private sector engagement. Six Key Priority Areas (KPAs) and twelve objectives are designed to attain this goal. The six KPAs are thematic groups of the 12 goals. The 12 goals are the shortlist of a thorough and expert-driven selection process from 36 policy mechanisms. The selection process entailed having three stakeholder workshops. In the first workshop, the technical experts of the cleantech ecosystem went through the longlist of 36 policy mechanisms from 2 policy groupings (Early stage Innovation and Women & Youth policy mechanisms) as designed by the Cleantech Group (CTG), and ranked them by their levels of impact and feasibility (time to realisation and resources). These policy mechanisms were carefully identified as best practices in the cleantech space from countries with advance cleantech ecosystems across the world. They are over 60 policy mechanisms for 4 policy groupings, however, given Lesotho's nascent cleantech experience, only 2 of the 4 policy groupings are relevant - Early stage Innovation and Women & Youth policy mechanisms.

In the second workshop, a more enlarged audience that included other stakeholders from the private sector, civil society, and development aid agencies, validated the rating for impact and feasibility of the 36 policy mechanisms that emanated from the first workshop. After which, the policy mechanisms that had the highest impact and the highest feasibility were recognised as the shortlist, constituting the priority policy mechanisms. In workshop 3, the same participants from workshop 2, brainstormed on the selected priority (high impact, high feasibility) policy mechanisms and identified the persons needed to draft the policy; the process, time and challenges it will take to pass the draft into policy and implement the policy; and the impact, data needed and the Key Performance Indicator to be measured. Appendix 1 contains all 36 policy mechanisms for the two policy groupings under consideration and their levels of impact and feasibility.

The 12 goals are therefore the selected policy mechanisms of the shortlist, that are grouped into 6 KPAs. The KPAs and goals are presented below.

KPA 1: Coordination and Collaboration

The challenges that bedevil the private sector of Lesotho, especially those in the cleantech space, underscore the importance of coordination and collaboration. Coordination and collaboration between government stakeholders as well as between government stakeholders and international R&D partners or local/international innovation partners have significant impact on the growth of advanced cleantech ecosystems. Collaborations could increase access to foreign investment and grants for cleantech innovation, accelerated technology transfer, research and development (R&D), capacity building and knowledge sharing, efficient resource utilization, enhanced market access, public-private partnerships, improved metrics and data sharing, increased global competitiveness, and ultimately local job creation and economic growth.

Noteworthy examples in Lesotho include the collaboration between the Competitiveness and Financial Inclusion (CAFI) project in Lesotho and the International Labour Organization (ILO) and the International Trade Centre (ITC) to facilitate early-stage financing for innovative SMEs. Another example is the Enhancing Lesotho's Private Sector Readiness for a Clean Energy Transition Project (ELPSRCETP) funded by the Green Climate Fund (GCF) Project. In addition, there currently exists some exchange programs between the energy research centre of the National university of Lesotho for staff and students with western universities. However, there is

need for significantly higher collaboration efforts to boost finance, advance capacity building, and expose the Lesotho cleantech ecosystem to the latest equipment and tools in the industry. There is equally need to put in place coordination efforts that streamline all collaborations and improves efficiency of the processes.

Goal 1: Coordination between government stakeholders

Strategic Objectives

i. Establish a centralized coordination body
ii. Enhance inter-ministerial communication among the key ministries involved in the cleantech ecosystem of Lesotho.
iii. Improve data sharing and accessibility among all stakeholders of the cleantech ecosystem.
iv. Promote integration of government presence on Public-Private Partnerships (PPPs) for similar projects
v. Monitor and evaluate coordination efforts

Goal 2: Collaboration with international R&D partners

Strategic Objectives

i. Establish formal partnerships with international R&D institutions
ii. Facilitate knowledge and technology transfer for human capital development
iii. Strengthen funding opportunities through partnerships between international R&D partners, cleantech entrepreneurs, research institutions or innovation hubs and the government
iv. Promote joint research and publications between local and international researchers
v. Build local capacity through international collaboration
vi. Align cleantech research with national cleantech priorities

Goal 3: Collaboration with local/international innovation partners

Strategic Objectives

i. Facilitate joint innovation projects to engage local and international innovators in providing cleantech solutions in Lesotho.
ii. Strengthen market access for collaborative innovations.
iii. Align innovations with national and regional goals

KPA 2. Funding and Financial Support

The need for funding and financial support for a landlocked least developed economy such as Lesotho cannot be over-emphasised. Financial support is even more relevant in the cleantech space, wherein most of the material, equipment and tools employed have huge initial costs for suppliers as well as for consumers. An economic analysis of the cleantech ecosystem of Lesotho by JETBO Research Consulting showed that over 80% of a sample of key informants identified, limited access to funding and high importation cost for technical equipment to be the biggest challenges requiring the most attention in developing the cleantech ecosystem of Lesotho.

To adequately fund key aspects of the Lesotho cleantech ecosystem, more grants and funding initiatives are expected, particularly from regional and International funding agencies, given the financial constraints of the government of Lesotho. Lesotho's Energy policy 2015-2025

recommends the creation of an Energy Fund that will finance energy programmes and projects that will be administered by the Ministry responsible for energy issues. This fund is yet to be created, yet could be a huge source for grants and subsidies for cleantech entrepreneurs in Lesotho. A more conscious effort and political will to attract funding in a systemic and efficient manner will equally serve to boost international funding to the cleantech space of Lesotho.

Goal 4: Stimulating grants & subsidies

Strategic Objectives

i. Develop a comprehensive cleantech funding framework
ii. Establish a national cleantech fund to provide grants and subsidies for cleantech innovation, focusing on startups, SMEs, and community projects.
iii. Leverage international climate financing mechanisms.
iv. Incentivize private sector participation with matching grants, tax breaks and subsidised loans.
v. Promote nationwide awareness campaigns to inform stakeholders about available grants and subsidies in the cleantech sector.
vi. Establish robust mechanisms to track the impact and efficiency of grants and subsidies, ensuring funds are used for intended purposes.

Goal 5: Promoting regional and international funds

Strategic Objectives

i. Build strategic partnerships with regional and international funding institutions
ii. Enhance proposal development capacity and foster knowledge exchange and capacity building
iii. Promote Lesotho as a regional hub for cleantech innovation
iv. Develop a national cleantech financing strategy

KPA 3: Policy and Regulatory Support for attracting foreign experts

An important aspect of advancing the cleantech ecosystem of Lesotho is to put in place the adequate regulatory framework to facilitate entry of foreign experts in the cleantech space. Facilitating access to work permits has the potential to attract global talent, fill skills gaps, enhance knowledge transfer, boost R&D capacity, strengthen international partnerships, promote diversity in innovation, and align with global standards. In Lesotho, the challenges that inhibit access to work permit include limited use of digital systems, inadequate tracking systems, time taking processes for approval of permit requests, the need for high level approvals, lack of efficiency in the system, and bureaucratic bottle neck in the request and collection process. The high-skill demand of the cleantech space requires specialized experts to install, manage, and monitor the equipment involved, given the deficiency of such experts in Lesotho, the need for foreign experts to come and transfer knowledge become imperative.

Goal 6: Facilitating access to work permits

Strategic Objectives

i. Simplify and streamline work permit application processes.
ii. Promote transparency and clarity in work permit requirements and processes
iii. Align work permit policies with regional and international standards
iv. Incentivize local employment and knowledge transfer.

KPA 4: Ecosystem Strengthening

In addition, qualitative and quantitative data is required to enable robust analysis that ultimately provide for evidence-based recommendations. A lack of understanding of the ecosystem weakens it and exposes the vulnerable sectors to shocks and other threats. The collection and analysis of cleantech data will lead to the discovery of new opportunities and provide ways of reaching new frontiers. The data required to be captured in the cleantech space include but are not limited to: market trends, investment, adoption rates, innovation metrics, performance metrics, environmental impact, socioeconomic, geographic, demographic, financial & investment, partnership & collaboration, operational, consumer behaviour, and policy/regulatory data.

Strengthening the cleantech ecosystem of Lesotho requires two key goals: Developing tools for ecosystem connectivity and ensuring that there is robust, trustworthy and usable data. To attain this, the following objectives must be attained.

Goal 7: Developing tools for ecosystem connectivity

Strategic Objectives

i. Develop a centralized digital cleantech platform.
ii. Develop an interactive cleantech innovation cluster map that identifies cleantech hubs, businesses, and projects in Lesotho to enhance visibility and foster partnerships.
iii. Establish regular networking and knowledge-sharing events and strengthen data interoperability between ecosystem players

Goal 8: Ensuring robust data

Strategic Objectives

i. Establish a national cleantech data repository
ii. Strengthen data collection mechanisms in the cleantech sector.
iii. Ensure data quality and accuracy.
iv. Promote data sharing and collaboration across sectors.

KPA 5: Education and Skill Development

Education is the most powerful weapon, which you can use to change the world[16] - the words of Nelson Mandela, is more visible in the cleantech space. The power of education resides, not only in its ability to equip human beings for tasks, but also in its potential to rekindle a fire of awareness and action. A plethora of literature on the cleantech ecosystem posit that skill-gaps are a key deterrent to its development. High-level experts are needed for the design and installation of massive and even small cleantech equipment, technical & non-technical workers require capacity

[16] Nelson Mandela, quoted in "The International Day of Education," United Nations, https://www.un.org/en/observances/education-day.

building to perform well, and entrepreneurs need training to manage cleantech firms with the peculiarity it deserves. In addition, the overall understanding and appreciation of the cleantech ecosystem by the populace is equally very low, which limits demand for cleantech products as well as the justification of its promotion generally.

While Lesotho's higher education system has not yet fully developed a robust cleantech education framework, there is strong potential for growth. Government initiatives, international collaborations, and emerging educational programs are setting the stage for a stronger focus on cleantech, renewable energy, and environmental sustainability. With adequate investment in curriculum development, partnerships with the private sector, and the creation of more specialized training opportunities, Lesotho can build a solid foundation for a future workforce skilled in cleantech and renewable energy technologies. The state of cleantech education in Lesotho's higher education system is in its early stages, but there are several positive indicators and emerging opportunities. There is need to crystallise these efforts to produce the right coordination, planning, and output for sustainable development of the cleantech ecosystem in Lesotho. This could be done by promoting strong university & training organization partnerships and improving access to STEM education, especially for marginalised groups like women and persons with special needs.

Goal 9: Promoting strong university & training organization partnerships

Strategic Objectives

i. Establish cleantech-focused curricula and training programs.
ii. Facilitate collaborative research and development (R&D) projects.
iii. Foster industry-academia linkages for knowledge transfer.
iv. Promote community engagement and outreach programs.

Goal 10: Promoting access to STEM education

Strategic Objectives

i. Expand access to STEM education in underserved areas
ii. Develop specialized STEM programs targeted at cleantech applications offer scholarships and financial support for students, especially women and rural youth, to pursue stem and cleantech-focused degrees.
iii. Encourage gender equity and inclusion in STEM fields partner with the private sector for stem training and internship opportunities.

KPA 6: Inclusivity and Equity

For growth to benefit all, it must be inclusive and equitably distributed. This suggests that conscious efforts must be put in place to ensure that initiatives, policies, and programs in the cleantech ecosystem, benefit all and sundry. One way to do this, is to decentralise innovation hubs aways from major cities. Innovation hubs or other concentrations of the cleantech industry usually have the tendency to be in the major cities, which is close to adequate source or reliable power, ICT connectivity and other infrastructure and logistic advantages. The Government of Lesotho, must then put in place the enabling environment to establish innovation hubs outside Maseru – the capital district. The NSDP II stipulates the need for support of innovation outside of Maseru urban, which includes the development of innovation clusters in other districts. However, this has not been effectively implemented. Setting up adequate infrastructure to attract

innovation hubs outside the major city could be very expensive, nevertheless, there exists other initiatives that could galvanise the efforts being made. Such efforts include offering grants, subsidies, and tax incentives, organising local competitions, and facilitating collaborations between rural innovators and urban-based businesses etc.

Beyond expanding outside the Maseru district, the need to reach marginalised groups is crucial in enhancing equitable growth of the sector. Recognising, supporting and showcasing the little efforts of women and youth in the cleantech ecosystem for example, will definitely boost the morale of the current actors and infinitely inspire the younger girls to aspire for greater heights. Women representation in the cleantech ecosystem in Lesotho is relatively small, and this could be attributed to the equally poor representation of females in STEM education at higher institutions as well as socio-cultural beliefs and traditions that perceives the cleantech space as a male oriented enterprise. These barriers must be broken with massive sensitisation campaigns and catch-them-young initiatives that levels the playing field for all.

There exist a number of best-practice initiatives that celebrate women and young entrepreneurs in Lesotho. Some of them include: the UNDP Lesotho's Celebrating Game-Changing Women Innovators, and published articles (such as the 10 Influential Women Entrepreneurs in Lesotho You Should Know and Lesotho's Women Entrepreneurs Showcase Their Strong Business Building Spirit). These efforts could have optimal impact if well coordinated.

Goal 11: Support for innovation outside of major cities

Strategic Objectives

i. Establish cleantech innovation hubs outside Maseru to provide infrastructure, mentorship, and access to resources for cleantech startups and entrepreneurs outside major cities.
ii. Offer grants, subsidies, and tax incentives to encourage entrepreneurs in districts outside Maseru to develop and commercialize cleantech solutions, such as renewable energy projects and sustainable agriculture practices.
iii. Enhance capacity building and skill development outside of major cities.
iv. Promote partnerships between urban and rural innovators.
v. Improve infrastructure (e.g., internet connectivity, electricity, and transportation) and connectivity nationwide to support innovation and business operations in the cleantech sector.
vi. Promote Local Solutions for Rural Challenges

Goal 12: Showcasing or spotlighting female/young innovators

Strategic Objectives

i. Organize Annual Cleantech Innovation Competitions Focused on Women and Youth.
ii. Create a Dedicated Mentorship and Networking Program for Women and youth Innovators.
iii. Facilitate Media Campaigns to Highlight Success Stories of Women and youth innovators in cleantech, emphasizing their contributions and creating role models for others.
iv. Facilitate Access to Industry Events and International Platforms

STRATEGIC IMPLEMENTATION PLAN

Table 3: Strategic Implementation Plan

KPA 1: Coordination and Collaboration						
Goal 1: Coordination between government stakeholders						
Objectives	*Actions*	*Implementation lead*	*Completion & timing*	*Stakeholder impact*	*Resource needs*	*Measures (progress indicators & outcomes*
Establish a Centralized Coordination Body	Form a national cleantech coordination council comprising representatives from government, private sector, academia, and civil society.	MoE & UNIDO	3- 6 months	MSMEs, IHLs, representatives from, private sector, academia, civil society, women & youth groups etc	Personnel time; Logistical costs Budget: +/- LSL200 000 per annum	○ existence of a coordination body with records of meetings;
	Assign a lead government agency with clear authority to oversee and facilitate cleantech initiatives.	MoE & UNIDO	3 months	MSMEs, IHLs, Women and youth, investors	Personnel time; Logistical costs	○ Appointment letter to the lead agency ○ # coordinated PP initiatives
	Develop a formal charter defining the roles, responsibilities, and decision-making processes of the council.	MoE	3 months	MSMEs, IHLs, Women and youth, investors	Personnel time	○ Completed charter; ○ Increased # strategic decisions; ○ Faster decision making.
Enhance Inter-Ministerial Communication among the key ministries involved in the cleantech ecosystem of Lesotho.	Schedule regular inter-ministerial meetings to discuss cleantech developments and challenges.	MoE & UNIDO	Ongoing	MSMES, Private sector, Women and youth, investors	Personnel time; Logistical costs	○ Records of meetings ○ Enhanced coordination and implementation of cleantech policies.
	Establish a shared digital platform for real-time updates and document sharing among ministries.	Ministries of Trade; Energy; Science & Technology; & Finance,	12 months	MSMES, Private sector, Women and youth, investors	Procurement funds Budget: +/- LSL1 000 000	○ Existence of digital platform ○ Reduced policy overlaps and resource duplications; ○ Improved resource and information sharing

	Create a reporting system to track progress on cleantech-related goals across departments.	MoE	12 months	Cleantech MSMEs	Funding	○ Timely reports on cleantech development
Improve Data Sharing and Accessibility among all stakeholders of the cleantech ecosystem.	Develop an integrated national database to track cleantech projects, funding, stakeholders, and outcomes.	MoE, & Ministry of Trade	12 months	Investors, MSMEs, Research bodies, Ministries	Funding Budget: +/- LSL5 000 000	○ Available national database; ○ Timely cleantech status
	Develop a periodic publication of cleantech developments, challenges and successes	MoE & UNIDO	Periodic	Investors, MSMEs, Research bodies, Ministries, Dev partners	Funding/Sponsorship Budget: +/- LSL 2 000 000 per annum	○ Number of annual reports/publications/magazines; ○ Timely cleantech status analysis
	Standardize data collection methods across government agencies to ensure consistency.	Ministries of Trade; Energy; Science & Technology	12 months	Investors, MSMEs, Research bodies, Ministries, Development partners	Funding to procure or develop a system	○ Standardized data collection methods
	Provide training for government officials on using and maintaining the database.	MoE & UNIDO	Ongoing	Government officials	Logistical time and costs	○ Number of successful trainings conducted
Promote integration of government presence on Public-Private Partnerships (PPPs) for similar projects	Identify potential private sector partners for cleantech projects and initiatives.	MoE & UNIDO	1 month	MSMEs, Private sector businesses & organisations.	Time	○ A database of categorised private sector partners
	Draft partnership agreements that define roles, contributions, and benefits for both public and private entities.	MoE and UNIDO	3 – 6 Months	Govt ministries, Private sector entities and NGOs	Expertise for drafting agreements, time and logistical costs	○ Number of agreements completed
	Host regular forums to promote dialogue and collaboration between government and private sector stakeholders.	MoE and UNIDO	Ongoing	Private sector entities, Civil	Logistical costs	○ Number of forums hosted annually

				society, Donors and investors		○ Increased stakeholder attendance & diversity
Monitor and Evaluate Coordination Efforts	Develop clear indicators to assess the effectiveness of coordination mechanisms.	MoE and UNIDO	3 months	Cleantech council members, Data analysts, M&E teams	Expert consultation, Data collection and reporting tools	○ Number of indicators developed & approved ○ # reportings based on indicators
	Conduct bi-annual reviews of inter-ministerial and multi-stakeholder collaboration.	MoE and UNIDO	Ongoing	Inter-ministerial reps, Private sector partners, NGOs - M&E teams	Dedicated time and logistics	○ Number of reviews conducted on schedule; ○ % action points resolved; ○ Stakeholder satisfaction with review process
	Publish annual reports outlining successes, challenges, and recommended improvements.	MoE and UNIDO	Ongoing	All stakeholders, including public, Media, Donors & investors	Writing, Design & analysis experts & resources	○ # published reports ○ Distribution reach and stakeholder awareness; ○ Incorporation of recommendations in strategies
Goal 2: Collaboration with international R&D partners						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Establish formal partnerships with international R&D institutions	Identify leading international R&D institutions specializing in cleantech.	MoE and UNIDO	3 months	- Government - Local R&D institutions - Cleantech council	Research team, Access to global databases and networks	○ # of relevant institutions identified
	Develop Memorandums of Understanding (MoUs) outlining joint research areas and resource-sharing agreements.	MoE and UNIDO	3 to 6 months	- Government - International R&D partners - Legal teams	- Legal and policy expertise - Administrative support - Translation services (if needed)	○ # MoUs signed; ○ # Joint research initiatives initiated
	Create a task force to manage and oversee partnerships.	MoE and UNIDO	3 – 6 months	Government and industry leaders	Task force funding, Office	○ Task force established and operational;

					space and communicatio n tools	○ # successfully managed partnerships
Facilitate knowledge and technology transfer for human capital development	Organize regular knowledge exchange programs, such as workshops and webinars, with international R&D partners.	MoE and UNIDO	Ongoing	Local researchers, International R&D partners and Policy makers	Event organization budget	○ # workshops/webinars conducted
	Develop local training programs to build capacity in applying imported technologies.	MoE and UNIDO	Ongoing	Local universities, Industry professionals & MSMEs	Training curriculum and facilitators Budget: +/- LSL500 000 per annum	○ # training programs conducted; ○ Participant skill improvement
Strengthen funding opportunities government	Co-develop funding proposals with international R&D partners for global grants and initiatives.	Ministries of Energy and Education, UNIDO, IHLs	Ongoing	Government, International R&D partners; Funding agencies	Grant writing expertise, Access to proposal platforms	○ # proposals submitted ○ Amount of funding secured
	Leverage existing partnerships to attract investment from international development agencies.	MoE and UNIDO	Ongoing	Government, International R&D partners; Funding agencies	Investment outreach team; Marketing materials	○ Amount of investment attracted ○ # strengthened partnerships
Promote joint research and publications between local and international researchers	Identify key research gaps in Lesotho's cleantech ecosystem and propose collaborative research projects.	MoE, UNIDO, IHL	6 – 12 months	Local researchers, Govt & International R&D partners	Research and stakeholder consultation platforms	○ # identified and documented research gaps; ○ # collaborative research projects proposed ○ % increase in scientific publications
	Establish a joint publication fund to support the dissemination of research findings in international journals.	MoE, UNIDO, IHL	Ongoing	Researchers, IHL International journals	Fund allocation, administrative support Budget:	○ # publications supported;

					+/- LSL 5 000 000 per annum	
	Co-host research conferences to share results and gain global visibility.	MoE, UNIDO, IHL	Ongoing	Researchers, International R&D partners, Industry professionals	Conference budget, Venues or virtual platforms Budget: +/- LSL200 000 per annum	○ # conferences hosted; ○ Feedback from participants
Build local capacity through international collaboration	Develop exchange programs to send local researchers and students to partner institutions for advanced training.	Ministries of Energy and Education, UNIDO, IHLs (Energy Research Center)	Ongoing	Local universities & Researchers and international institutions	Exchange program funding, Travel accommodation resources & Partnership agreements Budget: +/- LSL 5 000 000 per annum	○ # participants in exchange programs ○ Qualitative reports on skills and knowledge transferred from participants
	Invite international experts to provide mentorship and advisory support to local researchers.	MoE and UNIDO	Ongoing	Local researchers, International experts	Experts Honorariums, Mentorship logistical costs Budget: +/- LSL 1 000 000 per annum	○ # mentorship sessions conducted ○ Local researcher progress and feedback

	Establish local R&D hubs with support from international partners to strengthen domestic capabilities.	UNIDO and Ministries of Energy and Science and Technology	12 – 24 months	Government, Local researchers, International R&D partners	- Infrastructure and equipment Funding Budget: +/- LSL 15 000 000	○ # R&D hubs established ○ # projects completed at hubs
	Develop mentorship programs linking local innovators with experienced international counterparts.	MoE & UNIDO	Ongoing	Local entrepreneurs, International innovators	Program facilitation team	○ # mentorship matches created; ○ Reports on participant progress and satisfaction
Align cleantech research with national cleantech priorities	Collaborate with international partners to tailor research initiatives to Lesotho's cleantech needs.	MoE & UNIDO	Ongoing	Government, Local researchers, International R&D institutions	Data on local needs, Joint research funding	○ # tailored research initiatives ○ Relevance of research outputs to Lesotho ○ % increase in government budget allocation for R&D; ○ # cleantech R&I clusters
Goal 3: Collaboration with local/international innovation partners						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Facilitate joint innovation projects to engage local and international innovators in providing cleantech solutions in Lesotho.	Launch co-creation platforms to develop and pilot cleantech solutions in Lesotho.	UNIDO and Ministries of Energy and Science and Technology, IHLs	12 – 24 months	Local innovators, Govt ministries, Private sector partners	Platform development, Seed funding for pilot projects	○ # co-creation platforms established; ○ # pilot solutions developed
	Provide grants or incentives for collaborative innovation projects addressing Lesotho's cleantech needs.	UNIDO, MoE, LNDC, BEDCO	Ongoing	Local entrepreneurs & Startups, Research institutions	Funding mechanisms	○ # grants awarded ○ Total funds disbursed ○ Measurable impact of funded projects
	Organize hackathons and innovation challenges to engage local and international innovators.	UNIDO, MoE and IHL	Ongoing	Innovators, IHL, Private sector sponsors	Logistical budget, Procurement Budget, Prizes	○ # hackathons conducted ○ # foreign participants ○ # countries represented

					or rewards for winners	○ # ideas or prototypes developed
Strengthen Market Access for Collaborative Innovations.	Connect local innovators with international markets through trade fairs and innovation expos.	UNIDO, Ministry of Trade	Ongoing	Local entrepreneurs – Export, International buyers and investors	Budget for trade fairs, Travel and logistics funding Budget: +/- LSL 500 000 per annum	○ # international connections established; ○ Volume of exports generated ○ # participations in international trade fairs or expos
	Partner with international innovators to jointly commercialize cleantech solutions.	UNIDO, Ministry of Trade	Ongoing	Local innovators, International R&D partners, Investors	Partnership agreements, Market & feasibility studies, Access to funding	○ # joint commercialization ventures initiated; ○ Volume of revenue generated from commercialized solutions
	Provide export support for locally developed cleantech innovations through joint ventures.	UNIDO, Ministry of Trade	Ongoing	Local cleantech developers, Export agencies, International trade partners	Export facilitation resources, Regulatory compliance support	○ # cleantech products exported; ○ Volume of export revenue generated; ○ % Growth in export markets
Align Innovations with National and Regional Goals	Ensure that collaborative innovation projects align with Lesotho's cleantech and sustainability policies.	UNIDO, MoE, Ministry of Trade,	Ongoing	Govt, Innovators	Policy review mechanisms, M&E systems	○ % of projects aligned with policies; ○ Regular reporting on compliance; ○ Stakeholder feedback on policy alignment
	Promote cross-border innovation partnerships to address shared regional challenges.	MoE & UNIDO	Ongoing	Regional Govt, International partners, Local innovators	Networking platforms, MoUs, regional collaboration funding	○ # cross-border partnerships established; ○ # joint initiatives implemented ○ # of regional challenges addressed

KPA 2. Funding and Financial Support						
Goal 4: Stimulating grants & subsidies						
Objectives	*Actions*	*Implementation lead*	*Completion & timing*	*Stakeholder impact*	*Resource needs*	*Measures (progress indicators & outcomes*
Develop a comprehensive cleantech funding framework	Conduct a national needs assessment to identify priority cleantech areas requiring funding.	MoE & UNIDO	6 – 12 months	Govt ministries, Local researchers, Private sector stakeholders	Research teams and tools, Stakeholder consultation resources	○ Completed comprehensive assessment report ○ Degree of representation of stakeholder participation to national representation
	Draft a policy document outlining mechanisms for grants and subsidies tailored to the cleantech sector.	MoE & UNIDO	3 – 6 months	- Policy makers - Legal advisors - Industry representatives	Policy drafting expertise, Stakeholder consultation platforms	○ Policy document finalized and approved ○ Extent of alignment with cleantech priorities
	Align the funding framework with national sustainability and economic development goals.	MoE & UNIDO	3 – 6 months	- Govt planners, Economic advisors, Environmental organizations	Policy review resources, Expert consultants	○ Framework alignment independently reviewed; ○ Extent of alignment with national sustainability and economic development goals
Establish a national cleantech fund to provide grants and subsidies for cleantech innovation, focusing on startups, SMEs, and community projects.	Secure initial seed funding from the government and international development partners.	MoE & UNIDO	Ongoing	- Govt ministries, Development partners, Investors	Proposal writing expertise, Partnership outreach resources	○ Volume of seed funding secured ○ # development partners engaged
	Develop clear eligibility criteria and application guidelines for cleantech grants.	MoE & UNIDO	3 – 6 months	Grant administrators, Innovators, NGOs	Policy expertise, Communication tools for outreach	○ Criteria and guidelines published; ○ # applications received
	Create a transparent selection process for awarding grants to eligible projects.	MoE & UNIDO	3 – 6 months	Grant applicants; Govt agencies, NGOs	Independent review panels, Standardized	○ % applicants satisfied with the process; ○ Timeliness of grant awards

					evaluation frameworks	
Leverage international climate financing mechanisms	Identify and apply for funding opportunities from global initiatives such as the Green Climate Fund and Global Environment Facility.	MoE & UNIDO	3 – 6 months	Govt agencies, International partners	Research and application resources	○ # successful applications; ○ Amount of funding secured
	Build capacity within government agencies to write compelling grant proposals for international funding.	MoE, UNIDO, IHLs	Ongoing	Govt agencies, Capacity building consultants	Training programs, Technical writing expertise	○ #staff trained; ○ Success rate of submitted proposals
Incentivize private sector participation with matching grants, tax breaks and subsidised loans.	Provide matching grants for private-sector-led cleantech projects.	MoE & UNIDO	Ongoing	Private sector innovators, Govt grant bodies	Matching grant budget, Evaluation criteria	○ # matching grants awarded; ○ Private sector investment leveraged
	Offer tax breaks and other financial incentives for companies investing in cleantech development.	Ministries of Trade and Energy and RSL, and UNIDO	Ongoing	Cleantech companies, Tax authorities	Legislative changes, Monitoring and reporting systems	○ # companies benefiting from incentives; ○ Total value of incentives granted
	Collaborate with banks and financial institutions to design subsidized loans for cleantech enterprises.	MoE, LNDC, Private Sector Foundation, and UNIDO	Ongoing	Banks and financial institutions, Cleantech SMEs	Loan design expertise, Partnership agreements	○ # subsidized loans issued; ○ Loan repayment rates
Promote nationwide awareness campaigns to inform stakeholders about available grants and subsidies in the cleantech sector.	Conduct awareness campaigns highlighting available grants and subsidies in the cleantech sector.	Ministries of Trade, Energy & Science and Technology, and UNIDO,	Ongoing	Innovators, Entrepreneurs, NGOs	Marketing and communication materials; Media outreach platforms Budget: +/- LSL 500 000 per annum	○ # people reached through campaigns; ○ # inquiries about grants

	Host workshops and training sessions to guide potential applicants on how to access funding.	MoE, & UNIDO	Ongoing	Entrepreneurs; NGOs, SMEs	Workshop facilitators and material	○ # workshops held; ○ Participant satisfaction scores
	Facilitate public-private dialogues to identify barriers to accessing grants and develop solutions.	Ministries of Trade, Energy & Science and Technology, UNIDO	Ongoing	Govt agencies, Private sector stakeholders, NGOs	Dialogue facilitation resources, Stakeholder engagement platforms	○ # barriers resolved; ○ Frequency of dialogues
Establish robust mechanisms to track the impact and efficiency of grants and subsidies, ensuring funds are used for intended purposes.	Establish a monitoring system to track the utilization and impact of grants and subsidies on cleantech development.	MoE, & UNIDO	6 – 12 monthd	Govt monitoring teams, Grant beneficiaries	M&E tools, Data collection systems	○ % of grants monitored; ○ # impact metrics regularly reported
	Publish annual reports detailing funding allocations, beneficiaries, and outcomes.	MoE, & UNIDO	Ongoing	Govt agencies; Grant beneficiaries, General public	Data analysis resources, Report writing expertise, Dissemination platforms	○ Annual reports published on schedule; ○ Stakeholder awareness and feedback
	Continuously refine grant and subsidy programs based on feedback and performance metrics.	MoE, & UNIDO	Ongoing	Policy makers, Grant administrators	Feedback mechanisms, Policy review frameworks	○ Frequency of feedback and performance metrics. ○ # Revisions on grants and subsidy programs.
	Perform regular on-site inspections of funded projects to ensure compliance with grant terms and verify reported outcomes.	MoE, & UNIDO	Ongoing	Monitoring teams, Grant beneficiaries	Inspection teams, Standardized inspection checklists	○ % of projects inspected, ○ Compliance rates
	Hire third-party evaluators to provide unbiased assessments of the performance and impact of funded projects.	MoE, & UNIDO	Ongoing	Third-party evaluators, Govt - Grant beneficiaries	Evaluation contracts, Access to project data	○ # evaluations completed; ○ Extent of implementation of recommendations from evaluations
Goal 5: Promoting regional and international funds						
Objectives	*Actions*	*Implementation lead*	*Completion & timing*	*Stakeholder impact*	*Resource needs*	*Measures (progress indicators & outcomes*

Build strategic partnerships with regional and international funding institutions	Identify and engage key cleantech funding organizations (e.g., Green Climate Fund, African Development Bank).	MoE, & UNIDO	6 – 12 months	Govt ministries, Development partners, Private sector investors	Outreach and networking logistics	○ # funding organizations engaged; ○ Amount of funding opportunities identified
	Organize high-level meetings and forums to showcase Lesotho's cleantech opportunities.	MoE, & UNIDO	Ongoing	Govt officials, International investors, Development partners	Venue and logistics, Marketing materials, Event coordination	○ # meetings/forums conducted; ○ Attendance and participation rates
	Establish formal agreements or MOUs to streamline funding processes.	MoE, & UNIDO	6 – 12 months	Government agencies, Funding organizations, Legal advisors	Legal expertise, Negotiation teams	○ # MOUs signed; ○ % streamlined funding processes
Enhance proposal development capacity and foster knowledge exchange and capacity building	Train local government and private sector stakeholders on proposal writing for international funding.	MoE, & UNIDO	Ongoing	Govt officials, Private sector innovators, NGOs	Training materials, Expert trainers	○ # stakeholders trained; ○ Improvement in proposal quality and success rates
	Create a centralized support team for preparing competitive grant applications.	MoE, & UNIDO	Ongoing	Govt agencies, Grant applicants	Funding for staffing, Office space, Technology	○ # applications supported; ○ Success rate of submitted applications
	Develop templates and toolkits for standardized funding applications.	MoE, & UNIDO	6 – 12 months	Grant applicants, Support teams	Template development resources, Consultation with funding bodies	○ # templates/toolkits developed; ○ Stakeholder feedback on ease of use
	Partner with regional and international organizations for cleantech knowledge-sharing programs.	MoE, & UNIDO	Ongoing	Research institutions, Govt agencies, Innovators	Partnership agreements, Coordination resources	○ # knowledge-sharing programs initiated; ○ Participation rates
	Host workshops and seminars to highlight funding opportunities and successful case studies.	MoE, & UNIDO	Ongoing	Entrepreneurs, NGOs,	Workshop facilitators, Event logistics	○ # workshops conducted; ○ Participant feedback and satisfaction rates

				Private sector representatives		
	Promote collaborative research to strengthen Lesotho's position in the global cleantech ecosystem.	Ministries of Trade, Science and Technology, UNIDO, IHLS	Ongoing	Research institutions, International R&D partners	Research funding, Collaboration platforms	○ # collaborative research projects initiated; ○ Research publications produced ○ Increase in index of scientific reservation and promise ○ Number of voluntary funding mechanisms; grants, investments or donations
Promote Lesotho as a regional hub for cleantech innovation	Host regional events or expos showcasing cleantech innovations in Lesotho.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Local innovators, Regional stakeholders, International investors	Event organization budget, Marketing and outreach resources Budget: +/- LSL 500 000	○ # events hosted; ○ Attendance and investor engagement levels
	Leverage success stories from existing cleantech initiatives to attract funding.	MoE, & UNIDO	Ongoing	Innovators, Govt agencies, Funding bodies	Documentation and storytelling expertise, Communication channels	○ # success stories published; ○ Stakeholder interest generated
	Collaborate with regional economic blocs (e.g., SADC) to market Lesotho's potential.	Ministries of Energy and Trade, UNIDO	Ongoing	Regional partners, Govt agencies, Funding bodies	Regional coordination efforts, Advocacy resources	○ # collaborations formed; ○ Regional funding opportunities secured

Develop a national cleantech financing strategy	Outline financing needs, timelines, and expected impacts in a national roadmap	MoE, & UNIDO	3 – 6 months	Policy makers, Govt planners, Development partners	Strategic planning expertise, Stakeholder consultations	○ National roadmap completed; ○ Stakeholder feedback on clarity and alignment
	Develop pilot cleantech projects that can attract international attention and funding as scalable models	MoE, & UNIDO	6 – 12 months	Innovators, Development partners, Local communities	Pilot project funding, Implementation teams	○ # pilot projects initiated; ○ International funding attracted
	Leverage south-south cooperation with other developing countries and regional peers to tap into shared funding opportunities and best practices.	MoE, & UNIDO	Ongoing	Regional partners, Govt agencies, Innovators	Networking opportunities, Best practice exchange platforms	○ # south-south partnerships formed; ○ Shared funding opportunities secured
KPA 3: Policy and Regulatory Support for attracting foreign experts						
Goal 6: Facilitating access to work permits						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Simplify and streamline work permit application processes.	Develop a digital platform for online submission and tracking of work permit applications.	Ministries of Energy. Trade and Foreign Affairs	12 – 24 months	Govt agencies, Applicants, IT developers	Platform development budget, Technical expertise, User interface design Budget: +/- LSL 5 000 000	○ Digital platform launch; ○ # users engaged; ○ Application submission and tracking efficiency
	Reduce bureaucratic layers by consolidating approval responsibilities under one agency.	Ministries of Energy. Trade and Foreign Affairs	12 – 24 months	Govt ministries, Applicants, Human resources	Legal and administrative restructuring, Cross-agency collaboration efforts	○ # agencies consolidated; ○ Average approval time reduced; Stakeholder satisfaction with streamlined process

	Set clear timelines for processing work permits and communicate them to applicants.	Ministries of Energy. Trade and Foreign Affairs	12 – 24 months	Applicants, Govt agencies, HR departments	Process mapping, Communication tools (website, emails, etc.)	○ Timeliness of application processing; # applicants informed of timelines
	Formalize preference for experts with special skills, such as those with cleantech related skills	Ministries of Energy. Trade and Foreign Affairs	12 – 24 months	Skilled workers, Employers, Govt agencies	Policy development, Communication and training for officials	○ % of cleantech skilled experts prioritized # cleantech-related work permits issued
Promote transparency and clarity in work permit requirements and processes	Publish clear guidelines and checklists for work permit applications tailored to the cleantech sector.	Ministries of Energy. Trade and Foreign Affairs	12 – 24 months	Applicants, Govt agencies, Employers	Guide and checklist creation resources, Online publication tools	○ # guidelines and checklists published; ○ Stakeholder feedback on clarity and utility of materials
	Translate application materials into multiple languages to accommodate international talent.	Ministries of Energy. Trade and Foreign Affairs	12 – 24 months	International applicants, Govt agencies, Translation service providers	Translation services, Multilingual platforms	○ # translated materials available; ○ Increase in international applications received
	Provide regular updates on the status of applications to avoid confusion and delays.	Ministries of Energy. Trade and Foreign Affairs	Ongoing	Applicants, Govt agencies, HR departments	Notification system, Customer service or help desk resources	○ Frequency of updates provided; ○ Applicant satisfaction with communication and transparency
Align work permit policies with regional and international standards	Benchmark Lesotho's work permit policies against successful cleantech ecosystems globally.	Ministries of Energy. Trade and Foreign Affairs	6 – 12 months	Govt agencies, International policy experts, Employers	Benchmarking research, Access to global cleantech policy reports	○ # policy improvements made; ○ Comparative analysis results with top global ecosystems
	Collaborate with SADC member states to establish regional agreements for talent mobility.	Ministries of Energy. Trade	Ongoing	SADC governments,	Diplomatic and legal resources,	○ # agreements signed ○ Increase in talent mobility within SADC region

		and Foreign Affairs		Regional employers, Skilled workers	Cross-border negotiation teams	
	Adjust policies to attract international experts by offering competitive terms.	Ministries of Energy. Trade and Foreign Affairs	Ongoing	International experts, Employers, Govt agencies	Policy reform resources, Competitive benchmarking studies	○ # international experts attracted; ○ Satisfaction of international workers with terms offered
Incentivize local employment and knowledge transfer.	Require work permit holders to engage in knowledge-sharing programs with local talent.	Ministries of Energy. Trade and Foreign Affairs	Ongoing	Work permit holders, Local talent, Employers	Program design, Mentorship and training resources, Monitoring mechanisms	○ # knowledge-sharing programs/sessions held; ○ Local talent engagement and upskilling results
	Offer tax or permit fee reductions for employers hiring international experts committed to training locals.	Ministries of Energy. Trade and Foreign Affairs and RSL	12 – 24 months	Employers, International experts, Local employees	Tax policy adjustments, Permit fee reduction structures	○ # employers receiving tax/fee reductions; ○ # local workers trained as part of the initiative
KPA 4: Ecosystem Strengthening						
Goal 7: Developing tools for ecosystem connectivity						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Develop a centralized digital cleantech platform.	Design an online platform that maps cleantech stakeholders, projects, funding opportunities, and resources.	MoE, MoICSTI & UNIDO	12 – 24 months	Govt agencies, Private sector, Researchers, Investors, NGOs	Platform development budget, Technical expertise, Content creation (data entry, research) Budget: +/- LSL 1 000 000	○ Online mapping platform launched; ○ # stakeholders and projects mapped; ○ Quality of user engagement and feedback

	Develop analytics tools to track ecosystem growth and gaps.	MoE, MoICSTI & UNIDO	12 – 24 months	Govt agencies, Private sector, Researchers, Investors	Analytics software, Data collection tools, Expertise in data analysis	○ # metrics tracked; ○ Identification of ecosystem gaps; ○ Insights shared with stakeholders
Develop an interactive cleantech innovation cluster map that identifies cleantech hubs, businesses, and projects in Lesotho to enhance visibility and foster partnerships.	Leverage geospatial mapping tools to plot the locations of cleantech hubs and projects.	MoE, MoICSTI & UNIDO	24 – 36 months	Govt agencies, Local authorities, Private sector, Investors	Geospatial software, Data on cleantech hubs, Mapping expertise	○ # hubs and projects mapped; ○ Stakeholder engagement with the map; ○ Geographic distribution analysis
	Include information on talent pools, research facilities, available infrastructure, and key success stories	MoE, MoICSTI & UNIDO	6 – 12 months	Innovators, Research institutions, Govt agencies, Private sector	Data collection on talent pools, facilities and infrastructure, Storytelling expertise, Content management resources	○ # success stories published; ○ Stakeholders utilizing talent and infrastructure information; ○ Data completeness
	Promote the Platform Locally and Internationally to increase visibility.	MoE, MoICSTI & UNIDO	Ongoing	Govt agencies, Private sector, International stakeholders, Researchers	Marketing budget, Social media and communicatio n channels, Networking opportunities	○ # promotional campaigns launched; ○ Increase in platform users; ○ Global partnerships formed
Establish regular networking and knowledge-sharing events and strengthen	Host annual cleantech expos and hackathons to showcase innovations and foster partnerships.	MoE, MoICSTI & UNIDO	Ongoing	Local innovators, International partners, Investors, Govt agencies	Event organization budget, Venue and logistics,	○ # expos and hackathons hosted; ○ # partnerships formed; ○ Attendance and participation rates

data interoperability between ecosystem players					Marketing and outreach resources	
	Organize sector-specific roundtables to connect stakeholders across the value chain.	MoE, MoICSTI & UNIDO	Ongoing	Govt agencies, Private sector, Researchers, NGOs	Event facilitation, Expert speakers and panellists, Participant outreach and coordination	○ # roundtables organized; ○ # stakeholders engaged; ○ Outcomes and action items from discussions
	Facilitate workshops on international best practices for ecosystem collaboration.	MoE, MoICSTI & UNIDO	Ongoing	Govt agencies, Private sector, NGOs, International partners	Workshop facilitators, Best practice materials, Networking platforms	○ # workshops hosted; ○ Knowledge transfer and application by participants; Feedback from attendees
	Standardize data-sharing protocols to ensure compatibility across organizations.	MoE, MoICSTI & UNIDO	12 – 24 months	Govt agencies, Private sector, Research institutions, NGOs	Technical resources for data standardization Legal and policy frameworks for data sharing	○ # organizations adopting data-sharing protocols; Data compatibility success rate
	Develop APIs (Application Programming Interfaces) for seamless data integration among stakeholders.	MoE, MoICSTI & UNIDO	12 – 24 months	Govt agencies, Private sector, Researchers, Data providers	API development resources, Data integration expertise, Testing and deployment tools	○ # APIs developed; ○ API adoption rate among stakeholders; ○ Integration success across platforms
	Establish a shared repository of cleantech-related data accessible to all participants.	MoE, MoICSTI & UNIDO	12 – 24 months	Govt agencies, Private sector, Researchers, NGOs	Data storage infrastructure,	○ Repository launched; ○ # participants with access; ○ Volume and quality of data shared

					Content management system, Legal agreements for data usage and access	
Goal 8: Ensuring robust data						
Objectives	*Actions*	*Implementation lead*	*Completion & timing*	*Stakeholder impact*	*Resource needs*	*Measures (progress indicators & outcomes*
Establish a national cleantech data repository	Create a centralized, secure database to collect data on cleantech projects, investments, technologies, and impact metrics.	MoE, & UNIDO	12 – 24 months	Govt agencies, Private sector, Research institutions, Investors	Database development budget, IT infrastructure, Security measures, Data storage capacity	○ Database launched; ○ # cleantech projects, investments, and metrics tracked; ○ Database security audits completed
	Integrate data from government agencies, private sector players, and research institutions.	Ministries of Trade, Science and Technology, IHLSr & UNIDO	12 – 24 months	Govt agencies, Private sector, Research institutions	Data integration tools, Collaboration agreements, Access to data from stakeholders	○ # data sources integrated; ○ Frequency of data updates; ○ Data accuracy across integrated sources
	Standardize data formats and ensure accessibility for relevant stakeholders.	Ministries of Trade, Science and Technology, IHLSr & UNIDO	12 – 24 months	Govt agencies, Private sector, Research institutions	Standardization tools, Data accessibility platforms, Training for stakeholders on data formats	○ % of data standardized; ○ Accessibility improvements (e.g., system uptime, user access rates)

	Ensure regular updates and maintenance of the repository to keep data current and relevant.	MoE, & UNIDO	Ongoing	Govt agencies, Private sector, Research institutions	Maintenance resources, Data update schedule, Staff for ongoing updates and checks	○ Frequency of database updates; Stakeholder feedback on relevance and timeliness of data
Strengthen data collection mechanisms in the cleantech sector.	Develop and implement protocols for data collection across key cleantech domains (e.g., renewable energy, waste management, energy efficiency).	MoE, & UNIDO	Ongoing	Govt agencies, Private sector, Research institutions	Protocol development resources, Subject matter expertise, Training resources	○ # protocols developed; ○ Data coverage across cleantech domains; ○ Compliance rate with protocols
	Train local staff and partners in data collection techniques and tools to ensure accuracy and reliability.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Govt agencies, Private sector, Local partners	Training materials and facilitators, Workshops and seminars	○ # training sessions conducted; ○ Increase in data accuracy and reliability; ○ Stakeholder satisfaction with training
	Use surveys, interviews, and field visits to capture real-time data on cleantech activities.	MoE, & UNIDO	Ongoing	Govt agencies, Private sector, Research institutions, Local communities	Survey tools, Field visit resources, Staff for data collection	○ # surveys and interviews conducted; ○ Real-time data captured; ○ Stakeholder engagement in field visits
	Establish partnerships with universities and research bodies to enhance data collection capabilities.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Universities, Research institutions, Govt agencies, Private sector	Partnership agreements, Research resources, Funding for collaborative data collection	○ # partnerships established; ○ Data quality improvement through partnerships; ○ Publications or reports produced
Ensure data quality and accuracy.	Implement quality control measures such as validation checks and audits to ensure the integrity of data collected.	Ministries of Trade, Science and Technology,	Ongoing	Govt agencies, Private sector, Research institutions	Quality control tools, Audit staff,	○ Frequency of audits conducted; ○ # data inconsistencies identified and corrected;

		UNIDO, and IHLS			Regular data validation schedule	○ Data integrity improvements
	Develop guidelines and standards for data entry and reporting to minimize inconsistencies and errors.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Govt agencies, Private sector, Research institutions	Development of guidelines, Stakeholder consultation, Document creation and distribution	○ # guidelines developed; ○ Adoption rate of guidelines by stakeholders; ○ Reduction in data inconsistencies
	Conduct regular assessments and reviews of data accuracy, reliability, and completeness.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Govt agencies, Private sector, Research institutions	Assessment resources, Review schedule, Tools for measuring data quality	○ Frequency of assessments; ○ % data deemed accurate and reliable; ○ Stakeholder feedback on data completeness
	Provide training programs on best practices for data management for stakeholders in the cleantech space.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Govt agencies, Private sector, Research institutions, Data managers	Training materials, Workshop facilitators, Stakeholder engagement resources	○ # training sessions hosted; ○ Increase in stakeholder knowledge on data management; ○ Training program feedback
Promote data sharing and collaboration across sectors.	Create data-sharing agreements between government agencies, research organizations, and private sector firms to facilitate cross-sector collaboration.	Ministries of Trade, Science and Technology, UNIDO, and IHLS	Ongoing	Govt agencies, Private sector, Research institutions, NGOs	Legal and policy frameworks, Data sharing platform, Agreement negotiation teams	○ # data-sharing agreements signed; ○ Frequency of cross-sector data exchange; ○ Collaborative project outcomes
	Develop secure platforms for data exchange that allow stakeholders to share insights and trends related to the cleantech ecosystem.	MoE, & UNIDO	Ongoing	Govt agencies, Private sector, Research institutions, Investors	Platform development, Security measures,	○ Platform launch; ○ # users on the platform; ○ Data sharing frequency among stakeholders

					User engagement tools	
	Organize workshops and meetings to encourage knowledge sharing and leverage data for decision-making.	MoE, & UNIDO	Ongoing	Govt agencies, Private sector, Research institutions, NGOs	Workshop facilitation, Knowledge-sharing materials, Event coordination resources	○ # workshops and meetings organized; ○ Stakeholder participation rate; ○ Knowledge transfer outcomes
	Ensure that all data-sharing practices comply with relevant privacy and intellectual property regulations.	Law Office, & UNIDO,	Ongoing	Govt agencies, Private sector, Research institutions	Legal counsel, Privacy compliance resources, Data protection measures	○ # compliance audits; ○ # data-sharing practices that meet regulations; ○ Stakeholder satisfaction with data privacy practices
KPA 5: Education and Skill Development						
Goal 9: Promoting strong university & training organization partnerships						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Establish cleantech-focused curricula and training programs.	Partner with universities and technical training institutions to develop courses on renewable energy, green technologies, and sustainability.	MoE, UNIDO, and IHL	Ongoing	Universities, TVETs, Govt agencies	Curriculum development funding, Faculty and expert trainers Budget: +/- LSL 500 000	○ # new courses developed; ○ # students enrolled
	Provide funding and resources to establish cleantech-specific research and training centers in universities.	MoE, UNIDO, and IHL	Ongoing	Universities, Govt agencies, Private sector, Research institutions	Capital investment, Research Equipment and staff	○ # cleantech research centers established; ○ Research outputs from centers;

					Budget: +/- LSL 1 000 000	○ Collaboration with private sector
	Integrate industry input to ensure curricula align with market needs and emerging technologies.	MoE and IHL, Private Sectorr & UNIDO	Ongoing	Universities, Private sector, Industry professionals, Students	Industry advisory Boards, Curriculum experts	○ # industry consultations held; ○ % curricula updated based on industry input; ○ Graduate employment rate
	Facilitate internships and apprenticeship opportunities with cleantech companies for students.	MoE and IHL, Private Sectorr & UNIDO	Ongoing	Universities; Cleantech companies; Students, Govt agencies	Internship placement resources, Partnership agreements with companies, Mentorship programs	○ # internships and apprenticeships offered; ○ Employment rate of interns
Facilitate collaborative research and development (R&D) projects.	Create grant programs to support joint research initiatives between universities and cleantech firms.	MoE and IHL, Private Sectorr & UNIDO	Ongoing	Universities, Cleantech companies, Research institutions, Govt agencies	Grant funding, Application process management, M&E frameworks	○ # joint research projects funded; ○ Research outcomes and publications; ○ Industry uptake of research findings
	Encourage collaborative R&D in priority areas such as energy efficiency, waste-to-energy systems, and sustainable agriculture.	MoE and IHL, Private Sectorr & UNIDO	Ongoing	Universities, Research institutions, Private sector, NGOs	Research collaboration platforms, R&D funding, Access to data and field sites for testing	○ # collaborative R&D projects initiated; ○ Innovations or prototypes developed; ○ Publications and patents
	Host annual cleantech research symposiums to showcase collaborative innovations.	Ministries of Energy, Trade, IHL, Private	Ongoing	Universities, Private sector, Govt agencies,	Event management resources,	○ # symposiums hosted; ○ # presentations and innovations showcased;

		Sector & UNIDO		Research institutions	Sponsorship, Logistical costs	○ Stakeholder participation rate
	Develop partnerships with global academic institutions to foster knowledge exchange and technical expertise.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	Ongoing	Universities, Global academic institutions, Student, Govt agencies	Partnership agreements, Funding for international collaborations	○ # partnerships formed; ○ # students and staff involved in exchange programs; ○ Knowledge transfer metrics
Foster industry-academia linkages for knowledge transfer.	Establish university-industry advisory boards to align academic research with private sector needs.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	12 – 24 months	Universities; Private sector, Industry experts, Research institutions	Advisory board formation, Funding for board activities	○ # advisory boards established; ○ Frequency of board meetings; ○ Alignment of research outcomes with industry needs
	Organize networking events and hackathons to connect students and researchers with cleantech entrepreneurs.	UNIDO, Ministries of Energy and Trade & Private Sector	Ongoing	Universities, Private sector, Cleantech entrepreneurs, Students	Sponsorship and funding, Networking platforms for participants	○ # hackathons and networking events organized; ○ # startups and collaborations formed
	Develop co-working spaces or innovation hubs where academia and industry can collaborate on real-world projects.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	24 – 36 months	Universities, Private sector, Cleantech startups, Govt agencies	Funding, Collaboration and partnership agreements	○ # innovation hubs established; ○ # collaborative projects initiated; ○ Co-working space Usage rates
	Facilitate partnerships for prototype testing and commercialization of university-developed cleantech solutions.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	Ongoing	Universities, Private sector, Investors, Research institutions	Prototype development resources, Funding for commercialization, Business development expertise	○ # prototypes tested and commercialized; ○ Partnership agreements for commercialization; ○ Market success of products
Promote community engagement and	Support universities in conducting cleantech awareness campaigns targeting rural and urban communities.	Ministries of Energy, Trade, IHL, Private	Ongoing	Universities; Local communities,	Awareness campaign funding,	○ # campaigns held; ○ Outreach and participation rates;

outreach programs.		Sector & UNIDO		NGOs, Govt agencies	Educational materials	○ Impact assessments of community awareness
	Collaborate with training organizations to deliver hands-on cleantech workshops for marginalized groups.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	Ongoing	Universities, Training organizations, Marginalized groups, NGOs	Workshop facilitation resources, Logistical costs, Educational material	○ # workshops conducted; ○ # represented participants from marginalized groups; ○ Participant skill improvement
	Partner with NGOs and universities to implement community-based cleantech pilot projects.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	Ongoing	Universities; NGOs, Local communities - Govt agencies	Project funding, Partnerships with local communities, Project implementation resources	○ # pilot projects initiated; ○ Community engagement levels; ○ Impact assessments of pilot projects
	Leverage university resources to provide consultancy and advisory services to small businesses adopting cleantech solutions.	Ministries of Energy, Trade, IHL, Private Sector & UNIDO	Ongoing	Universities, MSMEs, Govt agencies, Private sector	Consultancy and advisory staff, Funding	○ # businesses supported; ○ Advisory services provided; ○ Adoption of cleantech solutions
Goal 10: Promoting access to STEM education						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Expand access to STEM education in underserved areas	Establish STEM-focused schools or resource centers in rural and underserved regions.	Ministries of Energy, Trade, Science and Technology, Education, IHL & UNIDO	24 – 36 months	Local communities, Govt agencies, Educational institutions, Students	Infrastructure development, Funding for operations, Curriculum development	○ # STEM schools established; ○ # students enrolled; ○ Student throughput
	Provide scholarships and financial aid for students in marginalized communities to pursue STEM education.	Ministries of Energy, Trade, Science and Technology, Education, IHL & UNIDO	12 – 24 months	Marginalized students, Govt agencies, Educational institutions	Scholarship funds	○ # scholarships awarded; ○ Academic success of scholarship students

	Partner with international organizations to distribute low-cost STEM learning materials and equipment to schools.	MoE & UNIDO	12 – 24 months	International organizations, Local schools, Students	Partnerships with international bodies, learning materials	○ # schools receiving materials; ○ # students benefiting from the materials
	Deploy mobile STEM labs to reach remote areas and offer hands-on learning opportunities.	Ministries of Energy, Trade, Science and Technology, Education, IHL & UNIDO	24 – 36 months	Rural communities, Educational institutions, Govt agencies, Students	Mobile lab vehicles, STEM equipment and learning materials	○ # mobile labs deployed; ○ # remote students reached;
Develop specialized STEM programs targeted at cleantech applications offer scholarships and financial support for students, especially women and rural youth, to pursue stem and cleantech-focused degrees.	Introduce cleantech-focused modules into existing STEM curricula at primary, secondary, and tertiary levels.	Ministries of Energy, Trade, Science and Technology, Education, IHL & UNIDO	12 – 24 months	Educational institutions, Students, Teachers and faculty	Curriculum development, Teacher training and professional development, Educational resources	○ # institutions adopting cleantech module; ○ Improved cleantech-related knowledge
	Create partnerships with cleantech companies to provide mentorship and real-world project experience for STEM students.	Ministries of Energy, Trade, Science and Technology, Education, IHL & UNIDO	Ongoing	Cleantech companies, STEM students, Educational institutions, Teachers	Partnership agreements, Funding for student internships and mentorships	○ # mentorships and internships offered, Student participation rates; ○ Success stories from mentorships and internships
	Design short courses cleantech entrepreneurship focussing for high school and university students.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	12 – 24 months	Educational institutions, Students, Cleantech companies - Govt agencies	Course development resources, Expert instructors	○ # courses developed and offered, ○ # students completing courses; ○ Post-course employment or internship rates
	Collaborate with training institutions to align STEM programs with industry-specific cleantech needs.	Ministries of Energy, Science and Technology,	12 – 24 months	Educational institutions, Cleantech	Partnership agreements, Curriculum	○ # aligned programs; ○ # students completing industry-relevant programs;

		Education, IHL & UNIDO		companies, Students	review and updates	○ Feedback from cleantech employers
Encourage gender equity and inclusion in STEM fields partner with the private sector	Launch outreach campaigns targeting girls and women to promote STEM careers in cleantech.	MoE & UNIDO	Ongoing	Girls and women; Educational institutions, Cleantech companies, Govt agencies	Awareness campaign funding, Promotional materials	○ # outreach campaigns launched; ○ # girls and women reached; ○ Increase in female enrolment in STEM fields
	Provide mentorship programs connecting female students with successful women in STEM professions.	MoE & UNIDO	6 – 12 months	Female students, Women professionals in STEM - Educational institutions	Mentorship program funding, Recruitment of female STEM mentors	○ # female students mentored; ○ # women professionals involved; ○ Career progression of mentored students
	Create inclusive extracurricular STEM activities like coding camps, science fairs, and cleantech innovation challenges.	MoE & UNIDO	Ongoing	Students, Teachers, Educational institutions, Cleantech companies, Communities	Event organization resources, Prizes and incentives, Sponsorships	○ # events organized; ○ Student participation rates ○ # cleantech innovations developed during events
KPA 6: Inclusivity and Equity						
Goal 11: Support for innovation outside of major cities						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Establish cleantech innovation hubs outside Maseru to provide infrastructure, mentorship, and access to resources	Identify strategic locations in rural areas for setting up cleantech innovation hubs.	MoE & UNIDO	3 – 6 months	Rural communities, Local governments, Educational institutions, Entrepreneurs	Geographic mapping & analysis tools, Collaboration with local governments for site selection, Feasibility studies	○ - # identified locations; ○ Selection criteria met; ○ Local community engagement and support

	Provide financial and logistical support to establish innovation centers with co-working spaces and labs.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	24 – 36 months	Rural entrepreneurs, Local governments, NGOs, Private sector	Funding for infrastructure development and Equipment	○ # innovation hubs established; ○ # entrepreneurs using the spaces; ○ Occupancy rates in coworking spaces
	Ensure hubs are equipped with internet connectivity and cleantech-specific tools and equipment.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	24 – 36 months	Rural entrepreneurs; Innovation hubs, Local govts, NGOs	Internet infrastructure, Cleantech tools and equipment, Staff for managing and maintaining the hubs	○ Availability and speed of internet connections; ○ # cleantech tools available
	Collaborate with local governments and NGOs to promote these hubs as focal points for innovation.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	24 – 36 months	Local governments, NGOs, Rural entrepreneurs, Regional development agencies	Partnership agreements, Funding for promotional activities	○ # local partnerships formed; ○ Level of promotion and community awareness; ○ # partnerships secured
Offer grants, subsidies, and tax incentives to encourage entrepreneurs in districts outside Maseru	Create targeted grant programs for cleantech entrepreneurs based outside of major cities	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	6 – 12 months	Rural cleantech entrepreneurs; Local govts, Funding bodies, NGOs	Grant fund allocation, Administration and evaluation resources,	○ # grants awarded; ○ Amount of funding disbursed; ○ # successful projects supported by grants
	Partner with financial institutions to develop microfinance products for rural cleantech startups.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	12 – 24 months	Financial institutions,Rural startups, Local govts - NGOs	Microfinance agreements, Loan product development, Capacity-building programs	○ # loans issued; ○ Amount of financing provided; ○ Loan repayment rates; ○ Growth of microfinanced startups

	Organize innovation competitions in rural areas, offering seed funding as prizes.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	12 – 24 months	Rural entrepreneurs, Local communities, Govt agencies, Cleantech companies	Seed funding for prizes, Event organization resources	○ # competitions held ○ # participants ○ # winning projects receiving seed funding
	Establish a fund specifically for cleantech projects addressing rural challenges.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	Ongoing	Rural cleantech innovators, Local govts, NGOs, Funding bodies	Fund allocation and management, Collaboration with rural stakeholders, M&E resources	○ Amount of funding raised; ○ # projects funded; ○ Impact of funded projects on rural communities
Enhance capacity building and skill development outside of major cities.	Offer training programs on cleantech technologies tailored outside of major cities.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	Ongoing	Rural communities, Vocational training institutions, Cleantech firms	Training materials, Skilled trainers, Transport and logistics	○ # training sessions held; ○ # participants trained; ○ Improvement in skills and knowledge post-training
	Partner with universities and vocational institutions to deliver workshops and certifications outside of major cities.	Ministries of Energy, Science and Technology, Education, IHL & UNIDO	Ongoing	Universities, Vocational institutions, Rural students, Rural communities	Funding for certification programs	○ # workshops delivered; ○ # certifications awarded; ○ Employment or entrepreneurial outcomes of graduates
	Train local trainers to ensure continuity in cleantech knowledge dissemination.	MoE & UNIDO	Ongoing	Local trainers, Rural communities, Educational institutions	Training materials for local trainers, Resources for continued professional development	○ # local trainers trained; ○ # rural beneficiaries taught by local trainers; ○ Ongoing training programs
	Provide rural innovators with access to online learning resources and mentorship programs.	MoE & UNIDO	Ongoing	Rural innovators; Mentors, Online education platforms,	Online learning platforms, Mentorship	○ # online courses accessed; ○ # mentorship sessions held;

				Cleantech companies	program resources -	○ Rural innovator progress and development
Promote partnerships between urban and rural innovators.	Organize networking events to connect urban-based cleantech firms with outside of major cities.	MoE & UNIDO	Ongoing	Urban cleantech firms; Rural entrepreneurs; Local communities	Event organization resources, Transport and logistics for rural participants	○ # networking events held; ○ # rural and urban participants; ○ # partnerships formed during events
	Encourage collaborative projects that bring together expertise from both urban and rural areas.	MoE & UNIDO	Ongoing	Urban and rural entrepreneurs, Local communities, Cleantech companies	Project collaboration frameworks - Cross-region funding	○ # collaborative projects launched; ○ # rural and urban participants involved
	Facilitate knowledge-sharing sessions where successful urban cleantech initiatives can inspire rural adaptations.	MoE & UNIDO	Ongoing	Urban cleantech firms, Rural innovators, Knowledge sharing platforms	Facilitators for knowledge-sharing sessions, Funding for outreach activities	○ # knowledge-sharing sessions held; ○ # rural innovators inspired by urban case studies; ○ Adoption of solutions
	Develop government incentives for partnerships that uplift rural cleantech innovation.	MoE & UNIDO	Ongoing	Govt agencies, Rural entrepreneurs, Cleantech firms	Policy development, Incentive funding, Legal and regulatory framework development	○ # partnerships formed due to incentives; ○ # rural cleantech projects supported; ○ Economic impact of incentives
Improve infrastructure and connectivity nationwide to support innovation and business	Invest in renewable energy solutions to power rural cleantech activities.	MoE & UNIDO	12 – 24 months	Rural communities, Cleantech innovators, Govt agencies - NGOs	Investment in renewable energy infrastructure, Funding for rural electrification	○ # renewable energy installations in rural areas; ○ Reduction in energy costs for rural innovators; ○ Increased energy access

operations in the cleantech sector.	Enhance road and transport networks to improve access to markets and resources.	Ministries of Energy and Works & UNIDO	24 – 36 months	Rural communities, Local governments, Cleantech innovators, NGOs	Investment in infrastructure, Transport logistics support	○ Length of improved roads; ○ Increased transport access for rural areas; ○ Reduced delivery times for rural cleantech products
	Provide reliable water and waste management systems to support cleantech prototypes and projects.	Ministries of Energy and Works & UNIDO	24 – 36 months	Rural communities, Cleantech entrepreneurs, Local govts - NGOs	Investment in water and waste infrastructure	○ # cleantech projects supported with water and waste management; ○ Improvement in waste management systems in rural areas
	Establish logistics networks to ensure rural innovators can access materials and distribute products efficiently.	Ministries of Energy and Works, & UNIDO	Ongoing	Rural entrepreneurs, Local govts, Logistics companies	Investment in logistics infrastructure, Partnerships with logistics firms	○ # logistics routes established; ○ Reduced transportation costs for rural innovators; ○ Increased product distribution
Promote Local Solutions for Rural Challenges	Encourage innovation tailored to address rural-specific needs, such as off-grid energy systems and sustainable agriculture.	MoE & UNIDO	Ongoing	Rural innovators, Agricultural sector, Cleantech companies - Govt agencies	Investment in R&D, Support for rural agricultural and energy innovation	○ # rural-specific cleantech innovations developed; ○ Adoption rate of rural innovations; ○ Impact on rural communities
	Support pilot projects for cleantech solutions that demonstrate impact in rural contexts.	MoE & UNIDO	Ongoing	Rural innovators, Govt agencies - Cleantech companies, NGOs	Pilot project funding, Partnerships with rural stakeholders	○ #pilot projects launched; ○ Success rates of pilot projects; ○ Replication of successful projects in other areas
	Develop a database of rural cleantech projects to document and replicate successful innovations.	MoE & UNIDO	24 – 36 months	Rural entrepreneurs, Govt agencies, NGOs - Cleantech companies	Database development, Data collection & management tools	○ # projects documented; ○ # successful innovations replicated

	Provide platforms (e.g., exhibitions or online showcases) to highlight rural innovations and attract investors.	MoE & UNIDO	Ongoing	Rural innovators, Investors, Cleantech companies, Govt agencies	Exhibition setup and logistics, Online platform development	○ # rural innovations showcased; ○ # investors engaged; ○ Amount of funding raised through showcases
	Organize local competitions and hackathons focused on rural innovation in cleantech, encouraging individuals and communities to propose and develop sustainable solutions relevant to their context.	MoE & UNIDO	Ongoing	Rural innovators, Local communities, Cleantech firms, Govt agencies	Competition organization resources, Prize funds	○ # competitions organized; ○ # participants from rural areas; ○ # solutions developed and adopted
Goal 12: Showcasing or spotlighting female/young innovators						
Objectives	***Actions***	***Implementation lead***	***Completion & timing***	***Stakeholder impact***	***Resource needs***	***Measures (progress indicators & outcomes***
Organize Annual Cleantech Innovation Competitions Focused on Women and Youth.	Develop a cleantech competition exclusively for Women and youth innovators with monetary awards and incubation opportunities.	MoE & UNIDO	Ongoing	Women & young cleantech innovators, Local businesses, NGOs, Govt agencies	Funding for awards & prizes Budget: +/- LSL 1 000 000 per annum	○ # Women and youth innovators engaged; ○ Amount of funding awarded
	Partner with local businesses, universities, and NGOs to sponsor and promote the competition.	MoE & UNIDO	Ongoing	Local businesses' Universities – NGOs, women and young innovators	Sponsorship agreements, Marketing and promotional materials	○ # sponsors secured; ○ Amount of sponsorship funds raised; ○ Reach of promotional campaigns
	Showcase competition winners in national media and cleantech forums to amplify visibility.	MoE & UNIDO	Ongoing	Women and young innovators, National media - Cleantech forums, Local govt	Media partnerships, Marketing, Event costs	○ # media features; ○ # cleantech forums attended; ○ Visibility increase in national media
Create a Dedicated Mentorship and	Match Women and youth innovators with experienced cleantech professionals for one-on-one mentoring.	MoE & UNIDO	Ongoing	Women and young innovators, cleantech	Mentorship platform,	○ # mentoring pairs formed ○ # mentoring sessions conducted;

Networking Program for Women and youth Innovators.				professionals, Mentor	Matching resources	○ Mentoring satisfaction rates
	Host networking events to connect them with investors, partners, and industry leaders.	MoE & UNIDO	Ongoing	Women and youth innovators, Investors, Industry leaders, Mentors, Local businesses	Event organization resources, Networking platform	○ # networking events held; ○ # investors and partners engaged; ○ Post-event partnerships formed
	Establish an online platform for continuous interaction, idea exchange, and showcasing innovations.	MoE & UNIDO	12 – 24 months	Women and youth innovators, Online platform providers, Stakeholders in cleantech ecosystem	Online platform development	○ # users registered; ○ # interactions on the platform; ○ # innovations showcased
Facilitate Media Campaigns to Highlight Success Stories of Women and youth innovators in cleantech,	Produce video documentaries and written profiles of successful Women and youth cleantech innovators.	MoE & UNIDO	Ongoing	Women and youth innovators, Media outlets, Public, NGOs, Educational institutions	Video Interview and story development and publication costs	○ # documentaries produced; ○ # profiles published; ○ Audience reached
	Collaborate with government and private media outlets to feature these stories widely.	MoE & UNIDO	Ongoing	Govt agencies, Private media outlets, Women and youth innovators, General public	Media partnership agreements, Advertising and promotional materials	○ # media outlets featuring stories; ○ Increase in public awareness; ○ Media reach & engagement
	Use social media campaigns to target younger demographics and potential role models.	MoE & UNIDO	Ongoing	Female and youth innovators, Social media influencers, Media organizations	Social media marketing funds, Content creation, Social media strategy	○ # social media campaigns run; ○ Engagement rates; ○ # young people reached
Facilitate Access to Industry Events and	Provide scholarships or travel grants for Women and youth innovators to attend regional and global cleantech summits.	MoE & UNIDO	Ongoing	Women and youth innovators, Regional and global summits,	scholarship and grant funding, Travel and	○ # of scholarships and grants awarded;

International Platforms				Cleantech communities	accommodation support	○ # Women and youth innovators attending summits; ○ Post-summit outcomes
	Partner with international organizations to nominate and sponsor Lesotho-based innovators for global awards.	MoE & UNIDO	Ongoing	International organizations, Women and youth innovators, Govt agencies	Partnership with international bodies, sponsorship logistics	○ # global awards nominations; ○ # awards won; ○ Global recognition of Lesotho-based innovators
	Organize local exhibitions where Women and youth innovators can present their work to stakeholders.	MoE & UNIDO	Ongoing	Women and youth innovators, Local stakeholders, Investors, General public	Exhibition space and setup, Event organization funds, Promotion and outreach resources	○ # exhibitions held; ○ # exhibitors and attendees; ○ Stakeholder engagement during exhibitions

Note *: #* represents 'number of'

: Financial estimates were informed by educated assumptions

MONITORING AND EVALUATION

It is in the characteristic nature of the cleantech ecosystem of any economy to have activities/initiatives that cut across several stakeholders. While the strategy paper proposes the establishment of a functional central coordinating body of the cleantech activities in Lesotho, it is expected that the implementation lead for each proposed action serves takes primary responsibility for the implementation of each action. The strategic plan presented above include details of the implementation lead, suggested timelines, stakeholder impact, resource needs and key performance indicators for each of the actions that make up the objectives. The implementation lead will therefore ensure that the resources required for each action are met, the timelines are followed religiously, and the KPIs are delivered as expected.

Monitoring and evaluation of the strategic plan will then reside with the immediate supervisors of the implementation lead, as well as the central coordinating body that would have been put in place. The central coordinating body is best suited in the office of the Minster of Information, Communications, Science, Technology and Innovation, who already relates with the key ministries of the cleantech space, to attain its current mandate of advancing technology, science and innovation. Periodic reports to the central coordinating office by the implementation leads will allow for consistent follow-up and ease monitoring. Evaluations could then be done by the supervisors of the implementation leads and the central coordinating body, to provide a reporting and feedback mechanism that ensures continuous improvement of the implementation process.

RISK MANAGEMENT

The strategic plan stated above is the most comprehensive and straightforward plan that has been put in place to develop the cleantech ecosystem of Lesotho. However, the strategic plan is exposed to a number of risks that needs to be mitigated in order to optimise its gains. The potential risks and mitigation strategies are presented below:

Table 4: Potential Risks and Mitigation Strategies

	Potential Risks	Likelihood	Impact	Mitigation Strategy
1	Limited stakeholder buy-in	Medium	High	Conduct stakeholder engagement workshops to ensure alignment and shared goals that ignite commitment.
2	Insufficient funding for implementation	High	High	Secure multi-source funding, including public-private partnerships and grants.
3	Overlapping or unclear roles among stakeholders.	medium	Low	Agree on specific officer(s) in charge of each of the actions
4	Delayed policy adoption	High	High	Promote advocacy groups and civil societies to expedite policy discussions and approvals.
5	Resistance to operational changes	Low	Medium	Need for training and sensitization campaigns to ease transitions.
6	Lack of technical capacity to implement some	High	High	Partner with international organizations to provide technical assistance.

	aspects of the strategic plan			
7	Monitoring and evaluation challenges	Medium	Medium	Pay attention to the monitoring and evaluation frameworks and evaluate KPIs.
8	External economic and political pressures	Medium	Medium	Legalize the coordinating body and initiatives so as to reduce exposure to abuse or political pressures

COMMUNICATION AND OUTREACH

The strategic plan is only as relevant as the recognition it gets from the public and policy space of Lesotho. There is need to ensure that the strategic paper is adopted by the government and conscious efforts put in place to implement it. The government via the Department of energy alongside other key ministries and stakeholders have been fully involved in the development process of the strategy paper. It is expected that it owns the strategic paper and considers it a valuable working document to develop the cleantech ecosystem of Lesotho.

Beyond this, there is need to carry out massive advocacy campaigns on the existence of the strategy paper and the need for all actors to come together to abide to this strategic plan. The need for such a vibrant communication and outreach cannot be over-emphasised. It will increase awareness and buy-in of stakeholders, mobilize resources, facilitate future collaboration, educate stakeholders on the benefits of cleantech, promote support of the strategic paper, encourage community participation and ensures that stakeholders and the public hold implementers accountable.

A vibrant communication and outreach could be carried out via workshops, symposiums, business/trade fairs, television programs or presentations, radio jingles, posters on websites of key ministries as well as using attractive posters on the social media platforms of the key stakeholders. Established bodies such as the private sector foundation, the Energy sector coordination forum network, and the water sector coordination forum network could also be reached, in order to snow ball the advocacy to all the members or groups in their respective networks.