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EVI-SICEE-RESEARCH BRIEF-19

Rethinking Support Systems for Clean Energy Enterprises in Kenya for Innovation, Inclusion and Collaboration

OCTOBER 2026

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Design and layout by Peter Ongalo







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Key messages

- Youth and women are increasingly being recognized as beneficiaries, entrepreneurs, innovators, and active drivers of change within the clean energy transition process.
- Clean energy enterprises are playing an important role in strengthening livelihoods, reducing inequalities, supporting local innovation ecosystems, and advancing Kenya's pathway toward inclusive and sustainable development.
- Regulatory barriers within the clean energy ecosystem are often shaped by limited awareness, weak institutional coordination, and broader socio-economic inequalities that disproportionately affect women and youth entrepreneurs.

Introduction

Kenya has progressively positioned itself as one of Africa's leading countries in renewable energy development and clean energy innovation. Over the years, the country has made notable progress in expanding access to renewable energy technologies such as solar power, clean cooking solutions, mini-grids, and bioenergy systems. This progress has been driven by a combination of government commitment, private sector investment, donor support, and growing public awareness of the need for sustainable energy transitions. Across urban and rural areas, clean energy enterprises are emerging not only as businesses but also as important contributors to livelihoods, environmental sustainability, climate resilience, and social transformation.

According to the International Energy Agency (IEA), IRENA (2024) and the World Bank (2024), in the Energy Progress Report 2024, decentralized renewable energy systems, particularly solar technologies and clean cooking solutions, have significant potential to improve energy access while creating local economic opportunities. The clean energy sector in Kenya has progressively been recognized as a key pathway for addressing interconnected development challenges including unemployment, energy poverty, environmental degradation, and gender inequality. This has contributed to the growth of youth-led enterprises, women-led distribution networks, community-based energy initiatives, and innovation-driven startups operating within the clean energy ecosystem.

Motivated by this growing potential, this brief seeks to examine the existing support systems for clean energy enterprises in Kenya, highlight the key opportunities and challenges affecting innovation, inclusion and collaboration, and provide practical recommendations for strengthening the ecosystem to enable enterprises, particularly youth- and women-led businesses, to innovate, grow and contribute meaningfully to a sustainable clean energy transition.

Methodology and Source of Insights

This article draws on insights generated through three workshops conducted during the implementation of the EVI-SICEE project in 2025/2026, held in Homa Bay, Embu and Nairobi counties. Presenting a synthesis of the ideas, experiences and perspectives shared across the three events, rather than the findings of a single workshop or individual participant. The discussions brought together a diverse group of actors within Kenya's clean energy ecosystem, including clean energy entrepreneurs, distributors, fabricators, government representatives, implementing partners and other sector stakeholders. The analysis draws on both written and oral contributions made during the workshops, including formal presentations and discussions, informal conversations, participant reflections and testimonials shared during the events. These contributions were reviewed collectively to identify recurring themes, common challenges, opportunities and areas of convergence across the three workshops. The emerging themes form the basis of the discussions presented in this article, particularly around the policy and institutional environment, regulatory barriers, enterprise development, inclusion, collaboration and the need to strengthen support systems for clean energy enterprises in Kenya.

Growing Policy and Institutional Support for the Sector

Recent years have also seen a rising momentum in policy reforms and institutional support aimed at strengthening the sector. The Government of Kenya has continued to develop and revise energy policies, renewable energy strategies, clean cooking roadmaps, and climate action plans aligned with broader national and continental development goals such as Kenya Vision 2030 and Agenda 2063. These frameworks emphasize inclusive growth, industrialization, green development, and the role of science, technology, and innovation in driving sustainable development.

At the same time, non-governmental organizations, innovation hubs, development partners, universities, and private sector actors are gradually investing in entrepreneurship support, incubation programmes, financing mechanisms, and capacity-building initiatives for clean energy enterprises. Organizations working in the sector are now paying closer attention to inclusivity, particularly the participation of women and youth who have historically faced structural barriers in accessing finance, markets, technical training, and ownership opportunities. There has been a growing shift from viewing women and youth merely as beneficiaries of clean energy programmes to recognizing them as entrepreneurs, innovators, and active agents of change within the energy transition process.

Clean Energy Enterprises as Drivers of Social Transformation

Literature on sustainable energy transitions further highlights that successful clean energy ecosystems depend not only on technological advancement but also on enabling social, institutional, and policy environments. Scholars such as Frank W. Geels (2022) emphasize that transitions toward sustainable systems require coordinated interactions between governments, markets, research institutions, communities, and innovation actors. Similarly, research on inclusive innovation in Africa argues that supporting small enterprises and local innovators is critical for ensuring that technological transitions respond to local needs and generate broad-based socio-economic benefits(Hooli, Nkonoki and Leppänen, 2024).

Despite these positive developments and growing optimism within the sector, many clean energy enterprises in Kenya, especially startups and small and medium-sized enterprises (SMEs), continue to encounter regulatory and institutional barriers that affect their ability to grow, compete, and scale sustainably. These barriers include complex licensing requirements, inconsistent policy implementation, taxation challenges, standards and certification costs, and limited regulatory support tailored to small enterprises and emerging innovators(IEA, 2025; Ministry of Energy and Petroleum, 2024). Such challenges often disproportionately affect women- and youth-led enterprises that already operate within constrained economic and social environments.

Understanding these barriers is important not only from an economic perspective but also from a broader social development lens. Clean energy enterprises are now becoming spaces where issues of inclusion, employment, innovation, sustainability, and empowerment intersect. Addressing regulatory barriers, therefore, has implications beyond business performance; it contributes to strengthening livelihoods, reducing inequalities, supporting local innovation ecosystems, and accelerating Kenya's transition.

Key Opportunities for Clean Energy Enterprises in Kenya

i.Strong Government Commitment and a Growing Clean Energy Market

Kenya has significant opportunities to position clean energy as a driver of economic transformation, supported by strong political commitment. During the 80th United Nations General Assembly (UNGA) in September 2025, the president highlighted Kenya's leadership in climate action and noted that 93% of Kenya's electricity comes from renewable sources, with investments expanding into e-mobility, climate-smart agriculture and green manufacturing.

Kenya's 2025–2030 Energy Compact further commits the country to universal electricity and clean-cooking access and to moving towards a fully clean-energy power system by 2030, creating a substantial and growing market for private-sector participation.

ii.Huge Opportunity in Off-Grid Energy and Underserved Markets: The continuing energy-access gap presents a major opportunity for enterprises developing decentralised and off-grid solutions. The Kenya Off-Grid Solar Access Project (KOSAP), implemented by the Ministry of Energy and Petroleum in partnership with Kenya Power and REREC, targets 14 underserved counties and includes plans for 120 mini-grids, 250,000 standalone solar systems, 387 electrified public facilities and 380 solar-powered community boreholes. This creates opportunities for large energy companies and also for local enterprises involved in installation, distribution, maintenance, after-sales services, digital solutions, financing, productive-use technologies and community-level energy services.

iii.Clean Cooking as a Major Emerging Enterprise Opportunity: Clean cooking represents one of the largest untapped markets in Kenya. Although Kenya has made progress in clean-cooking access from 10% in 2013 to 31% in 2023, the IEA reports that 69% of households still relied on polluting fuels in 2023, particularly in rural areas. The Government has responded by launching various policies ans strategies opening significant opportunities for enterprises working in improved cookstoves, LPG, electric cooking, ethanol, biogas, solar cooking, appliance distribution, financing, and related services.

iv.Increasing Financing, Partnerships and Investment Opportunities: The clean-energy sector is increasingly becoming an investment priority, creating opportunities for Kenyan enterprises to move beyond traditional grant-based support towards commercial finance, partnerships and investment. Kenya's National Energy Compact estimates that USD 19.1 billion in financing will be required by 2030 to achieve its energy objectives, while the country is actively working to make its development priorities more investable and establish credible project pipelines.

These developments reveal that Kenya's clean energy sector is a policy priority and an expanding economic opportunity. The combination of ambitious energy-access targets, the unmet demand, public investment programmes, strong political commitment, growing interest from investors and development partners provides a favourable environment for clean energy enterprises to innovate, create jobs and scale. The key challenge is therefore ensuring that local enterprises, particularly youth- and women-led businesses, are sufficiently supported, connected and prepared to access and benefit from these emerging opportunities.

Understanding Regulatory Barriers in the Clean Energy Ecosystem: Perspective from stakeholders

Discussions during the mentioned event (Box1) highlighted that while the clean energy sector in Kenya and across the region continues to grow, enterprises still face several regulatory and structural barriers that affect their ability to operate, expand, and sustain their businesses. Participants emphasized that many of these challenges are not only technical or policy-related, but are also shaped by awareness gaps, institutional coordination issues, and broader socio-economic inequalities affecting women and youth entrepreneurs.

i.Licensing and Compliance Challenges

Complex licensing and compliance procedures continue to pose significant challenges for clean energy enterprises, particularly startups and small businesses. Many entrepreneurs perceive licensing processes as expensive, complicated, and unclear, which discourages formalization and compliance. In many cases, the issue is not necessarily the absence of information, but rather the limited accessibility, interpretation, and understanding of regulatory requirements.

Fear of the unknown also emerged as a major concern, especially among informal enterprises that are uncertain about procedures, penalties, costs, and the implications of non-compliance. As a result, some enterprises delay registration or operate informally despite their willingness to grow and expand within the sector.

To address these challenges, participants emphasized the importance of demystifying regulatory processes through continuous awareness creation, simplified communication, and practical guidance tailored to entrepreneurs. Strengthening outreach programmes, advisory support systems, and information-sharing platforms was identified as critical in helping enterprises better understand compliance requirements and the benefits associated with formalization. Discussions further noted that many entrepreneurs are willing to comply once the processes are clearly explained and made more accessible. Enhancing regulatory support in a more user-friendly and inclusive manner would therefore encourage compliance, build trust, and support the growth of sustainable clean energy enterprises.

ii. Taxation and Certification Barriers

Taxation, certification, and standards compliance continue to present challenges for many clean energy enterprises, particularly startups and SMEs with limited financial capacity. Although the government has made notable progress through policy reforms, incentives, and standards development, enterprises still face difficulties associated with certification costs, import procedures, and compliance requirements. These costs can be burdensome for small businesses attempting to enter or expand within the clean energy market. In some cases, enterprises struggle to balance the need for compliance with the realities of operating within constrained financial environments.

To address these challenges, discussions emphasized the importance of strengthening engagement between regulators and enterprises to ensure that taxation and certification processes remain supportive, practical, and responsive to the realities facing small businesses. There was also recognition that compliance plays a critical role in ensuring product quality, consumer trust, and long-term business sustainability. Entrepreneurs were therefore encouraged to view compliance not only as a regulatory obligation but also as an important step toward building credible and competitive enterprises. Increased awareness creation, technical guidance, and supportive compliance mechanisms were identified as important strategies for helping enterprises navigate certification and taxation requirements more effectively.

iii.Institutional Coordination Gaps

Fragmentation among institutions supporting the clean energy ecosystem emerged as another key challenge during workshop discussions. Participants observed that government agencies, NGOs, incubators, financiers, researchers, and private sector actors often operate independently with limited coordination. This can lead to duplication of efforts, inconsistent messaging, weak referral systems, and missed opportunities for enterprise support and learning. The lack of coordinated action may also create confusion for entrepreneurs seeking guidance, financing, or technical assistance within the sector.

To strengthen the ecosystem, participants emphasized the importance of collaboration, networking, and stronger institutional partnerships. It was recognized that no single institution can adequately address the complex challenges facing clean energy enterprises alone. Greater coordination between policymakers, financial institutions, incubation hubs, research organizations, and entrepreneurs was therefore viewed as essential for improving enterprise support systems and strengthening sector growth. Networking platforms, regional workshops, and knowledge-sharing forums were particularly recommended as important spaces for exchanging experiences, aligning interventions, and collectively identifying solutions to shared challenges.

iv.Structural Barriers Affecting Women Entrepreneurs

Women entrepreneurs within the clean energy sector continue to face structural barriers that limit their participation, growth, and leadership opportunities. Despite increasing involvement in clean energy businesses, many women still experience unequal access to finance, productive assets, technical training, professional networks, and decision-making spaces. Cultural norms and social expectations also continue to influence women's mobility, confidence, ownership opportunities, and ability to scale their enterprises. These barriers often place women entrepreneurs at a disadvantage compared to their male counterparts, particularly in sectors perceived to be technical or male-dominated.

Discussions brought out the need for more intentional, inclusive support systems that directly address the realities faced by women entrepreneurs. Proposed solutions included targeted financing opportunities, mentorship programmes, flexible and accessible training, and the creation of safer, more supportive business environments. Discussions also emphasized the importance of recognizing women not only as consumers of clean energy technologies, but also as innovators, distributors, employers, and enterprise leaders capable of driving social and economic transformation within their communities.

v.Youth and Women-Led Innovation and Informal Enterprise financing and support gaps

Youth and women's participation in clean energy entrepreneurship is constantly expanding, notably in areas like innovation, digital solutions, installation services, sales, and community-based businesses. However, many youth- and women-led businesses continue to operate within informal systems characterized by limited access to capital, unstable markets, low visibility, and weak institutional support. Entrepreneurs often face difficulties transitioning from small informal activities into structured and scalable enterprises, which limits their long-term growth potential within the clean energy sector. For women entrepreneurs, these challenges are further compounded by unequal access to productive assets, networks, mobility opportunities, and decision-making spaces.

Limited access to financing, lack of collateral, inadequate mentorship, and low investor confidence were identified as major barriers affecting youth- and women-led enterprises. In many cases, entrepreneurs possess strong ideas, creativity, and entrepreneurial energy but lack the business development support necessary to commercialize and sustain their innovations. To address these challenges, participants emphasized the need for supportive and inclusive ecosystems that nurture innovation beyond the startup stage. This includes strengthening incubation support, mentorship programmes, market linkages, entrepreneurship training, networking opportunities, and policy inclusion tailored to the realities of youth and women entrepreneurs. Supporting youth- and women-led enterprises was viewed not only as important for economic growth, but also as a critical pathway for addressing unemployment, promoting inclusive innovation, empowering communities, and strengthening the long-term sustainability of the clean energy sector.

Moving from Fragmentation to an Innovative, Inclusive, and Sustainable Future of Clean Energy in Kenya

Despite the growing potential of the clean energy sector in Kenya, participants noted that innovation and enterprise development efforts often remain fragmented. Counties, organizations, enterprises, research institutions, incubators, and development actors frequently operate in silos, implementing isolated interventions with limited coordination or shared learning. This fragmentation can weaken the overall impact of clean energy initiatives by creating duplication of efforts, limiting knowledge exchange, and reducing opportunities for scaling successful innovations. In many cases, local enterprises, particularly small and emerging businesses, struggle to access broader innovation ecosystems, financing opportunities, markets, technical support, and collaborative networks that are necessary for long-term growth and sustainability.

Discussions during the workshop emphasized the importance of adopting more inclusive innovation approaches that bring together diverse actors within the clean energy ecosystem. Participants highlighted the need for counties, organizations, enterprises, financial institutions, researchers, and community actors to move beyond isolated operations and work collaboratively toward shared goals. Strengthening partnerships, regional networks, and knowledge-sharing platforms was viewed as essential for supporting local enterprises and accelerating sustainable impact. Collaborative approaches can help enterprises learn from one another, share resources and experiences, improve coordination, and collectively address common challenges affecting the sector.

There was also strong recognition that inclusive innovation should intentionally create opportunities for women, youth, and local entrepreneurs who are often excluded from mainstream innovation systems. Supporting local enterprises through incubation programmes, mentorship, market linkages, financing opportunities, and policy support can strengthen grassroots innovation and ensure that clean energy transitions generate meaningful socio-economic benefits at the community level. Participants stressed that the future of clean energy in Kenya will depend not only on technological advancement but also on the ability of institutions and stakeholders to build connected, inclusive, and collaborative ecosystems capable of creating lasting impact together.

Conclusion

Kenya's clean energy sector is gaining traction thanks to increased policy attention, institutional reforms, and a diversified community of businesses that are contributing to social and economic transformation. However, the debates underline that the presence of legislation and support institutions does not always result in an enabling climate for clean energy firms. Regulatory and compliance issues, taxes and certification requirements, institutional coordination gaps, and structural hurdles continue to impact the ability of firms, particularly women- and youth-led and informal businesses, to innovate, access opportunities, and grow sustainably.

As a result, the conversations highlight the need to rethink existing support mechanisms beyond program and policy delivery in order to create a more integrated, inclusive, and enterprise-responsive ecosystem. Greater collaboration among the government, counties, research institutions, financial institutions, private-sector actors, incubators, and businesses can minimise fragmentation, enhance access to information and resources, and forge stronger pathways from innovation to commercialisation and scale. At the same time, support systems must understand the varied realities and capacities of women, youth, and informal firms, and guarantee that legislative, financial, and institutional frameworks do not accidentally exclude them.

Strengthening Kenya’s clean energy sector will require a shift from fragmented interventions towards connected and collaborative support systems that enable enterprises to innovate, comply, access markets and finance, and grow sustainably. Such an approach can ensure that the clean energy transition is not only technologically driven but also inclusive, locally grounded and capable of generating meaningful social and economic transformation.

Recommendations

1. Strengthen coordination and integration of clean energy support systems: Government agencies, counties, research institutions, incubators, financial institutions, private-sector actors, and development partners should improve coordination and information-sharing procedures to try to eliminate fragmented initiatives and duplication of efforts. A more integrated ecosystem would allow businesses to access complementary support, such as technical assistance, incubation, funding, markets, research, and policy information, via clearer and more coordinated channels.

2. Simplify and make regulatory, taxes, and certification systems more responsive to the enterprise: Relevant institutions should examine and simplify licensing, taxation, certification, and compliance regulations, especially for small, emerging, young, and women-led businesses. Simplified procedures, clearer information, affordable certification pathways, and appropriate support for informal firms transitioning into formal systems could lower barriers to entry and allow more businesses to participate meaningfully in the clean energy market.

3. Develop more inclusive and targeted support for women, youth, and local businesses: Support programs should focus on broad participation targets and provide personalised assistance that addresses the unique needs and limits of women, adolescents, and informal firms. This should offer accessible incubation and mentorship, technical and business skills, finance options, market connections, networking, and guidance through regulatory and certification procedures. This approach would boost grassroots innovation and assist ensure that the benefits of Kenya's clean energy transition are more equitably distributed.

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