TaTEDO-SUSTAINABLE ENERGY SERVICE ORGANIZATION-(TaTEDO-SESO)

Report of Assessment of Challenges faced by Small & Medium Enterprises in the Sustainable Energy Sector in Accessing Financial Services in Tanzania

Table of Contents

LIST OF ABBREVIATIONS

BRELA	Business Registration and Licensing Agency
CRDB	Cooperative Rural Development Bank
DFIs	Development Finance Institutions
EISO	Entrepreneurship and Innovation Support Organizations
MFI	Microfinance Institutions
MSMEs	Micro, Small, and Medium Enterprises
PPP	Public Private Partnership
REA	Rural Energy Agency
REAs	Rural Energy Agencies
REIF	Renewable Energy Investment Facility
REEEP	Renewable Energy and Energy Efficiency Partnership
RBF	Results-Based Financing
SACCO	Savings and Credit Cooperative Organization
SME	Small and Medium-sized Enterprise
TANESCO	Tanzania Electric Supply Company Limited
TAMFI	Tanzania Association of Microfinance Institutions

EXECUTIVE SUMMARY

Climate change is serious global challenge threatening humanity and achievement of the local, national and global development plans including the 2030 UN Sustainable Development Goals. Modern energy services are a powerful engine of economic and social development. It is a foundation stone of the modern industrial economy and provides an essential ingredient for almost all human activities: it provides services for cooking and space/water heating, lighting, health, food production and storage, education, mineral extraction, industrial production and transportation.

However, while essential, traditional energy is among the major contributors of the GhG emissions thus necessitating a shift towards clean and modern energy services including renewable energy services. Small and Medium Enterprises are *central pieces* in this transition, particularly in developing regions, where they provide important off-grid energy solutions which is paramount for the attainment of SDGs and development frameworks. Despite their importance, SMEs in developing countries face significant challenges in accessing the needed finance to relevant energy projects and programs. Data show that approximately 40% of formal SMEs in developing countries including Tanzania face significant unmet financial needs.

This study aimed at (1) Mapping out financing opportunities available to sustainable energy SMEs in Tanzania, (2) Identifying challenges these SMEs face in accessing financing and (3) Proposing recommendations to mitigate these challenges. The research employed a comprehensive desk review of the literature-both grey and scientific literature. This entailed analysis of existing studies, reports, and data from various stakeholders, including government sources, research and academia, and publicly available reports from financial institutions.

Based on the above approach, the report identifies various financing opportunities for sustainable energy SMEs, including grants, concessional loans, equity financing, performance-based financing, carbon financing etc. It also identifies challenges facing energy SMEs in accessing/securing available finances including inefficiencies and constraints within SMEs, weakness in support systems, challenges in the market of sustainable energy products as well as policy and regulatory barriers.

Based on the above, the report makes the below recommendations to enhance access to finance for sustainable energy SMEs in Tanzania:

- Improve access to information and networks regarding financial products.
- Develop tailored financial support programs for energy SMEs at various stages including technical capacity in preparation of competitive bids and technical proposals.
- Foster partnerships between financial institutions and government bodies to offer tailored financial products for sustainable energy SMEs.
- Advocate for policy reforms that create a more favourable environment for financing of energy SMEs.
- Develop a dedicated national program for supporting energy SMEs to access competitive funding schemes. This may include, provision of guarantee and matching grants.

The report concludes with a solid position that while financing opportunities for sustainable energy SMEs in Tanzania exist, significant challenges equally exist and these must be addressed immediately. A collaborative, ecosystem-based approach involving multiple stakeholders is essential to improve the financial landscape and support the growth of these enterprises, which ultimately contribute to the energy security, economic growth and job creation in Tanzania.

1 INTRODUCTION

1.1 BACKGROUND

Climate change, driven by global warming, is one of the most significant global challenges of the 21st century. Since the mid-20th century, human activities, particularly in meeting its energy needs by burning fossil fuels, have accelerated the release of greenhouse gases (GHGs) such as carbon dioxide, methane, and nitrous oxide. The Intergovernmental Panel on Climate Change (IPCC), warns of the increasing frequency and intensity of climatic effects, leading to severe impacts on ecosystems, human health, and economies worldwide. The energy transition is crucial for mitigating climate change together with realizing sustainable development whereby its realization requires the involvement of all stakeholders including governments, private sector players, and Small and Medium Enterprises (SMEs). Small and Medium Enterprises (SMEs) are widely recognized as crucial drivers of economic growth, innovation, and job creation in global economies especially in developing countries including Tanzania. SMEs make up around 90% of businesses worldwide and provide over 50% of global employment. In developing and emerging economies, SMEs contribute up to 40% of national income (GDP), and this figure is even higher when accounting for the informal sector. Despite their critical role, access to finance remains one of the biggest barriers to SME's growth where it is the second most cited challenge for SMEs in emerging[1]economy. According to the International Finance Corporation (IFC), about 40% of formal micro, small, and medium enterprises (MSMEs) in developing countries have unmet financing needs. Furthermore, nearly 70% of SMEs do not access external financing from financial institutions, while another 15% are underfinanced. SMEs in the least-developed regions—such as Sub-Saharan Africa, East Asia the Pacific, and South Asia—face particularly significant obstacles in obtaining financing. These constraints severely limit their potential to scale and innovate[2].

1 World Bank(2019, October 16). Small and Medium Enterprises (SMEs) Finance. Retrieved from World Bank Group: https://www.worldbank.org/en/topic/smefinance#:~:text=SMEs%20account%20for%20the%20majority%20of%20businesses%20worldwide,40%25%20of%20national%20income%20%28GDP%29%20in%20emerging%20economies.

[2] World Bank. (2018). IMPROVING ACCESS TO FINANCE FOR SMES (Report No. 129283). World Bank Group. Retrieved from https://documents1.worldbank.org/curated/en/316871533711048308/pdf/129283-WP-PUBLIC-improving-access-to-finance-for-SMEs.pdf

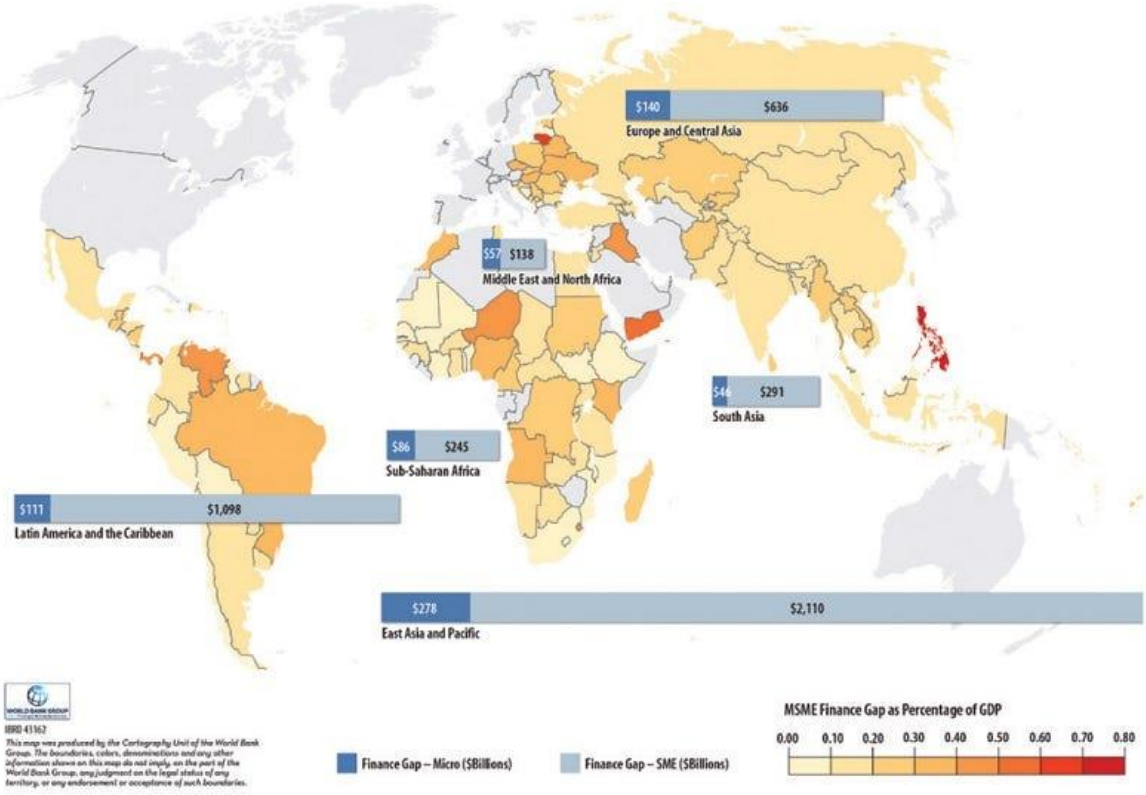

Figure 01: Formal MSME Finance Gap in Developing Countries

SMEs in the sustainable energy sector are pivotal in accelerating the global transition to renewable energy. These enterprises are often at the forefront of innovation, creating and deploying technologies that help reduce carbon emissions and improve energy access. In developing regions, where access to energy is limited, sustainable energy SMEs are vital in providing off-grid solutions such as solar home systems, mini and micro-grids, and clean cooking technologies. By doing so, they help reduce energy poverty while contributing to efforts on the achievement of SDG 7 (Affordable and Clean Energy). In Tanzania, these challenges are widely evident as described in sections that follow below.

1.2 OBJECTIVE OF THE STUDY.

TaTEDO-Sustainable Energy Services Organization (TaTEDO-SESO) in partnership with WWF-Tanzania are implementing the Africa Energy Transition (AET) program, which aims to shift investment from coal to renewable energy across Tanzania, Kenya, Madagascar, and China, while promoting cross-border energy trade within the EAC and SADC and involving SMEs in this transition.

As part of this project, implementing partners seek to identify the specific challenges facing Sustainable energy SMEs in accessing the needed finance in Tanzania and to propose recommendations to help mitigate those challenges. The overall objective has been translated to the following specific objectives of this study which are:

1. Mapping out types of financing opportunities available to Sustainable energy SMEs in Tanzania

2. Identifying challenges facing Sustainable energy SMEs in accessing finance from available opportunities in Tanzania
3. Recommend solutions to address the challenges above for inaccessibility of finance by sustainable energy SMEs.

2 METHODOLOGY

2.1 RESEARCH DESIGN

This study employed an in-depth review of literature and desk assessment of approaches for integrating both quantitative and qualitative methods to thoroughly assess the challenges faced by Small and Medium Enterprises (SMEs) in the sustainable energy sector in Tanzania.

The primary data collection method adopted by the study is a comprehensive desk review of existing studies, reports, documents, and databases relevant to clean energy and SMEs in Tanzania's sustainable energy sector. This included reviewing literature on financing challenges and performance metrics for renewable energy SMEs, and analysing data from government sources, financial institutions (including microfinance institutions), and donor organizations to gather insights on financing mechanisms and support available for SMEs. The study further explored online resources to complement and enhance the data gathered from the literature.

To validate findings, the study adopted data triangulation by cross-verifying information from multiple sources. The main sources included academic literature, government report, stakeholder reports (e.g. NGO's and Incubators reports), international organization publications, industry reports, grey literature, new/media articles/reports and other online sources

The recommendations were derived from the lessons learned in terms of needs and best practices as found in both published and grey literature and case studies from Tanzania and other parts of the world.

2.2 SCOPE OF THE STUDY

The scope of the study covered all SMEs engaged in the sustainable energy sub-sector without specification or exclusion of any specific technology. The scope of the undertaken study included;

1. Mapping and analysing financing opportunities including documenting various financial support mechanisms currently available for SMEs in the sustainable energy sector in Tanzania. This includes mapping out public and private financing sources, such as grants, loans, impact funding, and investment opportunities, as well as analysing their accessibility and relevance to the SMEs.
2. Rapid assessment of limitations and challenges inhibiting Sustainable Energy SMEs from accessing financial resources. This assessment analysed existing literature, reports, and data related to financing for sustainable energy initiatives. The analysis looked into systemic, institutional, and market-related challenges and explored potential solutions to improve access to finance for these enterprises.
3. Provision of set of practical recommendations for addressing the challenge of inaccessibility of finance by sustainable energy SMEs.

2.3 LIMITATIONS OF THE METHODOLOGY

While this study aimed to provide a comprehensive assessment of key issues and recommendations of the solutions, certain limitations are likely to have impacted the findings, as follows;

1. The assessment relies heavily on existing literature and secondary data sources (published and grey literature), which may not always provide the most current or complete information regarding the financial landscape for Sustainable Energy SMEs. A good example is the Rural Energy Agency (REA) which has provided a lot of financing windows for green Mini grids, renewable energies and clean cooking in the past 3 years. However, the details on number of energy SMEs that applied and received funding or missed it is not available publicly. The same is true for most of the funding sources including those for GEF and GCF. This information could only be obtained easily from direct consultation with the funding agencies or the applying SMEs, at least.
2. Due to the focus on a wide range of SMEs, the findings may not capture the unique challenges faced by specific type of renewable energy technology or regions within Tanzania, potentially leading to generalized conclusions.
3. Some financial institutions and SMEs may not publicly disclose all relevant information regarding financing opportunities and barriers, leading to potential gaps in data.
4. The financial landscape is continually evolving, and the publicly available information may become outdated quickly as new policies, funding mechanisms, or market conditions emerge.
5. While the desk review will provide valuable insights, a lack of direct engagement with SMEs and financial institutions could limit the depth of understanding of their challenges and needs.

3 FINDINGS AND DISCUSSIONS

In Tanzania, the definition of SMEs is guided by the National Small and Medium Enterprise Development Policy of 2003 whereby; micro-enterprises typically engage up to 4 people, often family members, or have capital of up to Tshs. 5 million, with most operating in the informal sector. Small enterprises are formal businesses with 5 to 49 employees or capital between Tshs. 5 million and Tshs. 200 million. Medium enterprises employ 50 to 99 people or have capital ranging from Tshs. 200 million to Tshs. 800 million. According to Tanzania Startup Ecosystem Status Report 2023[3], startups in the energy sector account for approximately 4.1% of the 673 known startups. Basing on this definition there are multiple sustainable energy SMEs in Tanzania engaged in various aspects of renewable energy services. Table 1 below presents a non-exhaustive summary of active energy SMEs in Tanzania.

Table 1: List of some energy SMEs in Tanzania

S/NO	Enterprise Name	Sustainable Energy Technology of Focus	SME Category
1	Envotec Ltd	Cooking stoves	Small
	Sustainable Energy Enterprise Company Limited (SEECO)	Cooking Stoves	Small
2	Best One Ltd	Contracting Company	Medium
3	Solar Sister Tanzania	Solar Power Products	Medium
4	Millennium Engineers Enterprises Ltd	Renewable energy solutions	Medium
5	Ensol Tanzania Ltd	Solar Power Products	Medium
6	Simu solar	Solar Power Products	Small
7	Resco Tanzania Limited	Solar Minigrid	Small
8	Consumer Choice ltd	Bio-ethanol	Small
9	Kuja na Kushoka Tools Manufacturer Group	Briquettes	Small
10	Chabri Energy Company Ltd	Briquettes	Small
11	Energy Moto Ltd	Biogas	Small
12	Ichi Energies Ltd	Biogas	Small
13	Dobea Energy Company Ltd	solar-wind hybrid mini-grid developer	Medium
14	Claphijo	Solar Dryers	Small
15	Sustainable Energy Services Company (SESCOM)	Electric pressure cooker, electric three-wheeler, solar driers	Medium
16	Millenium Engineers	solar and wind energy technologies	Medium
17	Mkaa Hai ltd	Briquettes	Small
18	Melegreen	Biogas	Medium

[3] Tanzania Startup Association. (2023). Tanzania Startup Ecosystem Status Report 2023. Retrieved from https://tsa.co.tz/storage/documents/ZUGwpnc0fnuWwsa6JN2HzrK0s86nUJGNkP9lT7F.pdf

19	Apollosolar Ltd	Solar technology	Medium
20	Energyplus Ltd	Solar technology	Medium
21	Elico Foundation	Solar,Wind,hydro, Bioethanol	Medium

3.1 MAPPING OUT TYPES OF FINANCING OPPORTUNITIES AVAILABLE TO SUSTAINABLE ENERGY SMES IN TANZANIA

Financing opportunities refer to the various avenues, sources and mechanisms available for obtaining funds to support business operations, projects, and or investments. These opportunities are essential for entrepreneurs and small to medium-sized enterprises (SMEs), seeking capital for various reasons. There are various traditional and innovative financial opportunities globally for sustainable energy SMEs but focusing on those currently available in Tanzania are as follows;

A) Grant Financing

Grant financing is non-repayable funds provided by international agencies, governments, non-governmental organizations (NGOs), Foundations etc to support specific projects or initiatives, often aimed at addressing social, economic, and or environmental challenges. This is the most common type of funding accessed by SMEs in conducting their activities. Grant financing has taken different approaches depending on the donor's intended aim. Below is a recount of some of these financing.

A.1) The Tanzania Clean Cooking Project (TCCP)[4]

It is a US$3.75 million three-year project (2022-2025) that aims to catalyse the clean cooking sector through enhanced private sector participation. It is funded by the Government of Sweden, to support market-based approaches for clean cooking in a number of African countries Tanzania

Accordingly, the initiatives have 3 objectives below:

- Accelerate the adoption of clean cooking solutions in underserved markets.
- Catalyze private sector participation and innovation in clean cooking.
- Strengthen sector coordination and advocate for a conducive policy environment for the clean cooking sector.

The project provides matching grant financing and technical assistance to small and growing businesses working in clean cooking. The financing aims to de-risk companies to venture into underserved markets and enhance the affordability and accessibility of clean cooking solutions for at least 60,000 beneficiary households. The funding arrangements and conditions for accessing the funds are presented in

Table 2 below:

[4] Tanzania Clean Cooking Project (TCCP) - AECF

Table 2: Funding types in TCCP

Type of Fund	Funding Amount	Size of company	Annual Turnover
Catalytic fund	US$ 50,000 to US$ 75,000	Small Companies	annual turnover of US$ 30,000 to US$ 200,000
Growth fund	US$ 100,000 to US$ 400,000	Large Companies	annual turnover greater than US$ 200,000

For both categories, funded companies are required to contribute cash matching funds of:

- 1:0.4 (AECF: investee if male-owned/managed company)
- 1:0.3 (AECF: investee if female-owned/managed company)
- 1:0.3 (AECF: investee if youth-owned/managed company)

A.2) SOARING (Southern African Renewable Energy Investment and Growth)[5]

In partnership with RENAC, REEEP is implementing the Southern African Renewable Energy Investment and Growth (SOARING) programme (2019 to 2023) to address market barriers faced by national development banks and local financial institutions in financing clean energy projects for businesses in agriculture sector. SOARING provides credit enhancement tools, capacity-building, and training on clean energy and climate finance, while also developing a clean energy project pipeline to facilitate funding access. By leveraging blended finance and green finance tools, the programme focused to help unlock local currency financing for SMEs, particularly in rural areas and agricultural value chains in Tanzania, using the existing infrastructure of local financial institutions. SOARING further supports green SMEs and their customers by evaluating key aspects such as supply, demand, and regulatory frameworks for clean energy alternatives, with a focus on off-grid power and agricultural value chains.

A.3) Cook Fund Program[6]

The UNCDF is implementing the Cook Fund Programme, a three-year (2021 to 2024) initiative funded by the European Union (EU) under the Integrated Approach to Sustainable Clean Cooking Solutions Programme in Tanzania and the 11th European Development Fund (EDF). The €17 million programme aims to support Tanzania's climate commitments by increasing access to sustainable clean cooking solutions. Cook Fund seeks to accelerate the market rollout of clean cooking technologies in mainland Tanzania, addressing challenges such as under-capitalization,

[5] SOARING (Southern African Renewable Energy Investment and Growth) | REEEP

[6] CookFund Program Aims to Lessen Tanzania's Climate Change Impact - UN Capital Development Fund (UNCDF)

scalability, and formalization of enterprises involved in the production, importation, and distribution of clean stoves, fuels, and related products. By bridging the gap between early-stage support, equity financing, and concessional/commercial debt, the programme aims to scale modern, clean cooking solutions across the country.

A.4) Direct financial funding provided to organizations following multiple criteria. Globally there are multiple funding opportunities advertised by different organization supporting energy intervention in developing countries like Tanzania whereby organization can apply for funding. Some of the funding opportunities includes call of proposal from U.S. African Development Foundation (USADF) Grants and Charles Mott Foundation.

B) Loan Financing

Loan financing is a repayable financing mechanism whereby the borrowed amount must be repaid with interest over a specified period. Below images show some of the common loan sources in Tanzania categorized based on interest rates.

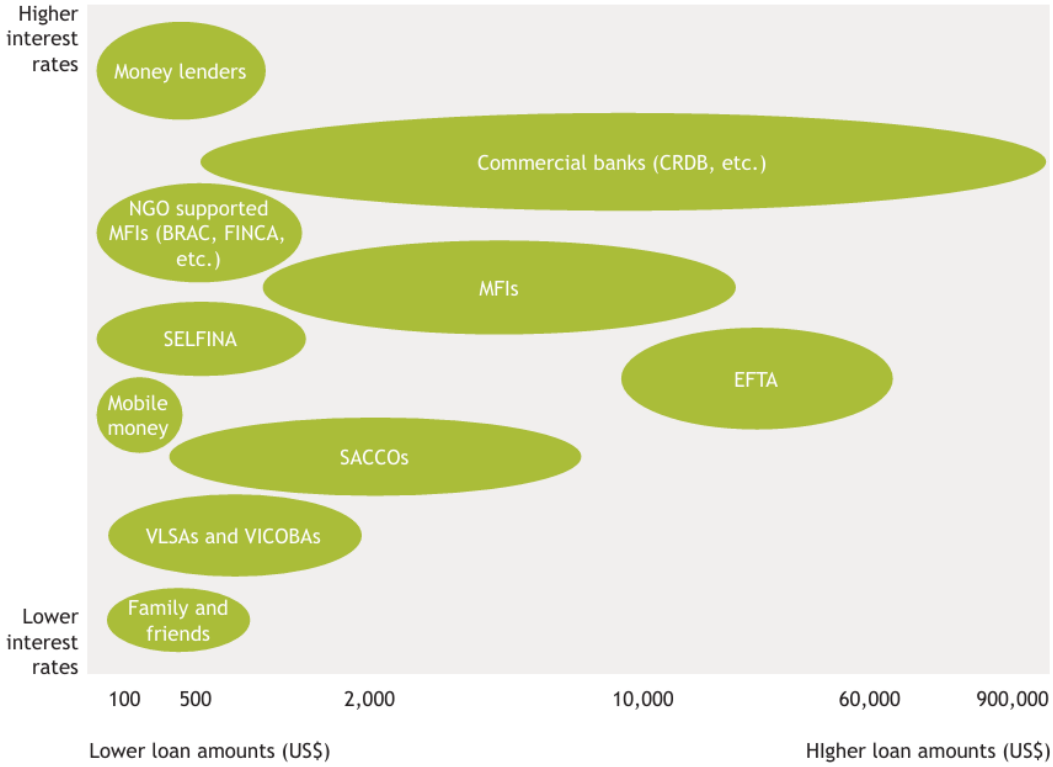

Figure 1: Financial providers in Tanzania by loan amount and interest rate[7]

B.1) Banking Institutions

The commercial banks for many years have provided loans with different loan modalities (i.e. specific characteristics and terms of a loan) and lending modalities (i.e. financial products) offered

[7] Johnstone, K., Perera, N., & Garside, B. (2020). Small business, big demand Facilitating finance for productive uses of energy in Tanzania. Retrieved from https://www.iied.org/sites/default/files/pdfs/2021-02/16681iied.pdf

by different sources. The most common modalities involve secured loans whereby there is a need of collateral as a security.
Some of the banks have developed specific SME financial products such as Stanbic bank and Bank of Africa (BOA) which have a Renewable Energy & Energy Efficiency Loan. These are the loans specifically designed to carter for SMEs and corporate needs of renewable energy and energy efficiency.

Apart from the traditional loans, banks have recently started channelling finance through microfinance institutions (MFIs) and other structures to make capital more accessible and affordable for communities and small businesses. Commercial banks like CRDB have been providing direct loans to Savings and Credit Cooperative Organizations (SACCOs), which then lend to entrepreneurs. Additionally, initiatives like the National Economic Empowerment Council's (NEEC) Entrepreneur Empowerment Fund have leveraged substantial amounts in guarantees to encourage lending, helping to mitigate risks for financial institutions.

Organizations such as Oiko Credit and the National Social Security Fund (NSSF) have also initiated supports to SACCOs with wholesale financing and medium-term loans, although some funds remain underutilized due to limited awareness and appetite of borrowers. These efforts aim to empower entrepreneurs, though there is still untapped potential for financing specifically targeting productive uses of energy (PUE) and equipment. Programs such as those offered by the Small Industries Development Organization (SIDO), in partnership with funding bodies like the East African Development Bank, further support SMEs in acquiring equipment for growth and productivity[8].

B.2) Microfinance Institution
Microfinance institutions are among the major funding sources for SMEs, with prominent ones including international organizations such as FINCA and BRAC, along with local savings and credit cooperatives (SACCOS). These institutions have succeeded in the lower segment of the economy due to their innovative lending methodologies, which differ significantly from those used by commercial banks. Unlike traditional banks, microfinance institutions do not rely heavily on conventional forms of collateral. Instead, they utilize trust-based group lending models as an alternative. Additionally, being localized, these institutions mitigate information asymmetry by having a deep understanding of their members and their communities[9]. Unfortunately, under this scope of this study, the number of sustainable energy SME's funded by these microfinance is hard to trace without contacting the microfinances directly.

Furthermore, there is a growing rise of microfinancing institutions developing of sustainable energy product loans that include as solar home system loans, Solar Power irrigation pump loans

[8] Johnstone, K., Perera, N., & Garside, B. (2020). *Small business, big demand Facilitating finance for productive uses of energy in Tanzania*. Retrieved from https://www.iied.org/sites/default/files/pdfs/2021-02/16681iied.pdf

[9] Marwa, N. (2014). Micro, Small and Medium Enterprises' External Financing Challenges: The Role of Formal Financial Institutions and Development Finance Intervention in Tanzania. *International Journal of Trade, Economics and Finance, Vol. 5, No. 3*.

and more. There is multiple intervention but different stakeholder that aim at the establishment of inclusive financial ecosystem for end-users and enterprises in Tanzania where financial institution both banks and microfinance are engaged. To mention a few is the SOARING Project by REEEP, intervention coordinated under Tanzania Association of Micro finance Institutions (TAMFI) to its members who are mostly microfinance institutions and more [10]. Such intervention supports financial sector actors inclusive of SME such as SACCOS to establish renewable energy financing products. Again, access to empirical data needs direct contacts with TAMFI or SACCOS.

C) Equity Financing Opportunities

Equity financing can take various forms, with the most common being venture capital, angel investing, and private-sector equity. While other options, such as Initial Public Offerings (IPOs) and crowdfunding, exist, they are generally not very common in Tanzania. This financing opportunity is mainly characterized by investors financing startups or small enterprises that are believed to have long-term growth potential. In venture capital, Tanzania ranked 88th out of 125 countries in 2021 for the volume of investment flows national wide. This followed the 2012-2017 trend which saw only 17% of the $2.4 billion in investment flows to the East African region coming to Tanzania[11].Within the sustainable energy SMES, very few enterprises such as Simusolar have successfully accessed this type of funding[12].

D) Carbon Financing

Carbon financing enables the monetization of interventions that reduce, avoid, or capture carbon emissions. In Tanzania, this type of financing is still emerging, with many institutions exploring ways to enter the market. To overcome technical challenges and financial constraints in developing carbon components, several organizations, such as UNIDO, South Pole Ltd, Ecoligo, Africa GreenCo, Elico foundation and Carbon Tanzania provide support for carbon project development. This creates opportunities for various stakeholders to engage with these organizations as carbon project development partners, facilitating access to carbon financing. The process for development and accessing of Carbon finance in Tanzania is guided by the national carbon trade regulations 2023 and guidelines 2022. So far most projects have focused on REDD+ although a limited number of energy projects focusing on clean cooking and hydropower have also been registered by the national Carbon project registry hosted by the National Carbon Monitoring Centre (NCMC).

E) Start-ups incubations

Entrepreneurship and Innovation Support Organizations (EISOs) provide a range of services: 60% offer Incubation, 50% Acceleration, 49% Community support, 19% Maker Spaces, and 14% Fab Labs or Living Labs. Many combine incubation and acceleration services. Other support areas

[10] Tanzania Association of Microfinance Institutions. (2023, May 25). *TAMFI Efforts Yield Results: More Financial Institutions in Tanzania Investing in Renewable Energy Financing*. Retrieved from https://tamfi.com/tamfi-efforts-yield-results-more-financial-institutions-in-tanzania-investing-in-renewable-energy-financing/

[11] The Citizens. (2021, April 12). *How Tanzania can attract more venture capital*. Retrieved from The CItizen: https://thecitizen.co.tz/tanzania/news/national/how-tanzania-can-attract-more-venture-capital-2635860

[12] Pitchbook. (n.d). *Company profile: Simusolar*. Retrieved from https://pitchbook.com/profiles/company/114630-85#funding

include Business Development, Office Spaces, Industry Linkages, Funding, and Networking. EISOs' sector focus shows energy-related support at 7.79%. Universities also host specialized canters offering tailored Business Development and Financial Management services for entrepreneurs[13]. NGOs like IMED and institutions like Commission for Science and Technology, Tanzania Industrial Research Development Organization (TIRDO) and BUNI Hub provide incubation programs, including financial linkage support, crucial for SMEs, especially in sustainable energy.

As of September 2023, commercial banks had issued TZS 3.3 trillion in funding, escalating to TZS 3.6 trillion by December 2023. Further, the Prime Minister's Office for Labour, Youth, Employment, and Persons with Disabilities outlined in their 2022/23 budget speech reiterated the empowerment of these groups through Local Government Council's Loans. LGAs approved TZS 76.02 sourced from 10% of local income specifically for loans to businesses led by women, youth, and people with disabilities. By February 2023, an impressive 53.01 billion shillings had been collected, with 37.59 billion shillings successfully disbursed as loans. Furthermore, in the 2022/23 financial year, the Prime Minister's Office, through the Youth Development Fund, issued 1.88 billion shillings in loans to support youth projects. Because of underperformance, this source of funding was put on hold during 2023 but the facility has recently been resumed. Information remains a challenge on the number of energy SMEs that received funding but it is inevitable that energy SMEs must have been funded since the facility provides funding to all key sectors including energy, water and agriculture sectors.

F) Financial Bonds

This is a fixed-income instrument and investment product where individuals lend money to a government or company at a certain interest rate for an amount of time. Although still in early stages of development, this is another potential source for financing since the government and companies are increasingly issuing bonds-both green and blue bonds to promote sustainability agenda. NMB and CRDB bank serve as examples of the national financial institutions that have taken bold steps to operationalize the sustainability agenda through the establishment of dedicated credit lines/facilities for loans and bonds for sustainability projects, businesses and Services. For instance, NMB issued a sustainability bond in 2022 through which funds raised are directed to companies promoting climate smart technologies including energy sector. Similarly, CRDB recently issued the first green bond in Tanzania, branded as Kijani Bond and valued at US$ 300 million with primary focus on renewable energy projects, energy efficiency, clean and low-carbon transport systems, sustainable forestry and fisheries as well as climate-smart agriculture project. Again, it is not known, which and how many energy SMEs have subscribed to these bonds although clean energy is among the priority sector for these bonds.

Other recent funding opportunities for energy SMEs from the Rural Energy Agency

[13] Tanzania Association of Microfinance Institutions. (2023, May 25). *TAMFI Efforts Yield Results: More Financial Institutions in Tanzania Investing in Renewable Energy Financing*. Retrieved from https://tamfi.com/tamfi-efforts-yield-results-more-financial-institutions-in-tanzania-investing-in-renewable-energy-financing/

G) Provision of Subsidies Under Result Based Financing for Improved Cooking Solutions Program

Funded jointly by the Rural Energy Agency (REA) and World Bank, this window is designed for co-funding Improved Cooking Solutions. The financing window is designed strategically to provide subsidy to Manufacturers/distributors of improved cook stoves for scaling-up their sales and increasing end-user affordability, thus, increasing access to modern and improved cooking solutions in rural areas of Mainland Tanzania for economic and social development. The call is currently open until November 11th 2024 and is open to Manufacturer/Distributors including SMEs/Companies who are producers, distributors, assemblers and wholesalers engaged in various improved cooking technologies. These include enterprises that can scale up production and/or sales to penetrate the market as well as those that can replicate proven and certified energy improved cooking technologies for local assembly and/or distribution[14].

Requirements: A comprehensive set of documentation for legal and technical documents is presented in annex 1 including a) Business Registration certificate Valid business license; Taxpayer Registration (TIN); and Test reports/certification from reputable laboratory around the globe such as Tanzania Industrial Research and Development Organization (TIRDO), Centre for Research in Energy and Energy Conservation (CREEC) and Kenya Industrial Research and Development Institute (KIDRI) etc.

Subsidy: The amount of subsidy to be provided per each unit is presented in Table 3 below

Table 3: Subsidy Levels

A. Base Subsidy Level per Unit,	Pricing / Tier	Rate
	Mid-Range (tier 3)	60%
	High End (tier 4 and above)	60%
B. Last Mile Reach (LMR): **A** * LMR Bonus Rate	Peri-Urban Townships/Districts headquarters	20%
	Rural Districts	20%
C. Made in Tanzania (MiT) Bonus: A * MiB Bonus rate	Imported Products:	0%
	Locally Produced Brands Units:	5%
D. Total Subsidy per unit sold	= A + B + C	

H) Results Based Financing (RBF) Grants for Liquefied Petroleum Gas (LPG), May 10th 2023

[14] https://rea.go.tz/Articles/call-for-proposals-provision-of-subsidies-under-result-based-financing-for-improved-cooking-solutions-program-1

Funded by the Government of Tanzania through the Rural Energy Agency (REA) this grant sought to support distribution of Liquefied Petroleum Gas (LPG) by providing the necessary incentives to Suppliers for scaling-up their sales, thus increasing access to modern and clean cooking in peri-urban and rural areas of Mainland Tanzania. This grant was also aimed to be used as part of awareness creation towards achieving 75% of access to clean cooking energy by 2030[15]. This window sought to offer the grants based on the offer (quoted amount) to be provided by the supplier to supply and distribute the LPG with its associated accessories. The amount of subsidy provided by REA 100%.

I) Results Based Financing (RBF) Grants/Subsidy for Selling Liquefied Petroleum Gas (LPG) in Rural and Peri Urban Areas of Mainland Tanzania

Funded by the Government of Tanzania through the Rural Energy Agency (REA) this grant/subsidy sought to co-funding distribution of LPG with their associated accessories in peri-urban and rural areas. The financing window sought to strategically provide incentives to Suppliers for scaling-up their LPG sales, thus increasing access to modern and clean cooking in rural areas of Mainland Tanzania for economic and social development purposes. This grant will be used as part of awareness creation towards achieving 75% of access to clean cooking energy by 2030[16]. The amount of subsidy provided by REA is shown in Table 4 below.

Table 4: Subsidy offered by LPG RBF Grant

Subsidy Percentage(of the promotional price) to be offered		
Cylinder Categories	**Associated Accessories**	**Subsisdy to be offered by LPG RBF Grant(percentage of promotional Price)**
6 kg	Trivet, Burner	50% in rural areas
		25% in peri urban areas of Dar es salaam

J) Renewable Energy Investment Facility (REIF)

Funded by the Sustainable Energy Fund of Africa (SEFA), the Renewable Energy Investment Facility (REIF), focuses on decentralized renewable energy to speed up rural electrification through innovative investment mechanisms and technical assistance support services for renewable energy mini-grids. It provides the private sector developers a mix/complement of appropriate financial instruments/products for renewable energy projects for rural electrification, thereby accelerating private sector participation in off-grid electrification in Tanzania[17].

Using these funds, the Rural Energy Agency (REA) invites renewable mini- and micro grid Project Developers to apply for financing and other support from REIF to support accelerated access to sustainable energy services in unserved rural areas of mainland Tanzania. The facility provides different instruments in

[15] https://rea.go.tz/Articles/liquefied-petroleum-gas-lpg-results-based-financing-rbf-call-for-proposals
[16] Invitation for Application of RBF for selling LPG in Rural and Peri Urban Areas of Mainland Tanzania
[17] Tanzania - Renewable Energy Investment Facility- Project Preparation - Project Completion Report | African Development Bank Group

Table 5 below

Table 5: Financial Instruments provided by REIF

Scheme	Description	Funding envelope
Matching Grants	Grants provide support for developers at the initial stage (preparatory work and/or develop new & innovative projects) of the project	Maximum of USD 500,000 per project depending on the size of the project. The maximum amount that will be contributed by REA is only 80%.
Results-based Financing (RBF)	Incentive-based model to finance project costs through grants per new connection in RE mini-grid projects of tier 4 and tier 5 (tiers as defined by SEF4All)	USD 1,300 per connection in initial years; USD 960 per connection after some years
Credit line	Concessional debt financing facility to provide low-cost loans to developer	USD 0.5-3 Million per MW depending on the capacity of the plant
Equity & Mezzanine Instruments	Equity financing suffice equity requirements of developers for project financing; Mezzanine instruments can be leveraged if equity financing is not sufficient	Depends on investor's financing
Risk Mitigation Instruments	Instruments to mitigate risks that create hurdle in providing sufficient low-cost investment	Coverage depends on deals with the instrument provider

3.2 CHALLENGES FACING SUSTAINABLE ENERGY SMES IN ACCESSING FINANCING OPPORTUNITIES.

Despite the presence of numerous potential sources of financing as illustrated above, sustainable energy SME's face several challenges towards accessing financing opportunities in Tanzania which have been categorized into the following groups

A) Inefficiency and constraints among SMEs

- Limited ability of SME's to tap into existing financial institution associated with inability of developing bankable project, limited awareness of funding opportunities, not meeting financial reporting and collateral requirements and weak applications[18]
- Low attractiveness of SME's to investors due to multiple factors among which are un-refined business models, management structures[19].
- Limitation in accessing grant financing attributed to lack of technical capacity when applying, poor processing of grant application evaluations and awarding, lack of awareness and high competitions[20]

B) Gaps within support system

In 2022, 81% of EISOs supported idea-stage startups, and 94% supported early-stage ones. However, only 61% backed growth-stage startups, with even fewer at the scaling (11%) and exit (5%) stages. This highlights a need for more support in scaling and exiting, where barriers like limited funding or mentorship may hinder growth[21].

C) Financing institutions participation in financing SME's

- There is a structural mismatch between mainstream funding requirements offered by local financial institutions and unique characteristics of SMEs and energy projects. Firstly, majority of SME are multiple and smaller size thus have high transaction costs per service and may lack adequate transparency in their operations due to lack of audited financial reports, supply chain contract, clients contract and more that can facilitate banking agency to better assess their risk[22]. Secondly energy project which require infrastructure development such as Mini-grids requires high capital at low cost and long-term duration which doesn't meet most of the financial products offered by financial institutions currently[23].

---

[18] Johnstone, K., Perera, N., & Garside, B. (2020). *Small business, big demand Facilitating finance for productive uses of energy in Tanzania*. Retrieved from https://www.iied.org/sites/default/files/pdfs/2021-02/16681iied.pdf

[19] Johnstone, K., Perera, N., & Garside, B. (2020). *Small business, big demand Facilitating finance for productive uses of energy in Tanzania*. Retrieved from https://www.iied.org/sites/default/files/pdfs/2021-02/16681iied.pdf

[20] Tanzania Startup Association. (2023). Tanzania Startup Ecosystem Status Report 2023. Retrieved from https://tsa.co.tz/storage/documents/ZUGwpNnc0fnuWwsa6JN2HzrK0s86nUJGNkP9lT7F.pdf

[21], ibid

[22] Marwa, N. (2014). Micro, Small and Medium Enterprises' External Financing Challenges: The Role of Formal Financial Institutions and Development Finance Intervention in Tanzania. *International Journal of Trade, Economics and Finance, Vol. 5, No. 3*.

[23] Mnzava, B., Pennink, B., & Mwambuli, E. (2022). Feasibility and potential of renewable and non-renewable energy investments in Tanzania. *Central European Review of Economics and Management*, Vol.6, 17-44. doi:https://doi.org/10.29015/cerem.941

- National development banks, as well as commercial banks, are increasingly gaining access to climate/green funds but are lacking the capacity and tools to build an investment pipeline to finance SMEs working on transitioning energy and agriculture.
    - They have extremely risk adverse lending appetites, typically requiring 150% plus tangible security and strong pre-existing cash flows
    - The longest tenor of loans in most banks is generally 5 years, which is typically too short green investments
    - DFIs who offer long term loans, requires incredibly large debt sizes which exclude many projects in the SMEs category
    - Many banks have limited experience with green financing and the structure that are needed such as project finance. The CRDB bank is good example of the bank characteristics described that have received significant amount of climate funding from the green climate fund to support technology development in the agriculture sector. However, due to predominant constraints described above, the bank has taken over 2 years to prepare relevant instruments to allow the green lending process.
- Most traditional loan financing offered by financial institutions are secured loans, thus requiring the SMEs to provide collateral to secure the loans. Considering that major energy infrastructures require high capital, this becomes a limiting factor as the SME's assets fail to meet the collateral requirements.
- For SMEs in the sustainable energy sector, these financing challenges are further compounded by the high upfront capital costs associated with renewable energy projects and financial institutions' limited understanding of the business models employed by sustainable energy [24]. This led to a lack of tailored financial products and the perception of renewable energy SMEs as high-risk ventures, especially when dealing with new or unproven technologies such as geothermal and tidal waves.
- This is exacerbated by a lack of awareness among SME owners about alternative financing options such as green/blue bonds, climate finance, impact investing and or crowdfunding.
- Moreover, regulatory barriers, such as the complex licensing requirements requiring multiple agency approval and the insufficient government incentives for renewable energy projects, particularly the complexities surrounding feed-in tariffs, significantly hinder the growth of these enterprises. For instance, the process of obtaining a license from EWURA involves acquiring multiple prior approvals and licenses that can take several months and requires extensive documentation, which can be both time-consuming and costly for small and medium-sized enterprises (SMEs). Additionally, the current feed-in tariff structure, is not cost-reflective for adequately recuperating for the high initial investment costs associated with renewable energy projects. This makes it

[24] Financing SMEs and Entrepreneur in Tanzania 2024 - TICGL

challenging for SMEs to achieve financial viability and discourages further investment in the sector[25].

D) Policy and regulatory barriers

While the policy and regulatory frameworks for SMEs in Tanzania have improved significantly for private sector investment based on the Public Private Partnership (PPP) legal framework, several challenges remain, particularly regarding compliance. Positive changes in the legal framework include the amendment of the Value Added Tax Act (CAP. 148), which increased the registration threshold from TZS 100 million to TZS 200 million, offering startups more financial flexibility and reducing the burden of VAT compliance. Additionally, the Vocational Education and Training Act (CAP. 82) was amended to reduce the Skills Development Levy rate from 4% to 3.5%, lowering employment costs and allowing businesses to allocate more resources to innovation and expansion. However, outdated Intellectual Property (IP) laws need updating to reflect current innovation and commercialization trends. The 2023 National Intellectual Property Policy aims to address this by providing a comprehensive framework for promoting innovation. Despite these improvements, high compliance costs, including permits, licenses, and taxes, strain early-stage businesses, impeding growth and expansion. Initial compliance costs from TRA and BRELA and the long bureaucratic process of getting permits can lead to fines and penalties, making it difficult for startups to maintain financial obligations[26].

For mini-grid developers, the absence of cost-reflective tariffs and clear purchase agreements with public entities (e.g., net metering integration with the grid) increases financial risks. Limited fiscal incentives further reduce investment appetite in mini grid projects. Addressing these barriers requires continued policy refinement and support to create a more conducive environment for growth and thriving of SMEs and sustainable energy projects.[27]

E) In-adequate demand of Sustainable Energy Products

The market demand for Sustainable energy products is growing, but faces several challenges. A significant number of potential end-users (clients) are unaware of these products, and there are concerns about counterfeit products. Additionally, there is a perception that sustainable energy products have higher capital cost compared to alternatives that gives it a perception of being expensive. These market asymmetries affect the earning/sale capacity of SMEs, and create a sense of risk or uncertainty for financers reducing the attractiveness of investment in this sector, which largely consists of SMEs[28]

---

[25] Royal Norwegian Embassy in Dar es Salaam (2022). *Clean Energy Transition in Tanzania*. Dar es Salaam. Retrieved from https://www.norway.no/contentassets/00c56b3642e5429fbc917d5fa42ff869/clean-energy-transition-in-tanzania-report.pdf

[26] ibid

[27] Royal Norwegian Embassy in Dar es Salaam (2022). *Clean Energy Transition in Tanzania*. Dar es Salaam. Retrieved from https://www.norway.no/contentassets/00c56b3642e5429fbc917d5fa42ff869/clean-energy-transition-in-tanzania-report.pdf

[28] Johnstone, K., Perera, N., & Garside, B. (2020). *Small business, big demand Facilitating finance for productive uses of energy in Tanzania*. Retrieved from https://www.iied.org/sites/default/files/pdfs/2021-02/16681iied.pdf

F) Paperwork linked to the technical capacity of energy SMEs to prepare comprehensively attractive proposal meeting the requirements of the funders, many SMEs especially those in the early stages of establishment find it extremely difficult to meet the requirement since the required documents are very comprehensive and requires significant amount of funds to be prepared by experts. This includes the need to collect baseline data which is not always readily available and may involve carrying out projections and modelling in advance to prepare an informed proposal. The REA's Renewable Energy Investment Facility (REIF) serves an example of the local funding sources requiring an extensive amount of documentation including:

- Business plan and cash flow projections,
- Feasibility Report with enclosures,
- VAT registration certificate,
- Taxpayer Identification Certificate (TIN) and Income Tax returns
- Filed returns to BRELA (Business Registration and Licensing Agency)
- Environmental and social management plan

A full list of all required documents is presented in **annex 2**. In general, the requirements tend to be intensive and therefore a barrier to many energies start up SME.

The above are among the reasons Tanzania-based energy SMEs have not taped into most of the international energy funding when compared with Energy SMEs from neighbouring countries especially Kenya, Rwanda and Uganda as summarized in Table 6 below.

Table 6: Performance in accessing regional and international energy funds

S/N	Country	# of Energy SMEs supported
Energy and Environment Partnership Trust Fund (EEP)[29]		
1	Tanzania	2
2	Kenya	8
3	Rwanda	6
4	Malawi	5
5	Uganda	6
Africa Renewable Energy Fund (FMO)[30]		
1	Tanzania	0
2	Kenya	6
3	Rwanda	4
4	Malawi	3
5	Uganda	4
SOARING		

[29] https://eepafrica.org/wp-content/uploads/2020/09/EEPAfrica_Brochure2020_DIGITAL.pdf
[30] https://www.fmo.nl/world-map?search=&region=&year=&projects=allProjects&sector%5B0%5D=3

1	Tanzania[31]	2
2	Kenya	4
3	Rwanda	No info
4	Malawi	No info
5	Uganda	2

Source: Consultant compilation, October 2024

3.3 RECOMMENDATION FOR ADDRESSING CHALLENGES OF INACCESSIBILITY OF FINANCE BY SUSTAINABLE ENERGY SMES.

A) Strengthen collaborations and networking with partners in access of information on available financial products and services tailored for sustainable energy SMEs, coupled with networking opportunities with potential investors and financial institutions. This is inclusive of support and or capacity building to enhance technical proficiency of SMEs in navigating the fund application process. Bridging this knowledge gap is crucial to empower energy SMEs in effectively participating and accessing available funding opportunities.
B) Develop tailored support programs that cater to the specific needs of startups at different stages of their life cycle. This could include mentorship, advisory services, networking opportunities, and access to resources like legal and financial expertise.
C) Through coordinated multi-stakeholders working through existing ecosystems and networks of financial institutions and actors, facilitate and incentivize learning and development of financial products tailored for sustainable energy SMEs' need. This can be realized through having knowledge-sharing platforms focusing on energy financing in Tanzania coupled with capacity building and risk mitigation mechanisms.
D) Strengthening Policy and Regulatory Frameworks that incentivizes investments or subsidies for sustainable energy projects. This is inclusive of expedious formulation and implementation of the Tanzania Startup Policy, Act and Regulation in efforts to foster a more favourable business environment for startups to grow and thrive in Tanzania.
E) Facilitate increase in the demand/uptake of sustainable energy technology that will improve the energy industry status which can enable SMEs to attract more financial supports. By having more end-use initiatives inclusive of financial support will enable growth from niche towards more pronounced SMEs attracting more players to invest
F) Facilitate partnerships between financial institutions and government bodies to offer subsidized loans or grants together through non-traditional financing models like crowdfunding, impact investment, and green bonds specifically designed for sustainable energy SMEs.
G) Advocate for Policy improvement to create an enabling environment by reforming policies to favour SME financing in sustainable energy.

[31] Projects are implemented by international SME

H) To ensure the success of financial products for sustainable energy SMEs there is a need of having a parallel or preceding support for building capacity and support of complementary organizations. This would include technical support services, market assessment and development, and tailored financial products with risk mitigation mechanisms.

I) Blending: As part of proposal write up for competitive financing, Energy SMEs should adopt a blending approach by integrating energy portfolios with adaptation portfolios to address key challenges of rural poor such as pastoral farmer insurance, hermetically sealed grain storage, pre-paid water metering and forage seeds. Blending increases the impact and so the value and impact of the project.

J) For banks and other financial institutions to;

- provide targeted capacity building and technical assistance to bridge the gap between financial institutions and sustainable energy SMEs, covering climate finance, business models of off-grid and productive use of energy technologies, credit and risk assessment tools and support to sector-suitable financial product design.
- Establish a Credit enhancement to cover first loss of loans to eligible companies focusing on productive uses of renewable energy. This simple, cash-based approach more effectively decreases risks for local financial institutions. The SOARING initiative referenced above is already promoting this approach in Tanzania and Zambia.

K) For SMEs, provide technical assistance support for pipeline origination and preparation with specialised technical assistance, project development and documentation, due diligence and risk assessment tools targeted to renewable energy companies.

4 CONCLUSION

The findings from this study indicate that there are multiple financing opportunities available to sustainable energy SMEs in Tanzania from both local, regional and international sources. However, significant challenges persist in accessing these funds. The challenges are inherent to the SME's themselves in the form of technical capacity, institutional arrangement, financial management system and securities for loan collaterals.

To address these challenges, a concerted effort taking an ecosystem approach to address the interlinked challenges is required. A set of recommended measures to address the above challenges has been provided in section 3.3 above.

5 ANNEXES

Annex 1: Technical Requirements for the REA Funding: Provision of Subsidies Under Result Based Financing for Improved Cooking Solutions Program, October 2024

The Call is open to SMEs and Companies that will provide the following information;

a) Business plan showing ability to undertake business in rural and peri-urban areas indicating Targeted Markets areas, Subsidy Facility Marketing Strategy, distribution approach, awareness campaign, safety mitigation and reporting arrangement;

b) Company profile showing organization structure;

c) At least one-year experience in carrying out business of Manufacturing and/or Distribution of Improved Cookstoves.

d) Ability to supply required number of Improved Cookstoves as per demand within the area of his/her operation; and

e) Possess a production facility, storage facility or/and office;

f) Professional capacity requirements:

- Applicants should be able to show that they have/has sufficient resources, competence and experience to perform projects in the efficiency cooking market.
- Applicants will also be required to establish a key management team responsible for performing and coordinating the project.

g) Market experience requirements:

- Applicants should demonstrate that they have sufficient market experience of at least one year of working in Improved Cookstoves.

h) Monitoring and Reporting: The applicant's capacity and readiness to track and report sales to end users of the technology, including data management and data quality checks. Baseline data on existing performance should be provided.

i) Gender mainstreaming: Applicants are encouraged to offer equal opportunities to men and women through their own policies and employment practices as well as in proposed projects.

Financial Experience and Capability

i) Proof of business track record and relevant experience: Have at least one year of business operations with minimum financial records (Average Turnover of one year shown in audited statement of at least 100 million Tanzanian Shillings) or submit business financial statements of at least one year of 2021/2022 or 2022/2023 with proper system of recordkeeping, financial management and evidence of bank account operations.

ii) Proof of Financial Capability: The Manufacturer/distributor shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any advance payment) sufficient to meet TZS 15Million.

Annex 2: List of documentation required for the REA's REIF Funding

- Business license for all businesses the company request financing;
- Certificate of incorporation for companies
- Board resolution to grant application for off-grid energy business
- Annual audited accounts for the past three (3) years and most recent draft/management accounts
- Copy of Title Deed (if any) or Lease Agreement
- Business plan and cash flow projections
- Feasibility Report with enclosures
- VAT registration certificate, Tax Payer Identification Certificate (TIN) and Income Tax returns
- Filed returns to BRELA (Business Registration and Licensing Agency)
- Business contracts signed with employers, suppliers, customers etc (agency contracts, construction contracts etc)
- Loan agreements from other financiers if any (e.g. loans by directors and other banks/financial institutions)
- Residence and work permit for non-resident directors
- Certificate of registration for co-operatives
- Certificate of maximum liability for cooperatives issued by Registrar of Cooperatives
- Minutes of the annual General Meeting authorising borrowing and signatories for Cooperatives
- Procurement plan demonstrating adequacy of commercial practices
- Adequate insurance of project assets or other payment securities
- Bank guarantee or other security covering the advance payment
- Location/Building permit (Local Government)
- NEMC Environment and Social clearance (where applicable)
- EWURA licenses and permits (where applicable)
- Standard Power Purchase Agreement (SPPA) with TANESCO for grid interconnection projects
- Bulk Power Purchase Agreement with TANESCO for grid power purchases (if applicable)