



Finance mechanisms for private sector-led energy access in urban informal settlements

Uganda case study

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Cover image: A resident from Kisenyi informal settlement prepares a family meal using a LPG stove.

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Contents

Executive summary	5
Introduction	7
About ENACT	8
About this paper	9
Background	10
Uganda's energy access context	10
Energy for lighting and powering appliances	11
Energy for cooking	12
Access to finance	12
Energy sector financing	17
Urban informal settlements in Uganda	19
Features of urban informal settlements	19
Policy and programmes supporting informal settlements	22
Why do we need more financing for energy access in urban informal settlements?	22
Financing needs: Energy product and service providers	23
Stakeholder mapping	23
Support in scaling clean cooking solutions in urban informal settlements	25
Financing needs by clean cooking companies	26
Financing instruments for clean cooking	27
Overview of energy financing mechanisms	27
Equity financing	31
Debt financing	31
Outcome-based financing	32
Crowdfunding	33
Carbon credit financing	34
Other financing examples	34
Challenges and opportunities for finance providers	35
Challenges	35
Opportunities	35
Conclusion and recommendations	36
References	38
Appendix: Funding opportunities for clean cooking companies in Africa	41

List of figures

Figure 1: Formal and informal financial inclusion in Uganda by gender	13
Figure 2: Financial inclusion of male and female adults by geographical setting in Uganda (FinScope, 2018)	13
Figure 3: Main barriers to financial inclusion of men and women in Uganda (FinScope, 2018)	14
Figure 4: Financing against energy SME growth	29
Figure 5: Clustering financial instruments against financial return expectations	30
Figure 6: Clean cooking commitments between 2013 to 2019 in high impact countries	31
Figure 7: The RBF concept	32

List of tables

Table 1: Strategy to connect households in Uganda to achieve universal electricity access (derived from the NES)	11
Table 2: Types of financing and example sources	12
Table 3: Potential financing sources for energy projects and appliances	18
Table 4: Profile of some urban informal settlements in Uganda	21
Table 5: Examples of clean cooking service providers in Uganda	24

List of boxes

Box 1: Spotlight: Financial service systems in Uganda's informal settlements	15
Box 2: Defining productive use of energy	16
Box 3: Formation and management of urban informal settlements	20
Box 4: Financial instruments applicable to energy access projects	28

Abbreviations

AMFIU	Association of Microfinance Institutions of Uganda
CDM	UN's Clean Development Mechanism
CIB	The Clean Impact Bond
DFI	Development finance institution
EPC	Electric pressure cooker
ESP	Energy service provider
GDP	Gross domestic product
GoU	Government of Uganda
ICS	Improved cook stove
ICSEA	Improved Cook Stoves for East Africa
IFC	International Finance Corporation
KCAP	The Kampala Climate Action Plan
KCCA	The Kampala Capital City Authority
MECS	Modern Energy Cooking Services
MFI	Microfinance institution
MSD	Market systems development
NES	The National Electrification Strategy
NGO	Non-governmental organisation
P-RECs	Peace renewable energy credits
PUE	Productive use of energy
RBF	Results-based financing
REA	The Rural Electrification Agency
ROSCA	Rotating credit companies and savings associations
SHS	Solar home system
SME	Small and medium size enterprise
UBOS	Uganda Bureau of Statistics
UCSCU	Uganda Cooperative Savings and Credit Union
UECCC	Uganda Energy Capitalisation and Credit Company
UMRA	Uganda Microfinance Regulatory Authority
UNACC	The Uganda National Alliance on Clean Cooking
USEA	The Uganda Solar Energy Association

EXECUTIVE SUMMARY

As populations grow in the world's cities, Africa and Asia are poised to gain a majority of the projected 70% population increase by 2050, triple the number from 2015¹. Uganda's urban population is projected to hit 53 million by 2060, surpassing the projected 51 million rural population. Without effective urban planning, this growth will lead to the formation of new informal settlements and increased populations in the existing ones due to limited access to affordable and reliable public services such as energy. This necessitates promoting initiatives that improve affordability of such services, enabling urban communities facing economic hardship to reap the economic and health benefits of clean energy solutions.

Africa's energy access deficit, including for clean cooking, will require approximately \$25 billion annually to achieve universal access by 2030, and the private sector is pivotal to meeting this ambition. In Uganda for example, investments in private sector-led solutions could help reduce biomass use from 85% in the 2018/2019 financial year to 50% by 2024/2025. However, access to financing remains one of the biggest hurdles for private companies in delivering suitable energy solutions and for end-users in adopting them.

As most consumers grapple with affordability of both energy assets and ongoing costs of use, energy service providers (ESPs) contend with balancing product and service affordability, while breaking even. Innovative business models, such as rent-to-own or pay-as-you-go, have proven effective in encouraging uptake and use, as they reduce the burden of upfront costs for the end-users, but these are not enough. ESPs require funding to enable market activation, awareness creation, business model development and enhancement, innovation and adaptation, operations and maintenance, all while meeting the national regulatory requirements. A diversified financing portfolio not only enables ESPs to spread the risk of capital and operational costs, but provides room to continue trialling and improving their business and product offerings to meet the needs of their target market.

This paper explores various finance mechanisms that would enable ESPs to deliver sustainable energy solutions to urban informal settlements in Uganda. While focused on clean cooking solutions, most insights presented in this paper also apply to other energy solutions, such as decentralised renewable energy and productive use

1. Statistics derived from UN's World Urbanization Prospects data: <https://population.un.org/wup/>

appliances in the context of urban informal settlements. Financing mechanisms such as equity, debt, output-/outcome-based grants, crowdfunding, and carbon credits are reviewed through a clean cooking ESP lens. Equity and grants appear to hold the highest share of financing into the clean cooking space, although there is considerable potential in other financing mechanisms, such as carbon credits and output-based grants, which could substantially de-risk capital costs for ESPs.

Despite these opportunities, access remains low for ESPs due to challenges financiers face in taking informed risks. Data and information gaps on clean cooking technologies, consumption patterns, and market conditions, limit their ability to accurately value clean cooking businesses. Additionally, the fluid nature of foreign exchange rates to major global currencies creates uncertainties in

return on investment, especially without risk assurance. Furthermore, complexities in tracking, validating and disbursing funds for output-/outcome-based grants and carbon credits increase the cost of establishing and managing these mechanisms.

Public investments offer significant opportunities to de-risk these innovative investments, while also supporting national energy transition plans, such as Uganda's National Development Plan. Nationally designed incentives and subsidies, paired with supportive regulatory frameworks, could markedly de-risk the cost of doing business for ESPs.

This paper is part of a series of reports on financing clean cooking solutions for clean cooking adoption in urban informal settlements, for both the public and private sectors. These reports can be found on the ENACT and Energy 4 Impact webpages².

2. <https://africa.iclei.org/project/enact/>; <https://www.energy4impact.org/resources>

INTRODUCTION

More than 4 billion people – 56% of the world’s population – currently live in cities and towns, a rate that is expected to rise to nearly 70% by 2050^{3,4}. Over 90% of this growth is projected to take place in Africa and Asia. In Africa, for example, the urban population is expected to triple to 1.5 billion between 2015 and 2050, accounting for two-thirds of Africa’s population and 22% of the world’s population. Africa, particularly sub-Saharan Africa (SSA), is however urbanising at lower GDP per capita levels compared to other world regions. This has led to a rise in the urban underserved population, among other factors.



3. (UN-Habitat, 2023)
4. (UN-Habitat, 2022)

Image: Aerial view of Kisenyi informal settlement in Kampala, Uganda.

Today, close to 60% of people living in urban areas in Africa live in informal settlements, compared to 21% in Asia, and 28% in Latin America and the Caribbean. While cities offer opportunities for wealth creation, employment, improved quality of life and increased social diversity, these opportunities are not equally distributed among people living in urban areas. Informal settlements are often left out of urban plans and strategies, leading to insufficient provision of basic services such as energy.

Limited access to sustainable energy by the underserved urban population has detrimental impacts, including missed livelihood opportunities in both supplying energy solutions and productively using energy for added-value goods and services. There is also an impact on the quality of life to end users: traditional energy sources (torch batteries or kerosene for lighting; charcoal or wood for cooking) are unhealthy, ineffective, expensive, and unsafe. More broadly, these traditional energy sources often contribute to climate and environmental hazards such as air pollution, fires leading to loss of assets and livelihoods, deforestation, land degradation, soil erosion and increased landslides. Clean and reliable energy is available in the urban market but is perceived as inaccessible to the urban underserved due to limited awareness and/or limited market activation opportunities.

About ENACT

The Enabling African Cities for Transformative Energy Access (ENACT)⁸ project works with local governments, the private sector, and local communities to create an enabling environment to help improve energy security for the urban underserved living in informal settlements in Freetown, Sierra Leone, and Kampala, Uganda. The project aims to introduce market-led energy solutions to provide adequate, safe, reliable, clean, and affordable forms of energy to urban underserved communities, addressing three key barriers to energy access in urban areas in SSA:

1. Limited capacity of local governments to plan and implement market-led energy access interventions in partnership with the private sector.
2. Low support for the private sector in commercially scaling locally relevant, reliable, affordable, and sustainable energy solutions to urban informal settlements.

Over time, energy service providers (ESPs)⁵ have proven to be key facilitators in accelerating energy access using market-led, innovative, environmentally and socially impactful approaches. National and sub-national governments can leverage partnerships with the private sector in delivering their energy access and climate action mandates, resulting in other socio-economic benefits such as job creation, promoting economic opportunities, and the improved wellbeing of people living in urban areas. However, private companies require support to deliver effective solutions, including access to capital, market assessment and segmentation, route-to-market support, and technical assistance to develop locally relevant business and delivery models, among other needs.

The International Energy Agency (IEA) estimates that SSA requires an annual investment of \$27 billion between 2018 and 2030 to achieve universal access, which is at least double current flows of financing into the region. To accelerate the transition to clean cooking, the current average of \$131 million in annual investments is a positive step but remains insignificant compared to the \$4.5 billion needed by 2030^{6,7}.

3. Limited knowledge and data on energy access gaps in urban informal settlements, and opportunities to improve access.

ENACT is funded by UK aid from the UK government via the Transforming Energy Access platform. It is managed by The Carbon Trust, and delivered by ICLEI Africa with support from Energy 4 Impact. The project has been actively working with the public and private sector since August 2020, aiming to increase access to clean energy (particularly clean cooking) in informal settlements through private sector penetration in Kampala and Freetown, with the goal of curating and piloting these approaches in other African cities.

5. Note: Energy Service Providers and clean cooking companies have been used interchangeably in this report.

6. (OECD/The World Bank/UN Environment, 2018)

7. (IMF, 2021)

8. For more information about the project, please visit <https://africa.iclei.org/project/enact/>

About this paper

ENACT focuses in part on designing and testing private sector-led energy access implementation models in the target locations of Kampala and Freetown. It provides grant support to de-risk private sector operations in informal settlements, and tests technologies and delivery models in these communities. Ongoing financing is crucial for sustaining, scaling, and replicating these efforts.

This paper supports the project by investigating financing challenges and opportunities per country (among energy providers and financiers) and identifying financing options for ESPs to penetrate urban informal settlements. The paper highlights gaps in financing and makes recommendations on improving the design of financing mechanisms to better suit ESPs.

This paper, which focuses on energy access financing in Uganda, is one of a series of reports that provide a landscape of energy access providers and financiers in Sierra Leone and Uganda, and details financing mechanisms that private companies can leverage to implement relevant business models in urban informal settlements in these and potentially other countries in SSA. This research complements additional research under the ENACT project on public financing proposals to support investments in energy solutions in cities.

The paper draws on in-depth engagements with energy companies, funders, and investors throughout ENACT's implementation, to understand the landscape, gaps, and opportunities for financing the private sector. This is complemented by background research on the energy access and financing landscape, and findings from ENACT project activities.

BACKGROUND

Uganda's energy access context

There are around 8.6 million households in Uganda, with nearly 13% living in urban areas and 87% in peri-urban and rural areas. Uganda's population, which is growing at a rate of 3.3% per year, has one of the world's youngest populations, with almost half of Ugandans under the age of 15. The urban population growth rate was 5.3% in 2021. The country's population is expected to reach 60 million by 2030⁹.



9. (World Bank, 2021)

Image: Charcoal briquette cookstoves in process of being fabricated at Green Bio Energy factory in Kampala.

Energy for lighting and powering appliances

According to World Bank indicators, Uganda's electricity access rate was 41.3% in 2019¹⁰, with 71% in urban areas and 32% in rural areas. Published access rates vary across sources: according to a Uganda Bureau of Statistics (UBOS) survey completed under the *Energy for Rural Transformation III* programme in 2018, 50% of households had access to at least one source of electricity, with 24% connected to the national grid, 23% owning a solar lighting system/solar lantern and 3% owning a solar home system (SHS). Uganda's per capita electricity consumption, at an annual average of 80 kWh in 2017, is one of the lowest in the world¹¹.

Several development projects have supported the Government of Uganda's (GoU) efforts in national electrification over the past decade. For example, the Energy Connection Policy, launched in 2018, aims to subsidise connection costs for end users situated close to an existing grid distribution network to improve access to and consumption of grid electricity. This supports the GoU's ambition to increase connection rates by 3 million by 2027. The National Electrification Strategy (NES) serves as the government's roadmap for achieving universal electricity access through grid and off-grid interventions. Developed in 2018, the strategy aims to connect 10.4 million households by 2030, using geospatial least-cost analysis to identify the most cost-effective approaches to achieve universal access. It targets 88% of connections through the grid and 12% through off-grid solutions. Table 1 breaks down the universal access strategy under the NES.

Table 1: Strategy to connect households in Uganda to achieve universal electricity access (derived from the NES).

Strategy	Grid densification	Grid extension	Solar mini-grids	Standalone solar system*
Number of new connections planned (millions)	3.44	1.2	0.23	5.5
% of the total new connections planned (10.4 million)	33%	12%	2%	53%
Estimated investment cost (millions)	2,509	1,398	356	418
Average cost per connection (\$)	730	1088	1519	76

*Including the replacement of the photovoltaic systems after six years of operation (estimated life span of a SHS).

Uganda has one of the most active off-grid markets in East Africa, with 18% of the population relying on off-grid solar technologies providing Tier 1-level access and above¹². Off-grid opportunities, particularly those in solar, will continue as 53% of the new connections under the NES are projected to be through standalone solar systems. The Uganda Solar Energy Association (USEA) reported that over 210 solar companies were operating in the Ugandan market in 2020, with most sales coming from a handful

of companies and through pay-as-you-go sales models. Most companies have focused on the easiest-to-reach market segments rather than the bottom of the pyramid, who can barely afford the systems.

The Rural Electrification Agency (REA), in collaboration with other international funding agencies, is undertaking some off-grid initiatives in areas of Uganda where grid extension will not take place. Most of these projects are

10. (World Bank, 2019).

11. (Global Petrol Prices, 2024).

12. According to the National Electrification Survey Report-2018 (UBOS, 2020)

solar/battery hybrid grids. According to the State of the Global Mini-grids Market Report 2020, at the end of 2019, Uganda had 34 mini-grids installed, totalling 56.8 MW – 6% of the country’s total capacity. Additional sites have also been commissioned in the past few years.

Energy for cooking

The use of biomass fuels in basic stoves is common in Uganda, as it is in most developing countries. According to the World Bank¹³, approximately 95% of Ugandan households rely on charcoal, wood or other forms of biomass for their household cooking. A 2019 Sustainable Energy for All (SEforAll) report reveals that roughly 150,000 households in Uganda use clean cooking fuels, most of which are concentrated in urban areas and are using electricity and liquified petroleum gas (LPG) for primary cooking. SEforAll forecasts that the use of clean fuels will grow tenfold to 7.5% of cooking access in Uganda by 2030, which represents just over one million households. The remaining 12.2 million households (88.7% of total households) are expected to continue cooking with wood and charcoal¹⁴.

The uptake of modern, clean fuels is inhibited by high prices and unreliable supply, perpetuated by low demand. Non-governmental organisations (NGOs) and

development organisations have implemented several projects and initiatives focused on producing improved biomass stoves and strengthening supply chains. The Uganda National Alliance on Clean Cooking (UNACC) coordinates interventions and stakeholders in the clean cooking sector, often supported by the GoU and donors. UNACC also works closely with the Uganda National Bureau of Standards (UNBS) to set standards for clean cooking technologies.

More recently, the Modern Energy Cooking Services (MECS) programme has promoted the use of electric cooking (e-cooking) in Uganda¹⁵. This includes benchmarking research on the cost of cooking with electricity, raising awareness about cooking with modern energy, researching off-grid cooking technologies, and researching private sector financing. As part of this intervention, the GoU introduced an e-cooking tariff in December 2021 to incentivise the adoption of electric cooking among domestic consumers¹⁶.

Access to finance

Household-level access

In general, Ugandans access finance through three different types of sources: formal, semi-formal and informal, as described in Table 2 below.

Table 2: Types of financing and example sources.

Category of finance	Examples of sources
Formal	Commercial banks, microfinance deposit-taking institutions, credit institutions, insurance companies, development banks, pension funds and capital markets.
Semi-formal	Savings and credit cooperative associations (SACCO), mobile money loans.
Informal	Village savings and loans associations (VSLAs), loans from family and friends, and credit from local shops.

According to the National Financial Inclusion Strategy (NFIS 2017-2022)¹⁷, 76% of urban adults in Uganda used either formal financial institutions (banks, microfinance

deposit institutions) or semi-formal ones (mobile money, SACCOs). In rural areas, 49% of adults used these formal and semi-formal financial services.

13. (World Bank, 2021).

14. (SEforAll, 2019)

15. See <https://mecs.org.uk/blog/scaling-up-electric-cooking-in-uganda/> for further details on electric cooking in Uganda.

16. See <https://www.era.go.ug/index.php/media-centre/what-s-new/371-energy-minister-launches-reviewed-electricity-tariff-structure>

17. (The Republic of Uganda, 2017)

Figure 1: Formal and informal financial inclusion in Uganda by gender.

(Extracted from the 2018 FinScope gender and youth analysis in Uganda, FSD Uganda)

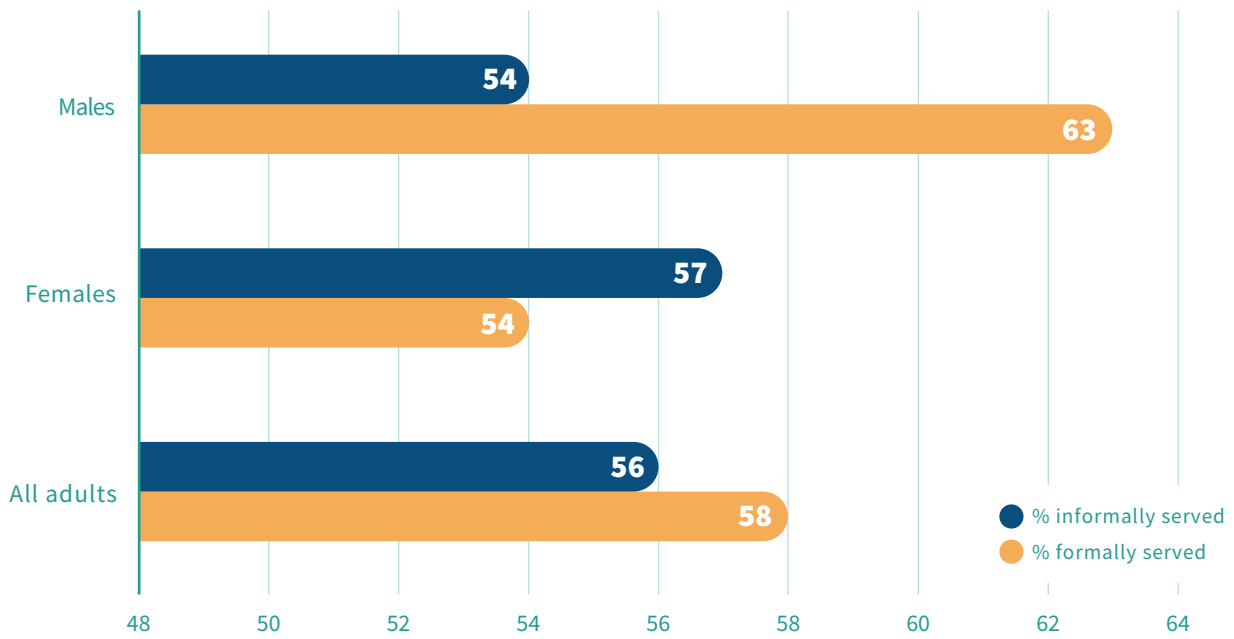
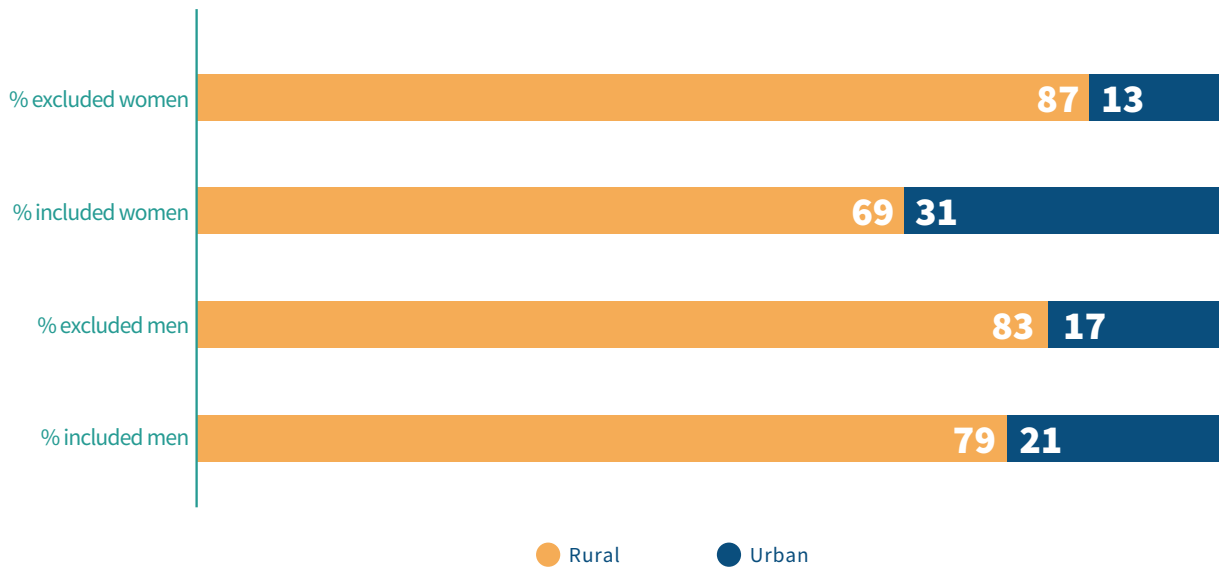


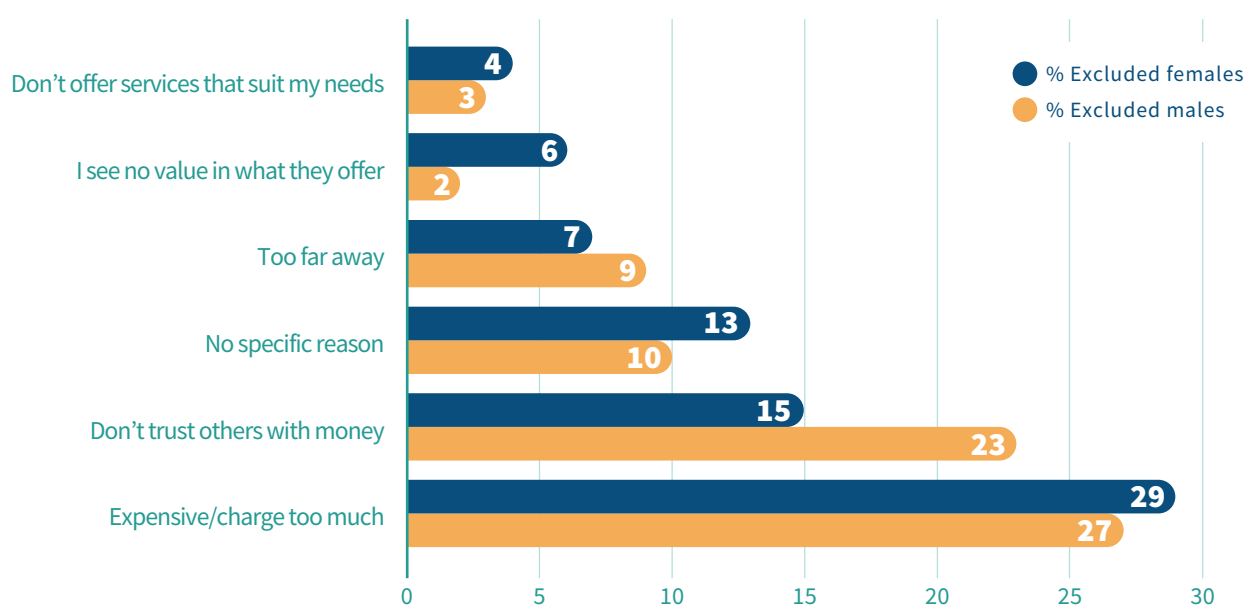
Figure 2: Financial inclusion of male and female adults by geographical setting in Uganda (FinScope, 2018)



In terms of gender distribution, financial inclusion levels are similar, with 23% of women (2.3 million) and 22% of men (1.9 million) financially excluded, according to the 2018 FinScope survey¹⁸. However, women are less likely than men to be formally included. Exclusion is prevalent among rural populations, youth, those with only primary school education, and individuals with irregular incomes. The FinScope report identifies the perception that

financial services are too expensive as a key barrier to financial access in Uganda. Other barriers include: a lack of trust between borrowers and lenders, financial services being too far away, and users not seeing the value in financial services (see Figure 3). Additionally, women are particularly hindered by the inability to meet the ‘know your customer’ (KYC) requirements of most lenders, and by lack of access to digital services.

Figure 3: Main barriers to financial inclusion of men and women in Uganda (FinScope, 2018)



Low-income households typically struggle with access to financial services for loans to deal with emergencies or invest in income-generating opportunities. This is particularly true for those living in informal settlements, who are generally excluded from formal financial markets and rely on informal lenders, such as saving groups or money lenders, who may charge extremely high interest rates – creating a vicious cycle of debt and ever-deepening poverty¹⁹. Common barriers to accessing formal and semi-formal credit include lack of collateral, lack of credit history, inadequate business skills or financial literacy, and prohibitive interest rates.

Access to finance in urban informal settlements

Development of the microfinance market is enabling more low-income households to access financial services, and

the size of the microfinance market has grown in Uganda in recent years. However, microfinance institutions (MFIs) in Uganda do not typically target the urban underserved, focusing instead on the rural underserved and middle-class salaried workers, who can offer wages or assets as security. Nevertheless, several innovative savings and credit methods have emerged for urban underserved communities, such as family members, and rotating credit companies and savings associations (ROSCAs). Their success is partly due to being rooted in social relationships and capital, allowing them to bridge the income gap and requiring little or no paperwork. Most of these schemes lend money through a revolving fund mechanism, mainly to boost small businesses and, in some cases, to enable people to build homes, pay school fees, and meet other basic survival needs²⁰.

18. Analysis derived from (Financial Sector Deepening Uganda (FSD Uganda), 2018)

19. (Bezboruah, 2022).

20. (UN-Habitat, 2006)

Box 1: Spotlight: Financial service systems in Uganda's informal settlements

Several development programmes and NGOs are supporting access to finance in informal settlements through the development of community savings and loan groups. An example is the National Slum Dwellers Federation of Uganda, a network of community savings groups that practises daily saving in six of Uganda's biggest municipalities: Kampala, Jinja, Mbale, Mbarara, Kabale and Arua. Members save at least 100 Uganda shillings per day via the federation, which are then lent to members, generally with interest but without collateral. These loans typically support household and livelihood needs such as school fees, healthcare, and small business operations²¹. Other organisations active in this area include Kinawataka Women's Initiative, the Tugezeko Women's Group, and the Mbuya 1 Cooperative Savings and Credit Society. Financial service providers offering credit services in the urban market include Uganda Women's Finance Trust, FINCA, FAULU Uganda and Pride Uganda.

Source: <https://cdkn.org/story/feature-mbarara-uganda-informal-community-uses-collective-savings-to-deal-with-covid-19>

End-user financing for energy products

End-user financing for clean energy solutions remains limited, with more financing needed to allow clean cooking enterprises to optimally support their operations to provide products to their customers. Two broad approaches are common in Uganda and other countries in SSA:

1. Companies create **in-house payment plans** that offer customers options to pay over time. These can be through layaway plans or pay-as-you-go options that align payments with customer usage.
2. Companies **partner with financial service providers (FSPs)** who offer credit and associated payment plans for the products. These can either involve FSPs purchasing the products and selling them through their credit models, or energy companies referring customers to FSP partners to access the financing they need to purchase the products.

Partnership development with FSPs is historically limited by the perception that loan sizes for household energy solutions (particularly cookstoves) are too small to justify the administrative costs of managing them, and that most domestic energy solutions do not generate revenue for the user. Energy solutions with higher price tags or those suitable for productive use (Box 2) have had more success with these partnerships. In-house payment plans pose challenges for the companies, requiring them to develop their own credit processes, manage associated cash flows, and divert time to credit management and follow-up, and, more crucially, pre-finance inventory.

21. (CDKN Global, 2021)

Box 2: Defining productive use of energy

Productive use of energy (PUE) refers to “the type of energy demand that generates revenue, increases productivity, enhances diversity, and creates economic value”. More broadly, it could include all socio-economic uses of energy that improve quality of life and local resilience, for example, healthcare, education, livelihoods, and other social services. In the context of micro-enterprises, examples of PUE activities include:

- Primary industries such as agriculture, fishing, livestock, timber, etc.
- Light manufacturing such as carpentry, tailoring, welding, etc.
- Commercial and retail enterprises such as phone charging, restaurants, video screening, cafes, etc.

Projects such as ENACT continue to demonstrate that clean cooking is a major source of livelihood, particularly in urban areas, making its application a form of PUE.

Sources: (Energy 4 Impact, 2021); (National Renewable Energy Laboratory (NREL)/ Energy 4 Impact, 2018)

Enterprise level access

Small and medium-sized enterprises (SMEs) dominate Uganda’s economy, with approx. 1.1 million SMEs making up 90% of the private sector²², 70% of which have unmet demand for credit²³. SMEs are key to Uganda’s economic growth and progress under the Green Growth Development Strategy²⁴. However, their growth faces major constraints largely linked to inaccessible sustainable financing mechanisms and the lack of or weak policy, institutional, legal and regulatory frameworks. On the supply side, financial service providers consider the cost of lending to SMEs to be too high relative to their average loan amounts and struggle to effectively assess risk to this segment. Uganda’s 2015 Small Business Survey also showed that while SMEs are actively using savings and mobile money services, their borrowing remains relatively low despite a demand for credit. Lending from commercial banks remains geared towards larger companies²⁵.

Enterprise development in Uganda is prioritised through policies focused on creating an enabling business environment, enhancing business linkages, and industrialisation to increase modernisation at both firm and household levels. For instance, the SME National Policy 2015-2025²⁶ seeks to enhance SME growth by addressing issues related to legal and regulatory mechanisms for

competitiveness, formalisation and cross-institutional collaboration to support micro, small and medium-sized enterprises’ access to technology, skills development, and access to finance²⁷. While determining the extent to which the policy supports energy SMEs in practice is beyond the scope of this report, it is a crucial area for further investigation, as it determines their contribution to the GoU’s Green Growth Development Strategy.

Research by the International Finance Corporation (IFC) estimates that only around 10% of Ugandan businesses have access to a bank account or line of credit. Uganda’s first credit bureau was established in 2008, and a collateral registry for moveable assets in 2019, which has enabled MSMEs to use their assets and credit histories to access finance. Additionally, the emerging and rapidly developing fintech sector is strengthening SMEs’ bankability as a new innovative model. The Uganda fintech market is driven by mobile money, with a growing number of mobile and digital wallet providers. Beyond mobile money, e-banking solutions (mainly debit cards and point-of-sale systems) offer additional payment options. Merchant and in-store payments, such as MTN MoMo Pay, Airtel Money Pay, and card payments, have steadily grown over the years²⁸. Despite these advances, IFC estimates that about 70% of all MSMEs in Uganda have unmet credit needs²⁹.

22. (ACODE, 2021)

23. (Siemens Stiftung, 2020)

24. (Global Green Growth Institute, 2021)

25. (FSD Uganda, n.d.)

26. (Ministry of Trade, Industry and Cooperatives, 2015)

27. Uganda Micro, Small and Medium Enterprise (MSME) Policy, 2015.

28. For further information on Uganda’s Fintech market, please see (Deloitte, 2022)

29. (International Finance Corporation (IFC), 2021)

The Bank of Uganda has the mandate to supervise and regulate the operations of the financial sector in Uganda. Meanwhile, the Uganda Microfinance Regulatory Authority (UMRA), established under the Tier 4 Microfinance Institutions and Money Lenders Act of 2016, is implementing a law that will introduce new rules for moneylenders and deposit-free MFIs, help streamline the money lending business, and encourage the adoption of best practices. Other industry associations include: (1) the Uganda Cooperative Savings and Credit Union (UCSCU),

which supervises and regulates SACCOs in Uganda and currently has 1,368 registered SACCO members; and (2) the Association of Microfinance Institutions of Uganda (AMFIU), a member-owned and founded organisation for MFIs with 132 members as of 2021.

In addition to financial institutions, other key stakeholders can influence financing for MSMEs and end-users, including public institutions, development partners and policymakers/regulators.

Energy sector financing

The current energy sector financing ecosystem in Uganda comprises the government (through the Uganda Energy Capitalisation and Credit Company (**UECCC**), state budgetary allocations, and public debt), development finance institutions (DFIs), foundations, commercial banks, investment funds and off-grid companies. Several financing options for implementing energy interventions in Uganda are currently available, as summarised in Table 3 below.

The financing available depends on the project type and financing needs. For example, donors such as the **World Bank** have supported the government of Uganda's rural electrification plans through concessional loans and grants. Donors have also sought to encourage lending to energy projects in Uganda by placing lines of credit with commercial banks and other institutions. The **UECCC**, established in 2013, facilitates investments in Uganda's renewable energy sector, focusing on enabling private

sector participation. It administers the Uganda Energy Capitalisation Trust, a framework for pooling resources from government and development partners to support renewable energy projects. In 2017, UECCC, working with financial institutions in Uganda, launched a facility that enables households and commercial enterprises to acquire standalone solar systems on credit³⁰. Similarly, **United Nations Capital Development Fund (UNCDF)** has been active in placing funds with financial institutions for loans and guarantee facilities for businesses, including those in the energy sector. They also offer technical advisory and support the broader financing ecosystem. In refugee settlements, UNCDF has worked on small-scale initiatives involving digital tools and mapping customer segments for potential loan products.

Carbon credits can also serve as a long-term source of financing for projects, such as for those in clean cooking that can verify their emission reductions.

30. (Africa Clean Energy Technical Assistance Facility (ACE TAF), 2021, p. 10).

Table 3: Potential financing sources for energy projects and appliances³¹

Financing source	Example institutions	Description
Fiscal revenue	Government of Uganda	Fiscal financing through budgetary allocation. Approximately 8% of 2020/2021 budget was allocated to renewable energy related activities.
Donor grants	USAID, World Bank, EU, Shell Foundation, Rockefeller Foundation	Donors may offer grants to support clean energy projects or to de-risk entry into new markets.
Donor backed guarantees and lines of credit	World Bank, AfDB, EU, UNCDF	Donors may extend a line of credit through local banks for lending to energy projects, technical assistance, and subsidies.
DFI concessional loans	World Bank, EU	Long-term, low-cost debt for public borrowers that can match with the return profile of grid electrification projects.
Results-based financing	GIZ	Financing given based on results achieved – normally verified sales of energy products. Can be used to encourage companies to enter new markets.
Microfinance institutions (MFIs) at project level		MFIs may provide finance to public and private-led initiatives on a project-by-project basis. They may also provide small loans to end users for PUE assets.
Commercial banks	Equity Bank, Ecobank	May provide debt financing at the project level and in some cases end-user financing.
Impact investors	Acumen, SunFunder	Impact investment funds may invest in clean energy initiatives through equity and debt investments in clean energy companies and directly at the project level.
Environmental credits	EEP, Carbon Finance Developers	Carbon credits can be generated through carbon offsets for verified emission reductions. New models such as peace renewable energy credits (P-RECs) aim to provide financing for off-grid energy projects in fragile contexts.
Off-grid companies	Bboxx, Enegrow, Mobisol	Off-grid companies may offer financing directly to their retailers for stock or directly to the end user through PAYG or instalment payment models.
Semi-formal and community level finance	VSLAs, revolving funds	For small financing needs, local savings groups may be used – for example, for purchasing energy appliances.

In general, the participation of commercial banks in funding energy companies and products has been limited as they are not familiar with energy projects and project financing risks. Lending from banks remains

geared to specific sectors and focuses on SMEs that can meet collateral and financial history requirements. Development of the microfinance market is enabling more small businesses to access financial services.

31. Information adapted from the National Electrification Strategy, p.281

Urban informal settlements in Uganda

Features of urban informal settlements

Urban areas have limited capacity to absorb large numbers of people and provide employment, access to land and basic amenities, resulting in the creation of informal settlements. These communities are home to Kampala's lowest-income and most economically excluded residents. It is estimated that about two-fifths of Africa's urban population lives in informal settlements. UN-Habitat's definition of an informal settlement is an area that has one or more of the following five characteristics³²:

1. **Structurally deficient housing:** The housing lacks a permanent structure that provides protection from extreme climatic conditions and is not located in a hazardous area³³.
2. **High occupant density:** There is insufficient living space, with an acceptable standard being no more than three people per habitable room.
3. **Limited access to safe water:** Water is insufficient, affordable and can be obtained without extreme effort. A household is considered to have adequate access if it can get at least 20 litres of drinking water per person per day for family use at a price not exceeding 10% of its total income.

4. **Limited access to sanitation and other infrastructure:** Access to infrastructure and sanitation is uneven and limited. Informal communities often struggle to access sanitation, electricity, and water. They are often obliged to pay more for these services through landlords and intermediaries.
5. **Insecure residential status:** There is no de facto or de jure security of tenure or protection against forced eviction. Residents are considered secure if they have documentation that demonstrates protection against unlawful eviction.

These gaps exacerbate the underlying socioeconomic inequalities, further hindering the overall development and wellbeing of informal communities. According to Cities Alliance, informal settlements also lack basic municipal services, such as water, sanitation, and waste collection services, as well as schools and clinics within easy reach, safe areas for children to play, and spaces for the community to meet and socialise³⁴. Notably, none of the definitions above specifically mention access to quality and affordable energy services or infrastructure, yet this is a common challenge among the urban underserved.

UN-Habitat further outlines factors contributing to the formation of informal settlements, and how governments have traditionally handled informal settlements³⁵. These are highlighted in Box 3 below.

32. (UN-Habitat 2014). This report uses the term "informal settlement" to cover both slums and informal settlements.

33. Most housing structures in informal settlements are made from temporary material such as cardboard, tin sheets, or mud. There are some permanent structures made from bricks or cement, though most do not comply with national building standards, and are not designed to protect their inhabitants from climatic issues such as prolonged cold or hot periods, storms, or heavy rains (UN-Habitat 2018).

34. (Cities Alliance 1999)

35. (Cities Alliance 1999)

Box 3: Formation and management of urban informal settlements

The following key factors have led to the rapid growth of informal settlements, particularly in developing countries:

- 1. Failure of governments and markets to meet the high demand for safe, stable and affordable housing:** Rural migrants move to cities at a high rate, driving up demand for housing. Both governments and the private sector are unable to keep pace with this demand. Quality land and housing are often out of reach for a majority of rural-urban migrants, who tend to experience more economic hardship than other urban residents. They, therefore, resort to low-quality accommodation or squatting. Additionally, affordable, quality land is in short supply, which means many informal settlements are in high-risk areas that expose residents to climate-related hazards such as floods and landslides.
- 2. Weak government policies:** Urban planning systems, especially in developing countries, are not designed to manage or prevent the development of further informal settlements. The fact that national and local governments do not acknowledge informal settlements as part of the city further exacerbates the situation. In addition, city planning often does not consider the projected economic and social needs of people who live in informal settlements.
- 3. Underinvestment in infrastructure for underserved communities:** When local authorities do not recognise informal settlements as legitimate, minimal investment is made in developing infrastructure such as proper housing, roads, electricity, water and sanitation, waste management, and social institutions in these areas. Housing standards and building by-laws, for example, seldom favour the urban underserved, and any construction that does not meet these standards is classified as “illegal”, which is often accompanied by tenure insecurity and eviction threats. As a result, the urban underserved use temporary or semi-permanent materials for their housing, fearing loss of investment due to forced eviction. On the other hand, the private sector does not consider informal settlements to be an attractive housing market, due to high perceived risk and low return on investment. Limited avenues for the urban underserved to access financing for proper housing further exacerbates this challenge.

National and local governments have traditionally adopted the following five measures to address the formation and growth of urban informal settlements:

1. Ignoring them, assuming that they are temporary and will disappear as the economy grows.
2. Politicising them as a way for politicians to gain popular support. While this can lead to some improvements, it is usually pegged to the political interests of leaders and the legitimate needs of the people living in informal settlements may not be adequately addressed.
3. Displacement through eviction, often to pave the way for large-scale development projects and events, or for failure in complying with increased rent rates.
4. Relocation, where people living in informal settlements are relocated to other areas and the land is redeveloped in the informal settlement. However, relocation initiatives often fail to consider broader needs, such as proximity to work and household expenditure, causing some to return to their original residences.
5. Public housing, where people living in informal settlements are rehoused in public housing in other parts of the settlement.

Sources: (UN-Habitat 2003); (UN-Habitat 2014); (UN-Habitat 2018)

Uganda's urbanisation rate stands at 5.4% per annum, leading to significant population growth in urban areas. According to World Bank indicators, 26% of the population (around 12 million people) live in urban areas, with 60% residing in informal settlements in 2018³⁶. Anticipated employment opportunities, higher incomes, better living conditions, and improved access to services in urban areas, particularly in big cities, continue to attract Ugandans from rural areas. Those migrating from rural areas often find affordable housing only in informal settlements, scattered across cities. Cities such as Kampala and Mbarara have experienced steady population growth in informal settlements in recent years. Estimates project that Uganda's urban population will reach 21 million by 2040³⁷.

Kampala was originally built on seven large hills with lowland swamps in between. There are 57 informal settlements in Kampala which are spread across the city's five divisions: Central, Kawempe, Nakawa, Lubaga and Makindye. The Central region has the highest proportion of urban residents, at around 54%. It is predicted that, at its current rate of population growth, Kampala will become a mega-city with a population exceeding 10 million by 2030³⁸.

Despite the prospects of better employment in cities, most people living in urban informal settlements have

low and medium incomes through occupations such as day labouring and small-scale businesses. There are often informal markets in these areas, giving rise to livelihood and employment opportunities. Some of the business activities include general stores selling groceries, restaurants, clothing shops, and auto repair garages. However, the creation of productive jobs has not kept pace with urban population growth, leaving many, particularly youth, unemployed.

Infrastructure developments have also struggled to keep up with urban population growth, leaving cities with highly populated areas where the demand for municipal services far exceeds supply, creating challenges in the movement of goods, supply of quality housing, and provision of social and environmental services such as sanitation and clean water. In 2016, Kampala was ranked the second most polluted city in Africa for particulate matter (PM)_{2.5} – one of the emissions released from burning biomass. Informal settlements often lie alongside highways, which are heavily congested, exposing residents to carbon monoxide emissions and other air pollutants. Inadequate waste disposal and food hygiene practices also expose residents to disease transmission and health risks. Informal settlements can also be prone to flooding, with infrastructure easily washed away, particularly given Kampala's location on swampland areas.

Table 4: Profile of some urban informal settlements in Uganda³⁹

Informal settlement	Average household size	Average number of households	Average population
Kisenyi I	6	400	2,400
Kisenyi II	6	1,500	9,000
Kisenyi III	4	2,000	8,000
Bukesa	6	900	6,000
Kagugube	6	2,500	15,000
Kamwokya II	5	1,276	6,380
Mengo	6	500	3,000

36. Statistics taken from World Bank indicators.

37. Uganda Bureau of Statistics (UBOS)

38. Information taken from the article: (Pyke, 2019)

39. Slum Settlement Profile - Kampala

In relation to energy access, Kampala has access to electricity, but many households, particularly in informal settlements, lack direct access due to high costs. In informal settlements, the average monthly cost of electricity is reported at 26,666 Ugandan Shillings (\$7.12) per household, contributing to low per capita annual consumption of 215 kWh⁴⁰. Reports from the Namuwongo informal settlement indicate that residents pay a flat monthly charge of \$3.50 for electricity, an exorbitant rate compared to the market⁴¹. The high costs have driven some households to use informal connections, while others have switched to alternative energy solutions like biomass, kerosene, and solar systems for lighting and cooking.

The use of charcoal, and, to a lesser extent, firewood, is also common within informal settlements. Observations from Namuwongo found households spent \$15 a month for 30 kg of charcoal, representing a significant proportion of household incomes. In Katanga, one of the largest urban settlements in Kampala, only 4.3% of households had electricity for lighting, while 84.2% used charcoal for cooking and 12.1% relied on firewood⁴². Limited and unreliable public services in informal settlements have led to a monopoly of private providers charging exorbitant prices for services other city residents access more affordably.

Policy and programmes supporting informal settlements

Organisations including NGOs and community-based organisations (CBOs) work within the informal settlements to improve living conditions for residents. In Uganda, these include **ACTogether**, which supports local groups in running small businesses, such as selling clothes and soap making, and **Hands for Hope**, a Ugandan NGO that equips young people, parents and guardians with education, skills and resources to pursue productive livelihoods and employment opportunities. Several global alliances are also working in Uganda to fight urban poverty and support cities in delivering sustainable development. This includes **Cities Alliance**, which adopts long-term programmatic approaches to support national and local governments in developing policy frameworks and strengthening local skills and capacities. The **Uganda Slum Dweller Federation**, a member of the **Slum Dwellers International** network, currently supports 38,000 members in six urban centres across Uganda, including through savings schemes.

The Kampala Capital City Authority (KCCA), through Expertise France (French public agency), received support to develop the Kampala Climate Action Plan (KCAP) under

the **Africa4Climate** project⁴³. In the KCAP, KCCA assessed the energy efficiency of energy sources within Kampala and found that energy consumption in the metropolitan area resulted in higher per capita carbon equivalent emissions of 1.7 CO₂e, compared to the national average of 1.4 CO₂e. While biomass is the main reliable source of energy for cooking in the Greater Kampala Metropolitan Area, accounting for 50% of the energy stack, the assessment suggests that by 2030, biomass and petroleum will dominate the energy mix, at 49% and 42%, respectively, with electricity comprising only 9%⁴⁴.

Why do we need more financing for energy access in urban informal settlements?

The slow transition to clean cooking solutions has been spotlighted extensively in literature, covering wide variations in momentum and outcomes of the transition across geographies. The literature points out factors inhibiting the scaled uptake of clean cooking solutions such as undeveloped and under-developed supply chains. As urbanisation accelerates, informal urban settlements grow too, worsening particulate matter emissions due to reliance on unclean cooking solutions.

With the world in its final decade of the 2030 Agenda for Sustainable Development, it is critical to steer private finance towards the Sustainable Development Goals (SDGs) with the aim of improving wellbeing, enhancing prosperity and protecting the planet. Clean cooking is a key target under SDG 7, with implications for several other SDGs such as good health, gender equality, climate, and responsible consumption. In Kampala's informal settlements, biomass is traditionally used for cooking, while electricity is used for lighting.

Preliminary findings from existing literature indicate market failure in the clean cooking value chain, as the currently most used solution – traditional biomass – yields few improvements in people's lives. Rectifying this failure, which emanates from multiple market and behavioural obstacles, would result in significant health, time, and emissions benefits. However, achieving this requires identifying and promoting financial approaches that support clean cooking market systems, as well as developing transformative policies.

Considering the net social and economic benefits, facilitating more direct and targeted financing to accelerate clean cooking access in urban informal settlements could not be timelier.

40. (Energypedia, 2023).

41. Observations taken from news story <https://worldprojects.columbia.edu/news-media/affordable-energy-and-water-are-out-reach-urban-poor-providing-both-would-be-simple>.

42. Information taken from *A proposal for empowering slum dwellers as a viable way of addressing urbanization challenges in Katanga slum, Kampala, Uganda* published here <https://www.eeer.org/journal/view.php?number=858>

43. (Access to Energy Assessment at households and institutional levels in the greater Kampala Metropolitan Area, 2022).

44. (KCCA, 2016).

FINANCING NEEDS: ENERGY PRODUCT AND SERVICE PROVIDERS

Stakeholder mapping

The adoption of clean cooking technologies in Uganda's informal settlements, including Kisenyi, is highly dependent on energy product and service providers. They play a key role in product development, market activation, and product distribution, as well as in enabling different product financing mechanisms that drive uptake within informal settlements



Image: An artisan at the Green Bio Energy factory shapes iron sheets to form stove liners.

Uganda boasts several ESPs that are specialised in technologies cutting across LPG, improved cookstoves (ICS), electric pressure cookers (EPCs) and briquettes, some of which are outlined in Table 5 below.

Table 5: Examples of clean cooking service providers in Uganda

ESP	Activities/technology specialisation
Wana Energy Solutions (WES)	Wana Solutions deals in the distribution of liquified petroleum gas, biomass ICS and EPCs in the informal settlement of Kisenyi and its environs, where the ENACT project was focused. Together with Green Bio Energy (see below), WES, in ENACT, distributed these solutions to people living in Kisenyi in a bid to promote the transition to clean cooking among households and microenterprises.
Green Bio Energy (GBE)	Green Bio Energy specialises in the production of ICS and charcoal briquettes. ICS have a 40% efficiency, making them fuel-saving, while charcoal briquettes, made from biomass residues, help to conserve forest cover. GBE, as part of the ENACT consortium, distributed ICS and charcoal briquettes in Kisenyi to support the transition to clean cooking among households and microenterprises.
Up Energy	The enterprise strives to address energy poverty and climate change with projects and technology that benefit those in a vulnerable position due to climate risks. Prioritised decarbonisation projects include electric cooking, fuel-efficient cooking technologies using ICS, and community initiatives that equip schools with bespoke cookstoves with higher thermal efficiency.
Uganda Stove Manufacturers Ltd (UGASTOVE)	UGASTOVE's mission is to improve the social and economic conditions of the urban underserved by engaging them with sustainable, innovative, and environmentally friendly energy-efficient cookstoves. The enterprise produces and sells more than 8,000 cookstoves per month ⁴⁵ designed for both household and institutional use. Clean cooking is achieved by reducing fuel consumption, indoor air pollution, and greenhouse gas emissions. Their products include modern kitchens, local ovens, fixed institutional improved cookstoves and domestic charcoal stoves.
Arem Clean Energy Solutions	Distributes bioethanol cooking solutions to households, businesses and restaurants in rural, urban and peri-urban regions in Uganda. With funding from Bettervest, the aim is to sell 10,161 bioethanol cookstoves and 321,456 litres of bioethanol fuel by 2025, thus promoting clean cooking interventions and abating approximately 75,362.1 tons of CO ₂ across the three-year period.
Eco Stoves Uganda	Specialises in the manufacturing of volcanic rock-based and solar-aided cooking stoves in Kampala. The volcanic rock stoves use volcanic rocks as an alternative to charcoal for better heat retention and fuel efficiency. Combined with solar-aided cooking stoves, this promotes more efficient and environmentally friendly clean cooking in Uganda.
Bidhaa Sasa	Promotion of clean cooking in Kenya and Uganda with distribution of over 50,000 efficient charcoal stoves, 50,000 LPG gas cookers, and 5,000 electric pressure cookers ⁴⁶ .
Conservation and Development Uganda Limited	Specialises in biomass pellet stoves.
Ezylife Holdings Limited	Aims to improve the lives of families at the base of the economic pyramid. Specialises in the production and distribution of improved charcoal stoves under the names EzyStove Wood Cookstove and EzyChar Charcoal Cookstove.

45. For more information, see <https://cleancooking.org/sector-directory/uganda-stove-manufacturers-ltd-ugastove/>

46. For more information, see <https://cleancooking.org/sector-directory/uganda-stove-manufacturers-ltd-ugastove/>

Potential Energy, Inc.	Non-profit organisation that manufactures and provides improved cookstoves to ensure every home benefits from healthy, safe and low emission.
ReNewable Hub (U) LTD	Electric pressure cookers.
TEECO Uganda Limited	Electric pressure cookers.

Support in scaling clean cooking solutions in urban informal settlements

Informal settlements require concerted efforts from various stakeholders to enable them to bridge the gap in access to clean cooking technologies. ESPs have a role to play in raising the standards through well-targeted programmes and products that promote energy access, enhance energy efficiency, and advocate for sustainable development. Barriers such as limited infrastructure, lack of awareness, and the high poverty index hinder the adoption of clean cooking technologies in the informal settlements.

ESPs will often bear the additional responsibility of addressing these challenges, which is typically not part of their core business model, and warrant technical support. Some of the areas of support needed include:

- Community sensitisation and awareness creation:** ESPs in Uganda carry out community sensitisation in the informal settlements to create awareness about clean cooking technologies and their importance for both the environment and people's health. WES and GBE have been at the forefront of this, to the extent of holding competitions where food is cooked with different types of technologies and the people living in Kisenyi are asked to taste the food and identify the technology used. In one of the market activation activities in Kisenyi, WES commented, "It was surprising then that the residents were not able to identify the technologies correctly hence none was rewarded". Though initiatives such as these have proven effective in raising awareness and improving the confidence of communities to access and use clean cooking solutions, they are often costly. Most of the enterprises in Uganda engage UNACC to help them advertise and sensitise the communities on the clean cooking technologies for a fee.

- Support for social and community services:** ESPs provide energy solutions (including clean cooking) to schools, clinics, and community centres, among others in informal settlements, enabling effective delivery of social services.
- Resilience and adaptation support:** In addition to the point above, the technologies provided by ESPs are crucial in building climate resilience, especially for those living in the informal settlements. Encouraging the use of these technologies for PUE helps cushion users against adverse effects of climate change. However, promoting this approach requires a dedication of resources and skills among ESPs.
- Facilitation of financing and payment plans:** Consumer affordability is one of the barriers to the adoption of clean energy projects within the informal settlements, as the end-users in informal settlements have low disposable income. In new markets such as urban informal settlements, ESPs bear the responsibility of implementing delivery models that improve affordability, such as pay-as-you-go or credit-based, often financed from their balance sheets.
- Building maintenance infrastructure and services:** Local technicians living in the informal settlements benefit from training sessions offered by ESPs on the installation, maintenance, and repair of energy access systems.

Financing needs by clean cooking companies

Clean cooking companies in Uganda need financing to support their operations, from product manufacturing, distribution and monitoring to consumer engagements. The entire business value chain requires funding, given the low penetration rates in urban informal settlements, more so as demand in the informal settlements is constrained by limited infrastructure and the economic status of the communities.

In addition, as with other companies in the clean energy sector, financing is required to support company growth – from seeding, early growth and late growth to maturity. Clean cooking companies engaged in ENACT cited the following common financing needs that would not only support business activities and growth, but also help them better penetrate nascent markets such as urban informal settlements. It is worth noting that these financing needs were recognised as crucial among small and medium enterprises whose base capital is insufficient to cover all these needs, and who need these foundational features to stand a chance of growing as a company.

- Market and brand activation:** Endearing the target audience to the products requires interactive events and experiences, which require facilitation of capital investment. In the Kisenyi informal settlement, clean cooking companies pay UNACC to help promote clean cooking technologies by organising targeted community events across the country. In addition, ESPs require funding to conduct market research that would inform strategic branding and marketing to effectively reach the target consumer market.
- Research and development (R&D):** Companies need to continue improving their product and service offering to fit the targeted end-use segments especially for new markets, and to keep up with the evolving regulatory environment. This requires resource allocation to continuous R&D, which is often a challenge for young and small to medium enterprises. GBE, for example, is currently researching the use of macadamia husks in producing charcoal briquettes, which would help to increase their briquettes production capacity and meet growing demand. Advancement in this R&D is however hindered by financial resources to acquire the raw materials in bulk, conduct field trials, and secure long-term contracts with macadamia producers and processors. Continuous R&D is important in clean cooking as technologies keep evolving against

a regulatory environment that demands further improvement in product efficiency.

- Scaling up:** Growth in demand necessitates additional capital to scale-up operations, including increasing production capacity, securing affordable and effective supply chains for raw materials and technology parts, entering new markets and strengthening distribution networks. In addition, the constantly evolving energy sector demands that companies keep up to date with the trends, while adapting to new technologies and evolving market conditions. Financial investment to SMEs is required for staff retraining, adopting new business models, and integrating new technologies.
- Infrastructure development:** Capital investment is crucial for building necessary infrastructure, such as LPG refill plants, energy-efficient cookstoves assembly, briquette manufacturing plants and distribution lines, among others. WES and GBE opened a distribution hub in the Kisenyi settlement but require additional funding to expand local delivery in other settlements in Kampala. ESPs therefore need financing to expand activities along manufacturing, distribution, customer engagement and monitoring and evaluation value chains.
- Community and stakeholder engagement:** The success of projects is heavily pegged on engaging local communities and stakeholders, which requires investment in communication, outreach, and may extend to social programmes.
- Compliance and regulatory requirements:** Energy service providers must adhere to environmental and safety regulations and obtaining the mandatory permits and licenses in their jurisdiction that may attract financial resources. In Kampala, for example, the Kampala Capital City Authority (KCCA) is an important local government structure that is vital for licensing enterprises involved in the manufacturing and distribution of clean cooking technologies. Both national and local governments operation licences incur costs that ESPs must remit.
- Operation and maintenance:** Recurrent expenses for maintaining equipment and facilities, ensuring operational efficiency, and minimising downtime to support reliable and sustainable operations all require financial resources.

FINANCING INSTRUMENTS FOR CLEAN COOKING

Overview of energy financing mechanisms

Financial support is pivotal in enabling energy access enterprises to scale their operations, especially in highly competitive urban spaces. Financial support is mainly delivered through instruments or mechanisms that are issued in various forms, as outlined in Box 4 below. It is estimated that \$4 billion is needed annually to provide clean cooking energy to 250 million people in Africa. The African Development Bank (AfDB) plans to invest \$200 million per year towards achieving the target⁴⁷. It would be worth investigating further how much of this investment flows geographically across clean cooking technologies and within clean cooking value chains.



47. (African Development Bank (AfDB), 2024)

Image: A stove distributor sells the Green Bio Energy cookstove at her store alongside improved biomass cookstoves.

Box 4: Financial instruments applicable to energy access projects

Grants: Funds given to an entity with no repayment expectation. Mostly provided by philanthropic and public actors.

Equity: Capital provided in exchange for ownership in the enterprise, with expectations of future growth. Equity finance is most often provided by investors and investment funds.

Debt: Capital provided with the expectation of future repayments plus interest. Debt financing usually requires hefty collateral and is most often provided by financial institutions.

Outcome-based financing: Mechanism where governments, state agencies, or donor agencies disburse funds to a recipient once a pre-agreed set of results has been achieved.

Crowdfunding: A fundraising method that involves people and organisations contributing money to finance projects and businesses.

Commercial capital: Funds that can be obtained in domestic and international capital markets through, for example, the issuance of bonds (debt obligations or borrowing by enterprises, governments, and multilateral banks) with a target market rate of return.

Blended finance: Use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development. Catalytic capital is more patient, risk-tolerant, or concessionary than traditional private sector capital, which seeks to maximise financial returns.

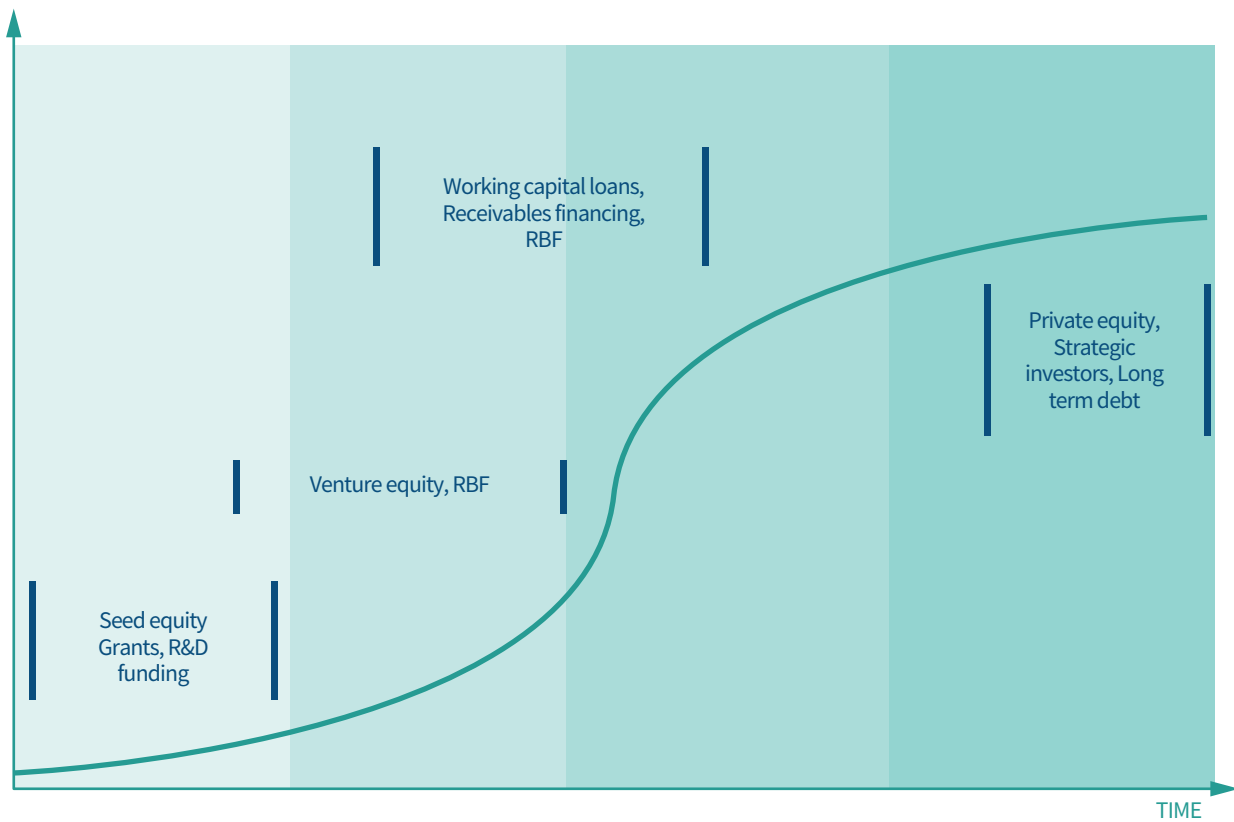
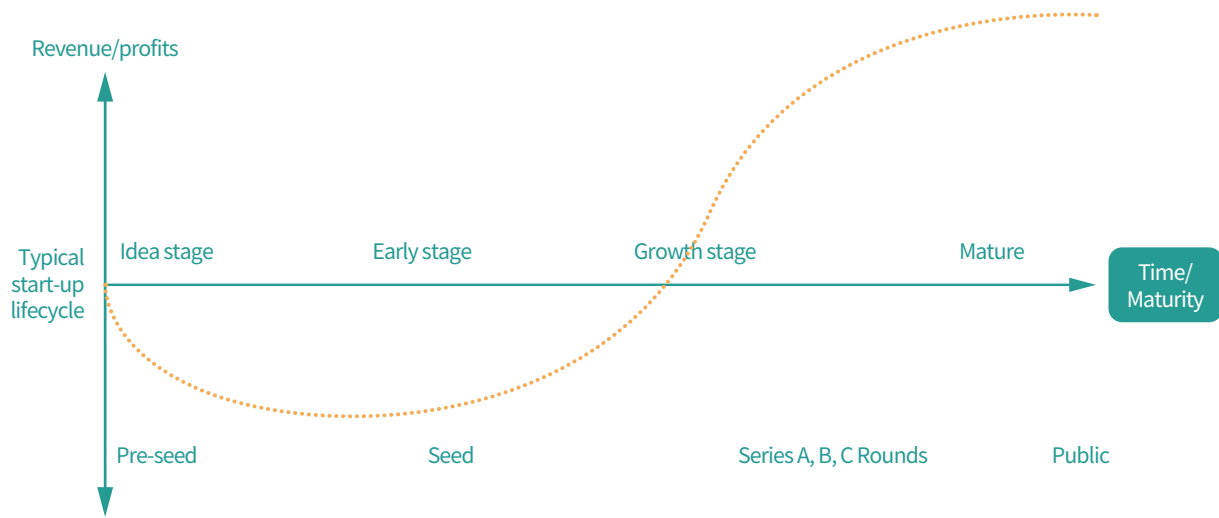
Depending on the growth stage of an enterprise, and what it needs at its current level of operations and profitability, various financial instruments are matched in order to fully realise the efficiency of the funding. A non-exhaustive list of such instruments includes impact-ready matching grants, repayable grants, soft loans, crowdfunding, convertible loans, SAFE agreements, social impact incentives, tech-enabled lending, trade finance, and public equity.

Beyond the private sector, governments have played a momentous role in enhancing access to clean energy for both cooking and lighting. ICLEI Africa has surveyed the various forms of public sector financing towards scaling clean energy access within a number of reports and resources⁴⁸.

48. Key resources published by ENACT can be found at <https://africa.iclei.org/project/enact/> and <https://www.energy4impact.org/resources>

Figure 4: Financing against energy SME growth

Source: Energy 4 Impact research on financing landscape (MECS & Energy 4 Impact, 2022)

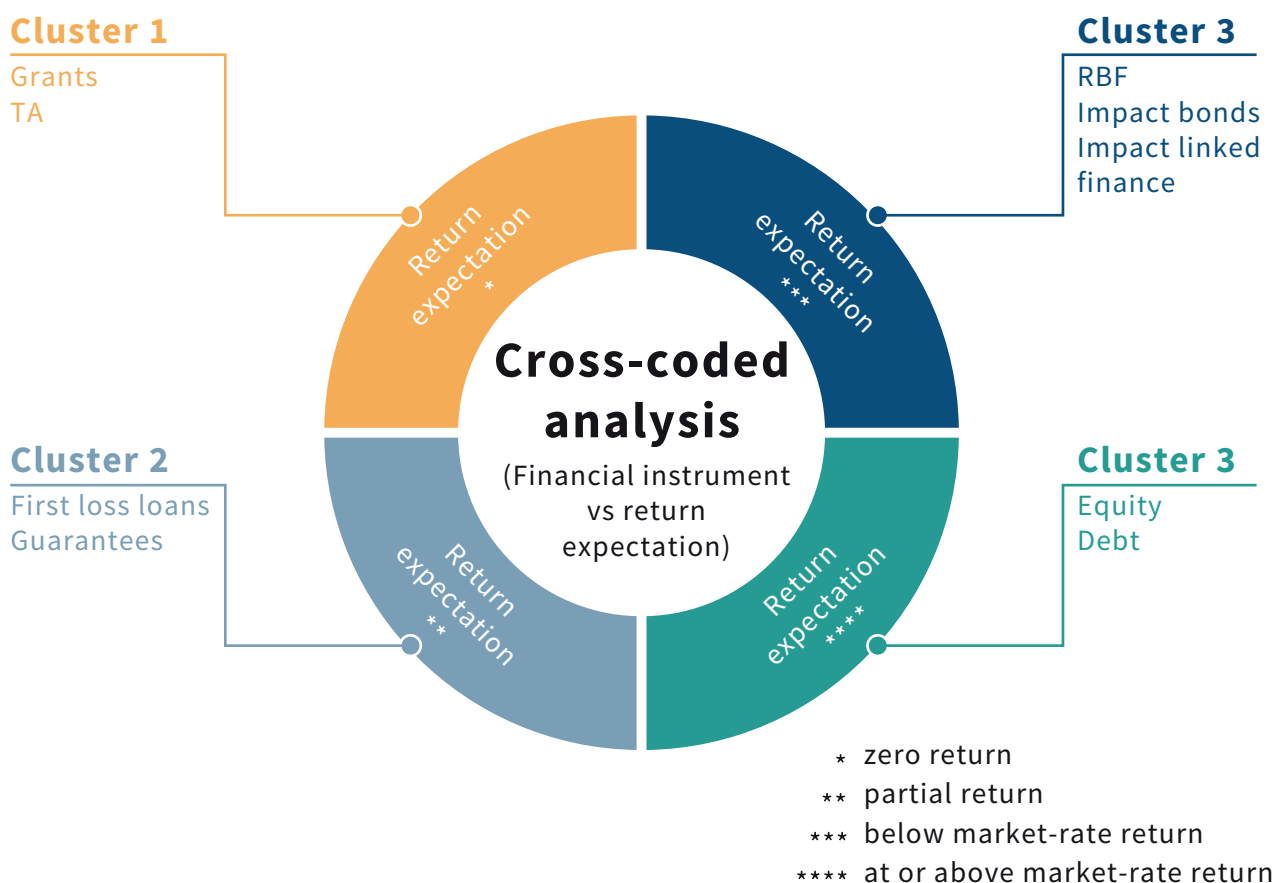


The figure above shows the various forms of funding applicable to energy enterprises, based on their financing needs at each growth stage, as depicted along the financing S-curve in Figure 4. While a market system development (MSD) approach is important in sustainably supporting energy enterprises in the clean cooking ecosystem, some financiers or funders offer first-loss loans instead of grants⁴⁹.

As seen in Figure 5 below, financing instruments for energy can be clustered into four main categories depending on the financial return expectations. This also applies to clean cooking companies.

Figure 5: Clustering financial instruments against financial return expectations

Source: Author’s conceptualisation per the assessment of existing literature.



The clean cooking space has attracted various forms of financing, mainly in the form of grants, private equity, venture equity, outcome-based finance, debt, technical assistance, first-loss loans, and impact bonds. Most energy enterprises prefer patient and affordable capital structured as subordinate debt or quasi-equity blended with grants. This should also be layered with a market return rate, with the caveat of not prematurely putting pressure on

the enterprises’ financial return⁵⁰. Table 3 presents a snapshot of the various forms of financing provided to clean cooking SMEs. However, grants, and increasingly equity, have been the most common forms of funding in the clean cooking value chain, while debt financing is less preferred especially by early-stage enterprises lacking sufficient financial history for a loan and access to investor networks⁵¹.

49. Author’s conceptualisation as per assessment of existing literature.
50. (Global Alliance for Clean Cookstoves, 2021).
51. (MECS & Energy 4 Impact, 2022).

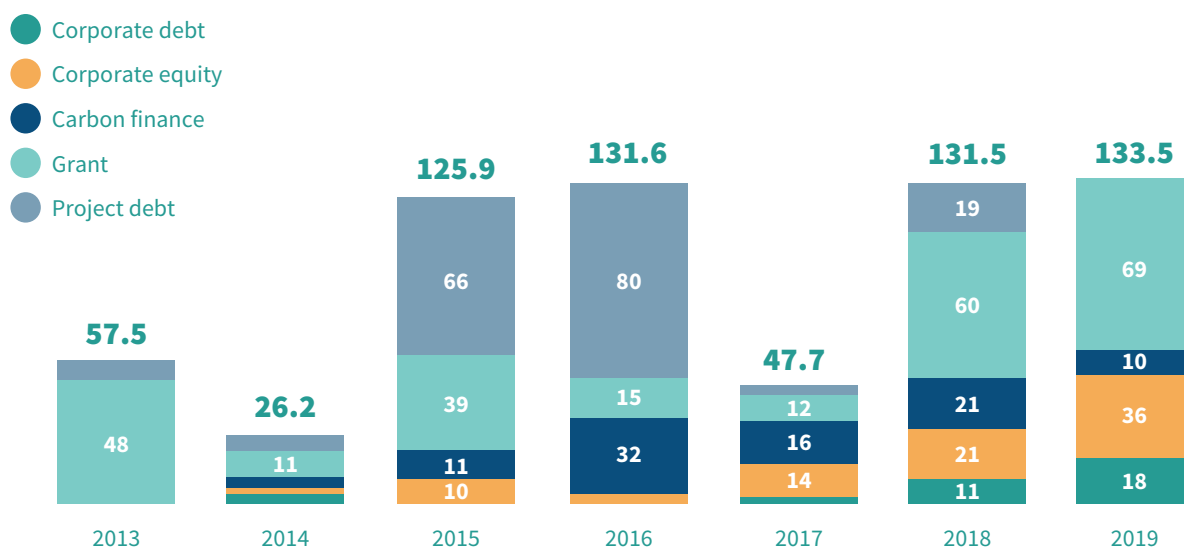
Equity financing

Equity investments are crucial for developing commercially viable and scalable clean cooking enterprises. Most clean cooking financing has come from equity and grants. There is a lack of impact investors willing to invest in early-stage businesses, preferring to invest at the stage of commercial viability. As a result, equity funds play a crucial role in the budding and early growth stages of an enterprise's development, helping to de-risk enterprises as they explore different business models and operations towards scaling up.

The clean cooking sector is nascent but is growing rapidly in high impact countries (sub-Saharan Africa). In other energy access value chains that are more profit-oriented than focused on social impact, equity funds have played a significant role in the scale-up phase. For instance, between 2015 and 2019, equity investment commitments grew by 2.5 times for clean cooking value chain enterprises in high impact countries (Figure 6).

Figure 6: Clean cooking commitments between 2013 to 2019 in high impact countries

Source: (SEforAll & Climate Policy Initiative (CPI), 2021).



Debt financing

Debt financing refers to repayable loans issued to clean cooking enterprises, sourced locally or internationally, either directly or through local financial institutions. Affordability is a significant barrier to clean cooking in the informal settlement target market in high impact countries. While most clean cooking enterprises sell their appliances for cash, affordability issues and low consumer credit have led to hire purchase or pay-as-you-go schemes becoming the main payment plans. As a result, these enterprises seek debt financing to support their operations. The enterprises are mainly in the late-growth to mature stage and exhibit the following characteristics:

- Sales sustain initial business operations but not growth (late-growth stage).
- The business model is functioning, and the focus is on expansion into new geographies.
- The enterprise is profitable.
- The enterprise has created consumer demand.
- The brand is developed and recognisable.
- Strategic planning is embedded in business activities.
- The organisation has implemented systems to build organisational capacity to scale.

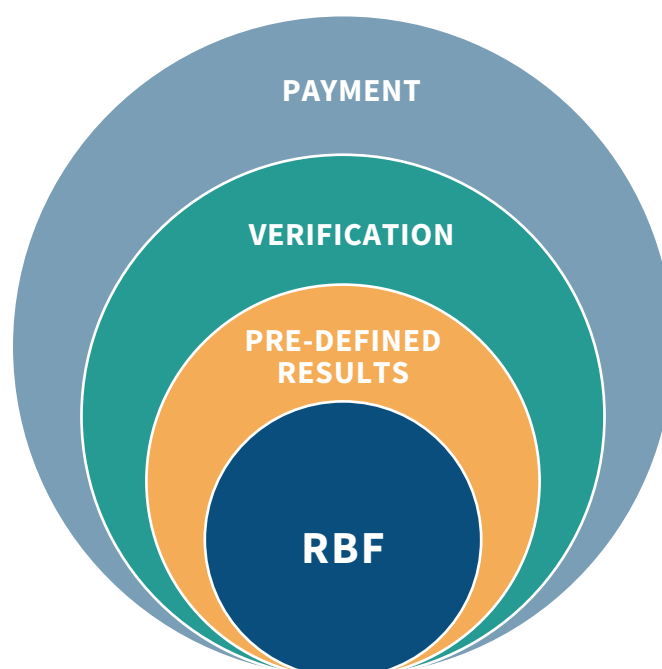
Debt financing is commonly used by capital providers and may include either traditional or concessional terms. Concessional debt offers advantageous financial conditions, including below-market interest rates, and longer grace periods. For instance, ResponsAbility, an impact investor, proposes flexible debt financing solutions for energy access companies in Africa and the Asia Pacific⁵². Their offerings include flexible ticket sizes, maturities ranging from six to 36 months, funding in various currencies, and disbursement and repayment structures tailored to cash-flow projections.

Outcome-based financing

These comprise of innovative solutions that channel donor funding to projects for verified outcomes. Examples include results-based financing (RBF), a form of payment-by-results that can be offered by both public and private sector entities, and impact bonds. These mechanisms vary in their focus on different stakeholders: impact bonds involve governments and NGOs, while RBF addresses market-based solutions. The clean cooking sector can leverage results-based financing schemes.

RBF is mainly implemented at the early growth stage of energy access projects to de-risk the enterprises, incentivise product and service provision, create or expand markets, stimulate innovation, raise awareness, and support market setup and development. It has become an important funding tool for the sector in the last decade. RBF is structured to prevent underperformance by ensuring that the financial risk of non performance lies with the enterprises, encouraging service providers to explore activities beyond their usual business scope, such as expansion into underserved regions like informal settlements, urban low-income population, and displaced communities. The models' key principles include setting pre-defined targets that must be verified independently before payment is made as described in Figure 7.

Figure 7: The RBF concept



52. For more information, please see <https://www.responsability.com/en/asset-classes/private-debt>

Other outcome-based models are demonstrated by investment vehicles such as the Clean Impact Bond (CIB) and Charm Impact Bond⁵³. The CIB was launched in 2022 in Accra, Ghana, when Cardano Development, the impact manager, and the Osprey Foundation signed an outcomes contract, alongside a loan agreement between BIX Capital and Sistema.bio. The development impact bond aimed to bridge a financing gap by providing clean cooking solutions for low-income consumers. It was designed to crowd in funds from various partners to support funding and scaling up the production of clean cooking solutions, by quantifying health and gender co-benefits in monetary terms to outcome buyers (organisations that commit to purchasing development impacts such as gender

equality and health benefits). The Charm Impact Bond between iGravity and Charm Impact is another investment approach, aimed at funding impactful enterprises that would typically be unable to secure financing due to their stage of growth and size. Targeted enterprises are in the clean cooking space, and loans range from about \$12,500 to \$430,000 with a three-year repayment period. Under this bond structure, enterprises that achieve high-impact rates are rewarded with lower interest rates. Moreover, the bond framework includes capital for a first-loss guarantee on every loan issued, de-risking private investors' capital and encouraging more risk-averse investors to crowd in commercial capital for budding and growing clean cooking enterprises^{54,55}.

Case example: The Charm Impact Bond (CIB) is composed of a consortium that includes BIX Capital, Osprey Foundation, International Finance Cooperation, Sistema.bio, and Cardano Development. BIX Capital is the primary investor, providing \$300,000 to directly finance the clean cooking enterprise, Sistema.bio, in scaling up business operations and recruiting new customers. The bond leverages outcomes including reduced mortality, improved health, and increased quality time for women using biogas digesters available by Sistema.bio.

The gender and health outcomes had a matching commitment of \$500,000 from Osprey Foundation, the outcome buyer, contingent on independent verification and certification of outcomes. The delivery cost of the CIB, including monitoring, evaluation, reporting, verification, and repayment of BIX Capital's investment, are covered by the outcome payments from Osprey Foundation.

Crowdfunding

Crowdfunding is a relatively nascent financing mechanism for clean cooking enterprises targeting the informal settlement market. It consists of four main archetypes, all of which can be implemented in raising funds for clean cooking solutions: donation crowdfunding, rewards crowdfunding, debt crowdfunding, and equity crowdfunding. In the energy access space, debt and equity crowdfunding tend to be suitable for highly innovative solutions and technology-centric enterprises. However, equity investors are primarily interested in financial returns over social impact, making them less likely to invest in cooking companies.

Clean cooking organisations raised nearly \$8 million through crowdfunding between January 2014 and

September 2020. This compares to \$159 million of energy access crowdfunding investments over the same period, and a total investment of \$153 million in clean cooking between 2017 and 2019⁵⁶.

Crowdlending platforms offer several advantages that are not typically available from traditional financiers. Kiva direct lending and Charm Impact mainly issue small-ticket loans and are highly suited for early-stage cooking companies that can reliably service their loans. Bettervest and Kiva, drawn by the social impact, are the main crowdfunding platforms in the clean cooking space. Unlike traditional finance, crowd funding offers advantages such as shorter transaction times (typically three months) compared to other funds, flexibility in campaign timing and funding tranches, and the diversification of funding sources⁵⁷.

53. (International Finance Corporation (IFC), 2023); (MECS & Energy 4 Impact, 2022)

54. (MECS & Energy 4 Impact, 2022)

55. (ESI Africa, 2022)

56. (Clean Cooking Alliance, 2021)

57. (MECS, 2023)

Case example: bettervest is supporting AREM Energy Solutions in the distribution of energy-efficient cookstoves targeting above 60,000 people and abating 75,362 tons of CO₂ through a three-year project with funding worth €100,000. AREM targets distributing 10,161 bioethanol cookstoves and 321,456 litres of bioethanol fuel by 2025.

Carbon credit financing

Carbon finance has helped unlock and scale up clean cooking enterprises. Considering the volume of carbon credit issued globally, approximately \$150 million in aggregate carbon financing has been generated by clean solutions between 2013 and 2022, with corresponding annual revenue flows exceeding \$36 million in 2020⁵⁸.

A new umbrella initiative, Improved Cook Stoves for East Africa (ICSEA), helps eligible stove suppliers earn carbon credits under the UN's Clean Development Mechanism (CDM). The stove suppliers receive support for their enterprise from the ICSEA Stove Support Facility, benefitting from a quick and affordable way of earning carbon credits, while retaining 100% of their credits. The revenue generated from selling the credits allows stove vendors to lower their prices and offer attractive benefits.

Additionally, renewable energy electricity projects (such as hydropower) licensed by the Electricity Regulatory Authority are eligible to generate carbon credits and, in turn, additional revenue through the CDM. To promote renewable energy development, the revenue inflow to the project from the sale of carbon credits does not affect the feed-in tariffs. Eight projects in Uganda are registered under the CDM, Carbon Sink and International Lifeline Fund, in partnership with GET.Invest Finance Catalyst, to increase the impact of energy efficient cookstove technologies in Uganda. As one of Uganda's two largest manufacturers, Lifelines EcoEnergy now receives carbon certificates for every single cooker produced and sold. Reinvesting these credits into manufacturing will enable EcoEnergy to scale operations exponentially, reach more homes and institutions with cost-effective solutions, and amplify the environmental benefits of reduced emissions.

Other financing examples

The World Bank's Clean Cooking Fund (CCF) – \$500 million – is the largest dedicated fund for galvanising political commitment, scaling up public and private investment and catalysing innovation using RBF designs to promote long-term market development and advance energy access for all, as administered through the Energy Sector Management Assistance Program (ESMAP).

In 2014, the World Bank, through the **Africa Clean Cooking Energy Solutions** (ACCES) initiative, provided RBF for clean cookstoves, aiming to promote enterprise-based, large-scale dissemination and adoption of clean cooking solutions in sub-Saharan Africa, with Uganda as one of the beneficiaries.

In partnership with the Government of Uganda, **the UK government, through the Ministry of Energy and Mineral Development (MEMD)**, launched a two-year clean cooking programme to introduce cleaner, more efficient cooking methods, improve health, save energy, and protect the environment. This programme also seeks to establish a Clean Cooking Unit within the MEMD, through the Global Green Growth Institute Uganda Office (GGGI), to spearhead the national clean cooking agenda for effective sector coordination and financing mobilisation.

Beyond these examples, sources or providers of direct financing include personal savings, public institutions, foundations, angel investors, venture capital funds, and capital markets.

58. (Galt et al., 2023).

Challenges and opportunities for finance providers

Challenges

1. **Results-based financing complexity:** The results-based financing business model is important in spurring the adoption of clean energy projects in the Low- and Middle-Income Countries (LMICs) of sub-Saharan Africa. Finance providers, however, face major challenges in deploying this model effectively due to the following:
 - RBF requires verification of targeted results before disbursing funds to the energy service providers, meaning the project must reach the implementation phase to generate the pre-agreed results. This in turn locks out early-stage companies that require pre-financing for the initial business model design and set-up. It could also lead to companies pursuing loans, delaying project implementation periods due to slow disbursement.
 - The model requires project tracking, validation, disbursement and reporting, which can be challenging for both companies and funders.
 - Some beneficiary enterprises are unable to comply with the RBF principles of proving results.
2. **Data and information gaps:** Limited data on energy usage patterns, infrastructure, and market design conditions can be an impediment to the assessment and valuation of projects, leaving finance providers with reservations about the energy access projects.
3. **Currency risks:** African countries are characterised by volatile economies and unstable forex exchange rates against reserve currencies such as the US dollar, which could have negative effects on the return on investment (ROI), discouraging financial investments in the energy sector.

Opportunities

1. **Increased clean energy demand:** There are concerted global efforts and a focus on sustainable development and the clean energy transition, which provide a significant opportunity for finance providers to invest in the energy sector. The transition to renewable energy has been prioritised by most countries, requiring substantial investment to meet the set targets.
2. **Government and international support:** De-risking investments in the energy sector through incentives, subsidies and a conducive regulatory framework by the government and international organisations has the potential to attract more finance providers, as risks are mitigated, making the projects more appealing.
3. **Impact investment and environmental, social and governance (ESG):** There is increasing focus on ESG aspects in energy projects, with emphasis on impact rather than solely financial returns. Finance providers have greater opportunities to invest in energy projects that benefit the environment and social aspects of communities.
4. **Innovative financing models:** Emerging financing models, such as green bonds, blended finance, and results-based financing make it easier to attract private capital to the energy access sector by de-risking investments and offering flexible funding options. RBF schemes have been less utilised in the energy sector compared to sectors such as transport, ICT and healthcare, highlighting the need to promote RBF models to encourage private sector investment in low-carbon opportunities.
 - Simplifying RBF model designs, which may be too complex for enterprises, presents an opportunity to attract more private sector participation and enhance success.
 - Other than financing based on the fulfilment of pre-agreed results, there is an opportunity for RBF models to strengthen local capacities, as complimentary technical assistance is essential.
5. **Emerging markets and untapped potential:** Finance providers have a wide scope to tap into, given the low energy access rates in Africa. There are opportunities for growth and investment in clean energy projects. Africa is home to an urban population of over 600 million, estimated to increase to over 1 billion by 2050. The market potential for clean cooking is underdocumented in the urban space, making the goal of achieving universal clean cooking challenging to bridge⁵⁹. This points towards the need for financial support to implement clean energy access projects in these markets.

59. Further analysis from Center for Strategic & International Studies [here](#)

CONCLUSION AND RECOMMENDATIONS

Adoption of clean cooking technologies in Uganda is picking up pace, with several players actively participating in enhancing the growth of the sector. The country has enterprises participating in the manufacturing and distribution of improved cookstoves and biomass briquettes, while others deal in LPG gas cookers and electric pressure cookers targeting households, businesses and institutions in the urban, peri-urban, rural and informal settlements. This is in line with the global goal of achieving modern, clean, affordable and reliable energy for all, as envisioned in SDG 7.



Image: A factory worker lays charcoal briquettes out to dry at the Green Bio Energy production centre

Financial constraints, both at the supply and demand side, are the main barriers to the uptake of clean cooking technologies. The enterprises need finances to expand their customer bases, activate the market, invest in research and development, develop infrastructure, and engage with communities, among other needs. The demand side cannot be overlooked, as most people living in informal settlements have very low disposable income, affecting their ability to afford the technologies. This necessitates enterprises' implementation of innovative product financing models, such as credit-based models where customers pay in instalments rather than one-off payments of the high upfront costs.

The partnership between the private sector, government institutions, non-governmental organisations, and financial institutions is critical to energy access projects, as most enterprises may not have the financial capacity to seamlessly run operations while also performing essential activities such as awareness creation, research and development, innovation, infrastructure development and community engagement, among others. The introduction of tax exemptions and subsidies by governments is key to promoting consumer affordability of clean cooking technologies, which could be a vital step towards increasing adoption among people living in informal settlements.

The information gathered through engagements with both the private and public sector through ENACT⁶⁰ in Uganda indicates a great opportunity to increase financing for the private sector in urban informal settlements by implementing the following actions:

- **Innovative financial products:** There is a need to develop innovative financial products tailored to the needs of enterprises operating in the informal settlements, which are characterised by high poverty indices. This could be achieved by implementing flexible loan terms with lower interest rates. Other mechanisms include results-based financing schemes, where enterprises are awarded grants based on achieving targeted and verifiable results in the clean cooking sector.
- **Carbon financing:** Enterprises dealing in the clean cooking space have an opportunity to take advantage of the carbon market space to gain extra funding for their operations. However, this requires government support through the enactment of regulatory frameworks that guide the sector and protect the entities from third-party brokers while they strive to get the best prices for the accrued project carbon credits.
- **Public-private partnerships (PPPs):** There is still a need to promote and enhance PPP development to provide the much-needed support and resources for private sector enterprises working in urban informal settlements. Public financing through these partnerships is vital to de-risk the investments via incentives and subsidies, which can further attract private capital investors to the energy sector.
- **Tax incentives:** The government needs to operationalise tax relief for enterprises providing clean energy technologies. Tax exemptions for manufacturers and imports will help reduce product costs, increasing affordability for people living in informal settlements, many of whom have low disposable income.
- **Awareness creation:** Awareness creation efforts must be robust, covering consumers, government institutions, and financial providers — including local banks and microfinance institutions — on the importance and benefits of clean cooking. There is a need for enhanced collaboration between the national government and local authorities in promoting clean cooking technologies, hence the need for synchronisation to ensure all parties are aligned with what is required. There is also a need for more engagements with the community to promote the sharing of information about the advantages (health, environmental and socio-economic) of using cleaner technologies to support informed decision-making. Financial institutions have also been reluctant to finance energy access projects, preferring large-scale, low-risk commercial sector projects⁶¹.

60. Through multi-level governance dialogues, city-to-city exchanges, and stakeholder interviews for this report.

61. (African Development Bank (AfDB))

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APPENDIX: FUNDING OPPORTUNITIES FOR CLEAN COOKING COMPANIES IN AFRICA

Table 8: Private sector funding opportunities

Project/fund manager	Fund type	Funding size	Purpose/objective	Target countries	Time frame
Spark+ Africa Fund	Debt & Mezzanine capital	\$500,000 – \$7m (only for entities that have commercialised their product or service and have traction in the market).	Impact investment fund financing companies that offer next-generation, distributed cooking energy solutions to the mass market in sub-Saharan Africa.	Sub-Saharan Africa	Rolling fund
Productive Use Appliance Financing Facility	Debt instruments: Inventory- & receivables-backed loans, secured &	Minimum of \$500,000.	Support businesses in catalysing the growth of productive use appliance markets.	DRC, Ethiopia, Kenya, Nigeria, Sierra Leone, and Uganda	Rolling fund

Development Innovation Ventures	Grant funding (based on a tiered-evidence approach that maximises impact per dollar spent).	<ul style="list-style-type: none"> • Stage 1 grants: Pilot (up to \$200,000) • Stage 2 grants: Test and position for scale (up to \$1.5m) • Stage 3 grants: Transition to scale (up to \$15m) • Evidence generation grants (up to \$1.5m) 	Funds breakthrough solutions that aim to address the world's toughest development challenges.	No geographic specification	Rolling fund
USAID Climate Finance for Development Accelerator	Catalytic grants	\$250m initiative (designed to mobilise \$2.5b public and private investments by 2030).	Help countries meet their national commitments in alignment with the Paris Agreement through evidence-based solutions that respond to national contexts and address gaps in global, regional, and national climate finance ecosystems.	Countries where USAID works	2022 -2030
Carbon Community (<i>UpEnergy & Carbon Streaming corporation</i>)-Climate Resilience Impact Fund	Grant	Each of the two organisations will be funded a total of \$150,000 over the course of three years.	Reduce carbon emissions and improve livelihoods across SSA. <ul style="list-style-type: none"> • <i>Supports two programmes every three years.</i> 	SSA: Currently in Malawi & Uganda (communities involved in Community Carbon's clean cooking and safe water initiative)	2022 - 2025

ESMAP-Clean Cooking Fund (CCF)	Catalytic grant	\$500m five-year funding target.	Accelerate access to clean cooking by 2030 by providing financial & technical support primarily through results-based funding grants to help countries incentivise the private sector to scale up investments on modern cooking services. Develop an impact bond market to monetise health, gender, and climate impact outcomes to attract a broad range of capital.	The first CCF project is the Energy Access Quality Improvement Project (EAQIP) in Rwanda, which is the largest World Bank-financed clean cooking project in Africa to-date. EAQIP will expand access to clean cooking to 500,000 households across Rwanda and leverage \$30 million in public and private sector investment. Other countries in the pipeline include Uganda, Burundi, Ghana, Myanmar, Niger and Mozambique.	Up to 2030.
AfricaGoGreen-Cygnus Capital Group	Debt	\$2m - \$10m	Promotes investments that mitigate or reduce greenhouse gas emissions in Africa.	Sub-Saharan Africa	Rolling fund
AHL Venture Partners Bridge	Debt	\$500,000 - \$3m		Eastern and Southern Africa	Rolling applications
British International Investment	Debt	\$3m - \$10m	Funds renewable energy businesses and projects in priority sectors through project finance and corporate lending. Trade finance and lending to financial institutions.	Sub-Saharan Africa, Caribbean, South Asia	Rolling fund
Energy & Environment Partnership Trust Fund (EEP Africa)	Grant	€200,000 – €1m	Early-stage financing for innovative clean energy projects. Projects are evaluated based on concepts of innovation, development impact, business model and financial sustainability.	Botswana, Burundi, Eswatini, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, Seychelles, South Africa, Tanzania, Uganda, Zambia, Zimbabwe	Rolling applications

Factor-E	Equity	\$100,000 – \$1m	Invests in early-stage companies with more than just capital, taking a more hands-on approach at the seed stage to provide companies with the resources and tools they need to scale their businesses and impact.	Sub-Saharan Africa	Rolling fund
Global Climate Partnership Fund (GCPF)	Debt	\$1m - \$10m	Leverages public funds to crowd in private investments renewable energy and energy efficiency in developing economies. The fund finances projects mainly via local financial institutions and directly as a debt provider. Equity investment may be provided in certain circumstances and to a limited extent.	Caribbean, sub-Saharan Africa	Rolling fund
InfraCo Africa	Equity	\$1m - \$10m	Provides equity to fund the development and construction of pioneering projects and innovative infrastructure businesses that need to scale up and demonstrate commercial viability.	Sub-Saharan Africa	Rolling fund
Oiko Credit	Debt	€1m - €3m	Provides loans to organisations active in financial inclusion, agriculture, and renewable energy in Africa, Asia and Latin America. They work with partner organisations that aim to improving the lives of low-income people and communities.	Benin, Burkina Faso, Côte d'Ivoire Dominican, Republic, Ghana, Haiti, Kenya, Malawi, Mali, Niger, Nigeria, Rwanda, Senegal, Uganda, Zambia	Rolling fund

OPEN Fund	Equity	Up to €100,000	Invests in women-led businesses within the energy sector in Africa, growing their businesses by providing access to funds and expertise to maximise their impact and profitability. The fund offers companies individual tailored advisory services and operational support specifically designed around their needs. Investees have access to the platform's investment, expertise, and networks.	Burundi, Ethiopia, Ghana, Kenya, Madagascar, Mauritius, Rwanda, Tanzania, Uganda, Zambia	Rolling fund
Multilateral Investment Guarantee Agency (MIGA)	Guarantee	N/A	Provides political risk insurance guarantees and credit enhancement to private sector investors and lenders. These guarantees protect investments against non-commercial risks and can help investors obtain access to financing on improved terms and conditions. Political risk insurance coverage products may be purchased individually or in combination.	Global	Rolling applications
Treehouse Investments	Equity	€100,000 – €3m	Provides direct investments in both publicly traded and private entities targeting market-rate returns to combat climate change, build the capacity of women, and catalyse a capital shift to sustainable investment practices.	Sub-Saharan Africa	Rolling fund

Clean Cooking Alliance - Venture Catalyst	Grant	€5,000 – €200,000	Provides a range of specialised support to selected companies, solidifying their commercial viability, enhancing their investment-readiness, and facilitating their access to growth capital.	Global	Rolling applications
Innovation Fund (AECF initiative)		\$1.2m	Expanding energy access in sub-Saharan Africa: Testing new innovations or extreme iterations of existing innovations to validate market fit, including surfacing innovations in clean cooking and productive use of energy technologies and services.	Ghana, Nigeria, Burkina Faso, Sierra Leone, Liberia, Mali, Ethiopia, Kenya, Rwanda, Tanzania, Zambia, Malawi, Mozambique, Zimbabwe	
USAID Uganda Strategic Investment Activity	Blended finance	Not provided	Improve the livelihoods of underrepresented and marginalised people by accelerating private investment in the country's agriculture, health, and energy sectors.	Feed the future zones	2021 - 2026