

Mapping Opportunities for Microfinance and Renewable Energy Services in Malawi

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Executive Summary

Community Energy Malawi (CEM) in partnership with University of Strathclyde and with funding from the Scottish Government have compiled this report which examines financing considerations for renewable energy projects in Malawi and makes recommendations for engaging the microfinance sector with organisations progressing decentralised energy access. Technological emphasis is placed on solar home systems (SHS) and mini-grids given their potential for providing energy access to rural communities. This report is intended for decision makers and practitioners working in the Malawian energy access and MFI industries to inform interventions, policy and projects and foster increased collaboration between the finance and energy sectors in Malawi.

While mini-grid systems are showing high potential for rural electrification in Malawi, it is recognised that microfinance mechanisms for mini-grid consumers will reduce barriers to the benefits of an electrical supply and as such hold potential to increase mini-grid profitability for operators. Additionally, CEM have been piloting Pay As you Go stand-alone solar PV systems which generate energy for productive business activities (PAYG-BE), with capital costs currently provided by Scottish Government funding. However, a long-term strategy is required for sourcing ongoing capital resources for CEM's sustainable PAYG-BE business development and a partnership with an established microfinance organisation is needed for the business strategy to progress.

Given the opportunities for utilising energy services such as these with microfinance solutions, this study was undertaken to investigate the challenges preventing MFIs from engaging with the energy services industry (particularly SHS and mini-grids) with a view to promoting collaborative partnerships between microfinance institutions and energy practitioners.

Malawi has a clear need to increase access to electricity nationally in order to foster productivity and achieve socio-economic development, demonstrated with ambitious targets from the Government of Malawi to increase access to electricity in rural areas by incorporating off-grid electrification. This context provides motivation for this study, the ultimate objective being the development of recommendations for strategies to sustainably provide energy access to rural areas of Malawi. This study comprises three parts: a review of Malawi's energy, institutional and policy framework, case studies of two current actors in Malawi's renewable energy sector, and an analysis of interviews with five MFI representatives conducted by CEM in Malawi.

Key Findings

- Malawi's renewable energy sector is gradually moving away from dependency on donor funding.
- This is attractive to MFIs, who expressed concerns about past donor-led projects' sustainability.
- Rural communities' remoteness and irregular incomes make them risky investments for MFIs.
- Governance of the renewables sector in Malawi is fragmented, with tax rates and accreditation procedures hindering the growth of the industry.

Recommendations

1. Ensure a long-term project focus through development of sustainable business models and seek funding from local and national sources as well as external donors.
2. Utilise mobile money and monitoring technologies to promote transparency and accountability in energy business strategies.
3. Support the reform of renewable energy policy in to include appropriate taxation policy and accreditation processes for renewables projects, as well as restrictions on the importation of sub-standard products

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1. Background

1.1. Energy access in Malawi

The electricity supply industry in Malawi remains heavily constrained by a low installed generation capacity of 351 megawatts (MW) against a “projected peak demand of... 798MW and 1,106MW for years... 2020 and 2025 respectively” [1, p. 57]. The transmission and distribution network is underdeveloped to the extent that only 11% of the population has access to electricity, with the vast majority located in urban areas (42% energy access in urban areas compared with 4% in rural areas) [2]. This is an increase relative to previous years, and is a continuation of steady growth of 0.4% per year, but is also significantly slower than for the Sub-Saharan Africa as a whole (Figure 1).

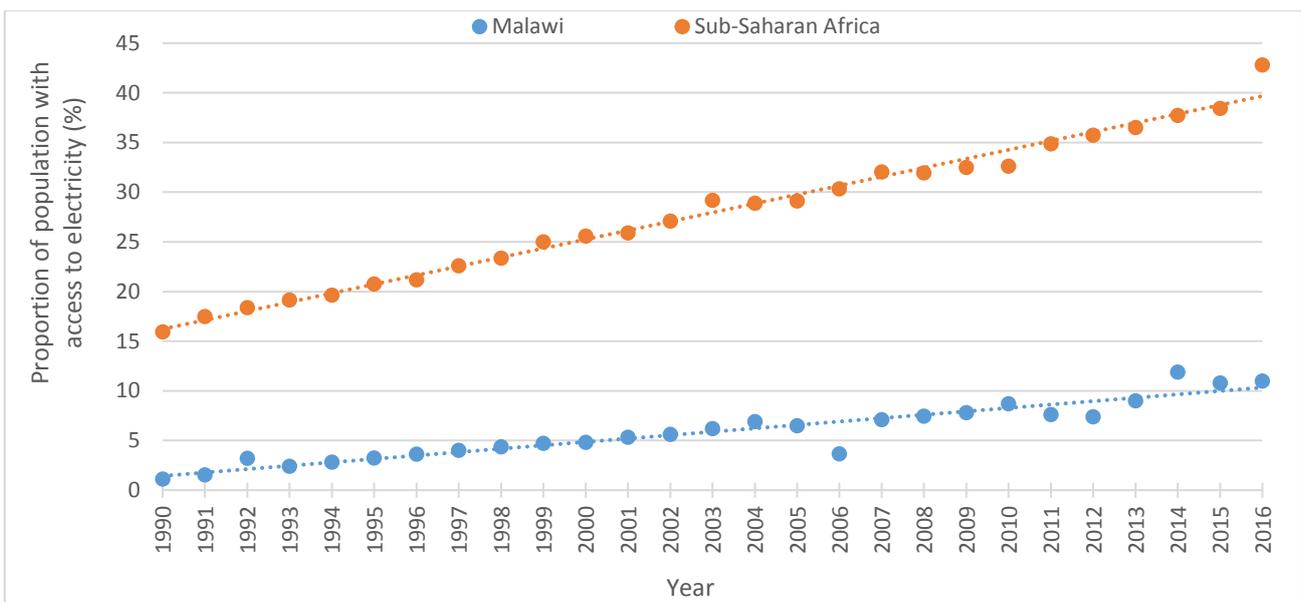


Figure 1: Proportion of population with access to electricity [2]

1.2. Solar PV in Africa

As the world focusses on the SDGs (Sustainable Development Goals) the International Energy Agency (IEA), amongst others, sees the potential for renewable generation in Africa and recognizes that “Africa is particularly rich in solar energy potential, with most of the continent enjoying an average of more than 320 days per year of bright sunlight” [3, p. 57]. In off-grid and mini-grid applications solar PV has a significant competitive advantage over other renewable technologies such as hydro-electric (requiring a water source) and wind power (faces durability issues in dry and dusty conditions).

In fact, several African countries have already started to exhibit noticeable levels of solar PV development. The East Africa region has been the main source of sales (particularly Kenya, Tanzania, Ethiopia, Uganda and Rwanda), with over two thirds of sales on the continent coming from this region, and over three-quarters of which are pico-solar¹ products or solar home systems² (SHS) [4]. A brief description of these systems is described below and in Figure 2.

¹ Pico-solar products are generally characterised by low-powered standalone solar systems capable of charging small batteries, phones and lanterns. These are usually bought over the counter and do not require specialist installation.

² Solar home systems are usually larger than pico-solar; capable of powering a radio, TV or low-powered refrigeration unit. These usually require installation by a technician.

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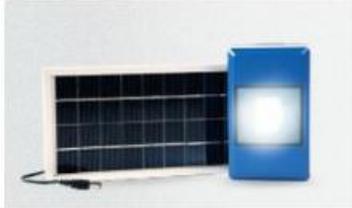
Product Type	Product Examples	Product Details	Company Examples
Portable Solar Lights	 <p>SoLite3 (Angaza Design)</p>	\$15–60 0.5–3 Watt Solar Panel Internal lithium-ion battery Single LED lantern, mobile charging on some models	Angaza Design (Kenya, Tanzania) divi Power (Namibia, Kenya, Ghana, Somaliland, Peru)
Pico Solar Systems	 <p>d.light d20 system (M-KOPA)</p>	\$100–250 4–25 Watt Solar Panel Internal lithium-ion battery Plug-and-play system, 2–6 LED lights, radio, mobile charging	M-KOPA Solar (Kenya, Uganda) Azuri Technologies (East and West Africa)
Large Solar Home Systems	 <p>Mobisol 30Wp system (Mobisol)</p>	\$150–1,000 30–200 Watt Solar Panel External lead-acid battery Technician installed multiroom energy system: 4–10 LED lights, mobile charging, radio, fans, TV, refrigerator	Mobisol (Kenya, Rwanda, Tanzania) Simpa Networks (India)

Figure 2: Description of small-scale solar PV systems (from [5, p. 5])

In their review of solar PV in three East African countries, Hansen et al. find that “SHS play a major role in Kenya and Tanzania, currently accounting for around 80% and 75% of total installed capacity, respectively” [6, p. 243]. This is due to a multitude of factors including the reducing prices of solar PV technologies, the expansion of mobile money, market and business support initiatives and more effective service delivery models.

However, although household scale solar generation provides facilities such as basic lighting and mobile phone charging, “the inability to provide higher levels of power for productive uses (e.g maize mills, agro-businesses and cooking), limits the impact of stand-alone SHS solutions on the broader community” [7, p. 1], [8], [9] .

1.3. Mini-grids in Malawi

Given these limitations of pico-solar and SHS and with their relative costs declining, mini-grids³ have been touted as a potential solution to providing off-grid energy access while supporting increases in demand, and load sharing [7], [10]. As such, within the last few years the list of interested parties in these technologies has grown and now includes “the UN, World Bank, DFID, USAID, and GIZ..., with more than 23MW of mini/micro-grid projects based on solar PV and wind power announced in 2016, most of them in Africa” [11, p. 8].

Indeed, the Government of Malawi also recognizes that mini-grids are a “‘high impact opportunity’ for sustainable development and can be a viable and cost effective route to electrification... where population is not dense enough to justify a grid connection” [12, p. 26]. In this Renewable Energy Strategy document, the Government of Malawi refer to previous studies which have shown that

“mini-grids are the most economically viable technology solution in areas with a population which has a density above 250 inhabitants per square kilometer and are situated more than 5km from the medium voltage-line. This represents more than 4.5 million Malawians...” [12].

In the same report it is written that there should be at least 50 mini-grids in operation by 2025 through engaging in information sharing and applying learnings from past project successes.

However, currently only a few mini-grids exist in Malawi, having been funded and operated by various organizations including; the Government of Malawi, NGOs (e.g Practical Action) and foreign funders (e.g the Roman Catholic Church and Scottish Government) [11]. They have also used a range of renewable sources of electricity generation including hydro, wind and solar, as well as non-renewable sources such as diesel generators.

1.4. Barriers to renewable energy applications in Malawi

Therefore, renewable energy (SHS and mini-grids in particular) has great potential for application in Malawi and has the attention of the government as well as funding organizations, but recent research has shown that this is far from all which is needed. Within Malawi, several renewable energy systems which have been installed within the last 5-10 years are not performing to their technical capacity or are in a state of complete failure [13]. On a basic level this appears to be linked to technical issues – e.g the use of sub-standard components and deterioration of batteries – or social barriers – e.g a lack of understanding of the technology by consumers. However, these issues can often be traced back to a management and funding environment which has shown a lack of appreciation of local cultures and capacities, and a short-term focus which neglects to consider the long-term sustainability of projects [14], [15]. Baurzhan and Jenkins summarize the issue;

“Failure to maintain the system appropriately causes the breakdown of components, leading to the benefits from the system either reducing or being completely eliminated. Financial schemes usually concentrate on the initial investment cost and do not sufficiently consider the O&M [operation and maintenance] costs” [16, p. 1409]

³ Mini-grids can be defined as the linkage of demand points located in a limited area which share one or several sources of energy.

One current project seeking to overcome these barriers is described in Box 1 (below):

Box 1: UNDP supported mini-grids in Malawi

To address issues and options in clean energy mini-grid implementation and business models in Malawi, the UNDP is supporting the project, *“Increasing Access to Clean and Affordable Decentralised Energy Services in Selected Vulnerable Areas of Malawi”* with co-financing support from the Global Environment Facility (GEF) [22].

The project is comprised of three components:

Component 1: Direct support to be given for a second hydro-electric mini-grid at Namainja which will be operated by Mulanje Electricity Generation Authority (MEGA). Institutional support will be given for other MEGA hydro-mini-grids with the objective to make MEGA financially self-sustaining.

Component 2: Seeking proposals to create a new public-private-partnership to install several new smaller mini-grids to function using the same business model as MEGA (Build-Own-Operate).

Component 3: Training and capacity building from local to national level, establishment of an information clearing house and changing policies and regulations to encourage the use of mini-grids for rural electrification. Synthesis and showcasing of lessons learnt in order to develop a policy making toolkit for Malawi on rural electrification.

It must be reinforced that the barriers to renewable energy use in Malawi, particularly at the village or community level, are numerous and cut across a multitude of areas; for example Eales and Unyolo showed barriers which fall into all of political, economic, social, technical, legal and environmental themes [11]. Although not independent from the other five areas, unpacking the economic barriers in the Malawian context are the primary interest of this report given recent trends which have shown a shift towards finding local public and private funding mechanisms. Hansen et al. amongst others attribute this to recent changes in the sector making the financial viability of renewable energy projects a more attractive proposition to organizations and individuals outside of governments and donor groups [6].

The rest of this report is arranged as follows: section (2) describes the existing regulatory environment in Malawi and investigates the scope for reforms which are conducive to the expansion of the SHS, mini-grids and renewables sector in general; section (3) provides examples of organizations currently operating in these sectors which highlights the need for local financing mechanisms; section (4) presents the findings from interviews with microfinance institutions in Malawi gathering their perspectives on renewable energy project financing and; section (5) makes conclusions and recommendations as to how partnerships between MFIs and organizations implementing renewable energy projects could be developed, and how this could be facilitated by a more enabling policy and regulatory environment.

2. Overview of Malawi's Energy Institutional and Policy Framework

A basic understanding of Malawi's energy context and policy environment is a prerequisite for identifying the gaps which could create a more enabling regulatory environment for economically attractive and financially sustainable renewable energy projects. The following section briefly outlines the main institutions and policies in the renewable energy sector of Malawi, the potential for tax and regulatory reforms to create a more enabling economic environment and how the growth of the mobile money sector increases the opportunity for market expansion.

2.1. Institutions

The government ministry responsible for energy policy is the Ministry of Natural Resources, Energy and Environment (MNREE), which contains the Department of Energy Affairs (DoEA). The DoEA is responsible for all energy policy which besides electricity which only accounts for 3% of the country's energy use, also includes the sizeable proportion of Malawi's energy usage which comes from biomass (89%) [12].

Other key institutions include the Malawi Electricity Regulatory Authority (MERA), which regulates the sector in coordination with the DoEA; the Malawi Bureau of Standards (MBS) responsible for certifying the industry; and the Renewable Energy Industries Association of Malawi (REIAMA) which is a membership forum for private sector companies. MERA is responsible regulating generation, transmission, retail across all grid sizes from the micro-level to the national level including renewables.

Private actors and community-based organizations (CBOs) make up a large proportion of activity in the country, particularly around renewables. For example, solar-lighting has recently attracted a number of actors, along with NGOs which are often including small renewable energy elements in their projects.

As such Malawi's electricity generation and renewables sector has a diverse selection of stakeholders, which makes understanding and planning the way forward challenging, particularly as there is a lack of reliable information which describes size of the renewables industry across the country. As a result, despite having regulatory powers, MERA is faced with significant obstacles in managing the sector.

2.2. Energy Policy

The 2018 energy policy [17] targets increased renewable energy deployment by 2030 and outlines plans to expand support to both grid extension and off-grid renewable electricity projects. Significant targets set out in the associated Malawi Renewable Energy Strategy include 50 mini-grids deployed and 100% of schools to have modern energy solutions by 2025. MERA was formed as part of the first policy in 2003 alongside a Renewable Energy Framework, which was complemented by the Renewable Energy Strategy (RES) [12] in 2017 and Renewable Energy Policy which is currently in development.

Many of those advocating for an expansion of the sector would welcome policies removing or reducing taxation and fees related to renewable technologies as part of this framework. Although the government has now waived all duties on imports of renewable energy technologies "the customer still has to pay 16.5% VAT on the purchase price" [11] which raises the cost to the consumer and reduces their ability to pay for technologies, and as such, reduces demand and hinders growth of the sector. It is important to note, as described by the World Bank:

“Since certain components of off-grid power systems have multiple uses (e.g., batteries), fiscal authorities are sometimes reluctant to grant duty exemptions, which can be abused. One option ... is to grant exemptions only for off-grid equipment that has met prescribed quality standards.” [18, p. 14]

It is not only taxation which restricts the growth of the sector. For example, a previous review has shown that Malawi has a very long waiting time for the receipt of permits for mini-grids (360 days) and very high costs of obtaining these permits at around \$15,000 (almost three times more than the next highest country in the review) [11]. However, at the time of writing a draft mini-grids framework has been released in draft form which is expected to address these challenges and reduce regulatory hurdles for mini-grid developers.

Through making the above reforms, it may be possible to encourage the growth of the renewable energy sector as well as improve the standard of imported components. It is this “light handed” regulation which could foster innovation in the sector by reducing the cost to enterprises and end users, making businesses more viable and more attractive investments to banks and other lenders [19].

2.3. Mobile money and PAYG

Outside of the public domain, there have been rapid changes in money management and data transfer which is driving the spread of new business models across Africa. Mobile money is one of the key drivers of new business models, as it reduces the transaction costs of coordination between small-scale energy users and producers.

The emergence of this new form of money has facilitated innovation in distribution and end-user financing. For example, Lighting Africa found that the solar lighting sector has five main distribution models [20] : (1) partnerships between companies and institutions (e.g Nova Lumos & MTN); (2) distributor-dealer channels (e.g Azuri Technologies); (3) proprietary distribution (e.g M-Kopa); (4) franchise models (e.g SolarNow); and, (5) renting or leasing systems (e.g SolarKiosk). A large number of the energy access enterprises work in close collaboration with existing retail networks, NGOs and community-based organisations, such as savings and credit cooperatives, to unlock markets and build local capacity.

The use of mobile technology has not only streamlined payments, but has huge potential in the off-grid renewables sector in allowing the monitoring of energy use and control of supply to end-users [21]. However, although a fast-growing industry, mobile money and monitoring in Malawi is still largely undeveloped and as such must be viewed as having great potential rather than being a reality at this stage, a fact recognised by MERA:

“Unfortunately, Malawi is still behind neighbouring countries in this area. Mobile money would make PAYG systems far simpler and could reduce the cost of finance for off-grid solar... Given that Malawi’s mobile money market is still in its infancy... it is envisaged that this will make a positive impact soon.” [12]

3. Example actors and projects in Malawi's renewable energy sector

3.1. Community Energy Malawi (CEM)

CEM is a registered Malawian trust and was formed as part of the Community Energy Development Programme (CEDP). CEDP was one strand of the Scottish Government funded Malawi Renewable Energy Acceleration Programme (MREAP). Between 2011 and 2015, CEDP successfully delivered 46 community energy projects that directly impacted 20,378 people in 12 districts.



Box 2: Proposed mini-grid projects in Sitolo Village

CEM is proposing to install a solar mini-grid at Sitolo Village, which is situated 18 km from Mchinji Boma (and 18 km from the national grid), to generate and distribute power. Sitolo village is not included in the national Malawi Rural Electrification Programme (MAREP). The village covers 3 Village Group Headmen (Sitolo, Kuluzeze, and Faifi) under Traditional Authority Kuluzeze.

Sitolo village has 300 households and 1 primary school and 1 clinic. The 80-kW solar PV facility will initially connect 100 households, grocery shops, a salon and barber shops, one bar, a maize mill, the local school and health clinic as well as six street lights. In the future, the system coverage could include more households and other productive uses (such as milk cooling and metal workshops). Also, CEM Trading may start a rolling programme of selling solar pico-products and battery charging in an 'energy hub/kiosk'.

To overcome funding limitations which have negatively impacted previous mini-grid and smaller solar PV projects, CEM (with help from Community Energy Scotland) will implement the project through CEM Trading, a social enterprise under CEM. Through this and other similar projects, the objective is to expand the activities of CEM Trading, increasing revenue to a point where CEM's activities are financially viable as an independent and profitable business.

3.2. Solar Aid/Sunny money

Solar Aid is a British charity which started operating in Malawi in 2008. Its activities are centred around the dissemination of solar lighting in rural areas. The objective is to eliminate kerosene lamps and replace them with solar lighting systems, thereby contributing to the fight against climate change. The second objective is to contribute to poverty reduction through the creation of opportunities for micro-entrepreneurship.



Initially Solar Aid attempted to establish a full value chain for solar lighting systems. They imported the components which were locally assembled by trained technicians who sold them to retailers established by Solar Aid itself and also raised awareness through campaigns for the technologies. Solar Aid now has a separate business unit (Sunny Money) which seeks to foster entrepreneurship and grow the enterprise to financial sustainability without need for its external funders.

These two examples exhibit the trend away from dependence on donors, and towards financial viability and independence. However, particularly during the early stages of business development and project implementation, up-front capital is required. The following section describes the findings of interviews with Malawian microfinance institutions which have the potential to contribute in this area.

4. Interviews with MFIs

As previously mentioned, in recent years there has been a shift from renewable energy systems being donated by funding organizations towards local enterprises selling them either outright or as a service. Meanwhile, engaging Malawi's banking sector and microfinance lenders is one way to transition away from donor-funding and the reliance on finance from the government. This section shows the findings from interviews with microfinance institutions in Malawi, highlighting the potential areas for developing partnerships and facilitating the expansion of its renewables sector, particularly in rural areas.

Ten MFIs and banks were contacted across the southern and central regions of Malawi from which five interviews were successfully completed. It was not possible to arrange meetings with formal banks due to the bureaucracy of organising interviews. As such, the five interviews were carried out with MFIs, using the same interview questionnaire (see appendix A). The questionnaire gathered background information about the organisation and loans they offer, followed by questions about their involvement and experiences with energy projects. Background information on the MFIs is included in Table 1.

Table 1: Organisation summaries

FINCOOP	
Type:	Lilongwe based Savings and Credit Cooperative (SACCO)
Fundees:	Rural community members, civil servants, private sector and village banks
Energy experience:	"bridging between the supplier and the consumer" Previous work with SolarAid/SunnyMoney Promotes solar lanterns and SHS
Links	https://fincoop.wordpress.com/about/mission-vision-values/ https://solar-aid.org/fincoop-microfinance-for-solar-in-malawi/
FISD	
Type:	Irrigation, water and clean energy contractor/consultancy also providing loans
Fundees:	Farmers, salaried workers and civil servants
Energy experience:	Irrigation projects for farmers and mini-grids Promote mini-grids, energy hubs and SHS
Links	https://www.fisdLtd.com/
GetBucks	
Type:	General loan provider across Malawi
Fundees:	Farmers, salaried workers, civil servants and village saving loans
Energy experience:	Customers are not targeted according to industry Financially focussed MFI, not targeting social impact
Links	https://mw.getbucks.com/
MEDF	
Type:	Government institution coordinating loans (e.g rural, youth and agriculture)
Fundees:	Farmers, salaried workers, civil servants
Energy experience:	Previously managed loan (irrigation) from Ministry of Energy Not currently targeting energy projects specifically
Links	https://www.nyasatimes.com/govt-establishes-malawi-enterprise-development-fund/
VisionFund	
Type:	Internationally funded finance institution targeting rural communities
Fundees:	Individuals, groups, cooperatives, associations (business and agriculture)
Energy experience:	Given loans for energy projects since founded – Particularly energy loans for agriculture purposes
Links	http://www.visionfundmalawi.org/1966/about/

From the summaries in Table 1 it is evident that despite the small sample, a wide cross section of organisations was interviewed including government institutions, poverty-focussed internationally-funded organisations and non-energy or non-poverty focussed microfinance lenders. All but one of the organisations (GetBucks) had some experience with providing loans specifically for the energy sector. Just one of the organisations was funded by foreign donors (VisionFund), with all the others either attempting to become, or already financially sustainable from revenue streams in Malawi or sub-Saharan Africa more widely. As such, the selection criteria for loan recipients from VisionFund is more philanthropic than the other four organisations which specifically mentioned that the salary of the loan recipient was a key factor in granting or rejecting an application.

4.1. Challenges and Barriers from the MFI interviews

The challenges and barriers mentioned during the interviews, particularly when providing energy related loans, were broadly the same for all five organisations. The key challenge mentioned (by four out of five organisations) was avoiding defaults on repayment of the loans by the customers, often either due to having insufficient incomes, or irregular incomes which is particularly common in farmers. One MFI also mentioned that involvement of the local or national government in providing funds for a loan can cause customers to consider the loan as a grant, making them unwilling to make repayments. Other political issues can arise when funds are only enough to install a system which provides access to electricity for some, but not all customers in a village; this can be intentional as only some members of the community may be deemed able to make the repayments.

One organisation mentioned that the proliferation of “fake products” and the high price of solar products, particularly in Malawi, was also a major barrier. Other barriers specific to Malawi were challenges in travelling to meet customers (either due to issues with the road network or the distance required to travel) which was mentioned by three out of five representatives. Box 3 details another barrier which was mentioned outside of the interview script during all the interviews.

Box 3: Donor-led projects’ lack of long-term strategy puts off MFIs

All the MFIs noted that technologies installed in energy projects are often not properly maintained. This can be due to a lack of spare parts, a lack of technical skills, a lack of further financial provision for maintenance or a poor post-project handover strategy. Badly functioning or failed systems are particularly problematic where they are installed for productive use (e.g TV screening or barbershop), where the operation and profitability of the business is contingent upon a reliable supply of electricity generated by the renewable energy system.

In the oral interview with VisionFund the representative said that most of the time, the renewables projects are donor sponsored with a specific project timeline. Once the project is complete and funding is halted, maintenance issues arise; a trend which is less common in community led projects. The representative gave the example of solar water systems which were installed at some primary schools by both the Government and NGOs. Just a few years after the schools opened, some systems completely ceased to function due to lack of maintenance, likely due to a lack of capacity building of local technicians. The VisionFund representative went on to say that this is one of the reasons why, despite customer demand for energy related loans, they are hesitant to fund projects particularly where donors do not have a vested interest in the its long-term sustainability.

4.2. Solutions from the MFI interviews

The most common solution offered to address the challenges highlighted in the previous section (mentioned by three of five interviewees) was to have more robust assessments of loan recipients in order to provide finances to those most likely to repay. While this may provide higher rates of repayment, it is likely to further restrict the potential for providing energy access to large sections of rural population. The solution offered to the issue of “fake products” was to have a more collaborative approach, with MFIs and government authorities working together to tackle this issue.

The largely negative responses associated with providing loans for energy related uses, were supplemented by a common perception by all the interviewees that there is a significant and un-met demand for renewable energy products in Malawi. All the organisations said they saw the great opportunity in creating partnerships with other MFIs in order to provide a better service to the energy sector would be prepared to provide up-front capital for stand-alone productive use systems as well as loans for mini-grids.

With such a small sample size, only indicative conclusions may be drawn from the responses to these interviews. However, broadly speaking the MFIs interviewed expressed the same view; that despite seeing potential in Malawi’s energy sector, there are barriers to it representing a sound investment. The very characteristics of those without access to electricity – i.e remote and rurally located – are the same characteristics which make them less attractive to Malawian Banks and MFIs, a situation compounded by these businesses’, communities’ and individuals’ often informal and irregular incomes.

5. Conclusions

Through a description of the Malawian energy access situation, a review of the institutional environment, the description of two renewable energy enterprise case studies and interviewing representatives of five MFIs, this report has highlighted some of the barriers to investment in the renewables industry in Malawi with particular focus on SHS and mini-grids.

In Malawi, as in several other developing countries, the renewable energy industry is moving away from dependency on foreign funding due to a combination of pull and push factors. The main pull-factor is that reductions in the cost of components for a renewable energy system (particularly using solar PV technologies) are making them increasingly affordable to consumers and attractive to entrepreneurs, while pull-factors include the failure of some past donor-led initiatives to provide sustainable long-term solutions to clean energy access in rural communities. The case studies of CEM Trading and SunnyMoney are examples of this trend, where they have set up new business arms tasked with becoming profitable through developing new business models and engaging in local capacity building.

A similar attitude towards donor-led projects was mentioned during interviews with representatives of Malawian MFIs. Although from a small sample (five interviews), the responses consistently noted that community led projects were often more successful than those led by funding bodies which have previously failed to build sufficient local capacity to maintain the systems and have not included mechanisms to support the replacement of expired components. Other concerns centred around the remote, rural locations of many groups which are seeking capital for energy access projects and the often-irregular incomes of the members of these communities which make them an unattractive investment. Despite this, all of the MFI representatives recognised the potential of the solar PV industry in Malawi and in improved circumstances would be willing to invest, particularly through partnerships between themselves and with the government.

However, in its current state, the governance of renewables in Malawi is fragmented and lacks a clear picture of the current status and size of the industry. Although the national government has demonstrated its commitment to renewable technologies and mini-grids, the sector is hampered by a restrictive taxation policy and out-dated accreditation process which is expensive and time-consuming. These issues have left (and continue to leave) the market open to an influx of sub-standard products which, although cheap, perform poorly and may erode public confidence in solar PV technologies. One area of great promise is in the use of mobile money and monitoring systems, which are still in their infancy in Malawi, but have the potential to provide consumers with a simple and low-cost payment method, and operators with insight and control of supply and demand previously unheard of.

As the renewables industry in Malawi transitions away from a dependency on international funders towards financial sustainability via support from the government and local revenue streams, the role of national policy and local financial institutions is becoming more and more important. This study has shown that the potential for growth of the renewable energy sector (particularly of solar PV applications) in Malawi is recognised by MFIs, and that through support and policy reform by the Government of Malawi, a growth enabling environment could be created. In such a situation, focussing on long-term sustainability, harnessing the potential of mobile money and monitoring, and utilising community-centred and capacity building approaches would provide a solid foundation for growth of the renewable energy market in Malawi.

6. Recommendations

These recommendations are given as ways to engage MFIs in Malawi's renewable energy sector⁴:

6.1. Ensure donor-led approaches to energy projects focus on long-term sustainability

MFIs recognise the importance of capacity building and donor strategy in contributing to the long-term sustainability of renewable energy projects. Through providing patient capital and supporting local capacity building, donors can improve the attractiveness of renewable energy projects to MFIs.

6.2. Continue the development of sustainable business models

A requirement for (6.1), and building on ongoing research, sustainable business models need to be found which are appropriate for the Malawian contexts. When viable business strategies are found, MFIs will have more confidence to invest in renewable energy community and business projects.

6.3. Seek local and national sources of funding

To achieve (6.1) through (6.2), ongoing capital support for pioneering businesses is needed. This can come from the local or national government as well as external donors, in the form of grants or the subsidisation of loans through MFIs, and should have providing energy access as its driving motivation.

6.4. Find innovative ways to overcome capital access barriers for rural communities

Through carefully designing mobile money and monitoring strategies, there is the potential to lower entry points for energy services, and in doing so bridge the gap between urban-based MFIs and rural communities. Such approaches also foster transparency and accountability in business planning, but strategies must be appropriate for the communities' capabilities and resources to avoid further excluding them from the energy market. If effective, the increase in Malawi's energy services customer-base will be highly attractive to investors.

6.5. Create partnerships between MFIs and with the government

Through creating partnerships between MFIs to support the energy industry, the risk of investment may spread across several financial institutions and create a cohesive body which may shape the market and interact with the Government of Malawi more effectively.

6.6. Reform taxation policy and accreditation processes for renewables

Growth-encouraging tax rates for renewable technologies are an essential reform needed alongside faster and cheaper mini-grid accreditation. These changes will reduce the costs and uncertainties for renewable energy businesses and grow the market through reduced costs to consumers.

6.7. Restrict the importation of sub-standard products

An important component addition to (6.6) is a strong and universal set of standards which, if effectively enforced, will increase the capacity, reliability and productivity of renewable energy systems and mini-grids in Malawi while improving public confidence in the technologies.

⁴ General recommendations for addressing energy access in Malawi in "Malawi Energy Access Workshop" report. Recommendations for mobile money in "Pay-As-You-Go and Mobile Money Services for Off Grid Solar PV in Malawi" report.

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Appendix A – Interview questionnaire

EXPERT INTERVIEW WITH MICROFINANCING INSTITUTION

Contact Details

Name of microfinance institution

- _____

Name and position of Key informant:

- _____

Contact email/phone number:

- _____

Business Overview

1. What is the core business of your organisation?

2. What customer segments do you generally work with?

3. How big is your organisation (number of employees/turnover)?

4. Could you provide some information about the type of loans that you offer (range of sizes, most popular size, rates and terms, for what purposes are loans offered etc)

5. What is your approach in microfinancing? Do you target individuals, institutions or groups?
 - Individual: what is the selection criteria?

 - Institutions/groups: what is your approach?

 - Both: Maximum funds so far given out?

6. Which institutions, groups of individuals have financed before?

Energy Projects

7. Have you had any involvement in energy projects? In what capacity/what sort of projects?
 - a. If yes continue, if no go to next section

8. When did you start incorporation energy concepts in your business?

9. What prompted your organisation to start addressing energy gap identified above?

10. How much funds/money have been allocated to energy projects for your current financial year?

11. What energy projects do you promote 1. solar lanterns, 2. Microgrids 3. Minigrids 4. Energyhubs 5: other (please specify) Please give details

12. What are your typical terms and interest rates for energy projects?

Challenges and Barriers

13. What are the key challenges/barriers that your organization face in offering loans in Malawi?

14. What different challenges exist for implementing loans for energy projects in Malawi?

15. How do you address these challenges?

16. What are the benefits of financing energy projects?

17. In your opinion, is there market demand for solar products in Malawi?

If yes, do you meet that demand?

18. Would you recommend this to other players?

If yes, please explain

If no, please explain

Opportunities

19. Do you see opportunities to partner with energy companies in providing microfinance?

If yes, what do you think are the main opportunities

20. I mentioned two ways the energy sector could benefit from microfinance: appliance loans for mini-grids, and providing up front capital for stand-alone Productive Use of Energy Solar PV systems.

Would you be interested in partnering with energy suppliers on either of these business opportunities? Please explain

21. Would you be interested in discussing these opportunities with CEM specifically?

If yes, what would be the next steps, what further information would you need?

Further Questions

22. Do you have anything to say apart from what we have discussed?

23. Do you have any suggestion of other players or individuals you think we should be contacting?

Appendix B – Interview responses

1. What is the core business of your organisation?	
FINCOOP	<ul style="list-style-type: none"> Formal cooperate of savings and credit
FISD	<ul style="list-style-type: none"> We have FISD Funds responsible for giving loans
GetBucks	<ul style="list-style-type: none"> Our core business is to give loans to communities
MEDF	<ul style="list-style-type: none"> We are the government micro institutions that coordinates loan facilitates from different sectors both government or private sector.
VisionFund	<ul style="list-style-type: none"> Transforming rural communities through provision of loans to already existing entrepreneurs
2. What customer segments do you generally work with?	
FINCOOP	<ul style="list-style-type: none"> Rural community members, Government civil servant, private sector and village banks
FISD	<ul style="list-style-type: none"> Farmers , individuals under payroll and government civil servant
GetBucks	<ul style="list-style-type: none"> Farmers, individuals under payroll and government civil servant
MEDF	<ul style="list-style-type: none"> Farmers, individuals under payroll and government civil servant
VisionFund	<ul style="list-style-type: none"> We target individuals, groups, cooperatives and associations
3. How big is your organisation (number of employees/turnover)?	
FINCOOP	<ul style="list-style-type: none"> 22
FISD	<ul style="list-style-type: none"> No response
GetBucks	<ul style="list-style-type: none"> We are a cross Malawi
MEDF	<ul style="list-style-type: none"> We are over Malawi
VisionFund	<ul style="list-style-type: none"> Not responded and referred to HR department
4. Could you provide some information about the type of loans that you offer (range of sizes, most popular size, rates and terms, for what purposes are loans offered etc)	
FINCOOP	<ul style="list-style-type: none"> Business loan and employment based loan
FISD	<ul style="list-style-type: none"> Business loan. Under business loan we have Mpamba loan and it ranges from MWK 20000 to 60 000 and sometimes it depends the size of the group and my farm loan
GetBucks	<ul style="list-style-type: none"> Business loans
MEDF	<ul style="list-style-type: none"> Business loan. We give to all people who have background of business
	<ul style="list-style-type: none"> Agriculture loan and under this, farmer get loans for agriculture inputs and equipment
	<ul style="list-style-type: none"> Previously we had energy loan from ministry of Energy
VisionFund	<ul style="list-style-type: none"> We have business loans and the business loans are also categorised into several groups. The first one is Tayamba loan and the maximum number is 9 people. Everyone is assessed individually on how much he or she can apply but the maximum amount is MWK 900000. The second category is Taoloka loan and is given to a group of 5 people maximum and this group qualifies for more funding from MWK 90000 to maximum of 500 000.00. The last group is Tafika and this is the individual loan and he or she can apply up to 2 000 000. Another group under business group is Serving Groups and can apply up to 5000 000. All loans the interest rate is 7%.
	<ul style="list-style-type: none"> We also have Agriculture loan and grouped into two. Dzinja loan and Mtsilira loan also known as irrigation equip. loan. In these loan we allow the farmers to budget all the necessary materials and other farm inputs needed for the whole farming period.
5. What is your approach in microfinancing? Do you target individuals, institutions or groups?	
	Individuals
FINCOOP	✓ The individuals who are economically active
FISD	✓ Salary of the person matters

GetBucks	✓ Salary of the person matters and business persons
MEDF	✓ Salary of the person matters and business persons
VisionFund	✓ We have developed a tool that help us to assess the capability of the individual on how much he or she can apply
	Institutions
FINCOOP	✓ We work with the group that exist and have permanent structure
FISD	✓ Mostly these are found in their interest
GetBucks	✓ Village saving loans
MEDF	✓ Mostly existing permanent groups
VisionFund	✓ We have also developed the tool to assess the group individually
	Max funds given out?
FINCOOP	✓ We have reached 1650 and the funds disbursed was not revealed
FISD	✓ I can say based on the individual not the whole funds we have managed to give out its 3 million but most of the time we give depend on the records of the group and institution
GetBucks	✓ We have given billions of kwacha
MEDF	✓ We have given billions of kwacha
VisionFund	✓ The max funds we give to individual is MWK 5 000 000. Its hard to revel the total funds we have given out but we are working in 5 Extension Plaining Area (EPA)
6. Which institutions, groups of individuals have financed before?	
FINCOOP	• Government and private sector
FISD	• Government , private sector and farmers
GetBucks	• Government, private sector and farmers and village saving loans
MEDF	• Government, private sector and farmers across Malawi
VisionFund	• We have financed more groups in all the 5 EPAs
7. Have you had any involvement in energy projects? In what capacity/what sort of projects?	
FINCOOP	• Yes, bridging between the supplier and the consumer in terms of finances
FISD	• Yes, irrigation for farmers and mini grid
GetBucks	• No, but we don't control our customers to invest in energy businesses
MEDF	• Yes, we had project from ministry of energy
VisionFund	• Yes
8. When did you start incorporation energy concepts in your business?	
FINCOOP	• 2015
FISD	• 2007
GetBucks	•
MEDF	• 2017
VisionFund	• Since we started giving loans as visionFund
9. What prompted your organisation to start addressing energy gap identified above?	
FINCOOP	• it was recovery strategy gap between supplier and consumer.
FISD	• It is to address energy poverty in malawi
GetBucks	•

MEDF	<ul style="list-style-type: none"> We were approached by ministry of energy
VisionFund	<ul style="list-style-type: none"> In Malawi we have two seasons; rainy and dry seasons and being a country that depend on agriculture the organisation thought of including energy issue for some of loans we give to communities.
10. How much funds/money have been allocated to energy projects for your current financial year?	
FINCOOP	<ul style="list-style-type: none"> Not responded but according to Mc million the company has big project in solar projects
FISD	<ul style="list-style-type: none"> No responded
GetBucks	<ul style="list-style-type: none">
MEDF	<ul style="list-style-type: none"> It was a lot of money and soon we will start again giving energy loans
VisionFund	<ul style="list-style-type: none"> We have much funds allocated and we are financing irrigation and farm inputs
11. What energy projects do you promote: 1. solar lanterns, 2. Microgrids 3. Minigrids 4. Energyhubs 5: other (please specify) Please give details	
FINCOOP	<ul style="list-style-type: none"> Solar lanterns and individual solar home system
FISD	<ul style="list-style-type: none"> Mini grid , energyhub and solar home system
GetBucks	<ul style="list-style-type: none">
MEDF	<ul style="list-style-type: none"> It was about energy for irrigation
VisionFund	<ul style="list-style-type: none"> We can call it energy hubs since we give out in the group most of the times but we are focusing on irrigation. We don't give also restriction to people who can apply for loan to ruin energy businesses
12. What are your typical terms and interest rates for energy projects?	
FINCOOP	<ul style="list-style-type: none"> 24% per year
FISD	<ul style="list-style-type: none"> 40% per year
GetBucks	<ul style="list-style-type: none">
MEDF	<ul style="list-style-type: none"> The interest rate varies and it depends on funding partner because we have different agreement with every partner
VisionFund	<ul style="list-style-type: none"> The interest rate is 7%
13. What are the key challenges/barriers that your organization face in offering loans in Malawi?	
FINCOOP	<ul style="list-style-type: none"> Fake products and the high cost of solar products
FISD	<ul style="list-style-type: none"> Individual repayment so difficult and this is happen if there was no individual assessments before giving loans
GetBucks	<ul style="list-style-type: none"> Individual repayment
MEDF	<ul style="list-style-type: none"> Individual repayment
VisionFund	<ul style="list-style-type: none"> Its default
14. What different challenges exist for implementing loans for energy projects in Malawi?	
FINCOOP	<ul style="list-style-type: none"> High cost of solar products
FISD	<ul style="list-style-type: none"> It's the distance we travel to meet the customers because we operate based in Lilongwe
GetBucks	<ul style="list-style-type: none"> Road network and distances we travelled to meet customers
MEDF	<ul style="list-style-type: none"> Road network
VisionFund	<ul style="list-style-type: none"> Partnership
15. How do you address these challenges?	
FINCOOP	<ul style="list-style-type: none"> We need to have collective approach

FISD	<ul style="list-style-type: none"> • Proper assessment and we are planning to open new offices in other districts
GetBucks	<ul style="list-style-type: none"> • Proper assessment before approving the loan and working with the group than individuals
MEDF	<ul style="list-style-type: none"> • Proper assessment and we have opened our offices in every district
VisionFund	<ul style="list-style-type: none"> • We also give loans to already existing entrepreneurs
16. What are the benefits of financing energy projects?	
FINCOOP	<ul style="list-style-type: none"> • The costumers responded positively because there is need for lighting method
FISD	<ul style="list-style-type: none"> • This is the service which people are looking so the market demand is higher
GetBucks	<ul style="list-style-type: none"> • This is the key aspect of development and involved in energy project enables the communities to access reliable energy sources
MEDF	<ul style="list-style-type: none"> • We help to reduce energy poverty we have in this country
VisionFund	<ul style="list-style-type: none"> • There is need for modern farming materials in most of the communities and we are assured that the group will pay back the loans.
17. In your opinion, is there market demand for solar products in Malawi?	
FINCOOP	<ul style="list-style-type: none"> • Yes, and we don't meet the demand currently and we will not meet
FISD	<ul style="list-style-type: none"> • Yes, and we don't meet the demand
GetBucks	<ul style="list-style-type: none"> • Yes,
MEDF	<ul style="list-style-type: none"> • Yes, and we don't meet the demand
VisionFund	<ul style="list-style-type: none"> • Yes, and we don't meet the demand currently and we will not meet
18. Would you recommend this to other players?	
FINCOOP	<ul style="list-style-type: none"> • We recommend for partnership
FISD	<ul style="list-style-type: none"> • We recommend for partnership and we are ready
GetBucks	<ul style="list-style-type: none"> • We recommend because the cake is so big and we alone we cannot manage to meet the demand
MEDF	<ul style="list-style-type: none"> • We recommend for partnership and we are ready
VisionFund	<ul style="list-style-type: none"> • We recommend for partnership
19. Do you see opportunities to partner with energy companies in providing microfinance?	
FINCOOP	<ul style="list-style-type: none"> • Yes, but currently we are only pitched with specific companies
FISD	<ul style="list-style-type: none"> • Yes, and we are ready to partner
GetBucks	<ul style="list-style-type: none"> • Yes, and we are ready to partner
MEDF	<ul style="list-style-type: none"> • Yes, and we are ready to partner
VisionFund	<ul style="list-style-type: none"> • Yes, we are looking for such partnership and we are willing to do so with any organisation
20. I mentioned two ways the energy sector could benefit from microfinance: appliance loans for mini-grids, and providing up front capital for stand-alone Productive Use of Energy Solar PV systems. Would you be interested in partnering with energy suppliers on either of these business opportunities? Please explain	
FINCOOP	<ul style="list-style-type: none"> • Both stand alone and mini grid
FISD	<ul style="list-style-type: none"> • Both stand alone and mini grid
GetBucks	<ul style="list-style-type: none"> • We are interest to fund any bankable ideas from both individuals and institutes that are into energy business
MEDF	<ul style="list-style-type: none"> • Both stand alone and mini grid
VisionFund	<ul style="list-style-type: none"> • We are interested in providing loans for capital investments in stand loan project and later we will move to mini grid

21. Would you be interested in discussing these opportunities with CEM specifically?	
FINCOOP	<ul style="list-style-type: none"> • Very interested and we need assessment thought meetings
FISD	<ul style="list-style-type: none"> • Very interested and the next level if you are interested its to express your interest in writing to our directors
GetBucks	<ul style="list-style-type: none"> • Very interested
MEDF	<ul style="list-style-type: none"> • Very interested and we exist to work with partners in any development ac
VisionFund	<ul style="list-style-type: none"> • Very interested and if you can write us the expression of interest we will be much happy
22. Do you have anything to say apart from what we have discussed?	
FINCOOP	<ul style="list-style-type: none"> • No
FISD	<ul style="list-style-type: none"> • No
GetBucks	<ul style="list-style-type: none"> • No
MEDF	<ul style="list-style-type: none"> • No
VisionFund	<ul style="list-style-type: none"> • We are targeting 70% of women and 30% men in most of our loans
23. Do you have any suggestion of other players or individuals you think we should be contacting?	
FINCOOP	<ul style="list-style-type: none"> • LEED and DAPP
FISD	<ul style="list-style-type: none"> •
GetBucks	<ul style="list-style-type: none"> •
MEDF	<ul style="list-style-type: none"> •
VisionFund	<ul style="list-style-type: none"> •