

Country briefing



Accelerating access to electricity in Africa with off-grid solar

Off-grid solar country briefing: Malawi

This country briefing is one of 13 prepared as part of a background study for the Energy Africa campaign launched by the Department for International Development (DFID) on 22 October 2015. The study was undertaken by the Overseas Development Institute (ODI), the Global Off-Grid Lighting Association (GOGLA) with SolarAid, and Practical Action.

The analysis and conclusions in this briefing, and other reports from study, are those of the authors and do not necessarily reflect the views of their organisations, ODI, GOGLA, Practical Action and SolarAid, nor those of DFID.

All project reports are available at: www.odi.org/publications/10200-accelerating-access-electricity-off-grid-solar



Background

Malawi has a population of around 17 million people.¹ Only 9% of the population have access to electricity.² In rural areas this proportion goes down to 5%, although the population density is relatively high. With a high proportion of the population not having access to the grid, Malawi offers a potentially large market for solar off-grid household systems. More than 50% of the population is living on less than US\$ 1.25 a day, however, which affects the overall affordability of off-grid solar household systems. To date, around 100,000 pico-solar products have been sold,³ equivalent to a market penetration of about 3%. The bulk of these products have been sold through the NGO-backed distributor SunnyMoney.⁴ In the Climatescope assessment, Malawi ranks 34th out of 55 countries.⁵

The country lived through a severe FOREX crisis a few years ago. While FOREX is now again available in the country, the economy has still not stabilised. A flood in 2015 destroyed most of the harvest, which hit the agriculture dominated economy hard. Following a corruption scandal, international donors have withdrawn their budget support for the government, which equalled 40% of the budget. The national currency, the Kwacha was recently devalued, losing up to 23% of its value against the US dollar in three months,⁶ which in turn increases the currency fluctuation risk for international companies.

Policy environment

Malawi has a National Energy Policy (NEP) in place which includes a renewable energy framework. The opportunities that market-based off-grid solar energy brings for energy access are not yet captured in the policy framework. Currently the framework is being reviewed with the aim of adopting a new energy policy by the end of 2015. The impression that the Malawi government is still in the process of fully understanding the benefits of off-grid solar was supported by the interviews conducted in Malawi for this study.⁷ Diverse groups are currently

advocating for the acknowledgement and active promotion of off-grid solar technologies in the new framework.⁸

The Malawi Energy Regulation Authority (MERA), established in 2004, is responsible for the regulation of the renewable energy sector. All importers of solar products must register with MERA to obtain a license. The regulations for the licensing could benefit from more clarity, however. They stipulate, for instance, that each importer of solar products needs to employ a certified engineer, but companies working with portable solar lights and plug and play solar home systems do not have the need for an engineer. MERA has reportedly licensed importers of small solar products even if they did not have an engineer on the payroll.⁹ This exemption is, however, subject to the judgement of individual officials and this creates policy uncertainty for companies entering the market.

Access to finance for the private sector

The sales cycle for an importer of solar products can be up to 32 weeks in Malawi. Due to its land-locked location, imports from Asia can take up to 22 weeks, and it may be up to 10 weeks before payment is received from the retailer or dealer. Long sales cycles tie up the working capital of companies and constitute a significant burden for their cash flow. Access to local finance is restricted by high interest rates of up to 40% per year, so companies need to bring in their financing from abroad. Tight restrictions for FOREX that were in place during the crisis are now almost entirely lifted, with the exception of international payments having to go through the national reserve bank of Malawi which may cause delays.

Due to the market environment in Malawi it is difficult to convince international investors to come in, as investment comes with a high risk. In the cash-deprived Malawian economy lack of access to finance, due to high interest rates, is particularly challenging for sales agents and retailers. Sales agents are often not able to stock products and

¹ United Nations, Department of Economic and Social Affairs, Population Division (2015). *World Population Prospects: The 2015 Revision*.

² IEA (2014). *Africa Energy Outlook*. International Energy Agency. The SE4All Global Tracking Framework (2015) estimates a 10% access rate nationally, and 2% in rural areas.

³ BIF2 Malawi: Pico Solar Products Market Analysis and Strategy, 2014.

⁴ Ibid.

⁵ <http://global-climatescope.org/en/download/reports/countries/climatescope-2014-et-en.pdf>

⁶ <http://www.oanda.com/currency/converter/> [11/09/2015]

⁷ Interview with Azuri Technologies, SunnyMoney, RENAMA, and Business Innovation Facility

⁸ Interview with Malawi Business Innovation Facility

⁹ Interview with Malawi Business Innovation Facility

need to ask their customers to pay the entire product price before they can order it from the retailer or distributor themselves.¹⁰ Downstream financing is therefore urgently needed to catalyse the market. This challenging situation is also reflected in Malawi's ranking by the Climatescope assessment of investment and financing, where it comes in second last.¹¹

Currently the market for solar household systems is driven mainly by donors and NGOs. The biggest player in the country is SunnyMoney, which is wholly owned and financially backed by the charity SolarAid¹² to enable it to manage its cash-flow, provide credit to its agents, and import products.

Import of solar household related equipment and fiscal barriers

Solar lighting products enjoy import tariff exemptions in Malawi. But other solar products are charged between 55% and 30% duty. All products are charged VAT at the rate of 16.5%. VAT and tariffs combined can, therefore, be as high as 46.5% for solar household products. In a very price sensitive market this tax was seen by all interviewees as a major constraint for the development of the market. The currency exchange risks in Malawi are especially challenging for distributors. VAT exemption would help companies to mitigate this particular risk, as it allows for a higher elasticity in their price range.

The definition of the Malawi Revenue Authority of what constitutes a solar product and which level of tariff applies is not sufficiently clear and leaves room for interpretation by border officials inspecting incoming containers. Tariff exemptions for solar lighting products, on the other hand, are often the cause of delays at the border as the certification process for duty and excise free imports is more time consuming.¹³

Consumer protection and quality assurance

Only companies registered with MERA are officially allowed to bring solar products into the country. Before products can cross the border they must, in addition, be approved by the Malawi Bureau of

Standards (MBS). Products must meet quality standards, but it is not clear which benchmark is being applied for pico-solar PV products. Explicit quality standards are only in place for PV panels, deep cycle solar batteries, and inverters.¹⁴ To have a product registered, the importer must guarantee a minimum warranty period of one year and provide product information on the packaging.

An influx of low-quality products suggests that there are leaks and that the enforcement capacity of the two agencies is not sufficient.¹⁵ SunnyMoney estimates that up to 25% of the products that are not sold through their channels are of low-quality and/or counterfeit products. The influx of these products is a relatively recent trend, and started only 3-6 months ago. So far the prevalence of low-quality products is concentrated in towns and cities and has not yet spread to the rural areas. However, SunnyMoney observed that suppliers of low-quality products try to follow their distribution pattern to benefit from their marketing activities. The provision of a warranty for SunnyMoney supplied products has reportedly affected the spread of low quality products and helped to keep market spoilage at bay.¹⁶

Consumer awareness

The vast majority of the population in Malawi knows about the concept of solar energy from institutional electrification for schools and health centres. However, most of these products have reportedly broken down after one or two years due to a lack of maintenance, contributing to the questionable reputation for solar among the population. However, according to one interviewee, the general level of consumer awareness for solar lighting products is low, and the vast majority will not have seen a solar product themselves and will not be aware of the benefits. Another interviewee mentioned the challenge of the "aid culture" in the sales process, in which households expect to receive goods, in this case solar lighting products, for free. Considering especially the low purchasing power of end-users, because of low income levels, awareness of the economics of a solar product is essential. The government has proved the effectiveness of

¹⁰ Interview with SunnyMoney

¹¹ <http://global-climatescope.org/en/country/malawi/#/details>

¹² Interview with SunnyMoney

¹³ BIF2 Malawi: Pico Solar Products Market Analysis and Strategy, 2014

¹⁴ Ibid.

¹⁵ Interview SunnyMoney and Business Innovation Facility

¹⁶ Ibid.

behavioural change campaigns with raising awareness for reproductive health issues. A similar approach for lighting could, according to an interviewee, drastically change the impact that solar initiatives have in Malawi.

In the absence of awareness campaigns at a national level, distributors are working through trusted members among communities to create awareness and promote sales (e.g. SunnyMoney is cooperating with head teachers, Azuri Technologies reaches out to the local chief).

Providing a level playing field

A subsidy policy that allows for the sale of kerosene under the market price has not been implemented actively, mainly because the government has not been able to fund the subsidies, especially in the light of the recent currency devaluation. However, the provision is currently only dormant and could be executed as soon as the government finds the budget for it.¹⁷ It should, however, also be mentioned that end-users are increasingly using torch lighting and candles as sources of lighting in reaction to increasing kerosene prices following the currency devaluation.¹⁸

Availability of consumer financing

In a country with low income levels like Malawi, consumer financing is important, to overcome high upfront costs. Affordability is therefore ranked by interviewees as one of the most important impediments to market growth right now. Although there are some micro-finance institutions in the country, their ability and willingness to lend to households intending to purchase a solar light seems to be limited. Interest rates are as high as 10-20% per month.¹⁹ One of the biggest micro-finance institutions in the country, CUMO, assesses the potential savings of a household purchasing solar lights as a compelling enough reason to lend money.

Even though only a fraction of the population is using mobile money today, the prospects for using

the technology to provide pay-as-you-go solutions were rated highly by interviewees. While the local mobile network operators cover 79% of the country, subscriber penetration is low (26%). Mobile money was launched in 2012 in Malawi. To promote financial inclusion, an e-money regulation was adopted in 2014, bringing Malawi in line with international best practice in this area and laying the foundation for mobile money uptake.²⁰ However, there are only two mobile network operators active in Malawi, TNM being by far the largest one. Due to limited network operators in the country, the International Telecommunication Union (ITU) concluded that there is only partial competition among operators, which in turn leads to high mobile phone tariffs.²¹

Level of local skills

Interviewees share the impression that the level of local skills is quite low. Companies entering Malawi will, therefore, have to first train their sales and technical staff, which is expensive. Because the sales of solar household systems are seasonal, coinciding with the harvesting season, companies find it difficult to keep trained agents engaged throughout the year. The lack of a steady income for sales agents from the sales of solar lights prompts them to leave the sector, and the company will have to train new staff again.²² Training for solar entrepreneurs is currently mainly taking place in the cities, but they are needed especially in rural areas. Vocational training, in particular, is missing but would be essential to create lasting jobs in the sector and kick-start local distribution networks.²³

Summary and recommendations

Malawi is struggling with macro-economic instabilities which make operations in the country risky. An enabling policy framework would help to decrease the risk of companies and end-users and therefore accelerate market development.

¹⁷ BIF2 Malawi: Pico Solar Products Market Analysis and Strategy, 2014

¹⁸ Interview Business Innovation Facility

¹⁹ Climate Scope Malawi: <http://global-climatescope.org/en/country/malawi/#/details> [12/09/2015]

²⁰ UNCDF (2014): The regulation of mobile money in Malawi.

http://www.uncdf.org/sites/default/files/Documents/the_regulation_of

[_mobile_money_in_malawi_project_report_final_version.pdf](#) [12/09/2015]

²¹ ITU country profile Malawi: <https://www.itu.int/net4/itu-d/icteye/CountryProfile.aspx> [12/09/2015]

²² Interview SunnyMoney

²³ Interview Azuri Technologies

Area	Situation	Opportunities
Policy Framework	Several policy uncertainties exist in registering a solar business, importing products, certifying products, and the level of kerosene and diesel subsidies.	The updated energy policy can provide the basis for harmonized and enabling policy environment for solar household systems and remove policy uncertainties
Access to Finance	Access to finance is critical but very limited; currency fluctuations pose a high risk for companies; high interest rates at commercial banks prohibit access to local finance	Work with international development banks and donors to channel finance at favourable terms into the country
Fiscal Barriers	High VAT rates and tariffs on solar products drive up the costs for end-users in a very price sensitive market	VAT and tariff exemptions for all solar products can help to kick start the market and help companies to mitigate currency fluctuation risks
Consumer Protection and Quality Assurance	Standards for pico PV products are missing to serve as a benchmark for the MBS; higher influx of low quality products and counterfeits puts consumer protection and sustainable market development at risk	The MBS can officially adopt the Lighting Global standards for pico PV to be used as a benchmark. Structures for company licensing can be built upon to increase market enforcement and therefore consumer protection
Consumer Awareness	Awareness for solar portable lighting products and home systems is low; technology reputation of solar is not good	Government has substantial experience in consumer awareness campaigns in the health sector. In cooperation with the private sector the experience could be leveraged to implement campaigns on the benefits of solar lighting
Consumer Financing	MFI are operating in the country and a good regulation for mobile money is in place but mobile money market is still in very early phase	Engage and further capitalize MFI for the distribution of solar lights; increase awareness and build trust for mobile money benefits to promote a faster uptake among the population
Level of Local Skills	Level of local skills is low, companies are training their own staff	Develop vocational training for solar entrepreneurs and offer it especially in rural areas



ODI is the UK's leading independent think tank on international development and humanitarian issues.

Our mission is to inspire and inform policy and practice which lead to the reduction of poverty, the alleviation of suffering and the achievement of sustainable livelihoods.

We do this by locking together high-quality applied research, practical policy advice and policy-focused dissemination and debate.

We work with partners in the public and private sectors, in both developing and developed countries.

Readers are encouraged to reproduce material from ODI Reports for their own publications, as long as they are not being sold commercially. As copyright holder, ODI requests due acknowledgement and a copy of the publication. For online use, we ask readers to link to the original resource on the ODI website. The views presented in this paper are those of the author(s) and do not necessarily represent the views of ODI.

© Overseas Development Institute 2015. This work is licensed under a Creative Commons Attribution-NonCommercial Licence (CC BY-NC 4.0).

ISSN: 2052-7209

Overseas Development Institute
203 Blackfriars Road
London SE1 8NJ
Tel +44 (0)20 7922 0300
Fax +44 (0)20 7922 0399

