



Accelerating access to electricity in Africa with off-grid solar

Off-grid solar country briefing: Ethiopia

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

Ethiopia has a total population of about 99 million.¹ In 2012, only 23% had access to electricity.² In urban areas 85% had access, compared with 10% in rural areas. Ethiopia has been dealing with the challenge of extreme poverty and was able to reduce the proportion of people living in extreme poverty from 39% to 30% in five years.³ The population density in Ethiopia is quite high, at almost 90 people per square kilometre,⁴ which suggests there is potential to extend access through both on-grid and off-grid options. The economy is growing and more communities and individuals are demanding access to electricity. There is significant potential to expand the off-grid technologies market in Ethiopia, which is starting to take off with several private sector players active. The country ranks 14th out of 55 in the Climatescope ranking.⁵

Policy Environment

The Ethiopian government has a very positive attitude towards off-grid electrification and the most strategic national policies include access to energy as the main objectives.

The Climate Resilient Green Economy (CRGE) strategy integrates accelerated economic growth with climate resilience and GHG abatement. Among the four focal strategies are the goals of expanding electricity generation from renewable sources of energy, and leapfrogging to modern and energy-efficient technologies.⁶ Ethiopia's Growth and Transformation Plan II (GTPII) includes ambitious plans for the dissemination of off-grid solar technology (3.6 million lanterns/pico-PV systems and 400,000 solar home systems by 2020). To achieve the objectives of the GTP and speed up the transfer and dissemination of alternative energy technologies, technical support, services and

training will need to be provided to different stakeholders offering both new and existing technologies. It is expected that the private sector will account for the dissemination of the large majority of these systems. For the private sector to meet the GTPII targets, however, significant market growth is required.

For the market to reach its potential, a transparent and coherent regulatory framework is required. The appropriate policy and regulatory environment in Ethiopia today are not yet in place, and there remains uncertainty about how the plans will be implemented to achieve universal energy access. The government has tried to run their own SHS scheme in recent years and, according to one interviewee, it plans to continue to provide solar systems to rural households that could better be served by the private sector itself. Increased consultation with the private sector would allow for better alignment.

The regulatory environment is also very complex and difficult to navigate. More than six agencies are involved in rural electrification, which complicates the process. Inconsistency in policies and their implementation is especially challenging for importing products (see below). Different regional level energy related offices have different policies and regulations, making it difficult for companies to operate in several regions. Harmonization between the regions and a more central approach are therefore necessary.

Access to Finance for the Private Sector

Like in most other countries, access to finance is one of the key barriers for the industry to scale up and reach rural households. In Ethiopia the lack of access to finance translates into a lack of effective distribution channels for products. In addition, access to international capital is very difficult. Companies need to rely on international investors, but the influx of foreign currency is restricted for international companies and off limits for local companies. When investing in international companies operating in Ethiopia, investors from abroad need to obtain a special permission in a very long process that lacks transparency. There is no official guidance or published regulation, which increases uncertainty and therefore companies' and the investors' risks. The untransparent and complex process for the repatriation of interest, dividends

¹ United Nations, Department of Economic and Social Affairs, Population Division (2015). *World Population Prospects: The 2015 Revision*. The SE4All Global Tracking Framework (2015) estimates 27% access.

² IEA (2014). *Africa Energy Outlook 2014*. International Energy Agency.

³ <http://www.worldbank.org/en/country/ethiopia/overview>

⁴ <http://www.worldometers.info/world-population/ethiopia-population/>

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

⁶ Democratic Republic of Ethiopia (2011). *Ethiopia's Climate Resilient Green Economy Strategy*. http://www.uncsd2012.org/content/documents/287CRGE%20Ethiopia%20Green%20Economy_Brochure.pdf [18/09/2014]

and investment in general is another risk for investors, especially for providers of debt.

The availability of foreign currency or FOREX for imports is extremely limited. The World Bank has set up, together with the Development Bank of Ethiopia, a facility that lends to the industry, including suppliers, in USD to overcome the barrier of limited foreign currency and working capital for energy micro- and small enterprises. This however is not a long term solution. The government needs to make more fundamental changes to the economic system to allow the influx of USD into the country. While the facility is working well and has helped to trigger market growth in the country, particularly for solar PV systems, it is also very bureaucratic and asks for a lot of collateral from companies, which smaller companies especially cannot present.

Import of solar household related equipment and fiscal barriers

Lack of access to international finance limits the capacity of companies to import products. Those that have secured access to FOREX are confronted with complex importing rules and provisions.

In 2010 the Ministry of Water and Energy signed a Memorandum of Understanding with the Lighting Africa programme. Based on this MoU, the Ministry of Finance and Economic Development directed that off-grid solar products with Lighting Africa, or other third party certification, should be eligible for duty-free status. When the agreement lapsed, the duty-free status was extended to all solar products imported into the country. While in theory VAT and tariffs have exemptions for solar lighting products, there are implementation problems related to the customs and revenue office, which lead to the inconsistent application of this regulation. Furthermore, the VAT and tariff status for product parts and appliances is unclear. While companies were able to mostly import these parts free of tax and duty, the line ministry responsible has recently changed, with the Ministry of Trade now being in charge. Interviewees reported that companies which had an agreement on the tax status for their product parts will need to go through the entire clarification process again.

Consumer Protection and Quality Assurance

An increasing number of low quality products is entering the market. The number of counterfeit products observed in the market is increasing substantially, affecting the business of renowned companies and their brand integrity. Market spoilage is, therefore, a significant risk in Ethiopia. In many rural areas it is easy to get a low quality product but hard to get hold of quality products.

The Ethiopian Standards Agency (ESA) adopted IEC (International Electrotechnical Commission) technical specifications for pico-PV lighting products as a Voluntary Ethiopian Standard in October 2013. However, this voluntary standard has not proved sufficient to safeguard the importation of quality of products into the country. It gives quality-verified products preferential treatment but has otherwise had only a limited effect. There is no technical facility or capacity to enforce the standards. Recently there was a change in the line ministry with the Ministry of Trade now being responsible for all quality questions concerning solar products. The transfer of the mandate has not been communicated well to the private sector, which sees a risk in the Ministry of Trade lacking the technical understanding to assess the quality of products.

The capacity of the customs and standard authority is very low, undermining the enforcement of any standards. Currently market surveillance is not carried out regularly. In a few regions, regional energy bureaus (REBs) have taken some action against suppliers of poor quality products. However, these actions are not widespread or consistent and it is not clear what measures the REBs are authorised to undertake in such cases.

The absence of minimum warranties and provisions for adequate after sales service undermine consumer protection. While cheap low quality products usually do not come with a warranty, in many cases it is difficult for consumers to enforce the warranty provided by a manufacturer of quality products.

To send a clear signal to the market, it is recommended that compliance with the IEC technical specification and the Lighting Global

Quality Standards⁷ is made mandatory, through the development of a Mandatory Ethiopian Standard based on or referencing these standards. Testing facilities and technical capacity for testing, or just quality checking based on IEC or the Lighting Global Quality Standards will be required. The Ethiopian Standard Mark (ES Mark) could be used to give consumers a simple but powerful way of identifying quality assured products. The use of this government owned and consumer oriented quality mark for verified products would help consumers and retailers to distinguish good quality from low quality products.

Consumer Awareness

Lack of awareness is seen as an impediment to market growth. The marketing and promotion of solar lanterns to low income consumers is a difficult, time- and resource-consuming task. However, consumer awareness creation is critical and the government can play a central role in this effort. The Lighting Africa programme is planning to implement consumer awareness campaigns jointly with the government and to eventually have the government take over the campaign work.

Providing a Level Playing Field

There are no direct subsidies on kerosene or diesel in place. Since fuel is VAT exempt, however, kerosene and diesel benefit from an indirect subsidy.

Availability of Consumer Financing

The prices of solar lighting products are still high for the great majority of rural consumers. End-user financing is therefore central to expand access. Consumer finance via micro-finance (MFI) and pay as you go (PAYG) solutions can help to overcome high upfront costs.

MFIs have access to the debt facility of the Development Bank of Ethiopia (see above) for on-lending to buyers of solar PV, biogas and improved cook stoves. Moreover, many MFI are government owned or close to the government, have good access to capital and play an important role in the distribution network. However, overall the distribution network is not very sophisticated. Only

players close to the government seem to have a wide reach.

The government owns the only fixed line and mobile network operator in the country, Ethio Telecom. The penetration rate for mobile phones in Ethiopia is only 26%.⁸ In 2012, the National Bank of Ethiopia developed a set of guidelines to regulate mobile and agent banking which came into effect at the beginning of 2013. Mobile money services are now being offered in several regions, through a handful of financial institutions. M-BIRR officially launched in March 2015 and is offered by five MFIs, focusing primarily on poor households in rural areas. HelloCash, another recently launched mobile money service, anticipates it could have several million customers by the year's end and 20,000 agents in the next three years.⁹ While it remains to be seen how fast mobile money can scale up in Ethiopia, the broad use of PAYG based on mobile payment was rated as a 'game changer' by interviewees.

Level of Local Skills

Technical training for solar is currently lacking in Ethiopia, resulting in a low level of skills available. Companies currently invest in training their own staff and take the risk that staff might move on to another company once they have finished the training. To strengthen the level of local skills, vocational training could become a more strategic focus for the government.

Summary and Recommendations

The Ethiopian market is off to a good start but would benefit from less complex and better harmonised policies and regulations across different state authorities and regions. Access to FOREX will remain one of the biggest barriers in the country, and is part of a broader fiscal policy the government needs to review for the benefit of private sector development. The government should continue to play an increasing role in consumer awareness programmes as they are very well positioned to reach many people all over the country.

⁷ The IEC technical specification details how products should be tested, while the Lighting Global Quality Standards detail the required minimum performance requirements and warranty terms.

⁸ <https://gsmaintelligence.com/markets/1013/dashboard/> [18/09/2015]

⁹ Centre for Financial Inclusion: The Politics Behind Mobile Money in Ethiopia. <http://cfi-blog.org/2015/07/29/the-politics-behind-mobile-money-in-ethiopia/> [18/09/2015]

Area	Situation	Opportunities
Policy Framework	Off-grid solutions are part of energy access policies and strategies. Their implementation is not harmonised, however.	Increased centralisation, harmonisation and private sector consultation could end policy uncertainties and improve implementation.
Access to Finance	Access to foreign capital and for international investors is limited and a high degree of uncertainty prevails	Increase transparency in the regulations for bringing in international investors to decrease risk. In the long run review the strict FOREX regulations.
Fiscal Barriers	Solar products are in theory exempt of VAT and tariffs. Lack of clarity prevails about the status of spare parts.	Apply regulations consistently for solar lighting products and explicitly include spare parts for VAT and tariff exemptions.
Consumer Protection and Quality Assurance	Low quality products are already starting to spoil the market. This trend is reinforced by counterfeit products, while the level of consumer protection is low.	Introduce national mandatory quality standards and enforce them strictly. Use the existing and well known ESI label for consumer education. Increase alignment between different authorities providing regulation and implementing them, and increase their capacity. Introduce minimum warranties for consumer protection.
Consumer Awareness	Level of consumer awareness can be improved.	Continue campaigns started by Lighting Africa.
Consumer Financing	Consumer financing is important due to low income levels.	Continue to promote MFI and mobile money availability.
Level of Local Skills	The level of skills is currently insufficient.	Increase number of vocational training and skills certification opportunities for solar technicians.

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