Country briefing

Accelerating access to electricity in Africa with off-grid solar

Off-grid solar country briefing: **Zimbabwe**

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

Zimbabwe has a population of 15.6 million.[1] In 2012, 40% of the population had access to electricity, 80% in urban areas and 14% in rural.[2] However, even those who have access to the national grid are hampered by the frequent load shedding and operational shortcomings. Currently, power outages run for 18 hours a day with rolling blackouts across cities and towns between 4am and 10pm.[3] The US dollar-based economy[4] is also under great stress and 4,600 businesses are said to have closed in the last three years.[5] One interviewee noted that unemployment rates run at 95%,[6] while 72% of the population lives in extreme poverty.[7]

In urban areas, many have resorted to using expensive generators to combat electricity shortages, while in rural areas, around 90% of people use toxic kerosene to light their homes. This has led to a burgeoning interest in alternative energy resources. However, consumer trust in solar technology has been damaged by an influx of poor quality products over the past few years. One interviewee estimated that 70% of the population have had access to solar off-grid products but that of these, 69% were low quality. A large initiative by Econet, in which 400,000 households were reached with solar lights, has also had a significant impact on market dynamics.[8]

Policy Environment

The National Energy Policy 2012 highlights off-grid solar.[9] The government has removed duty from solar system equipment imports through Statutory Instrument 147, 2010, and the Rural Electrification Fund Act (2002) has provision for renewable energies. However, interviewees noted that there had been no practical implementation of a supportive policy and, in respect of the Rural Electrification Fund, press reports suggest this has not only failed to meet rural electrification targets but was the centre of a significant corruption scandal in 2014.[10,11]

Currently the lack of a clear policy framework means that practitioners only need a basic business license to open a solar company and operations reportedly take place largely 'under the radar' of official control. One interviewee advised that it is likely the government will soon be forced to interject more proactively in the sector, both as a result of the energy crisis and the extent of low quality solar products within the market. For example, due to the energy shortages the government has introduced a requirement that solar geysers (hot water systems) are fitted on all new properties and has outlined plans to ban electric geysers from the start of 2016, insisting on their replacement with solar geysers within the next five years.[12]

Access to Finance for the Private Sector

Access to low cost finance was cited by interviewees as critical for accelerating the market and achieving scale. One advised that their waiting list for solar home systems was already six months long due to a lack of capital to buy more products. Although banks are restricted to providing a 20% interest rate, there is deflation throughout the economy,[13] and one stakeholder advised *"even if you have security, you cannot get a loan as the banks don't have money themselves."* This lack of available funding means that banks usually refer businesses to microfinance institutions who charge a much higher rate of interest at around 45%.[14]

Some international organisations were noted as having involvement within the country including SunFunder, USAID and ResponsAbility.

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[1] United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision.
[2] IEA (2014) Africa Energy Outlook 2014, International Energy Agency.
[3] The Herald (2015), *Tight power cuts schedule out*, Available from: http://www.herald.co.zw/tight-power-cuts-schedule-out/
[4] Zimbabwe phased out the Zimbabwe dollar in 2009 when it reached 35 quadrillion to the US dollar.
[5] Economist (2015) Available from: http://on.ft.com/1IeY8Hs
[6] Progressio (2011) The Youth and Unemployment in Zimbabwe, Available from: http://bit.ly/1RzGhR2
[7] World Bank (2011) Available from: http://data.worldbank.org/country/zimbabwe
[8] BizTech Africa (2013) Available from: http://bit.ly/1XeD1l1
[9] London School of Economics (2012) Available from: http://bit.ly/1StoDz5
[10] Zimbabwe Situation (2014) Looting spree at Rural Electrification Agency, Available from: http://bit.ly/1RZAgwF
[11] The Sunday Mail (2014) Rural Electrification Stalls, Available from: http://bit.ly/1Hv1ZA0
[12] Reuters (2015) Zimbabwe to ban electric water geysers in bid to save electricity: http://bit.ly/1kdJUBC
[13] Latham, B & Cohen, M. (2015) From Hyperinflation to Deflation, Available from: http://bloom.bg/1ihQVjD
[14] Stakeholder interview

Import of solar household related equipment and fiscal barriers

Tariffs have been removed for the import of solar products but VAT at 15% still applies.[15] Interviewees suggested that an exemption for solar products from VAT would provide a huge boost to the sector. However, one stakeholder advised that as tax revenues are one of the only ways the government has to raise funds to pay civil servants, any losses – even if providing long-term social benefits – may be tricky to implement given the immediate fiscal needs of the government.

Consumer Protection and Quality Assurance

The influx of substandard solar products into Zimbabwe was noted by all interviewees as being a significant challenge for the off-grid market. The scheme run by Econet was specifically cited. In this, the company encouraged customers to sign up to a package which provided customers with a mobile phone and a solar lamp for $ 45. Although, according to interviewees, the solar products were low quality, Econet sold around 400,000 lights, enough for about a third of the country's households. But their low quality has had a significant impact on trust in solar technology.

Instances of companies 'dumping' low quality solar products were also cited. One interviewee advised that, though some products might fail the standards tests put in place by the Standards Association of Zimbabwe, this only means that they are disqualified from tariff exemptions, rather than being banned from being brought into the country. As these low quality products are still cheaper than high quality solar, this has not dissuaded people from importing them.

As a result of these issues, interviewees reported that it can now take a long time to convince consumers of the benefits of solar lights and home systems. A problem with low-quality AC systems was also highlighted due to the lack of technicians able to install these effectively. The problem of low quality products was cited by all interviewees as a major challenge, and the need for greater enforcement of standards was seen as acute. Customer research by one company suggested that 90% of products were low quality. Various initiatives, such as quality kite marks, are being investigated and advocated by the sector to restrict low quality imports. The Regional Environment Organisation (ZERO) was highlighted as being involved in these efforts.

While action is clearly desirable to limit the influx of low quality products, one interviewee raised concerns that it might be difficult to enforce regulations as officials in the Zimbabwe Revenue Authority (ZIMRA) would not be equipped to implement quality control. Some merits were noted in the Consignment-Based Conformity Assessment Programme piloted by the French organisation Veritas, implemented to cover a four-year period while a Zimbabwe Quality Standards Regulatory Authority is established.[16] This programme, where shipments are pre-certified at the point of origin, was also noted as adding to the cost of systems and having the potential to restrict the sector. In the first instance, because importers have to bear the cost of pre-certification (which was advised as being around 2.5% of the Freight-on-Board cost of the consignment). Secondly, because during the first trial of the scheme some exporters were unhappy to enter into the system due to the inconvenience and the small size of the Zimbabwe market. Efforts should be taken to ensure that any such initiatives do not inadvertently make it more difficult to import good quality products into the country.

Consumer Awareness

As a result of NGO solar programmes over the last three decades, as well as more recent initiatives such as the Econet programme, according to interviewees 'everyone' knows about solar. The challenge is in changing the perception of solar products by providing higher quality technology, sales after care services and technical training in respect of installation and maintenance.

One company interviewed is running its own campaigns in selected districts to educate customers about what they should look for when buying products. They are also working with rural councillors to demonstrate good quality products. These activities are limited by resources, however (and are presumably linked to the sale of a specific

[15] Zimbabwe Revenue Authority (Accessed October 2015) Available from: http://bit.ly/1FUz7G8

[16] Mandizha, T, Govt to curtail influx of sub-standard products, Available from: http://bit.ly/1LSZQlI

set of products). Another organisation is working with the NGO, Young Africa, to train young people so that they can take solar knowledge back to their communities. Such schemes, while valuable, will only go a short way to sharing knowledge about solar energy and changing perceptions of the technology.

Providing a Level Playing Field

Kerosene is not subsidised, costing $ 1.07 per litre according to ClimateScope (2014)[17] and $ 1.20 as estimated by one interviewee. Stakeholders suggested that there have been some instances where tenders for solar products and NGO giveaway programmes have led to the provision of low-quality solar products, distorting the market, damaging the perception of solar and, in some instances, leading to the misappropriation of goods and funds.

Availability of Consumer Financing

The affordability of products was cited as a significant barrier to uptake (though second to capital finance at present, since demand for good quality products currently outstrips, and limits, supply). Solar home systems are often out of reach for rural households as families may not have enough funds for the down-payment on a system. To mitigate these challenges, one stakeholder has adopted the use of mobile enabled pay-as-you-go technologies and is trialing a range of products to meet the needs of different market segments.

The mobile network to support mobile payment systems is estimated to cover around 85% of the country. There are around 9 million Econet customers, 4 million of whom use EcoCash.[18] Mobile payment systems were also cited by one interviewee as a secure way to make transactions and to provide transparency in relation to payments. In addition, an example was cited of online payments for a mobile phone enabled solar home system that can be made from any location, enabling family members overseas to assist with repayment plans. (Remittances transferred into Zimbabwe through formal and informal channels are estimated to be around $ 2 billion annually.[19])

The Zimbabwe Association of Microfinance Institutions, which has 70 members,[20] may be able to engage with schemes to support the uptake of solar technologies. Interest rates were reported to be around 45%, however, severely hindering the ability of customers to make use of their services. Other economic pressures were also highlighted as having the potential to significantly impact customers' ability to pay for products or take out microfinance loans. For example, recent financial pressure on the tobacco and cotton industries. Agricultural cooperatives often provide a focus point for local lending schemes and the distribution of solar products, so such financial pressures may hamper their ability to engage with solar microfinance schemes.

A need for more market research on customer segmentation and financing was raised by one interviewee, while others advised that more capital finance and greater financial flexibility would be key to market growth. Interviewees expressed a desire to raise finance which would enable them to offer repayment plans that can work with the annual variability in consumer income. They felt this would not only allow more customers to purchase products, but would ultimately bring down the cost of financing by driving a positive impact on default rates. A further suggestion was to engage the large Zimbabwean diaspora in efforts to address consumer financing challenges for solar home systems, particularly where payments for systems could be made remotely by family members.

Level of Local Skills

The literacy rate for 15-24 year olds is quite high at 83.6%,[21] suggesting that it should be relatively easy to train staff. However, there is a critical skills shortage in the country. Where solar projects have been undertaken, a lack of knowledge about maintenance and installation has left systems in disrepair and contributed to the distrust of solar within the country.

Stakeholders advised that some organisations are beginning to look to external training providers to fill this capacity gap. One example is the NGO SNV

[17] Climatescope (2014) Available from: http://bit.ly/1PqI37N
[18] Microcapital (2014) *Econet's Ecocash*, Available from: http://bit.ly/1L03FSg
[19] Daily News (2015) Zimbabwe Targets 2 billion Diaspora Remittances, Available from: http://bit.ly/1NOMvun
[20] SEEP Powering Connections (Accessed October 2015) Available from: http://bit.ly/1Mmfsja
[21] UNDP (Accessed October 2015) Human Development Reports, Available from: http://bit.ly/1Q7w1BI

which has implemented a Rural Youth Solar training programme which aims to train 360 young people by the end of the year in management and distribution of solar lanterns and small home systems.[22] One interviewee noted, however, that bringing training staff into the country from overseas can sometimes be complicated and raised concerns that, across the board, the country lacks the expertise needed to train the upcoming generation.

Summary and Recommendations

The acute energy and economic issues create both an opportunity and a challenge for off-grid solar in Zimbabwe, with the impact of low quality products on consumer confidence a particular issue to address. Several actions could be taken to underpin and accelerate the off-grid sector including education and awareness campaigns which explain the importance of quality, capital finance made available to organisations selling quality products, and a clear mechanism for exemption from VAT. Technical training will also be needed to support and accelerate the sector.

[22] SNV (2014) *Solar Technology Generates Jobs for Zimbabwe Youth*, Available from: http://bit.ly/1qjRdFX

Area	Situation	Opportunities
Policy Framework	While there is a tariff exemption for solar products there is little other policy support for the off-grid sector. Due to the energy crisis, and through examples such as the ban on electric geysers, greater political focus is likely to be given to solar energy solutions.	Use the increased focus on energy issues to work with decision makers to put a framework in place to support off-grid solar. This could include off-grid targets, exemption from VAT for quality products and support for quality education campaigns and training.
Access to Finance	Access to finance is a problem in Zimbabwe due to the economic crisis. International finance is needed to underpin the sector. Use of the US dollar mitigates the forex risk prevalent in other countries.	Donor seed finance, low interest debt and de-risking instruments would help to accelerate the market.
Fiscal Barriers	Tariff exemptions apply to solar products but VAT exemptions appear to be made for some companies but not all.	Develop a clearer policy for VAT exemptions for all quality off-grid solar products.
Consumer Protection and Quality Assurance	A huge influx of cheap products and giveaways has significantly impacted the market. Though some quality assurance measures are in place these appear ineffective. The use of the US dollar has led to even more 'dumping' of products.	Given the difficulties of implementing supply-side consumer protection and quality assurance measures, demand-side education campaigns should be considered. Help provide access to capital for quality service providers.
Consumer Awareness	Cheap imports and Econet's scheme led to hundreds of thousands of poorer quality lights reaching consumers. While nearly everyone in the country is aware of solar solutions, trust in the technology is low.	Consumer awareness campaigns provide education on quality and warranties could help change perception, particularly if run in conjunction with local leaders.
Providing a Level Playing Field	There are no kerosene subsidies. Giveaways and the subsidisation of solar products have affected market dynamics.	Greater coordination between stakeholders from across the public and private sector may help mitigate these issues.
Consumer Financing	Loans via microfinance institutions are largely cost prohibitive. Mobile enabled payments are increasingly used, with millions using, or aware, of mobile money. Internet enabled PAYG schemes may also make it easier for the diaspora to help finance solar home systems.	Greater access to capital finance and flexibility in repayment programmes, would help practitioners provide services to more households. Linking remittances from the large Zimbabwean diaspora to the provision of energy services could significantly accelerate energy access.
Level of Local Skills	Despite relatively high literacy rates, technical and soft skills needed to support the sector are lacking. This lack of technical installation and maintenance skills has already led to the breakdown of a significant amount of solar hardware in the country.	Greater support for schemes such as that run by SNV. Providing technical apprenticeships and training.

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