

Zambia: Stand-Alone Solar Businesses

Case Study: Kazang Solar Pay-As-You-Go Solar Home Systems

SITUATION DESCRIPTION

This case study describes the business model of Kazang Solar – a provider of Pay-As-You-Go (PAYGO) Solar Home Systems (SHS) in Zambia.

ABOUT KAZANG SOLAR

Kazang Solar is a sister company of the financial services provider, Kazang Zambia. Kazang is a leading micro-payment processing service provider in sub-Saharan Africa, with presence in Botswana, Mozambique, Namibia, South Africa and Zambia. The Kazang cash transfer and bill payments service allows underserved customers to transfer money, pre-pay for products, and access additional services like electricity, TV, and insurance. In Zambia, Kazang has over 6,000 point-of-sales terminals, processing over 100,000 customer transactions per day.

Since 2016, Kazang Zambia has partnered with the UK-based Azuri Technologies to develop the Kazang Solar business. The company distributes Azuri's leading product, the Azuri Quad, on a PAYGO basis. During its startup phase, Kazang Solar is receiving technical and commercial support from Azuri Technologies, in the form of a seconded commercial advisor embedded within the Kazang Solar business. By early 2018, Kazang Solar has sold approx-

imately 5,000 units in Zambia, and plans to scale to 90,000 units by the end of 2023.

In August 2018, Kazang Solar has been awarded US \$1.6 million from the Africa Enterprise Challenge Fund (AECF) under its Renewable Energy and Climate Adaptation Technologies (REACT) window.

ABOUT PAYGO SOLAR

PAYGO solar is a relatively new approach to the distribution of SHS units in Zambia for customers with low and irregular incomes. PAYGO solar distributors offer solar products that match the energy payment patterns of their target customers. Customers usually pay a relatively small down payment to receive a system and 'top-up' with pre-payments over time typically via mobile money. The technology can lock the solar system in case of non-payment. Some PAYGO models enable system ownership, while others provide energy as a service. The PAYGO technology offers customers an affordable means to access not only modern energy services but also financial services, as customers build formal credit histories with solution providers.



GET.invest is supported by



MARKET SEGMENTS AND SIZE

Kazang Solar targets low income households with no or poor access to grid-based electricity. Kazang Solar typically serves rural markets, with the latter largely comprising communities that are within 10–20 km of a major, improved roadway. Customers typically have a mobile phone and may have access to a mobile money account.

TARGET CUSTOMER PROFILE

Kazang Solar's target customer is any household that does not have access to the national grid. A majority of these customers are rural smallholder farmers. Kazang Solar has begun its distribution operations serving households relatively close to established roadways and plans to deepen into more remote areas as its operations solidify.

BUSINESS MODEL¹

Kazang Solar's business model is strongly informed by the market experiences and operational know-how of its key technology partner — Azuri Technologies. Azuri is one of the leading companies in sub-Saharan Africa's PAYGO sector, with over 150,000 units sold in 12 countries since its establishment in 2011. Azuri's distribution strategy in Africa generally includes partnerships with established enterprises, using a variety of organisational relationships.

The collaboration between Azuri and Kazang Solar began in 2016 and is comprised of an arms-length technology and services supply agreement. Azuri sells products to Kazang Solar and provides ongoing services such as system monitoring, data management and reporting, as well as other back-end services. Azuri provides hands-on technical assistance to Kazang Solar in the form of an in-country consultant that delivers market expertise, operational know-how, and strategic support. Azuri does not have exposure to Kazang Solar beyond the sale of its products and know-how.

Kazang Solar **value proposition** to its customers include access to modern energy and financial services, as well as a reduction in household energy expenditure. The offered energy and financial products, along with the installation delivered by qualified technicians and 2-year warranty, provide customers with a modern energy solution.

Kazang Solar's **key activities** include procuring, importing and distributing PAYGO SHS products, marketing products through the Kazang agent network, customer registration, system installation, payment collection, after-sales customer support (including repairs and repossessions) and portfolio monitoring. Integrating these operations is an IT back-end provided by Azuri Technologies and integrated with Kazang's existing IT infrastructure.

Kazang Solar's **customer relationship** includes the full customer cycle, from initial marketing through to after-sales service, and promotion of other Azuri solar products — such as PAYGO solar satellite TV, which is available once customers pay off the cost of their first Azuri product. Awareness of Kazang Solar is enhanced by Kazang's established presence and high visibility in rural areas. Kazang terminals are easily found throughout urban, peri-urban, and rural areas, and are frequented by a diverse cross-section of Zambian households. Azuri additionally provides Kazang Solar with insight into best operational practices in customer marketing — i.e. that it has learned from other markets — and advises on the development of marketing campaigns and sales strategies. Kazang agents explain the product and PAYGO terms, install products at customer homes, and visit homes for payment collection. Call centre staff process customer registrations and ongoing post-sales issues.

The ongoing customer relationship is closely aligned to the sales and credit management functions of the business. The credit assessment process is a mixture of qualitative (i.e. agents' social networks and relationships within their sales territories) and quantitative (i.e. standardised customer sign-up survey) metrics. Once a customer has paid an upfront fee, registered the system, and has had the system installed, follow-on pre-payments are processed through agents or the Kazang Solar call centre.

Kazang Solar's **channels** to customers largely leverage the established physical coverage of the Kazang financial services network and its agents, as well as relationships with commercial partners.

1) Adapted from the Business Model Canvas framework, Osterwalder and Pigneur (2010).

Kazang Solar's **revenue** stream is comprised mainly of PAYGO down payments, and monthly repayments for its SHS solutions.

The company's cost structure is driven by inventory and consumer financing requirements, as well as the operational overhead of sales (e.g. agent commissions), marketing, distribution, and post-sales support. The commercial support received from Azuri Technologies is included within the cost of products.

CORE SOLUTION OFFERING

The core product offering is the Azuri Quad. The system includes: 10 W solar PV panel, 6500 mAh Li-ion battery with Azuri Home-Smart battery management technology, control box with keypad, 4 LEDs lamps, radio, mobile phone charger, flashlight, two wall switches, and cabling. The system is sold with a 2-year manufacturer's warranty.

Customers can either buy the Azuri Quad system upfront or on a PAYGO basis. At the time of writing, the upfront fee was ZMW 2,375 (EUR 207). The PAYGO option includes a down payment of ZMW 100 (EUR 8.7) and weekly top-ups of ZMW 40 (EUR 3.50) or 4-week/28-day top-ups of ZMW 160 (EUR 14). After a period of 80 weeks, customers have completed their PAYGO commitments, and they own the product.

PATH TO SCALE

From an installed base of over 5,000 systems at the time of writing (end 2018), the company intends to install more than 90,000 Quad systems by the end of 2023. Kazang Solar estimates that it requires over EUR 200,000 in equity and EUR 1,250,000 in debt to complement secured grants for the expansion phase.

Over the next four to six years, Kazang Solar anticipates providing an equity IRR of over 20% to early stage investors. The key sensitivities that may impact potential returns include: the rate of sales growth; churn and the performance of the portfolio; the cost of debt, and the company's ability to manage high growth and expansion.

ACKNOWLEDGMENTS

GET.invest deeply appreciates the time and effort spent by Kazang Solar to share data and information towards this case study. GET.invest expresses gratitude to all staff and individuals who reviewed the case study and provided valuable insights, guidance and feedback.

ABOUT GET.INVEST MARKET INSIGHTS

The first series of GET.invest Market Insights are published in early 2019 covering four renewable energy market segments in three countries, namely: renewable energy applications in the agricultural value-chain (Senegal), captive power (behind the meter) generation (Uganda), mini-grids (Zambia) and stand-alone solar systems (Zambia).

Each Market Insight package includes **a)** a 'how to' Developer Guide, **b)** Model Business Cases and **c)** Case Studies. The Developer Guide enables the reader to navigate the market and its actors, to understand the current regulatory framework and lays down the step-by-step process of starting a new project/business. The Model Business Case analyses project economics and presents hypothetical, yet realistic, investment scenarios. It hence indicates the criteria for a viable project/business to enable the reader to identify the most cost-effective project/business opportunities. The Case Study analyses the viability of operational or high-potential projects/businesses to highlight lessons learnt and industry trends.

GET.invest Market Insights therefore summarise a considerable amount of data that may inform early market exploration and pre-feasibility studies. It is recommended to cross-read all three products to gain a comprehensive overview. The products are accessible at www.get-invest.eu.

ABOUT GET.INVEST

GET.invest is a European programme which supports investment in decentralised renewable energy projects. The programme targets private sector business and project developers, financiers and regulators to build sustainable energy markets.

Services include project and business development support, information and matchmaking, and assistance in implementing regulatory processes. They are delivered globally and across different market segments.

GET.invest is supported by the European Union, Germany, Sweden, the Netherlands, and Austria, and works closely with initiatives and industry associations in the energy sector.

GET IN TOUCH

We welcome your feedback on the Market Insights by sharing any questions or comments via email at info@get-invest.eu.

DISCLAIMER

The information in this document is derived from carefully selected sources and interviews. However, GET.invest does not guarantee its accuracy or completeness and liability claims through the use of incorrect or incomplete information are excluded. This document does not necessarily represent the views of GET.invest or the countries mentioned. GET.invest does not endorse or recommend any commercial products, processes, or services mentioned in this document. This document is not intended to replace primary project and business studies. A detailed analysis for a specific project or business needs to be conducted before any investment decision.

CONTACT

GET.invest	Place and date: Brussels, June 2019
E info@get-invest.eu	Photo credits: © GIZ, except where otherwise indicated
I www.get-invest.eu	