



BGFA

Beyond the Grid
Fund for Africa

BEYOND THE GRID:

BEYOND THE NUMBERS – THE IMPACT OF BGFZ



Introduction

Zambia is home to a highly dispersed population, with more than 60% of people living under the poverty line, and some 70% of whom have no access to modern energy. Neither the national utility nor energy service providers had been able to effectively deliver energy to rural and peri-urban areas, hindered largely by a lack of

capacity and investment, including into the range of new technologies and solutions around distributed, off-grid energy services powered by renewable energy.

In 2016, the Power Africa: Beyond the Grid Fund for Zambia (BGFZ) was launched to help support private

sector-led energy service provision and stimulate the local energy market, with the ultimate aim of connecting one million Zambians to modern energy services. Today the Swedish-funded programme is on track to connect 1.6 million people – or 13% of the population – by 2021.



98%

of interviewees rated their energy services as "very good"

Joyex Zulu, a shop owner in Shikoswe Compound, Kafue, holding her new ReadyPay solar home system from Fenix Intl.

Beyond the grid: beyond the numbers – the impact of BGFZ

BGFZ has resulted in profound changes in the lives of many Zambians in off-grid rural and peri-urban areas. The availability of affordable and clean solutions has had impacts well beyond keeping the lights on.

The following report contains highlights from a study conducted in December 2018 to determine the socioeconomic impacts of the BGFZ programme.

The Centre for Energy, Environment and Engineering Zambia (CEEEZ) conducted the study through a series of interviews with 164 energy customers benefitting from BGFZ. The study aimed to understand the relationship of customers with the services and service providers.

Off-grid energy solutions are a technically viable, affordable, quickly deployed and reliable option for Zambians wanting modern energy services. But the impacts of using renewable energy over traditional methods have been far-reaching, impacting daily life in some communities.

Lighting

Reliable and renewable lighting solutions have resulted in more night-time activities, including the opportunity for children to study after sunset for longer than traditional lighting would allow. Candles are considered expensive, temporary, and hazardous, while solar lighting is clean, safe and has a far greater lifespan at vastly reduced (comparative) costs, with the

After acquiring the energy service, the proportion of households using candles dropped by

95%

money saved being spent to improve other areas of life. Improved lighting has also resulted in increased business hours, is easier on the eyes, and provides enhanced safety and security for households and communities at large.

Communication

Energy services make it easier to charge cell phones, which in turn allows people to keep in touch with friends and family. The charging facilities also mean more households are able to power radios and televisions, improving household access to information, current affairs and entertainment.

96%

of households said the lighting helped their children study better than before

"Customers dramatically altered behaviour in several ways after purchasing an energy service."

CEEEZ, 2019



>152,000*
Connections



>790,000*
Beneficiaries



>1,600*
Jobs created



>2,000*
Businesses connected



>375,000 kg CO₂*
Mitigated annually

*As of January 2020. Please find more information at www.edison.bgfz.org



Ester Tembo lives in a rural village an hour outside of Lusaka. She often cooks for up to 25 people – a job made far easier by her SupaMoto clean energy stove.

“The households are charging their cell phones in their homes and making savings by not paying elsewhere for the service while also cutting off expenditures on transport.”

Cooking

Traditional cooking methods that involve the burning of wood or charcoal expose households to poor air quality and increase the risk of respiratory illnesses. Clean cooking solutions do not negatively impact air quality and do not present the same hazards that traditional methods do.

There is initial evidence that improved cookstoves (ICS) provide significant benefits in particular to women, who are largely responsible for firewood collection and meal preparation. A wood pellet burning improved cookstove has been included in around 500 of the energy service packages to date*.

One third of interviewed households with an improved cookstove reported spending less time (only 2-15 minutes) on collecting fuel – a task that could previously take 4 hours.

87.6%

of households saved money by using the energy service and were able to use the money to improve other areas of life like nutrition and housing



BENEFITS OF USING ENERGY SERVICES

- Saving money on energy-related expenditures, particularly on lighting
- Generating new opportunities to supplement and/or increase income from small businesses
- Improved security and safety due to reliable lighting
- Increased time available for reading or studying during night time hours
- Cleaner air indoors due to improved lighting and cooking
- Improved access to communication
- Greater access to current affairs

Transformational impact

Cell phones have great importance in rural Zambia. Apart from tools for communication, cell phones can be used for identification, to send and receive money, and reduce reliance on banks. The ability to charge a cell phone is therefore a high priority.

25%

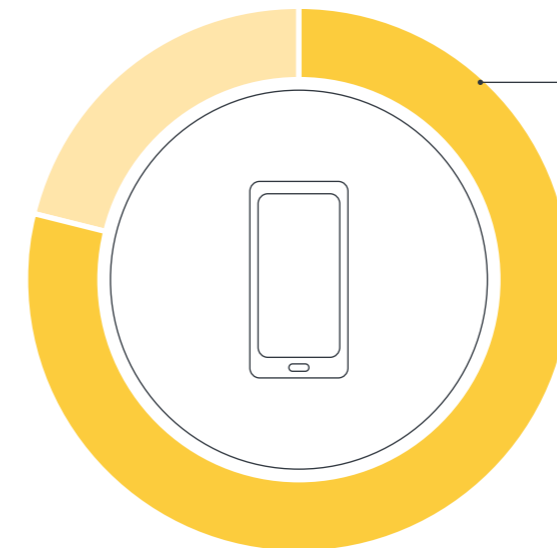
of customers used their energy service to increase their income from offering phone charging and mobile money services to lighting small businesses and other income-generating infrastructure.

48%

of respondents said their energy service enabled them to do things they could not do before



Schoolgirl Naomi Musoli makes a call from her farm on her family's mobile – charged by their solar home system.



79%

previously charged their phones at nearby shops, friends or marketplaces

100%

of interviewed households have a cell phone

20km

the farthest distance to travel to charge a cell phone

ZMW6-15 (USD 0.40-1.00)

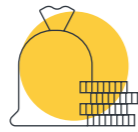
previous cost per week to charge a cell phone

* As of January 2020

How much has been saved?



Households previously spent **ZMW 60-180 (USD 4 -12)** on candles per month



The highest amount saved indicated by respondents was **ZMW 3270 (USD 225)**, the average amount was **ZMW 60-300 (USD 4-20)**

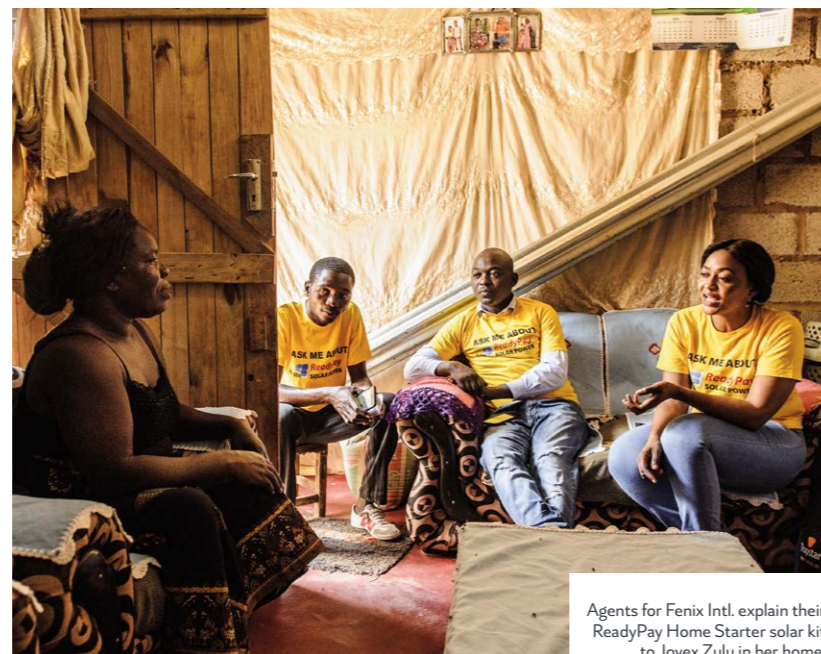


87% of households saved money after acquiring the energy service

Additional quality benefits

In addition to the improved lighting, easier access to phone charging, and the range of available electrically-powered appliances, customers also benefit from an enhanced level of service quality in the system itself. Aside from the mandatory minimum three-year warranty on core hardware, customers have access to access free customer service hotlines, technicians and service centres closer to their homes, a range of auxiliary products and services and opportunities to earn through referrals. Their benefits:

- Customer service
- Agents / points of contact
- Upgrading / downgrading
- More products available
- Job opportunities / referrals
- Education



Agents for Fenix Intl. explain their ReadyPay Home Starter solar kit to Joyex Zulu in her home.

“More than 98% of respondents are satisfied with the products and services.”

Recommendations

Although satisfaction among respondents was overall extremely high, many still pointed out areas of improvement.

Most of these centred around finding better payment modalities for those without access to (or interest in) mobile money.

Some customers also wished for more local technicians and encouraged energy service companies to further improve product capacity and durability.

There is potential for improvement such as (1) prioritizing consumer awareness and sensitization programmes, so that consumers are able to make informed decisions about products and services, (2) inclusion of improved cookstoves, and (3) expanding networks of product technicians to reduce repair and replacement times for customers living in remote areas.

The four companies of BGFZ:

Standard Microgrid provides reliable electricity to communities through an innovative financing mechanism. The company’s distributed renewable energy services are customisable and affordable, allowing communities to stay in control of their energy usage and expenditure.



Standard Microgrid

Emerging Cooking Solutions combines bio-energy and solar in their **SupaMoto Energy** products for cleaner and more efficient cooking. SupaMoto stoves run on pellets, and will soon be made available on a pay-as-you-go system, making the products accessible to more people.



Fenix International Zambia

Fenix International Zambia provides solar home systems through an innovative finance structure. The product, known locally as Fenix Power, is a lease-to-own solar home system providing lighting, phone charging, TV and radio for off-grid households, financed through affordable instalments over mobile money.



VITALITE Zambia

VITALITE Zambia offers solar home systems through an innovative and affordable pay-as-you-go system. The company has also focused on improving smallholder farming practices by making affordable quality products ranging from solar powered water pumps to high-quality certified farming inputs. The company’s agricultural information platform and customised training videos spread climate smart agriculture practices.



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