

GSMA™



Mwangaza “Light”: Improving Refugee Access to Clean Energy

GRANT PROJECT DATES

July 2019 to June 2021

Alight (formerly American Refugee Committee) is an international non-profit that works closely with refugees, trafficked persons, and economic migrants, to co-design solutions that help them build full and fulfilling lives, providing health care and clean water, shelter, protection, and economic opportunity to more than 3.5 million people in 19 countries each year.

BRIEF PROJECT DESCRIPTION:

Alight received a GSMA grant to implement Mwangaza, in Bidi Bidi Refugee Settlement in Northern Uganda and Kiziba Refugee Camp in Western Rwanda. Through a partnership with BioLite¹ they provided solar-home-systems (SHS) for lighting and fuel-efficient clean-cookstoves, through a mobile money enabled ‘pay-as-you-go’ (PAYG) model. The clean-cookstoves also convert heat from cooking fires to electricity for phone charging.

The project served as an important proof-of-concept for projects combining livelihoods, environmental protection, and humanitarian projects which require aid-users to pay a fee. Overall the aim was to reduce household spending on energy and reduce CO2 emissions. The project also aimed to test hypotheses that affordable energy access would improve economic activity amongst refugees and that refugees would benefit from better access to mobile technology through enhanced capacity to charge a phone.

1 <https://www.bioliteenergy.com>

KEY STATS



846 households reached

458 Kiziba

388 Bidi Bidi



In total

519

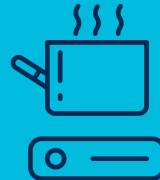
solar home systems distributed



Roughly

£20,000

of revenue was generated through customer payments



429

cookstoves distributed



SHS customers use it every day

Bidi Bidi

92%

Kiziba

98%



Say it reduced their fuel expenditure

Bidi Bidi

95%

Kiziba

96%



Felt it met their expectations

Bidi Bidi

99%

Kiziba

96%



Paid with mobile money

Bidi Bidi

100%

Kiziba

94%





Gail* Gail is a South Sudanese refugee living in Bidi Bidi Settlement, Uganda. She received a solar home system and stove from Alight in June 2020, making regular payments until 2021 when she had paid off the full cost of the system. She found that the two items helped to reduce the cost of fuel, and extended the hours at which she was able to light her home.

“These products enabled me and my family to access light in three of our rooms including a security light at the compound, listen to a radio, and charge our phones”

Gail thinks that the distributions should be extended to other settlements, to help more households get access to clean energy.

Victor* Victor is a refugee from the Democratic Republic of the Congo living in Kiziba refugee camp, Rwanda. He purchased the cook stove in November 2020 and had completed 72% of his repayments when he spoke to us. He feels that the equipment helped him to save money on the traditional fuels he was buying before.

“Today, I am happy because this stove helps me to save money as I am no longer buying kerosene.”



Raima* Raima is a refugee from South Sudan, living in Bidi Bidi Settlement. She first received her solar home system in 2020 and installed it in her business premises to try and save money on the ongoing costs of providing energy to her business. This was especially valuable to her during the COVID-19 pandemic, which impacted her ability to pay for a number of things, but she was thankful to have already paid off her home system and therefore have no energy outgoings during this period. She also appreciated the fact that the solar system had an inbuilt calendar which helped her to keep track of the date.

“...the 5000UGX I used to spend weekly has directly helped me invest in improving my place, I now have six chairs compared to time without Alight solar system”.

Project Outcomes & Lessons

OUTCOME

Mwangaza significantly reduced the amount households spend on energy

Mwangaza customers reported a significant reduction in the amount of money that they spent on fuel (including kerosene, charcoal, and wood). During the baseline survey in Bidi Bidi, 82% of customers spent more than 4,000UGX monthly on fuel, yet during the endline 66% spent less than this, including 33% spending less than 2,000UGX monthly. Similarly, 96% of SHS customers in Kiziba said the products helped in reducing their expenditure on fuel.

Additionally, customers from both locations used the systems to charge their phones, further to reducing household energy costs by reducing dependency on charging stations or paying neighbours. Nearly eight in 10 (78%) solar-home-system customers in Bidi Bidi reported that it was their main way of charging their phone.

“It has reduced the cost of firewood for those who managed to buy the cookstoves. It has changed the lifestyle of refugees in terms of lighting and even charging from home. The project is good and should continue providing safe and clean energy to refugees.”

– Bidi Bidi Camp Official

LESSON

Access to electricity increased phone usage

In both settings, customers indicated that the increased access to electricity has increased their access to and use of their mobile phones. In Bidi Bidi, 98% of customers said they were able to use their phone more now, in Kiziba the figure was 82%.

OUTCOME

Mwangaza met the needs and expectations of its customers

Customers let the evaluation team know that, overall, the equipment met their expectations. The majority of people who used the solar home system said that they were satisfied with it (99% in Bidi Bidi and 93% in Kiziba). This was similar for the cookstove in Bidi Bidi (94%) with a lower level in Kiziba (60%), potentially linked to laws which restricted firewood access. This was similar when looking at perceived affordability of the equipment, with 80% of customers in Bidi Bidi and 84% of customers in Kiziba saying that it was ‘very’ or ‘somewhat’ affordable for their household.

LESSON

Consistent repayment was a challenge

Based on Alight's project data, the majority of customers had missed at least one payment by the time the evaluation was conducted (73% in Bidi Bidi and 92% in Kiziba). On average customers in Bidi Bidi had paid back more of their outstanding balance than those in Kiziba. There were a number of issues which could have impacted this. One potential factor was that income was less predictable in Kiziba, where humanitarian cash assistance had been cut due to a lack of funding for the broader humanitarian response. There were, however, occasionally also issues with the way in which Mwangaza was set-up to receive payments, such as market-stands not always being manned and therefore not always making it convenient for customers.

“I missed the payment because the day I went to their office, I didn't find anyone there.”

Interestingly, repayment rates were higher for customers using solar-home-systems than cookstoves, it is thought that this is because the former stop working if payment is not received. As the SHS are connected to mobile networks via SIM cards, they require an activation code to function, and that code is sent to the customer automatically once they have made their monthly payment.

Field agents from the refugee communities were also trained on the installation and minor repairs of faulty systems. They also help in providing relevant information on the usability of the equipment as well as following up with those behind on payments.

LESSON

SHS were significantly more popular than clean-cookstoves in Kiziba

The evaluation study found that customers in Kiziba were much less interested in clean-cookstoves than they were SHSs, this is potentially due to changes in laws which restricted their access to firewood. This was both true of customers (as highlighted in the previous outcome) as well as prospective customers; only 13% of prospective customers showed an interest in the clean-cookstoves compared to 47% for the SHS.

Mwangaza: The future

- ➔ Alight was pleased to see that the project demonstrated the refugee customers in both settings have the capacity to acquire assets when supported by innovative loans. During the grant period, many of the customers paid off the balance of their loans and those with outstanding balances continued to do so, even through the COVID-19 pandemic, a sign of resilience.
- ➔ Alight has also noticed that demand for the SHS and the cookstoves still exists in both the refugee and host communities and therefore have identified the need to scale up solutions such as Mwangaza to address this.



DATA SOURCES

- Alight final report and project reporting
- Third party evaluation conducted by Three Stones International in February 2022. This evaluation consisted of a survey disaggregated by location and customer status (358 interviews with Alight customers (200 in Bidi Bidi and 158 in Kiziba) and 258 interviews with non-customers living in the camps (109 in Bidi Bidi and 149 in Kiziba)) and 15 key informant interviews.