



USAID INVEST CLOSE-UP:

EXPANDING INVESTMENT IN OFF-GRID ENERGY ACCESS IN KENYA

OCTOBER 2019



USAID
FROM THE AMERICAN PEOPLE

**POWER
AFRICA**
A U.S. GOVERNMENT-LED PARTNERSHIP

This study is made possible by the support of the American People through the United States Agency for International Development (USAID). The contents of this case study are the sole responsibility of INVEST implemented by DAI and do not necessarily reflect the views of USAID or the United States Government.

CLOSE-UP: EXPANDING INVESTMENT IN OFF-GRID ENERGY ACCESS IN KENYA

EXECUTIVE SUMMARY

In sub-Saharan Africa, an estimated 600 million people live and work without regular access to electricity. Power Africa, a U.S. Government initiative coordinated by USAID, aims to enable energy sector transactions between public and private investors to increase access to electricity across the continent.

By partnering with USAID INVEST, an initiative that mobilizes private capital to achieve development outcomes, Power Africa has increased access to solar home systems and mini-grids in areas across Kenya where access to grid electricity had previously been nonexistent or prohibitively expensive.

In Kenya, off-grid energy businesses have the potential to scale rapidly and reduce the energy gap for households and businesses in underserved areas. However, because these energy businesses do not have access to the expertise and support necessary to confront the complicated financial and business operational realities that accompany growth, they often fail to reach this potential.

INVEST, in collaboration with Power Africa and USAID Kenya, solicited proposals for targeted support from its specialized partner network, ultimately awarding a subcontract to CrossBoundary LLC and Open Capital Advisors. They identified four high-potential off-grid energy businesses with the intention of providing them with transaction advisory services required to raise capital to finance enterprise growth. They also identified a development finance institution (DFI) looking to set up an energy-focused debt facility.

By engaging transaction advisors, USAID can help off-grid energy businesses unlock the private capital they need to grow. With INVEST's assistance, the selected energy companies have

determined appropriate capital providers. Three of the companies have closed on transactions that raised growth and operating capital, and two of these companies are working on a second round of financing. The fourth company is making good progress on a deal. INVEST has also assisted the DFI in sizing the market and defining the appropriate structure and partners for its debt facility.

INVEST used a results-based contract in which the transaction advisors receive a portion of their fee based on transactions closed. Success fees help align business and development objectives (e.g. the amount of capital raised and the number of households connected).

Transaction advisors have the financial expertise and local contextual knowledge necessary to help enterprises determine and structure a best-fit financing solution that considers the company's market, products, and business stage. In Kenya, transaction advisors identified financing options for solar home systems and mini-grid companies, which included local currency lending, blended and concessional capital, and syndicated loans.

In Kenya, Power Africa's partnership with INVEST has exceeded targets for both capital raised and projected electric connections. To date, the INVEST transaction advisors helped the firms close debt and equity transactions totaling \$63.25 million with over \$136 million in capital projected to be raised by the close of the activity.¹ As a result, four off-grid energy companies are on the path to growth and a new debt facility is ready to be launched.

INVEST has enabled these companies to provide a projected 390,000 new connections as well as 6,000 upgraded connections,² and it anticipates mobilizing additional capital that will result in 50,000 more projected new connections.³

¹ Approximately half of this capital raised (\$30 million) is allocated towards Kenya, and approximately \$46 million of the total capital projected is anticipated to be deployed in the Kenyan market.

FINANCING OPTIONS FOR SOLAR HOME SYSTEM AND MINI-GRID COMPANIES

LOCAL CURRENCY LENDING: When businesses receive working capital in a foreign currency, it creates a currency mismatch between customer payments and the company's debt, thereby subjecting the firm's repayment of debt to risks associated with exchange rate fluctuations. The ability to borrow in local currency helps enterprises manage these risks; furthermore, the engagement of local lenders helps to develop local markets and increase economic growth.

BLENDED FINANCE AND CONCESSIONAL CAPITAL: Some sectors require higher upfront investment and have long return timelines, which makes them less attractive to investors. Like most energy infrastructure projects, mini-grids fall into this category. However, they have a high impact in terms of positive human and economic development. The expansion of mini-grid systems in Africa provides a higher quality of energy with more productive uses than basic solar home systems, but their start-up cost is expensive, it takes time for them to become profitable, and they connect fewer people per dollar invested than solar home systems. To make investment in these companies viable, transaction advisors structure a blended finance transaction in which impact investors, international development agencies, or philanthropic donors—all of whom are interested in development returns—contribute concessional capital, thereby attracting other, return-driven investors by mitigating risk with this “first-loss” tier of investors.

FINANCING OPTIONS FOR SOLAR HOME SYSTEM AND MINI-GRID COMPANIES (CONT.)

SYNDICATED LOAN: Sometimes, a company may have multiple investors, each with different terms and conditions for their loan (interest rate, payment schedule and length of loan, etc.). A syndicated loan aligns the terms and conditions of the loan across all investors, which improves the efficiency of, and reduces operational cost for, the company. Because a single entity manages the syndicated loan, the company's reporting requirements decrease, and its payments become standardized, both of which lift heavy administrative burdens from the company. A syndicated loan often results in additional capital raises because new investors are attracted to joining a group of investors with established terms and conditions.

Moreover, the expansion of access to solar power throughout Kenya is positively impacting the health, education, and livelihoods of people across the country.

INTRODUCTION

Power Africa and USAID INVEST combined their expertise to increase access to solar home systems and products in areas across Africa where users do not have or cannot afford access to the electric power grid.

Power Africa has an ambitious goal of producing 60 million new electricity connections by 2030. INVEST's capacity to conduct market assessments, design and structure financial support, and provide transaction advisory services enables Power Africa to ramp up off-grid electric access by helping to grow and strengthen businesses in the sector.

The collaboration began with work in Kenya where Power Africa and USAID have a robust presence and there is an existing market for solar household systems. Through this partnership, Power Africa and INVEST endeavor to build a body of evidence on mobilizing private capital for off-grid systems.

DEVELOPMENT CHALLENGE

While technological advances in solar home system products and mini-grid systems have led to rapid progress in electrification in Africa, off-grid systems are still accessible only to a small fraction of the market.

According to the World Bank, approximately 25 percent of Kenyans do not have access to electricity. Market assessments conducted by GOGLA in 2017 estimated that roughly 8.7 million Kenyan households did not have access to electricity or were served by an unreliable grid.

In Kenya, access to power has many productive uses. It increases commerce, construction, and public safety, and Kenya's agricultural industry

**INVEST IDENTIFIED FOUR
OFF-GRID ENERGY BUSINESS AND
A DEVELOPMENT FINANCE
INSTITUTION FOR TRANSACTION
ADVISORY SERVICES**



notably benefits from the implementation of irrigation, processing, and cold storage systems. Access to solar power also stops the burning of dirty and hazardous kerosene, firewood, and charcoal. According to GOGLA's 2018 report *Powering Opportunity: The Economic Impact of Off-Grid Solar*, 91 percent of households that previously relied on kerosene for lighting stated that having a solar home system has improved their health. Furthermore, household electricity and internet connectivity enhance the ability of individuals to learn at home. GOGLA's study noted that 84 percent of households with children reported that having access to a solar power system has increased the amount of time that their children spend on homework.

² These connections reflect the transition of customers from basic to feature-rich products and services e.g., from lighting systems to satellite TV, phones, etc.

³ Connection estimates from partner companies. These numbers may shift during the life of the engagement.

OBSTACLES TO PRIVATE SECTOR ENGAGEMENT

Off-grid energy businesses, including companies that provide solar household systems and build higher wattage mini-grids, have the potential to scale quickly, thereby decreasing the energy gap for households and businesses in rural and underserved areas. Yet these energy companies are falling short of their growth potential because they lack access to the expertise and targeted support needed to confront the complex financial and business operational realities that rapid growth entails.

These businesses also struggle to connect with investors and banks that can offer the appropriate capital and terms required to grow their companies. In traditional markets, local banks often provide debt for working capital. Yet in countries where off-grid energy businesses operate, local banks are often unfamiliar with the sector, and terms are often prohibitively expensive or the tenor (length of the loan) is too short. On the equity side, mini-grid developers and businesses can be challenging to finance since they are often too small from an investment perspective for traditional infrastructure investors, and they also require more patient capital than private equity investors are willing to offer.

OBJECTIVES

The activity's main objectives were to identify a group of three to five high-potential off-grid energy businesses in Kenya and determine requirements for transaction advisory services to support capital raises for financing enterprise growth. INVEST, Power Africa, and USAID Kenya developed criteria for selection and, after initial engagement with 14 companies, identified five to support.

The goal was to create a small portfolio of transactions that would simultaneously contribute significantly to Power Africa's objective of increasing electrical connections throughout

Kenya and to INVEST's mandate to conduct R&D and compile learning on the role of innovative finance in developing the market.

OUTCOMES

INVEST's support has enabled the selected companies to determine appropriate in-country, regional, and international capital providers and to raise capital for improving products for target markets, expanding operations in existing or new markets, and increasing service delivery.

The project has exceeded targets for projected electric connections and capital raised: 440,000 new and 6,000 upgraded connections are anticipated, and, as of September 2019, closed transactions total \$63.25 million with over \$136 million in potential capital projected.⁴

OUTCOMES: Power Africa Kenya & Invest

Project Targets	Progress as of Sept 2019
\$12 million of private capital deployed	\$63.25 million private capital mobilized ⁵
4 advisory engagements	5 firms under targeted transaction advisory
2 closed transactions	3 closed transactions
125,000 new connections	396,000 new and upgraded (projected) connections

⁴ Roughly \$67 million of the total capital projected is anticipated to be deployed in the Kenyan market

⁵ Azuri secured an equity investment from Marubeni, a Japanese Fortune Global 500 company, and Azuri continues to develop strategic partnerships with leading consumer brands and financial services companies as part of their regional and product expansion. (These partners include Unilever, APA Insurance, and Zuku, a TV and Internet provider.)

CRITERIA FOR IDENTIFYING AND PRIORITIZING OPPORTUNITIES

- **CAPITAL NEEDS:** amount and type of capital raised to date as well as status of current raise.
- **NUMBER OF CONNECTIONS:** total connections to date and projected number of connections in the next three years.
- **LOGISTICS:** amount of advisory support required as well as the timing and feasibility.
- **OVERALL SUMMARY:** general justification to capture any uniqueness or possible innovation structuring for transaction.

These transactions include innovative financial solutions that help advance the off-grid energy market, such as local debt, equity, and a syndicated loan for solar home system companies.

Local debt for solar home systems helps assure long-term liquidity needs are met; equity investment in mini-grids helps bolster the sector; and a syndicated loan aligns and improves financing terms and conditions. Together these innovative financial solutions are important demonstrations of investments that help advance the off-grid energy market.

Although a large ecosystem of investors with experience investing in Kenya’s energy sector exists, mini-grids represent a newer asset class, and INVEST’s support to close a unique corporate equity investment has created increased traction among investors interested in mini-grids.

INVEST provided each of the five selected organizations with customized financing solutions that met their unique needs:

AZURI TECHNOLOGIES

Azuri provides solar home systems to off-grid consumers in Kenya and around East and West Africa. Azuri pioneered the pay-as-you-go (PAYG) model. INVEST assisted in identifying a comprehensive list of possible lead investors, preparing and updating investor materials to reflect Azuri’s value proposition, providing introductions to prioritized investors, and supporting investor engagement e.g., due diligence requests regarding Kenyan energy access market. With INVEST’s support, Azuri attracted a \$26 million equity investment from Japanese corporation Marubeni, a Fortune Global 500 company, and additional participation by IP Group plc, a FTSE 250 company, and PM Partners.

GREENLIGHT PLANET

Greenlight Planet is a global pioneer solar household system and pico-solar product retailer. INVEST assisted in the development of an investor memorandum and financial model and the creation

FIVE TRANSACTIONS ACROSS KENYA’S ENERGY SECTOR

					
Size Total (US\$)	26 Million	70 Million	Undisclosed	25 Million	15 Million
Size Kenya (US\$)	7.8 Million	35 Million	Undisclosed	10 Million	10 Million
Status	Closed	Active <i>(1st round - 37.25 million closed)</i>	Active	Active	Active
No. of Potential Kenya Connections⁴	190,000	200,000	6,000	20,000	30,000
Engagement Type	Equity Transaction	Debt Transaction	Equity Transaction	Debt Facility <i>(Multiple transactions)</i>	Debt Transaction

of a syndicated loan that aligned existing unsecured lender covenants to improve efficiency and reduce operational costs. INVEST also made introductions to potential lenders, supported in negotiating term sheets, responded to due diligence requests, liaised with legal counsel, and provided full transaction support in the first close of \$37.25 million of senior secured debt. It continues to support Greenlight Planet and expects a second close shortly, which will bring the overall facility to \$70 million. The funding is being used to scale up Greenlight Planet's PAYG offering and growth plans in Kenya.

POWERGEN RENEWABLE ENERGY

Founded in Nairobi in 2011, PowerGen is a leading micro-utility company that builds mini-grids in several countries and uses the PAYG model. INVEST supported the financial close of a corporate equity round—a unique sector deal—by developing a financial model and country-level market sizing. INVEST also prepared a comprehensive summary of PowerGen's project pipeline that investors found particularly useful for assessing the viability of targets.

CDC

CDC is a U.K. development finance institution focused on achieving returns through commercial and concessional investments in the private sector. CDC invests in smaller, country-specific solar home system and productive use companies. INVEST, local commercial banks, and other lenders are discussing the structuring of a new facility sponsored by CDC and managed by a private asset manager. The new lending facility would extend an estimated \$25 million in local currency loans for second and third generation solar household systems and productive use enterprises over the next three years. The investment will support PAYG customer receivables in local currencies and national expansion including distribution channels and expanded payroll.

M-KOPA

M-KOPA, a solar home system company founded in Kenya in 2011, is also a pioneer of the PAYG lending model for solar products. INVEST is facilitating discussions with several investors to

participate in a \$15 million unsecured debt facility and advising on term sheet covenants based on company requirements and investor consultations. The investment is for product inventory purchases as well as research and development of additional products and services.

INVEST's work is also supporting key trends in Kenya's energy sector. For instance, solar home system companies have been focusing on additional product suites beyond lighting. Following this trend, Greenlight Planet has been increasing investment in the development and commercialization of new socially-relevant products, such as televisions, information devices, and cooling appliances, and financial services to better serve clients.

Solar home system companies have also begun applying the PAYG model to productive uses, which has led to an increase in demand for local currency (LCY) financing. Because of the end users' primary economic activities in Kenya, productive uses are currently focused on agricultural processes. For instance, Azuri has applied PAYG to irrigation and M-KOPA to refrigeration and cold storage. Lastly, there has been an increase in the investment from corporates as direct investors and strategic partners, which reflects a diversification of capital sources and an alignment with the broadening of product suites now being offered by some solar home system companies.

DEVELOPMENT RESULTS

INVEST will enable these companies to provide 440,000 projected new connections and 6,000 projected upgraded connections. Further, the expansion in capital for solar companies allows them to reach both new rural and peri-urban areas. By the close of the 20-month activity in early 2020, over \$136 million in additional capital will have been raised.

Access to electric power transforms lives and communities. In April 2019, Power Africa commissioned a qualitative data survey of 200 new electricity consumers in several countries, including Kenya, asking respondents how the access to power had changed their lives. All those surveyed indicated an improvement in their quality of life. Many reported increased business incomes

resulting from access to power; for instance, refrigeration has allowed restaurant owners and food distributors to preserve food longer and serve more customers. Refrigeration has also enabled people to store medicines for diseases like diabetes and tetanus.

Nearly all respondents indicated electricity had led to some combination of increased educational attainment, higher household income, and improved health.

KEY INSIGHTS

In addition to the development results generated, selecting and supporting a small portfolio of diverse investment transactions for off-grid energy companies provides valuable lessons for investors and development agencies.

DEVELOPMENT AGENCIES ARE UNIQUELY POISED TO SOLVE CRITICAL INVESTMENT BARRIERS IN THE ENERGY SECTOR AND BEYOND

- **A development agency's convening power** can bridge public and private sector objectives to achieve development goals. USAID's capacity to pair specialized energy sector experts from Power Africa with investment advisors from INVEST provides support to specific enterprises, builds the ecosystem for the burgeoning industry, and improves services for consumers.
- **Collaboration across agency initiatives that bring together niche expertise** can help facilitate investment. The combination of expertise in providing technical assistance to governments with that of investment expertise helped enable mini-grid investment in Kenya. Power Africa's experience in advising governments on developing or revising appropriate regulations, licensing, and tariffs supports mini-grid development. In tandem, INVEST supports the development of results-based financing schemes that facilitate investment in the solar home system and mini-grid sectors.
- **Development agency-supported investment facilitation** can deepen

SIX SOCIAL IMPACT AREAS FOR MINI-GRID AND SOLAR HOME CONSUMERS



local markets. In established markets, intermediation—connecting capital supply with investment opportunities—is well-established, and intermediaries are plentiful. However, in developing and emerging markets, intermediaries are fewer, and they may lack capacity or have expensive fees. Without effective intermediation in a market, fewer successful transactions are likely. Development agency support for intermediaries builds a track record of transactions, and it builds the experience and capacity of local intermediaries, both of which deepen the market.

The Power Africa and INVEST collaboration has elevated the value of, and demonstrated the need for, the funding of transaction advisors. By showing that such transactions are viable in the Kenyan market, Power Africa and INVEST have powerful demonstration effects for potential investors and lenders.

Examples of transaction elements that contributed to the success of this work include:

identifying a cornerstone investor to attract others and align conditions and covenants; crowding in capital through creating a local debt facility or debt syndication; and attracting investment for mini-grid expansion through concessional financing or grant capital.

- **Development agencies can use grant capital and blended finance approaches** to make a difference in access to off-grid energy. The International Economic Agency estimates nearly half of global investment in electrification in the coming decades will be in micro-grid expansion. In sub-Saharan Africa, roughly 100 million people could benefit from mini-grids. The work of USAID, through INVEST and Power Africa, offers valuable lessons about the best practices in using blended finance to increase off-grid energy access.

DEVELOPMENT AGENCIES SHOULD SEEK TO CREATE CUSTOMIZABLE INVESTMENT SOLUTIONS, TAKING INTO ACCOUNT THE LOCAL CONTEXT

- **Local context influences** development and financial results and should be considered when establishing performance metrics, targets, and success fees for pay-for-results contracts. The relatively healthy Kenyan market dynamics, including strong economic growth, robust demand, and a supportive enabling environment, combined with the maturity of firm development allowed INVEST to efficiently and effectively identify, support, and close transactions of significant financial value and development impact. The resulting success, projected connections, and the accompanying leverage ratios (of private capital mobilized over donor subsidies for transaction advisory services) would not be attainable in less developed sectors and markets.
- **Distinguishing the higher quality** connections of mini-grid systems is important. Higher wattage mini-grids allow communities to engage in productive use activities that smaller household systems do not. However, because of lower returns over longer time

periods, mini-grids require concessional financing. Even though it is difficult to obtain debt financing, many impact investors have indicated interest in mini-grid investments. Identifying a cornerstone investor during the capital raise is important.

- **International development agencies' target indicators** can drive transactions. For instance, prioritizing the number of projected connections as an indicator of success, as Power Africa does, prioritizes investments that expand electricity access to the greatest number of people. However, doing so can unintentionally dissuade technical experts from advising investors to pursue transactions with high-potential mini-grid firms that have a lower number of projected connections and monetary value but potentially greater capacity to power productive use and economic activity. Ensuring a greater balance between projects that maximize customer connections and projects that prioritize productive use, as reflected in the Power Africa 2.0 strategy, may help to demonstrate the market importance and investment viability of these lower value mini-grid firms and enhance development outcomes.
- **Market actors, in energy and other sectors, operate across regions**, making it challenging to focus transaction support on single country deals. USAID, through INVEST and Power Africa, can consider regional platforms for future initiatives in the sector. Many of the companies and investors engaged in Kenya operate in other countries across the region.

SOURCES

The World Bank, *Access to Electricity (% of Population)*, accessed Sep. 2019, [here](#).

GOGLA, *2018 Off-Grid Solar Market Trends Report*, Feb. 7, 2018, accessed Aug. 2019, [here](#).

GOGLA, *Powering Opportunity: The Economic Impact of Off-Grid Solar*, July 2018, accessed Aug. 2019, [here](#).

Power Africa, “Power Africa Impact Study Shows Positive Impact of New Connections,” *Medium*, July 2, 2019, accessed July 2019, [here](#).

Sam Booth and Eric Lockhart, “Scaling Micro-grid Development in Sub-Saharan Africa with Batteries,” *Medium*, Aug. 27, 2018, accessed July 2019, [here](#).

INVEST project reports from CrossBoundary, LLC and Open Capital Advisors.