



ACUMEN
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Community Report 2022

Disclaimer

This annual report contains forward-looking statements. Statements that are not historical facts, including statements about KawiSafi's beliefs or expectations, are forward-looking statements. These statements are based on plans, estimates and projections developed by the portfolio companies and our team at the time KawiSafi made the original statement, and you should not place undue reliance on them. KawiSafi does not undertake to update any of these statements in light of new information or future events.

Forward-looking statements involve inherent risks and uncertainties and KawiSafi cautions you that a number of important factors could cause actual results to differ materially from those contained in any such forward-looking statement. These factors include, among others: ability of portfolio companies to identify, assess and implement efficiency and productivity measures, to control or reduce costs; ability of portfolio companies to develop and launch

new products and distribute new and existing products or services; competition, including pricing and promotional spending levels by competitors to portfolio companies; ability of portfolio companies to generate and maintain effective partnerships for distribution or sales of products and services; ability of portfolio companies to identify and cultivate a strong management, marketing, operations, finance and sales teams; logistics and other transportation-related costs for portfolio company products and services; increase in costs of raw materials and manufacturing efficiencies for portfolio company products; sufficiency and effectiveness of portfolio company marketing programs; changes in, or the failure or inability to comply with governmental regulations or to procure and maintain governmental contracts on satisfactory terms; adverse weather conditions, natural disasters, social unrest and other conditions that disrupt portfolio company operations; general economic and business conditions; and other factors.

Abbreviations

AUM: Assets Under Management

BAU: Business-as-Usual

C&I: Commercial and Industrial Solar - solar solutions for large buildings, companies, manufacturing facilities etc. Solar energy produced by the system is typically produced at or near the site where it is used

CAGR: Compound Annual Growth Rate

DERMS: Distributed Energy Resource Management Systems

FDI: Foreign Direct Investment

GOGLA: Global Off Grid Lighting Association - global association for the off-grid solar energy industry

GHG: Greenhouse Gas

KSV: KawiSafi Ventures (also referred to as KawiSafi)

MOIC: Multiple on invested Capital; which, at the time of this report, is unrealized

LPG: Liquefied petroleum gas

PayGo: Pay As You Go - finance innovation where consumers pay for and / or lease assets on a utilization basis

PMI: Purchasing Managers' Index (PMI) is an index of the prevailing direction of economic trends in the manufacturing and service sectors. It consists of a diffusion index that summarizes whether market conditions, as viewed by purchasing managers, are expanding, staying the same, or contracting. The purpose of the PMI is to provide information about current and future business conditions to company decision makers, analysts, and investors

SaaS: Software-as-a Service

SHS: Solar Home System - typically defined as systems powered by panels between 6Wp and 100+Wp. Systems typically include lights, energy efficient appliances, and additional features. For the purposes of this report, SHS is inclusive of smaller pico lamps between 0.3Wp and 2.8Wp

TAF: Technical Assistance Facility

USD: United States Dollar - (note: all currency reported in this report is in USD unless otherwise stated)

VAT: Value Added Tax

Wp: Watt Peak - maximum output power achieved by a solar module under full solar radiation (under standard test conditions)

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01 Letter to Partners

On the 15th November 2022, we welcomed the birth of the Earth's eight billionth inhabitant. The UN's Secretary General, Antonio Guterres, marked the occasion with these words: "This is an occasion to celebrate our diversity, recognize our common humanity, and marvel at advancements in health that have extended lifespans and dramatically reduced maternal and child mortality rates. At the same time, it is a reminder of our shared responsibility to care for our planet and a moment to reflect on where we still fall short of our commitments to one another."

As we reflect on the past year and look ahead to the future, we are pleased to share with you the progress and achievements of KawiSafi's journey in building the off-grid ecosystem in Africa and our contribution to the UN Sustainable Development Goals. Our mission is to generate positive social and environmental impact alongside competitive financial returns. We do this by investing in sustainable enterprises that address clean energy access in Africa.

First and foremost, I would like to express my deepest appreciation for your continued trust and support in KawiSafi. Despite the dynamic and challenging global environment, our unwavering commitment to unlocking Africa's investment potential in order to improve people's lives remains resolute.

In the first days of 2022, few were predicting a European land war. The resulting spike in energy prices caused a significant reset of energy security policies and has spurred new impetus in the role of renewables. But the immediate economic and political impacts are being felt across the African continent. According to the IMF, growth in sub-Saharan Africa in 2022 dropped to 3.6 percent. A worldwide slowdown, supply chain constraints, and global inflation compounded more local shocks such as prolonged droughts. Government debt—built up as a result of COVID relief measures—has grown more expensive and burdensome. **The region's most vulnerable people are being hardest hit.**

In 2022, we continued to actively pursue our investment strategy, focusing on new developments in the African energy ecosystem.

We identified Carbon Markets and Electric Mobility as key innovations, driven by both regulatory and technology trends. I am proud to report that our investment portfolio has continued to grow and deliver favourable gains, underscoring the resilience and potential of Africa's markets.

We have made significant progress in our portfolio companies, working closely with management teams to drive growth and create positive impact. As of 31 December 2022, our portfolio had cumulatively impacted approximately 126M people and averted approximately 31MtCo2e. Poverty reach across the portfolio—the proportion of customers below the World Bank's poverty line—was 44% in Kenya and Rwanda.

2022 saw the first climate COP in Africa—in Egypt at Sharm El Sheikh. KawiSafi took centre stage at a series of events and published a [thought-leadership article](#) on **carbon markets** to coincide with the launch of the African Carbon Markets Initiative. We have seen the price of nature-based averted carbon credits (the credits that are most relevant to our cook stove companies) drop over the last year, but we remain bullish on the market and are going long on carbon.

Our investment team, a diverse and collegiate group of experienced professionals with deep local knowledge, continues to diligently manage our investments. We have deepened and strengthened our professional engagement in **impact management, corporate governance, risk management, and environmental, social, and governance (ESG) principles**. Our portfolio employs 3,579 in aggregate, 36% of whom are women. We recognise that effective integration of these principles are essential to creating sustainable, long-term value for our investors and the communities in which we operate.

As we look ahead to 2023, we remain optimistic about the investment opportunities in African energy. The continent's young demographic, growing middle class, and underserved markets present compelling investment prospects. **We will continue to leverage our expertise, networks, and market insights to identify attractive opportunities and deliver superior impact and returns.**

In conclusion, I would like to express my sincere gratitude to you for your continued support. Your trust and confidence in the KawiSafi team are invaluable, and we remain committed to our vision of unlocking Africa's investment potential

while creating a positive impact on the continent's economies and communities. On behalf of the entire team at KawiSafi, I would like to thank you for your continued partnership, and we look forward to a more successful year in 2023.

**Sincerely,
Amar Inamdar**



02 2022 Fund Overview

Mission:

KawiSafi aims to achieve social & environmental impact and long-term capital appreciation by enabling access to clean energy products and services to low-income and off-grid populations in developing economies. Our investments are intended to facilitate the expansion of companies in East Africa with a focus on Kenya and Rwanda.

Expected portfolio composition:

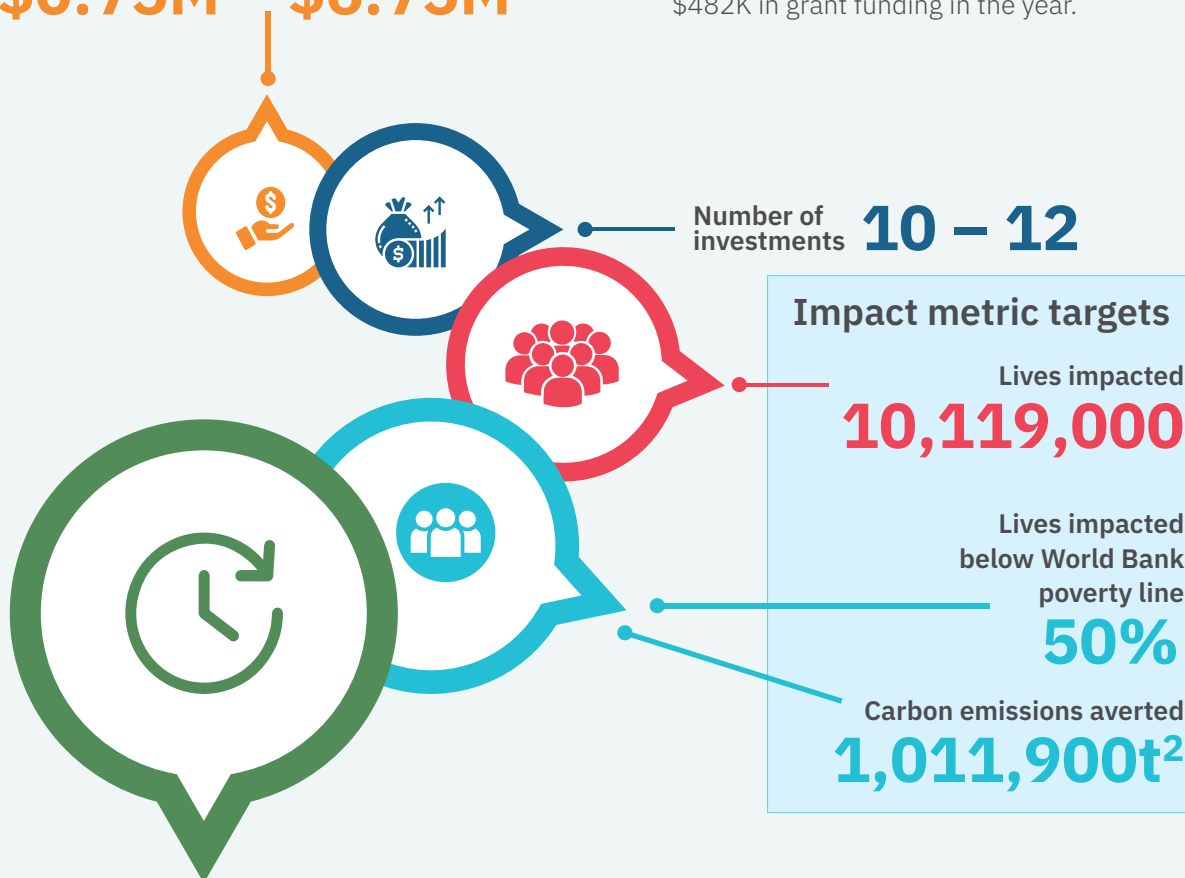
Sector: market driven clean energy access. Sub-sectors include and are not limited to; residential power, commercial & industrial power, alternative financing, software, mini grids, clean cooking technology, and mobility.

Stage: : growth stage companies, with up to 10% Assets Under Management in early stage (Series A or <\$1M sales) companies.

2022 milestones:

- The portfolio impacted ~126M lives and offset ~31M tonnes of CO2 and black carbon cumulatively as of 31 Dec 2022.
- Technical Assistance Facility (TAF) deployed \$482K in grant funding in the year.

Size of each investment
\$0.75M – \$6.75M



Holding period per investment:

5 – 7 years

03 Impact Overview

KawiSafi portfolio companies have cumulatively impacted an estimated ~126M lives globally and averted ~31M tons of CO2e since fund inception

Impact indicators (M)	Global	Kenya	Rwanda	Other markets	Notes
Lives Impacted					
Cumulative to date Lives reached (Direct and Indirect)	125.95	45.42	2.92	77.62	This metric looks at number of lives impacted cumulatively since KawiSafi made investments in the portfolio companies.
Annual 2022 Lives Impacted: Both Direct & Indirect	31.05	11.97	0.85	18.24	This metric looks at lives impacted directly or indirectly in the current period (Q4 2022) through new/additional products bought.
Annual 2022 First Access to Modern Energy Sources Direct Impacts Only	11.04	3.0	0.38	7.66	We use the first access indicator (collected from Lean Data studies or country averages where unavailable) as a discount factor to arrive at the estimated number of people receiving first access to modern sources of energy through the product they bought.
CO2eq emissions avoided					
Cumulative to date Climate-warming Emissions Offset	30.57	19.66	2.34	8.57	Includes all offset carbon and CO2 in CO2 equivalents for entire fund life
Annual 2022 Climate-warming Emissions Offset	6.56	3.39	0.32	2.85	Tons of carbon dioxide and black carbon (in CO2 equivalent) averted due to reduction in kerosene lantern use; over expected lifetime of product (does not include embodied energy from manufacturing and transporting products)

NOTES:

1. Table above presents impact as at 31/12/2022 cumulatively and annually for 2022. Numbers may not add up exactly due to rounding off.
2. In arriving at lives impacted, direct impact relates to B2C companies (d.light, Bboxx, BioLite and Sistema.bio) while indirect impacts are generated from B2B companies (Lendable, Redavia, OPES, Angaza, InspiraFarms and Shyft).
3. Carbon averted looks at tons of CO2 and black carbon averted from purchase of energy product/services over the expected lifetime of the energy product. The carbon averted is due to reduction in kerosene lantern and diesel/fuel use. This includes black carbon.

Annual Impact Overview: 2021 to 2022 (Cumulative, Global)

**95M**

Lives Impacted, 2021

**130M**

Lives Impacted, 2022

**24M**CO₂eq emissions
avoided, 2021**31M**CO₂eq emissions
avoided, 2022

In 2022, our portfolio companies provided an estimated ~3.4M people in Kenya and Rwanda with access to modern energy products for the first time

Impact indicator	Global	Kenya	Rwanda	Other markets	
Annual – 2022 : First-Access to Modern Energy Sources Direct only	11.04M	~ 3M	~380K	~7.7M	We use the first access indicator (collected from Lean Data studies or country averages where unavailable) as a discount factor to arrive at the estimated number of people receiving access to modern sources of energy through the product they bought. Does not include indirect impacts from B2B companies such as Angaza, Opes, Redavia and InspiraFarms.

Lives Impacted

First Access to Modern Energy Sources¹

Kenya: To date, the portfolio has reached ~45M people in Kenya with clean energy products. ~3M of these people received access to modern sources of energy for the first time in 2022, estimated at 24% of the unelectrified population². According to recently available statistics, the country is at 76.5% electrification.

Rwanda: To date, the portfolio has impacted over 3M lives directly and indirectly. Over 380K are estimated to have been reached with first access to clean energy products in 2022, this is estimated to translate to 9% of the unelectrified population taking into account Government data indicating a 69% household electrification rate in the Country³.

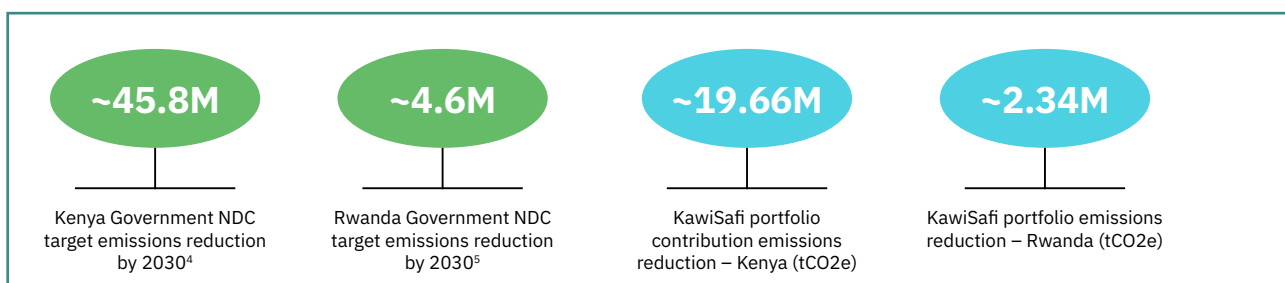
Climate-warming emissions averted

Kenya:

- The portfolio has offset ~19.66MTCO₂e which represents a positive contribution to Kenya's target emissions reductions.
- Kenya emits over 60MTCO₂e annually, with its NDC targeting a 32% reduction to BAU emissions by 2030.

Rwanda:

- The Country's updated target is a reduction of 38% of Business as Usual (BAU) emissions representing 4.6MTCO₂e.
- The KSV portfolio is already at ~2.34MTCO₂e, making a significant contribution to the target.



NOTES:

- First Access: Provides insight into whether KSV portfolio companies are serving unserved populations and providing first access to modern energy to customers.
- Kenya Assumptions: Population 53M (2021 estimate) Unelectrified population estimated at 12.455M (24% of the population)
- Rwanda Assumptions: Population 13.46M (2021 estimate) Unelectrified population estimated at 4.17M (31% of the population)
- Kenya's Updated NDC targets reduction of 32% of GHG emissions relative to the BAU scenario of 143Mt CO₂e by 2030. Source [UNFCCC, 2020](#)
- Rwanda Enhanced NDC targets [UNDP Rwanda NDC 2020](#)

KawiSafi portfolio companies in 2022 had 3,579 employees in aggregate, 36% of them being women

Impact indicators	Global	Kenya	Rwanda	Other markets	Notes
Yearly 2022 Number of people employed by portfolio companies	3579	898	160	2,521	Total number of employees at portfolio companies (not including indirect jobs such as sales agents). Annual indicator.
Yearly 2022 % women employed by portfolio companies	35%	49%	32%	31%	Total number of direct female employees at portfolio companies. Annual indicator.
Yearly 2022 Number of women trained by portfolio companies	1,556	955	0	601	Number of women trained in the solar sector - employees and affiliated agents (solar technicians and installers, sales agents and customer care professionals)
Poverty Reach (%)		44%	45%		% of people living below \$3.20 a day collected from Lean Data Projects.
Poverty reach - in numbers		~21M	~1.5M		Number of customers living below the World Bank \$3.20 per day poverty line reached to date
Quality of life improvements		84%	30%		Proportion of customers who feel their quality of life has improved significantly as a result of access to the solar product
Net Promoter Score®		80	45		Testing customer satisfaction using proportion of customers rating company 9-10/10 (Promoters) minus proportion rating company 0-6/10 (Detractors)
Livelihoods supported		7%	16%		Percentage of customers who use their product for income-generating activities
Spending on energy		\$56.33	(\$39.52)		Amount of US\$ change in spending on energy (increased spending or savings), over first year post-purchase, per household
Value for money		70%	68%		Proportion of customers rating the company product/service as very good or good value for money

Highlights:

- Poverty reach remained the same in Kenya and decreased in Rwanda from 74% to 45% compared to 2021.
- Customer satisfaction (measures using the NPS score) over the year remained constant in Kenya. Rwanda saw an increase from 31 in 2021 to 45 in 2022.
- Based on trend data, customers in Kenya reduced spending on energy marginally, while those in Rwanda made savings and reduced expenditure.
- Despite inflationary challenges in the year, 885 new jobs were added, with the portfolio employing 3,579 people as of 31/12/2022.
- % of women employed by the portfolio has increased from 31% to 35% of the portfolio, that said women trained have decreased significantly.

KawiSafi is proud to be 2X-aligned, based on a 2022 gender assessment of 8 of the 10 portfolio companies

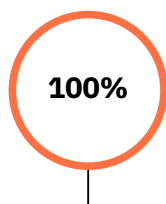


Methodology

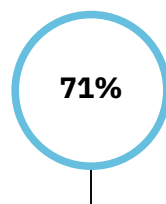
- The 2X criteria are a global industry standard for gender lens investing and have been internationally harmonized and integrated into the IRIS+ framework for impact management and measurement of the Global Impact Investing Network (GIIN).
- For the assessment, the consultant 60_decibels designed a data collection form to collect portfolio data. They also designed an interview guide to allow for semi-structured, in-depth discussion with high level leaders to capture successes, challenges and areas of additional support around gender inclusive practices and strategies.

The portfolio performed well in the areas of:

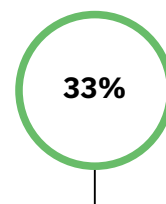
- % share of women in senior management where four companies were above the 30% threshold.
- % share of full-time women in the workforce where five companies were above the 30% threshold.
- % share of part-time women in the workforce where three companies were above the 30% threshold.
- No of policies in place for women's quality employment at the Company, where all companies assessed had over 1 policy in place.
- Extent to which the Company has product that disproportionately affect women where this was applicable to 5 out of the 8 Companies.



of portfolio companies
assessed were aligned to the
2X Criteria



Portfolio with products
disproportionately impacting
women



Portfolio average share
of women in senior
management

NOTES: (1) The Portfolio level gender assessment was carried out on 8 of the 10 portfolio companies in October/November 2022.



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04 Market Outlook

Economies slowed amid significant headwinds in 2022; there is cautious optimism on economic recovery in 2023/24 across East Africa

2022 Macroeconomic performance highlights

- Growth in East Africa moderated to 4.2% in 2022 from 5.1% in 2021—and is projected to rise to 5.0% in 2023 and 5.4% in 2024.
- Countries in the region are largely net importers of commodities and bear the brunt of high international prices in addition to recurrent climate shocks such as drought and insecurity. The slowdown in 2022 was attributed to effects of these shocks, exacerbated by disruptions to global supply chains.
- Tight monetary and fiscal policy to rein in inflation (East Africa average CPI increased by 25.3% in 2022) has also constrained domestic household consumer demand, amplifying the effects of exogenous shocks on economic activity.
- Constrained household consumption was compounded by contractions in agriculture and manufacturing activities, weak growth in credit to the private sector, and rising public debt.
- Majority of currencies depreciated against the dollar, due partly to the US Federal Reserve's aggressive interest rate hikes in 2022, and to global uncertainty driving investors away from emerging market economies' assets, including African currencies towards "safe haven" US treasuries.

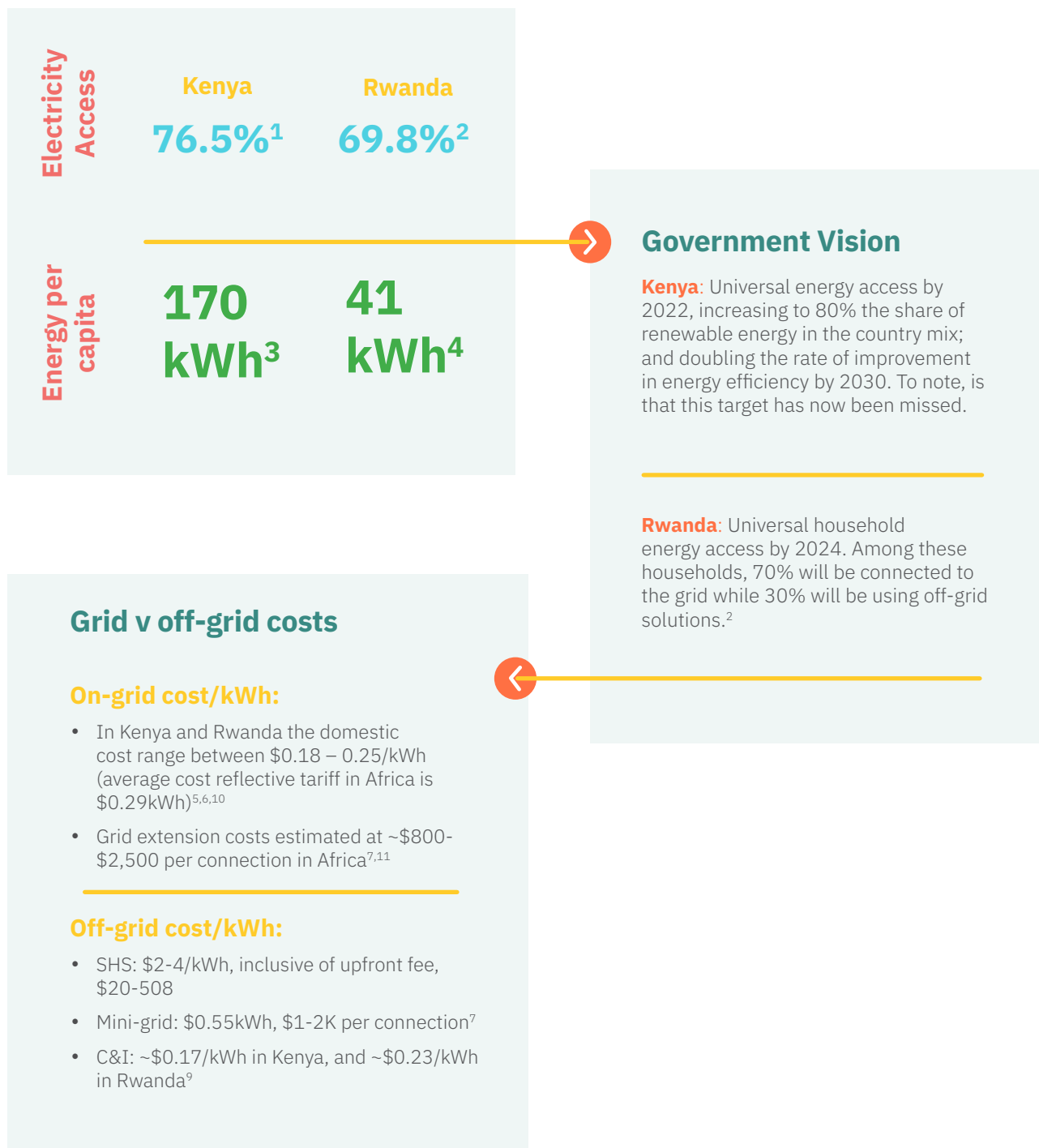
Despite the economic headwinds experienced in 2022, recovery and resilience in East African markets is expected in the short to medium term building on the traction of recovery seen across the economies.

Outlook on East Africa's Economy

- Following impressive recovery in 2021 after the shock of the COVID-19 pandemic, East African economies slowed amid significant headwinds in 2022, but they remain resilient with a stable outlook. Growth is projected to recover to the pre-pandemic average above 5.0%.
- Slowing global demand, tighter financial conditions, and disrupted supply chains had different impacts on East African economies in 2022. In 2023, the outlook is positive, with prices for key exports remaining high and competition for Africa's natural resources expected to grow as advanced economies look for alternative food and energy markets and for mineral resources to support their green transitions
- Tighter global financial conditions put downward pressure on African domestic currencies, raising the risk from already high inflation, but inflation is projected to ease in 2023 as countries sustain restrictive monetary and structural policies.
- The welcome recovery and the economic resilience of East African countries in the short to medium term comes with cautious optimism given the considerable global uncertainty around i) risk of debt default given high accumulation and structure of public debt, ii) additional pressures created by the appreciating US dollar, and tightening of monetary conditions globally, iii) high dependency imports with limited value added exports and iv) risk of sustained geopolitical tensions like Russia-Ukraine crisis further disrupting supply chains.

Source: AfDB, Africa's Macroeconomic Performance and Outlook 2023, [link](#)

Kenya + Rwanda electricity access



1. EPRA, Energy & Petroleum Statistics Report, 2021 2. REG, Electricity Access in Rwanda, [link](#); 3. Enerdata, Kenya Energy Information, [link](#); 4. World Info, Energy consumption in Rwanda, [link](#); 5. StimaTracker, Electricity cost in Kenya, [link](#); 6. REG, Electricity tariffs, [link](#); 8. KawiSafi Analysis; 7 ESMAP, Mini Grids for half a billion people, [link](#) ;9. BNEF, Solar for Businesses in SSA, [link](#) 10. Statista, Household electricity prices in Africa, [link](#); 11. Shell foundation, Off grid utilities report: Bridging the rural energy gap in emerging market, [link](#)



Residential solar still driving off-grid electrification rates despite headwinds in 2021/22; recent policy changes and development support to kickstart mini-grids market

Residential Solar

Industry Trends

- GOGLA Off-Grid Market trends Report 2022¹ reports that the sector has proven to be more resilient than was originally anticipated when the COVID-19 pandemic hit. The sector has shown resilience in its sales, improving by 9% in the first half of 2022 compared to the second half of 2021, 25% higher than sales from a year prior¹⁶.
- Further, the report notes that solar energy kits remain the most cost-effective solution to electrify hundreds of millions of off-grid homes and businesses. That said, ability to pay is a continuing challenge, with falling income levels and inflationary pressures further exacerbating the situation for consumers.¹

Ecosystem Trends

Several residential solar companies are now more focused on mobile phone financing which is showing rapid growth and has been less impacted by the pandemic. Other developments in the sector include:

- The Rwanda Development Bank (BRD) has launched their #canachallenge which will see 10K families provided with SHS aimed at contributing to the broader energy connection targets.¹⁷
- Local banks increasing exposure to the energy landscape with Bboxx raising local currency financing from SBM bank in Kenya.¹⁸
- GOGLA is starting a pilot program 'Elevate' to support the next generation of locally-owned and managed companies in the off-grid solar sector reach and service last-mile customers.¹⁹
- AfDB extends \$180M loan to Rwanda to finance the electrification of 77K homes in rural areas.¹⁶

Recent Transactions

- D.light closed \$50M debt round with participation from Mirova SunFunder, Trade and Development Bank to fund Africa expansion.²
- Acumen launches \$25M Powering Livelihoods Using Solar (PEII+) initiative to strengthen livelihoods through the use of solar photovoltaic energy.³
- Bboxx acquires West African clean energy company PEG Africa.⁴
- D.light and Solar Frontier Capital Ltd (SFC) jointly announce the establishment of a \$238M receivables financing facility; Brighter Life Kenya 2 Ltd (BLK2).⁵
- SunKing raises \$260M to widen clean energy access in Africa and Asia⁶
- M-Kopa raises \$75M growth equity round to expand into new markets.⁷
- Zola Electric closed \$90M funding round to scale technology and enter new markets.⁸

Mini-grids

Industry Trends

- Developers continue to find East African markets a challenging environment to develop projects, given regulatory uncertainty and competitive dynamics with utilities.
- Several mini-grid developers are starting to focus more on C&I projects rather than community-based mini-grids, given the quicker project cycles and lower off-taker risk.
- Growth in the sector has slowed down in the recent months, however, there remains keen interest as major institutions such as the World Bank, and the International Energy Agency estimate that mini-grids are essential to providing electricity to approximately half of all unelectrified communities in Africa.⁹

Ecosystem Trends

- The AfDB commits up to \$164M to promote decentralized renewable energy in Ghana, Guinea, Ethiopia, Kenya, Nigeria and Tunisia. The program will scale up decentralized renewable energy through use of SHS, green-minigrids and C&I.¹⁰
- World bank research recommends investing \$127 billion in green for mini-grids to provide access to electricity for half a billion people in SSA.¹¹
- IFC's launches Mini-Grid (SMG) programme in DRC mobilizes \$400M for electrification via mini-grid powered by Solar PV energy.¹²
- The Global Energy Alliance for People and Planet allocates \$50M to the Universal Energy Facility (UEF) to finance access to clean energy in developing countries. The program has a focus on solar mini-grids to support rural electrification in SSA.¹³

Recent Transactions

- CrossBoundary Energy Access raised \$25M from Arch Emerging Market Partners, Bank of America and Microsoft climate Innovation Fund to accelerate the deployment of solar-powered mini-grids with storage in sub-Saharan Africa.¹⁴
- Harith General Partners and Anergí (UK-Based power producer) collaborate to launch a \$300M financing mechanism for renewable energy in Africa, the Pan African Renewable Energy Fund (PAREF).¹⁵

Sources: 1. GOGLA, *Global Off-Grid Solar Market Trends Report 2022*, [link](#); 2. d.light raises \$50M for its solar home systems, [link](#); 3. Acumen launches \$25M programme for productive solar, [link](#); 4. Bboxx, Press release, [link](#); 5. d.light, Press Release, [link](#); 6. TechCrunch, Sun King raises \$260M to widen clean energy access in Africa and Asia, [link](#); 7. TechCrunch, *M-Kopa raises \$75M*, [link](#); 8. Zola Electric, *Press Release*, [link](#); 9. AMDA, *Benchmarking Africa Mini-grids Report 2022*, [link](#); 10. ESI Africa, *Growing decentralized energy to boost electricity access in Africa*, [link](#); 11: \$127M investment needed to unlock potential for green mini-grids [link](#); 12. Afrik21, IFC is launching it's Launching Mini-Grid (SMG) programme in DRC mobilizing \$400M for electrification via mini-grid powered by Solar PV energy. [link](#); 13. Afrik21, Alliance Funds \$50M for clean energy access through UEF, [link](#); 14. Afrik21, CrossBoundary mobilizes \$25M for solar mini-grid financing, [link](#); 15. Afrik21, New PAREF fund to accelerate renewable energy deployment, [link](#); 16. Afrik21, AfDB finances electrification of 77,400 houses with \$180 million loan [link](#); 17. ESI Africa, Rwanda Development Bank launches #canachallenge, [link](#); 18. ESI Africa, *Local bank extends local currency loan to energy sector*, [link](#); 19. ESI Africa, *Targeting off-grid solar business acumen to extend energy access*, [link](#); 16. GOGLA, *Global Off-grid Solar Market Report, Semi-Annual Sales and Impact data*, [link](#)



C&I capacity on the rise, as the race to scale kicks off with notable M&A in the region; E-mobility continues to attract interest and early investment

C&I Solar

Industry Trends

C&I capacity in the region is on the rise with large deployments across the year corroborating the increased participation and competition from C&I developers.

- Climate Investor One (CIO) and Empower New Energy (Empower) to set up 100MW solar PV C&I capacity in 11 countries. The project will provide renewable energy to 370K people and create 9,500 jobs.¹
- United Aryan EPZ sets up 1.8MWp rooftop solar plant in Kenya, the largest operational rooftop solar facility in east Africa financed by Solarise Africa,²
- TotalEnergies Tanzania launches solar energy powered service station in Dar es Salaam, planning to solarize up to 68 such stations by end of 2022.³

Ecosystem Trends

Competition in the sector has seen several mergers and acquisitions during the quarter as firms push to increase C&I capacity in the region. This corroborating the increased participation and competition from C&I developers.

- Starsight energy and SolarAfrica merge to form the largest C&I solar developer on the continent.⁴
- Shell acquires Daystar Power, a West Africa provider of hybrid solar power solutions to C&I businesses.⁵

Recent Transactions

- CFAO invests in Ofgem, a Kenya-based C&I installer to expand its services in Kenya.⁶
- Crossboundary Energy raised \$40M equity financing round from KLP Norfund Investments.⁷
- AIIM invests ~\$73M in newly merged Starsight Energy and SolarAfrica to boost solar energy for C&I solar.⁸
- EDFI announces \$3M to REDAVIA to solarize business and industries in Kenya and Ghana.⁹

Electric Mobility	Industry Trends	Ecosystem Trends	Recent Transactions
	<ul style="list-style-type: none"> There are a growing number of start ups across East Africa that are innovating in the electric mobility space, primarily using 2- and 3-wheelers as the entry point Given the lack of incumbents, many of these firms are integrating vertically across manufacturing and assembly, distribution, financing and charging. In Kenya, on-demand delivery platforms such as Uber, have launched pilots around several different brands of electric motorbikes, a first in Africa for riders on UberBoda, Uber Connect and Uber Eats platforms. There is a lot of interest in the space among investors, policymakers, and development actors. We have identified more than 20 companies in our pipeline. 	<ul style="list-style-type: none"> Zembo launches the first Africa intercity e-corridor for electric motorcycles. The company has installed charging stations along the 120Km Kampala-Masaka highway in Uganda.¹⁰ Ampersand and TotalEnergies install three battery swap stations in Total service stations to supply batteries for EVs in Kenya.¹¹ OX Delivers, the logistics firm is piloting pay-as-you-go EV transport in Rwanda,¹² Nopea Ride is scaling up its all-electric fleet in Nairobi through setting up solar hubs in 6 new locations in Nairobi.¹³ Kenya is greatly ramping up investments for new e-mobility charging stations to support a transition to sustainable transport. Energy 4 Impact. Arc Ride, Fika Mobility, Imperial London and Strathmore University are testing the commercial viability of the battery-as-a-service model.¹⁴ Roam (formerly Opibus) announce the local production of a new electric motorbike “Roam Air” which will be used in Nairobi from 2023.¹⁵ 	<ul style="list-style-type: none"> Musashi makes a strategic investment in Kenya-based ARC Ride to promote the adoption and deployment of new E-mobility technologies.¹⁶ Persistent Energy Capital raises \$10M to finance clean energy and electric mobility in Africa.¹⁷ OX Delivers, the Rwanda-based EV company, closed \$3.4M seed round.¹⁸ BasiGo secured \$4.3M in seed funding to accelerate mass transit EV adoption in Kenya,¹⁹ Kenyan tech-enabled logistics platform Amitruck raised \$4M, to expand into Uganda and Tanzania,²⁰ WaterBus raised an additional \$3.8M to support expansion of transport services on Lake Victoria in Kenya, with Shell Foundation keen to support the retrofitting of vessels for solar power systems.²¹ The Rwanda Innovation Fund invests in MAX.Ng to accelerate MAX’s impact with the goal to expand its socially and environmentally impacts to East Africa.²² Verdant Capital invests \$7M into Watu Credit Uganda to expand it’s 2-wheeler financing business through the market.²³

Sources: 1. ESI Africa, C&I clients in 11 African countries to benefit from 100MW solar PV, [link](#); 2. ESI Africa, *Largest rooftop solar plant in East Africa*, [link](#); 3. ESI Africa, *Solar powered fueled stations the new wave in Tanzania*, [link](#); 4. Starsight Energy and SolarAfrica to join forces and transform into one of the largest C&I solar developers on the African continent, [link](#); 5. Daystar Power to be acquired by Shell, [link](#); 6. CFAO invests in Ofgen and enters the C&I solar market, [link](#); 7. Norfund invests a further \$40m in the African C&I market [link](#); 8. AIIM invests further ZAR1.25 billion in newly merged Starsight Energy and SolarAfrica to boost solar energy for commercial and industrial sectors across Africa, [link](#); 9. Africa21, EDFI lends \$3M to REDAVIA to solarize business, [link](#); 10. PREO, Zembo launches the first Africa intercity e-corridor for electric motorcycles. [link](#); 11. Afrik21, 3 TotalEnergies stations to swap Ampersand’s electric batteries, [link](#); 12. Autorecent, OX Delivers pilots PAYG EV transport, [link](#); 13. ESI Africa, New Solar hub to power up e-hailing fleets in Kenya, [link](#); 14. Kenya already fully charged with new e-mobility solutions underway, [link](#); 15. Roam to put a new electric bike on the road in 2023, [link](#); 16. Musashi, Press Release, [link](#); 17. Afrik21, Persistent raises \$10M to finance climate projects [link](#); 18. OX Delivers, OX closes over-subscribed #3.4M seed round, [link](#); 19. TechCrunch, Basigo raises \$4.3M seed round, [link](#); 20. TechCrunch, Amitruck raises \$4M, [link](#); 21. ESI Africa, WaterBus raises additional \$3.8M [link](#); 22. Ein PressWirre, Rwanda Innovation Fund invests in MAX.Ng, [link](#); 23. Verdant Capital Announces an Investment in Watu Credit Uganda, [link](#);



2022 posed opportunity for scaling clean cooking with VAT reintroduction on LPG and carbon credit demand; Energy-enabling technologies raise funding during the year

Clean Cooking

Industry Trends

Household clean cooking solutions are starting to demonstrate commercial scale in East Africa. With considerable movement across the region during the year.

- KOKO Networks has entered an agreement with Rwandan Authorities to set up a national bioethanol distribution network in Rwanda. KOKO to invest \$25M in the project.¹
- Danish Investment Fund for Developing Countries (IFU) invests EUR 4.5M in Spark+ Africa Fund to further clean cooking in sub-Saharan Africa.²
- Modern Cooking Facility Africa (MCFA) launches clean cooking financing platform in 6 countries (including Kenya and Tanzania).³
- The Spark + Africa Fund has raised over \$40M in a first close and will focus on financing clean cooking in sub-Saharan Africa.⁴

Ecosystem Trends

At the beginning of 2022, LPG prices went up 48%, reaching an 8yr high in Kenya, mainly driven by rising crude prices and reintroduction of VAT by the government. In the second half of the year, changes in legislation halved VAT on LPG to 8% (from 16%).

- The elimination of VAT on biofuels has helped one company KOKO Networks achieve rapid growth now serving 200K households in and around Nairobi. The Company has also entered the Rwanda market, and is now serving 450K households across all markets.⁵
- Kenya's Energy and Petroleum Regulatory Authority is expecting to establish a framework to guide the pricing of liquefied petroleum gas (LPG) by June 2023.⁶

Recent Transactions

- Kenyan-based Microfinance Bank Sumac received \$2M funding to grow its clean cooking portfolio in Kenya.⁷
- FMO joins forces with Bix Capital to open a \$10M line of credit to C-Quest capital (CQC) in order to distribute environmentally friendly cook stoves in 15 sub-Saharan countries.⁸
- World Bank extends KES 390M facility for the deployment of 122K SHS and 150K clean cooking solutions in 14 counties in Kenya.⁹
- Burn Manufacturing raises \$4M+ in quasi-equity financing from Spark+ Fund to accelerate expansion across Africa.¹⁰
- KoKo Networks raised an undisclosed amount of equity from Microsoft Climate Innovation Fund.¹¹

Energy Fintech & Software

Industry Trends

Control & monitoring solutions for distributed energy assets are attracting interest as evidenced by SparkMeter's financing round, however uptake still limited as C&I/Power-as-a-Service providers test technology at smaller scale to prove out ROI.

Strong fintech activity continues in the region with greatest momentum in payment platforms, including those with cross-border capability. Non-bank credit and asset financing solutions remain important. PAYGO technology is being expanded for non-energy appliances (most notably, mobile phones).

Ecosystem Trends

As one of the main barriers to scaling renewable energy, KSV is seeing continued interest in innovative financing mechanisms for renewable energy products. Such opportunities are also creating interest for larger global commercial asset managers to enter the market. As examples:

- OPEC Fund for International Development (OFIC), the United Nations Capital Development Fund (UNCDF) and the Sustainable Energy for All initiative (SE4All) are forming an alliance to support innovation in financing, thus tackling the real barrier to access to electricity in Africa.¹²
- Mirova, an impact investment fund manager and subsidiary of Natixis Investment Managers, acquires SunFunder in a bid to accelerate investments in renewable energy in Africa and other key markets.¹³

Recent Transactions

- SparkMeter raises \$10M to accelerate growth.¹⁴
- WattNow closes \$1.3M pre-series A round.¹⁵
- Odyssey solution raised \$5.3M seed financing led by Equal Ventures with Twelve Below, Abstract Ventures, and MCJ participating.¹⁵

Sources: 1. Afrik21, Koko Networks to invest \$25M for ecological cooking, [link](#); 2. Afrik21, IFU invests EUR 4.5M in Spark+ fund for green cooking, [link](#); 3. Afrik21, MCFA launches clean cooking financing program in 6 countries, [link](#); 4. ESI Africa, Spark + Africa fund raises \$40M to accelerate clean cooking in SSA, [link](#); 5. Bloomberg, Koko Networks expands into Rwanda in a bid to replace charcoal with ethanol, [link](#); 6. Kenya set to regulate high cooking gas prices, [link](#); 7. Spark+ provides USD 2 million to Sumac Microfinance Bank to grow its clean cooking portfolio in Kenya, [link](#); 8. Afrik21, CQC secures \$10M credit from FMO and BIX for clean cooking [link](#); 9. Business Daily, 1.3M people to get World Bank-funded solar power, [link](#); 10. Clean Cooking Alliance, Spark+ Invests US \$4 Million in BURN to Accelerate Its Multi-Country Expansion Across Africa, [link](#); 12. Afrik21, A new financial innovation centre for renewable energy, [link](#); 13. Afrik21, Mirova acquires SunFunder and accelerates its focus on renewable energy, [link](#); 14. PR Newswire, SparkMeter raises \$10M, [link](#); 15. Wattnow, Press Release, [link](#); 15. Odyssey Energy Solutions continues quest to electrify developing economies with \$5.4M seed, [link](#);

05 Portfolio

Company	Sector	Regions where product or service is sold
	Enterprise SaaS/ Fintech	East, West, & Southern Africa, Asia
	Residential Solar/Clean cooking	East, West & Central Africa
	Residential Solar/Clean cooking	Africa, Asia, N. & S. America, Europe
	Residential Solar	Africa, Asia, Latin America
	Clean Cooling	East, West, Central & Southern Africa
	Fintech	East, West, & Southern Africa, Asia
	Solar manufacturing	East & West Africa, Asia, Europe
	Commercial and Industrial (C&I) Solar	East & West Africa
	Distributed Energy Management Software	East and West Africa
	Clean Cooking/ Biogas	East Africa, India, Latam

06 Technical Assistance Facility (TAF)

Background

The \$5 Million KawiSafi Technical Assistance Facility (TAF) was established to support Ecosystem Interventions in two primary focus areas: Consumer Protection and Gender-specific interventions as highlighted below.

Subcomponent 2.1: Consumer protection:

Deploying and funding mechanisms to prevent and protect consumers from the product and service risks that may arise in the event of insolvency, financial distress, operational issues or technological obsolescence of a portfolio company or its products and services. This is designed to reduce negative impact on consumers of renewable energy products in the case of financial distress, significant disruption in supply, obsolescence, or defunct products.

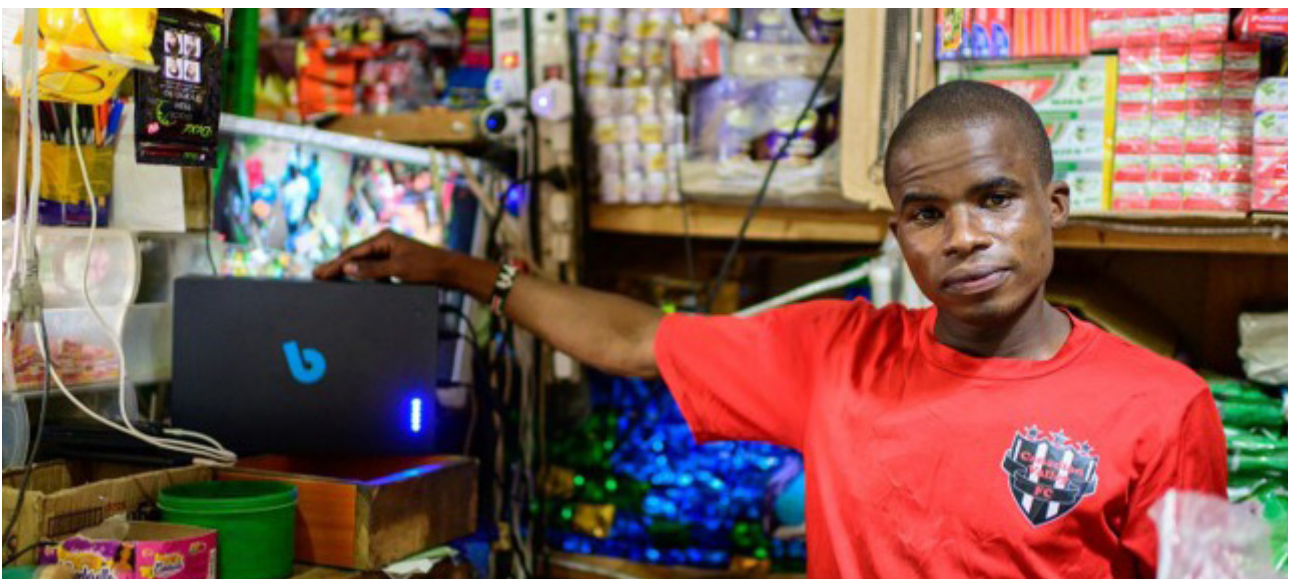
Subcomponent 2.2: Gender-specific interventions:

To provide support to women and girls, encompassing projects aimed at developing and deploying initiatives to multiply and measure the beneficial development impact of KawiSafi Ventures' investments on women, particularly low-income women.

TAF in FY2022

The legacy impacts of COVID-19 compounded by increasing global oil prices had a major impact on the East African economies and the resilience of livelihoods.

- Through the TAF sub-component 2.1 on Consumer Protection, the TAF has continued to focus on offering grants to energy suppliers who structured COVID-19 relief either through free lighting to their consumers or through payment waivers throughout 2022.
- For gender specific interventions, the TAF focused on carrying out a gender needs assessment for its portfolio companies and educating women on the benefits of clean lighting solutions.



Technical Assistance Facility (TAF) Updates

2022 Updates



The TAF disbursed \$482,000 in grant funding in 2022. This was allocated to d.light, Bboxx, Association for Electric Mobility and Development in Africa (AEMDA) under 2.1 consumer protection and 60 Decibels under 2.2 gender initiatives.

Support to d.light and Bboxx was to further their consumer protection initiatives.

AEMDA received a grant of US\$ 2,000 to support the development of the nascent e-mobility segment.

60 Decibels was contracted to carry out a gender needs assessment for 8 of the 10 KawiSafi portfolio companies. The Consultants used the 2X Criteria as a reference. The portfolio companies received targeted Gender Action Plans and prioritization recommendations to aid them in improving their gender outcomes.

2023 Outlook



In 2022, the TAF received over 14 proposals from women-focused MFIs to carry out awareness campaigns aimed at generating demand for clean energy products.

The TAF manager developed a call for proposals to identify competent organizations to run the 500,000-women education campaign on clean energy products.

RAFODE and BioLite were shortlisted for these . The team plans to conclude contracting and kick off implementation in FY2023.

07 What We Are Reading

REPORT: Private Asset Impact Fund report 2022

The 2022 survey brings together the most comprehensive dataset to date on this investment fund universe. It also segments the analysis by each fund's primary asset class (fixed income, equity and mixed funds) and primary impact sector (climate & energy; food & agriculture; health & education; housing, water & communities; microfinance; SME development; and multi-sector funds).

REPORT: Powering Jobs Census 2022: The Energy Access Workforce

This report provides a comprehensive picture of employment in the DRE sector, including recruitment in the sector, the skill levels of the DRE (decentralized renewable energy) workforce, availability of and investment in training, compensation levels, women's participation, and workforce retention.

PRESS RELEASE: Sun King expands Series D to \$330m with additional investment of \$70m led by LeapFrog

The company's products have so far provided light and power to 95 million people who lacked access to reliable electricity and have prevented more than 24 million tons of carbon dioxide emissions.

NEWS: AIIM invests additional \$73m in newly merged Starsight Energy and SolarAfrica

The newly combined strength of Starsight Energy and SolarAfrica will make it one of the continent's most dominant solar players - a genuine pan-African provider of competitive, full-service renewable energy and energy efficiency solutions to the continent's commercial and industrial (C&I) sectors.

NEWS: Oil giant Shell snaps up African solar provider Daystar Power

Oil giant Royal Dutch Shell will purchase African solar provider Daystar Power as it expands its global renewables portfolio. Daystar purchase is its first power acquisition on the continent, underscoring a mandate to halve greenhouse gas emissions by 2030.

NEWS: Africa Should Trade Its Carbon Credits to Fund Renewable Energy - UNECA

Carbon credits present an opportunity for African countries - many dependent on fossil fuels for energy - to protect themselves against climate change while raising much-needed finance for the transition to renewable energy transition.

NEWS: Kenya Power to spend \$331,000 in pilot transition to electric vehicles

State-owned Kenya Power has said it has started the process of phasing out vehicles that run on fossil fuels for electric ones as a way of adopting "sustainable ways of doing business."

REPORT: Renewable Energy and Jobs - Annual Review 2022

According to the latest report on renewable energy and jobs published by the International Renewable Energy Agency (IRENA) and the International Labour Organization Organisation (ILO), the energy transition is unlocking a diverse set of job opportunities.

REPORT: Off-Grid Solar Market Trends Report 2022

Over the past decade, the biennial Off-Grid Solar Market Trends Report (MTR) has been the go-to source of sector information for investors, industry members, policymakers, and other stakeholders in the sector.

08 Our Media Highlights

Carbon Credits and Energy Transition: An Emerging Markets Investor Perspective

The KawiSafi team shared some thoughts on carbon credits and energy transition from an investor perspective.

d.light welcomes \$50M investment on its journey to impact 1 billion lives

d.light, announced a \$50 million investment from a consortium of lenders with a focus on the renewable energy space including SunFunder (Mirova SunFunder since June 2022) and TDB (Trade and Development Bank) as Co-arrangers and FMO, the Dutch entrepreneurial development bank.

Angaza and Solar Run Partner to Bring Reliable Energy Access to Underserved Markets

Angaza is excited to partner with Solar Run, manufacturer of reliable and affordable solar solutions for off-grid and under-electrified communities. Solar Run offers a wide range of sustainable products including solar home systems, solar lights, and solar-powered appliances.

KawiSafi has been recognized for the second time in ImpactAssets 2023

KawiSafi has been selected for the ImpactAssets 50™ 2023 (IA 50) for the second time. KawiSafi was one of the firms selected for the IA 50 2023 to represent experienced managers across a breadth of geographies, asset classes and impact areas of focus.

Opes solutions and Westfalia: Vehicle-integrated photovoltaics enter series production

Solar technology company OPES Solutions and Europe's leading motorhome manufacturer Westfalia

have developed a powerful solar solution for camper vans. This is the first time that large solar panels are part of the standard vehicle configuration of Westfalia motorhomes.

YC-backed fintech Numida raises \$12.3M led by Serena Ventures to extend loans to MSMEs beyond Uganda

Lendable announced providing \$5m of this funding to Numida (YC W22) to extend ethical loans to Micro, small and medium-sized enterprises in Africa. Great work by the team.

Bboxx consolidates its market leading position by acquiring solar energy frontrunner PEG Africa

The acquisition cements Bboxx's position as the leading super platform for essential products and services in Africa, providing clean energy, clean cooking, mobile phone technology and accessible financial products to 3.5 million people.

How remote monitoring is enabling farms and agribusinesses to optimise their cold chain

InspiraConnect is the hardware that consists of IoT-enabled sensors, including intelligent sensors, loggers, and electronics that allow our operating system, InspiraOS, to generate the key data needed to optimise post-harvest and cooling performance, and track energy consumption of our clients.

Powering Africa's Green Growth – beyond adaptation and resilience

Insightful opinion piece written by Amar Inamdar on powering #greengrowth beyond adaptation and resilience published on UNFCCC UN Climate Champions.

09 Our Team

KawiSafi Ventures team



Amar Inamdar
Managing Director



Michelle Osorio
Investment Director



Marcus Watson
Investment Director



Baafour Otu-Boateng
Investment Director



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