GOGLA

The Voice of the Off-Grid Solar Energy Industry

Global Off-Grid Solar Market Report Annual Sales & Impact Data

2024, Public Report



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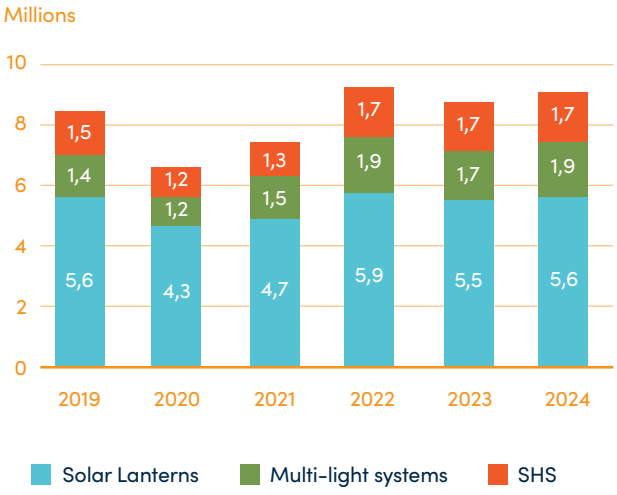
Transforming Energy Access

Executive Summary

In 2024, access to solar energy kits (SEKs) grew at a rate of almost 4% when compared to 2023. This shows a positive trend and the ongoing demand for off-grid solutions despite macroeconomic headwinds, including high inflation and climate emergencies. Sales of off-grid solar technologies by GOGLA affiliates reached 9.3 million SEKS and nearly 2 million off-grid appliances such as solar water pumps, fans and fridges. GOGLA affiliate companies are now serving over 137 million people, and even more homes and businesses have been reached across the wider industry. However, the sector must increase its growth rate significantly to achieve national and international electrification goals.

The announcement of Mission 300 (M300)[1] in 2024 - an initiative by the World Bank Group and African Development Bank to electrify 300 million people in Africa by 2030 - has set the scene for an acceleration of energy access in 2025 and is expected to lead to more subsidy models and Results-Based Finance (RBF) mechanisms for solar home systems and appliances. GOGLA is tracking the progress of M300, the Energy Compacts being designed by Governments and other policies and programmes, to champion the critical role of off-grid solar and explore how these initiatives affect electricity access and the dynamics of the off-grid industry. These trends will be captured in future reports and datasets.

Figure 1 - Annual Global SEKs Sales by Product Category 2019-2024



2024 Global Highlights

137.6 million people currently benefit from improved access to electricity by using a solar energy kit (SEK) sold by GOGLA affiliates. This is a net increase of 20 million people from 2023. A further half a million households and farms currently use a solar water pump or refrigeration unit sold by GOGLA affiliates.

Total sales of **solar energy kits** (SEKs) reached 9.3 million units in 2024. In terms of total volumes reported by GOGLA affiliates, 2024 recorded the second highest sales ever after 2022 (9.5 million units) and grew just under 4% compared to 2023.

These sales include:

- 5.6 million solar lanterns (+3% compared to 2023)
- 1.9 million multi-light systems (+11% compared to 2023)
- 1.7 million solar home systems (SHS) (-1% compared to 2023)

In line with seasonal trends, sales in the second half of 2024 exceeded sales in the first half of 2024 by 11%.

1 GEAPP, GEAPP, Rockefeller Foundation, SEforALL Advance World Bank & AfDB Mission to Electrify 300 Million in Africa, 2024

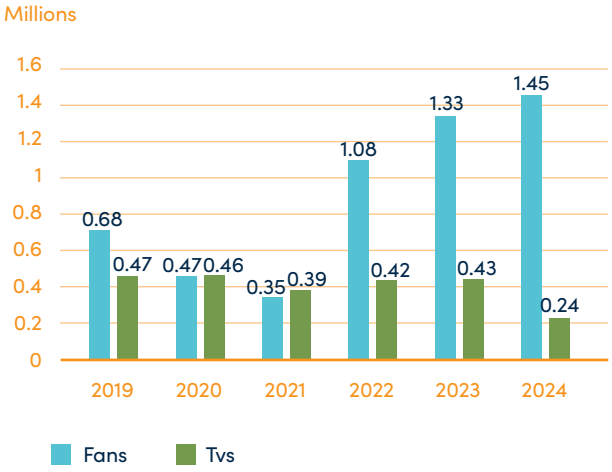
Executive Summary

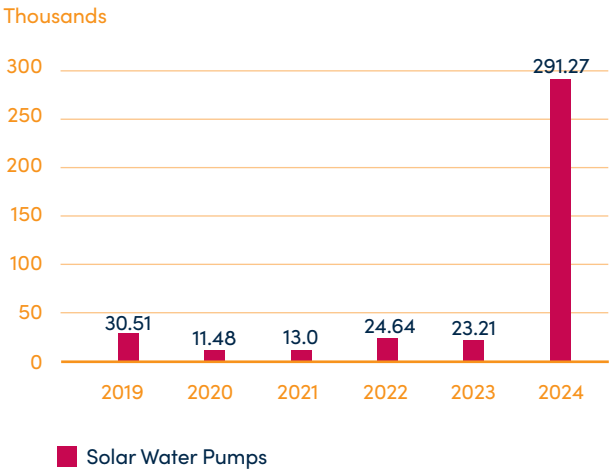
Total sales of **key appliances** tracked in this report (televisions (TVs), fans, refrigeration units and solar water pumps) reached 1.98 million units in 2024, including:

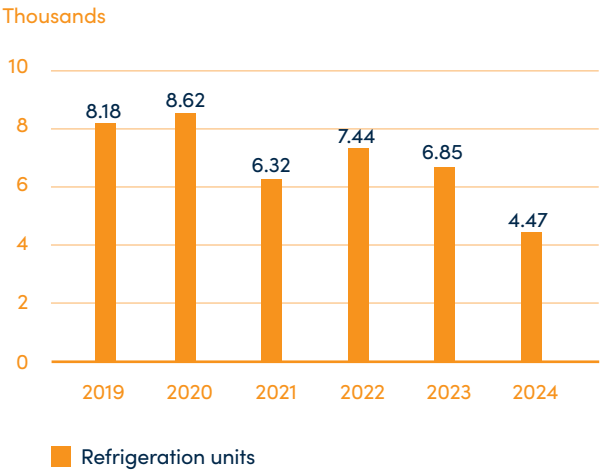
- 1.4 million fans (+9% compared to 2023)[2]
- 291,000 solar water pumps (not comparable to 2023 due to an increase in the number of participating companies.)
- 239,000 TVs (-45% compared to 2023)
- 4,469 refrigeration units (-35% compared to 2023)

In 2024, 576 units of walk-in coldroom (data collected for the first time) were sold.

Figure 2 - Annual Global Key Appliances Sales by Product Category 2019-2024









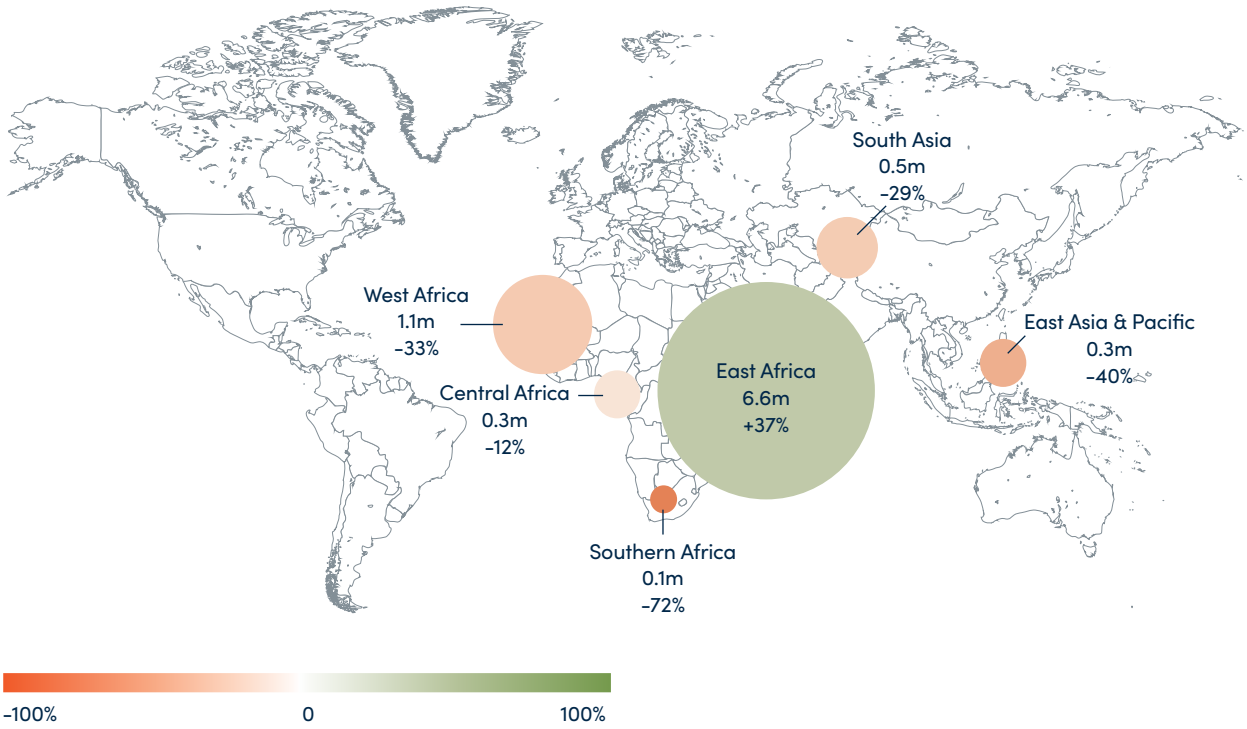
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2 Increase in sales between 2021 and 2022 linked to increased participation from South Asia manufacturers

Executive Summary

Regional highlights

Figure 3 - 2024 Sales Volume by Region and Year-on-Year Evolution



Trends to watch out for this round:

- Global growth in sales volumes of SEKs in 2024 was almost exclusively driven by growth in East Africa with particularly strong increases in sales in Ethiopia, Malawi, Rwanda, Somalia, Tanzania and Zambia.
- Sales in West Africa decreased by 33% as the Nigerian market was hit by a combination of factors including devaluation of the naira, high inflation and the early end of the subsidy program under the Nigeria Electrification Program (NEP).
- Lanterns (0 - 3 Wp) and multi-light kits (3 -10 Wp) saw growth in global sales volumes while larger systems (50 - 100+Wp) -within SHSs (10 -100+Wp)- sales stalled.
- TV sales took a major hit in 2024 driven by poor performances in key markets such as Nigeria and Kenya.
- The apparent exponential growth in the global sales of solar water pumps is due to an increase in participation in the data collection. Excluding the new participants, companies reporting in previous rounds actually saw a slight decrease in sales volume.

Executive Summary

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About the Report

Authors

GOGLA

GOGLA is the global association for the off-grid solar energy industry. We are proud to champion one of the world's most innovative and impactful sectors. Hundreds of millions of people already benefit from affordable, high-quality, clean off-grid solar products and services. With the right support, our pioneering industry will be able to scale up rapidly to improve the lives of 1 billion people by 2030. To help make this happen, we promote, safeguard, and convene the industry, advocating for enabling policies and increased investment as well as supporting our 200+ members with effective services.

Contributors

ESMAP

The Energy Sector Management Assistance Program (ESMAP) is a partnership between the World Bank and over 20 partners that helps low- and middle-income countries reduce poverty and boost growth through sustainable energy solutions. ESMAP's analytical and advisory services are fully integrated within the World Bank's country financing and policy dialogue in the energy sector. Through the World Bank Group (WBG), ESMAP works to accelerate the energy transition required to achieve Sustainable Development Goal 7 (SDG7) to ensure access to affordable, reliable, sustainable, and modern energy for all. It helps shape WBG strategies and programs to achieve the WBG Climate Change Action Plan targets. Learn more at: https://esmap.org

Efficiency for Access

Efficiency for Access is a global coalition working to promote high performing appliances that enable access to clean energy for the world's poorest people. It is a catalyst for change, accelerating the growth of off-grid appliance markets to boost incomes, reduce carbon emissions, improve quality of life, and support sustainable development. Efficiency for Access consists of 20 Donor Roundtable Members, 19 Program Partners, and more than 34 Investor Network members. Current Efficiency for Access Coalition members have programs and initiatives spanning 62 countries and 34 key technologies. The Efficiency for Access Coalition is coordinated jointly by CLASP, an international appliance energy efficiency and market development specialist not-for-profit organization, and UK's Energy Saving Trust, which specializes in energy efficiency product verification, data and insight, advice, and research. For more information, please visit www.efficiencyforaccess.org

The appliances section of this report has been funded by UK aid from the UK government. However, the views expressed do not necessarily reflect the UK government's official policies.

Berenschot

Berenschot is a leading Dutch management consultancy firm with an extensive track record in supporting industry associations on market data collection. Berenschot has been elected by clients as one of the best management consultancy firms of the Netherlands. Berenschot maintains a high standard of confidentiality, as stated in the Berenschot Terms and Conditions.

Join the data collection

The sales and impact data used in the analysis showcased in this report, as well as all other market intelligence outputs from GOGLA are enabled by the participation of companies in GOGLA's sales data collection efforts.

Why join

Participating companies receive access to a personalized results platform where they can interact with the data and see their market share. Via this platform users can also download data and impact reports, which companies can use to attract investors, inform strategy, and overall, better understand their position in the market.

By joining the data collection, you are making a valuable contribution to developing the off-grid lighting and energy efficient appliances sector by helping to shape the most comprehensive sales data report in the industry, which GOGLA, Lighting Global and the Efficiency for Access Coalition can use to formulate effective policy guidelines and support the growth of the off-grid solar sector.

The data is also a source for key publications by other organizations in the sector including the SDG Tracking report[3], the World Energy Outlook[4], the Off-Grid Solar Market Trends Report[5] and the Off-grid Renewable Energy Statistics 2024[6] .

Who can join the sales data collection

Eligible companies include GOGLA members, companies selling products that meet VeraSol Quality Standards, and appliance companies that participated in the Global LEAP Awards or are engaging with the Low Energy Inclusive Appliances (LEIA) program.

How to join the sales data collection

To join the sales data collection please reach out to Serra Paixão s.paixao@gogla.org. The next round of data collection will take place in **July 2025**. Eligible companies that have contacted us before then will be invited to participate.

A video tutorial for the questionnaire will soon be available. In the meantime, you can refer to the H2 2021 introductory webinar recording and to the Frequently Asked Questions from participants for more information.

Data confidentiality

Data shared by companies is treated as confidential. All public outputs created using the data respect a three-data-point rule where at least three separate companies need to have reported sales for any single data point to be shared. Further details can be found in the methodology annex.

3 IEA, IRENA, United Nations Statistics Division, The World Bank and World Health Organization, Tracking SDG7 The Energy Progress Report 2022
4 IEA, World Energy Outlook 2022
5 Lighting Global, IFC, Efficiency for Access, GOGLA and Open Capital Advisors, Off-Grid Solar Market Trends Report 2022: Outlook 2030, 2022
6 IRENA, Off-Grid Renewable Energy Statistics 2024

Introduction

Context

In 2024, developing economies, notably in Sub-Saharan Africa, saw modest growth and in many cases persistent inflation. Many of the challenges the industry experienced in 2023 remained true in 2024:

- Inflation and currency depreciation worsening the affordability challenge notably in reaching those that remain unconnected and are the hardest to reach, but also damaging the portfolio quality of PAYGo companies.
- Currency depreciation and devaluations eroding local-currency revenues in value against hard currency debt repayments.
- Companies are struggling to attract new equity funding

However, 2024 has also seen signs of a maturing industry:

- Market concentration is increasing. This is visible through the sales data as the size of the market has not faltered despite a shrinking number of reporting companies. It has also been visible through an increasing number of mergers and acquisitions.
- New funding mechanisms better suited to the PAYGo industry and to the hardest to reach are emerging: patient equity funds, blended finance structures and results-based finance. The larger players in the space are also increasingly growing their off-balance-sheet financing.[7]
- The World Bank and African Development Bank led M300 initiative is expected to help catalyse the industry's ability to meaningfully contribute to universal energy access.

Off-grid solar is expected to play a key role in delivering access to electricity to the hardest to reach under the M300 initiative.[8] But beyond that off-grid and decentralised solutions will be essential in accelerating rural development and climate resilience through energy access and through access to appliances such as mobile phones (through charging capability), but also productive appliances such as fridges, cold rooms, pumps and agro-processing equipment.

Overcoming these hurdles and delivering on impact promises will require a sustainable and performing industry. It will also require increased collaboration between the private sector, government and development partners to design interventions that deliver for all stakeholders and in particular for end users.

Methodology

Data collection

GOGLA, Lighting Global and the Efficiency for Access Coalition, with support from Berenschot, collect data from affiliate companies via an online survey every six months. Participating



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7 GOGLA, After the Dip: Off-Grid Solar's Defining Moment, 2025
8 World Bank, Mission 300: Unlocking Capital for Off-Grid Solutions in Africa, 2025

Introduction

companies voluntarily share data on their product specifications and sales volumes on a per product, per country basis.

Analyses in this report are based on sales reported by 36 solar energy kit manufacturers and 34 appliances manufacturers[9] and may not translate into sales to customers in the same time period. The data collected from affiliates is not extrapolated to the entire sector. Yet, it provides the broadest and most reliable dataset on the off-grid solar and energy-efficient appliances sector.[10]

Data is self-reported by companies but goes through a thorough quality control process.

Data confidentiality and hidden values

To protect the confidentiality of companies' data, only aggregated data points are shared. Additionally, GOGLA applies a three-data-point rule:

Data on a specific region, country or product category is only included when at least three separate product manufacturers have reported sales for any single data point. Where there are fewer than three responses for a region, country or product category, no results are shown to protect the proprietary interests of the companies who have supplied data in support of this industry report.

Readers should keep in mind the three data point rule and possible changes in the numbers of companies participating, as these often explain large swings in numbers.

Market Share Represented

For Off-Grid Solar Appliances, the proportion of the total market that is represented by our affiliates has not yet been accurately estimated. Most recent efforts to assess the market share of affiliates for productive use appliances (RUs and SWPs) provides a range of **20% to 50%.**[11]

For Off-Grid solar energy kits, based on the recently completed analysis for the '2024 Global Off-Grid Solar Market Trends Report', it is **estimated that, in 2023, sales of affiliates represent an estimated 29% of all solar energy kits including component based systems**.

Key definitions

Cash/PAYGo:

- **Cash sales** are when the product is sold to the customer in a single transaction. Note that this category also typically includes products purchased as a tender by governments and humanitarian agencies.
- **Pay-As-You-Go (PAYGo)** sales are when the customer pays for the product in installments over time or pays for use of the product as a service. This includes both new energy-as-a-service sign-ups by distributed energy service companies (DESCOs) as well as lease-to-own sales.

As the report relies on manufacturer data, where these are not vertically integrated, a product is considered to have been sold PAYGo if it is PAYGo-enabled.

Key appliances: A set of appliances for which companies are explicitly asked to report their sales. These appliances were chosen based on market maturity/potential. They include TVs, fans, refrigeration units, solar water pumps. Further sub-categories are based on criteria such as size or capacity (see below). Manufacturers/Distributors: Companies are classified as distributors when they are selling other companies' branded products, or as manufacturers when they are selling their own-brand products. This distinction is made at the product level meaning a company can be a distributor for one product, but a manufacturer for another product.

Solar energy kits (SEKs): Solar energy kits encompass products ranging from simple solar task-lanterns to large solar home systems capable of powering an entire household including appliances. These SEKs are further classified into sub-categories based on their number of lightpoints, ability to charge phones and solar panel size (see below).

9 Manufacturers here designate companies selling their own branded products, by opposition with distributors of other companies' branded products.

10 Affiliates are estimated to represent 28% of the global off-grid solar market.

11 Lighting Global, ESMAP, Efficiency for Access, GOGLA and Open Capital Advisors, Off-Grid Solar Market Trends Report 2022: State of the Sector Report, 2022

Introduction

Solar generators: Solar generators are differentiated from solar home systems by including an inverter.

Product sub-categories: The full description of the product categories for both solar energy kits and key appliances is available here.

Impact metrics

Impact data in this report is based on the standardized impact metrics for the sector developed by GOGLA, Lighting Global and the Efficiency for Access Coalition:

- Standardised Impact Metrics for the Off-Grid Solar Energy Sector
- Efficiency for Access Impact Assessment Framework
- Off-Grid Solar Resilience and Adaptation Framework



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Global Insights

Global Insights

Sales and Impact Trends

Global Key Highlights

Sales figures presented here refer to the total of all off-grid solar energy kit and off-grid appliance sales reported by participating affiliates[12] in the period between January 1st and December 31st, 2024.

Solar Energy Kits (SEKs)

9.3 million
off-grid solar energy kits

5.8 million
have been sold as cash products

3.5 million
sold via Pay-As-You-Go (PAYGo)

5.6 million
portable lanterns

1.9 million
multi-light systems

1.7 million
solar home systems (SHS)

48,400 units
solar inverter

85 MW
newly installed capacity globally through off-grid solar energy kits

Appliances

1.44 million
fans sold

239,300
TVs sold

4,469
refrigeration units sold

291,300
solar water pumps sold

539,900
radios sold

4,942
other appliances sold[13]

12 Affiliates include GOGLA members, companies selling products that meet Lighting Global Quality Standards, and appliance companies of the Global LEAP Awards or the Low Energy Inclusive Appliances (LEIA) program.

13 Affiliates are given the opportunity to include other appliance types in their data reporting. Other appliances are generally not reported in sufficient volumes by participating companies to enable their inclusion but provide an insight into the type of appliances that are sold. This round again, the main appliance types included are hair clippers and speakers.

Global Insights

Off-Grid solar energy kits

A total of **9.3 million** solar energy kits were sold in **2024**, which represents a **4% increase from 2023**. However, sales remained **2% lower** than the peak recorded in **2022**.

Despite a gradual decrease in the number of reporting manufacturers, the market size has not shrunk. This is indicative of growing market concentration in the industry as the biggest brands increase their market share and mergers and acquisitions become more frequent.

- **Cash sales** increased by **5%** compared to the annual sales for **2023**, with **5.82 million** products sold via cash transactions.
- **PAYGo sales** increased only by 1% to **3.46 million units**, remaining stable compared to the full-year trend but **3% lower** than the peak in **2022**.

Product trends

While sales grew overall, sales of small solar lanterns (0-1.5Wp) and of the larger solar home systems decreased.

- Global lantern sales (0-3Wp) grew 3% in 2024, reaching 5.64 million units and multi-light system (MLS) sales (3-10Wp) increased 11% year-on-year to just over 1.94 million units.
  - 0-1.5 Wp sales decreased 6% to 2.85 million units
  - 1.5-3 Wp sales increased 14% to 2.79 million units
  - 3-10 Wp sales increased 11% to 1.94 million units

Figure 4 - Annual Global SEKs Sales 2019-2024

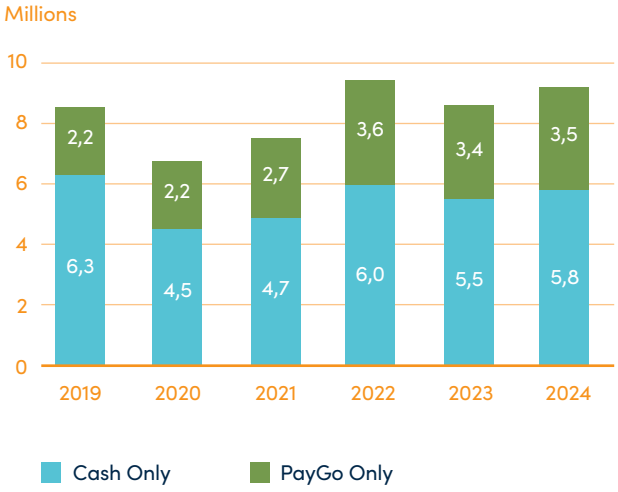
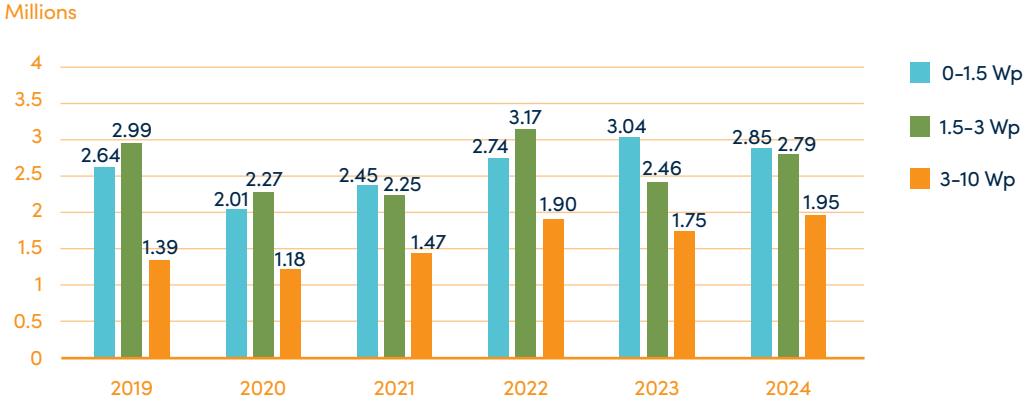


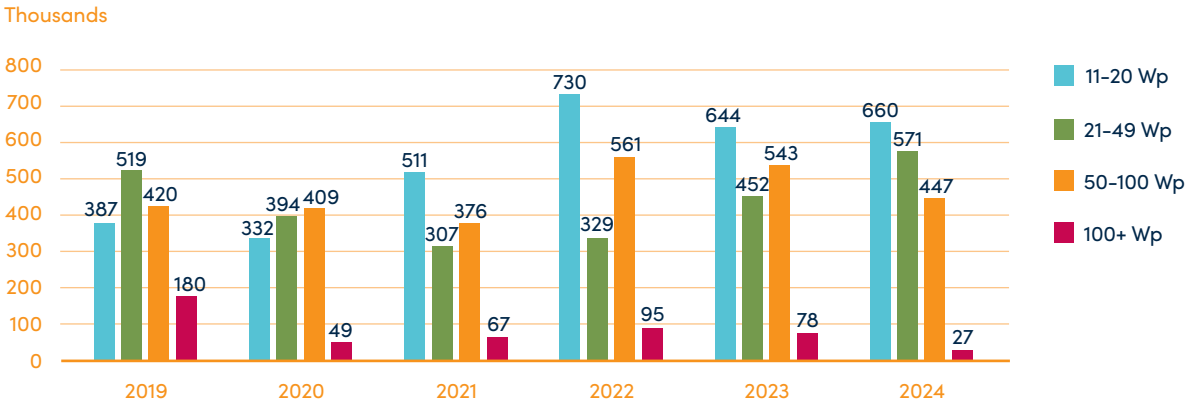
Figure 5 - Annual Global Sales of 0-10 Wp SEKs



Global Insights

- Solar home system (SHS) sales dropped 1% annually, reaching 1.7 million units overall - but with significant variation across sizes:
  - 11-20 Wp sales increased 3% to 660,000 units
  - 20-49 Wp sales increased 26% to 570,500 units
  - 50-100 Wp SHS sales declined 18% to 447,000 units
  - 100+ Wp product sales fell 66% to just under 27,000 units

Figure 6 - Annual Evolution of Sales Volumes of Solar Energy Kit by Category (11-110+Wp) - World



Solar Generators

For the first time, the sales data collection included sales of solar generators. For the data collection, solar generators were defined by their inclusion of an inverter. In 2024, 8 manufacturers reported sales of solar generators. In total, 48,400 units were sold in 2024.

Among the products reported:
- Inverter sizes range from 0.3 to 8 kW
- Battery sizes range from 0.64 to 10 kWh
- Panel size range from 200 Wp to 3.5 kWp
- The range includes products designed to power productive appliances such as pumps and cold rooms

Sales were reported in East Asia & the Pacific, South Asia, Central Africa, East Africa, Southern Africa and West Africa:
- Sales volumes are quite evenly split between Asia and Sub-Saharan Africa with a small majority of sales going to Africa.
- Within Sub-Saharan Africa, West Africa was by far the largest regional market and the majority of sales to the region were reported in Nigeria.

Global Insights

Off-Grid Solar Appliances[14]

In the context of this series of sales reports, the appliance section focuses on sales of appliances which have reached mainstream levels of production.[15] These are currently regarded as: Televisions (TVs), fans, refrigeration units (RUs) and solar water pumps (SWPs). These are collectively referred to as "key appliances" when reported in aggregate. These separate appliances are reported individually where sufficient sales warrant them, and data confidentiality allows it. Where data cannot be shared due to the limited number of manufacturing companies reporting sales, it will be specified in the report.

Global sales of key appliances reached **1.98 million units** in 2024. Sales increased **11%** compared to the annual total in **2023**. Increased participation in the reporting of solar water pump sales in **South Asia** was a primary factor. Without the increased participation, sales would have slightly decreased.[16]

Product trends

- **Global fan sales** increased **9% year-on-year**, from **1.32 million to 1.44 million units**. However, fan sales declined in most regions, except **East Asia & Pacific** and **South Asia**.[17]
- **Global TV sales** dropped significantly compared to **2023**, decreasing **45%** from **434,000 to 239,000**. The decrease was led by **East Africa and West Africa**.
  TV sales are closely tied to larger SHS sales in key markets such as **Kenya and Nigeria** which showed a visible decrease in **2024** compared to **2023**. This trend is marginally exacerbated by a small reduction in the number of companies reporting TV sales.
- **Global refrigeration unit (RU)** sales declined **35%** to **4,469 units**. This number is the **lowest sales reported** in the **last 6 years**. The decrease was mainly caused by the sales decline in East and West Africa markets

Figure 7 - Annual Global Fan Sales 2019-2024

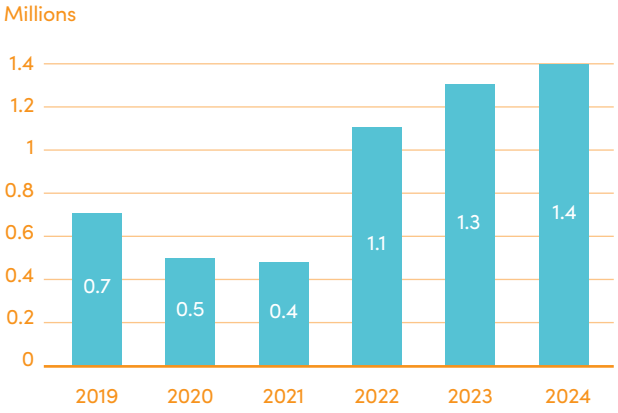


Figure 8 - Annual Global TV Sales 2019-2024

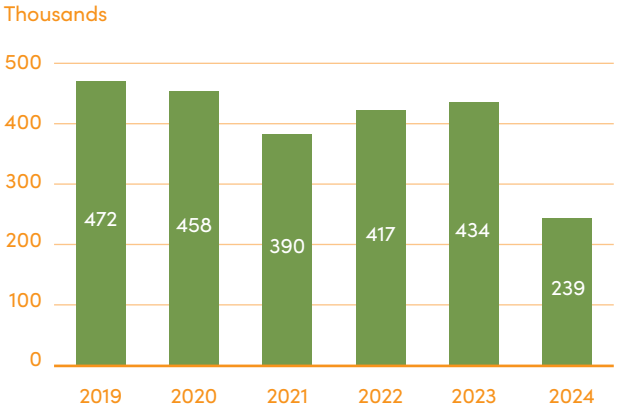
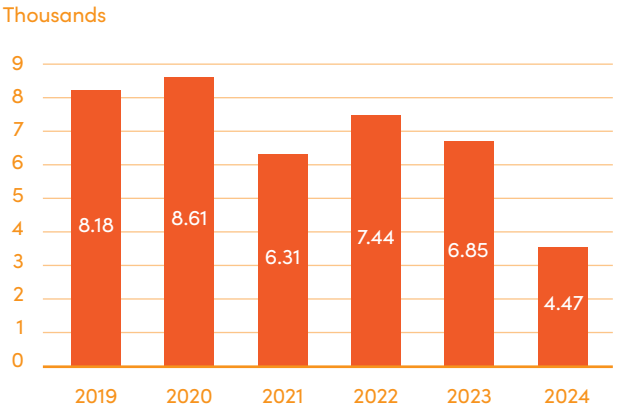


Figure 9 - Annual Global RU Sales 2019-2024



14 The sales data collection for off-grid appliances is at an early stage. Please note that, as the number of companies reporting their sales and product information is still growing, there may be limitations on how representative the data is of total sales in certain country markets. We therefore advise users to complement it with other sources where possible.

15 Radios were originally excluded due to being sold on a much higher scale. While we now feature radios in the report, we do not aggregate their sales to the Key Appliances.

16 Exact numbers cannot be shared due to the three-data-point rule.

17 Since 2022, fan manufacturers in Pakistan have joined the sales data collection. This explains most of the growth between 2021 and 2022.

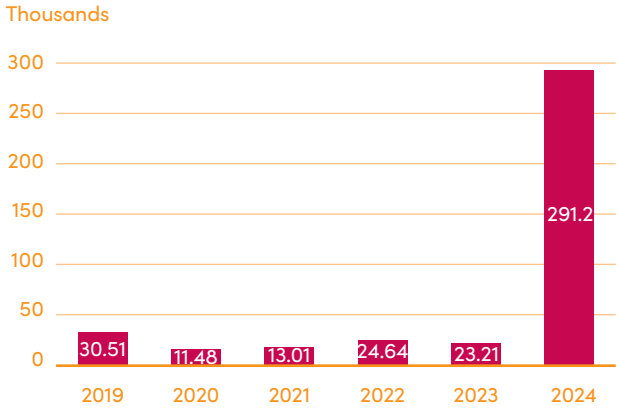
Global Insights

For the first time in our data collection, **walk-in cold room (WICR)** sales were tracked in 2024. A total of **576 units** were sold over the course of the year.

The sector remains nascent and, with very few companies reporting, there is little that can be shared publicly. Sales occurred in South Asia, East Africa, West Africa and Latin America & the Caribbean regions. The most significant volumes were reported in South Asia.

- **Solar water pump (SWP)** sales saw significant growth, **increasing 1,155% compared to 2023** to reach **291,269 units sold worldwide in 2024**. However, this growth reflects new companies' participation in the data collection rather than market growth. If we exclude the participation of new companies, 2024 would reflect a slight decline compared to 2023.[18]

Figure 10 - Annual Global SWP Sales 2019-2024





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18 Exact numbers cannot be shared due to the three-data-point rule.

Main markets by appliance type January-December 2024

Efforts are being undertaken to expand participation in data collection from companies selling appliances. As this is on-going, it can sometimes be difficult to get a clear picture of the main markets per appliance type throughout this report as there are several cases where collected country data is either not shown (due to not satisfying the data confidentiality rules)[19] or where some of the major appliance suppliers have not yet chosen to participate in contributing data to the reports. Below is a table summarizing the top 3 markets for each appliance type by sales volume reported by Affiliates between January and December 2024.

Table 1 - Top 3 Markets by Appliance Type Based on Sales Volumes Reported by Affiliates Between January and December 2024

Rank	Tvs	Fans	Refrigeration Units	Solar Water Pumps
1	Kenya (9 companies)	Pakistan (3 companies)	Nigeria (4 companies)	India (3 companies)
2	Nigeria (7 companies)	Nigeria (9 companies)	Kenya (5 companies)	Kenya (3 companies)
3	Tanzania (4 companies)	India (3 companies)		Ethiopia (3 companies)



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19 See Methodology section for more details.

East
Africa
Insights

East Africa Insights



Regional Sales Trends

Off-Grid solar energy kits

Sales of off-grid solar energy kits in East Africa exceeded **6.55 million units** in 2024, showing a **37% increase** compared to 2023.

- **Cash sales increased 48%** year-on-year, led by solar lanterns.
- **PAYGo sales rose by 24%**, compared to 2023.

Product Trends

- **Lantern sales rose by 33%** compared to 2023.
- **Multi-light systems increased by 45%** from the sales in 2023.
- **SHS sales increased 38%** compared to **2023**. However there was a large drop in the **100+ Wp** category.

Figure 11 – Annual Evolution of Sales Volumes of SEKs - East Africa

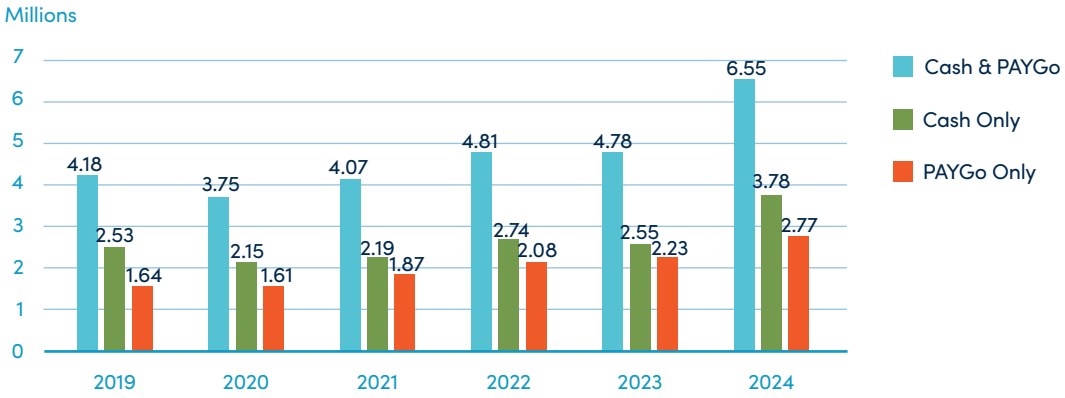


Figure 12 - Annual Lantern and Multi-light System Sales 2019-2024 - East Africa

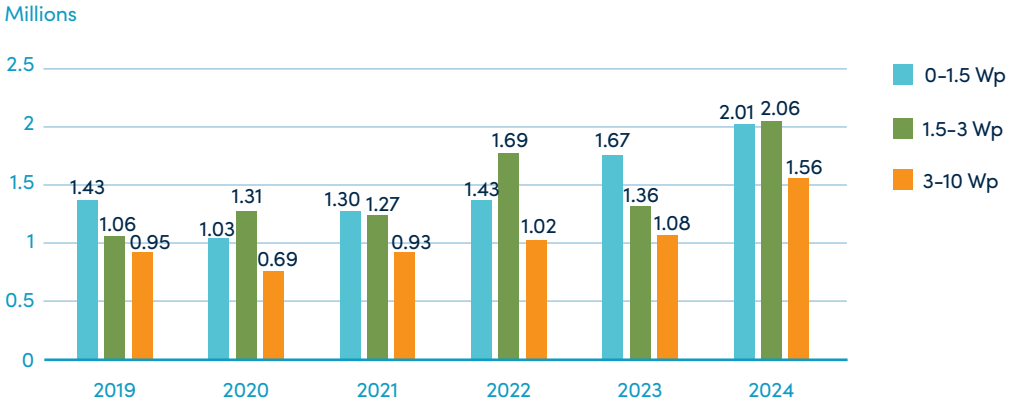
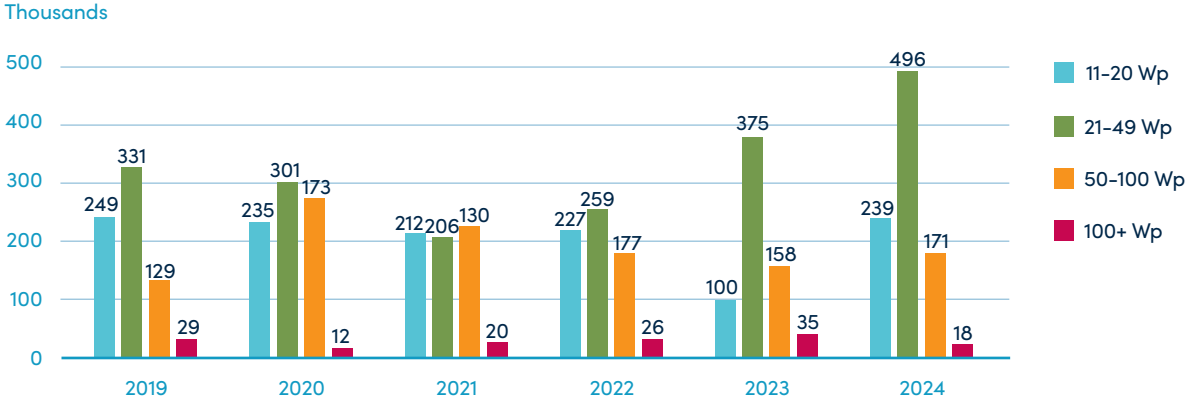


Figure 13 - Annual Lantern and Multi-light System Sales 2019-2024 - East Africa



East Africa Insights



Off-Grid Solar Appliances

East Africa recorded **157,000** units of key appliances sold, **39% lower** than 2023 and lowest recorded since 2019.

Product Trends

- **TV sales in East Africa totaled 134,715** units which is a 33% decrease compared to 2023. TV sales in East Africa represent 57% of **Sub-Saharan sales**. **99% of TVs are bundled with SHS.** The TVs were mostly large and extra-large sizes.
- **RU sales decreased 15%**. With 1,161 units sold, the sales are making up **43%** of Sub-Saharan Africa RU volumes.
- **SWP sales are increased by 16%**, totaling **19,077 units**.
- **Fan sales decreased significantly, by 97%**, to **1,172 units**. This was the outcome of fewer companies reporting data.



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Kenya Insights

Background

Kenya is the most mature market for plug-n-play off-grid solutions and has become the largest market overall since overtaking India in 2019. Market maturity also means Kenya is one of the most stable markets and despite external shocks it has not experienced abrupt swings in sales in the way more nascent markets have.

As the most mature market, Kenya is seeing rapid development in informal alternatives to off-grid solar products, notably to DC appliances. This includes technicians solarising AC appliances from TVs to refrigerators or egg incubators. These solutions are often much more affordable than DC appliances, but may also present quality and safety issues depending on the quality of appliances purchased and the degree of professionalism of the installers.

Several on-going interventions were reported to us as having supported the sector in Kenya in 2024:

- The Kenya Off-Grid Solar Access Project for Underserved Counties (KOSAP) is being implemented by the Ministry of Energy with financing from the World Bank. The project closing date is expected to be extended until May 2025. Over 20 firms have been selected, to date, with the aim of selling 250,000 solar home systems in 14 counties.
- The Sustainable Energy for Smallholder Farmers (SEFFA) project (EnDev, IKEA Foundation, GIZ, SNV) which provided funding to support productive use of energy (PUE) in the dairy and horticultural value chains in Ethiopia, Kenya and Uganda, until June 2024.

Sales Trends

Off-Grid Solar Energy Kits

Kenya, the largest market in East Africa, continued its **growth by 5%**, marking the fourth consecutive period of increase.

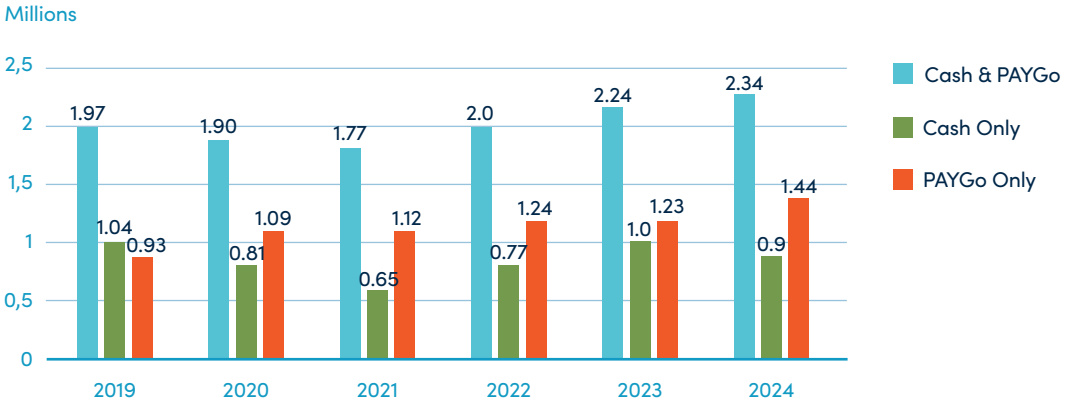
- Growth in sales this year is driven primarily by lanterns, lanterns with phone charging and multi-light systems.
- Lanterns with phone charging and multi-light systems being majorly sold as PAYGo, contributed to the overall increase in PAYGo volumes.

Appliances

Key appliance sales dropped by 27% in Kenya year-on-year, led by a decline in TV sales:

- TV sales made up 81% of appliance sales in Kenya. With 88,000 units sales, compared to 2023, TV sales dropped 19% in 2024.
- Sales of RUs with a total of 703 units, declined 14% compared to 2023.
- SWP sales in Kenya increased 31% since 2023, reaching 16,369 units.

Figure 14 – Annual Evolution of Sales Volumes of SEKs - Kenya



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Figure 15 - Annual TV Sales 2019-2024 - Kenya

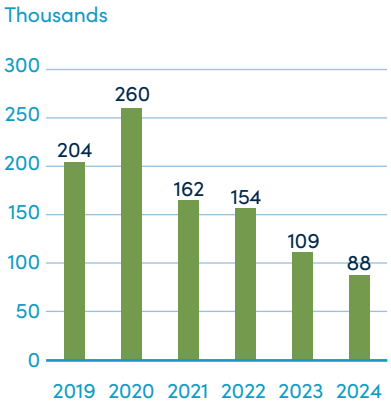


Figure 16 - Annual RU Sales 2019-2024 - Kenya

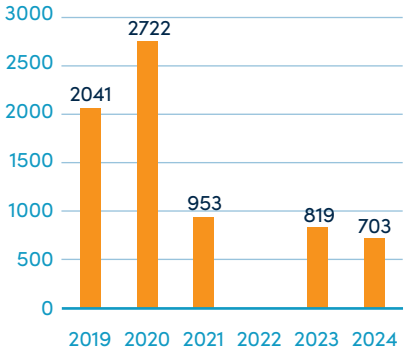
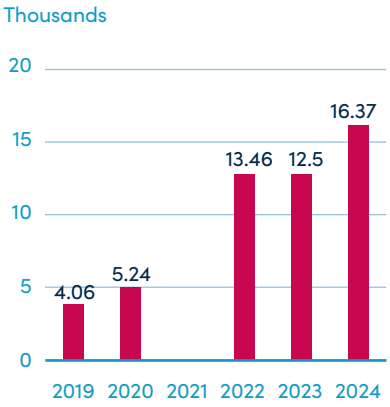


Figure 17 - Annual SWPs Sales 2019-2024 - Kenya





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Malawi Insights

Background

As of 2024, Malawi's solar energy sector continues to evolve amid economic challenges. The Solar Home System (SHS) Kick-Starter Program, which concluded in September 2022, successfully facilitated the sale of over 108,000 systems and helped establish a foundation for ongoing market growth.[20]

In early 2022, Tropical Storm Ana damaged the Kapichira hydroelectric plant, reducing national power generation by approximately 30%. This led to increased power outages and a heightened demand for off-grid solutions, including SHS.[21]

To promote renewable energy adoption, the Malawian government waived duty and excise taxes on solar lamps, water pumps, and refrigeration units in February 2022. While this policy remains in effect, its benefits have been tempered by economic difficulties. Notably, a 44% devaluation of the kwacha in November 2023, followed by an additional 23% devaluation in November 2024, has led to significant inflationary pressures. By early 2025, inflation reached 28.5%, exacerbated by fuel shortages and foreign exchange constraints.[22,23]

These economic conditions have impacted both consumers' purchasing power and the operational capacities of energy companies. Despite these challenges, the demand for solar energy solutions persists, driven by ongoing power supply issues and the need for reliable off-grid alternatives.

Several on-going interventions were reported to us as having supported the sector:

The Ngwee Ngwee Ngwee Fund (NNNF) is a $20 million initiative funded by the World Bank under the Malawi Electricity Access Project (MEAP) to expand off-grid solar energy access in Malawi. Launched in March 2023, the fund aims to provide electricity to at least 200,000 rural households by June 2024. It offers $14 million in working capital loans to solar companies, $5.5 million in end-user subsidies to make solar home systems more affordable, and a $500,000 Market Catalyst Fund to support innovative market solutions. The NNNF has been instrumental in making Malawi one of the fastest-growing off-grid energy markets in East Africa.

Sales trends

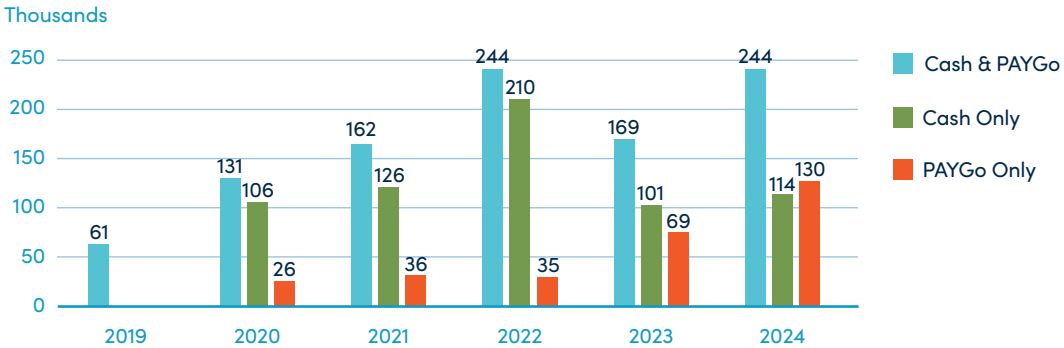
Off-Grid solar energy kits

- **Malawi has been recovering from a drop in sales in 2023. With 244,260 units sold in 2024, sales in Malawi increased by 44% compared to 2023.**
- Both cash and PAYGo sales are higher than in 2023.
- The most significant increase compared to 2023 was a 56% growth in multi-light systems with the majority being sold PAYGo.[24]

Appliances

- Due to data privacy rules (three data point rule), annual appliances sales trends in Malawi cannot be shared in this report.

Figure 18 - Annual SEKs Sales 2019-2024 - Malawi



20 USAID, The Solar Home System Kick-Starter Program for Malawi, 2024
21 Voice of America, Malawi Loses 30% of Its Electricity to Tropical Storm Ana, 2022
22 Reuters, Malawi Cuts 2025 Growth Forecast as Inflation Spurs Street Protests, 2025
23 FAO, Malawi National Currency Devalued, 2023
24 Nyasa Times, Malawi Government Launches $20m Off-Grid Market Development Fund, 2023

East Africa Insights



Uganda Insights

Background

Current interventions supporting the sector in Uganda include:

- Uganda is one of the countries targeted by the €8 million Sustainable Energy for Smallholder Farmers (SEFFA) project alongside Ethiopia and Kenya. The project is funded by EnDev and the IKEA Foundation and aims to support PUE in dairy and horticultural value chains.The programme concluded in 2024.
- Uganda has launched a new Results-Based Financing (RBF) program funded by the World Bank and managed by the Uganda Energy Credit Capitalisation Company (UECCC) under the Electricity Access Scale-Up Project (EASP). Officially launched in December 2024, the program provides price subsidies of up to 60% for off-grid solar systems, clean cooking solutions, and productive use of energy (PUE) equipment. It aims to enhance clean energy access across Uganda and will run until June 2027.
- The Beyond the Grid Fund for Africa (BGFA) – Uganda, funded by Denmark and Sweden and implemented by NEFCO and REEEP has made US$20.7 million available in RBF, and the program will run until 2026.

Sales trends

Off-Grid solar energy kits

- **Sales of Solar energy kits reached almost 436,400 units in 2024, increasing 1% compared to 2023.** Sales volumes in the country seem back on a sustainable growth path.

Appliances

- In 2024, 7,498 units of key appliances were sold including 7,212 TVs. This is a 63% decrease compared to 2023. TV sales represent 96% of all appliances sold in Uganda. Companies also report sales of fans, SWPs and RUs, but further details cannot be provided in this report due to data confidentiality rules.

Figure 19 - Annual SEKs Sales 2019-2024 - Uganda

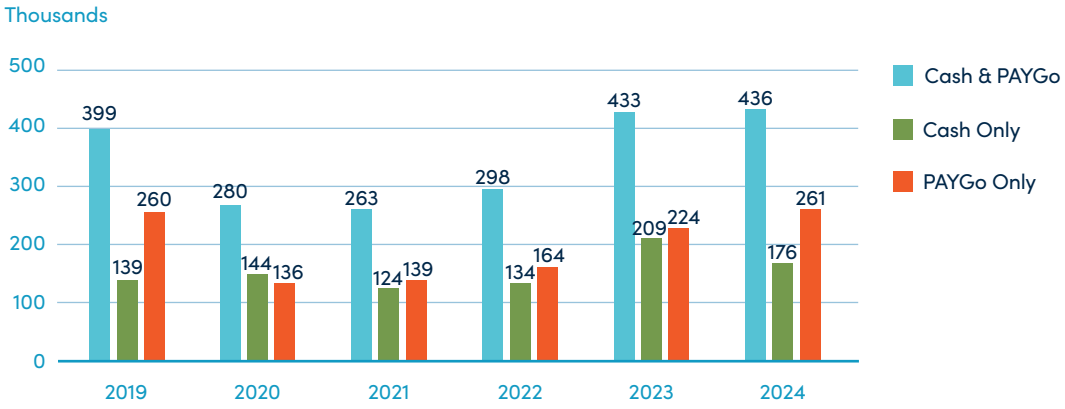
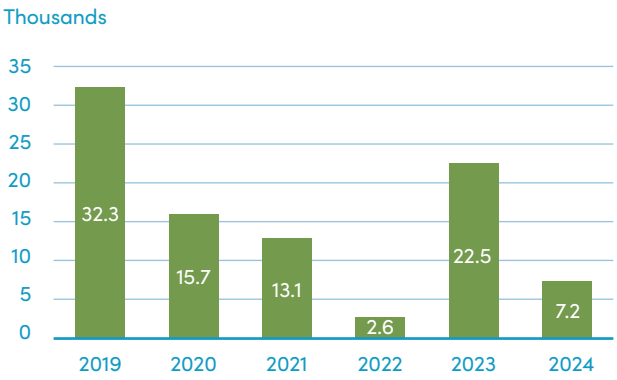


Figure 20 - Annual TV Sales 2019-2024 - Uganda



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Zambia Insights

Background

A key factor that may have favored sales of off-grid solar solutions is the particularly high load-shedding in Zambia due to continued low water levels in dams.[25] The increased need for alternatives had also been a factor in the adoption of the new import procedure which allows for the import of unlicensed products as long as it is for domestic use. There is concern this may create an uneven playing field.

Current interventions supporting the sector in Zambia include:

- Zambia receives continued support from the Beyond the Grid Fund for Africa (BGFA) with US$10 million in funding from Germany and Sweden to be disbursed by 2025.

Sales Trends

Off-Grid solar energy kits

- **Sales of solar energy kits reached 760,800 units in 2024, a 42% increase compared to 2023.**
- The main driver of sales growth since 2020 has been a strong increase in the sales of solar lanterns and multi-light systems, notably in the 1.5-3Wp and 3-10 Wp category.

Appliances

- **With 9,476 units of key appliances sold in 2024, Zambia records a 33% decrease in sales compared to 2023.** The decline in sales is attributed to the discontinuation of reporting by some participants with larger sales in 2024.

Figure 21 - Annual SEKs Sales 2019-2024 - Zambia

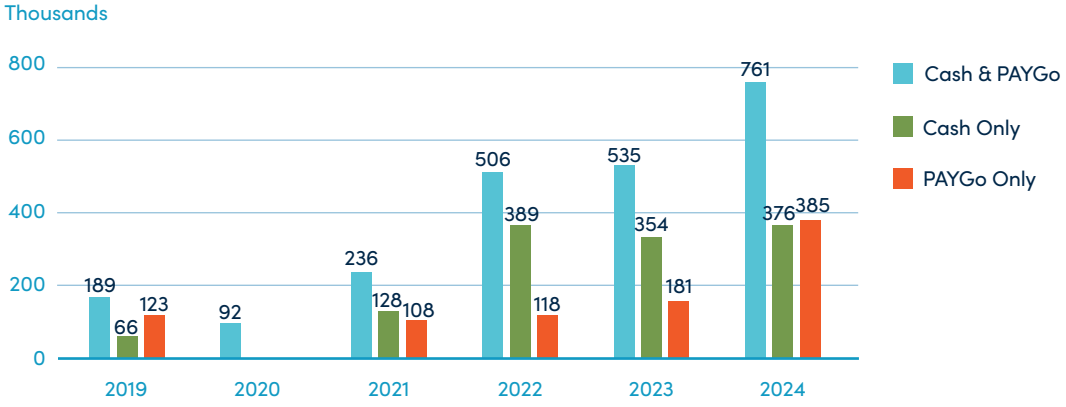
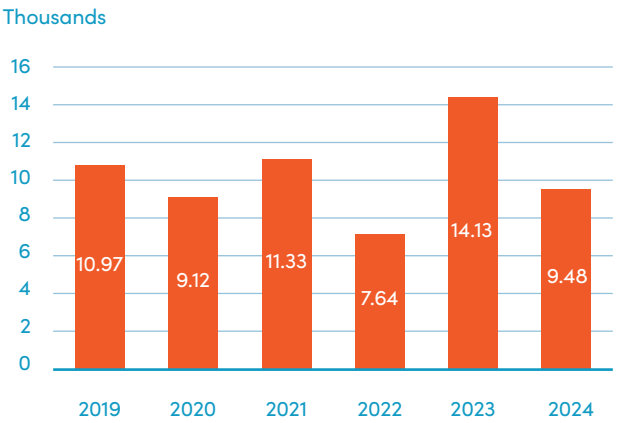


Figure 22 - Annual Key Appliances Sales 2019-2024 - Zambia



25 Cyril Zenda, Zambia Faces 21-Hour Power Cuts as Lake Kariba Dries Up, 2024

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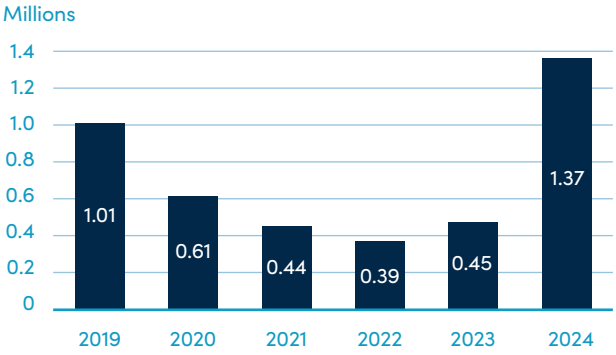
Other East African Countries

Ethiopia

With 1.37 million units sold in 2024, sales of solar energy kits in Ethiopia have increased by 205% compared to 2023.[26] However, it should be noted that a large share of sales for the first half of the year was attributed to humanitarian bulk procurement.

Reported sales of appliances in Ethiopia are negligible. Due to too few companies reporting data, providing any other insights in this report is not possible.

Figure 24 – Annual SEKs Sales - Ethiopia



Madagascar

Sales of off-grid solar products dropped to 138,500 units in 2024, a 27% decrease compared to 2023. Cash sales increased by 8% compared to 2023 while PAYGo sales decreased by 64%.

8,773 key appliances were sold during 2024, a 28% increase from the sales in 2023. Due to a low number of reporting companies and limited historical data, no further details can be provided regarding the appliance sales in Madagascar.

On-going initiatives supporting the sector in Madagascar that have been reported to us include:

- The US$40 million Off-Grid Market Development Fund (OMDF), offering RBF and debt funding for providers of solar lanterns and solar home systems including appliances by the Government of Madagascar, funded by the World Bank and implemented by Bamboo Capital Partners ended in 2024.

Rwanda

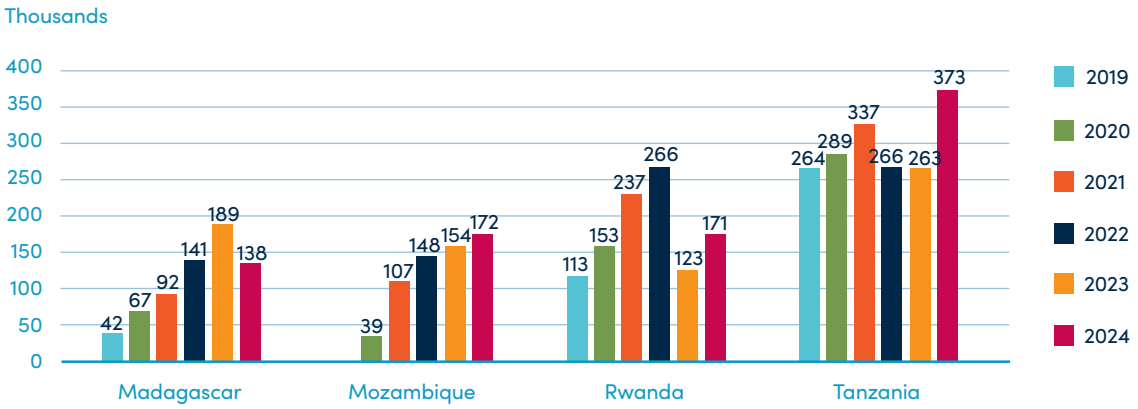
With 170,970 units sold in 2024, off-grid solar energy kits sales in Rwanda increased by 39% compared to 2023. Cash and PAYGo sales both increased compared to 2023; PAYGo sales increased by 19% and cash sales increased by 63%.

3,331 key appliances were sold in Rwanda during 2024, which is a 41% decrease compared to 2023.

On-going initiatives supporting the sector that have been reported to us include:

- In 2020, the World Bank approved a US$150 milllion IDA loan to the Government of Rwanda to improve access to modern energy, of which US$15 million are allocated towards the pro-poor RBF for off-grid solar, complementing US$15 million previously allocated to support off-grid solar through the REF. Under the pro-poor RBF (REF window 5), the government subsidized low-income households' access to solar home systems until 2024.

Figure 23 – Annual SEKs Sales - East Africa



26 The Ethiopian market is mostly a cash market with limited options for consumer financing. Sales that are described as PAYGo in data collected by GOGLA are sales of PAYGo-enabled products, but evidence points to the fact these are also mostly sold cash.

East Africa Insights



Mozambique

With 171,500 solar energy kits sold, sales in 2024 are 11% higher than in 2023. Due to few companies reporting in cash and PAYGo sales in some years, it is not possible to show the numbers in some years.

Appliance sales in 2024 decreased by 61% compared to 2023 with 4,241 units sold. Companies reported sales of fans, TVs, RUs and SWPs, but details cannot be shared in this report due to confidentiality rules.

Mozambique maintained relatively low inflation rates, with the annual rate reaching 4.15% in December. However, the country faced significant challenges due to Cyclone Chido and post-election unrest, which contributed to price[27] increases.

On-going initiatives supporting the sector in Mozambique that have been reported to us include:

- The BRILHO program financed by the United Kingdom and Sweden, and implemented by SNV, has been running since 2019 providing funding (through catalytic grants and RBF) and technical assistance to kick-start businesses in the off-grid sector (SHS, clean cooking and mini-grids).
- Support from the Fundo de Acesso Sustentavel as Energias Renovaveis's (FASER) RBF set up by the Fundação para o Desenvolvimento da Comunidade (FDC) and GIZ, through the Energizing Development (EnDev) and Grüne Bürgerenergie (GBE) programs. The programme supports SHS, improved cookstoves and PUE solutions.

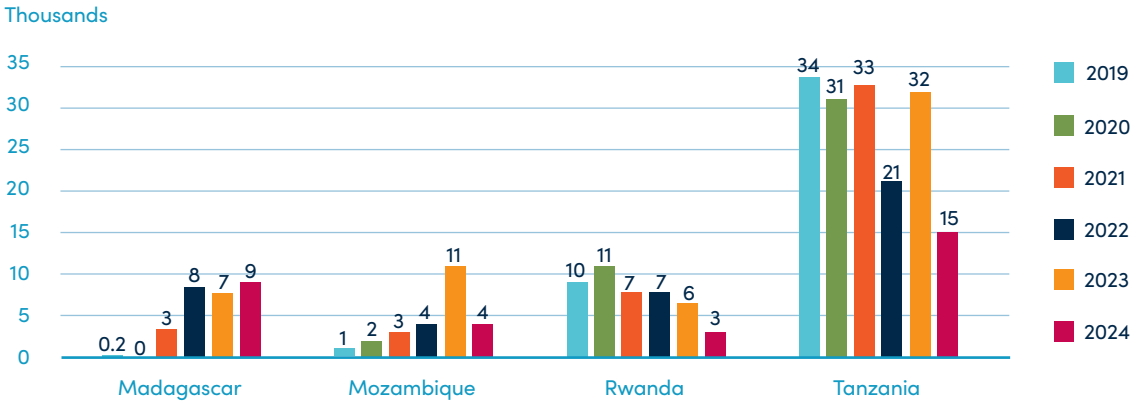
Tanzania

In addition to a large unconnected population, anecdotal evidence points at the need for back-up to the grid as a factor in sales growth in the country.

Sales of solar energy kits in 2024 reached 373,260 units, a 42% increase compared to 2023. Cash and PAYGo sales both grew compared to 2023. PAYGo sales increased by 52% and cash sales increased by 6% compared to 2023.

Key appliance sales, of which 98% are TVs, have decreased by 54% compared to 2023 to reach just above 14,400 units sold.

Figure 25 – Annual Key Appliances Sales - East Africa



27 Trading Economics, Mozambique Inflation Rate – CPI, 2025

West
Africa
Insights

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Regional Sales Trends

Off-Grid Solar Energy Kits

Sales of off-grid solar energy kits in West Africa dropped to **1.14 million units** in 2024, showing a **33% decrease** compared to 2023.

- **Cash sales decreased 31%** year-on-year.
- **PAYGo sales decreased by 35%**, compared to 2023.

Product Trends

- **Lantern sales dropped by 43%** compared to 2023.
- **Multi-light systems decreased by 25%** from the sales number in 2023.
- **SHS sales dropped 30%** compared to **2023**. The largest drop was in the **11-20 Wp** category.

Figure 26 – Annual Evolution of Sales Volumes of SEKs - West Africa

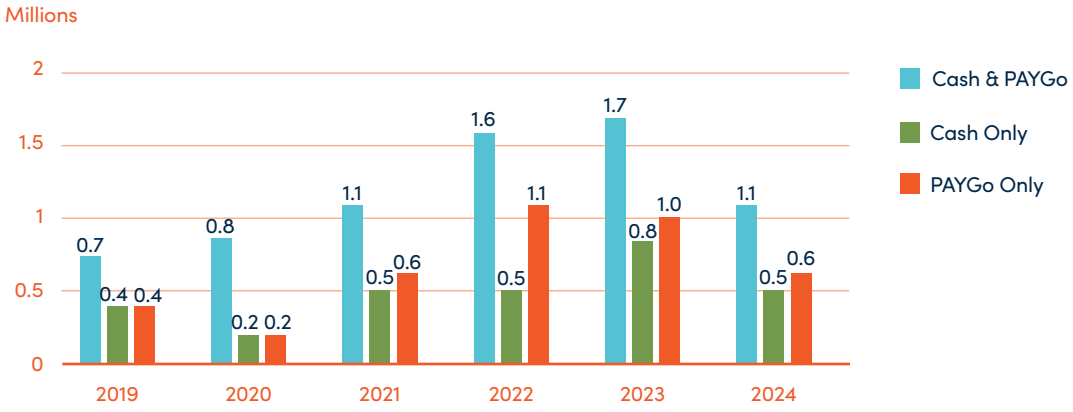
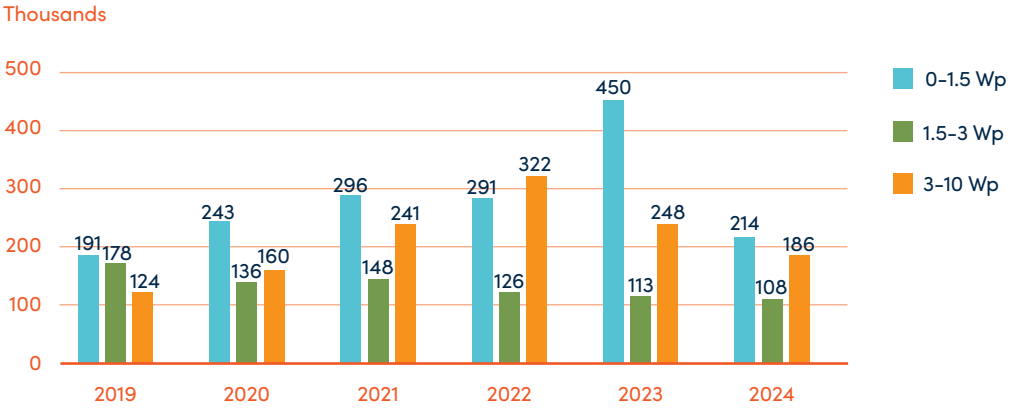


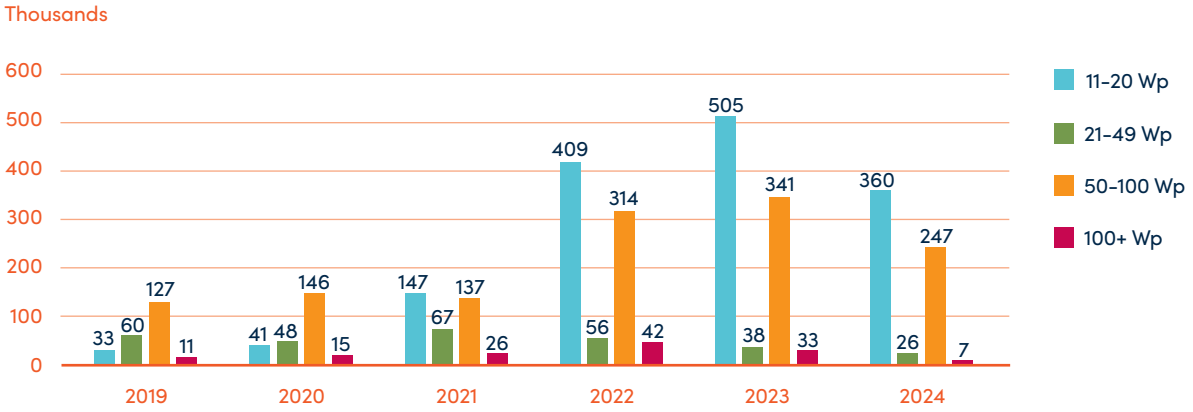
Figure 27 - Annual Lantern and Multi-light System Sales 2019-2024 - West Africa



West Africa Insights



Figure 28 - Annual Lantern and Multi-light System Sales 2019-2024 - West Africa



NOTE:
Countries not featured in this table did not see enough companies reporting to pass the three-data point rule

Off-Grid Solar Appliances

West Africa recorded **352,000** units of key appliances sold, **36% lower** than 2023.

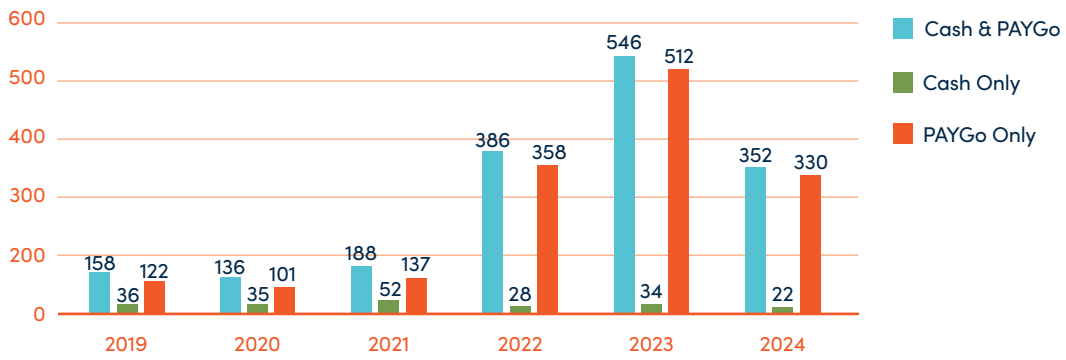
Product Trends

- **TV sales in West Africa totaled 90,477 units in 2024**, representing **38% of Sub-Saharan sales**. This is a 56% decrease compared to 2023. **98% of TVs are bundled with SHS**, mostly large and extra-large sizes.
- **RU sales decreased 31% to 2,166**, making up **56%** of Sub-Saharan RU volume.
- **SWP sales** are not shown due to too few companies reporting the product in the region.
- **Fan sales decreased by 23% to 257,832 units.**

Table 2 - Evolution of Sales Year-on-Year - Key Appliances by Category - West Africa

West Africa	2024	% change from 2023
Key Appliances Sales	352,032	-36%
TVs	90,477	-56%
Fans	257,832	-23%
RUs	2,166	-31%
SWPs		

Figure 29 – Annual Key Appliances Sales - West Africa



West Africa Insights



Nigeria Insights

Background

The Nigerian off-grid solar market has experienced a bit of a slump after a period of accelerated growth supported by the Nigerian Electrification Programme (NEP). The end of the NEP has been compounded by inflation in Nigeria exceeding 34,80% by the end of 2024[28] and the foreign exchange (FOREX) crisis which has been an issue for companies operating in Nigeria.

On-going initiatives supporting the sector in Nigeria that have been reported to us include:

- The Productive Use Appliance Financing Facility (PUAFF), launched in Nigeria in 2022 by CLASP and Nithio with support from GEAPP, provides subsidies and grants to companies offering productive use appliances like solar water pumps, refrigerators, and milling equipment. The goal is to boost income-generating activities, improve energy access, and support market growth across off-grid, mini-grid, and grid-connected sectors.[29]
- The Distributed Access through Renewable Energy Scale-up (DARES) project is a $750 million initiative launched by the World Bank in December 2023 to expand clean energy access in Nigeria, of which $300 million is allocated to standalone solar systems for both household and productive uses. It aims to provide electricity to over 17.5 million Nigerians through the deployment of solar mini-grids and standalone systems, targeting households and approximately 237,000 micro, small, and medium enterprises (MSMEs). The project also seeks to replace more than 280,000 polluting generator sets, contributing to Nigeria's energy transition goals. DARES builds upon the successes of the Nigeria Electrification Project (NEP) and aligns with the country's Energy Transition Plan.[30]

Sales Trends

Off-Grid solar energy kits

Nigeria represents 74% of West African sales. **Nigeria has recorded lower sales volumes in 2024, 847,160 units. This is a 37% decrease compared to 2023.**

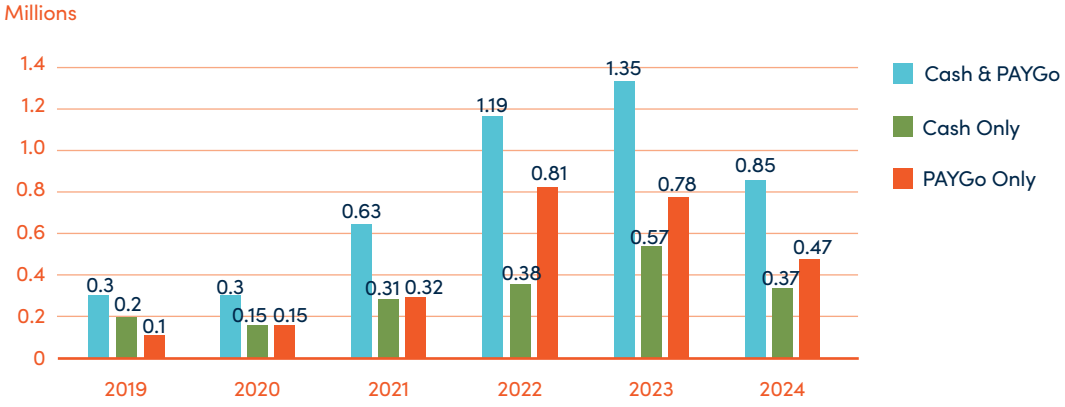
- Both cash and PAYGo sales showed decrease compared to 2023.
- Except for multi-light systems sales increasing by 8%, both lantern sales and SHS sales decreased compared to 2023.

Appliances

Key appliance sales dropped by 38% in Nigeria, with 289,600 units, compared to 2023.

- 2024 TV sales in Nigeria decreased 71% compared to 2023, to 42,894 units.
- Fan sales made up 84% of appliance sales in Nigeria. With 245,100 units sales, compared to 2023, Fan sales dropped 22% in 2024.
- Sales of RUs with a total of 1,006 units declined 29% compared to 2023.
- Although there are sales of SWPs, due to few companies reporting sales, we are unable to report them.

Figure 30 - Annual Sales SEKs – Nigeria



28 Reuters, Nigeria's inflation rate rose to a 28-year high in June 2024, 2024
29 Clean Cooking Alliance, CLASP & Nithio Launch Productive Use Appliance Financing Facility, 2022
30 Rural Electrification Agency, Distributed Access through Renewable Energy Scale-Up (DARES) Project, 2024

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Figure 31- Annual Sales of TVs - Nigeria

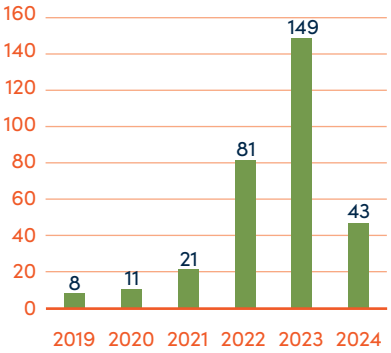


Figure 32- Annual Sales of Fans - Nigeria

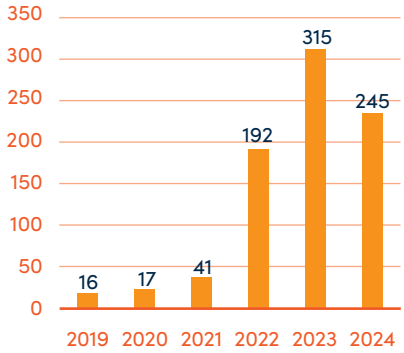
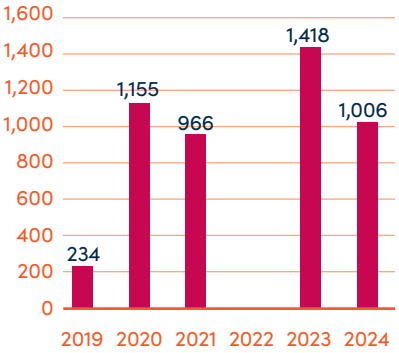


Figure 31- Annual Sales of RUs - Nigeria





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Benin Insights

Background

Despite headwinds, the economy of Benin has proven resilient in 2024 with growth projected to be over 6% and with a relatively low inflation.[31]

On-going initiatives supporting the sector in Benin that have been reported to us include:

- In 2017, the Benin Power Compact from the Millennium Challenge Corporation (MCC) entered into force. Out of a total grant of US$391 million, approximately US$45 million is budgeted for the Off-Grid Electricity Access Project which supports mini-grid and SHS deployment.
- Other initiatives supporting the sector in Benin include a 2019-2021 RBF window from EnDev for solar energy kits and a productive use RBF from Green People's Energy (GBE) for Africa – Benin. The RBF from EnDev included up to €1.3 million for distribution of solar energy kits. The RBF by GBE includes €350,000 for PUE companies and €150,000 to companies that provide credit for PUE customers.[32]

Sales Trends

Off-Grid solar energy kits

- Solar energy kit sales of 2024 dropped to 61,300 units; a 37% decrease compared to 2023.

Appliances

- Appliances sales in Benin dropped to 11,600 units in 2024. This is a 61% decrease compared to 2023. 2,144 units of fans were sold in Benin in 2024, this is 54% lower than the sales in 2023. Too few companies reported appliance sales in Benin for further details to be shared, but TVs and RUs sales were also reported.

Figure 33 - Annual Evolution of Sales Volumes of Solar Energy Kits – Benin

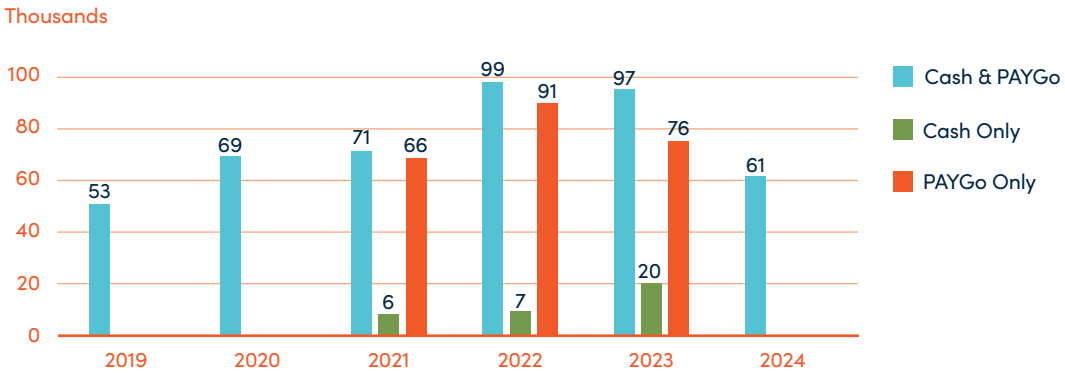
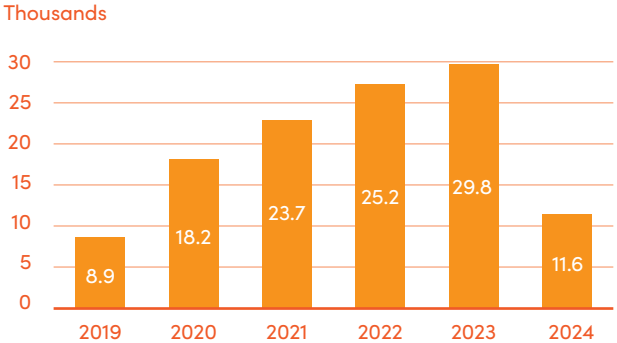


Figure 34 - Annual Sales of Key Appliances - Benin



31 International Monetary Fund, Benin: Fifth Review under the Extended Fund Facility and the Request for Modification of Performance Criteria, 2024

32 More information here

West Africa Insights



Other West African Countries

Burkina Faso

In 2024, Burkina Faso continued to face high levels of insecurity due to ongoing violence, particularly in northern regions. The situation has significantly impacted civilian populations and contributed to broader regional instability.

41,300 units of solar energy kits were sold by manufacturers in 2024. This is a 21% decrease compared to 2023.

1,506 units of key appliances sold in 2024. Compared to 2023, it is a 21% decrease. 65% of total key appliances sales in 2024 were TVs. Due to the insufficient number of companies reporting, data for the other key appliances results cannot be shared in this report.

Interventions currently supporting the sector in Burkina Faso include the Beyond the Grid Fund for Africa (BGFA) which signed its first Results-Based Financing (RBF) project in April 2022.[33]

Côte d'Ivoire

Solar energy kit sales in 2024 decreased by 12% compared to 2023 and resulted in 27,670 units.

In 2024 with 15,120 units sold, sales volumes of key appliances decreased by 8% compared to 2023. TVs, with more than 10,700 units sold, were the second popular key appliances after fans. While due to an insufficient number of companies reporting specific sales data cannot be shared, SWPs and RUs were also reported this round.

Liberia

13,900 units of solar energy kits were sold in Liberia during 2024, a 17% increase compared to 2023. Due to the limited number of companies reporting the sales numbers of key appliances data cannot be shared.

Ongoing initiatives supporting the sector in Liberia that have been reported to us include:

- The Beyond the Grid Fund for Africa (BGFA) began awarding contracts in Liberia in 2022.
- The World Bank (LESSAP) and Endev launched a joint RBF coordinated by Liberia's Rural & Renewable Energy Agency (RREA) and implemented by RREA and BRAC, with the first sales under the program beginning in H2 2024.

Senegal

Senegal experienced a significant decline in inflation, reaching 0.8% year-on-year in December 2024,[34] down from 14.1% in November 2022. This decrease was primarily driven by a reduction in food prices, which had previously been a major contributor to inflation. The Central Bank of West African States (BCEAO) had raised interest rates to combat inflation, and these measures, along with improved agricultural production, contributed to the stabilization of prices.[35]

Sales of Solar energy kits were 17,900 units between January and December 2024. This is a 72% decrease compared to 2023.

6,400 key appliances were sold in 2024. This is a 30% decrease compared to 2023.

Ongoing initiatives supporting the sector in Senegal that have been reported to us include:

- The local agricultural bank has opened a climate funding line focused on renewable energy production and green transition solutions (including SWPs).
- Other developments that benefit the market through 2024 include the USAID Scaling Up Renewable Energy (SURE) Senegal RBF for SWPs.

Togo

Off-grid Solar energy kit sales in 2024 reached close to 86,150 units, a 40% increase compared to 2023. Due to insufficient number of companies reporting, cash and PAYGo sales data distribution cannot be shared in this report.

33 African Power Platform, First BGFA-Funded Project Signed in Burkina Faso, 2022
34 Trading Economics, Senegal Inflation Rate – CPI, 2024
35 World Bank, Senegal Economic Update 2024: Seizing the Opportunity, 2024

West Africa Insights



Too few companies shared appliance sales data to include numbers in this report. Sales reported include TVs and fans.

Ongoing initiatives supporting the sector in Togo that have been reported to us include:

- The CIZO rural electrification program has worked to create an enabling environment for the access to energy sector and especially PAYGo SHS providers. In particular, the customer subsidy program often referred to as "CIZO cheque" introduced in 2019,[36] in which the customer pays only the unsubsidized portion of their monthly PAYGo fee out-of-pocket, has been hailed as a success. Furthermore, the CIZO program's subsidy scheme was extended in 2021 to solar water pumps[37] with a target to distribute 3,000 pumps.[38] Since October 2022, a new module enables members of the diaspora to purchase kits for rural households in Togo.

Figure 36 - Annual Sales of SEKs – West Africa

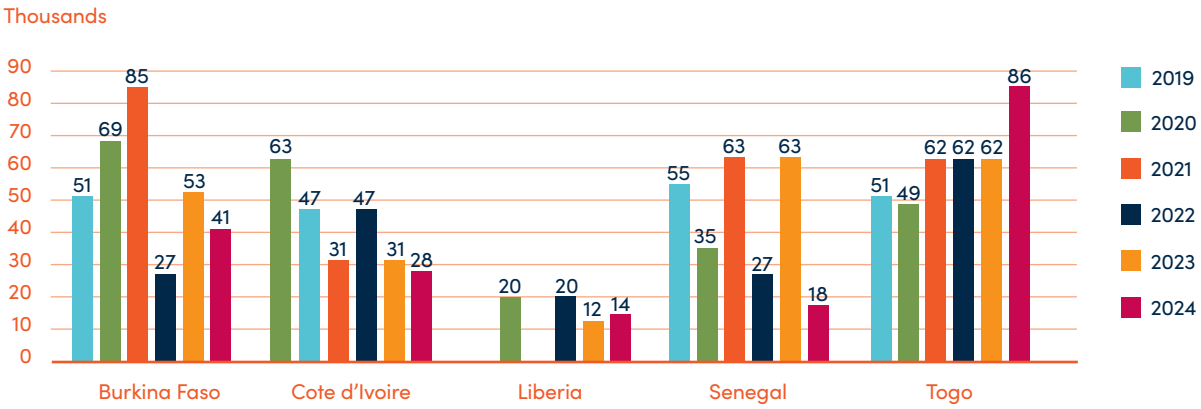
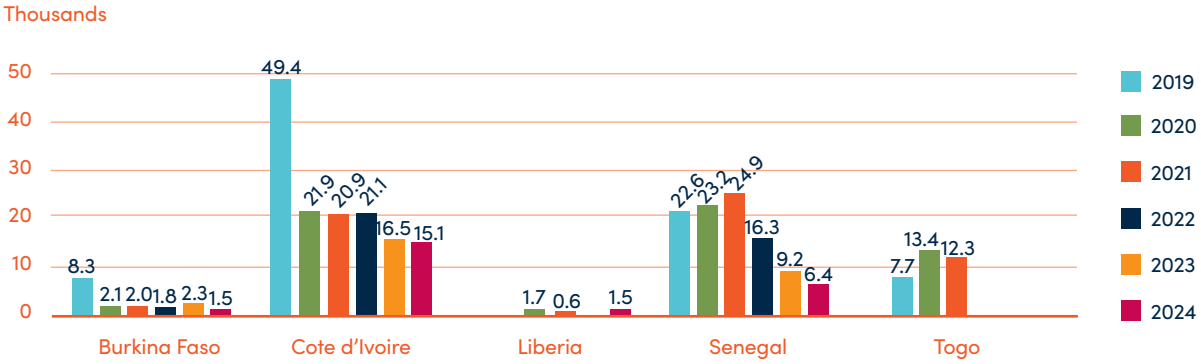


Figure 37 - Annual Sales of Key Appliances – West Africa



37 PV Magazine, EDF s'investit au Togo dans l'irrigation solaire pour les agriculteurs, 2020
38 Togo First, Cizo: Solar-powered irrigation pumps to be set up in rural areas, 2021

Central Africa Insights

Central Africa Insights



Regional Sales Trends

Off-Grid solar energy kits

In 2024 sales of off-grid solar products in Central Africa fell to 284,100 units sold. This is a 12% decrease compared to 2023.

Product Trends

Trends by product category paint a mixed picture. A notable trend is that sales of small solar lanterns (0-1.5Wp) have increased for the last two years.

Off-Grid Solar Appliances

Key appliances sales in **Central Africa decreased by 55% compared to 2023. From the total sales of 14,872 units, 11,570 units were TVs and 3,300 units were fans.** The decrease was dominantly driven by fan and TV sales.

Figure 38 -Annual Sales of Lanterns and Multi-Light Systems – Central Africa[39]

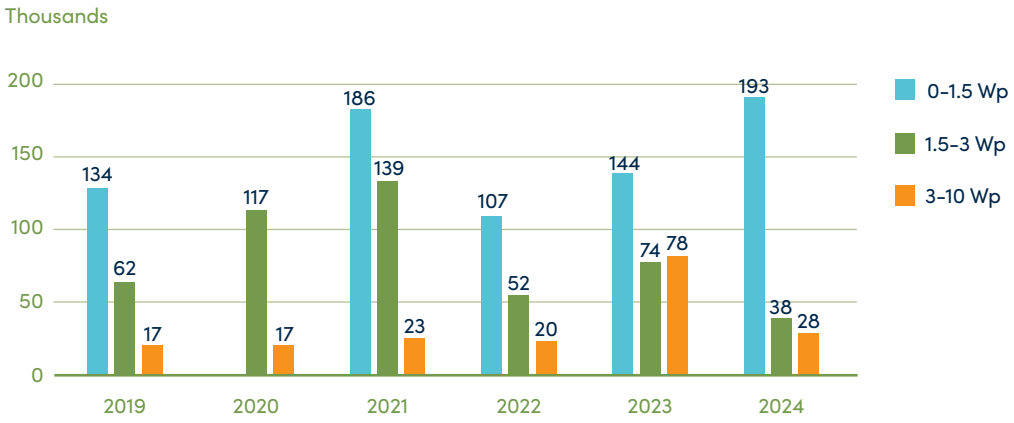
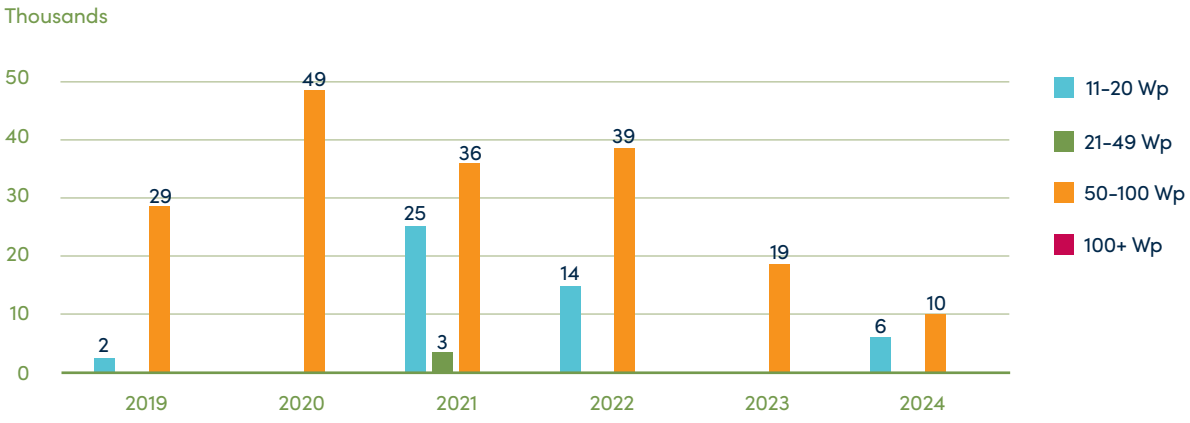


Figure 39 -Annual Sales of SHS – Central Africa



39 Product reclassification means data from 2021 H2 for solar lanterns is no longer directly comparable with data from 2020 H1, H2 and 2021 H2. While this affects multiple markets, the impact is minimal except in Central Africa.

Central Africa Insights



Central African Countries

Cameroon

2024 sales of solar energy kits in Cameroon decreased by 12% compared to 2023, to 47,000 units. Although detailed numbers for each category cannot be shared in this report due to data confidentiality, this decrease was mostly driven by much lower sales of solar lanterns and lanterns with phone charging.

Very few companies reported appliance sales in Cameroon. **2,471 units** of key appliances including TVs, fans and RUs were reported in 2024.

Democratic Republic of the Congo

36,250 units of solar energy kits were sold during 2024, a 43% decrease in sales 2023. 17,080 units were sold cash and 19,170 units were sold through PAYGo. The majority of products sold are SHS.

Close to 9,881 units of key appliances were sold in DRC in 2023. It is a 65% decrease compared to the sales in 2023. 9,315 of these appliances were TVs. Due to an insufficient number of companies reporting specific sales data cannot be shared, however other key appliances were also reported in 2024.

Ongoing initiatives supporting the sector in DRC that have been reported to us include:

- The World Bank's DRC Electricity Access and Services Expansion (EASE) program, which includes an active US$3.5 million RBF scheme.
- The Beyond the Grid Fund for Africa has opened its first call for proposals in the DRC.

Figure 40 - Annual Sales of SEKs – South Asia

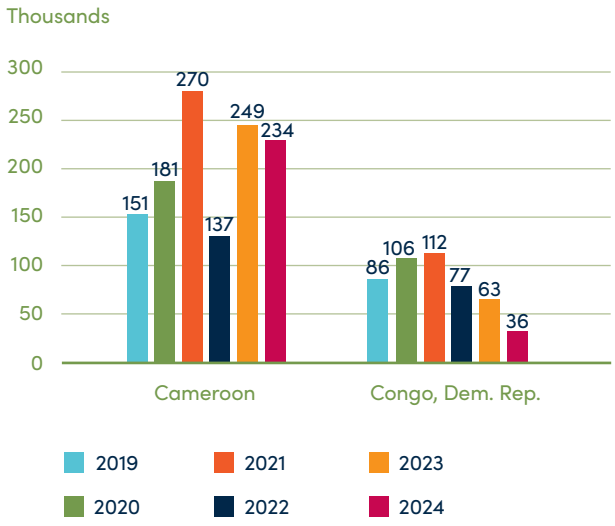
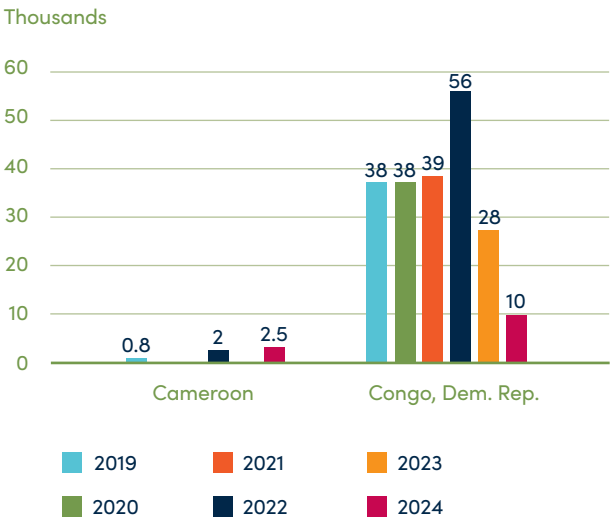


Figure 41 - Annual Sales of Key Appliances – South Asia





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South Asia Insights

South Asia Insights



Regional Sales Trends

Off-Grid solar energy kits

Sales of off-grid solar energy kits in South Asia have decreased by 29% compared to 2023 to reach just above 542,500 units sold. This is the continuation of a trend of lower sales for solar lanterns and plug-and-play kits linked to increased grid electrification and a shift towards component based and hybrid solutions which can be paired with a weak grid connection. Cash and PAYGo sales numbers for some years cannot be shared due to data confidentiality.

Product Trends

Sales in South Asia are predominantly driven by solar lanterns.

Figure 42- Annual Sales of Lanterns and Multi-light Systems – South Asia

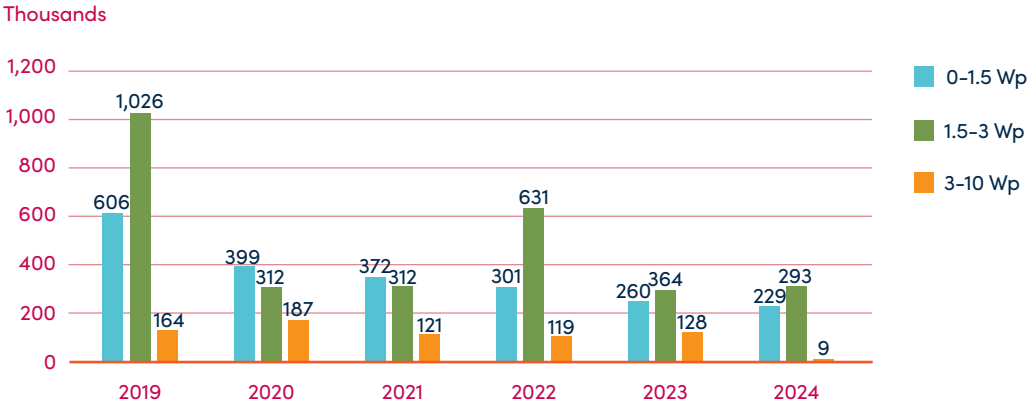
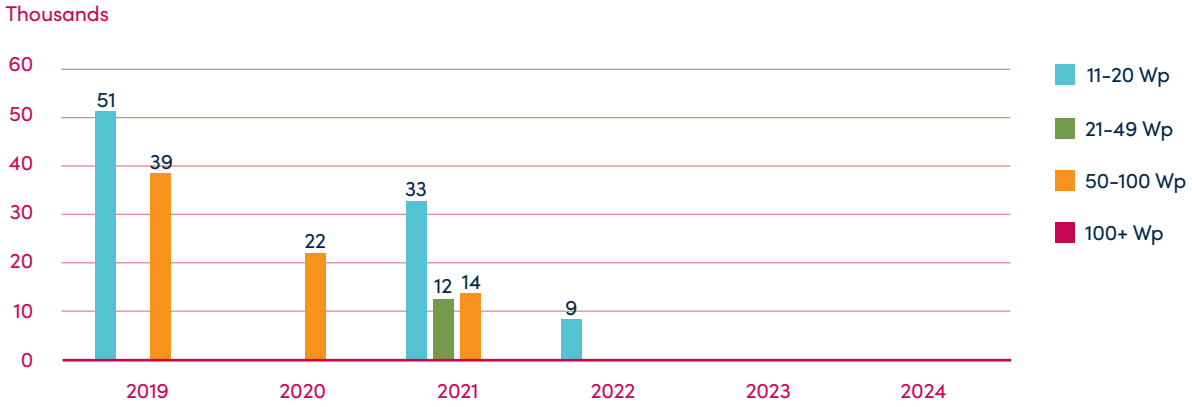


Figure 43- Annual Sales of SHS – South Asia



South Asia Insights



Off-Grid Solar Appliances

Product Trends

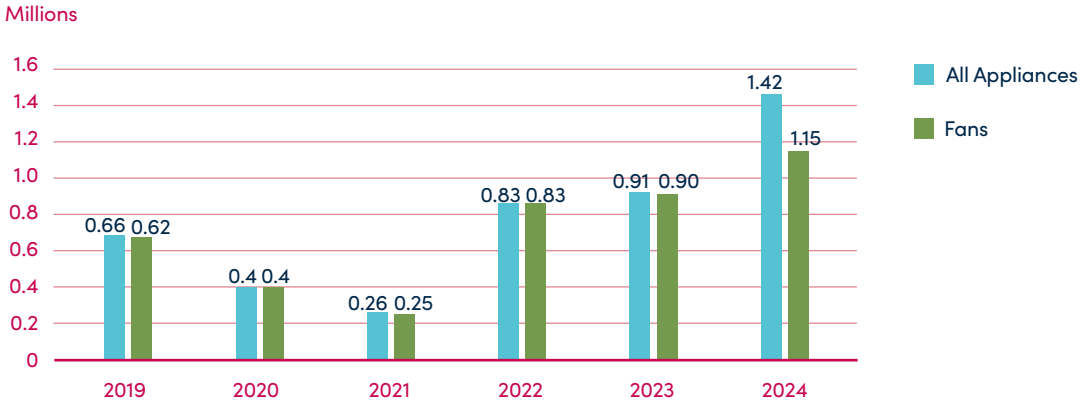
1.41 million units were sold between January and December 2024, more than 70% of which were fans and 20% were SWPs. This is a 56% increase compared to 2023.

Fans play a key role in helping households cope with high temperatures and increasingly frequent strong heatwaves. Larger, more powerful ceiling mounted fans are also typically the largest sellers in the region, followed by pedestal fans and table fans. Fan sales in the region are mainly led by India and Pakistan.

In contrast with trends in Sub-Saharan Africa, fans in South Asia are generally sold separately from a power source and are almost exclusively cash sales. The prevalence of cash in the region can be seen as a result of the limited penetration of PAYGo sales in the region more broadly, and is also applicable to solar energy kits. However, this does not mean that customers do not have access to financing as microfinance institutions are key players in the distribution and financing of off-grid solar and energy-efficient appliances in the region. Furthermore, the product mix in the off-grid energy access market more broadly leans towards component-based systems rather than towards the kits being favored in Sub-Saharan Africa, which limits product bundling.

Due to limited data, no trend analysis or other data points can be shared for the appliances other than fans.

Figure 44 - Annual Evolution of Sales Volumes of Key Appliances – South Asia





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South Asia Insights



India Insights

Background

Sales reported in India have been on a structurally declining trend as the product mix is evolving away from traditional off-grid products like lanterns and plug-n-play kits towards weak-grid products which this report does not capture. Companies in the off-grid sector are adapting to this progressive pivot and diversifying to include weak-grid products in their portfolio. Nonetheless, lanterns and other off-grid solar solutions remain relevant for the Indian market for outdoor usage, as a back-up to the grid or as a primary source ahead of the grid.[40]

Sales Trends

Off-Grid solar energy kit

Sales of Solar energy kits decreased by 30% compared to 2023 and now stands at 505,200 units. Detailed PAYGo and cash sales data cannot be shared in this report due to data confidentiality.

The drop in sales is mostly due to lower sales of small solar lanterns (0-3Wp).

Appliances

308,800 units of key appliances were sold in India between January and December 2024, a 675% increase compared to 2023. Of these, 87% are SWPs. This increase in sales is not linked to market growth but to increased participation in the data collection.

Too few companies reported sales of other appliances, such as fans and RUs, to be included in this report. While fan sales, compared to 2023, were higher; sales of RUs remained at similar levels with 2023 sales.

Figure 45 - Annual Evolution of Sales Volumes of Solar Energy Kits – India

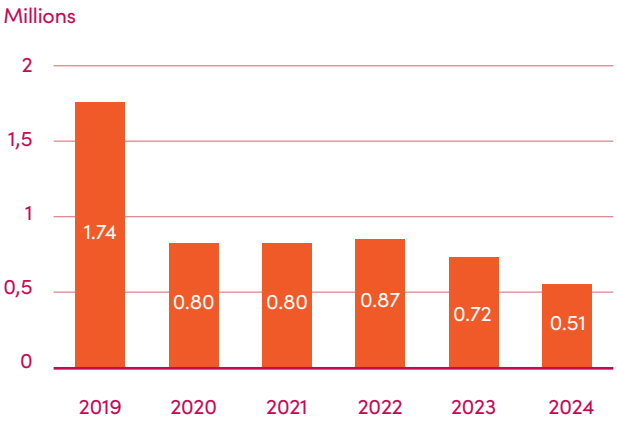
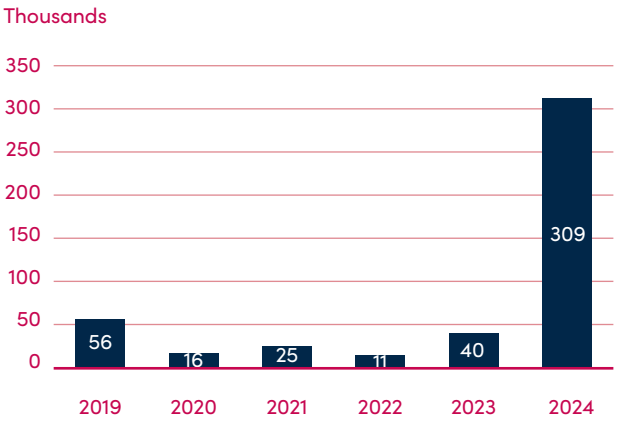


Figure 46- Annual Evolution of Sales Volumes of Key Appliances – India





© Ecozen/Ecofrost

40 Harrington, E., Athavankar, A. and Hsu D. (2020), Variation in rural household energy transitions for basic lighting in India, Renewable and Sustainable Energy Reviews, Volume 119. ISSN 1364-0321. https://doi.org/10.1016/j.rser.2019.109568.

East Asia & Pacific Insights

East Asia & the Pacific Insights



Regional Sales Trends

Off-Grid Solar Energy Kits[41]

Sales of off-grid solar energy kits totaled 270,000 units in the region between January and December 2024. This is a 40% decrease in sales compared to 2023.

Product Trends

Lanterns and multi-light systems recorded lower sales in 2024 compared to 2023.

Figure 47 - Annual Sales of Lanterns and Multi-light Systems – East Asia and the Pacific

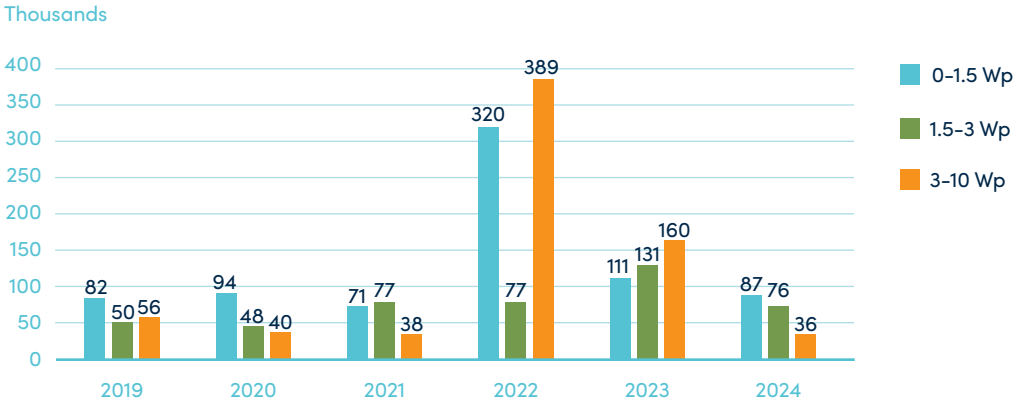
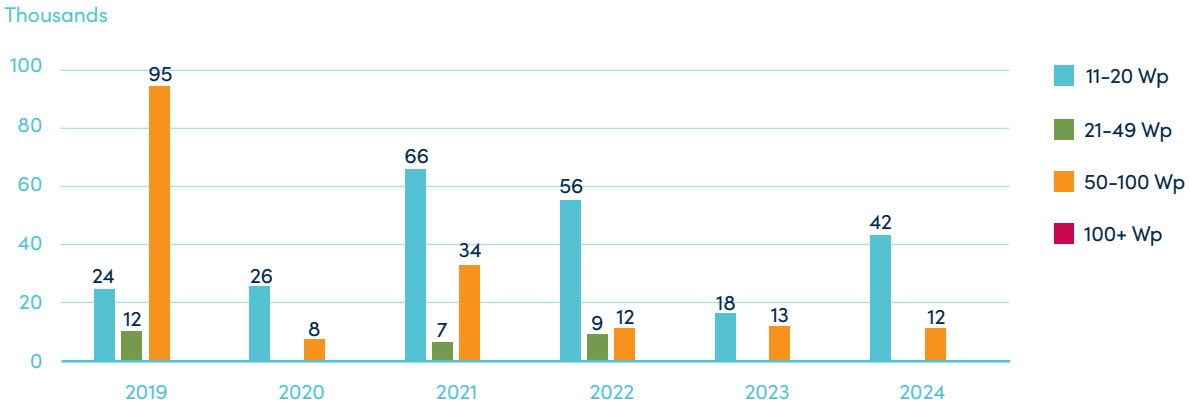


Figure 48- Annual of Sales of SHSs– East Asia and the Pacific



41 The sales of solar energy kits for January–December 2022 to East Asia and the Pacific presented in this report includes unusually high units sold to China. This is usually not the case. However in 2022 H2 several companies were unable to report sales to the country of destination where they will be sold by distributors and instead reported those sales to China. These sales are counted as part of Global sales.

East Asia & the Pacific Insights



Off-Grid Solar Appliances

28,000 units were sold between January and December 2024, a 15% increase compared to 2023. The off-grid appliance sector remains more nascent in the region and sales data does not indicate clear trends as of yet. Among appliances reported this round, fans represent 95% of volumes.

East Asia & the Pacific countries

Papua New Guinea

Papua New Guinea (PNG) experienced a significant return to growth, with the economy expanding by 4.3%. Despite ongoing challenges, Papua New Guinea's economy is projected to grow by approximately 4.2% in 2024, with growth driven by the resource sector and supported by higher prices of agricultural exports such as coffee and cocoa.[42]

Off-grid solar energy kit sales totaled 143,000 units in 2024. This represents a 33% increase in volumes compared to 2023.

Too few companies reported sales of appliances in 2024 to include the data in this report. Sales of fans, RUs and TVs were reported.

Papua New Guinea remains a fairly nascent market for off-grid solar. There are currently several donor programs supporting the sector:

- The 'Pawarim Komuniti' grant program set up by the Australian Department of Foreign Affairs and Trade (DFAT) began implementation in early 2021. However, further funding rounds of the project will focus on mini-grids.[43]
- Further support is coming from the USAID-led PNG Electrification Partnership (PEP) which was announced in November 2020. As part of this program, close to US$800,000 have been dedicated to grants for off-grid solar.[44]

Philippines

Sales of off-grid solar energy kits totaled 38,150 units in the region between January and December 2024. This is a 59% increase in sales compared to 2023.

Too few companies reported sales of appliances in 2024 to include the data in this report.

Ongoing initiatives supporting the sector in Philippines that have been reported to us include:

- In 2023, BKCF awarded a $300,000 grant to Light of Hope PH for deploying portable solar kits in off-grid communities in Surigao del Norte. The two-year project continued through 2024, providing clean energy solutions to disaster-prone, low-income households.[45]

Vanuatu

Off-grid solar energy kit sales totaled 23,000 units in 2024. This represents a 33% decrease in volumes compared to 2023.

Too few companies reported sales of appliances in 2024 to include the data in this report.

Ongoing initiatives supporting the sector in Vanuatu that have been reported to us include:

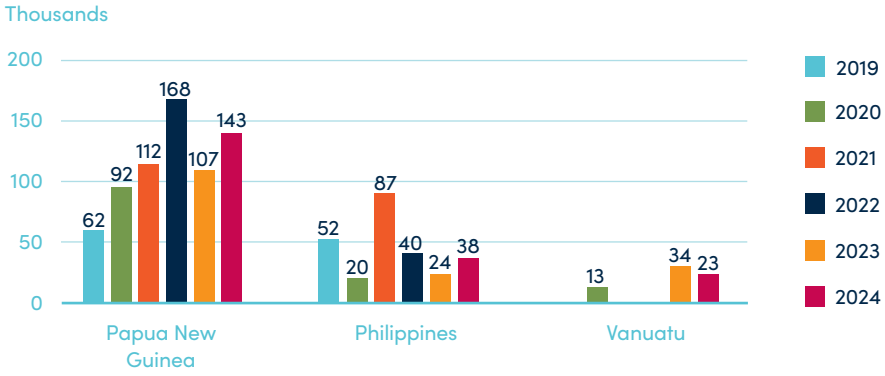
- The National Green Energy Fund (NGEF) continued to expand off-grid solar energy access, particularly in rural areas. In 2024, the NGEF approved over VT190 million for solar projects, advancing the country's goal of universal energy access under its National Energy Road Map.[46]
- Under the Australian Government's Pacific Climate Infrastructure Financing Partnership (PCIFP), the Australian Infrastructure Financing Facility for the Pacific (AIFFP) announced new business partnerships in July 2024 to deliver off-grid renewable energy to remote communities in Vanuatu. One partnership focuses on managing and reducing e-waste from solar energy systems through a circular economy project involving the University of New South Wales and local Vanuatu organizations.[47]

42 United Nations Development Programme, Papua New Guinea Economic Brief – Issue 2 (2024), 2025
43 Pawarim Komuniti, Now Open 2024, 2024
44 DevelopmentAid, USAID Provides an Additional $1.2M and New Private Sector Partnership for Clean Energy in Papua New Guinea, 2023
45 BIMP-EAGA, Portable Solar Kits Empower Off-Grid Communities in Surigao del Norte, 2025
46 National Green Energy Fund, News, 2025
47 Australian Infrastructure Financing Facility for the Pacific, Powering the Pacific and Timor-Leste with three new Off-Grid Renewable Energy Partnerships, 2024

East Asia & the Pacific Insights



Figure 49- Annual of Sales of SEKs– East Asia and the Pacific





© Greenlight Planet

“Global Impact”

Global Impact

Estimated Impact of Off-Grid Solar Energy Kits and Appliances Sold by Affiliates

520.6 million
people cumulative living in a household with improved energy access through GOGLA affiliates

3.6 million
people currently using their SHS to support an enterprise

138 million
people currently living in a household with improved energy access[48]

120 million
metric tons of CO2e emissions avoided, over the expected lifetime of all off-grid solar energy kits sold since July 2010

$16.7 billion
savings on energy expenditure, over the expected lifetimes of all portable lanterns or multi-light systems sold since July 2010

34,500
metric tons of CO2e emissions avoided, over the expected lifetime of all TVs and fans sold since July 2018

6.7 million
people currently undertaking more economic activity as a result of using off-grid solar energy kits

$9.9 billion
additional income generated as a result of off-grid lighting system ownership, over the expected lifetime of all off-grid solar energy kits sold since July 2010

7.7 million
people currently benefiting from high performing, off-grid televisions

18.8 million
people currently accessing cooling service from high performing, off-grid fans

2.6 million
people currently benefiting from high-performing solar water pumps

143,000
people currently accessing cooling service from high performing, off-grid refrigeration units

48 In this context, 'improved' is used to reflect lighting and energy provided by appropriate (less expensive, less dangerous, better quality) technologies such as solar, instead of baseline technologies such as kerosene lanterns, battery lights, candles, or even poor-quality solar products etc.

Global Impact

Energy Access

GOGLA affiliates have cumulatively provided access to energy to over 520.6 million people based on sales reported to GOGLA alone. From these affiliate sales, 138 million people are currently benefiting from improved energy access through an off-grid solar product.

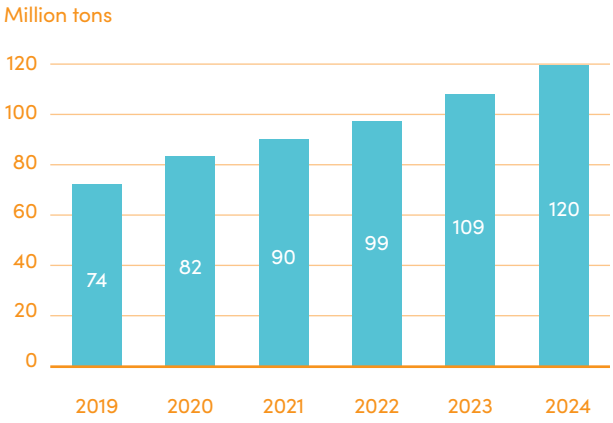
Economic Impacts of off-grid solar solutions

6.7 million people are currently undertaking more economic activity as a direct result of owning an off-grid solar energy kit. Cumulatively, economic opportunities unlocked or improved through ownership of off-grid solar products has led to US$9.9 billion in additional income generated by customers since 2010. Coupled with the savings that smaller off-grid products, such as lanterns and multi-light kits, have created for households, the benefit to the finances of millions of low-income households is over US$26.6 billion since 2010. In particular, off-grid solutions are boosting economic opportunity across rural and peri-urban communities. An estimated 3.6 million small and micro-enterprises are currently supporting their activity with off-grid solar products. The majority of these are based in rural regions.

Environment & Air Pollution

Total CO2e emissions avoided through kerosene replacement for lighting since 2010 (across product lifetime) now exceeds 120 million metric tons. This is the equivalent of taking 32 coal-fired power plants offline for a year.[49] Emissions reductions also have critical health benefits. Emissions are avoided when off-grid solar solutions replace the use of toxic kerosene lamps. Research shows that inhalation of kerosene can lead to respiratory illness, pneumonia and tuberculosis[50,51] and that its most damaging effects are on women and children. Removing kerosene pollution from homes significantly improves air quality and health. Emissions are also avoided when solar appliances replace appliances powered by diesel generators.

Figure 50 -Annual Evolution of CO2e Emissions Avoided Through Usage of Solar Energy Kits Cumulatively - World



Emissions avoided by high-performing fans and TVs since July 2018 are already close to 34,460 metric tons. This is equivalent to taking 8,038 petrol-powered cars off the road for a year.[52]

Access to High-Performing TVs

An estimated 7.7 million people are benefiting from the use of off-grid TVs and they are being used in 149,700 businesses. These numbers have decreased compared to 2023 as sales have decreased significantly in 2024 and were lower than the number of TVs estimated to have reached their end of life during that same period.

TVs and other communication devices, such as radios and mobile phones, provided vital access to access health information, educational programs and news during the pandemic, and they continue to both bring communities together, and connect them with important knowledge. An estimated 6.8 million people currently have improved access to information through news, current affairs and political programs they can access on their high-performing TVs sold by affiliates.

49 United States Environmental Protection Agency (2021), Greenhouse Gas Equivalencies Calculator.
50 Bates et al. (2013), Acute Lower Respiratory Infection in Childhood and Household Fuel Use in Bhaktapur, Nepal.
51 Pokhrel et al. (2010), Tuberculosis and Indoor Biomass and Kerosene Use in Nepal: A Case–Control Study.
52 United States Environmental Protection Agency (2021), Greenhouse Gas Equivalencies Calculator.

Global Impact

Access to High-Performing Fans

High-performing fans are currently benefiting over 18.7million people and are being used within 107,800 businesses.

Predominantly sold in South Asia, fans are a critical tool to combat heat stress. With climate change leading to longer and more pronounced periods of intense heat, the importance of cooling systems to keep body temperature at a safe level cannot be understated - and high efficiency, off-grid technologies have a significant role to play. An estimated 17.6 million people currently experience improved thermal comfort from a high-performing fan sold by affiliates.

Access to Productive Appliances

In addition to the productive use of solar energy kits, half a million solar water pumps and 30,000 refrigeration units are currently deployed in households, business and farms providing additional support for economic activity in off-grid and weak-grid markets.

Based on the assumptions in the Off- and Weak-Grid Appliances Impact Assessment Framework, this translates into:

- An estimated 2.6 million people currently benefiting from access to a solar water pump sold by affiliates through agricultural outcomes or improved access to water
- A further 143,000 people are currently benefiting from high-performing RUs sold by affiliates, reducing food wastage and improving food security. Research has also shown that RUs sold by affiliates are likely to be used for income generating activities by a majority of customers.[53]



© ZOLA

53 Efficiency for Access and 60_decibels, Uses and Impacts of Off-Grid Refrigerators, 2022

Global Impact

Table 2 - Global Impact by Product Category - SEKs

Product Categories	People with improved energy access - cumulatively	People with improved energy access - currently
All categories	**520.7 million**	**137.6 million**
0-1.5 Wp	150.5 million	40.3 million
1.5-3Wp	231.5 million	33.6 million
3-10Wp	78.7 million	28.7 million
11-20 Wp	20.4 million	10.6 million
21-49 Wp	16.4 million	9.2 million
50-100 Wp	18.5 million	12.5 million
100+ Wp	4.7 million	2.7 million

Product Categories	People undertaking more economic activity	People using products to support enterprise	People that spend more time working	Additional income generated - cumulatively
All categories	**6.7 million**	**3.6 million**	**3.4 million**	**US$ 9.9 billion**
0-1.5 Wp	1.2 million	0.8 million	0.4 million	US$ 1.5 billion
1.5-3Wp	0.9 million	0.7 million	0.3 million	US$ 2.3 billion
3-10Wp	2.4 million	1.2 million	1.4 million	US$ 3.4 billion
11-20 Wp	0.8 million	0.3 million	0.4 million	US$ 0.9 billion
21-49 Wp	0.5 million	0.2 million	0.3 million	US$ 0.7 billion
50-100 Wp	0.7 million	0.3 million	0.4 million	US$ 0.7 billion
100+ Wp	0.2 million	0.07 million	0.1 million	US$ 0.3 billion

NOTE:

- Impact is estimated using the GOGLA Standardized Impact Metrics for the Off-Grid Solar Energy Sector. Please note that the current approach is based on best available research information and data. All numbers calculated using the metrics should be interpreted as estimates.
- Lanterns 0-1.499Wp include one light and no mobile charging, lanterns 1.5-2.999Wp one light and mobile charging, and multi-light systems 3-10.999Wp at least two lights and mobile charging. Solar home systems >11Wp are classified based on panel wattage.

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Table 3 - Global Impact by Product Category - Key Appliances

Appliance types	Number of people who gained first time access to an off-grid appliance - cumulative	Number of people who currently have access to an off-grid appliance	Number of customers/HH currently accessing off-grid appliances through flexible financing	Tonnes of CO2e emissions avoided - cumulative
TVs	16,072,962	7,684,646	1,318,717	34,457
Fans	30,710,118	18,771,936	1,010,671	34,151
RUs	258,753	142,667	15,188	2,728
SWPs	2,609,658	2,557,345	50,326	2,100,025

Appliance types	Number of People using their appliance to support enterprise	No. of people generating additional income	Number of people accessing information through TV	Number of people who are experiencing improved thermal comfort
TVs	149,701	66,534	6,839,335	NA
Fans	107,781	Unavailable	N/A	17,645,620
RUs	Unavailable	Unavailable	N/A	NA
SWPs	Unavailable	Unavailable	N/A	NA

NOTE:

- Impact is estimated using the Off- and Weak-Grid Appliances Impact Assessment Framework developed by Efficiency for Access and Rural Senses/SVT and the Standardised Impact Metrics for High-Performing Appliances: Fans and TVs developed by GOGLA and Efficiency for Access. Please note that the current approach is based on best available research information and data. All numbers calculated using the metrics should be interpreted as estimates.
- Results are marked as "N/A" when a given metric is not applicable for the appliance type considered. Results are marked and "Unavailable" where the metric is applicable but is not yet available as part of this data collection and reporting exercise.



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Table 24 - List of Participating Companies

#	Company Name	Off-Grid Solar Energy Kits	Off-Grid Solar Appliances
1	Afreesun Limited	MAN	-
2	Agsol Kenya Ltd	-	MAN
3	Alternative Energy Technologies Group (Altech Group)	DIS	DIS
4	BAOBAB+	DIS	DIS
5	Barefoot Power	MAN	MAN
6	Bboxx Ltd.	MAN&DIS	MAN&DIS
7	BioLite	MAN	MAN
8	Bonergie SARL	DIS	DIS
9	Bright Products AS	MAN	-
10	Clamore Solar	-	MAN
11	d.light design. Inc.	MAN	MAN
12	Davis & Shirtliff Ltd.	-	MAN
13	Devidayal Solar Solutions Pvt. Ltd.	-	MAN
14	Easy Solar (Azimuth)	DIS	DIS
15	Ecozen Solutions Pvt Ltd	-	MAN
16	Energy + SA	DIS	DIS
17	ENGIE Energy Access	MAN	MAN
18	ennos ag	-	MAN
19	Fena Solar Limited	DIS	DIS
20	FINCA PUS LLC T/A BrightLife	DIS	DIS
21	FUTUREPUMP LIMITED	-	MAN
22	GLOBAL ICE TEC AG	-	MAN
23	Goodbook Investments/Kumusha Power	DIS	-
24	GREENLIGHT PLANET INCORPORATED	MAN	MAN&DIS
25	IONA	MAN	-
26	JUA Energy Company Limited	MAN	MAN
27	Khursheed Fans	-	MAN
28	Koolboks	-	MAN
29	Lagazel	MAN	-
30	LIB Solar	DIS	DIS
31	Lightbox Africa SA	DIS	DIS
32	Namene Solar Lights Limited	MAN	-
33	Natfort Energy	DIS	DIS
34	OKRA SOLAR PTY LTD	MAN	-
35	OmniVoltaic Energy Solutions Company Limited	MAN	MAN
36	Osomobegbe Global Ventures Limited	DIS	MAN&DIS

#	Company Name	Off-Grid Solar Energy Kits	Off-Grid Solar Appliances
37	Plug The Sun Limited	MAN	-
38	Qingdao Sunshine New Energy Co., Ltd	MAN	-
39	Qotto	MAN&DIS	MAN
40	RDG Collective	MAN&DIS	MAN&DIS
41	Renewgen AS	DIS	-
42	Roofstar Technology Co., Ltd	MAN	-
43	Savanna Circuit Technologies Limited	-	MAN
44	SelfChill	-	MAN
45	SHENZHEN JCN NEW ENERGY TECHNOLOGY CO.,LTD	MAN	-
46	Shenzhen Power Solution Ind Co., Ltd.	MAN	MAN
47	Shenzhen Solar Run Energy Co.. Limited	MAN	MAN
48	Simusolar. Inc.	-	MAN
49	Sinoware Technology Co.. Ltd	MAN	-
50	Solar Panda	MAN	MAN
51	Solar Sister	DIS	DIS
52	Solar Village AS	MAN	MAN&DIS
53	Solarcool Ltd	MAN&DIS	MAN&DIS
54	SOLEKTRA RWANDA LIMITED	DIS	-
55	Spark	MAN	MAN
56	Starco Fans	-	MAN
57	StarTimes Solar	MAN	MAN
58	SunCulture	MAN	MAN
59	SUNKEN LIMITED	-	DIS
60	SunnyMoney (SolarAid)	DIS	DIS
61	Tamoor fans	-	MAN
62	The Sure Chill Company	-	MAN
63	TotalEnergies Offgrid Solar Solutions SAS	MAN&DIS	DIS
64	upOwa	DIS	DIS
65	Villageboom	MAN	-
66	VITALITE Senegal	DIS	DIS
67	World Jolly Generation Engineering and Trading	DIS	-
68	Zimpertec Gmbh & Co KG	MAN	MAN&DIS
69	Zola Electric	MAN	MAN
70	Zuwa Enegry (Pty) Limited	DIS	DIS

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