sun king

April, 2024

Sun King Energy Solutions

Making Solar the Smart Choice for Governments, NGOs, and Businesses

Introducing Sun King.

Founded in 2007, Sun King is the world's leading off-grid solar company. We manufacture, install, and finance solar products for the 1.8 billion people who lack reliable access to electricity. Years of experience addressing electrification challenges in Africa and Asia have shaped our model that tackles three critical challenges: energy, accessibility, and finance.

1. Energy: To replace gas generators and kerosene lighting, Sun King designs its own green energy products that outperform fossil fuel-based solutions and eliminates the practical obstacles that block people from adopting solar.

2. Access: Our hyperlocal workforce, with 300 shops and 26,000 sales agents across Africa and Asia, facilitates customers' access to technology and allows us to identify and install suitable solar products for each client.

3. Finance: We break down affordability barriers by offering customers loans to finance their solar systems through small instalments over an agreed period.

Historically focused on selling, installing, and servicing individual solar products for households and businesses, Sun King expanded its focus in 2023 by launching our new 'Energy Solutions' service. This service leverages our direct-to-consumer operations to cater to institutional clients looking to transition their multi-facility operations to solar in challenging off-grid or weak-grid locations.

From one-room schoolhouses to small hospitals, each system is tailored to the facility's needs, ranging from 200 Wp to 20 kWp of solar power, along with requisite battery storage, and smart, GSM-enabled inverter technology. This enables loads for lighting, refrigeration, ventilation, educational devices, medical equipment, and office equipment to function smoothly. Sun King has a proven track record of installing solar solutions in rural, hard-to-reach facilities, including schools, health centres, and administrative offices. We offer comprehensive system configuration and project management, site surveys, product delivery, installation, and ongoing remote performance monitoring and service.

This document details how Sun King collaborates with governments, implementing partners, NGOs, businesses, and foundations to develop sustainable energy solutions through our products and services. Together, we can overcome barriers that prevent communities, economies, and businesses from realising their full potential.

Introducing Sun King Energy Solutions

Establishing a dependable energy supply is an expensive and time-consuming challenge for governments, businesses, and NGOs operating in areas without reliable access to the traditional electrical grid. Sun King is the leading off-grid solar provider globally. With over 132MW of solar deployed across over 20 million homes, businesses, and public buildings across Africa and Asia, Sun King uses its vast technical and practical experience to deliver suitable solar solutions to education, healthcare, humanitarian, and commercial facilities.

Sun King offers an end-to-end service. In other words, we do it all. We design our own solar systems, install them, monitor performance, and manage and maintain the systems on your behalf. Our partnerships are designed for the long term, allowing us to strike ongoing service agreements and provide uptime-guaranteed 'energy as a service' arrangements to suit your specific requirements.

Sun King stands at the forefront of the solar and energy storage industry. We offer ready-made and bespoke solutions tailored to diverse organisations' specific requirements.

Clean, Affordable Energy
Dependable solar can provide 24/7 power without the environmental and financial costs associated with polluting generators. Our solutions offer up to 41% greater cost efficiency than traditional diesel generators over a five-year period.

End-to-End Solutions
Sun King is a one-stop-shop that encompasses pre-installation energy assessments, selection, and installation of appropriate products, as well as post-installation evaluations, audits, and analyses. With Sun King's expertise, you can smoothly transition your buildings to solar, bypassing the hassle of multiple vendors and technologies.

Reliable Service
Leading the off-grid solar sector, Sun King ensures reliable and consistent power with expert, local Africa- and Asia-based teams, performance guarantees, flexible warranty options, and remote monitoring. Sun King has the talent, products, and procurement channels to fulfil performance agreements and maintain a consistent energy supply.

Sun King's Impact, At a Glance

(Statistics updated: April, 2024)

132 megawatts
of solar installed

23 million
solar products sold

$890 million
of solar loans extended to clients

40+ countries
where Sun King products are sold in large quantities

Why Off-Grid Solar?

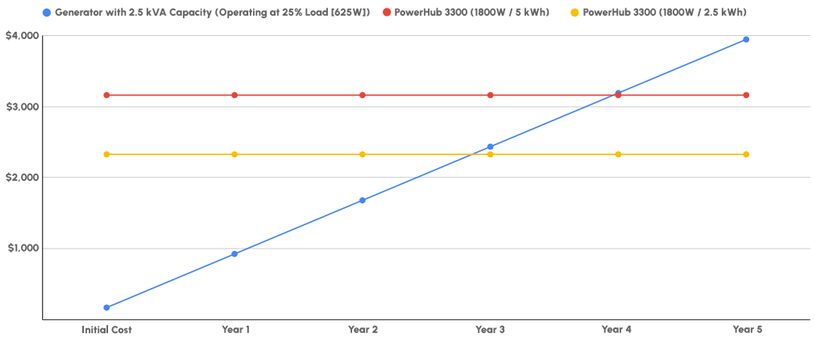
The Off-Grid Opportunity

Nearly one billion people around the world lack access to electricity, and millions more have unreliable access. The widespread use of diesel generators to fill this gap has significant implications in terms of cost, environmental impact, and health consequences.

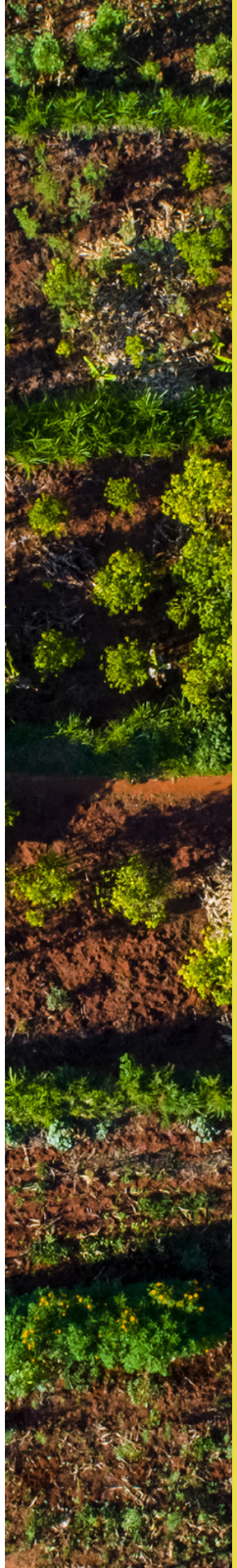
Globally, generator customers spend on average $0.30/kWh on fuel alone, totaling $28-$50 billion, with operations and maintenance accounting for an additional 10-20%. Generators consume 40-70 billion litres of fossil fuel annually, emitting over 100 megatonnes of CO_2e into the atmosphere each year.

Now is the time to look at off-grid solar as part of the solution to combatting climate change and broadening energy access. Solar technology is a clean, cost-effective, zero-emission option for companies and communities alike. Solar power is a critical tool to help government institutions, programmes, and businesses meet their national and organisational climate targets — and Sun King is leading this movement.

Graph: Cost Comparison of Sun King PowerHub 3300 Solar System vs. Diesel Generator Equipment and Fuel in Nigeria, 2024



The graph above illustrates the cost comparison between two different configurations of the Sun King PowerHub solar systems and a diesel generator in Nigeria for the year 2024. It depicts the estimated cumulative cost over five years.



Why Sun King?

Sun King is the largest off-grid solar provider in the world. The company designs, distributes, finances, and installs rooftop and portable solar systems. This integrated approach ensures that we can craft products and services with unparalleled speed and precision, addressing the specific demands of the clients we serve at scale.

Harness Significant Technological Progression

Sun King is at the forefront of the rapidly evolving off-grid solar sector, continually integrating the latest advancements in battery storage and solar photovoltaic (PV) technology — enabling us to produce ever more powerful solar products at a lower cost.

Cost-Effective for Off-Grid and Weak-Grid Customers

Solar is the 'right-fit' option for areas off the grid or with unreliable access to the grid. Sun King's products are fast to deploy and the most cost-effective option for many use cases. Over a five-year period or less, solar is more cost effective than the ubiquitous diesel generator.

Aligns with UN Development and Climate Targets

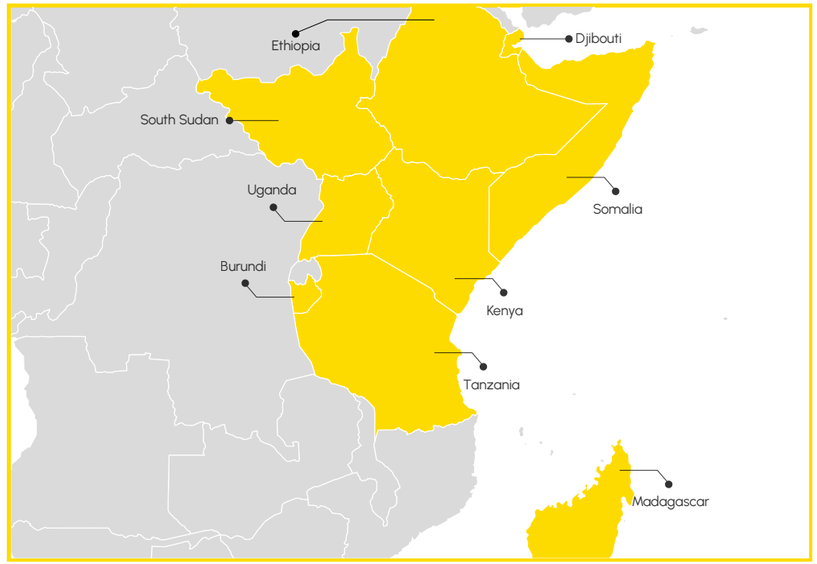
With Sun King's locally led model, we provide clean, cost-effective power while creating green jobs that help Africa and Asia to meet the SDGs and UN climate targets at a critical time.

Solar Creates Quality, Local Green Jobs in Areas of High Unemployment

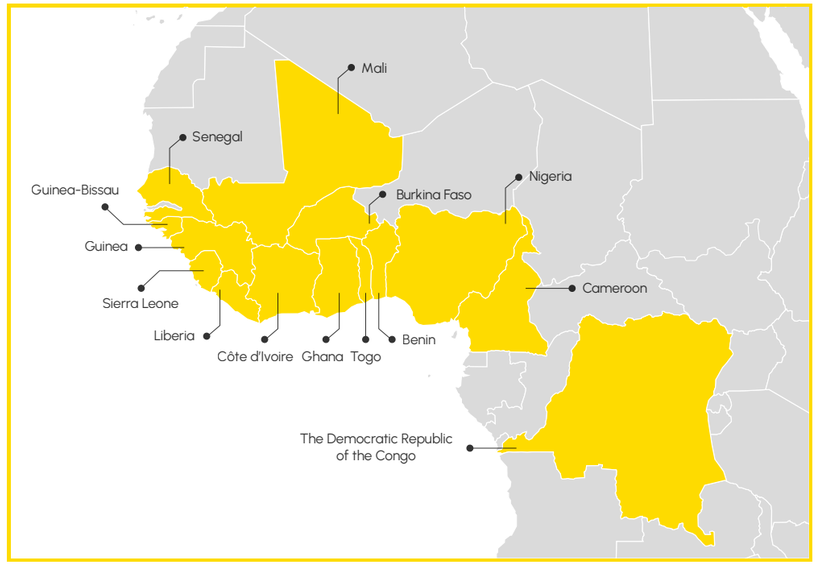
Sun King provides meaningful livelihood opportunities for over 26,000 African Energy Officers who sell, install, and service solar energy systems in primarily rural and peri-urban areas. Sun King is establishing the technological ecosystem for solar products to thrive with gainfully employed local engineers and energy officers at the forefront of this movement.

Where Are Sun King Products Available?

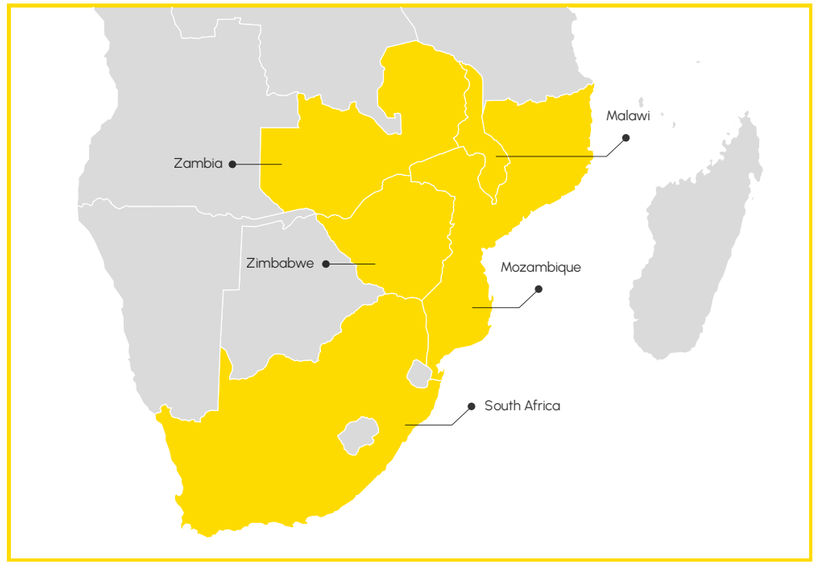
East Africa



West and Central Africa



Southern Africa



Asia–Pacific

Sun King Energy Solutions

How Sun King Works with Institutional Partners

Why Sun King is the Ideal Partner for Your Organisation

Sun King's expansive network spans over 40 countries, positioning us as the ideal partner to advance the priorities of businesses and international development leaders in Asia and Africa. Our solar energy systems offer sustainable and cost-effective solutions that can serve a diverse range of institutions across both the public and private sectors.

Working hand-in-hand with local implementing partners, businesses, and community stakeholders, Sun King provides cutting-edge solar services that ensure continuous power. Our model is customised to the needs of specific communities and use cases — whether that is electrifying schools, powering life-saving medical equipment in a local health clinic, ensuring food safety through consistent refrigeration at a local market, or bringing light to the darkness in a refugee camp. Importantly, our procurement model is also tailored to our partners' needs — allowing us to supply right-sized solar solutions, provide long-term service and maintenance support, or anything in between.

Sun King is currently engaged in a variety of projects aimed at enhancing access to sustainable energy. In Sierra Leone, with support from UK aid, in collaboration with the Government of Sierra Leone and Crown Agents, we are installing solar systems in off-grid health centres. These installations are crucial for powering essential healthcare equipment, providing adequate lighting for medical practices, and supporting data management and recordkeeping by powering computers. In the Democratic Republic of the Congo, through our partnership with USAID's HETA programme, we are providing community health workers with critical access to light and energy. Additionally, across multiple countries, our collaboration with the international NGO Imagine Worldwide is enabling off-grid and weak-grid schools to enhance educational outcomes by powering tablets and essential school equipment with solar systems.

How Sun King Empowers our Partners

End-to-End Solutions

Sun King helped establish the off-grid solar sector more than 15 years ago. We work across product design, installation, maintenance, and financing to provide end-to-end solutions for our customers. Our ability to do all these things allows us to do each better.

Cost Competitive

Sun King's pricing is more affordable than that of other solar system vendors. Our costs are specifically tailored for each partner and use case — ensuring that we right-size our technology and its cost to your specific needs and goals. Our local teams will work directly with you to develop a personalised quote and plan for your project.

Established Local Presence

You benefit because we are the leading off-grid solar company globally. We aren't setting up a new network for each individual service in a new location for each new specific project's needs. Having to pivot from project to project can lead to higher costs to partners and less reliable service. Instead, we're leveraging a large, existing, direct-to-consumer business model. We have proven delivery and servicing infrastructure that's already supporting millions of clients in remote locations.

Global Support Network

Sun King prides itself on having a robust support system with call centre staff, technicians, and engineers in 12 countries, with plans for further expansion. This network doesn't just supply technology; it encompasses a complete suite of services essential for the optimal functioning of Sun King systems. Where we don't have a physical presence, we have tried-and-tested processes and support systems to allow our partners to install and maintain our systems. Sun King works with established, reliable partners in over 40 countries who sell, install, and maintain our world-class products.

Market Leadership and Reliability

Sun King designs its own products and is typically responsible for both installation and maintenance. Our extensive experience across design, installation, and maintenance provides us with an in-depth understanding of potential failure points, which we proactively address in our designs. This focus on reliability and quality enables us to offer industry-leading warranties, underpinning our commitment to resilience and dependability. Our expertise — honed through decades of data-driven innovation — ensures that our products are not just of high quality, but also embody the trust and reliability that our customers and clients expect.

Advanced Cloud-Based Technology

We offer cutting-edge, cloud-based solutions that provide near-real-time monitoring of solar inverter performance. This feature is crucial for the maintenance and servicing of the inverters, ensuring that critical facilities remain operational. Sun King can appraise the system remotely, allowing us to provide remote assistance or identify an issue and quickly deploy an engineer, and help mitigate potential technical issues before they arise. We can also provide data on performance and the status and health of specific components of the system.

Quality Products Backed by Warranty

Our products are engineered to work with one another. Our solar inverters are optimised to operate in contexts where there are challenges around wear and tear, high temperatures, dust, and extreme weather. All of our powerful rooftop solar inverter products are backed by a three-year warranty, with options for extended coverage to meet specific client needs.

Proven Recycling Partnerships

Sun King has established e-waste partnerships as a way to ensure our equipment will be handled properly once it is time for replacement. We send e-waste to a responsible recycler and, where possible, find best-in-class local e-recycling firms to recycle solar waste and meet partners' needs. We can work closely with our partners to develop end-of-life plans for our technology from the very beginning of our partnership, from the procurement phase through to the conclusion of our project.

Sun King's Work With Institutional Clients

Sun King has experience working with USAID, UK aid, the World Bank, and other donors and implementing partners. We have built strong relationships with private sector partners across Africa, including TotalEnergies and Orange, as well as leading governments and intergovernmental organisations. With the growth of our highly efficient and sustainable solar inverter range, we have developed new pathways to deepen these existing new partnerships, strike new collaborations, and expand our work across Africa and Asia.

Case Study: Building Education Foundations Through Innovation and Technology (BEFIT) Programme

Sun King is proud to be partnering with local civil society organisations, the government, and international NGOs to support the electrification of all primary schools in Malawi through the BEFIT programme.

In Malawi, 90% of children cannot read by age ten. Technology can help improve educational outcomes, but only one in every three Malawian schools has access to electricity, and this figure drops to 10% for rural, remote Malawian schools. Through BEFIT, Sun King is changing that.

Launched in 2023, BEFIT seeks to enhance basic maths and reading skills through tablet-based educational technology (EdTech) interventions. Led by Malawi's Ministry of Education and supported by international NGOs Imagine Worldwide, VSO, and onebillion, as well as local NGOs, Sun King is electrifying all 6,000 Malawian primary schools by 2029 to help provide a better education for 3.8 million children.

In 2023, Sun King installed 500 solar inverter systems in BEFIT schools, and we are already seeing huge strides from the students who are benefitting from having reliable electricity at their schools, often for the first time.

Sun King's solar energy solutions power the educational tablets provided by BEFIT and, when feasible, address the wider electricity requirements of the schools. Utilising its advanced PowerHub 3300 solar inverter system, Sun King has developed customised solar energy systems specifically for the needs of BEFIT schools. These systems, tailored to each school's unique power requirements, consist of a combination of inverters, batteries, solar panels, and charging stations. The components of these solar systems are containerised, ensuring both easy installation and secure and safe operation.

Beyond installation, Sun King supports BEFIT by offering locally based maintenance, repair services, and system upgrades for their solar systems. This ensures the sustainability and cost-effectiveness of the solar energy infrastructure crucial to BEFIT's tech-based education approach. The initiative serves as a blueprint for other countries struggling with poor educational capacity and limited access to electricity.

With BEFIT's founding partners, including Imagine Worldwide, Sun King is replicating the solar-powered EdTech approach in Liberia and Sierra Leone. In 2024, there will be trials in both countries with an eye to expanding across all schools across both countries.

BEFIT's Installation Timeline and EdTech Impact

"Sun King owns the entire value chain from manufacturing to logistics, all the way to distribution and installation of these systems. The fact that Sun King is an industry leader and has been doing this work for over 15 years gave us a lot of confidence and reassurance in their capabilities. Sun King's local presence with the agents that they have on the ground allows us to focus our attention on other critical issues around the programme and not worry about the installation of these systems, which is tremendously helpful."

Parth Arora,
Director of Technology,
Imagine Worldwide

A Selection of Relevant Partnerships

BGFA Beyond the Grid Fund for Africa
British International Investment
Standard Bank
TotalEnergies
IMAGINE THE FUTURE OF LEARNING
Norfund
onebillion
SolarAid
ONE ACRE FUND
THE WORLD BANK
VSO
FMO Entrepreneurial Development Bank
orange
citi
TDB TRADE & DEVELOPMENT BANK
giz
UKaid
UNHCR The UN Refugee Agency
USAID FROM THE AMERICAN PEOPLE
CROWN AGENTS

Our Products

An Overview of Sun King's Solar Inverter System Products

Sun King offers comprehensive AC electricity solutions through our range of solar inverter systems. Solar inverter systems consist of solar panels; solar inverters, which convert solar panels' DC energy to AC energy; and a battery to store energy and provide 24/7 power. Sun King offers two ranges of solar inverters.

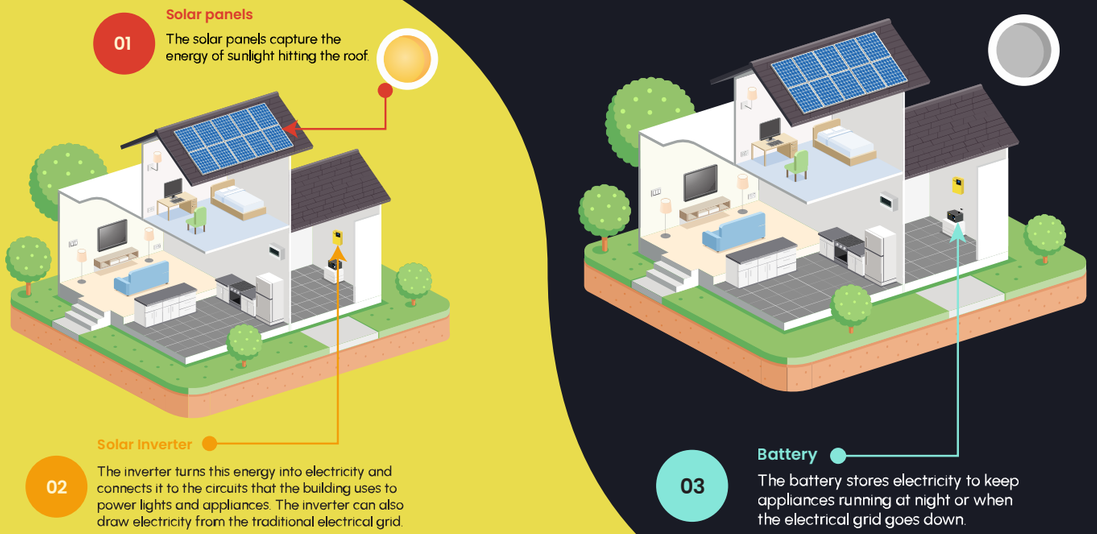
PowerHub

A range of powerful solar inverters that are fixed into a building that can power an entire public building, house, or business.

PowerPlay

A range of portable solar inverters that are easily transportable and can power essential appliances on the move.

How Solar Inverter Systems Work



All Sun King Solar Inverter System Products Benefit From:

Dual Energy Source Connection

Sun King solar inverters connect to both solar panels and, where available, the electrical grid.

Simple and Durable Design and Interface

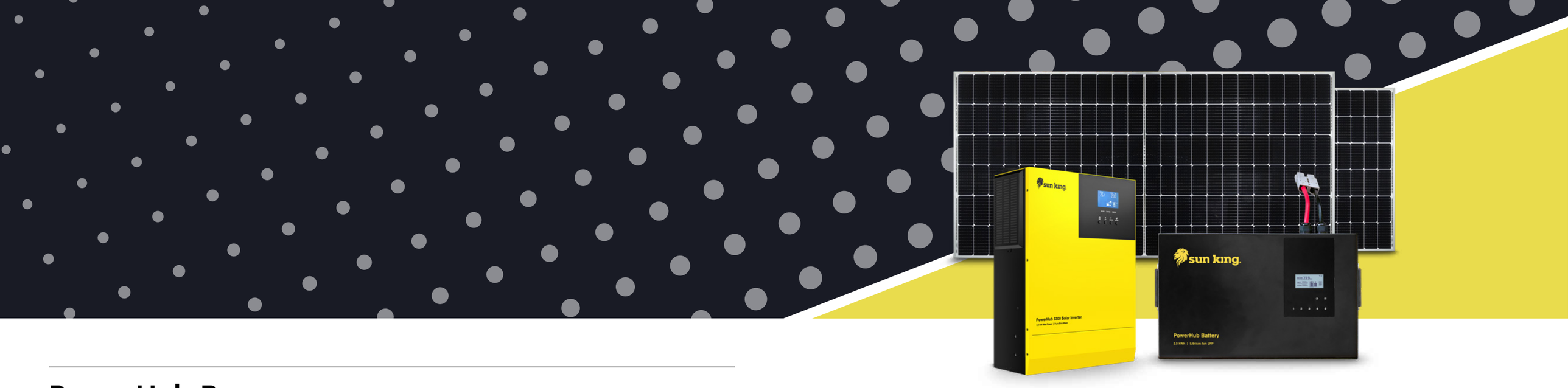
Sun King solar inverters are designed with intuitive ease of use in mind and have an LCD screen that provides near-real-time information on the performance of the product.

In-House Product Design

Sun King uniquely designs its products, ensuring compatibility and efficiency. Our approach guarantees an integrated end-to-end solution.

GSM Monitoring

A cloud-based online tool allows users to monitor the performance in near-real-time.



PowerHub Range

A fixed and powerful solar inverter system that offers power equity with the traditional electrical grid.

	Key specifications
What can it power?	Single-phase AC appliances found in homes, businesses, and public buildings like health centres and schools
Inverter	Up to 20,000 W AC Output (4 x PowerHub 5000 Solar Inverter)
Battery	Up to 40.96 kWh (8 x 5.12kWh lithium-ion LFP battery)
PV Modules	Up to 21,600 W (48 x 450W-PV-Panels in Series)
Energy Demand Supported **(75% Day / 25% Night)** **(50% Day / 50% Night)**	Up to 86,400 kWh a day

Key USPs for Our PowerHub Range:

Expandable Design

PowerHub systems can be combined to meet the specific demands of power-intensive homes and institutions, from hospitals and schools to farms and businesses.

Smart Settings

Settings that monitor and optimise your solar system's performance. Settings automatically prioritises energy sourcing, seamlessly switching between the electrical grid and solar power based on your specific needs.

Lithium-Ion Batteries

World-class reliable lithium-ion batteries (LFP) batteries with a lifespan two or three times longer than lead acid batteries and an anticipated lifespan of ten years.

PowerPlay Range

A compact, plug-and-play, portable solar inverter that can power essential AC appliances, including laptops, televisions, lighting, and fridges. This product offers a unique combination of efficiency, affordability, and convenience.

	Key specifications
What can it power?	Single-phase AC appliances found in homes, businesses, and public buildings like health centres and schools
Inverter	600 W AC Output
Battery	800 Wh
PV Modules	880 W
Energy Demand Supported	Up to 3.5 kWh a day

Key USPs for Our PowerPlay Range:

Portability — The PowerPlay's compact design and built-in handle makes it easy to transport for on-the-go energy regardless of setting or conditions.

Simple Set Up — The portable solar inverters are designed for immediate, 'plug-and-play' use straight out of the box. This design eliminates any time-consuming or costly set-up processes.

Zero Maintenance — The PowerPlay 800 is a zero-maintenance unit with an expected lifespan of five years, and it comes with a standard two-year warranty that can be extended as needed.

Smart Energy Management — The PowerPlay 800 features an advanced energy management system that optimises power usage. This system intelligently turns off the inverter during inactive periods to save energy.

Illustrative Use Cases of Sun King Technologies

Sun King's energy systems can fit into a wide variety of use cases. The technology behind Sun King's solar systems is adaptable to most settings, from urban stores and businesses, to hospitals and rural health centres, to refugee camps in humanitarian settings.

Healthcare

Sun King can provide cost-effective, sustainable power solutions to a diverse set of healthcare institutions, from large central hospitals in urban areas, to small health posts in rural areas. It is critically important that healthcare facilities have access to consistent, reliable power in order to power everything from lights to microscopes and water purifiers, to other vital life-saving equipment. In many African countries, however, healthcare facilities are reliant on diesel generators or are totally off-grid, compromising and reducing access to healthcare services.

On the next page, we show how Sun King can help provide greater electricity affordability and security for a range of different healthcare facilities.

Table: Assessment of Power Needs and Relevant Sun King Solutions for Different Healthcare Facilities

Facility Type	Health Post	Primary Health Clinic	Central Hospital
Key Appliances Requiring Power	Lighting, blood analyser, pesestal fan, phone charging, and laptop charging	Lighting, refrigeration, microscope, printer, and ceiling fans	Lighting, ultrasound, CD4 counter, oxygen concentrator, hematology mixer, ECG machine, vacuum aspirator, and GeneXpert
Energy Problem	Dependence on fuel-powered generator No power for essential medical equipment	Intermittent power supply affecting essential medical equipment No lighting in emergency rooms during blackouts Unable to access patient records during blackouts High cost of running a generator	Intermittent power supply affecting essential medical equipment No lighting in emergency rooms during blackouts Unable to access patient records during blackouts High cost of running one or multiple generators
Suggested Sun King System[1]	1 PowerPlay (0.6 kVA AC output Solar Inverter, 0.8 kWh LFP Battery Storage 0.88 kW) 4 220W-PV-panels (0.88 kW)	1 PowerHub 5000 Solar Inverters (5 kVA AC output) 2 LFP Battery Storage Units (10.24 kWh) 12 450W-PV-panels (5.4 kW)	4 PowerHub 5000 Solar Inverters (20 kVA AC output) 8 LFP Battery Storage Units (40.96 kW) 48 450W-PV-panels (21.6 kW)
How the System Addresses the Problem	Affordable and reliable energy to power key medical and facility equipment	Back-up power to ensure continuous lighting in emergency rooms Reliable and affordable backup power for essential medical equipment	Back-up power to ensure continuous lighting in emergency rooms Reliable and affordable backup power for essential medical equipment
Purchased Outright With a 5-Year Warranty (USD)[2]	$834	$4,585	$16,400
Approximate Cost for Energy-As-A-Service Monthly Subscription Model Over Ten Years (USD)[3]	Deposit Payment: $125 Year One Monthly Cost: $15 Year Ten Monthly Cost: $20	Deposit Payment: $750 Year One Monthly Cost: $85 Year Ten Monthly Cost: $112	Deposit Payment: $2,500 Year One Monthly Cost: $350 Year Ten Monthly Cost: $461

Footnotes

1: Sun King sizes each prospective client to identify a relevant solution based on actual energy needs. The above are illustrative examples. The above look to fully replace the grid and provide facilities with an alternative and robust energy system to meet their needs comprehensively. If the grid is available, Sun King would take that into consideration when suggesting a specific system.

2: If purchased outright, costs exclude the cost of installation and maintenance. All prices contained in these documents are valid as of April, 2024 and are specific to Kenya. These prices are only for business customers who purchase products in bulk. The prices are inclusive of Kenyan VAT and do not include the cost of transportation and installation.

3: Energy-as-a-service costs are inclusive of all installation, maintenance, analytics and reporting, and project management services. The monthly cost of the energy as a service model escalates annually. On average, the escalation costs are ~3% a year to account for currency and inflation fluctuations.

Education

Sun King can provide cost-effective, sustainable power solutions to a diverse set of education hubs, from universities to one-room primary schools. In order to learn effectively, students need light and electricity to power tablets, computers, and other technology necessary to prepare them for the modern workforce and ensure a more promising future.

On the next page, we show how Sun King can help provide greater electricity affordability and security for a range of different educational facilities.

Table: Assessment of Power Needs and Relevant Sun King Solutions for Different Educational Facilities

Facility Type	One-Room Schoolhouse	Multi-Room Primary or Secondary School	University Building
Key Appliances Requiring Power	Lighting, projector, pedestal fan, computer, printer, and e-learning tablet charging	Lighting, computers, ceiling fans, printers, photocopy machines, WiFi routers, LED lights, laptop charging, refrigerator, water pump, and televisions	Computers, CCTV cameras, projectors, fans, refrigerator, photocopy machines, sound systems, water pumps, WiFi routers, LED bulbs, focus lamps, laptop charging, water dispensers, printers, and televisions
Energy Problem	Irregular power or no power for school equipment High cost of running a generator	Inadequate power supply affecting lighting, training equipment, and important school facilities	Inadequate power supply affecting lighting, training equipment, and important institutional facilities High cost of running generators during blackouts
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Business

In order to ensure businesses run smoothly, offices must have reliable access to electricity, internet, and other technologies from phones to photocopiers, and refrigerators to cash registers. Sun King can provide cost-effective, sustainable power solutions to a diverse set of businesses and office settings, in both rural and urban areas. Reliable businesses fuel local economies and help drive a community.

On the next page, we show how Sun King can help provide greater electricity affordability and security for a range of different offices and businesses.

Table: Assessment of Power Needs and Relevant Sun King Solutions for Different Business Facilities

Facility Type	Small Office (1-5 Employees)	Medium Office (10-15 Employees)	Large Office (15-50 Employees)
Key Appliances Requiring Power	Lighting, computers, pedestal fan, printers, WiFi routers, laptop charging, refrigerators, and televisions	Lighting, computers, ceiling fans, printers, photocopy machines, WiFi routers, LED lights, laptop charging, refrigerator, water pump, and televisions	Lighting, computers, ceiling fans, printers, photocopy machines, WiFi routers, laptop charging, refrigerators, water pump, and televisions
Energy Problem	Unreliable or non-existant power for lighting, laptop charging, phone charging, printer, and other office equipment	Unreliable power for lighting, laptop charging, phone charging, printer, and other office equipment	Unreliable power for lighting, laptop charging, phone charging, printer, and other office equipment
Suggested Sun King System[1]	1 PowerPlay (0.6 kVA AC output Solar Inverter, 0.8 kWh LFP Battery Storage 0.88 kW) 4 220W-PV-panels (0.88 kW)	1 PowerHub 5000 Solar Inverters (5 kVA AC output) 1 Battery Storage Units (5.12 kWh) 6 450W-PV-panels (2.7 kW)	4 PowerHub 5000 Solar Inverters (20 kVA AC output) 8 LFP Battery Storage Units (20.48 kW) 48 450W-PV-panels (10.8 kW)
Purchased Outright With a 5-Year Warranty (USD)[2]	$840	$2,780	$16,400
Approximate Cost for Energy-As-A-Service Monthly Subscription Model Over Ten Years (USD)[3]	Deposit Payment: $125 Year One Monthly Cost: $15 Year Ten Monthly Cost: $20	Deposit Payment: $450 Year One Monthly Cost: $50 Year Ten Monthly Cost: $66	Deposit Payment: $2,500 Year One Monthly Cost: $350 Year Ten Monthly Cost: $461

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Agriculture

In most of Africa and much of Asia, the economy centres around agriculture and agri-business, from small-scale subsistence farmers to large commercial farms. Agricultural hubs are often in remote rural areas where the grid is not present and extensions are expensive. Sun King can provide cost-effective, sustainable power solutions to a diverse set of agriculture institutions, from agri-warehouses to refrigeration centres. These agricultural centres are critical both for creating and sustaining local jobs, and ensuring the supply chain providing food to local communities is uninterrupted.

On the next page, we show how Sun King can help provide greater electricity affordability and security for a range of different agricultural facilities.

Table: Assessment of Power Needs and Relevant Sun King Solutions for Different Agricultural Facilities

Facility Type	Small Processing Facility	Refrigeration Cold-Chain Centre	Post-Harvest Handling Centre
Key Appliances Requiring Power	Milling machine, lighting, ceiling fans, CCTV cameras, WiFi Routers, marketing displays, phone chargers, refrigerator, water pump, and laptop charging	Refrigeration, freezers, lighting, ceiling fan, CCTV cameras, WiFi Router, marketing display, phone chargers, and laptop charging	Larger arrays of refrigeration, milling, and other processing equipment
Energy Problem	Spoilage of perishable food during blackouts High generator operating cost	Unreliable power affecting the factory and warehouse operations High generator operating cost	Unreliable power affecting operations High generator operating cost
Suggested Sun King System[1]	1 PowerHub 5000 Solar Inverters (5 kVA AC output) 1 Battery Storage Units (5.12 kWh) 6 450W-PV-panels (2.7 kW)	2 PowerHub 5000 Solar Inverters (10 kVA AC output) 4 LFP Battery Storage Units (20.48 kW) 24 450W-PV-panels (10.8 kW)	4 PowerHub 5000 Solar Inverters (20 kVA AC output) 8 LFP Battery Storage Units (40.96 kW) 48 450W-PV-panels (21.6 kW)
Purchased Outright With a 5-Year Warranty (USD)[2]	$2,780	$9,120	$16,400
Approximate Cost for Energy-As-A-Service Monthly Subscription Model Over Ten Years (USD)[3]	Deposit Payment: $450 Year One Monthly Cost: $50 Year Ten Monthly Cost: $66	Deposit Payment: $1,500 Year One Monthly Cost: $175 Year Ten Monthly Cost: $230	Deposit Payment: $2,500 Year One Monthly Cost: $350 Year Ten Monthly Cost: $461

Footnotes

1: Sun King sizes each prospective client to identify a relevant solution based on actual energy needs. The above are illustrative examples. The above look to fully replace the grid and provide facilities with an alternative and robust energy system to meet their needs comprehensively. If the grid is available, Sun King would take that into consideration when suggesting a specific system.

2: If purchased outright, costs exclude the cost of installation and maintenance. All prices contained in these documents are valid as of April, 2024 and are specific to Kenya. These prices are only for business customers who purchase products in bulk. The prices are inclusive of Kenyan VAT and do not include the cost of transportation and installation.

3: Energy-as-a-service costs are inclusive of all installation, maintenance, analytics and reporting, and project management services. The monthly cost of the energy as a service model escalates annually. On average, the escalation costs are ~3% a year to account for currency and inflation fluctuations.

Procurement Options

Client's Procurement Pathways

We've adapted our procurement process to best meet the needs of our institutional partners. Clients and partners can engage with us in two different ways.

1. Standard purchase option: Institutional clients can buy Sun King solar inverter products — tailored to your specific need, setting, and use case — which come with a standard three-year warranty. We can extend these warranties and service plans as required. Sun King will install the product and provide maintenance within the agreed warranty. Additional services can be procured upon request.

2. Energy-as-a-service model: In this model, we establish a longer-term relationship where we work together throughout the life of a project. We install the system of your choosing and provide ongoing maintenance. At the outset, we will assess the project's energy needs and use this data to establish a monthly energy target and cost for the recommended system. Sun King will then provide a performance guarantee and flat rate fee, meaning that our clients only pay for the energy they receive. Our custom dashboard will allow you to see power rates being provided in near-real-time. GSM monitoring allows us to provide accurate and transparent monthly bills.

This model is ideal for a partnership of more than three years and can be extended indefinitely and in perpetuity. This payment model ensures a flat rate within energy target ranges, spreading payments over time throughout the life of the partnership and reducing the need for large upfront expenditures.

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