



Community Power
from Mobile

CPM Vendor Directory



Introduction

The GSMA Development Fund launched the Community Power from Mobile (CPM) Programme in November 2010 to leverage the scale of mobile technology and infrastructure, to improve the business case for off-grid telecom and provide off-grid communities with access to improved energy services. The programme is supported by the International Finance Corporation's (IFC) Lighting Africa Initiative.

Mobile penetration has outpaced the growth of the electricity grid, which means over 500 million people have gained access to a mobile phone before access to electricity.¹ This wide adoption of mobile services by underserved populations provides a new opportunity to develop energy solutions for the near 1.4 billion people that currently lack access to electricity.²

Mobile operators can support improved access to energy via 3 main channels:

- Last mile distribution networks of handset retailers and airtime vendors can be used by energy product companies to reach customers
- Mobile towers existing power generation equipment can be used to provide access to energy services to nearby off-grid communities
- Mobile money and payments can provide consumer financing and pay-as-you-go solutions to energy.

The CPM vendor guide builds on the past experience of the Green Power vendor guides and Charging Choices reports. The vendors within this catalogue have been ordered alphabetically and subsequently categorised at the back according to their specialist field. We hope that this catalogue will provide a snapshot of the current market and is organised in a clear and concise way. We intend to keep this catalogue a dynamic document with relevant updates on a regular basis. If you are a vendor and are interested in making a submission to the Vendor Catalogue in time for the next update, please contact cpm@gsm.org

This list of vendors is not GSMA approved or vetted but is intended to be a useful starting point for operators when making enquiries. Additionally, please note that GSMA have not revised any of content in these submissions. Any changes have been merely to the format for consistency purposes.

¹ GSMA research, 2010

² <http://www.worldenergyoutlook.org/development.asp>

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Barefoot Power Ltd

Company Background

Barefoot Power, a social for-profit enterprise, manufactures and distributes solar phone charging, lighting products and business development services to people at the base of the global economic pyramid. Our mission? To bring affordable renewable energy and efficient lighting to 5 million people by 2012 and 10 million people by 2015 and help eradicate energy poverty. How will we do that? Barefoot Power strives for operational excellence. By bringing electricity to millions of people that currently use kerosene lighting and walk far for phone and battery charging, we plan on reversing the traditional process of rural electrification.



Barefoot Power offers an opportunity for telecommunication companies. According to GSMA, offering charging solutions, telecoms can improve ARPU by 10-14% and operators can add an incremental US\$3.2 billion of potential revenue per month. By making phone charging accessible and reducing the cost of charging, customers could invest in airtime.

Product and Service Description

Barefoot Power has developed a product range of low-cost, expandable lighting and phone charging systems. Improvements to Generation 2.5 products include:

- Longer life, high capacity Lithium Iron Phosphate (LiFePO₄) Battery – 1000 cycles!
- SMD LEDs last longer!
- Environmental Improvements - Barefoot Power Generation 2.5 products are designed and developed to meet the UN Clean Development Mechanism standards. Carbon revenue will contribute to the affordability and improved quality and performance of all Barefoot Power products.
- New Phone Charging Solutions - Barefoot Power is offering the Firefly Fast Phone

Charge kit. The Firefly Fast Phone Charge is a mobile phone charging solution that enables customers to charge 3 to 6 phones in a day depending on the capacity and power requirement of the mobile phone battery and the intensity of the sun.

Barefoot Power distributes through multiple distribution channels. The micro-franchise model is complimentary to the GSMA Community Energy Program. Barefoot offers specialized "business in a bag" training for entrepreneurs interested in developing micro-franchises. Products are also distributed through local country importers, in country distributors, micro-franchises, dealers, NGO and other corporate partners and telecommunication partners. These partners are supported by Barefoot Power with marketing and awareness-building activities, innovative financial support systems and after sales warranty services.

Geographic Footprint

Africa, Asia Pacific, India, the Americas.

Client List

Simba Telecom
Orange

Company

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BBOXX Ltd

Company Background

BBOXX is a global provider of integrated technology, consulting and transformation services dedicated solely to the electrification markets in developing countries. We develop innovative business models and energy systems to provide "The Right Energy" in terms of price, market, reliability and environment.

BBOXX is a UK based company which design and manufactures small scales solar systems targeted to low income people in the developing world. BBOXX's founding partners are also founders of a charity at Imperial College London called e.quinox (www.e.quinox.org) that has been designing and testing innovative energy solutions and business models to provide affordable electricity to rural communities in sub-Saharan Africa.



Category of Company

Off-Grid Product Provider and
Distribution Company

Year the Enterprise was Founded
2010

Product and Service Description

BBOXX's core business activities can be summarized as follows:

- We offer a wide range of solar kits from 5Ah to 120Ah.
- We have a plug&play all-in-a-box solution which is great because:
 - Installation is really simple.
 - It is very user friendly.
 - Everything comes in one package.
- Leads complete implementation cycle design, prototyping, manufacturing, marketing, after sales service and optimization of processes.
- Actively seeks partners to represent the BBOXX brand and product range through our franchising model.

- Works closely with local partners to provide on ground marketing, sales and technical support.
- Offers original design and manufacturing solutions to strategic partners operating in rural electrification markets.

BBOXX is commercializing the Energy Kiosk concept which e.quinox has developed which can be connected to a telecom tower to provide basic energy to surrounding communities via BBOXX battery boxes. E.quinox has already five kiosks in Rwanda and one in Tanzania which are showing signs of profitability.

Geographic Footprint

DR Congo, Rwanda, Uganda, Kenya, North Sudan, Pakistan and Iraq.

Maturity of Enterprise

BBOXX has sold more than 4,500 solar kits. We have now a wide range of portable solar kits from 5Ah to 120Ah. BBOXX has distribution networks in Uganda, RD Congo, Rwanda, Kenya, Pakistan, Iraq and Ethiopia which have sold over 4,500 solar kits overall.



"BBOXX has developed the most exciting and marketable off-the-shelf solar product range I have seen to date. The BBOXX team has accurately interpreted the market demand for solar energy solutions and translated this understanding into the development of a relevant and marketable range of products."

Sam Dargan, CEO of Great Lake Energy, Rwanda

Contact

Christopher Baker-Brian

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CAT Projects

Company Background

CAT Projects operates throughout the Asia Pacific, specializing in remote area project management, power and renewable energy system engineering, and community engagement and stakeholder management. Our primary focus is on delivering innovative solutions for optimizing the generation, distribution and consumption of energy, with particular expertise in the technical and financial analysis, design and implementation of remote mini-grids (both hybrid and pure RE), and large grid-tied solar PV power plants.



CAT Projects has delivered numerous projects including three of the largest solar power plants in Australia, a number of large, high penetration solar-diesel hybrids (85% solar) in remote indigenous Australian communities, and the award winning Bushlight India Project.

Category of Company

Off-Grid Product Provider

Year the Enterprise was Founded

2007

Product and Service Description

The Bushlight Model is a comprehensive, structured, thoroughly documented and resourced process for consultatively planning and implementing remote village minigrid energy systems. Developed to facilitate the establishment of reliable electricity supplies in remote Australian Indigenous communities, the model's effectiveness has been successfully proven through applications in over 150 communities. More recently, it was collaboratively adapted and demonstrated for use in remote Indian villages.

The Model has a service philosophy of providing reliable electricity supplies that are available 24/7; which it achieves through a range of innovative DSM hardware (specifically the Urja Bandhu household energy meter), linked into an associated and set of community education and energy planning activities. The total energy individual consumers can draw on any one day is limited to their selected daily energy budget (Wh/day), allowing for fixed daily demands, system optimization and simplified tariff structures and billing.

Geographic Footprint

Across the Asia-Pacific region.

Maturity of Enterprise

The Bushlight model has been used to guide the delivery of reliable, quality electricity services to over 150 remote Indigenous communities across central and northern Australia, and adapted and demonstrated in remote communities in western Orissa and the Sundarbans regions of India.

"This has been an experience where quality power has come to a very very impoverished people and people are now learning to dream."

Joe Madiath, Executive Director, Gram Vikas, Orissa, India

Contact

Lyndon Frearson,
General Manager

Company

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Decentralised Energy Systems India Pvt. Ltd. (D.E.S.I. Power™)

Company Background

DESI Power™ is focused on creating an empowered rural India where green energy is a means to achieve economic development of the region. The mission of DESI Power is to promote the reduction of endemic rural poverty through local job creation driven by electricity generation from power plants based on local resources of renewable energy for local micro-enterprises, businesses and energy services for lighting, pumping for irrigation, modern biomass based cooking fuels, drinking water, cold storage, etc.

DESI Power was founded in 1996 by an outstanding technocrat Dr. H.N.Sharan, who is a world renowned energy expert, together with Dr. Ashok Khosla, Founder of Development Alternatives, New Delhi and an internationally reputed environmentalist.



Category of Company

Off-Grid ESCO

Year the Enterprise was Founded

1996

Product and Service Description

DESI Power builds and operates decentralized electric power plants using renewable sources such as biomass, bio-fuel, hydro, solar, etc. It also establishes the rural ecosystem for access to electricity and economic development around it. The ecosystem includes power plants for electricity generation, energy services including micro/mini grids for electricity distribution, capacity building, and microenterprise development.

DESI Power undertakes end-to-end activities of for decentralized power plants using biomass gasification, biogas, or solar technologies. It includes site surveys to access the demand and resource supply, preparing DPRs, setting-up the plants and running them. It undertakes agro forestry and biomass and bio-waste management such as assessment of sources, procurement, processing and preparation. It also sets up mini- and micro-grids to deliver

power to the customers, and manages the electrical distribution system.

Another key activity and expertise of DESI Power is training and capacity building. It trains the workforce not only to run its own operations but also to support other enterprises in the ecosystem. It not only mobilizes the villager by forming cooperatives and societies, but also helps them set up microenterprises to enable them to progress in the socioeconomic value chain. Some of the microenterprise activities taken up or enabled by DESI Power include clean cooking energy solutions, drinking and irrigation water solutions to the farmers and villagers, and local micro enterprises such as rice mills, oil expellers, etc. Thus, the solutions provided by DESI Power create a complete ecosystem for the economic development of the village.

Geographic Footprint

Currently operates in Bihar, Madhya Pradesh, Karnataka. Plan to extend to all North East and North states in India.

Maturity of Enterprise

3 plants under <100kW. More than 200 consumers.

Client List

Bharti Infratel, Vodafone.

Contact

Aklavya Sharan

Company

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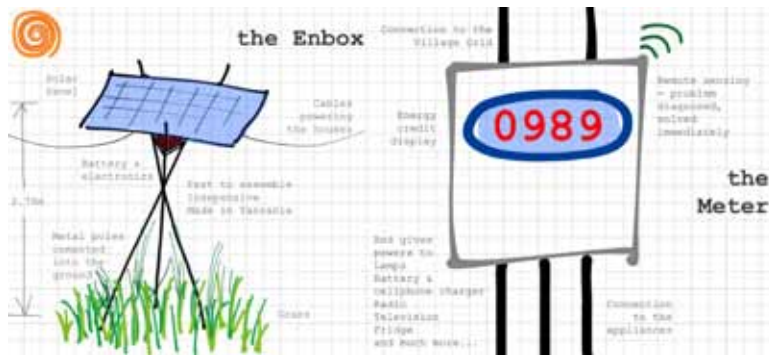
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Devergy

Company Background

Devergy is a social energy utility, which provides a prepaid-based reliable, affordable electrical service to low-income people in developing countries by supplying a vertically scalable system. The electricity service is affordable as an alternative to kerosene (and solar lighting products) and covers the need typically addressed by solar home systems at a fraction of the costs.



"We find Devergy's offer is affordable and will allow us to move away from kerosene, which is too dangerous for our children."

Tatu - Matipwili, Bagamoyo



Devergy Tanzania is a joint venture between Devergy and Voltzon. Devergy is an engineering company based in Amsterdam, specialized in developing prepaid electrical services focusing on rural households in developing countries and business development. Voltzon is a Dutch-founded Tanzanian company specialised in the procurement, installation and maintenance of solar systems in rural areas with years of experience in the solar sector in Tanzania. Devergy Tanzania will start its operations in 2012 with a pilot in several Tanzanian villages, followed by a full launch in 2013.

Category of Company

Off-Grid ESCO, Pay-as-you-go Solution

Year the Enterprise was Founded

2010

Maturity of Enterprise

3 pilots starting in Spring 2012.

Product and Service Description

Devergy works through a service model, providing electricity to customers who have no access to the power grid. Devergy sells energy as pre-paid credit top-up cards. When connecting a new village, Devergy installs solar panels and batteries (Enboxes) and a meter in the customers' home or small business. The meter shows the available credit on a display. When the credit is finished energy is not provided anymore, until the meter credit is topped-up again.

The Devergy system is designed to be cheaper than the current kerosene spending for equivalent lighting, while offering a much better service, in terms of quality (better light) and diversity allows to charge mobile phones and batteries for radio. The same meter can be used to power a small light or an appliance such as a TV or fridge, without any intervention except the top-up of credit as necessary.

Geographic Footprint

Tanzania, bordering countries by 2015.

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EarthSpark International

Company Background

EarthSpark is a growing social enterprise that empowers communities by eradicating energy poverty. We leverage a portfolio of high potential energy technologies and business models to deliver low-cost, high value energy products and services to underserved populations in Haiti. Working in rural Haiti since 2008, EarthSpark has a deep understanding of low-income customers' energy needs and has strong local partnerships with community organizations, corporations, international institutions, and government agencies.

EarthSpark's portfolio is a matrix of approaches and technologies broadly defined across delivering small-scale energy products, micro-grids, and energy services.



All of these solutions address under-provision and inefficient use of energy services in Haiti. Individually or in combination, these solutions will have a very large and positive effect on social and economic development in Haiti by delivering affordable, reliable and environmentally sound energy services.

Category of Company

Off-Grid Product Provider, ESCO (in pilot)

Year the Enterprise was Founded

2008

Product and Service Description

EarthSpark's Haitian brand, Enèji Pwòp (Clean Energy in Haitian Creole) serves as distributor and micro-franchiser for small-scale clean energy technologies, specifically efficient cookstoves and small-scale solar electricity

systems. The solar solutions range from a simple solar light bulb to larger systems for homes and small businesses. In addition to local points of sales, an e-commerce site, www.enejipwop.com, enables members of the Haitian diaspora to purchase clean energy products directly for friends and family in Haiti. EarthSpark is also currently piloting an innovative microgrid approach that highlights pre-payment, deep efficiency, and collaborative business practices.

Geographic Footprint

Haiti - Port-au-Prince region and Côte Sud region (Cayes to Tiburon).

Maturity of Enterprise

Sold over 3000 products and 1 microgrid currently in pilot.

"I am very proud to be affiliated Enèji Pwòp. We are doing great things, and these products change lives. As Enèji Pwòp grows, I am proud to know that it started here in Les Anglais."

M. Jacquelin, Enèji Pwòp customer and Enèji Pwòp reseller

Contact

Allison Archambault

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Eight19 Ltd

Company Background

Eight19 develops and manufactures printed plastic solar cells. Originating from Cambridge University in the UK, these flexible, robust, lightweight modules have the potential to expand solar power into new markets where low cost and manufacturability are key. The 1.6Bn consumers worldwide who lack electricity spend up to 30% of their income on fossil fuels which, watt-for-watt cost as much as 1000x that of mains electricity. This represents \$50Bn/year market for solar lighting and mobile phone charging alone. For these consumers, solar electricity is not merely advantageous, it is transformational to their lives, if it is affordable.

Eight19 has developed IndiGo, a revolutionary smart power technology that allows solar power to be sold as a service, providing mobile phone charging and high quality lighting for less money than individuals presently spend on kerosene. IndiGo is being rolled out in East Africa with expansion plans in India and Asia in 2012.



Category of Company

Pay-as-you-go Solution

Year the Enterprise was Founded

2010

Product and Service Description

Eight19's IndiGo is a pay as you go solar home power solution, providing lighting and mobile phone charging for rural off-grid customers. Paid for using scratch cards or mobile payments, the system provides lighting and local mobile phone charging for \$1/week, replacing approximately \$2/week on customers existing kerosene and phone charging spend. The system has been successfully deployed in Kenya, Zambia, Malawi and South Sudan and the company has announced an initial deployment of 4,000 units in East Africa will occur in Q1 2012 in collaboration with NGO Solar Aid. The principal benefit of the system is to eliminate the up-front cost of solar

charging products. Customers value that they no longer need to switch off their phone between uses, making it available 24x7 and anecdotally, this increases mobile usage by 10-20%.

Eight19 and Solar Aid have launched the Kickstart fund, which provides the project finance to support the rollout of IndiGo units. The fund was launched in January 2012 with an base investment of \$200,000 to deliver an initial 4,000 units in Q1 2012.

Geographic Footprint

East Africa.

Maturity of Enterprise

Pilot stage deployment completed Q4 2011. 4,000 units being deployed in East Africa Q1 2012 as part of growth plan.

"We are excited to be working with Eight19 on this revolutionary technology. Solar energy offers huge economic, health and social benefits to the world's poorest people; for lighting and mobile phone charging. Eight19's technology opens up these benefits to many more people. This is a major breakthrough."

Steve Andrews, CEO of Solar Aid

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Emergence BioEnergy Inc. (EBI)



Company Background

Emergence BioEnergy Inc. (EBI) has developed an innovative package (known as the EBI Utility Station or EBUS) for rural South Asia and Africa that generates electricity and increases the economic value of small dairy farms. The various components of EBUS mutually reinforce each other and collectively represent an attractive business opportunity for farmers, tripling the economic returns on their cattle. While the market for EBI spans all of rural South Asia and Africa (the market), the initial experimentation and product refinement is taking place in Pakistan and Bangladesh. EBI maintains offices in Cambridge, MA and Dhaka, Bangladesh.

EBI sees an opportunity to bring electricity and add other economic values through cattle, a resource that is ubiquitous and an integral part of life in rural areas. The EBUS seamlessly integrates several related components, giving rise to several revenue streams, including electricity and cooling, that triple the productivity of cattle and facilitate reliable power from biogas.

Category of Company

Off-Grid Product Provider

Year the Enterprise was Founded

2006

Product and Service Description

The EBUS is based on micro-combined-heat-and-power (micro-CHP) engine technology that produces up to 3.5 kilowatts of electricity and 8 kilowatts equivalent of heat. The EBUS

can cycle heat into cooling, generating in excess of 1.5 tons of cooling capacity. The engine is based on free-piston Stirling technology that allows for continuous operation, minimal maintenance, low-noise operation and 70,000 hours of operation. By employing rejected heat from the engine for a secondary cooling process, the system can be upwards 70% efficient in terms of fuel utilization. The engine can operate from biogas, natural gas and widely available liquid fuels. We expect the a series of prototypes to be field tested starting in April 2012.

Geographic Footprint

Starting in Bangladesh, expect to expand to India and Pakistan shortly.

Maturity of Enterprise

Initial series of 6 pilots expected to begin in April 2012.

Contact

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Energize the Chain

Company Background

Energize the Chain (EtC) is a non-profit organization based out of Philadelphia, USA. EtC proposes using existing energy generation infrastructure at base transceiver station (BTS) locations to power vaccine refrigerators. Ensuring the integrity of the entire cold chain up to the final point of delivery in remote areas of the world will have a measurable impact on vaccine quality and rates of spoilage by helping to store vaccines longer and in safer conditions. In the long term, this will help to maintain vaccine integrity and reduce costs in the cold chain.

Category of Company

Non-Profit Community Services Provider

Year the Enterprise was Founded

2010

Product and Service Description

EtC partners with Mobile Network Operators (MNOs), tower companies, public health agencies, multilateral organizations, and other entities involved in the cold chain to increase access to, and improve the quality of, early childhood vaccination primarily in remote communities with no/unreliable power grids.

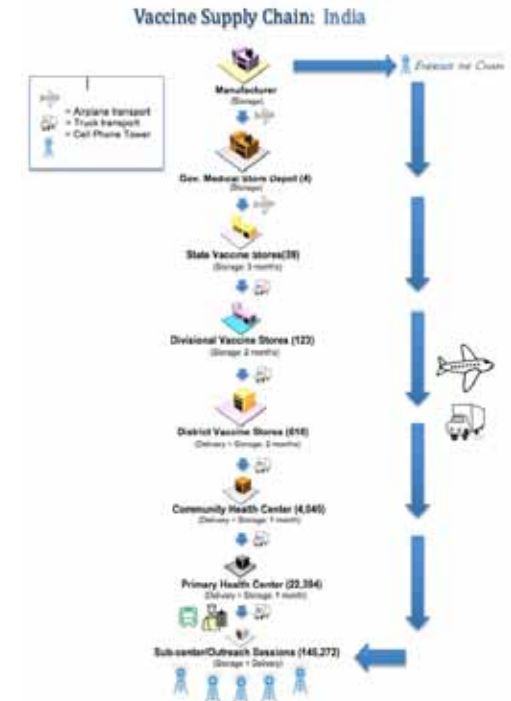
EtC provides its advisory and support services free of charge to participating MNOs and tower companies, and can often arrange for vaccine refrigerators to be funded from third party donors.

Geographic Footprint

EtC is US-based, but maintains a global scope. Current efforts are focused on Africa and



India, but EtC is ready and interested to initiate projects in other parts of the developing world.



Client List

Econet
Vodafone

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Fenix International

Company Background

Fenix is a Silicon Valley based renewable energy company that designs and manufactures affordable electricity generation and power storage solutions for emerging markets across Africa, Asia, and Latin America.



Client List

MTN Uganda

Category of Company

Off-Grid Product Provider

Year the Enterprise was Founded

2009

Product and Service Description

Fenix's flagship product, the ReadySet, is an intelligent plug-and-play energy system that can power mobile phones, lights, radios, tablets, and even medical devices. The ReadySet contains intelligent electronics and a robust battery that can be charged from a variety of energy sources including solar, micro-wind, micro-hydro, and even a bicycle.

The ReadySet is designed to empower rural entrepreneurs in emerging markets to become micro-utility providers and deliver sustainable energy to their communities. By powering mobile phones, as well as rechargeable



lanterns and torches, for a small fee (typically 0.25USD), ReadySet entrepreneurs can generate substantial new income. Previous field studies have shown the cost of the system can be earned back in as little as three to six month's time.

For mobile network operators in emerging markets, The ReadySet keeps users phones fully charged, increasing mobile customers' off-grid utilization of services such as airtime, mobile money, and data.

Geographic Footprint

Uganda plus 20 pilots across Africa, Asia, and Latin America.

Maturity of Enterprise

3,000 units sold and over 20 pilots in progress with mobile operators across Africa, Asia, and Latin America.

"The ReadySet has changed people's lives. It has added to their incomes and their working hours. They found it positive and the efficiency is very good. It has helped them charge their phones. On avg they charge 8 phones/day and earn 500 shillings per phone."

Nelson Kiwagi, Regional Account Manager, MTN Uganda

Contact

Mike Lin

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Frontier Markets Pvt. Ltd

Company Background

Frontier Markets (FM) has created an innovative and effective distribution channel to market and sell high impact, affordable products to millions of base of the pyramid (BOP) households in India. We have experienced the barriers to BOP market entry have established an innovative approach to address these challenges. Our aim is to provide the "last mile connectivity." We focus on clean energy alternatives that will make the greatest impact on the lives of rural villagers. FM focuses both on demand generation and distribution of products. FM provides the ground staff and the expertise to create its own distribution channel (incl. wholesale and retail points) to provide large-scale market entry through marketing, wholesale supplying, sales, and post sales services for product companies.



Our ongoing presence gives us access to end-consumers on a 24/7 basis, creating a strong relationship, value, and ability to collect data to consult in product development.

Category of Company

Off-Grid Product Provider, and Distribution Company

Year the Enterprise was Founded

2009

Product and Service Description

FM staff educates customers, sells and services products for rural households everyday using a hub and spoke model. Sales agents imbedded in the community reach out from a central retail shop to develop awareness and match products to customers needs through existing community points like markets and social meetings. We cement the trust, presence and brand in the community. Our product basket includes solar plates for mobile phone charging, grid connectivity, and other power-



based products. Executives research and create new branches every quarter that captures standardized markets and mix the right product basket to run a sustainable profit center. Our research and operations team continually tests and selects new products, and provide feedback to manufacturers to improve product design and quality. We have a strong relationship with the BOP.

We currently use solar mobile kiosks to attract cell-phone charging in remote villages, and assist target markets to better utilize solar for their phones. Additionally, we provide mobile-solutions for marketing, customer service, and product follow-ups.

Geographic Footprint

We work in Jaipur, Chomu, Amer, Govindgarh, Bassi, Alwar and Dausa Rajasthan, India.

Maturity of Enterprise

We have over 30 distributors, and sold over 1500 products.

"FM sources solar products in bulk from different manufacturers and retails them under the brand name 'Saraal Jeevan'. Its trump card is the profile of its agents, whom it pays a commission. These are village-level community workers, who are already familiar faces in the region, since they also provide some other service."

Taslina Khan, Business Today

Contact

Ajaita Shah

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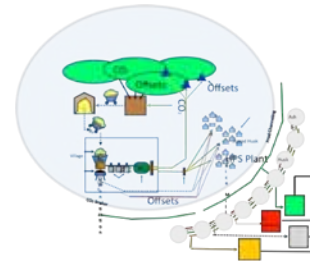


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Husk Power Systems Private Ltd

Company Background

Husk Power Systems is a social enterprise, provides off-grid rural electricity solutions. The company designs, installs and operates biomass-based power plants. Each plant uses proprietary gasification technology to convert rice husk and other abundant agricultural residue (procured from local farmers) into electricity, which is then distributed to rural households and micro-enterprises through a micro-grid system – providing a better quality, cheaper way to meet their need for energy. This technology cost-effectively converts agricultural residue (rice husk, mustard stems, corn cobs, certain grasses etc.) into electricity.



In doing so, HPS creates an ecosystem around each plant by providing income generation opportunities to local farmers and entrepreneurs, and creating employment – a high percentage of whom are women. This enables sustainable development within the communities it serves.

Category of Company

Off-Grid ESCO

Year the Enterprise was Founded

2008

Product and Service Description

HPS provides end-to-end renewable energy solutions by installing 12-kW to 100-kW 'mini power plants' and then wiring villages and hamlets of up to 4000 inhabitants to deliver electricity on a pay-for-use basis. A typical plant can serve two to four villages within a radius of 1.5 kilometers, depending on size

and population. The plant employs local villagers who are then trained by HPS to conduct plant operations. Consumers pre-pay a fixed monthly fee ranging from US\$2 to 2.50 to light up two fluorescent lamps and one mobile charging station. This offers consumers savings of at least 30% over competing kerosene and diesel energy sources (annual savings of up to US\$50) and a lighting package that can serve the whole household.

Geographic Footprint

Bihar, Uttar Pradesh, Nepal, Uganda & Tanzania.

Maturity of Enterprise

In just four years HPS has installed 84 mini-power plants, providing electricity to over 200,000 people spread across 300 villages, while employing 350 people through its operations.

"Electricity is scarce in Bihar and there are many problems because of that. In Tamkuha there used to be a lot of theft. Snakes and dogs would bite, transportation was difficult and my children couldn't study after sunset. I want my children to study and my son to be an engineer. Since the electricity came, my children can study even at night. It is also good for business. This little plant has done what big power plants couldn't do. I used to live in darkness and now I live in a world full of light. "

Ragunath Prasad Chauhan, HPS customer, Tamkuha, Bihar

Contact

Ratnesh Kumar, Director

Company

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Community Power from Mobile

Nokero International Ltd

Company Background

Nokero (short for No Kerosene) manufactures solar lights and phone chargers designed expressly to meet the needs and budgets of communities living without access to electricity. We design products that are practical, intuitive, and the most cost-effective on the market, and then partner with local organizations to get them to the communities who need them most. Nokero lights and chargers are sold in clean energy stores in Haiti, at hawkers' markets in South Africa, through a chain of bread bakeries in Fiji, at water purification centers in India, and by door-to-door saleswomen in Uganda.

Client List
Earthspark International
(relationship with
Digicel Haiti)

Eureka Forbes Ltd
(in discussions with
mobile providers in India)
Westinghouse Lighting



Nokero products are also utilized and deployed by humanitarian aid organizations in the aftermath of natural disasters, and in concert with development programs targeting economic growth, health, education, agriculture and the environment. Around the world, Nokero provides a compelling small business opportunity for entrepreneurs, spurring local enterprise, reducing poverty, improving health, and greening the environment.

Category of Company

Off-Grid Product Provider

Year the Enterprise was Founded

2010

Product and Service Description

Nokero has delivered over 300,000 products to more than 125 countries and territories worldwide. Every product we make is portable, high-quality, yet inexpensive - designed specifically with the budgets of off-grid communities in mind. Nokero's all-in-one solar

chargers, compatible with cell phones and other low voltage devices, provide an affordable solution for off-grid mobile users. The iconic Nokero N200 solar bulb is designed to be simple and intuitive, and is also the most economical solar light on the market. The recently released N220 is bigger and brighter, making it ideal for small classrooms and health clinics, as well as disaster relief situations. Finally, Nokero's new AA solar battery charger, a small and convenient piece of technology, ensures that a replacement battery is available whenever it might be needed - either for use in a Nokero solar bulb, or in any device where an AA is required.

Geographic Footprint

Worldwide.

Maturity of Enterprise

Since launching in June 2010, Nokero has delivered more than 300,000 products to over 125 countries and territories around the world.

"Nokero is a values-driven company with an ambitious vision that makes market-changing products."
Kristine Pearson, CEO of Lifeline Energy

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Business Development

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Community Power
from Mobile

Nuru Energy

Company Background

Nuru Energy was seed-funded by the World Bank in 2008 and currently operates in East Africa and India. With an enduring commitment to solving the global problem of energy poverty, which affects over 2 billion people worldwide, Nuru Energy has developed a one-of-a-kind robust and simple-to-use off-grid recharging platform, the Nuru POWERCycle™ pedal generator. The POWERCycle™ provides reliable clean, sustainable power anytime, anywhere and is hundreds of times more efficient than current solar-based solutions at a fraction of the cost.



For its efforts, Nuru Energy has been recognized as the recipient of numerous global awards, including the prestigious 2010 UNEP Sasakawa Prize, the 2010 UNDP World Business and Development Award, the eBay Foundation/ Ashoka Powering Economic Opportunity Award among others.

To learn more, please visit:
www.nuruenergy.com.

Category of Company

Off-Grid Product Provider &
Distribution Company

Year the Enterprise was Founded

2008

Product and Service Description

The Problem: Over 700 million people in Africa live without electricity. To address their need for mobile phone charging, most walk many kilometers each week to access mobile phone charging services in larger town centers with grid access. Our Solution: Nuru Energy aims to

address their need by creating a network of off-grid village-level microentrepreneurs (VLEs) that each use Nuru Energy's POWERCycle pedal generator as the basis for an off-grid fee-for-service recharging business, recharging mobile phones, Nuru Energy's own modular, portable LED lights and other devices.

The patent-pending POWERCycle pedal generator is the first of its kind in the world. With minimal human exertion (approx. one rotation per second), up to 12 mobile phones can be recharged within an hour. Because it is human-powered, the POWERCycle is not affected by unpredictable weather patterns and can therefore recharge mobile phones anytime, anywhere.

Geographic Footprint

Rwanda, Kenya, Uganda with joint venture/ distributors in Cameroon, Democratic Republic of Congo.

Maturity of Enterprise

136 distribution agents (village-level entrepreneurs), >15,000 products sold.

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Community Power
from Mobile

Off.Grid:Electric

Company Background

Off.Grid:Electric is Africa's first distributed clean energy utility providing accessible, affordable and reliable energy beyond the electrical grid. OGE sells electricity as a service, generated at the point of use. The company is based in Arusha, Tanzania with a world-class management team and global investors. We are building a technology and operational platform that will deploy and manage thousands of renewable energy sites. The company is currently working closely with partners in East Africa to prove the concept and deploy at network scale.



Category of Company

Off-Grid ESCO

Year the Enterprise was Founded

2011

Product and Service Description

Off.Grid:Electric sells energy services, not energy products. As a power provision company, our primary focus is on maximum reliability and efficiency. Because Off.Grid:Electric has a long-term financial interest in the performance of systems, the company continually searches for new technologies to increase efficiency.

Energy is our only business, allowing focus and rapid implementation. Our rigorous remote monitoring systems and next generation batteries increase system useful life, decrease maintenance cycle time and improve system integrity. Off.Grid:Electric can engage with mobile operators and tower companies through a primary power or integrated power provider model.

Community Power is also central to Off.Grid:Electric's vision. Given the location of the mobile towers and dispersed nature of off-grid

communities, Off.Grid believes that a community energy access solution requires more than one approach to delivering energy. For many locations, the central hub system can provide low-cost energy services for a community. Under proper conditions, a decentralized, local mini-grid may be viable.

Mobile operators and tower companies have the opportunity to share in CAPEX investment or to choose a pure OPEX model. Off.Grid's ESCO model can offer OPEX savings of 10-25 percent with zero CAPEX commitment. Alternatively, OGE offers OPEX savings of 50-75 percent with existing CAPEX investments.

Geographic Footprint

OGE is headquartered in Arusha, Tanzania - well positioned to serve the East African market.

Maturity of Enterprise

Off.Grid:Electric is currently piloting two energy generation deployments with Vodacom Tanzania to power a multi-tenant telecom site and an off-grid community of over 10,000 people.

Client List

Vodafone Tanzania

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Community Power
from Mobile

Pamoja Cleantech

Company Background

Pamoja Cleantech is a global born social enterprise specializing in renewable energy engineering, natural resource management, community empowerment and skills training.

Pamoja Cleantech has established research collaboration with the Swedish Royal Institute of Technology, Aalto University, Makerere University and the Ugandan Industrial Research Institute to develop services and products which meet the Community Power opportunity. Our focus is the design of an off-grid platform that provides sustainable energy, ICT and life services and excites local entrepreneurship in rural communities. This research is demand-driven and invites the telecom industry to be co-creators in product development.



Pamoja Cleantech builds, owns and operates power plants and provide cheap, locally-produced 100% renewable energy. We also provide services and consultancy for the energy supply of telecom companies. We offer feasibility studies of integration of renewable energy systems, demand evaluation, assessment of energy efficiency, and formulation of sustainability strategies.

Category of Company

Off-Grid ESCO

Year the Enterprise was Founded

2010

Product and Service Description

Our product, The Green Plant, is a hybrid energy system that combines solar photovoltaic and biomass gasification technologies to provide a reliable renewable alternative to diesel generated power.

The Green Plant is linked to local communities and farming cooperatives by short cycle

biomass operations that provide feedstock fuel for the power plant. These operations support sustainable agroforestry and use of waste agricultural residues and can be actively aligned with addressing deforestation, erosion and loss of ecological diversity. An anchor load electricity consumer such as a telecom base station allows us to reach out to the nearby community with affordable power. This power is distributed through E-hubs: energy centres that sprout entrepreneurial activity and small local businesses. This approach to energy production creates a resilient system that nurtures local sustainable development and strengthens the customer base of the telecom industry. Estimated levelized costs of electricity: 0,2-0,5€/kWh.

Geographic Footprint

Sweden, Finland, Germany, Uganda.

Maturity of Enterprise

Pamoja Cleantech is a start-up company currently in the process of implementing the pilot project.

"What began as an innovation project in the Swedish university environment is now a for-profit social enterprise network in Africa and Asia. We are impressed with the high level of innovation, commitment and a novel approach in spreading of an idea which contributes to sustainable growth in developing countries."

Veckans Affärer

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Community Power
from Mobile

Renewable Energy Ventures (K) Ltd.

Company Background

Renewable Energy Ventures Ltd. is a Kenyan consultancy and project advisory company in the fields of renewable energies and energy efficiency. In 2010, we additionally launched the Solanterns Initiative in order to replace kerosene lamps with solar lanterns and to create jobs at the same time. Hence, we developed a micro-entrepreneur model and looked through all the products on the market in order to settle for the best one. We chose the Sun King™ products as they have the best cost-performance-ratio.



The solar lanterns "...exceeded my wildest imagination."

Category of Company

Distribution Company

Year the Enterprise was Founded

2008

Product and Service Description

Renewable Energy Ventures (K) Ltd. offers the SUN KING™ and SUN KING™ Pro solar lanterns. Both lanterns are tested and awarded as high quality products by the World Bank/ IFC "Lighting Africa" Program.

The SUN KING™ Pro solar lanterns have a shatter-proof casing, offer up to 30hrs of light and a battery life of up to 5 years. They have the capability of mobile-phone charging with 6 different connectors and give a warm-temperated light out of a single 1-watt LED bulb.



The SUN KING™ is for lighting purposes only and gives up to 14hrs of light out of 10 high-efficient LED bulbs in 3 different lighting modes. Its battery has a lifespan of up to 3 years.

Additionally, Renewable Energy Ventures Ltd. offers a 1-year warranty on both products and free delivery in the Nairobi area.

Geographic Footprint

Starting point: Nairobi and Nairobi area, Kenya.

Already retailers in Thika, Kisumu, Eldoret, Karatina, Meru, Nyeri, Machakos, Nakuru, Kisii and Kericho.

Maturity of Enterprise

10,000 solar lanterns sold since inception in emerging markets.

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Renewit Ltd

Company Background

Renewit has been established for over 3 years as off shoot of a Hong Kong based design and manufacturing company. Our ethos is to bring reliable, affordable technology into emerging markets and through good design make this product desirable. In particular we have focused on portable power solutions for charging mobile devices and lighting. Our 20 year knowledge of working in China ensures we work to the highest international standards of design, product quality and performance and then offer this product at affordable pricing. As a manufacturing company we can offer individual tailor made solutions for clients to meet the demands of different markets around the world. We know work with many leading consumer electronic brands and telecom companies.



Category of Company

Off-Grid Product Provider

Year the Enterprise was Founded

2009

Product and Service Description

Our primary products are solar mobile phone chargers. Our unique technology in circuit design ensures are product works with every mobile device with no compatibility issues. After extensive field testing we understood the demands of the end consumer. The "out of the box experience" is very important. The product easily charges in less than 1 day of sunlight it will hold the charge for 45+ days and will charge a mobile phone in approx. 1 hour. We have also launched a range of lighting products including home lighting systems and a market leading solar light. Operators are increasingly relying on data



services to drive revenue with smartphones growing in popularity in emerging markets so whether this is downloading apps, surfing the internet, banking etc. Mobile money in particular needs consumers to have a reliable power source for their phone to give them the security to embrace the service.

There are opportunities for JV financing with third parties such as banks, financial institutions and internet service providers and internet companies. All of these third parties benefit from consumers having power to access their services through mobile.

Geographic Footprint

Worldwide

Maturity of Enterprise

We have sold over 150000 units in the last 12 months to operators and distributors.

Client List

MTN
Econet
Airtel in Africa
Reliance and Airtel in India and operators in Asia and North America.

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Community Power
from Mobile

SharedSolar

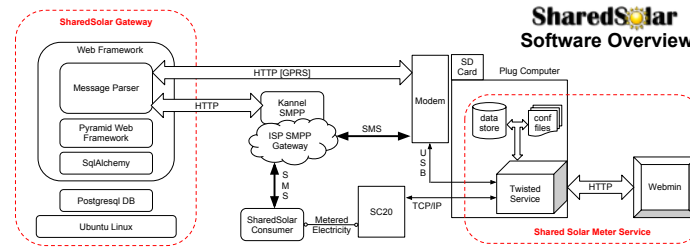
Company Background

Columbia University New York (CU) has developed a new shared electrical metering and account management platform designed to meet the needs of off-grid populations, international aid groups, investors and governments alike. The technology has been field tested since 2010 in the Millennium Villages Project in Mali and Uganda supported by Millennium Promise. The SharedSolar product offers a platform for pay-as-you-go metering, control and monitoring for rural microgrids.

Client List

Airtel Uganda
Malitel
Digicel

Mr Haidara is an entrepreneur. Before the installation of SharedSolar, Mr Haidara used to charge car batteries 7km away in order to recharge mobile phones in his village. Now, with a 24/7 supply of electricity, he charges about 15 telephone batteries a day. With each recharge he makes 100F for normal batteries and 200F for the bigger batteries. His costumers are mostly other villagers passing by on their way to the main market or some come from nearby. With the revenue generated he has bought more charger systems and pays the whole of his electricity consumption for TV and lighting.



The system offers the following functionality:

- the flexibility to adapt to stand-alone generation sources such as solar PV and diesel
- small frequent customer payments via scratch cards, android applications
- low cost automated prepaid metering
- a web-based management option for operators and investors.

Category of Company

Off-Grid ESCO with Pay-as-you-go Solution

Year the Enterprise was Founded

2010

Product and Service Description

At present the SharedSolar systems deploy a custom software package that sits on consumer-off-the-shelf hardware. Multiple custom hardware solutions are possible and supported by SharedSolar making it a flexible platform. There are primarily two major pieces of software that have been developed for SharedSolar: the



Metering Service and the Gateway. The Metering Service comprises of a software application residing at each SharedSolar site and responsible for near real-time metering of each circuit, consumer credit accounting, aggregated log transmissions to the Gateway, alert mechanisms, energy management and so on. It also provides the messaging interfaces for the Gateway to access the sites, web UI's for local technicians to troubleshoot over and a web service API supporting a local vendor solution using Android devices.

The Shared Solar Gateway is a python based web application that parses SMS text messages or GPRS requests, tracks power usage and allows an administrator to manage and view individual meters. The Gateway is developed and deployed on Ubuntu Linux.

Geographic Footprint

9 (+8 in construction) systems in Segou, Mali, 8 in Ruhira, Uganda, 2 in construction in Port-a-Piment, Haiti.

Maturity of Enterprise

Currently, there are 245 households connected to the SharedSolar platform.

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Community Power
from Mobile

Solar Sister

Company Background

Solar Sister eradicates energy poverty by empowering women with economic opportunity. We combine the breakthrough potential of solar technology with a deliberately woman-centered direct sales network to bring light, hope and opportunity to even the most remote communities in rural Africa. The Solar Sister Entrepreneurs provide green mobile charging solutions for their communities through charging services and by selling micro-solar mobile chargers. Light and connectivity powered by clean energy enhances education, improves health and safety and provides economic opportunity. Through economic opportunity and the transforming benefits of solar technology, women are able to lift themselves, their families and their communities out of poverty.



Category of Company

Distribution Company

Year the Enterprise was Founded

2010

Product and Service Description

The most important step to ending poverty is to create employment and income opportunities. Solar Sister does just that by empowering women with economic opportunity. Using an Avon-style distribution system, Solar Sister creates vital access to clean energy technology by building and extending the supply chain through women's rural networks. Solar Sister provides the women with a 'business in a bag', a start-up kit of inventory, training and marketing support. The women become their own bosses, creating sustainable businesses.

The women use their natural networks of family, friends and neighbours to provide the most effective distribution channel to rural and hard-to-reach customers.

Geographic Footprint

East Africa.

Maturity of Enterprise

Solar Sister has 148 Solar Sister Entrepreneurs and distributed clean energy products that benefit over 20,000 people.

"I no longer have to pay for phone charging, I just put the solar panel on my roof and connect my phone to the lamp and it is charged, it is a miracle that has put my heart to rest."

Mama Norah, Uganda

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Community Power
from Mobile

Solengy Group Ltd.

Company Background

Solengy was founded in 2001 with the vision of adapting renewable technologies and business models to be both, affordable and sustainable in the challenging environment of rural areas in developing countries.

In the past 10 years Solengy has been gathering experiences in different markets such as Haiti, Sri Lanka and the Dominican Republic building a strong on the ground expertise which lead to the development and implementation of cutting edge solutions with a proven track record.

Client List

Digicel Haiti

"Since 2010 Digicel has been investing in finding sustainable solutions for their subscribers in rural areas to recharge their cell phones. In doing so we worked closely with Solengy who developed a Solar Charging Station for rural electrification together with a micro enterprise model."

Maarten R. Boute, CEO, Digicel Haiti



Solengy
Innovation for Sustainable Development

Category of company

Off-Grid Product Provider &
Distribution Company

Year the Enterprise was Founded

2001

Product and Service Description

Solengy develops, manufactures, distributes and leases Integrated Solar Power Solutions for rural applications in developing countries. Our product line covers Solar Charging Stations, Solar Street Light, Integrated Solar Power Systems for Telco Towers, Integrated Solar Power Systems for Community Centers (health centers, schools, etc.)

Our main solution is a leading edge Solar Charging Station, the SGX Series, along with Solengy rechargeable devices that allows rural households at the bottom of the pyramid to get access to basic electrical needs such as lighting, mobile phone charging, radios and television.

Each SGX charging station creates one micro enterprise, empowering a woman generating

sustainable revenues and creating up to one additional job.

By the end of 2012 Solengy will have installed 2,000 charging stations in Haiti, providing 400,000 Households access to recharge their mobile phone and their Solengy Rechargeable Devices as well as empowering 2,000 women with their own micro enterprise (system operators).

Solengy is launching pilots with its Integrated Solar Power Solution for Telco Towers in 2012. Solengy is providing turnkey solution with 100% OPEX model with contract length between 5 to 10 years.

Geographic Footprint

Haiti, Dominican Republic, Sri Lanka.

Maturity of Enterprise

Over 3,000 Solar Power Systems in rural developing countries (Haiti, Dominican Republic, Sri Lanka). Over 25,000 users (Haiti, Q1/2012), Over 400 agents (Haiti, Q1/2012).

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Chairman and CEO

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Community Power
from Mobile

Suntrica Ltd.

Company Background

Suntrica Ltd from Finland is the leader in flexible and high-efficiency portable solar chargers. Suntrica's ergonomic and lightweight products provide the most convenient mobile charging experience. Chargers converting ambient solar energy into usable electrical energy can provide an unlimited source of power for personal electronic devices. Suntrica's vision is to become the fastest growing and most profitable global company to supply solar chargers for the mobile and consumer electronics industry. Suntrica's mission is to design cost-efficient, universal and easy-to-use solar chargers and integrated charging technologies that are effective in improving the operating time of mobile and consumer electronic devices.



Suntrica is committed to facilitate awareness about the importance of using ambient energy sources and environmental-friendly technologies to make the solar powered future of mobile and consumer devices a reality. Suntrica is also committed, from its part, to decrease the carbon footprint thus reducing the effects of the climate change.

Category of Company

Off-Grid Product Provider

Year the Enterprise was Founded

2006

Product and Service Description

Suntrica designs, manufactures and markets easy-to-use flexible personal solar chargers for use with portable battery-powered devices. Suntrica's main product is a flexible, lightweight SolarStrap with an internal battery. You harvest solar energy to the internal battery by keeping the SolarStrap with you always when you're outside, and get some quick boost

to your electronic device just when you need it! Thanks to various adapters, with Suntrica's SolarStrap you can charge iPhones and other smartphones, feature phones, mp3/4 players, GPS-receivers, digital cameras and other devices that use 5V charging power.

SolarStrap is easy to use; lightweight and easy to carry with you, weatherproof, so it tolerates a humid environment and it doesn't need any special maintenance. On cloudy weather you can charge the SolarStrap also from laptop, mains power or cigarette lighter plug in the car. Suntrica's SolarStrap™ means that you will never find yourself low on portable again!

Geographic Footprint

Suntrica has distributors in more than 30 countries, in 5 continents.

Maturity of Enterprise

Off-Grid product providers: >250kpcs of products sold since inception in emerging markets.

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Community Power
from Mobile

ToughStuff International

Company Background

ToughStuff is a triple bottom line energy business – we aim to achieve positive financial, social, and environmental outcomes. We operate as a privately funded company which we believe enables us to more effectively and sustainably achieve our social and environmental goals.

ToughStuff's mission is to bring affordable energy products to people without access to electricity thereby helping to increase living standards, improve health, enhance the environment, and build enterprise and employment.



ToughStuff has developed a modular range of affordable solar powered energy solutions to the three main power needs of poor consumers in the developing world – lighting, mobile phones and radios. Our unique products are designed following market research and field studies in Africa to meet the specific needs of our customers. They combine high performance, durability, and affordability.

Product and Service Description

ToughStuff provides energy solutions. The power source is a unique flexible, robust, water-resistant mini solar panel. This provides power to our phone connector plugs which charge all common phones. The products are highly durable, and have an expected 10 year lifespan. Our mobile charging kit represents a high quality, affordable, durable means for off-grid mobile users to charge their phones.

On average, ToughStuff's mobile solar connectors charge mobile phones around 15 times each month, and that each recharge saves the user around \$0.10, meaning an aggregate saving of \$1.50 per month on charging costs as well as free up charging time and money for more productive uses. Furthermore our products increase the ability of off-grid customers to use their phones by 10-14% (GSMA source), bringing social, banking and health benefits without any of the regular costs and time inconveniences that their previous methods of charging necessitated.

ToughStuff has been nominated two years running for the GSMA award for best product for underserved segments

Geographic Footprint

Kenya, Tanzania, Rwanda, Uganda, Zimbabwe, Somalia, Ethiopia, Ghana, Nigeria, Malawi, India, Pakistan, South Africa.

"When I saw the product, I knew that this modern technology is so badly needed in my rural, remote part of the country. I saw immense business opportunity – additional income stream from charging people's phones. It's helping me to support my family."

Grace, Kajiado, Kenya

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Community Power
from Mobile

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