



## Energy Challenges

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### **Scale Access to Mobile Solar Genset (MSG)**

*Mobile Solar Genset (MSG) creates enormous benefits for developing world families. MSG create massive cost savings, allow children to study more, and reduce household fire danger. In three months, sell 15 mobile solar gensets to rural or urban homes and plan to scale to at least 100 homes in one year. A successful model will be evidence-based, will include continuous monitoring and testing, and a commitment to change if evidence suggests your approach is not working.*

### **The Problem**

One third of the world's population has no electricity. The majority of these people live in rural, remote areas of the world's poorest nations. 598 million people in Africa alone have no access to electricity. While In Nigeria, there are 28.9 million households in which 82.1% of the households don't have access to electricity from the grid then the imperative of kerosene lanterns and generators to public and

private life in Nigeria becomes compelling. Without electricity families have no clean source of light, leaving millions to rely on expensive and dangerous alternatives.

Many use homemade kerosene lamps and fossil fuelled generators which are a poor source of light; they emit toxic black smoke, eat up to 40% of a family's income and are extremely hazardous. Children can't study at night, the working day ends prematurely and indoor air pollution presents a serious health hazard

Report puts the number of deaths from generator smoke inhalation in Nigeria between 2008 and 2014 at no fewer than 10,000 and almost every week media reports tell of the deaths from carbon monoxide poisoning. Incidents of entire families dying from smoke inhalation is a regular feature in the news media and recently in one particular case 17 persons died at a religious gathering suspected to be from smoke inhalation.

This lack of access accentuates poverty, overburdening meagre household budgets because people must pay high costs to access even simple light.

While Nigeria's energy sector made reforms that prioritize energy access, it is uncertain when remote villages will be connected to the grid. The cost of infrastructure to extend electricity distribution lines and expand power generation is steep, while energy demand continues to grow.

### **The Proven Solution**

With a mobile solar generator, everything changes. These mini off grid solar genset are safe, clean and affordable. They give off hours of electric power so families can earn, learn and feel safe after dark. Just a 500w system can transform the fortunes of an entire family and is the first step on an energy ladder to full electrification.

We're all familiar with plugging appliances into a wall socket and getting power. Mobile Solar Genset (MSG) functions in a similar way. Switch it on, plug an

appliance into the socket and you'll have power for your favourite devices. The heart of the system is an advanced battery backup that has been used for decades in the automotive & telecommunication industry. The system can be charged by solar or any other form either of Alternating current or direct current (DC). The retail price of a small solar electric system in Nigeria is around ₦150,000

### **Your Challenge**

We will award up to ₦1million to a social entrepreneur who can design a business and sell minimum of 15 mobile solar gensets in a three-month proof of concept stage, and who can grow to reach 100 homes within one year.

A successful proposal will include a localized plan that can manage uncertainty, including:

- A evidence-based approach that can identify the strongest factors limiting solar home systems access, specific to the region in which you will operate
- A model of how and why your intervention will boost use of solar home system in the long run
- A plan for continuous testing and evaluation of the program
- A commitment to change the plan if the evidence suggests that the approach isn't working

### **Other Market Information**

- Significant investment and overreliance on technology have however led companies to define very strong growth targets. As a result, many of them have prioritized quick customer acquisition over portfolio quality (e.g. aggressive sales strategies or limited vetting processes) and end-user affordability over risk exposure (e.g. low down payments or extended contract periods).

- Simultaneously, the recruitment and management of field staff at scale is a key challenge. Commissionbased contractors tend to focus on easy sales, quickly reaching ‘low-hanging fruits’ in their areas, and becoming inactive after a few months. This led to saturation of areas at low adoption rates, with high numbers of defaulting customers unable to sustain their payment schedule and acting as a deterrent for others.
- While awareness is progressing, quality-verified lantern players struggle to reassure customers on product quality: with the surge in cheap copycats and lack of service, solar lanterns are often seen as disposable products failing after a few months and are therefore unworthy of investment.
- Yet the main issue remains the lack of adequate distribution channels in rural areas, where the traditional direct sales model is unsustainable for entry-level products, and where partnership models (e.g. cooperatives, MFIs) have only met local successes.
- Finally, financing challenges remain, as PAYG is a highly capital-intensive business model. Replication will be challenging in more complex market environments (e.g. low solar awareness, absence or low penetration of mobile money, and high currency risks).