

Options for Energy Entrepreneurs in Cameroon

Introduction

This report presents preliminary recommendations for a range of 'green' energy products that could form the basis of sales and support businesses for small-scale entrepreneurs and micro / small enterprises.

Technologies have been identified that have some 'track record' in African locations and are generally assessed to be 'fit for purpose'. Where possible suppliers have been identified that express a strong social purpose and present opportunities for wider collaboration and partnership.

Because of the specific market that the project is working in, it is necessary to identify products that will meet the expectations of consumers both in terms of price and efficiency. In some cases there may be a need for specific approaches to price and payment models that defer cost and allow consumers to lease equipment without major capital outlay.

Approach

This report considers the main ways that consumers use energy in Doula for power, lighting and cooking; and presents a range of technologies that will meet consumers' needs in a more sustainable way.

LEF has already established contact with all of the technologies and suppliers presented in this report. In some cases there have been discussions about pricing, supply and distribution options. In other cases wider opportunities for collaboration and partnership may be explored, particularly in the cases of larger corporates such as Schneider Electric.

Questions about local supply and distribution of products to entrepreneurs have been identified. In most cases there has been a discussion with the supplier about how LEF entrepreneurs can get a regular supply of products in Douala, however further work will be required to finalize details including pricing, payment terms etc.

Who is the Customer?

This report makes a number of assumptions about the market and end-customers of the various products and services to be offered. The broad definitions of the key customer groups are as follows:

- Householders with needs energy for power, lighting and cooking
- Institutions with needs for energy for power, lighting and cooking

Further market research at the local level will add greater detail and clarity to the specific requirements of the target market. The technology best suited to customer needs will obviously vary, for example institutions such as schools may need large scale fuel-efficient stoves, restaurants may want solar charging systems so that customers can charge mobile phones while they eat, further opportunities will be identified through local research.

Price point

Cost of products will be a major influence affecting the likely success or failure of any enterprise focused on sales / leasing and support. Products have therefore been identified that are priced at a level likely to be affordable to the core market of householders. Some products more suited to institutional users such as schools or restaurants are likely to be more expensive and further research should aim to estimate the size of the market for these 'big ticket' items, price threshold and most effective payment options.

Subsidy and Soft Loans

For the purposes of the project it may be that LEF provides an initial subsidy to offset the up-front capital costs, to enable the business to get started. Some suppliers such as D.light generally adopt this approach, based on the understanding that entrepreneurs will need to demonstrate some kind of capital investment into initial stock to get the business moving.

As part of the selection of products to be offered by entrepreneurs, it will be necessary to work out the full cost model, profit margins etc. to determine the viability of the enterprise over the long term.

LEF may also need to consider the extent to which it is able to offer subsidy or 'soft loans' to enable the enterprises to become established, according to budget available for this.

LEF may also be in a position to engage with suppliers to secure favourable terms so that entrepreneurs are able to avoid time pressures to generate significant sales income while the business is still in start-up mode.

Price Models

The producers and suppliers of selected products will be asked to provide examples of price models that have been developed for specific products. This is especially relevant for solar charger systems similar such as those offered by Schneider Electric that have a relatively high capital outlay with users leasing batteries or lamps.

Training

Where appropriate suppliers will provide training to entrepreneurs / retailers; For example D.Light have established programmes where all entrepreneurs are provided with training to help them become successful in selling lamps and other equipment, this includes sales and marketing techniques as well as technical training relating to maintenance and support.

More sophisticated systems such as some of the equipment provided by Schneider may require a higher level of technical training and support, the need for this should be identified and established in advance of any agreement being put in place.

Competition

The market research out should focus on products available in the local market that are comparable with those recommended in this document. In particular cheap solar lamps including those offered on local markets should be identified.

2. Product Options

2.1 Lighting

2.1.1 WakaWaka Lights

Claims to be 'The best solar lamp in the world.' Provides 16 hours of safe and decent reading light on less than a day of sunlight. Rugged, water resistant, it can withstand extreme environments.

WakaWaka has a 800 mAh NiMh battery (3 x AA size) with 500 cycles. This means it can be fully charged and discharged 500 times before the capacities start to degraded steadily. Since WakaWaka runs at least 2 days on 1 cycle, the batteries will work for at least 1,000 days, or around 3 years before they start to wear out and need to be replaced.



On a full battery (less than 1 day charge) WakaWaka provides:

- 8 hours of bright ambient light
- 16 hours of bright reading light
- 80 hours of soft night safety light

Note: Only one type of lamp is available – very small size, but some positive feedback received about this product.

Product Specification:

<http://www.wakawakalight.com/about/the-wakawaka-lamp/product-specifications/>

Price Information:

\$10 per unit – for purchases of more than 500 units. Sample price quoted as \$15 for up to 48 units – this is all subject to negotiation.

Wholesale Price Ex Douala: To be confirmed

Recommended Retail Price: To be confirmed

Training Required:

To be confirmed

Supplier Details:

Local supplier / distributor in Cameroon should have a stock of 500 available.

Alternatively LEF would arrange with WakaWaka in the Netherlands – there are questions to answer with regard to imports, quotations etc.

2.1.2 D Light

D.Light produce a range of solar powered lights and systems that have been deployed widely in Africa and other locations.

The d.light S1 is an all-purpose, high-brightness solar light designed to make solar lighting available and affordable to all. Following in d.light's tradition of quality and durability, it combines an attractive price point with functional design.



The D.light s10 is a versatile, multi-purpose solar lantern designed for all members of the family. It exemplifies the best of d.light product design, quality, and affordability. A highly efficient solar panel is conveniently integrated into every d.light S10 to make solar charging as easy as possible. It can also be fully charged through the AC power grid with any standard 2 mm Nokia mobile charger.



The d.light S250 is a dual-purpose solar light and mobile charger. Its bright white light illuminates a room as much as a 3-5 watt CFL lamp, and is up to 5 times more energy efficient. It provides up to 10 times more light than a kerosene lantern. S250 also charges the most popular mobile phones on the market when AC power is unavailable or inconvenient.



Product:

<http://www.dlightdesign.com/product-line/>

Price Information:

D.light S1 – price \$8 - \$10

D.light S10 – price \$10 - \$15

D.light – price S250

Wholesale Ex Douala: To be confirmed

Recommended retail price: To be confirmed

Training Required:

D.light typically provide training under their micro-franchisee model, training in sales as well as technical support.

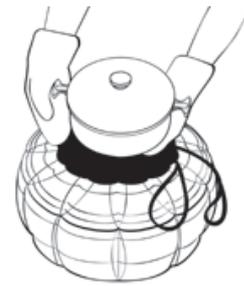
Supplier Details:

In Cameroon D.light have a partnership with Total who act as distributors through their petrol stations. LEF would need to establish an agreement with Total TATS team to supply products (ideally at cost) in Cameroon.

2.2 Cooking

2.2.1 Wonder Bag

Wonderbag is an insulated bag in which people can cook anything from meaty stews or vegetable curries to simple rice and soups. You heat up your pot of food on the stove, kick-starting the cooking process, and then place it in the Wonderbag.



Due to the reduction in fuel used, the Wonderbag is estimated to reduce carbon emissions by up to half a ton of carbon dioxide per year if used three times a week. Total fuel savings are estimated by the manufacturers at 30% over five years for South African families compared to heating by paraffin stove alone. Estimates on total savings suggest that up to 10% of total household income could be saved due to the reduction in fuel costs, along with the associated time saving due to less gathering of fuel being required.

Product:

<http://nb-wonderbag.com/Pages/WonderbagCommunity>

Price Information:

Wholesale Ex Douala: To be confirmed

Recommended retail price: To be confirmed

Training Required:

To be confirmed – the product is fairly simple in its use so little training in sales techniques is required.

Supplier Details:

The product is manufactured in South Africa, though in a previous conversation with a Wonderbag partners we were informed of plans to start supplying this product in Cameroon. There could also be plans to manufacture the product in Cameroon as the design and construction is simple and in South Africa this has been a successful way of creating employment.

Notes: Further discussion with Wonderbag will be necessary to establish best terms and conditions for securing cost effective supply in Cameroon. LEF should take this enquiry forward. Perhaps a useful first step might be to secure a number of sample products to test the market if none are currently available in Cameroon.

2.2.2 Fuel Efficient Stoves



There are a range of potential suppliers for fuel-efficient stoves ranging from products manufactured internationally to locally produced stoves. It will be important to source stoves that are of good quality and available at a reasonable price that is affordable in the local market. It is suggested that FCTV / LEF approach ACREST with the aim of negotiating terms for supply of stoves in Douala at discounted rates for bulk purchases.

1.

The majority of fuel efficient stoves are produced for domestic use – ACREST may have experience in the production and installation of larger institutional stoves or other suppliers may need to be found. Practical Action produce a fact sheet on stoves for institutional use: http://practicalaction.org/docs/technical_information_service/stoves_institutional.pdf



Price Information:

Wholesale Ex Douala: To be confirmed.
Price per stove on ACREST website is 10,000 CFA

Recommended retail price: To be confirmed

Training Required:

To be confirmed – There may be opportunities for entrepreneurs to get involved in manufacture of stoves?.

Supplier Details:

<http://www.acrest.org/products/>

2.2.3 Briquettes

There is an opportunity for entrepreneurs to get involved in the manufacture and sale of briquettes from waste material. However it will be important to establish that sufficient demand exists for the product.

According to some reports about energy usage in Uganda – a large proportion of the urban population cook using bottled gas. It may be that schools, restaurants or other institutional consumers are a better target market for briquettes, ensuring a regular, consistent demand for the product, possibly in conjunction with the use of fuel-efficient stoves is an important linkage in this business line.

2.3 Power

2.3.1 Schneider Electric Bip Bop Products

Schneider Electric produce a range of products aimed at the bottom of the pyramid. Based on review of the products available it is suggested that FCTV focus on 2 product lines – solar lamps and home charging systems and the In-Diya Battery Charging system presented below. See attached catalogue for full details.

2.3.1.1 Solar Home System with 2 Lamps

This is a more elaborate solar home system that includes a battery back up to provide 8 hours lighting. The system is scalable and includes a cell-phone charger.

Features

- 10Wp solar lighting system with 2 nos. of 2.5 W LED lamps and 3A charge controller with built-in cell phone charger
- 8 hrs backup for two lamps with one day of charge
- Trickle charging mechanism to increase battery life
- Scalable system to connect loads up to 36 Watt (Max) by connecting 12 V, 40 Wp solar panel and 12 V, 50 Ah battery

Benefits

- Provides reliable lighting for people living without access to electricity
- Sufficient to illuminate two rooms for daily household activities
- Increase in battery life
- Low cost compared to CFL based solar home lighting system
- Can operate lamps and cell phone charger during daytime when battery is getting charged

2.3.1.2 In-Diya Battery Charging Station

The In-DiyaTM Battery Charging Station could be utilized by an entrepreneur who owns the charging system and generates an income from renting batteries to customers. Also opportunity for phone charging income.

Product Description

Battery charging station is a solar powered system utilizing power from photovoltaic panels to charge In-DiyaTM backup units which are rented to people living without access to electricity.

This system allows people without access to electricity to have reliable lighting through In-DiyaTM LED Lamp without investing on solar panel and battery. It is a sustainable, profitable and scalable system promoting entrepreneurship at base of the pyramid.

Features

- Green and safe energy for lighting and cell phone charging in off-grid areas at lower cost than lighting with kerosene lamp
- Owned and managed by entrepreneur who rents batteries to customers
- Consists of 12 V, 150Wp solar panel, a battery charger and 10 numbers of In-DiyaTM backup units
- Battery charger can charge 10 backup units simultaneously within 8 hours
- Easily scalable with increase in number of customers

- Can be powered by grid supply
- Can charge cell phone

Application

Lighting and cell phone charging for households and small shops without access to grid supply

Price Information:

Wholesale Ex Douala: To be confirmed.

Recommended retail price: To be confirmed

Training Required:

To be confirmed.

Supplier Details: Schneider is working with a local distributor in Cameroon – details to be confirmed.

Notes:

LEF and FCTV have been involved in ongoing discussions with Schneider both in Paris and Cameroon, however details for supply and pricing (wholesale and retail) of products need to be finalized.