

The logo for Africa Power features the word "Africa" in orange and "Power" in purple. Above the letter "A" in "Africa" are three green curved lines representing a signal or power icon.

Transforming Business and Lives

Africa Power is an off-grid, rural power services company, providing power services to businesses and households

We happen to favour off-grid independent systems over micro-grid systems,
But that is NOT today's topic

We have exciting new ideas about Solar Home Systems, but we will talk about
and demonstrate those at our March conference/exhibition

Productive Use of Power



Micro-enterprises and Business do NOT want electricity

- They want the capabilities / services/ outcomes which power(electricity) can engender.

Micro-enterprises and budding entrepreneurs in Africa are capital poor – they have no savings.

- So if they can't afford to buy solar, they can't afford to buy the equipment to use the power.
- *So we are looking at some form of leasing / PAYG model which has to include leasing the end-use equipment/appliances*

Business Package



A productive use business package comprises 4 elements

1. Some **end-use equipment/appliance** to provide the required outcome/benefit or help to complete a task
 - Lights; pumps; grinding machine; TV screen; fridge; oven.
2. (Renewable) **power (source)** to power the equipment
 - PV panel; solar power system; wind turbine; water turbine
3. A source of **Business inputs** (consumables)
4. Training; professional **support & advice**

Business Package Examples



Grain Milling –

- Cooperative or business?

Drip feed irrigation in Benin

Courtesy of Burney et al.

Aim of our research



Create, test & commercially deploy business packages

1. Choose a business to study
2. Create a financial business model for the entrepreneur
3. Source / develop / test equipment to match above
4. Calculate leasing costs (for all 4 parts of business package)
- 5. Check leasing costs are less than 50% increased profits**
- 6. Change/Africanise specifications/outcomes & repeat**
7. Until one has a profitable business package
8. Partner/Create a team, who can supply all 4 elements
9. Test with real micro-enterprises – improve 2-8 above
10. Deploy commercially.

The demand:

Many (most) Africans have mobile phones but are unable to charge them due to lack of grid power. People are willing to pay to charge their phones. Based on studies in East Africa solar charging businesses charge:

7-17 Phones per day*

*Based on average number of charges for Tanzania, Uganda & Kenya, data collected by GVEP (Phone Charging Micro Businesses In Tanzania & Uganda, GVEP International (2011))

The Opportunity:

a solar powered phone charging station

Number of charges/week

72 Per week*

Weekly Income

\$12.24 Per week**

Cost of solar kit for 18-36 charges/day

\$3.90 Per week***

Zero business inputs/ consumables; limited or no ongoing support required.

*Africa Power Estimates, based on 12 charges a day, 6 days a week

**Based on GVEP study, based on cheapest cost to the customer to charge a cell phone (\$0.17, Tanzania)

***Based on Africa power leasing calculations of a 45W solar phone charging system, repayment time is 18 months

Profit Margin

68% 1st 18 months

90% After 18 months

^After 18 months the kit is paid off and transferred to a "maintenance plan" \$1.25/week. This guarantees the kit is fully functioning and replaces the batteries **before** their end-of-life

Limitations?

What haven't we considered



Real world data

Data such as number of charges per week have been estimated by Africa Power, real world data would increase the confidence in the business plan. The data preceded SMART phones, which take 3 x the energy to charge as 2G phones. Do they differentiate in price? What is the ratio of small to large phones per day. How is it trending?

Scale of the business

While this business is proved to be profitable, the scale is small as a stand alone business, This enterprise is best suited as an “add on” product for an already existing business.

External Factors

Though this business plan is currently profitable, are there changes in the playing field that will affect profitability. For example lots of SHS's providing home charging.

Non financial support

The financials of this enterprise stack up favourably for the entrepreneur (and for Africa Power) however are there other aspects of the business model that need to be addressed before it is successful. For example entrepreneur training.

What is Today about?

Creating a group **interested** in productive power and who want to **make a difference**

- Help us **choose/prioritise businesses** to study
- **Provide data** or sources of data (references/contacts)
- **Follow our work** and help with answers
- **Participate** in the analysis
- Support a testing programme
 - Access to villagers/businesses;
 - Provide business inputs
 - Sell us the equipment / power source package
 - Help with training / professional advice
 - Deploy the business packages in a current development programme
 - Share results

Process



1. Hear some inspirational presentations
2. List every possible rural business in Africa
3. Plot our best guess of profitability vs surety of data
4. Discuss the most interesting businesses in more depth – prioritise our analyses
5. Network and meet friends