IFC International Finance Corporation
World Bank Group

Slum electrification: challenges to be addressed

Off-grid lighting, an ideal interim solution to grid lighting

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Lighting Africa – a joint IFC/WB program

Objective:

Mobilizing the private sector to provide **affordable, renewable, clean lighting** to 2.5 million people in Africa.

This will be achieved by facilitating sales of a minimum of 500,000 off-grid lighting units by 2012 while at the same time, **establishing a sustainable commercial platform** to realize the vision of supplying 250 million people with off-grid lighting products by 2030.

Current main sources of Lighting in Kenya…

23.7 % of households use "Kuruboi" – open wick lamps

1,800,000 households (est)

52% of households use hurricane lamps

3,900,000 households (est)

Population with grid connection is estimated at 18 - 23%

Fuel based lighting figures;

On a household or duka level:

- Ksh 180 – average amount spent per month on kerosene (kuruboi)
- Ksh 585 – average amount spent per month on kerosene (hurricane lamp)
- Ksh 7,000 – average amount spent per year on kerosene
- Ksh 1,300 – 4,000 average cost of a solar lantern
- Ksh 7,000 – amount that would be saved over a 2 year period using a solar lantern instead of a kerosene lamp

On a National scale:

- Ksh 4 - 6 Billion spent annually on fuel based lighting
- Significant GHG emissions

Off-grid products – an ideal interim solution before grid connection

“People do not have to wait for the grid to enjoy better lighting”

Off-grid products – social impact & better living standards

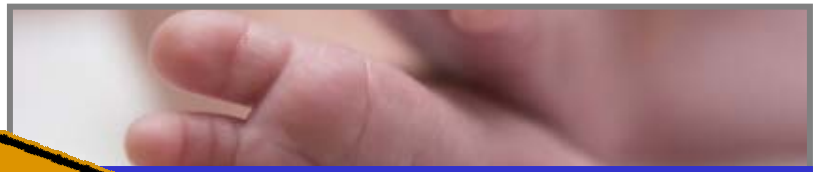
- Off-grid lighting products using LED and CFL technology can deliver high-performance, affordable lighting services to low-income people currently dependent on kerosene and other fuel-based lighting.

- Industry characterized by rapid change and innovation
  - Better quality of light
  - Longer usage times
  - Lower pricing
  - Clean lighting
  - Wide product offering

- Savings from fuel based lighting can be redirected towards more productive channels.
- Better lighting has a social impact benefit in; **health**, **education** and income generation opportunities

Key Questions Asked To Evaluate off-grid Lighting Devices

Would you buy it?

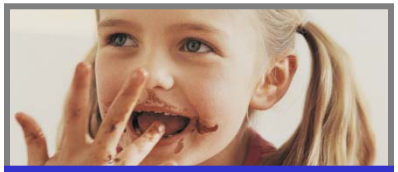


idea genuinely new and unique?

Is the idea clear to you?

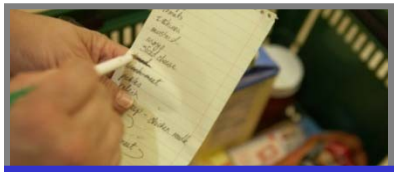
Is it relevant to you?

Do you find it exciting?



Do you actually like the idea?

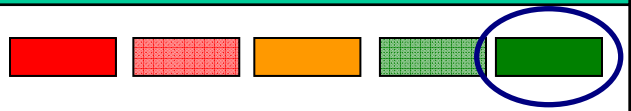
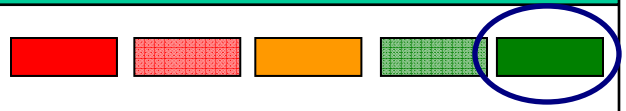
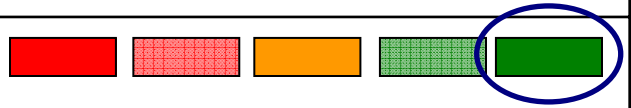
Do you think it would offer value for money?



How often would you buy it?

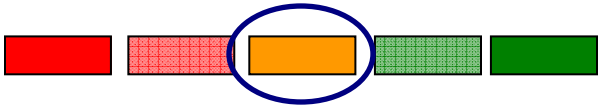
Do you believe it?

Test product comparative evaluation

Evaluation	Before placement	After recall
Uniqueness		
Relevance		
Excitement		
Clarity		

- After recall the product was regarded as very exciting because of its smart and small design
- The product was perceived as unique; some respondents mentioned that they could show off with it
- Task light was considered relevant because of its portability and good light

Test product evaluation pricing & purchase intent

Feature	Before placement	After recall
Likelihood to purchase		
Worth more than other products		

- After recall respondents indicated that the product was worth more than other products and the willingness to purchase the product in the future remained high
- The perceived price before placement was US$ 20-40, which was higher than the RRP

Test product pricing scenarios

Pricing Scenarios	Amount US$	Response	Reasons
Willingness to pay more than perceived price mentioned before placement	20-40		As there are no running costs involved and the battery last long
Willingness to purchase at the RRP	17.7		It is a good price
Willingness to purchase if financing is available to offset part of purchase and maintenance cost			It is an easier way of purchasing regarding the small budget of most of the respondents
Willingness to purchase without solar panel (KO13/ HI65 only)	12.8		It is better to buy the whole set together to prevent charging expenses
Willingness to purchase solar panel separately			
Purchase price (without solar panel) with monthly AC running cost	18.8		

- The perceived price before placement was US$ 20-40, which was higher than the RRP
- The idea of selling the product without the solar panel was rejected by most respondents, as they try to avoid running costs

Tapping into the low income market

Challenges;

1. Narrow income streams – cannot afford large upfront payments
2. Limited access to finance – operating out of the banking sphere
3. Limited distribution – channels within their reach cannot afford to stock off-grid products
4. Limited awareness – solar energy is a new innovation for the segment
5. Security – Panels may be stolen

Possible solutions;

1. Provide an avenue/structure for a monthly installment payment plan.
2. MFIs as a viable option either informal or formal in nature.
3. Formal/informal MFIs as viable distribution channels **OR** explore an "order based" distribution option with supplier
4. Awareness campaign – preferably experiential marketing.
5. Set up charging stations

"Consumer finance is key to unlocking the market potential"

Off-grid products are within reach of the low income segment

Est. retail Pr Ksh 1,300

Kuruboi/open wick: monthly kerosene bill Ksh 180

- Payback period of 8 months

Hurricane lamp: monthly kerosene bill Ksh 585

- Payback period of 3 months

Product warranty provides a safety net for the transaction

"An industry characterized by rapid change & innovation – Expect better priced products"

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