

Market Development for Renewable Energy Technologies



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Development

Organisation



Connecting People's Capacities

SNV Netherlands Development Organization

Mission:

SNV is dedicated to a society where all people enjoy the freedom to pursue their own sustainable development:

Programmes:

- Agriculture
- Water, Sanitation & Hygiene
- Renewable Energy
 - Increased use of modern and clean forms of energy at the bottom of the pyramid

Supporting Market Development for Renewable Energy Technologies

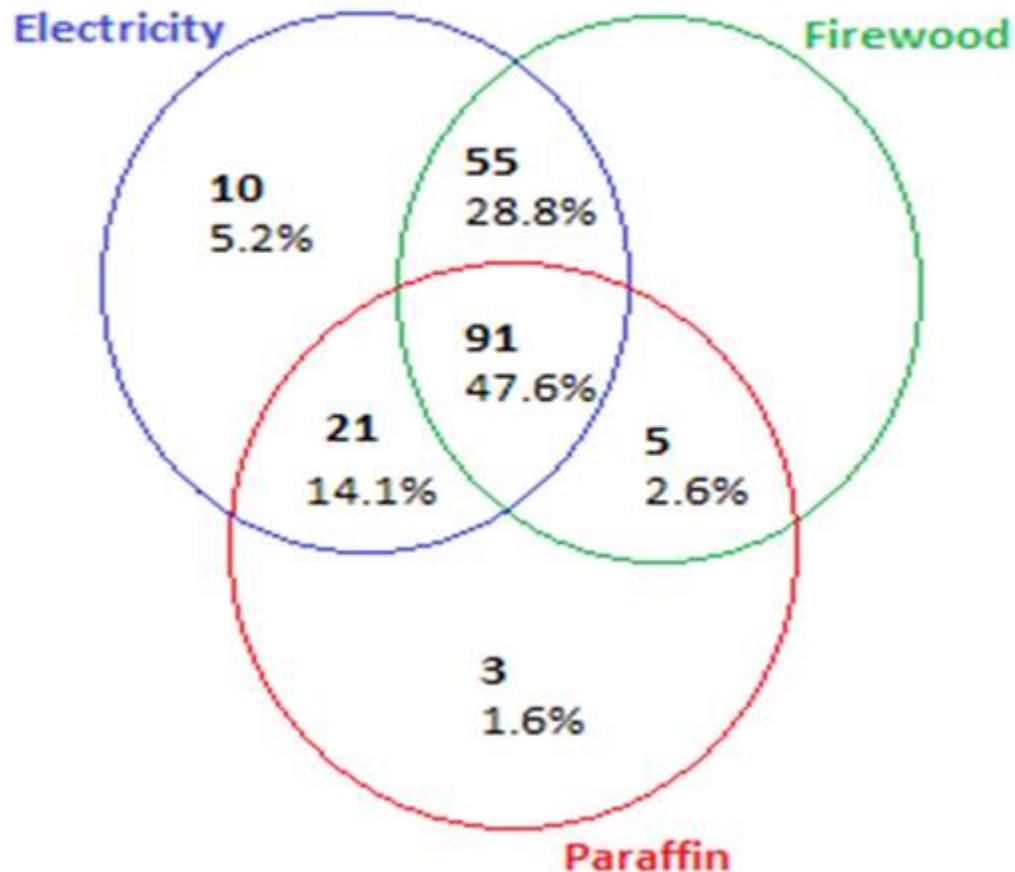
“EVERY DISADVANTAGE HAS ITS ADVANTAGE”

Johan Cruijff



Energy for Cooking/Heating – The case of Harare

- 485,000 households in high density Harare (Census 2002)



- 96% grid connected
- 67% load shedding per week
- Coping through Energy Mix
- Half uses electricity, paraffin & firewood

Per month \$11million:
Electricity \$4.2 million
Firewood \$5.2 million
Paraffin \$1.4 million

(SNV & Hivos 2011)

A Firewood Industry per month

- Firewood \$5.2mIn = 11.7 million kilogrammes
 - 200mIn Mega Joules
 - Non Renewable 65% = 7.6million kilogrammes
- 145 hectares natural woodland
- 290,000 trees

Consumer Profiles

no. households	energy mix	Monthly Expenses Cooking & Heating
68,493	Paraffin & Electricity	\$16.13
139,901	Firewood & Electricity	\$29.49
231,225	Paraffin & Firewood & Electricity	\$22.41
12,630	Paraffin & Firewood	\$21.22
25,260	Electricity	\$24.80
7,772	Paraffin	\$11.80

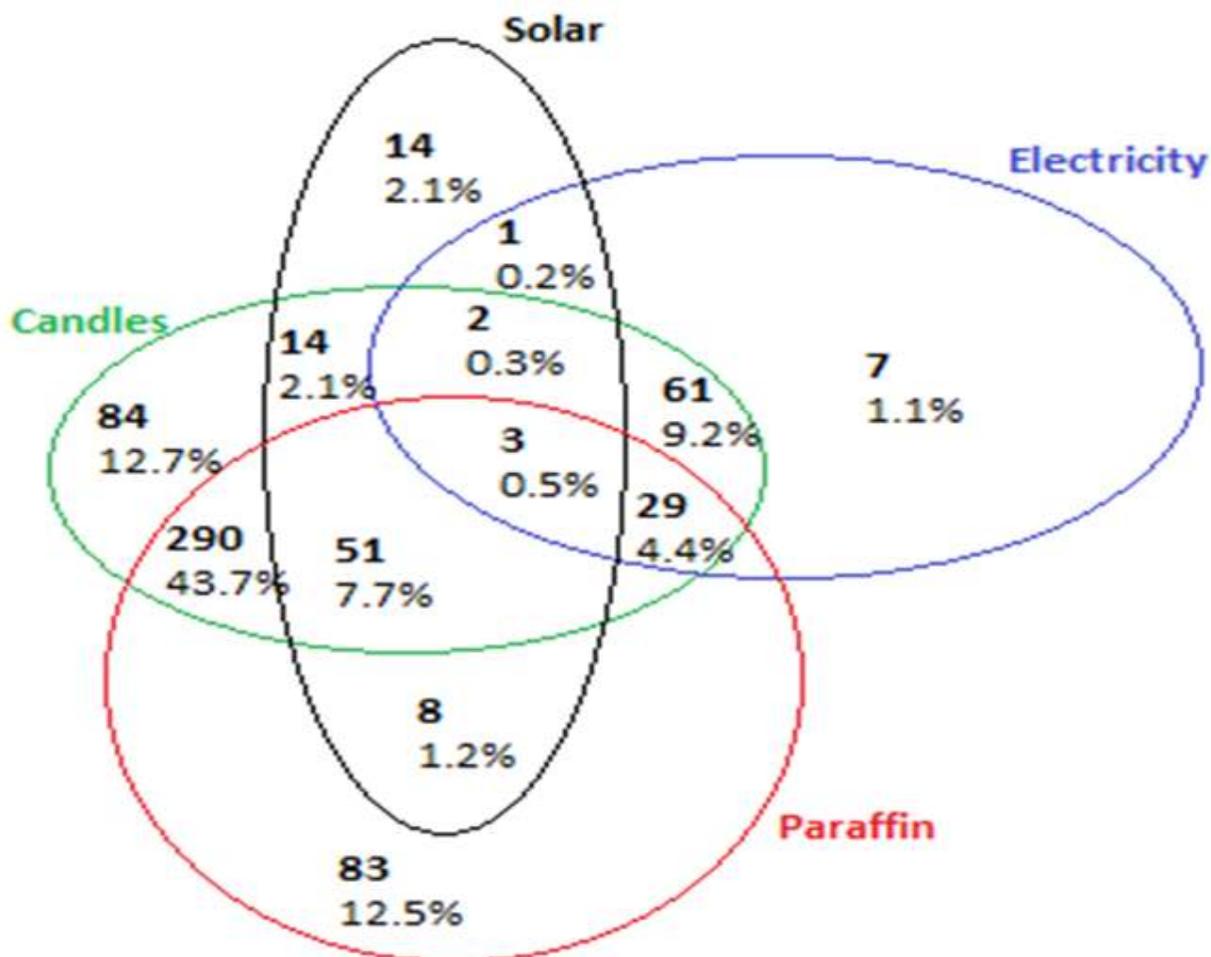
(SNV & Hivos 2011)

Competing with Firewood – \$5.2 million market

- Some companies are in the market with
 - Charcoal
 - Coal dust briquettes
 - Sawdust briquettes
 - Biofuel such as ethanol gel
- Factors to consider for successful market entry
 - Price competitive **\$/MJ**
 - Consumer preference – turn key clean energy (electricity)
 - Paraffin fairly affordably, but affects taste of *sadza*, prohibitive cost of cookstove(s), is believed to cook slower, and some fear its inflammability
 - Initial stove price prohibitive at Bottom of the Pyramid

Energy for Lighting – Rural Zimbabwe

- 1.5 million rural households off-grid (census)



- 14% owns solar
- Off-grid used to cope with energy mix
- Half uses paraffin and candles with electricity or solar
- Cellphone charging 10x per month @ \$0.2 to \$1

\$7.5million per month

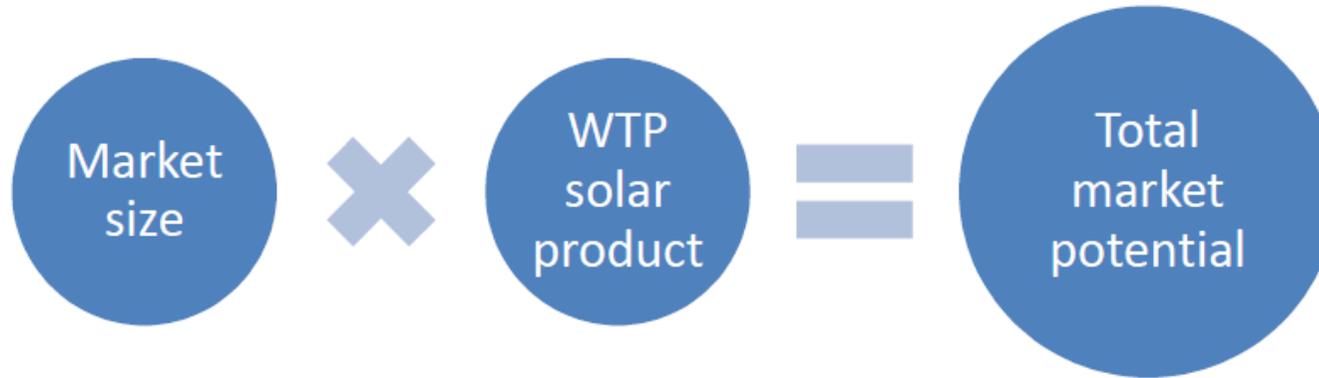
(SNV & Hivos 2011)

Willingness to Pay Research

- three products



Willingness to Pay Research Continued



District	Households without electricity	WTP solar lantern	Total market potential	15% market potential
Zimbabwe	1,536,090	\$22	\$ 33,793,980	\$5,069,097
District	Households without electricity	WTP solar lantern + charger	Total market potential	15% market potential
Zimbabwe	1,536,090	\$44	\$67,587,960	\$10,138,194
District	Households without electricity	WTP small solar home system	Total market potential	15% market potential
Zimbabwe	1,536,090	\$153	\$235,021,770	\$35,253,265

Source: Koen Van Kuijik, Solar PV Potential in rural Zimbabwe, Vrije Universiteit Amsterdam and SNV Zimbabwe 2012

Competing with Paraffin & Candles

- Some companies are in the market with
 - Solar household systems
 - Various solar lanterns
- Factors to consider for successful market entry
 - Financing competitive to weekly lighting, entertainment and cellphone charge expenses → mobile juice card system the next generation solar gadgets?
 - Consumer accepting solar (14%) quality remains an issue
 - Last mile sales, distribution and after sales service

Conclusion

- Demonstrated urban market potential for alternative cooking and heating fuels
- Demonstrated rural market potential for solar in Zimbabwe

“Who is taking up the challenge?”

“YOU HAVE GOT TO SHOOT, OTHERWISE YOU
CAN'T SCORE”

Johan Crujff

Thank you!

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