Global Off-Grid Solar Forum & Expo

22-24 January 2018, Hong Kong Convention and Exhibition Centre

Platinum

Gold

Silver

Bronze
A Peek into our Rural Customer Base

Insights for Innovation
Speakers

- **Moderator:** Kate Montgommery, Associate Director, Strategic Partnerships, Acumen

**Speakers:**
- Daniel Waldron, Consultant, CGAP / World Bank Group
- Richa Goyal, Sr Energy Analyst, Lighting Global Quality Assurance Team
- Shazia Khan, CEO and Co-Founder, EcoEnergy Global LLC
- Samuel Muthoka, Country President, Ipsos Tanzania Ltd
Agenda

• Introductions

• Customer Values and Preferences
  • Richa
  • Daniel

• Business Model development and strategy
  • Samuel
  • Shazia

• Final thoughts
Insights from the
The Energy Ladder Research, Uganda

Richa Goyal
Schatz Energy Research Center

A Peek into our Rural Customer Base
Global off-Grid Solar Forum & Expo
January 23, 2018
Contents

1. Set a quick context of the off-grid electricity situation in Uganda
2. Ways in which end-users adopt higher levels of solar energy access
3. Motivations for purchase
4. User preferences for subsequent purchases
Who were the respondents

Level 1: Solar portable lamps (SPL) owners (226 respondents)

Level 2: Small solar home system kit owners (166 respondents)

Level 3: Large solar home system owners (162 respondents)

Constructing the notional solar energy ladder in the sampling plan
Research methods and timeline

March, 2016
Stakeholder feedback process

April, 2016
Solar off-grid product distribution chain mapping

May-Jun, 2016
Baseline surveys: Phone interviews

Jun-Jul, 2016
Baseline surveys: Face to face interviews

Feb, 2017
Endline surveys: Phone interviews
Key insights

1. We reject the solar energy ladder hypothesis. Low income households can leap to higher level of solar energy access directly if appropriate financing instruments is made available to them.

2. We observe mixed stacking and fuel switching behavior among users.

3. Fulfilling lighting energy demand by stacking lighting products, and buying components to expand existing system capacity are popular solar product purchases.

4. Direct marketing, referrals and demonstration effect, play a big role in sales.

5. Users prefer to avoid flexible financing for subsequent purchases.
Solar product adoption patterns
Solar Energy Ladder?

- **Biomass based fuels**: E.g. cow dung, firewood
- **Traditional fuels**: E.g. kerosene, coal, charcoal
- **Modern energy**: E.g. LPG, electricity

The energy ladder hypothesis was adapted into a hypothetical construct of a ‘solar’ energy ladder.

**Original Energy Ladder**

**Diagram showing the conceptual solar energy ladder**

**Energy Stacking**
(solar with tradition fuels)

**Energy stacking?**
(solar with solar)
Solar energy ladder hypothesis does not hold!

Percentage of respondents that purchased a solar product for the first time in the year 2015

<table>
<thead>
<tr>
<th>Level</th>
<th>Respondents that bought their first product in 2015</th>
<th>Total respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>221</td>
<td>226</td>
<td>98%</td>
</tr>
<tr>
<td>Level 2</td>
<td>163</td>
<td>166</td>
<td>98%</td>
</tr>
<tr>
<td>Level 3</td>
<td>150</td>
<td>162</td>
<td>93%</td>
</tr>
</tbody>
</table>
Use of solar and traditional fuels show a mixed stacking and fuel switching behavior

Respondents’ use of non-solar energy fuels and technologies

Savings in energy spending on status-quo fuels

Plot shows within-level percentage. E.g., 40% Level 1 respondents stopped using status-quo fuels and technologies and shifted to solar off-grid product(s). Respondents can use more than one status-quo fuels and technologies.
Within-solar product stacking - solar off-grid energy adoption trends over time

Individual trends lines for daily energy use in Wh across all solar systems owned by respondents

Note: Graph has been zoomed to optimize graphing area. Some outliers have been excluded. Some Level 3 respondents have daily energy service exceeding 400 Wh.
Within-solar product stacking – who bought what

Popular solar energy products bought by subsequent purchasers (respondents that bought at least one other solar energy product between baseline (May-Jun, 2015) and endline (Feb, 2017) surveys.

<table>
<thead>
<tr>
<th>Level of solar energy access</th>
<th>Overall actual purchasers</th>
<th>Systems with lights</th>
<th>Overall actual adoption rate</th>
<th>Light adoption rate</th>
<th>Components bought to expand current solar system</th>
<th>System expansion rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>44</td>
<td>40</td>
<td>22%</td>
<td>91%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Level 2</td>
<td>26</td>
<td>15</td>
<td>18%</td>
<td>58%</td>
<td>6</td>
<td>23%</td>
</tr>
<tr>
<td>Level 3</td>
<td>22</td>
<td>9</td>
<td>15%</td>
<td>41%</td>
<td>3</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>64</td>
<td>18%</td>
<td>70%</td>
<td>9</td>
<td>10%</td>
</tr>
</tbody>
</table>
Motivations for purchase
Key prior experiences or information that influenced users to purchase each of the solar products they own.

Factors that influenced end-consumer purchase decisions

<table>
<thead>
<tr>
<th>Factor</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct marketing by solar organization</td>
<td>446</td>
</tr>
<tr>
<td>Referrals</td>
<td>164</td>
</tr>
<tr>
<td>Demonstration effect</td>
<td>121</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
</tr>
<tr>
<td>Other energy options were unsafe</td>
<td>7</td>
</tr>
<tr>
<td>I am not a first time buyer</td>
<td>6</td>
</tr>
<tr>
<td>My child recommended this purchase</td>
<td>5</td>
</tr>
</tbody>
</table>

Note: Respondents could report more than one influencing factor.
Motivations for purchasing a solar home system as the first solar product

Reasons why Level 2 and Level 3 respondents bought a solar home system in their first product purchase

Note: Graph reports within level percentages. E.g. 66% Level 3 respondents bought a big system because they had demand for many lights. Respondents could report more than one motivation.
Is motivation for purchase an economic one? - Net present value (NPV) analysis for typical customers

Graph shows monthly savings for typical customers of each level of solar energy access
## Is motivation for purchase an economic one? - Net present value (NPV) analysis for typical customers cont.

### Results of a net present value analysis

<table>
<thead>
<tr>
<th>Solar Product Adopted in 2015</th>
<th>Level of solar energy access</th>
<th>Solar scenario description</th>
<th>Median monthly savings due to avoided spending on status-quo fuels</th>
<th>NPV over two years in 2015 money</th>
<th>Break-even period if less than 2 years</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple lantern</td>
<td>Level 1</td>
<td>Complete upfront payment of $10</td>
<td>$2.76</td>
<td>$56.84</td>
<td>4 months</td>
<td>Almost 5.7x benefit over two years</td>
</tr>
<tr>
<td>Single light with mobile charging</td>
<td>Complete upfront payment of $24.2</td>
<td>$2.76</td>
<td>$40.62</td>
<td>10 months</td>
<td>Almost 1.6x benefit over two years</td>
<td></td>
</tr>
<tr>
<td>Small 3-light kit (10 W solar module)</td>
<td>Level 2</td>
<td>Complete upfront payment of ~$196</td>
<td>$3.61</td>
<td>-$151.66</td>
<td>N/A</td>
<td>There is net cash outflow during the analysis period (2 years).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PAYG payment plan: Down payment: $18; Monthly payment: ~$10; Repayment period: 18 months</td>
<td>$3.61</td>
<td>-$127.85</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Large 3-light SHS with TV (50 W solar module)</td>
<td>Level 3</td>
<td>Complete upfront payment of ~$546</td>
<td>$5.25</td>
<td>-$541.43</td>
<td>N/A</td>
<td>There is substantial net cash outflow during the analysis period (2 years).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro-credit payment plan: Down payment: ~$117; Monthly payment: ~$28.50; Repayment period: 24 months</td>
<td>$5.25</td>
<td>-$735.39</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
Preferences for subsequent purchases
**Users’ preferences for subsequent purchase of energy product(s): Summary**

*This Table summarizes some of the key highlights from the ‘subsequent purchase analysis’*

<table>
<thead>
<tr>
<th>Key metrics</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preference for upfront payment using personal savings</td>
<td>98%</td>
<td>97%</td>
<td>95%</td>
</tr>
<tr>
<td>Dealer stickiness</td>
<td>24%</td>
<td>74%</td>
<td>73%</td>
</tr>
<tr>
<td>Preference to purchase from a different ‘known’ dealer</td>
<td>9%</td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>Preference for PAYG as financing method</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Preference to purchase non-solar energy products or take utility grid connection</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Acknowledgements

• The research benefitted from the following organizations and individuals

• UNCDF CleanStart Team: Hee Sung Kim, Robin Gravesteijn & Vincent Wierda

• Research advisory board: Kat Harrison, Acumen & Michael Nique, GSMA

• Fieldwork implementing agency: CIRCODU
Research contacts:

Richa Goyal
richa.goyal@Humboldt.edu
&
Dr. Arne Jacobson
arne.jacobson@Humboldt.edu

During Baseline survey, Energy Ladder Research
Image by Richa Goyal, taken during Baseline Survey fieldwork, 17 May – 2 June, 2016
Escaping Darkness: Consumer Value in PAYGo Solar

Daniel Waldron
January 23, 2018
“…everyone likes light. It is important, especially at night. You can’t stay in darkness!”

Tanzanian PAYGo user
Context
Motivation
PAYGo sector has emphasized user net savings, but the story appears more complicated.

Median household spending in the Kenya Financial Diaries

$2.54 per month on energy in total

There was a need to better understand household financial dynamics

We wanted to find out:
- How and why customers decided to acquire PAYGo
- How they are able to afford it
- What (if anything) kept them from paying

We interviewed 138 rural households in Kenya, Tanzania, Ghana and Cote d’Ivoire.

We worked with four providers who graciously helped us to identify low-income and/or struggling customers, and then allowed us to speak directly with their customers.
Results
PAYGo providers allow customers to invest in transforming their own lifestyles

<table>
<thead>
<tr>
<th>Users adopted PAYGo solar to escape darkness</th>
<th>“Even before saying [I have solar], when a visitor comes here, he says, ‘Hey you’ve got solar!’ and it makes me so happy.”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literally, they wanted better, cleaner lighting</td>
<td>“We were used to the tin lamp but now when I see how the solar lights the house, I wonder how we used to survive before….”</td>
</tr>
<tr>
<td>Figuratively, they wanted to be connected</td>
<td>“I like the solar because it gives me access to information. That’s it.”</td>
</tr>
</tbody>
</table>
We cannot overstate the importance of consumer finance, of being able to pay over time

“[Paying in installments] is very important, because if they asked us to pay [all at] once it will not be possible as we cannot afford it.”

Users felt that PAYGo providers had placed trust in them, and valued that relationship

“You can be given something but the way you are talked to will either make you want to pay for it or not. They have good language and are not abusive.”

“I have light, my friends can [charge their phones] and that is development.”
For most, a PAYGo acquisition had not resulted in savings during the loan.

**Interviewer**: “Do you think [your solar home system] has saved you money?”

**Respondent**: “I cannot compare because I used little money to buy kerosene. [Solar] is much better than using [the kerosene] lamp.”

Few households were struggling to pay; customers reduced consumption, tapped savings, and used the flexibility of PAYGo

“What I have done is, when we cook rice during the day we eat half for both lunch and supper. That is how we economize. If the solar had affected our life so much, I would have told them to come and take it away.”

“The solar] is good even if it is more expensive.”
These results are consistent with other findings

“Kerosene purchases… decreased by 47 to 49 rupees per month… there were no consistent effects on savings”
– Aklin et al, 2017

“it’s not always the case that customers make savings. Families can spend more for energy after purchasing a more powerful SHS during the repayment period”
– Acumen, 2017

“For solar home systems… the payback period may be longer or there may not be a net reduction in lighting expenditure. However, the direct financial comparison between electric and kerosene lighting does not consider the qualitative difference in lighting.”
– SE4All, 2017
“[My wife] refused, saying [the solar] will give us problems. I called customer care anyway…”

Across all markets, it was men who made the decision to acquire solar, often against the initial protests of their wives

Interviewer: “Did you come home and consult with your wife?”
Respondent: “I made a mistake and decided to buy it right there and when I came home I told her, ‘Look! I have got solar and they have said we pay $0.53 daily!’ But it has not been easy!”

Recurrent payments often came out of women’s budgets

“When [she] wants to go to the market, instead of taking a motorbike, she prefers to walk so that we can use that money to pay for solar.”
PAYGo products are complex, leaving customers vulnerable to misunderstandings or misrepresentations.

“I was supposed to pay $31.59 as deposit and $0.57 daily. But [the agent] only said [to pay] $22.73…Now I am wondering if the documents were inaccurate.”

**Interviewer**: “What does [the solar company] say in the text message when you make payment?”

**Respondent**: “They state the amount that has been paid so far but not the balance.”

“There was a paper signed, but I did not read because I don’t know how to read English.”
High Level Takeaways
Longer tenors are not necessarily the best way to reach low-income customers

<table>
<thead>
<tr>
<th>Daily cost of energy</th>
<th>Ability to offer larger products affordably</th>
<th>Default risk*</th>
<th>Cost of capital*</th>
<th>Time to upgrade, offer other services</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-year term</td>
<td>3-year term</td>
<td>Lower</td>
<td>Lower</td>
<td>1-year term</td>
</tr>
<tr>
<td>Lower</td>
<td>Greater</td>
<td>Lower</td>
<td>Lower</td>
<td>Shorter</td>
</tr>
</tbody>
</table>

*Ultimately feeds into customer costs
Who are we reaching? And why does it matter?

It is possible to go down-market, but it will not happen without strategic planning and long-term effort.

The value here is in long-term relationships. You have to be kind, and you have to be transparent.

Understand what behaviors build trust, and emphasize those at every opportunity.
“The solar has benefits, and there is a saying that everything good is worth the price.”

Ghanaian PAYGo customer

Thank You!

Questions?
First round of discussions
A Peek into our Rural Customers

A Deep-dive of Ethiopia, Kenya and Tanzania Markets in Africa

Presenter: Samuel Muthoka
Ipsos Tanzania
Commissioned by the World bank group, The LA research projects in Kenya, Ethiopia and Tanzania have happened over the last two years

Main objective was to understand trade penetration, deep-dive in trader and consumer dynamics
KEY INDICATORS: ETHIOPIA

- **56 Million** – Target consumer Market (15+)
- **76%** - Have primary level education and below
- **59%** - Seasonal income through agriculture and menial work
- **44%** - Mobile phone penetration (79% of population have access to mobile)
- **<20%** - connected to grid electricity

- **5%** - Trade channel penetration for Solar lighting products
  - **79%** of these outlets pushing Lanterns, 35% pushing Home Kits
- Lanterns: **335 Brands in the formal trade market**
  - 11% LA Associates, 89% non-associates.
- Home Kits: **308 brands in the informal market**
  - 8% - LA Associates, 92% non-associates

**Large market, developing trade networks, itinerant distribution, COUNTERFEIT**
Strong standards, higher consumer awareness

- 25 Million – Target consumer Market (16+)
- 60% - Primary level education and below
- 50% - Seasonal income through agriculture and menial work
- 31% - Education most important goal in life
- 30% - Rely on social networks for coping mechanisms
- 95% - Have access to mobile telephony at HH level

- 21% - Trade Channel penetration for Solar lighting solutions
  - 79% of these channels pushing Lanterns, 37% pushing Home kits
- Solar lanterns: 150 brands in the formal market
  - 54% - LA Associate brands, 46% - Non-associate brands
- Home Kits: 59 Brands in the formal trade market
  - 48% - LA Associate brands, 52% - Non associate brands
Strong distribution networks, drive for higher capacity systems, challenge of counterfeits

- **29 Million** – Target consumer Market (16+)
- **79%** - Have primary level education and below
- **60%** - Seasonal income through agriculture and menial work
- **31%** - Health and education
- **56%** - Cut down on spending as a coping mechanisms, 40% rely on social networks
- **95%** - Have access to mobile telephony at HH level
- **46%** - Access to Grid Electricity

- **14%** - Trade Channel penetration for Solar lighting solutions
  - 79% of these outlets pushing Lanterns, 35% pushing Home Kits
- Lanterns: **148** Brands in the formal market
  - 17% - LA Associates brands, 83% - non-associates brands
- Home Kits: **70** Brands in the formal trade market
  - 44% LA Associates brands 56% - non-associates brands
Informal access is significantly higher than mainstream trade access – and more driven by home kits than lanterns – through credit. This is explained by thriving social networks and seasonality of income, which agents leverage on.

Route to Market – Consumer purchase points

- Door to door agents / distributors, 39%
- Retail outlet (Local or regional), 47%
- Others (Distributor fairs, ROSCA, School, etc), 24%

CONSUMER ACCESS IS HOWEVER MULTI-FACETED
NON-TRADE CHANNELS RELY ON RURAL ECONOMY AND TRUST TO PUSH THEIR BRANDS

Market Approach
- Door to door selling
- Target both urban and rural areas

Main Products Moved
- Majority move the solar kits
  Kits with TV are said to be of higher demand
- Solar lanterns have the least demand

Volumes Moved
- Agents move about 12-40 units per month depending on the size of the unit and demand

Stock Movement
- Agents move around with stock
- Stock is taken from the main office /branch
- Agents cater for their own transport

Agent Payment
- Agents are paid on commission based on the units that they push

Customers Payment Modules
- Credit facilities are accepted where by a down payment is done and later on monthly/weekly/daily instalments are paid within 2-3 years
- Cash is also accepted and is a bit cheaper compared to buying on credit
LANTERNS MORE POPULAR AMONG KENYA CONSUMERS (88% Lanterns, 12% Solar Kits),
SOLAR HOME KITS MORE POPULAR AMONG TANZANIA CONSUMERS

A deep dive in Tanzania Consumers

SOLAR PRODUCTS USED IN THE HOUSEHOLD

Solar Home systems
- Tier 1: 40%
- Tier 2: 62%
- Tier 3: 66%

Solar Lanterns
- Tier 1: 55%
- Tier 2: 23%
- Tier 3: 21%

Solar Panels
- Tier 1: 13%
- Tier 2: 20%
- Tier 3: 23%

n=1378
Price and multi-functionality of the brand are key determinants on what solar products to purchase—this is linked to consumers' financial capacity and the brands' capability to cater for the basic needs of the households such as lighting, charging phones etc.

“...before I buy solar I look at if the product is able to perform a variety of services at the same time e.g. lighting a room and charging a phone.”

“...when I go to the shop I usually look at products that I can easily afford and products that have warranty- Mwanza”

“...last time I went to buy my solar lantern I asked the retailer to light it so as I can see the brightness of the light because I wanted a lantern that emits enough light - Singida”

“...for me I will purchase a product that I am sure I will get the after sale service. For example I have M-PAWA product and anytime I have a problem I will call the technicians and they will come right away - Mwanza”

“...nowadays life is tough there is no loose money so I will buy a product that is not too expensive- Arusha”

“...I will buy a product that I can easily get close to where I live because I do not want to incur transport costs- Tanga”

INCREMENTAL NEEDS NOW A KEY PURCHASE DRIVER FOR RURAL CONSUMERS
Faint light from the solar products has been one of the greatest challenge that more than quarter (43%) of the households surveyed faced when using the solar products.

**EXPERIENCED PROBLEM WITH THE SOLAR PRODUCT**

- **YES, 36%**
- **NO, 64%**

**SOLAR PROBLEM EXPERIENCED**

- The light is not so bright: 44%
- The panel fails to charge at times: 30%
- The light from the product lasts for a very short time: 25%
- Warranty was not guaranteed: 5%

Please tell me, have you ever had any issues with your solar lighting products?

**YES, 36%**

**NO, 64%**
CONSUMERS TOP CONCERNS – FOR IMPROVEMENT: SIMILAR ACROSS TIERS

More than half of the households surveyed have recommended for a reduction in price on the solar products. Other concerns included brightness of light and a longer duration of lighting of the solar products.

Q25. What do you think can be done to improve your experience with solar lighting products?

- Reduce price of the products
- Increase lighting hours
- Increase multifunctionality of products to enable power radio, TV etc.
- Increase the light of the products
- Increase number of bulbs

<table>
<thead>
<tr>
<th></th>
<th>Total (1378)</th>
<th>Tier 1 (151)</th>
<th>Tier 2 (278)</th>
<th>Tier 3 (948)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce price of the products</td>
<td>55%</td>
<td>49%</td>
<td>57%</td>
<td>56%</td>
</tr>
<tr>
<td>Increase lighting hours</td>
<td>34%</td>
<td>34%</td>
<td>30%</td>
<td>34%</td>
</tr>
<tr>
<td>Increase multifunctionality of products</td>
<td>29%</td>
<td>18%</td>
<td>16%</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Increase the light of the products</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase number of bulbs</td>
<td>19%</td>
<td>22%</td>
<td>17%</td>
<td>20%</td>
</tr>
</tbody>
</table>

n=1378
COST IS A BIG CHALLENGE

• There is willingness to pay for higher capacity products, but cost is a barrier to rural consumers.

QUALITY = TARGET POPULATION

• ‘QUALITY’ as a stand alone attribute is not a concept the mass market understand well, rather they have issues with low level of brightness, batteries not charging and short lighting span – all which define product quality (all these issues worry consumers)
• Sales agents driven purchases carry the day – low quality, unverified products, but cheap

MARKET IS MOVING FROM PICO TO HIGHER CAPACITY SYSTEMS

• Need driven by multiple functions. The future is in higher capacity home systems (at an affordable price)

COMMUNICATION TARGETING

• Repeat purchase and upgrade to higher capacity systems
• Target Informal distribution networks (training days? Incentives? Accreditation?)
CASE STUDY: EcoEnergy
Successfully implementing Pay-As-You-Go solar in Pakistan

Shazia Khan /// CEO and coFounder of EcoEnergy
Pakistan: Country Overview

200 Million people  6th largest country in world  64% population under 30
Pakistan: Energy Access Picture

70 million off-grid
71 million under-electrified
1.2 million businesses off-grid
No grid expansion plan
$2.2b/year spent on energy alternatives
The problem:

to create a commercially viable business model for off-grid electrification in Pakistan.
The bigger problem...

Zero data.
Talk to your customers!
Mapping energy access

44,000 households and 2200 villages
4 years relationship building and research

LIVELIHOODS  INCOME  PURCHASING POWER  CONSUMER PREFERENCES  FINANCING NEEDS
Market Segmentation and Targeting the Right Customer

EARLY ADOPTER

REVENUE GENERATION

PRODUCTIVE END USE
Where to sit on the value chain

- Product Design
- Product Manufacturing
- Pay Go Tech
- IT Infrastructure
- Sales
- Customer Service
- Financing
Market building…what does it take to SCALE adoption of a new technology

MASSIVE BEVIORAL SHIFT
EcoEnergy Pioneered PAYGO solar in Pakistan

ENFORCE REPAYMENT INCREASE EFFICIENCY IN PAYMENT COLLECTION
We have customers…now what?
Scaling Strategy

- Strong partnerships all along the value chain
- Lower costs of customer acquisition
- Increase streams of revenue using existing infrastructure
- Off-load financing to meet end user consumer needs
BBOXX Invests into EcoEnergy

FOCUS ON UNIQUE CORE COMPETENCY     LEVERAGE EXISTING EXPERTISE
EcoEnergy Acquires Brighterlite

- INCREASED MARKET PENETRATION
- MOVE DOWNSTREAM
- CONSUMER INSIGHTS
Mini-Grid Pilot with REON Energy Q2 2018

USE EXISTING INFRASTRUCTURE           MOVE UPSTREAM              PRODUCTIVE END USE
EcoEnergy Pioneers innovative consumer financing

FINJA (fintech)  MEEZAN BANK (asset finance)  UBANK (MFI)
We have some more customers...now what?

OTHER BARRIERS TO SCALE
The problem: Financial

NO WORKING CAPITAL

EQUITY INVESTORS PERCEIVE PAKISTAN AS RISKY
(After relentless and time-consuming lobbying) financing solutions slowly beginning to emerge

DFI LOAN GUARANTEES     DEBT FUNDS FOR PAYGOS     PROFIT SHARING
The problem: Regulatory

GENERAL SALES TAX  IMPORT DUTY

INCONSISTENCY BETWEEN CUSTOMS RULES MAKES IT DIFFICULT TO PLAN
Partnerships with valuable advocates provides entrance to stakeholder meetings with Pakistani government officials.
Growth

- 15,000 solar lanterns 2014-2016
- 1500 shs in 2017
- 10000 shs in 2018
- 50000 shs in 2019

Consistent month/month growth, except for May 2017, due to stock-out.
Slowly overcoming foreign perspective on Pakistan
Investment Climate and Political Stability

Improving investment climate

○ Morgan Stanley updated from Frontier to Emerging Market

○ FDI increased by 5% to $2.4b in FY17

○ Major inflows from Netherlands, France, UK

Moving towards long-term political stability

● 1st democratic elections held in 2013

● Disqualification and ouster of Prime Minister on charges of corruption
The future

(...not totally relevant, just miss that guy.)
Thank you.

Shazia Khan, CEO EcoEnergy
skhan@ecoenergyfinance.org
Second round of discussions and final thoughts