Ellen
Increasing Access to Energy Services Leads to….

- Greater participation in Development and trade
- Increased productivity and income SMEs
- Reduced pressure on forests and environment
- Lighting and refrigeration for health clinics
- Lighting for schools & increased time to study
- Improved child and maternal health
- Empowering women and gender equality
- Energy and development
<table>
<thead>
<tr>
<th>Service</th>
<th>Energy System</th>
<th>Benefits</th>
</tr>
</thead>
</table>
| Electricity        | • Solar lanterns  
• Solar lighting systems for businesses and homes  
• Battery charging | • Cleaner, brighter light for work, study and recreation  
• Safer- fewer burns, less breathing/vision problems  
• Reduced dependency on unreliable grid  
• Increased income opportunities |
| Heat for cooking   | • Biogas systems  
• Liquefied Petroleum Gas stoves  
• Efficient wood/ charcoal cook stoves | • Cleaner and more efficient  
• Safer- fewer burns, less breathing/vision problems  
• Job creation in manufacture, sales and distribution |
| Mechanical Power   | • Multifunctional platform  
• Water pumps | • Women’s drudgery reduced  
• Higher quality product and higher prices  
• Job creation for operation and maintenance  
• Creates options for non-electrified villages |
Access to finance needs across the value-chain

Manufacturers

- Initial capital for both R&D and the fixed assets for a production facility
- Working capital to purchase inputs and produce finished goods
- Typically offered little credit from international manufacturers
- Face disproportionately high inventory levels due to poor demand predictions in early years of operations

Wholesalers/retailers

- Working capital challenges in light of long transport times and customs clearing
- Often required to extend credit to dealers in order to stimulate sales.
- Often stuck between MFI and Commercial bank value propositions with no natural provider of capital
- Squeezed on working capital, as they are usually small rural/peri-urban operations
- Often unable to provide credit their customers need

Last-mile dealers

- Affordability is the leading barrier – low-income households typically cannot afford to pay a lump sum of $10 or more
- Credit schemes difficult to design due to small ticket size of the purchase and lack of familiarity by MFIs with lighting products

Customers
Financial institutions serving the poor

More Formal

Fx/Remittances
Microfinance Institutions

Commercial Banks/Postal Banks
Insurance Companies

Less Formal

Savings & Credit Coops
Community-based Organizations
Rotating Savings Groups

Very Poor

Poor

Less Poor
Phil
Energy Poverty
Opportunity
Energy Waste

Enterprises such as
SELCO-India

Enterprises such as
TecnoSol (Nicaragua)

Enterprises such as
KWTE

SME-RE
Cambodia
La Esperanza
Honduras
Macro – Country-Region Framework

Human & Institutional Capacity

Policy & Regulation

Business Environment

Market

Size and Attractiveness
MESO Framework: the delivery of modern energy requires that the delivery enterprise and clients have ACCESS to:

- INFORMATION
- CUSTOMER FINANCE
- ENTERPRISE FINANCE
- CAPACITY BUILDING

APPROPRIATE, AFFORDABLE PRODUCTS
The Enterprise-Customer Connection: Eight Critical Factors for Success

Entrepreneur (e) → E (Enterprise) → C (Customer) → Benefits & Returns

- Financial
- Social
- Environmental

Technology (t) → Services (Es) → Finance (Ef) → Demand (d) → Knowledge (k) → Services (Cs) → Finance (Cf)
Ellen
What are people paying for energy?

Note: Bubble size equals number of un-electrified

Source: World Resources Institute & The Bottom Four Billion
What is end-user finance?
Tailoring Financial Services to the Needs of Poor Customers

Asset Building, Risk Mitigating Products
- Voluntary savings
- Health and life insurance

Variety of Products
- Housing loans
- Education loans
- Life cycle products
- Business development services
- Quality of life enhancing products (e.g. energy and H₂O)

Service
- Rapid, convenient access
- Respect, connection

Flexible Loans
- Small initial loan sizes
- Larger loans over time
- Longer terms

No Traditional Collateral

Group → Individual Loans
Harish
Access to Credit: Innovative Financing

Street Vendor

Cricket bat makers

Street Vendor

Handloom workers
<table>
<thead>
<tr>
<th>Financial</th>
<th>Social &amp; Economic</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Funds Disbursed</td>
<td>People with Access to Modern Energy Services</td>
<td>Households served</td>
</tr>
<tr>
<td>$14.7 million</td>
<td>3,607,599</td>
<td>721,000</td>
</tr>
<tr>
<td>Entrepreneurs Investment</td>
<td>Cumulative Clean Energy Generated</td>
<td>Energy saved from Efficiency initiatives/</td>
</tr>
<tr>
<td>$29.1 million</td>
<td>59,539 GWh</td>
<td>118 GWh</td>
</tr>
<tr>
<td>3rd Party Capital</td>
<td>Jobs Supported</td>
<td>Improved Income</td>
</tr>
<tr>
<td>$113.8 million</td>
<td>2,965</td>
<td>$7.4 million</td>
</tr>
<tr>
<td>Capital Mobilized</td>
<td>Clean Energy Enterprises</td>
<td>Women Ownership/Shareholding</td>
</tr>
<tr>
<td>$157.6 million</td>
<td>138</td>
<td>90</td>
</tr>
<tr>
<td>Portfolio Return after Write-offs (Before 1X Costs)</td>
<td>Clean Energy Employees &amp; Customers trained</td>
<td>Customers Installing Efficiency Equipment</td>
</tr>
<tr>
<td>8.3%</td>
<td>73,960</td>
<td>29,545</td>
</tr>
<tr>
<td>OPM Ratio</td>
<td>Entrepreneurs Identified</td>
<td>Entrepreneurs receiving Services</td>
</tr>
<tr>
<td>1 : 9.7</td>
<td>1,574</td>
<td>857</td>
</tr>
</tbody>
</table>