Many microfinance clients suffer from a vicious cycle of energy poverty

- Recurring expenses
- Health impacts
  - Respiratory disease
  - Childbirth
  - Awareness
  - Burns
  - Water borne disease
- Gender impacts
- Education impacts
- Environmental impacts
Microfinance can be a channel for clean energy alternatives
Example: Grameen Shakti

Cumulative Solar Lighting Systems Sold

Other products include Biogas digesters and Improved cookstoves

MFIs can use carbon revenues from MEC to reduce the cost of clean energy to end users and to offset program costs

- Companies in Europe spent **120 Billion Dollars** on carbon credits in 2008
- But less than 1% of that was spent on renewable energy in developing countries
- High transaction costs make these projects unattractive

- MEC is an aggregator that tracks small clean energy investments and packages them for sale on the carbon markets

- **2.5 Billion people** live without access to modern energy
- They survive on traditional fuels which create over 600 Million tons of CO2 emissions per year.

**Microentrepreneurs adopt clean energy**
Who is doing it?

FINCA Uganda

XacBank Mongolia

Spandana India

Aryavart Gramin Bank India

“I was inspired by what you do. We shall definitely work with you.” Ingrid Munroe, Jamii Bora

“I micro energy credits partnership will add a great value for MFI clients and Grameen Koota.”

Suresh Krishna, Grameen Koota

The role of partners

- EcoSecurities sells the carbon offsets to the carbon markets, companies and individuals

- EcoSecurities (LSE: ECO) purchases the carbon offsets aggregated by MEC, and securitizes them for the carbon markets

- MEC purchases carbon offsets from MFIs
Step 1: Carbon purchase agreement

- The agreement says that MEC will purchase the carbon offsets created when an MFI lends for clean energy.

- It includes an estimate for the annual volume of carbon offset created by each product, and the dollar value of the project.

- No upfront transaction costs or minimum project size, and no liability if the project does not expand as planned.

- The agreement should be signed before the project starts.

Step 2: Clean energy product marketing

Best practices to successfully scale up a clean energy program include:

- Identify products that provide great value to clients through market research, surveys and/or pilot tests.

- Develop a business plan to justify upfront investments in project development including marketing activities.

More best practices:

- Engage women, and the community.

- Support local job creation.

- Create a robust quality assurance process.

- Hire or allocate a dedicated project manager and energy officers.

- Choose trustworthy suppliers.

- Take advantage of technical assistance.
Step 3: Receive carbon revenues

- Upon receipt of the sales data from the MFI, MEC will conduct the first audit.
- Once the audit results are received, MEC will start making payments to the MFI on a semi-annual basis.
- At any point the MFI can see its balance with MEC.
- The MFI can use the carbon revenue for purposes such as:
  - Hiring a project manager or energy officers
  - Expanding marketing to reach more clients
  - Client education and awareness
  - Technical assistance
  - Lowering interest rates or principal costs
  - Funding ongoing customer service.

Step 4: Monitor the clean energy systems

- The carbon credit is renewable for every quarter of a year that the client continues to use the clean energy system.
- The MFI provides monitoring data indicating that the client continues to use the clean energy product.
- MEC has developed an internet technology using mobile phones and GPS that is free to its MFI partners.
- Monitoring is simple, and can be done by:
  - Loan officers
  - Energy officers
  - Energy suppliers
  - Local agents hired by the MFI.
### Some sample clean energy products

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Cost</th>
<th>Lifetime</th>
<th>Carbon Offset (tons over 5 yrs)</th>
<th>Payment/ System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar Light 50 W</td>
<td>5 Lights 4 hrs per day, tv and cell phone charger</td>
<td>$552</td>
<td>20 years</td>
<td>2.3*</td>
<td>$19*</td>
</tr>
<tr>
<td>Solar Light 100 W</td>
<td>7 lights 6 hrs per day, tv and cell phone charger</td>
<td>$978</td>
<td>20 years</td>
<td>4.9*</td>
<td>$41*</td>
</tr>
<tr>
<td>Efficient Stove</td>
<td>Reduces wood or charcoal consumption by 50%, efficient cooking</td>
<td>$38-$76</td>
<td>10 years</td>
<td>7.5*</td>
<td>$49*</td>
</tr>
<tr>
<td>Biogas Digester</td>
<td>Uses cattle or poultry manure to provide clean cooking gas, light and electricity</td>
<td>$567</td>
<td>15-20 years</td>
<td>14.7*</td>
<td>$96*</td>
</tr>
</tbody>
</table>

Future products include solar water heaters, tree planting, efficient boilers, efficient housing, cooking gas.

*Based on data from Bangladesh and Uganda. Actual payments will vary.

### Conclusions

- Simple energy products can **improve the quality of life** of microfinance clients.
- Renewable energy is **affordable**; spending is close to what MFI clients already spend on kerosene, fuel wood and charcoal.
- **Carbon revenues** are available to help MFIs bring these products to their clients.
- When all of us offset our carbon footprint we can also help end **energy poverty**.
**APPENDIX: HOW DO CARBON MARKETS WORK?**

1. 174 nation states have signed the Kyoto Protocol
2. Industries are given emissions allowances. They must either reduce or purchase "credits." They purchased $180 B in 2008.
3. The Clean Development Mechanism allows carbon offsets generated in developing countries. $3 B were sold in 2007
4. Carbon offsets generated in the developing world can be sold and traded on regulated exchanges
5. In the voluntary carbon markets individuals and companies purchase carbon credits. $100 Million were sold in 2007

*The Kyoto treaty recognizes the need to help developing countries to get on a different energy path as they make new investments*