Modern Energy Cooking: Review of the Funding Landscape

Tuesday 8th March 2022
Legacy Improved Cooking Solutions

- Lower tier improved cookstoves (ICS) using biomass
- Simple low tech appliances
- Sector seen as low technology, unprofitable, unscalable and highly localized
- Mostly NGOs and small local operators
Modern Energy Cooking (MEC) is becoming increasingly viable

- Energy efficient devices e.g. Electric Pressure Cookers (EPCs)
- Good user experiences
- Increasing charcoal prices but decreasing MEC costs
MEC appliances are more expensive so require funding solutions

<table>
<thead>
<tr>
<th>Appliance</th>
<th>Price Range</th>
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</thead>
<tbody>
<tr>
<td>Improved biomass stoves</td>
<td>$5 to $40</td>
</tr>
<tr>
<td>LPG solutions (depending on size of cylinder and accessories)</td>
<td>$30 to $100</td>
</tr>
<tr>
<td>Ethanol stoves</td>
<td>$25 to $36</td>
</tr>
<tr>
<td>Electric hotplates</td>
<td>$10 to $30</td>
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<tr>
<td>Induction stoves</td>
<td>$35 to $80</td>
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<tr>
<td>Microwaves</td>
<td>$30 to over $110</td>
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<tr>
<td>EPCs</td>
<td>$60 to over $100</td>
</tr>
<tr>
<td>Gasification stoves</td>
<td>$110 to $130</td>
</tr>
<tr>
<td>Biodigesters</td>
<td>$500 to $750</td>
</tr>
<tr>
<td>Battery-supported eCooking appliances, e.g. solar electric systems</td>
<td>$150 to $2,000</td>
</tr>
</tbody>
</table>
Traditional funding is important but new alternatives are emerging

<table>
<thead>
<tr>
<th>Cooking Technology</th>
<th>Appliance type</th>
<th>Cash &amp; Carry</th>
<th>Layaway Savings</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Third party financing partnerships</td>
</tr>
<tr>
<td>E-cooking</td>
<td>EPCs</td>
<td>✓</td>
<td>✓</td>
<td>(✓)</td>
</tr>
<tr>
<td></td>
<td>Induction stoves</td>
<td>✓</td>
<td>✓</td>
<td>(✓)</td>
</tr>
<tr>
<td></td>
<td>Hot plates</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Modern fuels</td>
<td>LPG</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Bioethanol</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Biodigesters</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Other</td>
<td>Biomass gasifiers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Improved biomass cookstoves</td>
<td>✓</td>
<td>✓</td>
<td>(✓)</td>
</tr>
</tbody>
</table>

Note:
PAYGO = pay-as-you-go
* = PAYGO Energy as a service
✓ = actual
(✓) = planned or in pilot phase
? = option, but not yet being piloted
Relatively few pure cooking companies are at a mature stage.
Early stage grants to support innovation have played a crucial role. TA support for corporate development and to support fundraising is also a priority
Other priorities are early growth Patient Equity and Receivables Funding
Digital Technology is a feature of most MEC Appliances

- Digital technology and Smart Data features are available across all major fuel types
- More sophisticated companies are emerging that can exploit the opportunities provided
PAYGO enabled by smart appliances

- Customers make regular payments through mobile money or cash dispensers similar to SHS
- Customer payments are tracked. Kit can be disabled if a customer falls behind on payments
- Smart meters allow customer usage to be tracked and devices to be remotely managed.
- Removes upfront price barrier: end-users pay small or zero deposit followed by installments
- PAYGO solutions developed for multiple appliances: EPCs, induction stoves, LPG kits, biomass gasifiers, biodigesters.
Importance of Carbon Credits

• Carbon credits are very important. A typical household MEC cookstove might save 3-4 tonnes CO2e per annum. At current VER prices of $6-9 per tonne this represents a great opportunity for companies to boost earnings and lower appliance costs.

• With Modern Energy devices you can measure how much fuel each appliance uses on a continuous basis. New streamlined approaches will calculate emissions reductions from measured fuel use. Further improvements are likely.

• Current carbon credit market outlook is positive. Although historically prices have been volatile, new opportunities to hedge price risk and mitigate project risk are available.
Importance of Impact Funding

- Major SDG impacts achievable from the transition to MEC - especially for Health, Climate, Gender, Livelihood, and Environmental.
- Opportunities to access grant funding are growing through the strong carbon credit markets, RBF programmes and other development impact funding initiatives.
- Opportunities to use smart data to lower costs and improve reporting accuracy.
MEC involves a wide range of institutions

- More sophisticated appliance companies and some major international groups
- Solar Home System Groups
- Minigrid Groups
- Utilities
- NGOs
- Distributors and Financing Groups
- Energy groups seeking to promote fuel use or expertise
- Governmental institutions

Wide range of business models and perspectives offer more opportunities to promote clean cooking and especially the opportunity to involve MDBs and DFIs more actively
Utility-led Financing

- Reduces the upfront cost of e-cooking devices and increases the uptake of e-cooking
- On-bill financing
  - Devices financed on balance sheet of utility
  - Repayments collected through utility bill
- Co-marketing and data sharing
  - Finance and billing for devices done by third party
  - Utility provides data and support related to customers for credit scoring and market purposes.
Opportunity for Leveraging Large Scale Energy Investments

"Nearly 2 Billion people have access to electricity but don't cook with it"

Total Commitments for Residential Clean Cooking in HICs (2013–19, USD million)

Finance to Electricity in HICs (2013-19, USD million)

Source: SE4ALL
A few key takeaways

• Smart features of new appliances are creating important new financing opportunities e.g. PAYGO, OBF, as well as ways to reliably measure SDG impacts which can facilitate RBF, Carbon Credits and other grants.

• The changed landscape, creates new opportunities to attract capital into the sector and should permit the greater involvement of MDBs/DFIs.

• Donor grants for innovation, corporate development and advice have been essential for almost all groups to achieve their progress.

• Patient equity and receivables funding are key issues for small fast growing companies that limit opportunities to scale quickly.

• There is a need to integrate cooking into the broader energy agendas rather than to look at it as a separate sector in order to catalyse larger fund flows.
Thanks for listening!

MECS.org.uk

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