National Capacity Building Workshop
Financing Clean Cooking in Bhutan and Nepal

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Outline

1. What is the role of finance?
2. Case studies
3. Outlook and recommendations
What is the role of finance?
Summary of clean cooking barriers

Solutions by MTF Tier

**CONSUMER**
- Culture. Behaviour. Knowledge
- Affordability
- Poorest visibility. Lack of prioritisation
- Weak policy
- Poorly understood budgetary impact
- Lack of integration with electricity

**SECTOR TRANSFORMATION**
- Few incentives. Insufficient standards
- Constrained distribution
- Fuel competition
- Insufficient products
- Lack of integration with electricity
- Scarce data
- Insufficient collaboration
- Inadequate sharing
- Limited communication of impact
- Risk aversion
- Limited innovation funding
- Weak pipeline. Poor enterprise capacity
- Unattractive terms
- Few successes
- Inadequate consumer finance
- Unengaged local financiers

**MARKET DEVELOPMENT**
- Poor visibility. Lack of prioritisation
- Weak policy
- Weak institutional structures
- Poorly understood budgetary impact
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Source: Coldrey, O.; Lant, P.; Ashworth, P. Elucidating Finance Gaps through the Clean Cooking Value Chain. *Sustainability* 2023, 15, 3577. [https://doi.org/10.3390/su15043577](https://doi.org/10.3390/su15043577)
A chronic shortfall of finance

Total Finance Commitments for Clean Cooking in High Impact Countries (HICs), by Country, 2018-2019 (USD m), and % of Country Population with No Access to Clean Fuels and Technology for Cooking

USD 8 billion required annually to close access gap, or USD 148–156 billion to achieve universal access to modern energy cooking services by 2030; in 2019 only USD 130 million committed to clean cooking in twenty HICs in Africa and Asia

An adapted version of Porter’s value chain to frame the cooking poverty sector

A dynamic financing market

- Historical dependence on public funds
- Private finance commitments nearly doubled in 2019, comprising 42 percent (USD 56 million) of total commitments.

Sources: Sustainable Energy for All and Climate Policy Initiative. *Energizing Finance: Understanding the Landscape*; Sustainable Energy for All: Vienna, Austria, 2021

Clean Cooking Commitments in HICs by Source and Financial Institution, 2013-2019 (USD mn)
Case studies
Finance for women at the last mile

- 2019: OECD records official development assistance (ODA) for energy sector projects with a Principal or Significant gender equality marker ~13% of development finance for all energy projects. This is ~half the volume of development finance targeting gender equality across all sectors (25%)
- **Improving clean cooking access for women requires a concerted effort to overcome financing barriers uniquely experienced by them**
  - Targeted financial solutions to address legal and customary headwinds: lack of access to formal financial institutions; lack of credit history or collateral; discriminatory social norms and laws
  - Audits focused on outcome metrics
  - End user engagement at every stage of the policy, project and financing cycle
## Case study: Market Acceleration of Advanced Clean Cookstoves in the Greater Mekong Sub-region

**Program period**  
2015 – 2019

**Funding sources**  
Energising Development (EnDev); Blue Moon Fund

**Amount**  
EUR 3,839,704

**Objective; financial structure**

**Objective**  
To accelerate a sustainable market for clean cookstoves through sale of 120,000 units in Cambodia, Laos and Vietnam.

**Financial structure**  
Results Based Financing (RBF) to strengthen involvement of supply chain actors in nascent clean cookstove markets. The innovation is an ‘Auction Platform’ in each country – a dynamic, market-based mechanism to determine required RBF incentive levels for development of self-sustaining markets for cookstoves.

**Implementation**

**Implementation partners:** SNV, GIZ, Vietnamese Women’s Union  
**International manufacturers:** Mimi Moto, Solar Serve, Prime Cookstoves  
**Local distributors:** Lightning Engineering Solutions, Fresh Innovation Cambodia, EcoSun, ACE Energy Solutions Co.

**Results and lessons learned**

- **Grounded in trust.** Implementation team deep and longstanding relationships in-country, including with government  
- **End user involvement** in planning and implementation  
- **Local capacity building.** Vietnam integrated 5 local producers, promoting 8 different advanced biomass cookstove (ABC) models. 33,000 ABC sold over 3-year period, leveraging $600,00 in enterprise investment and generating $1.3m in sales revenue.  
- **Employment.** >600 jobs created in two-year period after program commencement  
  - 115 full-time and 494 part-time jobs  
  - 41% women  
  - 23% youth under 30
Clean cooking finance through the innovation cycle

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## Case study: KOKO Networks (Kenya)

<table>
<thead>
<tr>
<th>Profile</th>
<th>For-profit, privately-owned company. “SmartCook” two-burner clean cookstove with integrated bioethanol fuel canister</th>
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<tbody>
<tr>
<td>Funding sources</td>
<td>Commercially funded: family offices, high net worth individuals and venture capital, including Microsoft Climate Innovation Fund equity investment in 2022</td>
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</table>
| Financial, business model, supply chain innovation | • Partnership with Vivo Energy Kenya, owns and operates Shell-branded fuel distribution infrastructure  
• Fuel sold to customers pay-as-you-go (PAYG) through cloud-connected “KOKO Points”, fuel ATMS located in corner stores close to target customers, who top up accounts via mobile money  
• Last mile distribution to KOKO Points by “smart micro-tankers”, IoT enabled trucks designed for local road conditions  
• To address affordability challenges, customers can purchase cookstove via interest-free layaway scheme: small deposit and incremental instalments with no minimum payment or time limit  
• Operates wholly owned manufacturing facility in India |
| Lessons learned | • Market entry strategy informed by local context, including Kenyan consumers’ typical spending patterns of frequent, small transactions and openness to new technology; good physical infrastructure and strong base of local engineering skills; government willing to make policy changes to recognise ethanol as cooking fuel  
• Agile fuel distribution model eliminates centralised bottling and single-use plastic bottles; focuses on customer convenience to compete with charcoal and kerosene  
• Real time, technology-enabled data improves supply chain management and despatches fuel to customers as required  
• Customers enjoy greater agency through monitoring and managing their fuel use  
• Commercial financiers will invest in innovative companies with sound business models, even in nascent markets |
| Replication and scale | • Serves more than 750,000 household customers in Kenya  
• 2022 agreement with Government of Rwanda to develop nationwide, world first, renewable cooking fuel utility. Government to strengthen policy environment, through tax and import duty concessions on hardware and fuel, with cost reductions flowing through to household consumers |
Outlook and recommendations
Outlook and recommendations

**Prioritise:** Governments key to expanding access through clear targets, integrated energy plans, supportive policy and regulation, and strong investment climate.

**Strategic approach:** Project-by-project approaches to investment by public sector actors require strategic rethink across the value chain; includes donor resources for technical assistance and institution building.

**Reduce siloes:** Break down siloes between public and private actors and consider optimal blend of capital.

**Innovate:** Continued innovation in financial instruments needed to deploy the scale of capital necessary for universal access. Rapid development of carbon markets.

**Data:** Sharpen focus on data collection, sharing, knowledge exchange.

**Engage with end users!** And invest in consumer-facing research.
Thank you