

PROMOTING PRODUCTIVE USES OF ELECTRICITY

A CORNERSTONE OF MINI GRID DEVELOPMENT



WORLD BANK GROUP
Energy & Extractives

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Session Topic

Panelists

Importance of Productive Uses in Electrification through Mini Grids

Role of Income-generating Appliances

Demand and Supply-Side Interventions

Incorporation of Gender-specific Activities

Moving Forward

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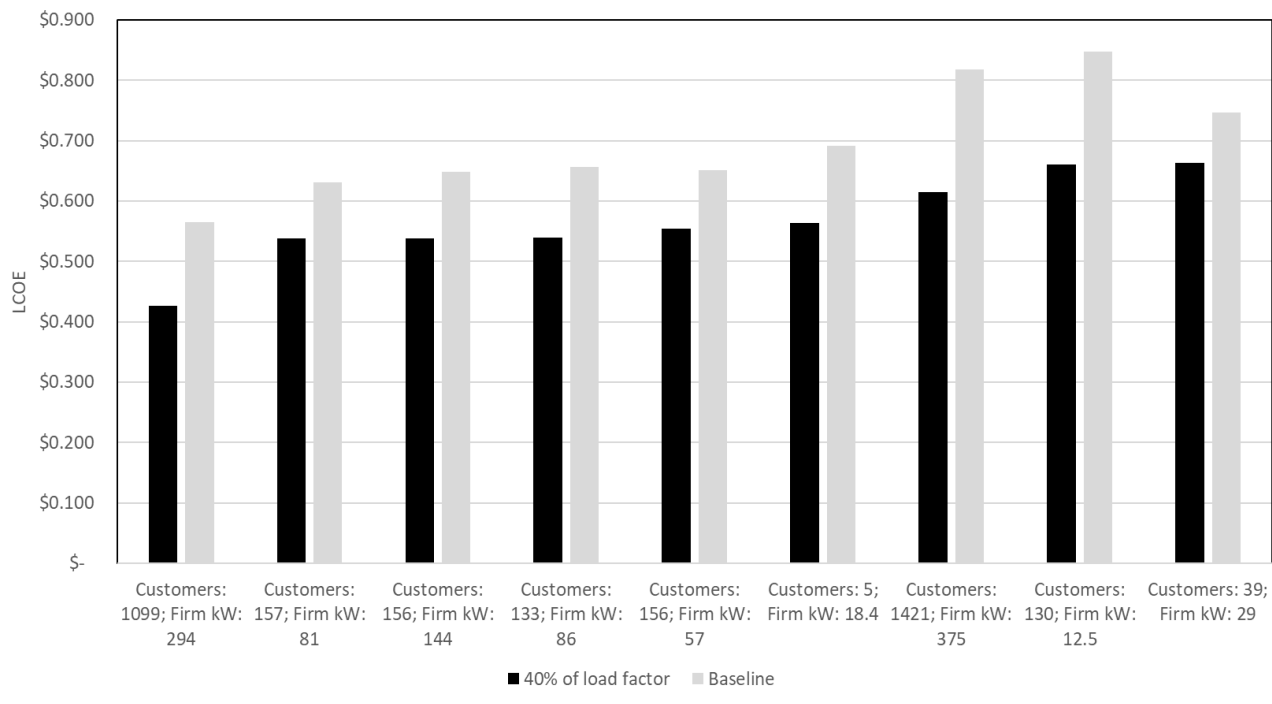
Why is it critical for productive uses to become an integral part of electrification?

Impacts on LCOE with increasing the use of electricity

A virtuous circle on paper

Maximizing economic and social development benefits

Increasing the financial viability of investments

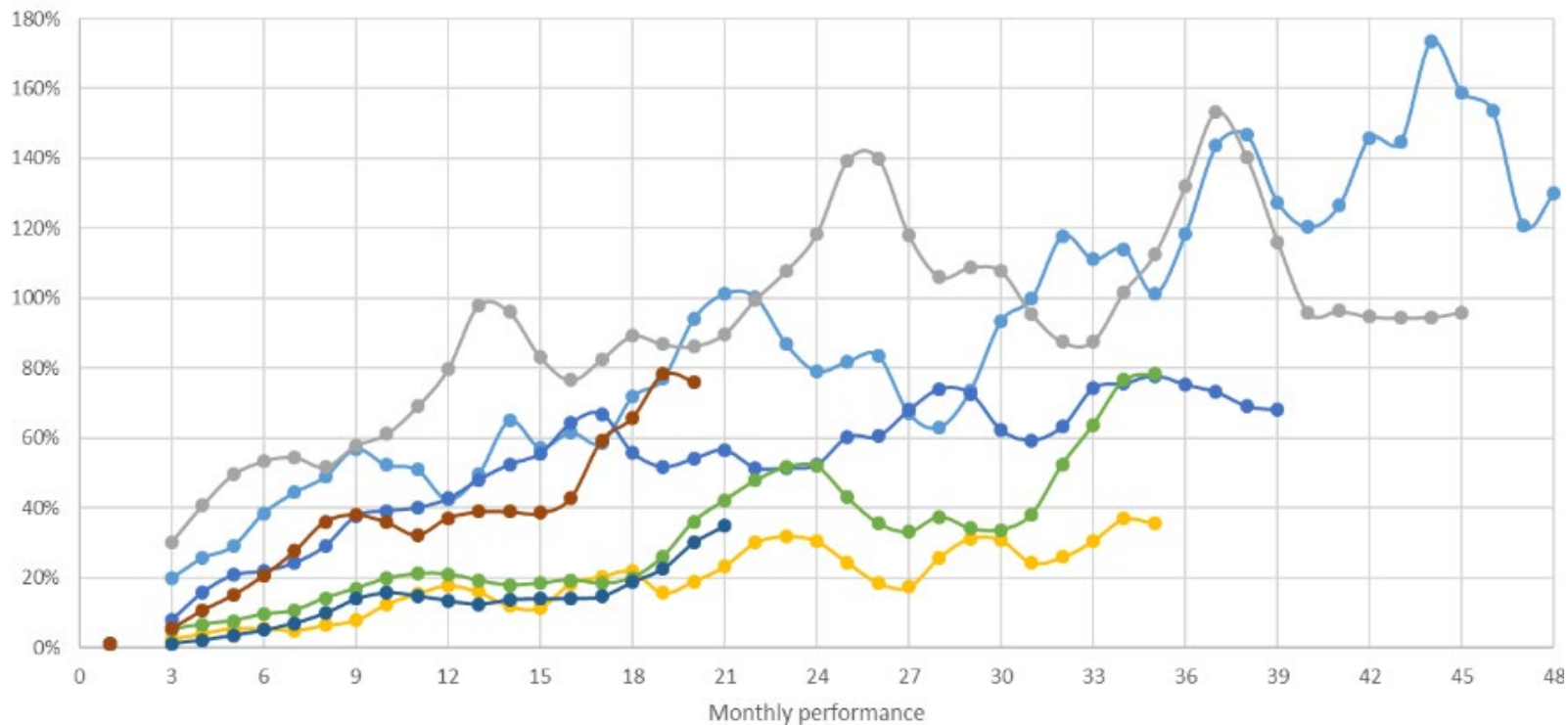


Source: HOMER

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However, load uptake does not always happen as expected

Share of expected load achieved by selected mini grids in Bangladesh



Source: IDCOL

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Increasing productive energy use uptake is a process, not an event

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Demand stimulation

- Identifying the potential for productive uses of electricity
- Encouraging the adoption of electricity for productive purposes
- Accessing and understanding productive use of appliances
- Providing affordable financing to productive users
- Encouraging entrepreneurship

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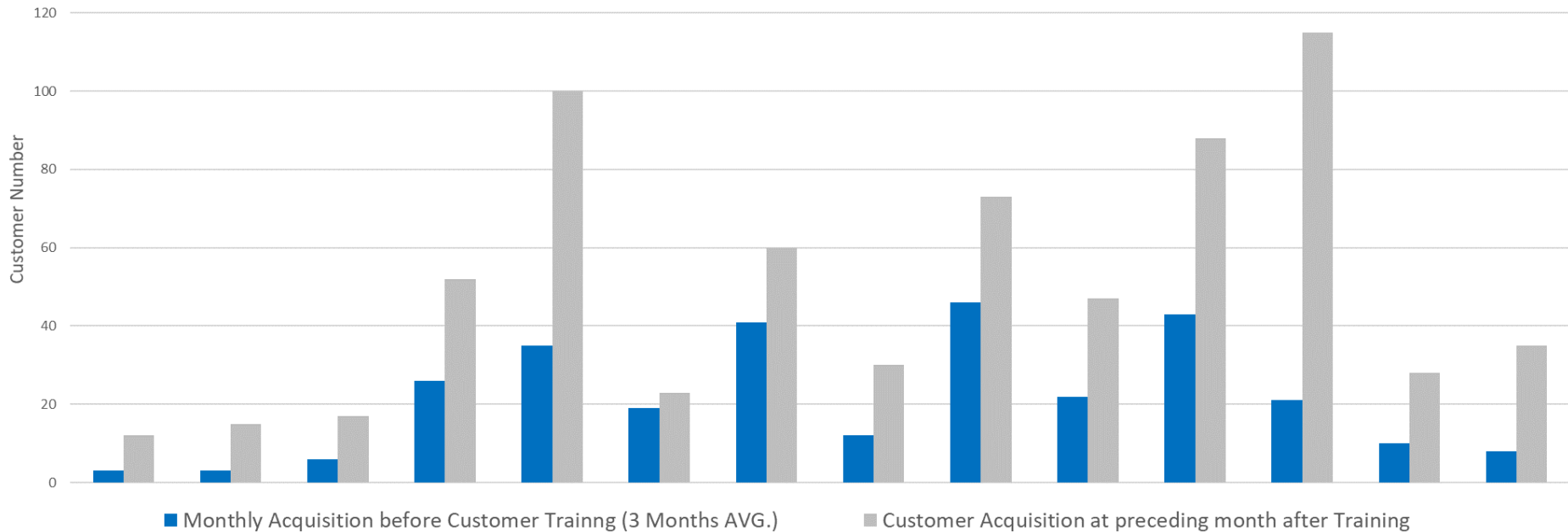
Technical and commercial implications for operators

- Rethinking the standard ABC model
- Addressing and monitoring demand from productive uses
- Designing an appropriate tariff

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Customer awareness campaigns can lead to significant improvements in rate of customer acquisition

Effect of extensive customer awareness campaigns on load uptake in Bangladesh



Source: IDCOL

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The equipment adoption process is meaningless if income generating appliances are not compatible, available or affordable

Adding productive electric appliances to the systems is not technically and economically straightforward

Finding the right income generating appliances

- Limited knowledge on the compatibility of appliances

Including them into mini grid business models

- End-use financing
- End-use availability and education
- End-use targeting
- Tariff innovation
- Maintenance

A repair shop owner using welding machines and lathes



Source: TechnoHill

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The promotion of productive uses of electricity implies a major shift in designing and implementing electrification projects

There is 50 times more financing available to generate electricity than for promoting its consumption in Africa (RMI)

Inclusion of productive uses in electrification planning and government objectives

- Electrification strategies should not view access to electricity as an end in itself
- National electrification strategies and planning should seek a more balanced approach to maximizing development benefits

Leadership from electrification agencies

- Advocate of an enabling policy and regulatory environment
- Interface between mini grid developers and other stakeholders (NGOs, equipment suppliers, financing institutions etc)
- Vehicle to share knowledge and provide financing mechanisms

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Moving forward

The promotion of productive uses of electricity in mini grid development is neither straightforward nor organic

It requires:

- Strong **multi-stakeholder collaboration**
- **Driving role of electrification authorities**
- High degree of understanding of productive demand and close interactions with end-users
- **Availability and affordability** of income-generating appliances
- Specific **financing mechanisms**



Source: Pact/Smart Power Myanmar

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Thank you!

Executive Summary of *Mini Grids for Half a Billion People: Market Outlook and Handbook for Decision Makers* is available for download at:

https://www.esmap.org/mini_grids_for_half_a_billion_people

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Demand assessment and end-users' awareness should begin as early as possible in the mini grid development project cycle

Organization of workshops to better assess demand in Myanmar

- **Identification of opportunities** for productive uses through two methods: systematic or pragmatic
- **Launch of information and marketing campaigns** among entrepreneurs in the sectors selected in the identification phase
- **Need for change agents** to initiate the adoption process of income-generating equipment



Source: Pact/Smart Power Myanmar

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The connection of productive loads has significant implications on mini grid business model and operations



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Expensive electrical appliances and high connection fees can impose a financial burden on productive users

How to provide affordable financing to businesses?

Creating its own financing facility

- Pros: better monitoring of the strategy towards productive uses, control of the type of appliances connected
- Cons: financial burden on balance sheets, diversion from core business
- Example: Jumeme, Tanzania

Relying on third parties

- Pros: expertise in financing SMEs
- Cons: risk adverse, need to tackle financial inclusion issues
- Example: Village electrification committees, Myanmar

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Tackling the gender gap at every step of the process

Electricity access can support income earning for women's enterprises



However, women's contributions to productive sectors are often unrecognized



?

How to assess and address some of the drivers behind the gender gap related to productivity

A woman operating a lobster pond in Myanmar thanks to access to round-the-clock electricity



Credit: TechnoHill

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