A much higher priority must be given to promoting productive use of electricity (PUE) for mini-grid business model sustainability and for rural electrification to significantly impact the broader development agenda.

Two new reports from the International Institute for Environment and Development (IIED) and a new report from Smart Power India (SPI) provide an overview of the opportunities created by PUE by analyzing case studies in Tanzania and India respectively. This new research shows:

To be financially successful, energy service providers must focus not only on a village’s existing power demand, but also on building additional demand by supporting electricity-based local enterprises.

» SPI evaluates the commercial performance of 106 renewable energy based mini-grid plants it supports through local partner Energy Service Companies in India.

» SPI’s mini-grids represent a total of over 3MW installed capacity, and approximately 12,000 customers. Each mini-grid operates either with or without a telecommunication anchor client.

» With or without a key anchor client, mini-grids are capable of achieving operating margins as much as 30% of revenues. In mini-grid models without anchor telecom clients, shops and commercial microenterprises account for 80% of revenue.

» In either case (with or without anchor telecom clients) households account for less than 25% of revenue, and SPI’s evidence suggests that non anchor-based models may not be viable in very small villages.

» Microenterprises on SPI mini-grids reported 12-15% increase in monthly revenue on average.

The importance of stimulating PUE applies to community-based mini-grid models as well.

» European non-profit companies ACRA and CEFA established community based utility companies to manage the small hydro mini-grids established in rural Western Tanzania.

» In each case, the utility companies engaged the community directly (as employees and through information provision); helped established financial support for local microenterprise; and provided vocational training to entrepreneurs.
The types of productive electricity uses that emerged included: milling, poultry farming, animal feed factories, carpentry workshops, fish refrigeration and drying, ice-making, and shops (barber shops and groceries).

Many factors are critical to establishing PUE beyond just energy access itself, including capacity development, business permitting processes, access to finance and transportation infrastructure.

- Many newly electrified villages may lack access to markets for their products that are enabled by energy, or to markets for the related inputs, due to poor infrastructure.
- Households and small businesses often lack technical business administration skills, as well as knowledge about how electricity can be used in productive enterprise.
- Long-term and low-cost financing is limited for PUE projects due to uncertain risk profile, requiring complementary financial tools, such as results-based funds for service providers.

**Share the Message**

DRE developers must focus on developing PUE in order to maximize the development benefits of electricity access as well as for the sustainability of their own business models.

- Promoting PUE to low-income and marginalized groups can increase local impacts but requires time, expertise and financial support.
- Mini-grid developers should partner with MFIs and NGOs and others with expertise in local value chains, to understand and assess opportunities for developing PUE within the community.
- Developers, governments and funders can support innovation in PUE through facilitating access to finance, advice, guidance, training, skills development and networking at the community level.

**Sources:**