

Approaches to community engagement to reduce minigrid cost

ROCKY MOUNTAIN INSTITUTE

26 June 2019



Transforming global energy use to create a clean, prosperous, and secure low-carbon future.

Community engagement, by reducing costs, is critical to minigrid success

Lessons the market has already shown:

- Community engagement determines site-selection, and getting customer buy-in for minigrids – both drive cost and revenue
- Challenges with community engagement often lead to incorrect system sizing, and lead to poor returns on investment

Future opportunities:

- There are significant remaining cost-reduction opportunities tied to community engagement
- Productive use / demand-stimulation is enabled through strong community engagement
- Minigrid business models that involve community-led leadership have the potential to reduce customer acquisition costs and empower local actors



An operator-financed, electric-powered milling machine (Source: Nayo Technologies Ltd)



Current approach: Ensuring satisfactory operation and billing

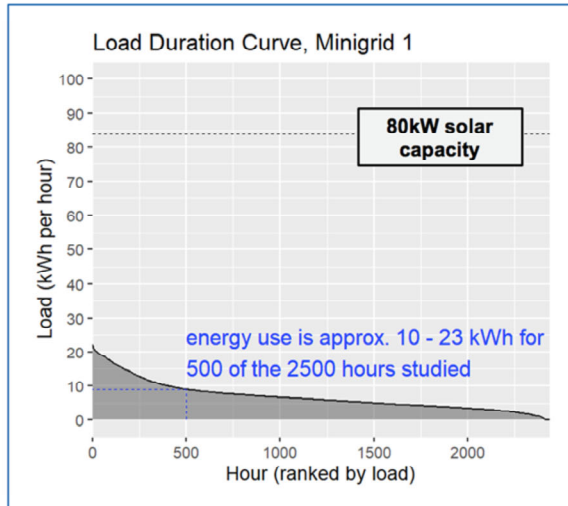


Current situation:

- Lack of community engagement can lead to agents not being available or agents running out of scratch cards (or other unobserved operational issues). This causes customer frustration, and can also mean customers are unable to either use or pay for power
- **Result:** Low satisfaction, lost revenue, burned customers, and an increased likelihood that they will rely on alternatives (i.e. diesel/petrol genset or unreliable grid)



Current approach: Sizing and getting buy-in

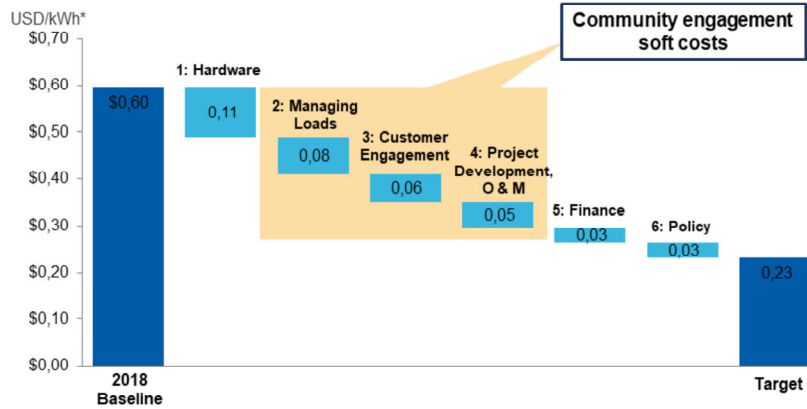


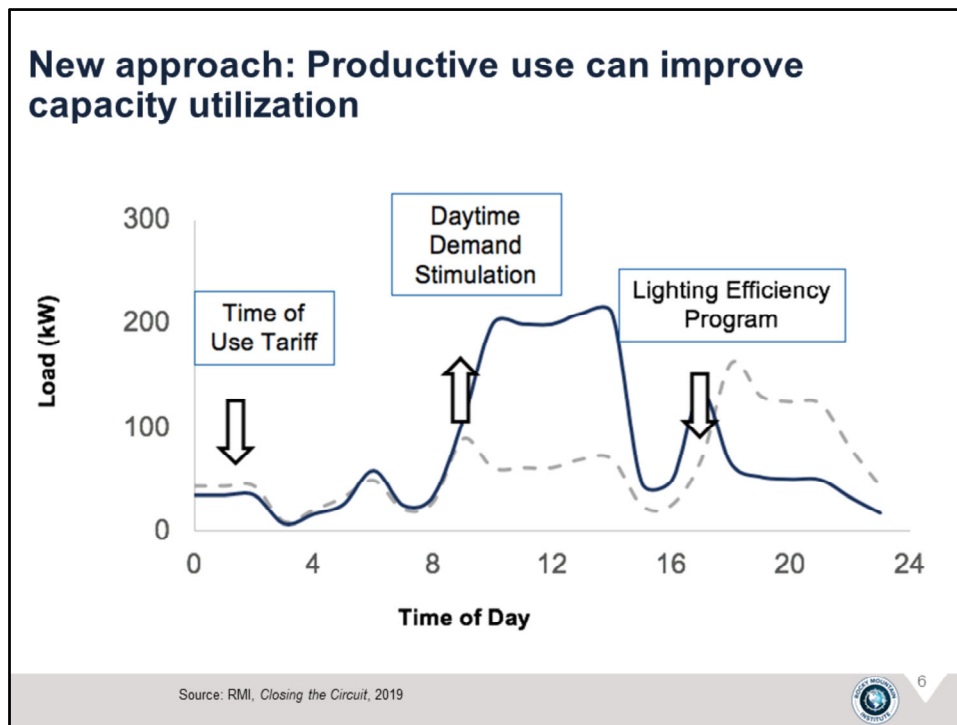
Current situation:

- Bad load estimates lead to poor sizing and lower returns
- If reliability is emphasized over cost, it can encourage dramatically oversizing systems
- In this example, reducing system capacity to 30 kW would significantly reduce capital costs, and still serve all of the load

Looking forward: New approaches to community engagement could unlock cost-reductions and scale

Cost reduction opportunities in six categories





Implementation options:

- Committing demand with **customer agreements**
- Facilitating access (training, awareness, subsidies) to **energy efficient equipment** and **soft-start motors**
- Implementing **Time of Use Tariffs** to incent daytime demand

New approach: Community-led business models

	Generation		Distribution	
	Utility	Private	Utility	Private
Project Development		■	■	
Ownership	■		■	
Construction		■	■	
Operations		■	■	

Through alt. community-led business models:

- Empower local actors,
- Reduce customer acquisition cost,
- Lower soft costs



Community engagement – moving from ‘push’ to ‘pull’

Better for people, better for commercial viability

- Community engagement can be part of a shift away from ‘push’ factors and toward ‘pull’ factors for minigrids
- Methodical site selection, unsolicited tenders, cooperative models can help ensure demand, ownership, and need
- Relies on historical precedent
- Ultimately, these improve the business model
- **Energy access needs to respond first and foremost to the needs of people, even while governments and donor partners are providing strong support**

