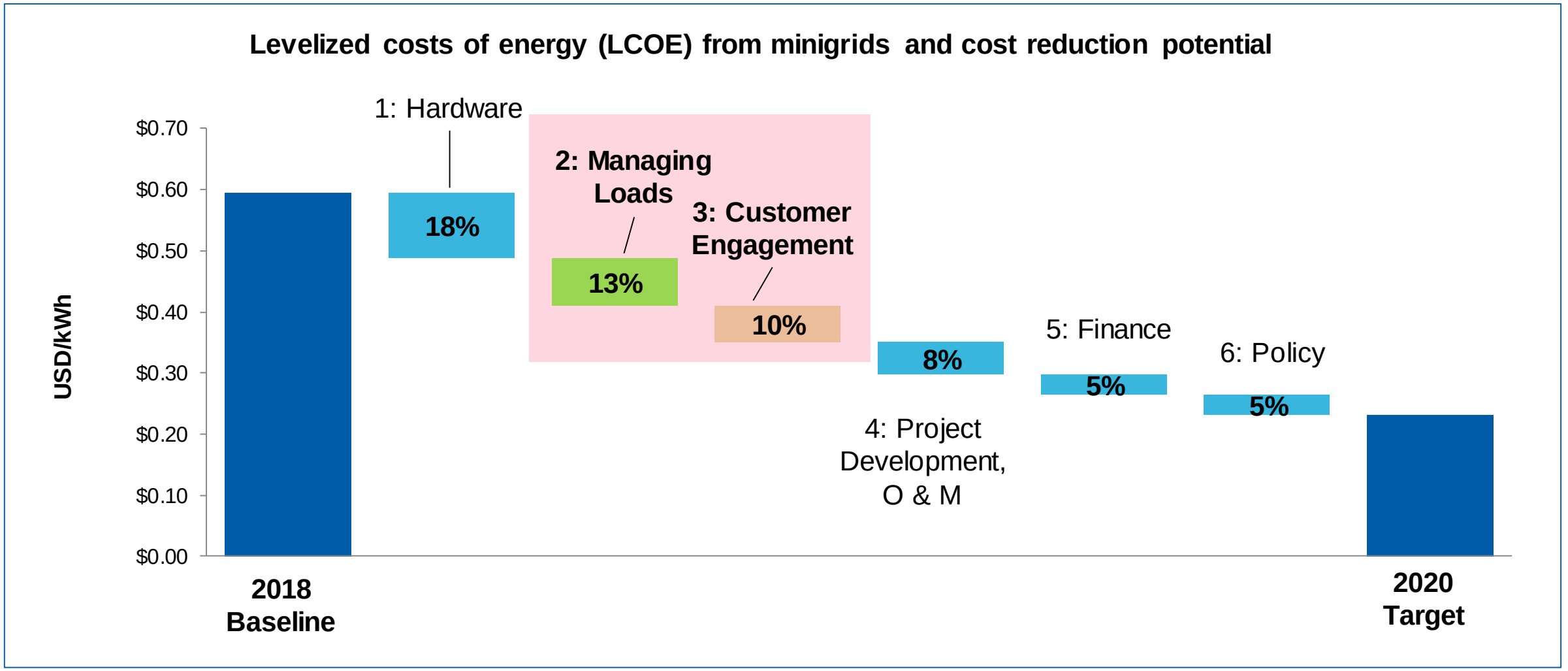
Productive uses of energy are essential for reducing the costs of energy from minigrids, helping reduce subsidy needs and make funding go further



https://rmi.org/minigrids-money-reduce-costs/

The productive use sector in Ethiopia is centered on agricultural productivity, and overlaps with activity in this sector

Sector	Loads	Key references
Smallholder irrigation	Pumps Standalone and grid connected systems	• National strategy for irrigation • NEP-II, ATA mapping & solar pilots
Mechanization	Grain mills Threshers and coffee washing stations	• National strategy for mechanization • Value chain analyses; AGP-II
Meat, dairy and poultry	Cold chain, milking and milk collection Incubators, heating and lighting	• Value chain analyses in meat, dairy and poultry
Horticulture	Cold chain Lighting and heating	• National strategy for horticulture • Value chain analyses
Small businesses	Welding; woodworking; hair salons; tailoring; entertainment; food & drink	• Existing business activities in electrified rural areas
Institutional loads	Schools: lighting, ICT Health: lighting, cooling, medical eqpt	• Ministries of Health & Education • NEP-II, Geospatial mapping

Agricultural productivity

A range of promising Productive Use appliances in Ethiopia but limited supply capacity

- **Agricultural value chains**

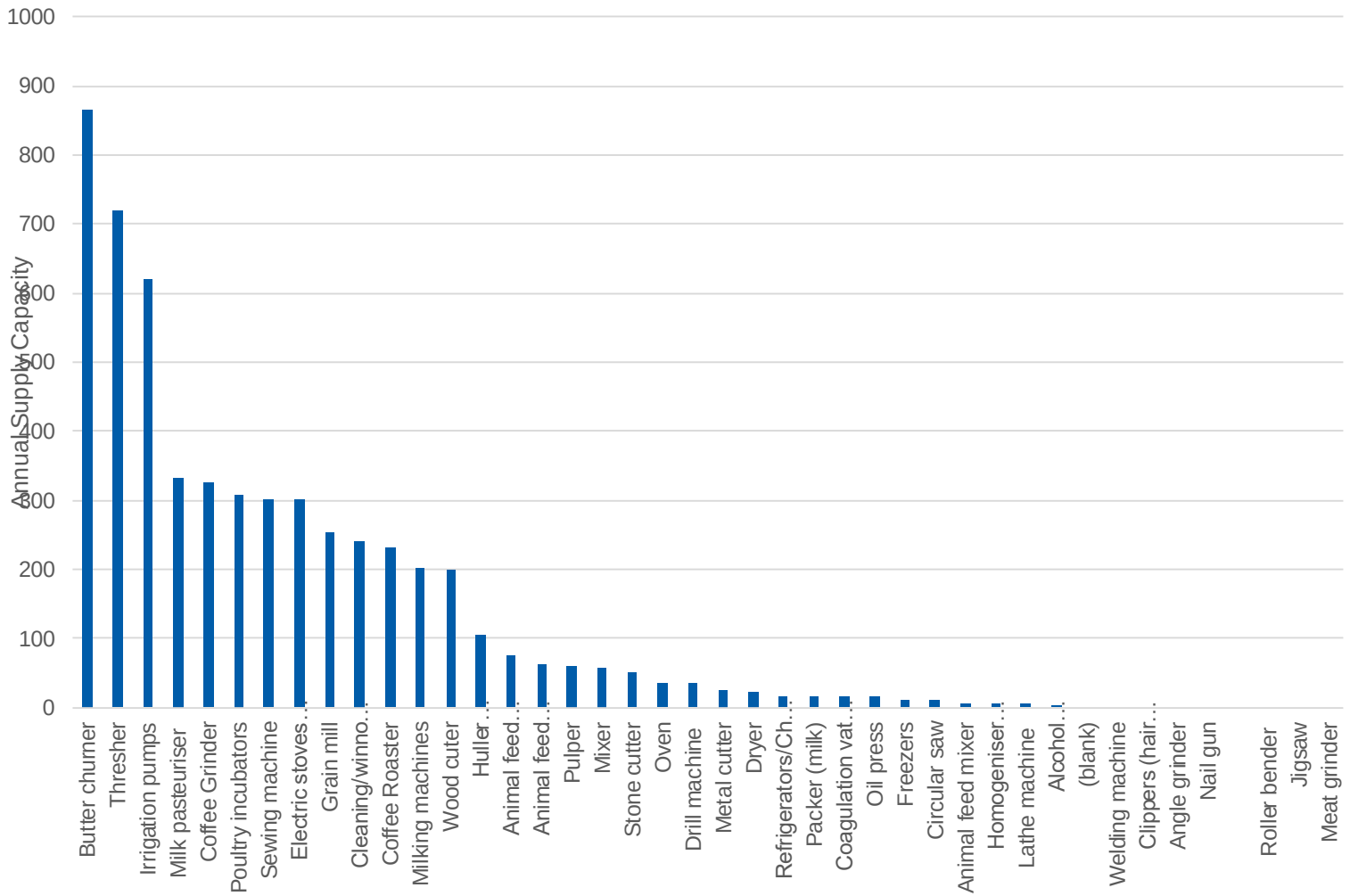
(wheat, teff, coffee, oily seeds, soybeans)

  - Irrigation pumps
  - Threshers
  - Hullers and pulpers
  - Mills
  - Oil presses

- **Dairy and poultry value chains**
  - Milking machines
  - Dairy cold storage
  - Pasteurization units
  - Egg incubators

- **Commercial value chains** (carpentry, metal works, restaurants, hair saloons)
  - Ovens
  - Dough mixers
  - Welding machines
  - Hair dryers (hood)

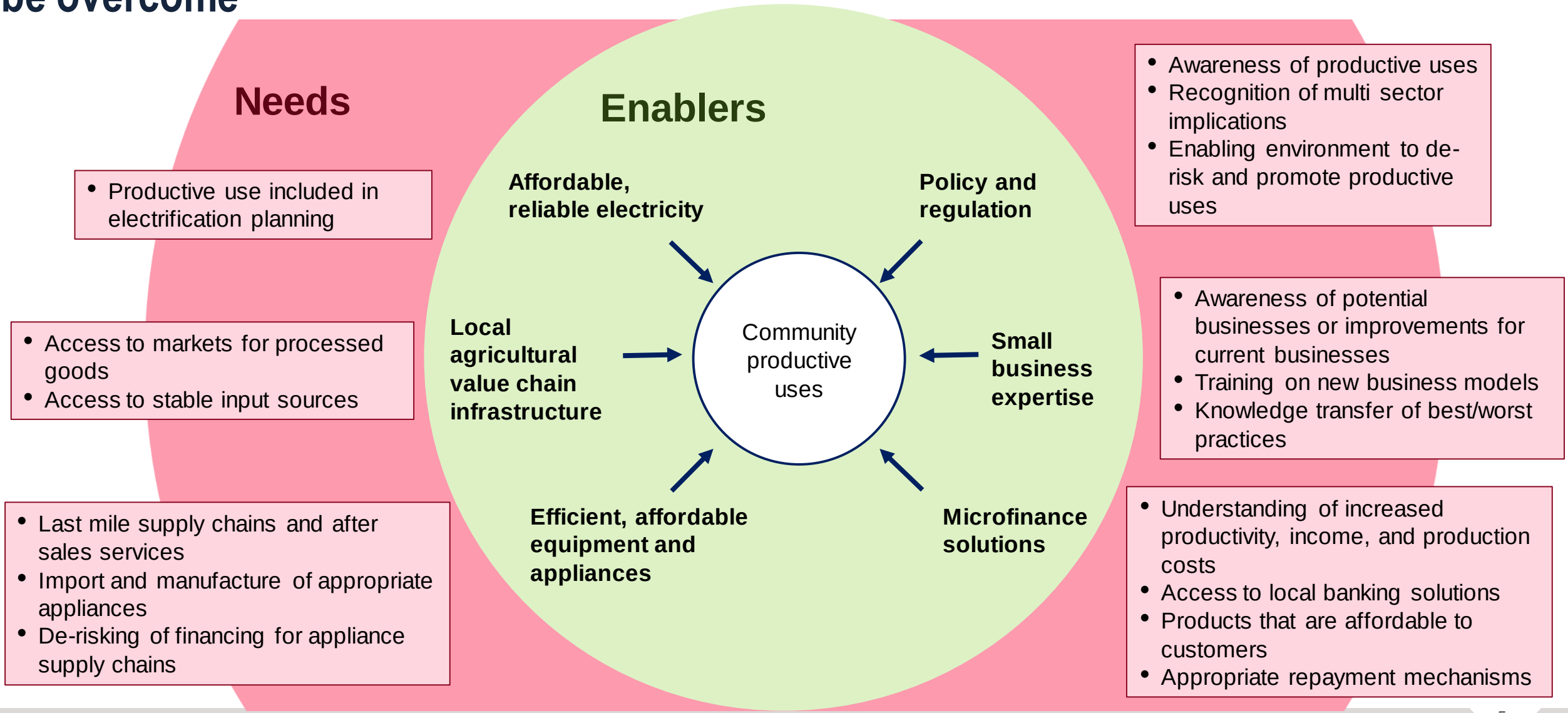
Productive Use appliances supply capacity in Ethiopia



In the Ethiopian context, the availability and financing of Productive Use appliances faces several bottlenecks

- Detailed market assessment (accurate evaluation of number and scale of appliances needed)
- Development and enforcement of standards applicable to productive use appliances
- Gaps in supply chain and limited capacity from both local manufacturing and import perspective
- Policy challenges
  - FOREX
  - VAT exemption/ application scheme to
- Access to finance (loans and FOREX) is a major challenge for supply chain
- Stakeholder alignment and coordination
  - Development agencies – alignment of electrification and economic development goals
  - Communities – electrification systems, PU and payments (ability and will)
  - Government – "Task force" co-ordination key
- Tailored community engagement mechanisms
- Capacity building needs
  - Fostering awareness of MFI and banks on business models for PU appliances
  - ESA - standards development and implementation
  - Appliance suppliers – quality assurance and business management

For communities to effectively develop productive uses, a range of barriers need to be overcome



- Productive use included in electrification planning

- Access to markets for processed goods
- Access to stable input sources

- Last mile supply chains and after sales services
- Import and manufacture of appropriate appliances
- De-risking of financing for appliance supply chains

- Awareness of productive uses
- Recognition of multi sector implications
- Enabling environment to de-risk and promote productive uses

- Awareness of potential businesses or improvements for current businesses
- Training on new business models
- Knowledge transfer of best/worst practices

- Understanding of increased productivity, income, and production costs
- Access to local banking solutions
- Products that are affordable to customers
- Appropriate repayment mechanisms

Graphic includes elements from *Sustainable Energy and Livelihoods*, SELCO Foundation

A successful productive use program must intervene across supply, demand and capacity building