Off-Grid Energy Financing

Designing solutions to bridge the financing gap for agricultural SMEs and technology distributors in East Africa

The findings and ideas presented are based on an 8-week Discovery and are not comprehensive of all potential solutions that may exist

ACELI AFRICA

Global Development Incubator

Market context (1/3): Our discovery started with exploring the needs and trends for off-grid renewable energy in the Agri-SME market segment and direct adjacencies

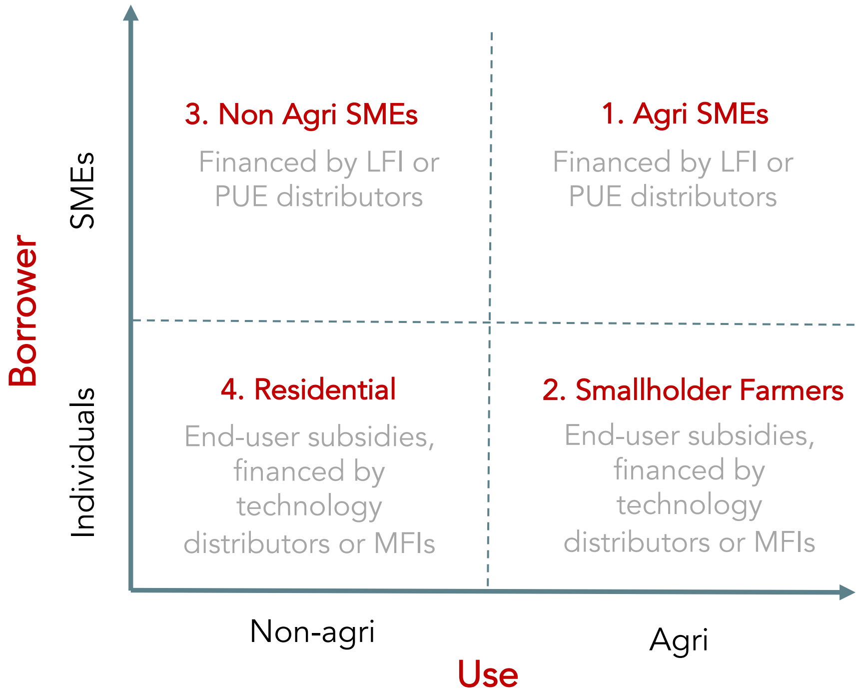
Based on Aceli's geographic coverage and current mandate, we conducted the market assessment in Kenya, Uganda, Rwanda, and Tanzania. We prioritized the segments as follows:

1st Agri-SMEs – synergies with Aceli's existing market incentive model

2nd Smallholder Farmers – direct vertical adjacency with Aceli's beneficiaries as they are key suppliers to Agri-SMEs

3rd Non-Agri SMEs –horizontal adjacency with Aceli's current beneficiaries but working through same Local Financial Institution (LFI) partners to extend RE asset lending capabilities

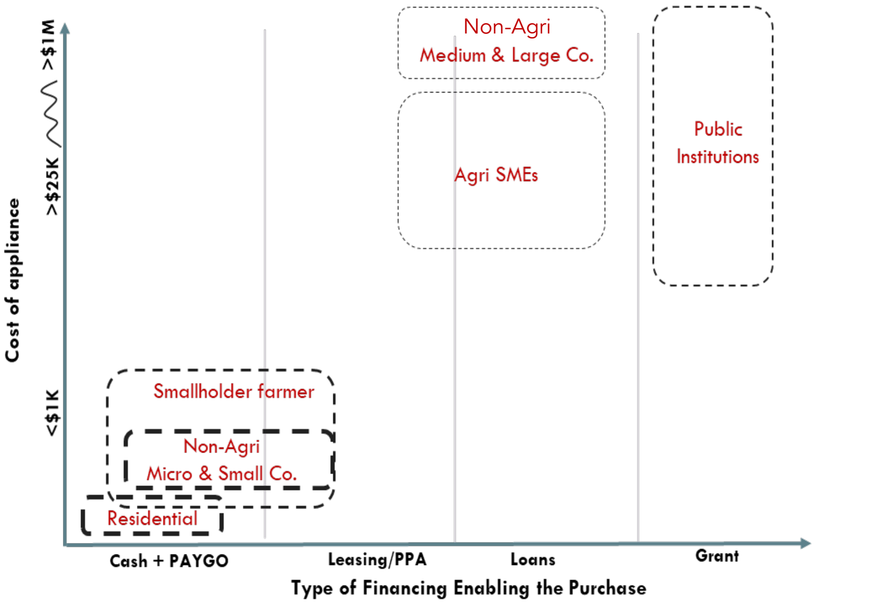
4th Residential Customers – fewer synergies with Aceli's current LFI partners or SME borrowers; this segment may be targeted by some technology distributors serving smallholder farmers and non-Agri SMEs



Market context (2/3): Due to different business models and market segment needs, we redesigned the matrix at the intersection of ticket sizes and consumer finance

The different segments also present specific financing solutions:

- Residential & micro and small enterprise (non-agri) are fairly crowded markets, with distributors financing customers with Cash + PAYGO
- Residential and micro and small enterprise (non-agri) segments tend to mirror each other in their needs (using solar home systems to light homes or shops)
- The products for smallholder farmers may include solar irrigation systems, which may have a higher ticket size, but otherwise usually financed by PAYGO
- Medium and large enterprises usually source financing from third parties, with few technology distributors offering financing options
- Public Institutions such as schools and hospitals typically rely on grant money and may be better suited for Result Based Financing models[1]



Thickness of dotted line denotes our perception of number of technology distributors

[1]SEforAll, 2021

Market context (3/3): Our next steps will focus on: 1) Agri-SMEs, and 2) technology distributors that target Agri-SMEs and/or smallholder farmers

We evaluated different market segments against the below factors, which helped guide us through our decision-making process:

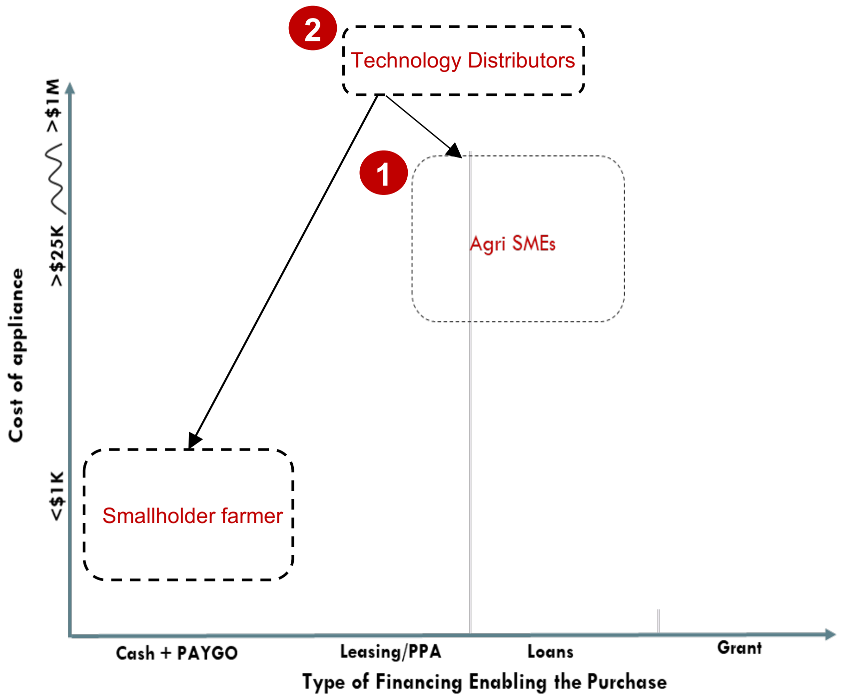
Feasibility: The ticket size of appliances suited for Agri SMEs are closer to the minimum loan size required by Aceli, and the usual working capital requirements for small-medium Technology Distributors is about the maximum loan size currently eligible for Aceli's incentives.

Ease of access: Easier entry into Agri-SME market using established Aceli channels, both lenders (receiving incentives) and Agri-SMEs (receiving TA)

Demand: Agri-SMEs have two primary use cases (cold chain and reliable/cost effective energy for processing); and Technology Distributors' demand for capital is currently underserved by LFIs

Potential for Impact:

1. Facilitate Agri-SME adoption of renewable energy based on increased reliability of energy, reduced cost, and/or higher production/processing capacity.
2. Unlock local currency working capital for Technology Distributors to support growth and resilience



Mapping a high-level ecosystem value chain helped us understand the potential flow of funds and identify the barriers for each stakeholder

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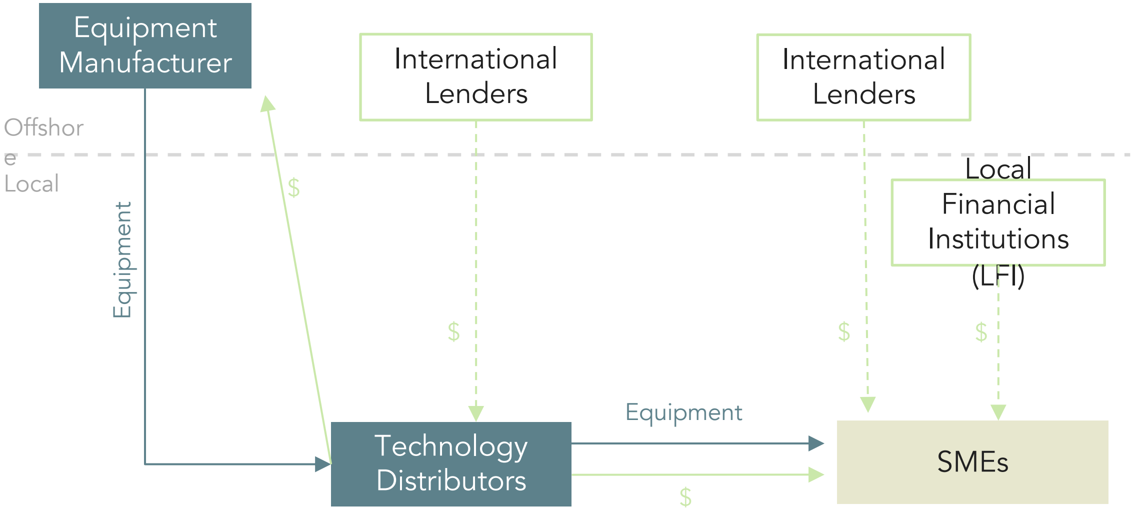
Value chain showing existing flow of funds between various stakeholders



Barriers across stakeholders

Local Financial Institutions (LFI): i) unfamiliarity with off-grid RE sector; ii) high credit risk of technology distributors with limited collateral; iii) lack of appropriate lending product (potentially backed by receivables)

Technology distributors: i) access to local currency working capital to finance scale of operations (while reducing FX risk); ii) availability of customer financing in the market

SMEs: i) affordability; ii) awareness of the right technology for their operations; iii) tailored financing

International lenders: i) challenging to lend in local currency in an affordable and efficient manner; ii) long lead time to close transactions; iii) ticket sizes for SMEs and some technology distributors are too small

Pathway selection (1/2): We assessed five options that emerged during the discovery process…

Option 1:
Supporting individual technology distributors to set up their own Special Purpose Vehicle (SPV)

Best suited for: *Sophisticated technology providers with high transactions volume, track record of receivables, and large scale operations*

Option 2:
An industry-level SPV to purchase portfolios of receivables originated by multiple technology distributors

Best suited for: *Technologies offering PAYGO with similar underlying characteristics and using a common receivables management platform*

Option 3:
Financial or operating lease provided by Local Financial Institutions

Best suited for: *Technology providers offering large ticket size appliances with stable, long-term cashflows*

Option 4:
Leverage existing channels to create demand for Off-Grid PUE and develop asset finance product

Best suited for: *Agri SMEs seeking off-grid RE that matches equipment offering of technology providers in $10K-50K+ range.*

Option 5:
Enable local currency lending to technology distributors

Best suited for: *All types of technology providers willing to borrow in local currency and able to attract international lenders*

Pathway selection (2/2): …and focused on two potential pathways

Option 1:
Supporting individual technology distributors to set up their own Special Purpose Vehicle (SPV)

Option 2:
An industry-level SPV to purchase portfolios of receivables originated by multiple technology distributors

Option 3:
Financial or operating lease provided by Local Financial Institutions

Option 4:

Leverage existing channels to create demand and facilitate financing for Off-Grid PUE

Option 5:

Enable local currency lending to technology distributors

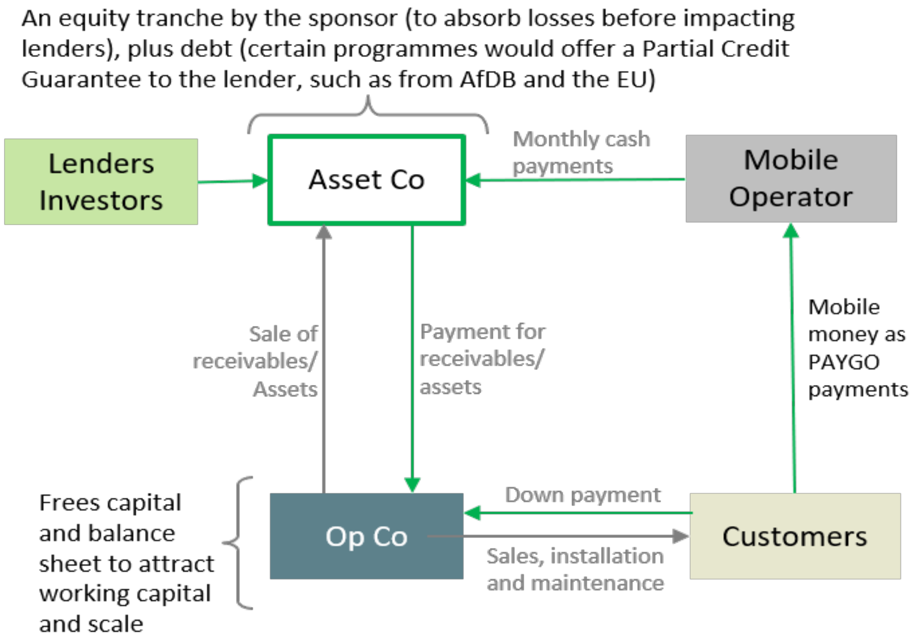
Reasons for prioritizing the above options

- Suitability across market segments
- Operational needs to implement solution
- Synergies with Aceli's capabilities & footprint

Appendix

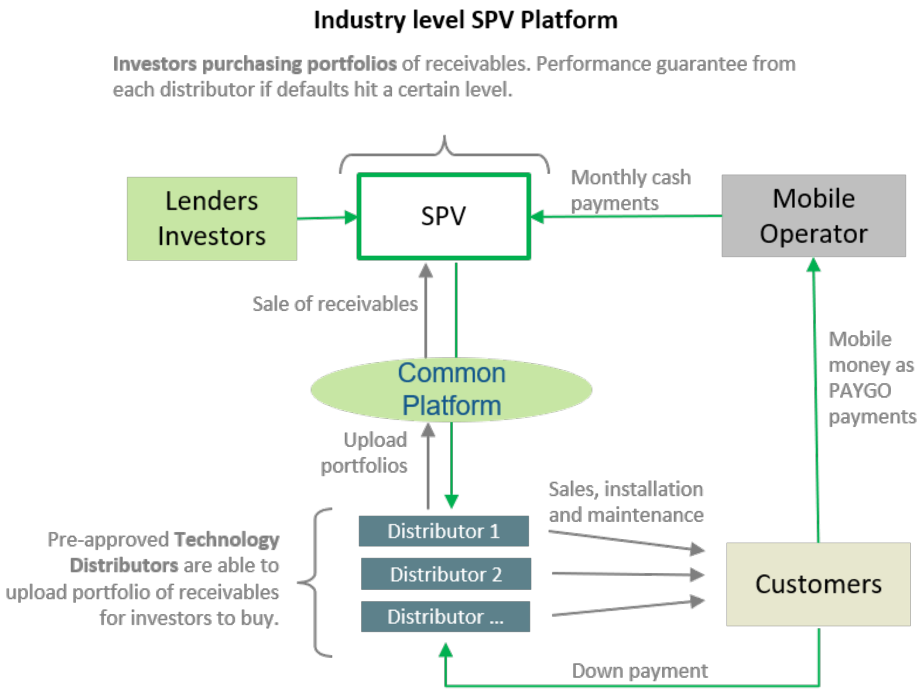
Option I: Support technology distributors to set up their own SPV

Standard optimal model to finance asset-heavy companies



- ✓ **Takeaway:** Technology provider specific strategy that does not yield a sector-wide solution
- ✓ **Best suited for:** Sophisticated technology providers who have high transactions volume, a track record of receivables, and large scale operations
- ✓ **Stakeholders involved:** i) local legal counsel, ii) structuring team, iii) SPV sponsor/ investor, iv) technology distributor
- ✓ **Strengths:** Company's SPV may reduce technology providers risk and free capital to attract further investment to scale
- ✓ **Weaknesses:** SPV is company specific and replication across multiple companies is not always feasible

Option 2: An industry-level SPV to purchase portfolios of receivables originated by multiple technology distributors.

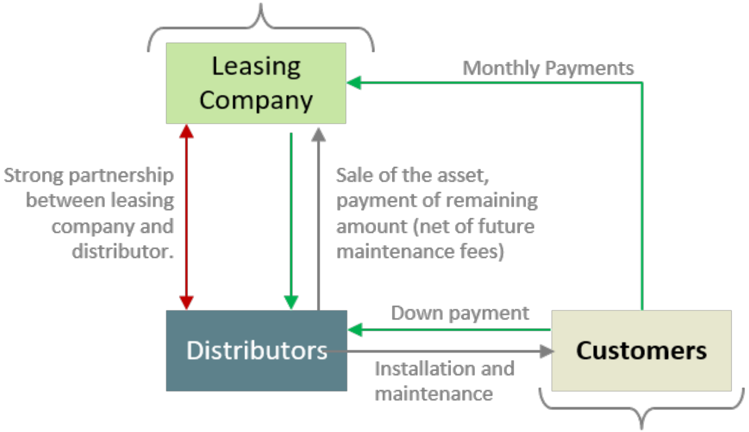


- ✓ **Takeaway:** Highly complex model to setup; potential to create significant benefits, but high barrier to entry
- ✓ **Best suited for:** Technologies offering PAYGO using a common receivables management platform
- ✓ **Stakeholders involved:** i) Receivables management platform, ii) local legal counsel, iii) anchor investor, iv) technology distributor
- ✓ **Strengths:** : i) may enable large ticket investors to reach small ticket borrowers
- ✓ **Weaknesses:** i) only applicable for PAYGO operators

Option 3: Financial or operating lease provided by Local Financial Institutions.

Operating Leasing

Owns the asset(s) from the moment of sale and rents it to the customer(s), at the end the customer can buy the quipment for a „symbolic amount“.



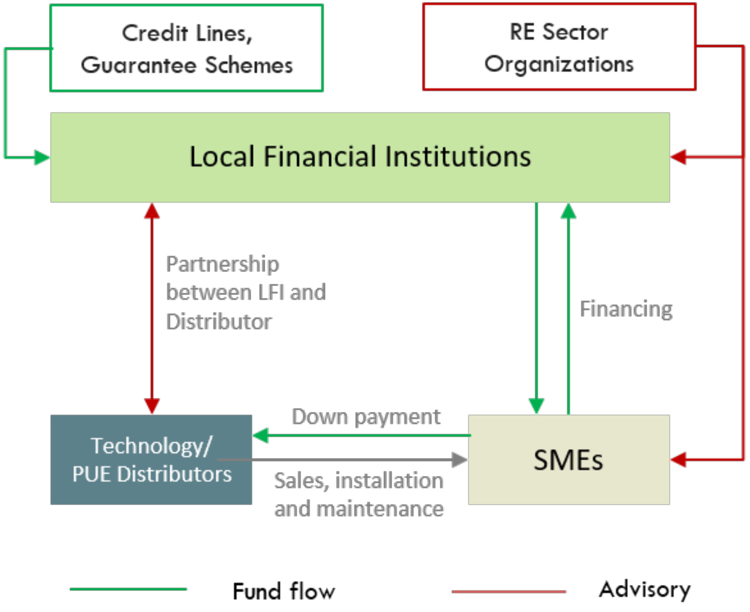
Customers makes a down-payment to the distributor and rent installments to leasing company, rent can be tax deductible and residual value refinanced at the end.

- ✓ **Takeaway:** Well suited option to solve for affordability but limited in scale and applicability
- ✓ **Best suited for:** Technology providers offering large ticket size appliances with stable long-term cashflows
- ✓ **Stakeholders involved:** i) local leasing company or financial institution, ii) technology distributor
- ✓ **Strengths:** i) may improve affordability of RE equipment by end users, especially when operating lease is used and a higher residual value is applied (monthly rent is cheaper than monthly principal + interest payments)
- ✓ **Weaknesses:** i) repossession is a challenge in emerging markets; ii) risks associated with long term rental; iii) only suitable for high cost appliances

Option 4: Solutions for financing distribution of Off-Grid RE equipment to agri-SME customers

LFIs drive demand for Off-Grid RE Financing

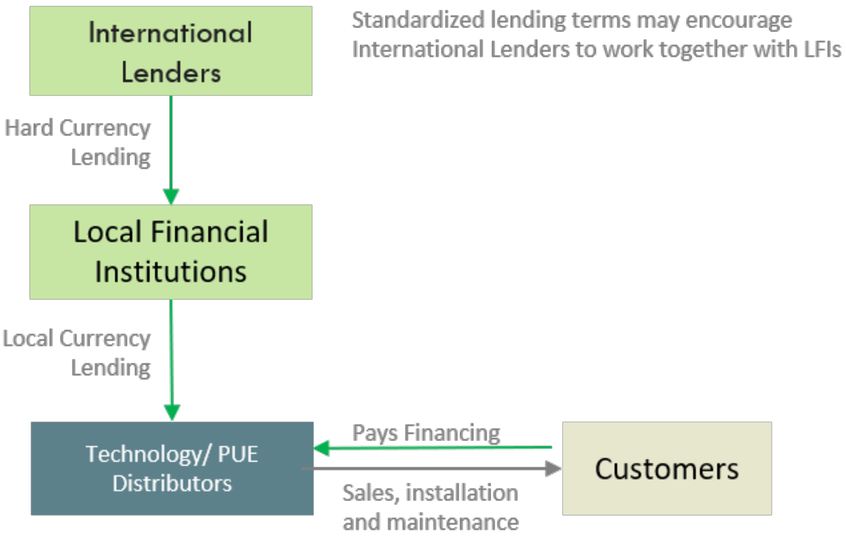
LFI and RE supporting organisation to partner drive demand for Off-Grid PUE within the LFI's existing client base



- ✓ Key takeaway: Existing networks may offer higher probability of success and volume of transaction in a resource efficient manner.
- ✓ Best suited for: Agri SMEs seeking off-grid renewable Energy, technology providers offering equipment in $10K-50K range.
- ✓ Stakeholders involved: i) Local lenders; ii) technology providers; (iii) renewable energy organization/transaction advisors; iv) existing Agri-SME borrowers of local lenders.
- ✓ Strengths: i) lenders and borrowers gain experience with renewable energy technologies, reducing perceived risk; ii) new lending products for renewable energy equipment
- ✓ Weaknesses: i) Success relies on the push and competency of the renewable energy organization/transaction advisor, ii) complexity of aligning Agri-SME energy demands with right technologies and financing

Option 5: Lending to accelerate growth of technology providers by addressing financing needs of technology providers

International Lenders to enable LFIs into the sector



- ✓ **Key takeaway**: Technology distributors having reliable access to working capital and availability of affordable equipment for agri-SMEs.
- ✓ **Best suited for**: All types of technology providers willing to borrow in local currency and able to attract international lenders
- ✓ **Stakeholders involved**: i) international lenders; ii) LFIs; iii) technology distributors; iv) local or regional legal counsel
- ✓ **Strengths**: i) encourage LFIs to enter the sector; ii) enable more local currency lending into the sector; iii) create comparables for better pricing
- ✓ **Weaknesses**: i) designing standardized lending terms may take time; ii) transaction specifications may vary on case-by-case basis; iii) lack of transparency regarding the composition of local currency rate; iv) LFIs may require support to manage FX risk; v) higher level of risk mitigation incentives may be required