

ENERGY  
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# Theme Guide: Selling on Credit

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## Theme Guide: Selling on credit

Digital finance holds a huge opportunity for greater financial inclusion and expansion of basic services. Nearly 61%<sup>1</sup> of people in the developing world own a mobile phone and can carry out financial transactions from their devices. Energy providers can attract substantial numbers of customers and scale up off-grid energy services to those who lack access to electricity.

Energy technologies can be broadly classified according to five tiers of service, as defined by the World Bank Multi-Tier Framework (MTF) and outlined in the table below. This framework lists each tier and the level of energy service, which is used to estimate the most suitable technology to meet the needs of the target end users.



Capacity	Tier 0	Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
<b>Power capacity rating (minimum in W and daily Wh)</b>		3 W 12Wh	50 W 200Wh	200W 1.0Wh	800W 3.4Wh	2,000W 8.2Wh
<b>Supported appliances</b>		Very low-power appliances	Low-power appliances	Medium-power appliances	High-power appliances	Very high-power appliances
<b>Typical supply technologies</b>		Solar lanterns	Rechargeable battery, SHS	Medium SHS, Fossil fuel-based generator, Mini-grid	Large SHS, fossil fuel-based generator, mini-grid, central—grid	Large fossil fuel-based generator, central grid

Table 1: Tiers of capacity of energy supply according to MTF<sup>2</sup>

In rural settings, household consumer energy needs can be typically met with Tier 1 and 2 systems, at least when companies and distributors bring the costs in line with their ability to pay, although in some cases, Tier 3 may be suitable and affordable. Because lower tier solutions are limited to small, household scale systems, they are usually sold as plug-and-play devices, like solar lanterns and solar phone chargers, that don't require installation or technical training.

Different financing models have been developed over the years to help energy companies sell products to their target markets, which often consist of low-income individuals or households with limited access to capital or competing financial priorities.

These products are usually sold directly to the customer or through a third party using the following models: cash, credit, or fee-for-service. The type selected usually determines the stage at which ownership of the product

<sup>1</sup> [The Mobile Economy](#) (GSMA 2023).

<sup>2</sup> To find out more about the MTF, visit [Multi-Tier Framework for Energy Access \(MTF\) | ESMAP](#)

is transferred to the customer, as well as the party responsible for operations and maintenance of the product. Payments can be made via mobile devices, cash transactions, or both.

## Credit sales

Under this approach, users acquire energy products or energy services using credit. It aims to reduce the high initial investment barrier for low-income end-users by introducing a credit scheme or facility. The scheme can either be run by the energy provider or a financial institution. It can be implemented using the following three models.

### Lease-to-own model

To bridge the financing gap for its users, energy providers set up their credit schemes and sell products on credit directly to the users. Depending on the strategy adopted by the provider, the end users make an initial down payment ranging between 30% and 50%, and then pay equal instalments based on the period selected, e.g. weekly or monthly until the total amount is paid in full. In other scenarios, the energy provider does not request a down payment but allows the user to pay in instalments from the beginning.

This model could in some instances attract interest on the loan advanced, but this depends on the cost and sources of capital available to energy providers. Under this model, energy providers have direct control over the financing strategy. The ownership of the system is transferred either when the down payment is paid or when the credit is fully repaid. Generally, the end-user is responsible for the maintenance of the product, although in some cases maintenance can be carried out by the energy provider (potentially for an extra fee).

This model is often used by mini-grid developers who act as financial intermediaries to sell electrical equipment, sourced from local suppliers to their mini-grid users, either for household or business use.

The equipment acts as security during the payment period and in case of default, the equipment can either be repossessed, electricity disconnected, or payment terms adjusted to incentivise the users to make the necessary repayments. However, in practice, this seldom happens, as this is not in the interest of the provider or end-user, and repossessions in remote areas are costly.

### End-user credit model

This model is similar to the lease-to-own model where energy providers sell products on credit. But in this case, it is done with the support of a third party, usually a financial institution (FI) or a micro-finance institution (MFI). The energy provider gets into an agreement with an FI or MFI, which then creates a credit scheme to lend directly to its end-users to acquire its products.

The FIs/MFIs usually carry out their internal assessment to determine the worthiness of a potential borrower before advancing a loan. When approved, the user makes a down payment to the FI/MFI, and the remaining payments are collected by the FI/MFI, which then pays the full price to the energy company. The energy provider remains responsible for the sales and distribution of the product.

Under this model, the end-user is the owner of the product and responsible for maintenance and repair, although most FIs will state in their credit terms that they maintain ownership until the last payment is made.

#### Group lending mechanism

- Groups are usually composed of 5 to 30 members.
- Each group must have a chairperson, secretary, and treasurer elected by group members.
- Group members develop rules and regulations governing the operations of the group.
- Borrowing is usually done per cycle and the typical length of a cycle runs between 12 and 18 months, depending on the loan size and repayment period stipulated by a financial institution (FI).
- Loan sizes are usually for small amounts and have a short repayment period. However, timely loan repayments could influence FIs to increase the loan size limit initially set for the group.
- To mitigate loan loss, FIs advise groups to consist of members operating in different business sectors. However, there are instances where all members are from a similar sector, e.g. farmers looking to purchase a solar irrigation pump.

This model is often used to sell solar and clean cooking products such as lanterns, solar PV systems, solar water pumps, institutional cookstoves, household cookstoves, and other related solar and clean cooking products.

In cases where a user does not meet the FI's requirements to secure a loan individually to purchase the product(s), an FI will recommend other loan products, such as a group loan. The concept of group lending was borrowed from informal trust networks such as Rotary Clubs and the Village Savings and Loans Associations (VSLAs), also known as '*chama*' in Kenya and Tanzania, where group members without conventional security guarantee each other to receive a loan.

Many group saving schemes tend to form in communities where formal financial financing is not accessible. These groups can function quite well with as few as three members and can also be successful in large numbers. The members decide at the outset how often they would like to meet, how much they would like to save, and whether they will store the funds for an agreed period and then distribute money to all members at once, or whether each time the group meets a different member will take home the group's contributions<sup>3</sup>.

### Pay-As-You-Go (PAYG) model

Under the PAYG model, a user rents a product with the intent to acquire it from an energy provider over a certain period. Most energy providers offer PAYG models for end-users through a Business-to-Customer (B2C) model, but some offer their PAYG solutions to intermediaries or Business-to-Business (B2B). This allows energy providers to sell to customers who would otherwise be unable to afford to make a cash purchase, and to sell higher tier products to customers with limited ability to pay. The model has several design considerations:

- **Deposit:** There is often a requirement for an upfront deposit when entering a PAYG arrangement. This is typically a percentage of the total costs of the unit and can range from 10% to 50%. This reduces the repayment period and, in some cases, reduces the costs of finance.
- **Instalments:** Customers are required to pay instalments over a period until the full costs have been repaid. On top of this, the provider might charge additional costs like financing, penalties, or fees. These instalments can be fixed or variable and can also be structured at regular or seasonal intervals depending on the PAYG arrangement and/or target market dynamics. In most cases, payment arrangements are kept flexible to allow for variations in ability to pay, seasonality of incomes, and any economic shocks that might occur in the selected market. Depending on the status of the country's mobile money market, users can make payments via mobile devices or cash. The unit can be enabled or disabled remotely if a customer's repayment or instalment falls overdue.
- **Repayment period:** The period over which a customer is required to repay their outstanding balance is a key metric used to determine the effectiveness and success of a PAYG offering. A longer repayment period unlocks affordability as it in turn leads to a reduction in the repayment amount. But it can also have an adverse impact when the need for replacement parts occurs before the final repayment has been made. Client repayments are tracked over this period.
- **Repossession of unit:** In some cases, the energy provider retains the right to repossess a device if the customer defaults on their repayment/instalment contract.
- **Source of credit:** Availability and access to consumer credit is a key consideration to PAYG delivery. Energy providers will require adequate capital reserves to be able to extend consumer credit. The assessment of credit risk and effective payment collection is also required to ensure costs of the same are not extended past the income derived from the PAYG contracts.

Energy providers also offer user training, ongoing maintenance, and other related aftersales services. The product usually has a service-blocking function that minimises investment risks for the provider.

The user usually becomes the owner of the product when the final payment has been made. The provider continues to offer system maintenance by a warranty. This could be offered remotely or on location by the provider's local agents. This model is often used to sell solar products such as solar home systems and solar lighting products of any power capacity.

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<sup>3</sup> [Consumer finance models for clean cookstoves](#) (Global Alliance for Clean Cookstoves, 2015).

The PAYG model is relatively new and still evolving. Different companies are experimenting with various approaches to meet the needs of not just the end-users, but also its sales agents and B2B energy clients, especially in areas such as the collection and monitoring of revenues, product distribution, activating repeat sales, and reaching end-users in very remote locations. Market-ready tools such as Angaza are some of the platforms used to manage some of these business needs.

## Fee-for-Service

Under this approach, an energy company sets up a decentralised system such as a solar mini-grid, and sells the power generated from the system for a fee. The energy company or mini-grid developer remains the owner of the hardware and is responsible for installation, operations, maintenance and repair of the system. In some instances, the provider trains a resident to manage day-to-day operations at the site.

The end-user pays a one-time connection fee and thereafter a tariff to stay connected. Based on the metering technology installed by the energy provider, the payment can either be via the post-paid model or the pre-paid model. The equipment such as the meter box, whose cost is covered by the connection fee, is registered under the customer's name or business, though the energy provider maintains ownership.

### Post-paid model

Under this model, the users are charged every month after consumption. The amount of energy consumed is measured by the metering device with cost calculations and a bill is sent to the consumer. This payment model can be quite costly for low-income users and might lead to multiple disconnections due to unsettled bills or prompt a complete switch to alternative sources of power, leading to erratic earnings from the system.

### Pre-paid model

Under this payment model, users pay before consumption. This can either be done through cash or mobile money, or in some cases both. If payment is done through a mobile device, electricity tokens are generated and sent directly to the mobile device, then keyed into the meter for activation. On the other hand, if payment is cash-based, the user purchases a voucher from local agents or an energy provider. The voucher has token digits which are also keyed into the meter for activation.

Payments made using a mobile device depend on how advanced the mobile money market of a country is, and the energy provider's ability to integrate it into its billing system.

## Building customer relationships

The challenges currently faced by solar energy providers do not exclusively relate to energy access, but rather to the complexities of creating brand equity to drive repeated sales and customer loyalty. Emerging best practices from existing players show that viable growth can be achieved in multiple ways.

Companies working with households have developed various routes to market their products in different countries:

1. **Direct/ vertical integration:** Company core teams work with a network of village or regional-based staff with its retail network.
2. **Sales partnerships:** Partnerships with distributors, electrical shops, and retail outlets to sell products and provide on-ground customer support and activations.
3. **MFI partnerships:** Partnerships with MFIs to provide energy products as part of their offerings.

Each of these delivery models is utilised to varying degrees by all the companies operating in the sector. Diversification across the different channels ensures that energy enterprises have access to a broader range of customers that would not be accessible by any single channel.

Selling complex products to low-income users requires the provision of excellent aftersales services that go beyond market activation and consumer financing. The early success of companies such as d.light, M-KOPA, Engie Mobisol, or Greenlight Planet demonstrates that effective customer call centres are essential to serving customers remotely and encouraging long-term usage.

Product innovation should focus on meeting the ever-changing and diverse demands of customers. Selling a variety of products such as TVs, solar fridges, clean cookstoves, and electric cookers, while also focusing on the supply chain and distribution, will help increase and maintain usage among customers.

Strong customer interactions are a prerequisite for building trust amongst customers and galvanising new or repeat sales. A physical presence in off-grid communities complements effective distribution channels and B2B sales. This can be executed by creating partnerships with local players that already have a presence in off-grid areas, to enhance the brand and prove its credibility to potential customers. For example, M-KOPA created a partnership with a telecommunications company, Safaricom Limited, which had already cemented its presence and brand in very remote locations in Kenya.

Reducing a customer's exposure to risk by providing long-term warranties and PAYG financing will help a customer build confidence in an energy provider's company. Potential customers are often put off by initial poor experiences and sub-standard products that fail to meet their needs on performance and durability. The likes of M-KOPA and d.light now offer their customers long-term warranties of between two and three years.

Energy providers are changing the narrative by branding themselves as service providers, not just product providers, and their products as services. For instance, M-KOPA has positioned itself as a service provider and understands its comparative advantage when it comes to distribution and customer relationships. Greater awareness of customers' needs, as well as energy usage, led the company to an increase in repeat business, with over 30% of its customers purchasing another product. Similarly, BBOXX sells its products as an 'education system with free internet access' instead of as a '50-watt solar home system with a tablet and six lights'.

SunCulture has used a similar tactic. Instead of selling a solar water pump, it markets its pump as a 'solution that doubles the yield of a farmers' land'. Such messaging effectively communicates how they offer more than just a solar water pump: they also conduct technical assessments to ascertain the best placement, type, and usage, whilst also providing ancillary services like water storage tanks and drip irrigation systems.

## Sector challenges and opportunities

When assessing the market potential of each sales model, it is important to consider the following factors:

- **Policy:** governmental policy, taxes, licences and certifications.
- **Technology:** technology costs, technical skill of the staff, quality assurance, durability.
- **Marketing:** marketing and communications expertise of staff, availability of aftersales services to rural customers.
- **Finance:** availability of affordable small loans and refinancing credits for end-users as well as working capital for energy providers.
- **Product/service awareness:** publicity of the technology, confidence in the product and service as well as misconceptions or misunderstanding of the technology.
- **Willingness to pay (WTP) and ability to pay (ATP):** WTP useful to gauge hypothetical customer base while ATP would give insight into household expenditure and incomes.

The tables below outlines the common challenges and opportunities faced by companies seeking to sell on credit in the African and South Asian markets.

**Table 1: Challenges when selling on credit**

Challenge	Mitigation
The lease-to-own model for mini-grid developers can be a burden on their balance sheets.	Partner with financial institutions.
Energy providers might lack vital skills and resources to operate a credit scheme, i.e. conducting credit assessments, monitoring loan portfolios, and following up on loan repayments.	Partner with financial institutions or a digital sales and customer management software, such as Angaza.
In-house development and running of PAYG platforms can be financially straining.	Outsource the service to a technology provider such as Angaza.
Collecting payments from users in regions without a mobile money market or one that is not fully established requires more financial and staff resources.	This will need to be decided on a case-by-case basis and will depend on the options available in the regions identified.
The restrictive policies of traditional financial institutions might limit the number of low-income users receiving loans to purchase energy products.	Partner with FinTech companies in the regions offering similar products.
Lack of access to mobile devices in target markets, especially in very remote/rural areas.	Energy products and mobile devices could be sold on credit as a package for first time energy customers
Forex exposure as companies import units in foreign currency while sales are normally made in local currency.	Partner with financial institutions providing some risk guarantee mechanisms or local currency debt instruments.

**Table 2: Opportunities when selling on credit**

### Mobile money market

Opportunity to scale up PAYG as mobile money markets in Southern African, South and Southeast Asian countries start to grow.

### Public-private partnerships

Creating partnerships with financial institutions or FinTech companies to reach a wider target market by leveraging their geographical networks or advanced tech systems.

### B2B partnerships

Energy providers can collaborate actively through B2B partnerships with last mile players under the Global Distributors Collective (GDC) to leverage on activations turnarounds as well as client risk assessment mitigation.

### RBF and risk guarantee facilities

Opportunities in RBF facilities which assist in lowering prices and increasing affordability for end-users. Risk guarantee facilities form part of sector support/programmes launched in ECOWAS countries and Rwanda.

### Access to finance tools and opportunities

## Case study: Angaza

Angaza provides sales and customer management software that enables businesses to provide affordable, life-changing products to the 1.2 billion people living off the electrical grid. Communities in last-mile rural areas in regions such as South and East Asia as well as Latin America have saved \$50 million by switching from kerosene fuel to solar energy using Angaza's technology.

Angaza provides hardware integration for PAYG energy products such as solar home systems and lighting, and a cloud-based software suite to enable PAYG energy providers to use the Angaza software platform to manage their portfolio of loan accounts and access powerful business analytics. It also enables them to optimise their sales force, allowing companies to capitalise on the benefits of PAYG cheaply and easily without having to develop it in-house.

The sales agents use Angaza's mobile app to make PAYG sales to clients, as well as to manage loans for non-metered products, such as clean cookstoves and smartphones. Angaza has established partnerships with over 100 distributors in over 30 countries.

By making energy products more affordable, PAYG has increased the accessibility of solar products, allowing customers to save money they had previously directed towards kerosene, batteries, mobile phone charging, or electricity.<sup>5</sup>

The software platform includes a cloud-based backend database, a fully customizable front-end web portal ('Energy Hub') which allows distributors to manage PAYG loan portfolio (providing robust data analytics), and a mobile application ('Activator') for use by field agents, online or offline, to sell to and manage their customers. Angaza provides regular training for distributors as well as responsive customer support.

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<sup>4</sup> [Crowdfunding Energy Access](#) (Energy4Impact, 2021).

<sup>5</sup> [Impact Report 2021](#) (MKOPA, 2021).



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