ENERGY
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Theme Guide: Selling on Credit

June 2020

Innovate UK

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Digital finance holds a huge opportunity for greater financial inclusion and expansion of basic services. Nearly 50% of people in the developing world own a mobile phone and are able to carry out financial transactions from their devices. Energy providers have the opportunity to attract substantial numbers of customers and scale up off-grid energy services to those who lack access to electricity.

Different financing models have been developed over the years to help energy companies sell products to their target markets, who 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 is transferred to the customer, as well as the party responsible for operations and maintenance of the product. Payments can be made via mobile device, cash transactions or both.

Cash sales

Cash sales is the simplest model used by energy providers. It has the lowest demand for capital and involves a small number of stakeholders to reach its end-users. The energy provider will either sell the product directly to the user or through a distributor's outlets, preferably with a wide geographical coverage. The model is usually targeted at users who are able to make a high upfront investment, which might limit the provider's market.

Depending on the nature of agreement between the energy provider and the user or energy provider and distributor(s), the sale could have a warranty and after-sales services. However, in most cases, the user is responsible for operations and maintenance of the product. This model is often used to sell small energy products such as solar lanterns, pico-solar or clean cookstoves for household use.

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:

1) Lease-to Own Model

To bridge the financing gap for its users, energy providers set up their own 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%, 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 an interest on the loan advanced. 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.

This model is often used by mini-grid developers who act as financial intermediaries to sell electrical equipment, often 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.

2) End-User Credit Model

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

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

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 usual done per cycle and the typical length of a cycle runs between 12 and 18 months, or depends on the loan size and repayment period stipulated by an FI.
- Loan sizes are usually of small amounts and have a short payment 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.

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 till the last payment is made.

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 its other loan product, known 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 Association (VSLA), also known as Chama, where group members without conventional security guarantee each other to receive a loan.

3) 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 of time. Based on an agreement with the energy provider, the user will make a down payment then make daily, weekly or monthly payments which goes towards clearing the full price of the product. Depending on the status of a country's mobile money market, users can either make payments via mobile devices or cash.

Energy providers also offer users training, ongoing maintenance, and other related aftersales services. The product usually has a service blocking function that minimises investment risk for the provider. In instances where a user has not paid an instalment, the service blocking feature is activated remotely by the provider, which then switches off the product until the next payment is made and vice versa.

The user usually becomes the owner of the product when the final payment has been made. The provider continues to offer system maintenance in accordance to 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.

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 its sales agents and B2B energy clients, especially in areas such as collection and monitoring of revenue, product distribution, activating repeat sales and reaching end-users in very remote locations.

Fee-for-Service

Key Factors for Consideration for each Model

- **Policy:** governmental policy, taxes, licences and certifications
- **Technology:** technology-costs and technical skills of the staff, quality assurance, durability
- **Marketing**: setup of a rural (after-sales) service, customer service, entrepreneurial skills of the staff
- **Finance**: availability of affordable small loans and refinancing credits for end-users
- **Product/service awareness:** publicity of the technology, confidence in the product and service as well as misconceptions or misunderstanding of the technology

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 at 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 local resident to manage the 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 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.

1) Post-paid model

The users under this model are charged on a monthly basis 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.

2) Pre-paid model

Under this payment model, users pay before consumption. This could 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 directly from 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 facing solar energy providers do not exclusively relate to energy access, but rather to the complexities of creating brand equity to drive repeat sales and customer loyalty. Emerging best practices from existing players show that viable growth can be achieved in various ways.

Selling complex products to low income users requires provision of excellent aftersales services that go beyond market activation and consumer financing. The early success of companies such as d.light, M-KOPA, Mobisol or Greenlight Planet demonstrate 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. Envirofit, for example, experienced a 28% increase in product usage as a result of implementing a call centre in its Honduras operations.

Strong customer interactions are a prerequisite for building trust in customers for new or repeat sales. 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 telecommunication 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 between two and three years.

Energy providers are changing the narrative, branding themselves as service providers, not just product providers. For instance, M-KOPA has positioned itself as a service provider and attributes its comparative advantage to distribution and customer relationships. Understanding customers' needs as well as energy usage led to an increase in repeat business, with over 30% of its customers purchasing another product. Similarly, BBOXX, states that it sells an education system with free internet instead of 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 states that it offers a solution that doubles the yield of a farmers' land. SunCulture offers more than a solar water pump - it

conducts technical assessments to ascertain best placement, type, usage, and also provides ancillary services like water storage tanks and drip irrigation systems.

Sector challenges and opportunities

Table 1 Challenges when selling on credit in Africa and South Asia

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
In-house development and running of PAYG platforms can be financially straining	Outsource the service to technology providers
Collecting payments from users in regions without a mobile money market or one that is not fully established	Case by case basis and will depend on the options available in the regions identified.
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

Table 2 Opportunities in Africa and Southern Asia

Opportunity
Mobile Money Market Opportunity to scale up PAYG as mobile money markets in Southern African, South and Southeast Asian countries starts 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.

Case study

Digital financing to sell PAYG energy products on credit

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

Angaza provides hardware integration for pay-as-you-go energy products such as solar home systems and lighting, and a cloud-based software suite to enable pay-as-you-go sales and distribution anywhere in the world. By partnering with both product manufacturers and distributors, Angaza is accelerating the pace of scale within the off-grid energy and asset financing sectors by allowing companies to capitalise on the benefits of PAYG cheaply and easily without having to develop it in-house.

Distributors use the Angaza software platform to manage their portfolio of loan accounts, access powerful business analytics, optimise their sales force, and more.

Their sales agents use Angaza's mobile app to make PAYG sales to clients in regions with and without cellular network coverage, as well as to manage loans for non-metered products, such as clean cookstoves and smartphones. Angaza employs a human-centred design approach to enhance its software and meet the diverse and evolving needs of distribution partners and end users, and continually field tests a growing set of feature and design enhancements.

Angaza has established partnerships with over 100 distributors in over 30 countries. As of 2018, Angaza's technology platform supports 700,000 products, benefitting 2.5 million people. About half of the products sold are solar home systems, with the remainder being a mix of life-changing products like solar water pumps and household appliances. In addition, Angaza's software is increasingly being used to manage credit sales of a diverse set of non-metered devices.

PAYG has increased the affordability of the solar products, allowing customers to save the same, or more, than they had been spending previously on kerosene, batteries, mobile phone charging or electricity. By making energy products more affordable, Angaza's manufacturer and distributor partners have seen their sales increase significantly. In addition, the Angaza platform provides a full suite of tools to make the process of running a successful PAYG business more transparent, efficient and scalable.

Angaza's software platform includes: a cloud-based backend database; a fully customisable front-end web portal ('Energy Hub') which allows distributors to manage PAYG loan portfolios and provides 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 trainings for distributors as well as responsive customer support.

For manufacturing partners, Angaza offers four different Internet of Things (IoT) metering options: GSM mobile, keypad controls, cable connections and Bluetooth. These options allow distributors to select the metering option that works best for their target markets. All solar lighting products incorporating Angaza technology have a Lighting Global certification, an international standard of quality for solar products.

Angaza is growing its portfolio of manufacturing partners to incorporate more diverse product types. It is also expanding its software platform to meet the diverse needs of its growing portfolio of distribution partners.

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