



Shell Foundation | 

SmartGas™ Pilot

An Envirofit Case Study



THE DANGERS OF COOKING WITH BIOMASS

Nearly half the world's population cooks with biomass. Open fire cooking represents the world's largest environmental public health challenge contributing to climate change, deforestation, disability and mortality, while keeping families in the cycle of poverty to collect or purchase fuel for daily cooking. Household Air Pollution from open cooking fires kills 4.3 million people a year - more than HIV, Malaria and TB combined. Globally families who cook with traditional methods spend on average up to four hours each day gathering fuel, or spend up to 30% of their income purchasing fuel.

ABOUT ENVIROFIT

Envirofit is an for-profit social enterprise that innovates aspirational products and services that increase energy access for families living in emerging markets. Over the past decade, Envirofit has led the market in cookstove innovation- designing, manufacturing and bringing to commercial scale, products and services for families as they transition up the energy ladder from wood to charcoal, to LPG (liquefied petroleum gas). Envirofit's cooking solutions enable families to cook faster while reducing fuel use, smoke, and toxic emissions. Serving more than 8 million people in energy poverty, Envirofit's innovations deliver social, economic and environmental impacts -reducing climate change, creating jobs, and enabling families to save money.

BARRIERS TO GAS COOKING

Many barriers stand in the way of the access, affordability and adoption of clean cooking solutions like LPG. Unlike firewood and charcoal, which can be purchased (at a premium) in small daily bundles as needed, LPG is only available for purchase in bulk (generally monthly), which does not match the consumption patterns of lower and middle-income families who make most purchases daily. This creates the perception that LPG is an expensive fuel, however families pay almost twice as much for charcoal than they would for LPG because of the economic convenience of purchasing it on a daily basis.

In May 2017, Envirofit announced a new SmartGas™ program, which enables households living in energy poverty access to LPG (liquefied petroleum gas) fuel by paying for it on an incremental basis using mobile money.

The SmartGas™ program delivers to three fundamental value propositions: the ability to Pay-As-You-Cook™, safe home delivery and installation, and the prospect of never running out of LPG. All 3 of these value propositions represent significant improvement for low-income and/or energy-deprived consumers in target markets.

KEY VALUE PROPOSITIONS

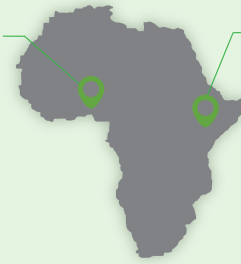
(1) Pay-As-You-Cook™: LPG adoption has traditionally been difficult for customers who live in regions lacking modern energy infrastructure where cash flow is constrained. Because of this, most households make small, daily purchases of wood or charcoal for cooking. Through Envirofit's SIM/GPS enabled Smart Meter, families can use their phones to pre-pay for gas as needed using mobile money. This transaction activates the valve to supply the purchased amount of gas, thus allowing customers to pay-as-you-cook with clean LPG with the flexibility of an incremental purchase. This compliments household earnings volatility common among low-income households, especially those who work in the informal sector.

(2) Professional, safe home delivery and installation: LPG delivery already exists in some emerging markets but not at an accessible price point, while offering professionalism and high safety standards. This often means a choice between high-priced market leading brands (i.e. Total or Vivo) or unregulated local dealers. In addition, most delivery services require tanks to be paid for in full, and connection support is not always guaranteed. Considering that target customers are often working mothers, home delivery is hugely meaningful in availing more time for work and/or child rearing and household management. Moreover, the Envirofit differentiator is ensuring convenience of delivery at a price comparable to charcoal, while ensuring the fuel content and installation procedures are up to safety standards for families.

(3) Consistent supply: Constant monitoring of the data received by the Envirofit Customer Care team allows Envirofit to schedule the delivery of a new cylinder before the customer ever runs out, assuring a consistent supply of quality LPG gas.

PILOT PROGRAM

Ghana Kenya



600+

Home Deliveries

99%

Technology Adoption

3,500

Mobile Money Payments

61%

Purchased a SmartCooker LPG Stove

\$2-3

Average Payment Amount

4-5 days

Average Payment Frequency

SMARTGAS PILOT

In 2017, Envirofit implemented the first SmartGas™ pilot in Kenya and Ghana, to validate the market potential of the world's first Pay-As-You-Cook™ LPG service. The pilot was implemented in order to confirm market demand, as well determine the key target market and priority value propositions required to design a scalable business model for SmartGas. This can have far-reaching implications not only for Envirofit, but the general clean cookstoves and household energy ecosystem. As governments, donors and social enterprises advance the access to energy agenda, there is cross-sector commitment to transition over a billion users from biomass cooking to LPG. The question is how to change cooking behavior? How to ensure the products and the pricing are in line with demand of enough consumers to generate a massive and profitable scale? Which consumers need to be reached first with which value propositions to start a ripple effect in the market?



"To change the cooking behavior of one billion households we need to make sure that products, services and pricing match the consumption patterns and needs of consumers. The only way we can turn push products into pull products is if the value proposition of the solution is critical enough that consumer can't live without it at an attainable price point by which they can access it. This needs to be coupled with a positive experience from a brand that fosters trust, generating the word of mouth sales required for a solution to scale." -Ron-Bills, CEO of Envirofit

PILOT METHODS

The SmartGas™ pilot was rolled out in Kenya and Ghana to explore and analyze target market demographics, fuel consumption patterns, mobile technology use, and key value propositions. During the pre-pilot period, Envirofit established branding and safety guidelines for consumers, delivery agents, and customer care teams and began the SmartGas delivery cycle. At the onset, Envirofit selected pilot locations in Accra and Nairobi that encompassed a wide range of target customers within the lower to middle-income category. Surveys were used to understand cooking fuel consumption patterns from households across different socio-economic class (SEC). Envirofit created a marketing approach to test the three different value propositions.

Envirofit looked at three specific user groups including charcoal users, stove-stackers, and dedicated LPG users. Envirofit collected and analyzed data from focus groups, interviews, surveys, customer support calls, service and sales visits, and meter data applied iteratively and continuously across qualified participants (n~1100), an active customer base (n~300), and specific households (n~150).

Envirofit developed communication software and customer management databases to enable their IoT and mobile technology equipped SmartGas meter to function within localized networks and mobile money platforms. In 2017, the first ~400 pre-production SmartGas valves were produced and delivered in Kenya and Ghana. These units were then distributed within a subset of the baseline group.

KEY LESSONS

Value Proposition

All three SmartGas value propositions (1) Pay-As-You-Cook™, (2) professional, safe home delivery and installation, and (3) never running out of gas, resonated extremely well within the customer segments of our target market. From this research Envirofit learned that each target group required different value positions and that different messages about the product and service appeal to different audiences.

Target market

Envirofit intentionally cast a wide net to understand fuel consumption patterns among people earning between \$3-\$16 USD/day in pilot markets. While there were high levels of interest in SmartGas across the different target groups, Envirofit wanted to understand the users who would serve as the best business case for scale-up of the SmartGas business model. This research informed Envirofit's launch strategy. Although SmartGas is designed for low-income families, Envirofit decided to launch the product among families who resided in middle-income socioeconomic groups to demonstrate the aspirational value of the technology before then expanding into lower-income families. Envirofit has subsequently begun expansion into lower income communities.

Safety

In both markets safety is a major concern. As gas is a combustible material, there are risks of explosions and gas contamination. Large companies that work in the LPG supply chain have detailed safety guidelines on the filling and handling of LPG. For the most part the standardization and enforcement of policies ends when the gas leaves these companies and reaches LPG marketers. Envirofit wanted the SmartGas program to have the highest level of safety standards that match those at the international level. During the pilot Envirofit found a lack of standardization and guidelines for LPG marketers and developed a rigorous process and guidelines to ensure that employees and customers are safe. Envirofit has made safety a key component of the SmartGas installation process to give each customer a 20 minute training on LPG safety in their own home in addition to insuring the SmartGas unit is safely installed and connected to the cookstove. Results from our pilot demonstrated that his added level of consumer education and the installation by a qualified professional made customers feel safer about using LPG. In fact 97% of pilot participants agreed they felt safer using SmartGas than their previous cooking solution with the balance feeling it a was 'as safe' as their previous configuration.



SAFETY

99%

Of users said that SmartGas is safer than previous options.

ADOPTION

100%

Surveyed said they were interested in the technology.

AFFORDABILITY

97%

Of users said it was convenient and easy to use.

99%

Of users said they would recommend SmartGas to friends or family.

90%

Of users said it was worth the investment



PILOT RESULTS & PLANNED EXPANSION

Overall, the pilot was extremely successful in validating the market potential for SmartGas, and helping Envirofit determine the business model, key target market, and value propositions required to successfully scale SmartGas. During initial canvassing, 100% of respondents were interested in SmartGas and over 80% were willing to sign up on the spot.

Envirofit was able to identify the key strategic target group for commercial scale-up which encompasses women in the urban middle class who mostly cook with LPG but also cook with alternative fuels when they run out of gas. Focus group testing concluded that the value proposition this target audience found the most valuable was having the visibility of knowing when gas will run out, which helps them better manage their fuel budget and avoid the crisis of running out of gas.

CONCLUSIONS

Many social enterprises are increasingly stepping up to serve low-income consumers in emerging market. Reaching scale can thus often require a low-cost, high-volume approach. This pilot was meaningful, in terms of finding a way to bring such a comprehensive value proposition yet still serve low-income customers. Many low-income customers in Kenya have access to entry level LPG solutions like a meko (6kg cylinder with an attached burner on top), however, sub-standard levels of safety, and the cost of buying refills prevent families from using this as their main fuel. SmartGas is unique in providing the same customers with a cooking option that matches their spending habits while providing them with a premium customer experience, in terms of delivery, safety, branding and customer care. To create economies of scale and establish a highly aspirational value propositions around the product Envirofit launched SmartGas in middle-income households but has already expanded to offer SmartGas in low income households. While impact-investors often want to see efforts that primarily target low-income communities, but this broader reach across different socioeconomic groups is critical to bringing products and services to scale. us configuration.



"Delivery to my door makes my life easier and saves me the haste"

"I buy gas anytime I want with any amount, its freedom of purchase now, I don't have to struggle to get the full amount to refill the full cylinder."

"I don't have to worry about safety because it is fixed professionally ."