Innovative Consumer Financing for Cooking Energy Access

28 February 2018
9:00-10:00 AM EST
LOGISTICS

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Richenda Van Leeuwen, The Global LPG Partnership
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LPG is a solution that can start helping 1+ billion of the 3 billion people requiring clean cooking energy now

• A clean, portable, safe gas for cooking

• A low carbon, plentiful and environmentally friendly fuel, mainly produced as a by-product of oil and natural gas refining. BioLPG production increasing.
1. Switching to LPG use helps prevent the more than one million annual premature deaths in India and over 500,000 across sub-Saharan Africa from household air pollution.

2. LPG has a lower emissions profile than firewood, charcoal and kerosene. Reduced particulates (eliminating smoke inhalation) means better respiratory, cardiovascular and other outcomes.

3. Benefits for pregnant women and children, leading to better birth weight, stillbirth prevention and less incidence of pneumonia in children under five years old.

4. Less pressure on forests from reduction or elimination of gathering of wood fuel or charcoal production.


6. Does not exacerbate climate change: in fact modeling shows slight net climate cooling impacts from switching from wood and charcoal to LPG for cooking.
Common Reasons for Lack of LPG Usage for Residential Cooking in Developing Countries

• National governments have not established adequate policies, regulations, market structures, and regulatory enforcement to stimulate and sustain market development.

• LPG, while plentiful globally, is often scarce locally due to supply chain constraints, often as a result of policy issues.

• Local companies often lack the money or knowledge of essential practices to build needed infrastructure and distribution systems to reach consumers effectively and efficiently.

• Consumers want and like LPG for cooking, but lower income consumers often can’t afford the cash required for upfront switching equipment purchase - the LPG stove, burner, hose, and cylinder. This is where innovative consumer financing solutions are needed.
Bottled Gas for Better Life
Access to Clean Cooking with LPG through Microfinance
Meixi Gan, The Global LPG Partnership
The Global LPG Partnership Supports Large-scale Clean Cooking Transitions in Developing Countries

• Launched in 2012, GLPGP is the boutique non-profit public-private partnership established by the United Nations to focus on LPG for clean cooking, working among host and donor governments, UN agencies, NGOs, DFIs and impact investors, and leading international LPG companies.

• It helps countries build up and coordinate national LPG ecosystems — support development of national plans, policies, regulation, supply, infrastructure and distribution.

• It helps consumers switch to LPG via education, consumer financing innovations (microfinance and Pay As You Go) and other support.

• It helps academic researchers pursue evidence-based research around LPG for climate, health and the environment.
Innovative Consumer Financing to Help Lower-Income Households Switch to Clean Cooking with LPG Sustainably

Program:
- Six-month commercial microloans offered to low-income families in Cameroon and Kenya for LPG equipment purchase
- Community sensitization/education on safe LPG use
- Capacity building through close collaboration with local microfinance institutions (MFIs) and LPG marketers
- Target: New LPG users; a small number of loans given to existing LPG users wishing to change suppliers/equipment

Goals:
- Accelerate adoption of LPG by poorer households as the national LPG supply chain is expanded
- Proof of concept for African MFIs to incorporate LPG household lending in their regular portfolios, significantly scaling up household LPG access over time
ADOPTEZ LE GAZ EN BOUTEILLE POUR L'AMÉLIORATION DE LA QUALITÉ DE VOTRE VIE

Une Bouteille de Gaz pleine (12.5kg), un réchaud double bruleurs pour seulement 51,600 FCFA !

Un plan de remboursement qui s'étale sur six (06) mois pour ceux qui s'inscrivent au prochain évènement.
Bottled Gas For Better Life in Cameroon

>700 households served in 11 communities across 5 regions since Feb 2017 in two phases

Loan Offer:

• Partners: MUFFA and MC2 (MFIs); Tradex and Glocalgaz (LPG marketers)
• Loan: 50,000 CFA (about US$86) – 11,600 CFA (US$20) refundable deposit followed by 6 monthly payments with commercial interest rates (excluding for initial pilot)
• LPG equipment offered: Filled 12.5kg Cylinder + Double Burner Cookstove + accessories

Community Sensitization & Education:

• LPG cooking demonstration
• Leaflets on LPG use and benefits
• Calendars with safety instructions
• Door to door canvassing in rural areas

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Bottled Gas For Better Life in Cameroon

Participant data for Phase II (April 2018-present):

- 509 households to date (data available for 492); average household size of 5.3
- Existing and new customers of the MFIs; all are screened for credit risk
- Average monthly household income: US$88-173, or about US$0.60-US$1 per capita per day (Cameroon’s average: US$4 per day)
- Most common primary fuel at baseline: Wood – 73% in rural areas, 54% in peri-urban areas, 32% in urban areas

![Monthly Household Income (US$) (n=492)](chart_1)

![Primary Cooking Fuel Used (n=492)](chart_2)
Bottled Gas For Better Life in Cameroon

Phase II preliminary findings after 6-month loan period:

Loan repayment (available data for 492 households)

- Repayments ongoing through March 2019; 89% of loaned capital repaid to date (vs. 95% repayment after full 6 months in Phase I, 200 households)
- 68% of households have fully re-paid in under 6 months
- Civil disruption in Anglophone regions from mid-2018 affected loan registration and early loan collections

Months Taken To Repay US$86 Loan (n=492)
**Bottled Gas For Better Life in Cameroon**

Phase II preliminary findings after 6-month loan period:

Data from Briquetrie-Yaounde, peri-urban community (n=100)

- 99% still using LPG after 6 months, but 98% reported some stacking with other fuels

**Other Fuels Used (n=98)**

- Firewood 73%
- Saw dust 21%
- Electricity 2%
- charcoal 4%

**Frequency of Secondary Fuel Use (n=98)**

- Daily: 1%
- Every 2-3 days: 16%
- Once/twice a week: 62%
- Every two weeks: 16%
- Every four weeks: 4%

**Use of Time Saved (n=98)**

- Work: 38%
- Rest: 33%
- Family care: 10%
- Housekeeping: 8%
- Other (e.g. study, go to market): 11%

- LPG usage: 15.7 kg/capita/year vs. 18-19kg/capita/year in Phase I
- 98% reported time savings from LPG; 38% used extra time for work and 33% for rest
Kenya
Bottled Gas For Better Life Pilot in Kenya

69 households served since August 2018

Loan Offer:
- Partners: Equity Bank, National Oil Corporation of Kenya (NOCK)
- Loan: 9,900 kshs (about US$99) – 2,000 kshs (US$20) refundable deposit followed by 6 monthly payments with commercial interest rates
  - Loans fully funded by Equity Bank with partial loss guarantee by GLPGP (unlike in Cameroon, where GLPGP funded loans)
- LPG equipment offered: Filled 13kg LPG Cylinder + Double Burner Cookstove and accessories

Community Sensitization & Education:
- LPG cooking and safety demonstration in July 2018 attended by 70 people
- Briefings at community group meetings by GLPGP/ NOCK/ Equity Bank
Bottled Gas For Better Life Pilot in Kenya

Participant characteristics at baseline:

- Participants are from a rural village in Nyandarua County and environs
- All screened for credit risk
- Charcoal is widely used as a primary fuel
- Participant surveys led by the University of California, Berkeley are beginning in March 2019 to investigate:
  - Role of microloans in encouraging LPG adoption and change in cooking practices
  - Effects of LPG adoption on health and time use
  - Commercial viability (based on loan repayment patterns)
  - Perceptions of the loan and what population segment is the best target
**Bottled Gas For Better Life pilot in Kenya**

**Initial observations:**

- Equity Bank loan offer was less well-received; higher take-up through informal “table-banking” savings group (SEMA) with simpler approval process

**Program Registration (n=69)**

- Paid in cash (no loan) 22%
- Took Equity Bank loan 29%
- Took loan through savings group 49%

- Factors affecting loan registrations:
  - Loan approval processes
  - Income seasonality (for agriculture-dependent households)
  - Prior experience with bank loans

- 100% repayment rate to date in Equity Bank group, likely attributed to:
  - Thorough credit screening before loan approval
  - Ease of paying through Equity Bank’s mobile banking platform
  - Option for members of savings groups to help one another with payments if needed
Lessons & considerations for future phases

1. The six-month loan term is appropriate for LPG equipment, and can be re-paid at commercial interest rates as long as proper upfront credit screening takes place.

2. Community sensitization/education, on LPG safety and health/economic benefits, is needed in conjunction with loan offer.

3. Coordinating registration and equipment delivery (no long delays) is important to maintain confidence in program.

4. Digital finance tools can simplify data collection and encourage better loan repayment practices.

5. Demand for LPG exists beyond current program scope: LPG for businesses, heating, and bundled with other energy services e.g. solar.
"You don’t feel anything when you cook using gas. But when you cook with firewood, smoke enters your eyes. My children cough because of the smoke."

"It is clean to use gas to cook. It does not dirty your room, pot or kitchen. It also cooks faster because you are using two or three burners at the same time."

"I can use a bottle of gas for one month and a half. I will not regret it, because If I calculate the charcoal or the firewood I’d use, it will be more expensive than the gas I’m using."

"I am in favor of the use of domestic gas because it has less effect on my health and the environment."
Thank you!

THE GLOBAL LPG PARTNERSHIP

Email us: info@glpgp.org

Follow us on Twitter: @globalLPG

We are grateful to the following donors for their support to *Bottled Gas For Better Life*:
About Us

We are a tech company with the mission to accelerate access to clean, safer and affordable cooking solutions in developing countries using cutting edge software and hardware.
Our Focus

• In Dar Es Salaam ~ 2 million households will switch to LPG

• It is the 3rd fastest-growing city in Africa and 9th in the world – growing at 5.84% - biggest in East Africa

It is going to be about ongoing service, not a stand-alone product
Problem

Charcoal

Cost per Month (USD)

Daily payments

Solution

LPG

Cost of Gas

Pay as You Go

Availability
Nearby

Quality
Reliable Supply

Affordability
Pay as you Go
Commercialized the first consumer-grade IoT meter for LPG in 2015

Our technology enables Customers pre-pay as little as $0.3 per day for all their cooking needs via mobile money
Operations

MIDSTREAM

ORYX

LPG Import
Bulk Storage
Bulk Transport
Storage & Refilling Plant

KOPAGAS

Cylinder Transportation
Warehouse
Logistics
Sales to Final Customers

DOWNSTREAM

LAST-MILE

Sebastian Rodriguez

Pay As You Go

- cylinder replacement
- stove, hose & valve
- meter
- customer financing
- software

© Kopa Gas Ltd (2019)
Software

Our cloud-based software allows control of thousands of transactions, meter logs and just in time delivery of cylinders for 20K customers a month.

Our tools have helped us to maintain growth and bring unique visibility to our LPG distribution network of 600+ retail points.

Sebastian Rodriguez
KOPAGAS
GSM Technology is an enabler in Tanzania

- 60% of population has used mobile money in last 12 months
- KopaGas is integrated to MNOs in TZ

Reasons to switch to LPG

- Cleanliness / Reduce Smoke
- Persuaded after demonstration
- Pay as You Go
- Efficiency and Ease of Use
- Availability through KopaGas
- Preferred to Alternative
- Savings

48% of households live below the USD 3.10 per person per day poverty line
96% of KopaGas customers are saving an average of USD 2.92 per week on cooking fuel
65% of customers are new to LPG cooking
86% of customers do all or most of their cooking with KopaGas
98% of KopaGas customers are women
Benefits

LPG CUSTOMERS
- Value
- User experience
- Home Delivery
- Pay as you Go

LPG MARKETERS
- Direct Relationship
- Savings
- Control
Impact on Quality of Life

- Reduces stress
- Cleaner
- Better than alternative
- Flexibility in cooking and purchase fuel
- Affordable
- Efficient/easy

Keep providing more value to customers
www.kopagas.com
info@kopagas.com

Thanks

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Lessons from PayGo and Consumer Finance

Alexander Sotiriou, CGAP
Contents

What PAYGo means for companies and customers

Alternative methods of financing goods/services
Pay-as-you-go Solar is a new form of asset financing, enabled by two innovations:

**Digital Payments**
- Allow companies to sell to anyone who has mobile connectivity.

**Remote Lockout**
- Technology reduces the portfolio risk by ensuring willingness to pay.

### What PAYGo Means for Companies and Customers

- **SHS is purchased on credit, paid for over 12–36 months.**
- **A customer puts down $10-30 as a deposit, acquires the asset.**
- **Monthly payments of $8-$20 combine loan instalments and usage fees.**
- **Flexible repayment adapts well to low-income cash flows.**

- **Financed, Affordable Solar Home Systems**
Lockout technology is the key to offering truly flexible finance

A 12-month PAYGo loan for a solar home system is really a commitment to buy 365 energy ‘days.’

PAYGo loans have no accumulated arrears, and no compounded interest.

Poor households use this to buy 4–6 days a week, lowering the effective price.

Providers have enough data that they can price the loan for the average completion term. Fast re-payers subsidize the slow.

The “Adapter” starts off a bit rough but catches up by paying more than the minimum when possible. The loan is paid off on time and the power is on most of the time.

The “Stretch Flex” puts money toward the loan when possible. It takes longer to pay off the loan and the power is on when the payments are made, but the total amount of the loan never changes.
What PAYGo Means for Companies and Customers

In their own words: Customers value the relationship with their PAYGo providers

CGAP conducted demand-side research with FIBR to understand customer value in PAYGo

4 providers involved

138 households interviewed

4 countries represented

Take enormous pride and pleasure out of having energy in-home

Most customers have a strong trust in providers

Lower-income customers were not saving money by switching to solar, which was an early hypothesis

They mostly pay back the loan by tapping additional income sources or savings

They still perceive it as good value for money, and would recommend the loan elsewhere

These customers have been historically underserved, and they respect that PAYGo companies trust them

Bottom Line
Remote lockout technology allows firms to offer consumer financing to a wider group of customers.

The rise of asset financing in the developing world is partially enabled by the rapid proliferation of smart, connected devices that can report on usage behavior and be turned on or off remotely.

Without lockout technology, no-file customers are simply too risky.

Lockout gives a lender something to ‘repossess’.

It also provides a stronger incentive for on-time repayment.

All of which can reduce the probability of default and loss given default.

Alexander Sotiriou

CGAP
CGAP has focused on PAYGo because of its unique potential to advance financial inclusion. This is not just energy. This is asset financing for poor households.

At the end of a PAYGo loan, there are four building blocks in place for a long-term financial relationship:

1. Established digital payment channel
2. Remotely secured collateral for future lending
3. Rich consumer data on payment and usage
4. Mutual trust between provider and client
What PAYGo Means for Companies and Customers

Although we are excited about the sector’s potential, there is uncertainty about the future and several barriers that need to be addressed.

Headwinds:

- Lack of transparency, benchmarking, harmonized metrics
- Customer protection standards
- Falling sales in Kenya, Ethiopia
- Internal incentives titled towards growth over sustainability
- Lack of digital finance infrastructure
Contents

What PAYGo means for companies and customers

Alternative methods of financing goods/services
Effective financing for goods/services requires coordination across two value chains.

**Lending / Leasing Value Chain**
- Liability Management
- Origination
- Underwriting
- Portfolio Management
- Collections

**Example: Durable Goods Value Chain**
- Design
- Manufacture
- Sales
- Distribution
- After Sales Service

The coordination must be seamless for PAYGo products, because of the tight linkage between usage and payments.
Alternative methods of financing goods/services

Three models for effectively bundling products across value chains

**Product Led:**
Specialized Non-Bank Financial Institution

**Bank/MFI-led:**
Retail Affiliate

**Joint venture:**
Everyone stays in their lanes
MFIs have certain strengths …

• Existing customer base
• Expertise in managing credit

… and weaknesses

• Rigid, traditional, and slow underwriting
• Do not like providing consumer finance, especially beyond existing customers
• Difficulty dealing with technology
• Do not offer flexible repayment schedules
Alternative methods of financing goods/services

**Water.org: Making microfinance work for water and sanitation**

Water.org has proven that there is a market for loans for water/sanitation improvements.

- **15 MFIs** have disbursed more than **500,000** water and sanitation loans through WaterCredit in India alone.
- **$138** Average loan size
- Two-thirds of borrowers earn less than $2 a day
- **+99%** of loans repaid on time

Alexander Sotiriou
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Q&A

1. For questions, please use the Chat box on the right-hand side of the Webex session.

2. To ensure your question is seen by the moderator, select “All Participants” from the drop-down menu when sending the question.

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QUESTIONS? IDEAS?

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POLL

Please take a moment to respond to the poll questions on the right-hand side of your screen.
WHAT’S NEXT?

1. We will email you when the webinar recording and related materials become available on the FinDev Gateway website.

2. Join FinDev Gateway’s next webinar: 
   Change Management: Business Opportunity in Customer Centricity  
   12 March 2019, 9:00 AM EDT

3. For more resources on financial inclusion, visit 
   www.FinDevGateway.org
Thank you

www.FinDevGateway.org