

# Conditions for the delivery of clean energy to a mass market



# Natural Gas – Gas BAN

35-year concession, 1.3 million customers

Propane tanks can cost 7 times more  
High installation costs (US\$ 600-700) for  
low-income citizens who's average monthly income is US\$ 150



Pilot projects have reached 3,300 families (2003-2006)  
Average consumption for low-income families is half of others  
Recovery time for investment is 107 months (83 for others)

300,000 families awaiting service (100,000 close to a pipeline)

Plans: US\$ 7.4 million to reach 7,000 by 2014

# Promigas

50-year concessions to create a market in five Colombian regions

Total pipeline: 2,895 km. for 2.5 million customers

Regional Gas Lines: US\$ 36 mi. for 686 km. in 145 towns

High installation costs brought down to US\$ 480 (from 650)

Company credit line with US\$ 10 monthly payments

**Gas distribution to 246,300 families (2005-2010)**

**Credit program was used by 2/3 of these families**

New credit line for construction materials, appliances, furniture

Average loans of US\$ 500 to 470,000 customers



# What explains the different performances?

## Similarities that can be discarded as explanations:

- Unmet needs in low-income populations
- Lack of knowledge about these populations
- Initial restrictions (e.g. resources, capabilities, payment culture)
- Willingness to develop pilot projects
- Degrees of freedom from headquarters
- Logistic and social infrastructure to carry out projects



# Internal barriers that might explain the different performances

## **High opportunity costs:**

Small value creation compared to main line of business  
Pressure for short-term results

## **Cognitive barriers:**

Risk aversion in the face of unknown conditions and low profits  
Relegate social value creation to CSR (i.e. protection against critics)  
Organizational slack subsists because State can be blamed, there are scarce NPOs to work with, and no pressure groups exist

## **Innovation processes:**

Discontinuities between (1) ideas  
(2) pilot initiatives (window displays)  
(3) widespread implementation

# External conditions that might explain the different performances

## **Attractive markets (i.e. satisfy needs with profitable operations):**

Promigas worked to get 50-year concessions in different regions

NG BAN already has a 35-year concession

## **How to move beyond a competitive forces framework when no competition exists?**

Competitive positions in a regulated monopoly are profitable and protected even in the face of underproduction

## Looking forward

Any one interested in exploring  
one or several of these hypotheses?

## Policy and managerial implications

- Unmet needs as business opportunities
- Opportunities to set up monopolies drive entrepreneurial behavior
- Threats of losing a relative monopoly spur innovation
- Unintended consequences of price controls and subsidies
- Pressure seems to be more effective than calls for responsible leadership

# Codensa



Más fácil para ti,  
**más fácil para todos.**

Electric utility with 2.2 million customers, but losses of 23% of output (US \$ 82 m.) and late payments added up to 115 percent of monthly sales (US \$ 43 m.)

Codensa changed several of its systems:

- Billing cycle was cut to one month
- Paying was simplified (infrastructure, financing)
- 13 customer service centers were created
- Incentive system
- Community outreach programs

Results obtained by Codensa in the first four years (1997-2001):

- “Normalized” its relationship with 300,000 customers
- Energy losses were reduced to 11% of output
- Accounts receivable were cut to a fourth of its initial level
- Yearly savings totaled US\$ 71 million

Results obtained by consumer credit line (2002-2008):

- Codensa Hogar* has issued 730.000 credits to 450.000 customers
- credit business generates 2% of total revenues (8% in future)