

Diffusion of Alternative Electricity Supply Solution in Bangalore:

The Emergence of a Market for Middle-Income Customers with New Aspirations

Case Studies of SELCO and BCIL promoting Photovoltaic Systems

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Emergence of off-grid in urban context

Context

- Small visionary companies are developing the urban market of off-grid electricity supply services
> SELCO, BCIL (ZED Homes)
- Customers attracted by the services and the financial incentives

Research Question

- Is that trend an early signal of the emergence of a social group willing to change its consumption behavior?

From the literature...

- Find value in terms of energy resilience (O'Brien & Hope, 2010)
- Acceptance of these off-grid option & Expansion of the market > price reduction (Bhandari & Stadler, 2009)
- Emergence of “lead users” (Hippel, 1986)
- **Communities functioning as communication channel (Rogers, 1983)**
- Switch from providing technology > energy service systems in a different context (Schäfer et al., 2011)

From the field...

Sample studied

- Companies facilitating access to alternative sources of energy
- Companies introducing PV systems & new service models
- Companies proposing services to very distinct customer groups
 - Low-income: SELCO
 - High-income: BCIL

Our Questions...

> *Initial question*

How these **companies define** these new segments of customers?

> *Intermediate question*

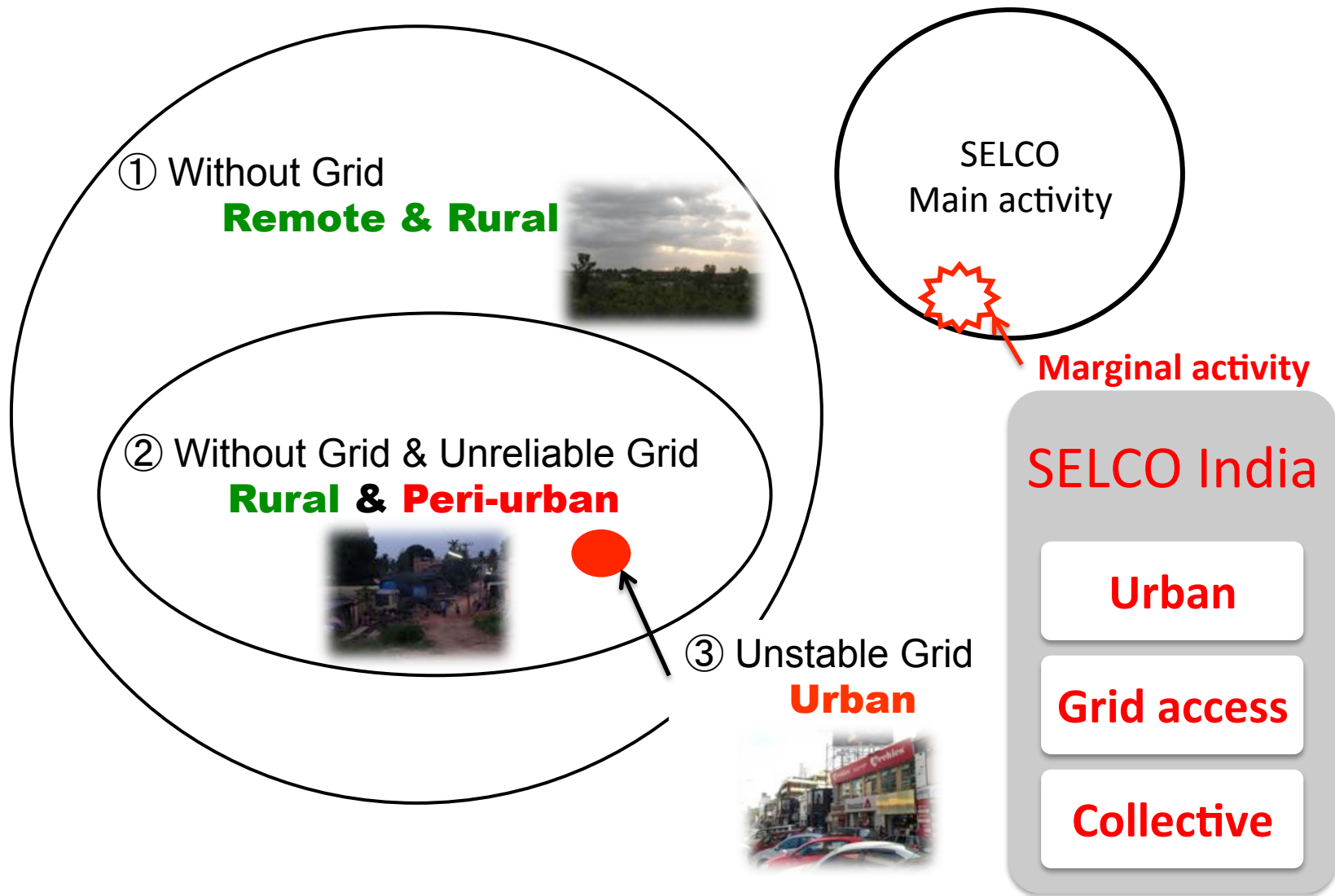
What **motivations drive** customers in using these off-grid options?

> *Final question*

How **PV system is diffused** within this new category of customers?

Definition of the niche market by SELCO

Mostly oriented towards rural & remote contexts and marginally in urban areas



BCIL's integrated service model

BCIL is a "green" housing developer

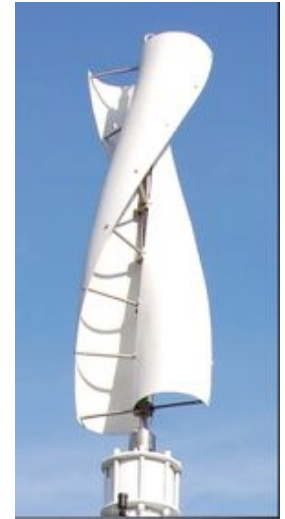
It reduces the impact to the environment from two aspects:

1. Reduces construction materials

- Less concrete by using hollow blocks
- Road made of construction debris

2. Take advantage of nearby natural resources & reduce its usage

- Rainwater harvesting for water
- Solar panels for electricity



Definition of the niche market by BCIL

From exclusive high-end Villas to affordable & low-income Apartments

Collective houses

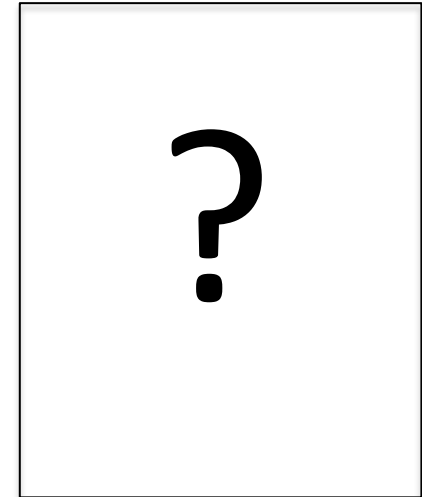


2000 - 2003

Apartment



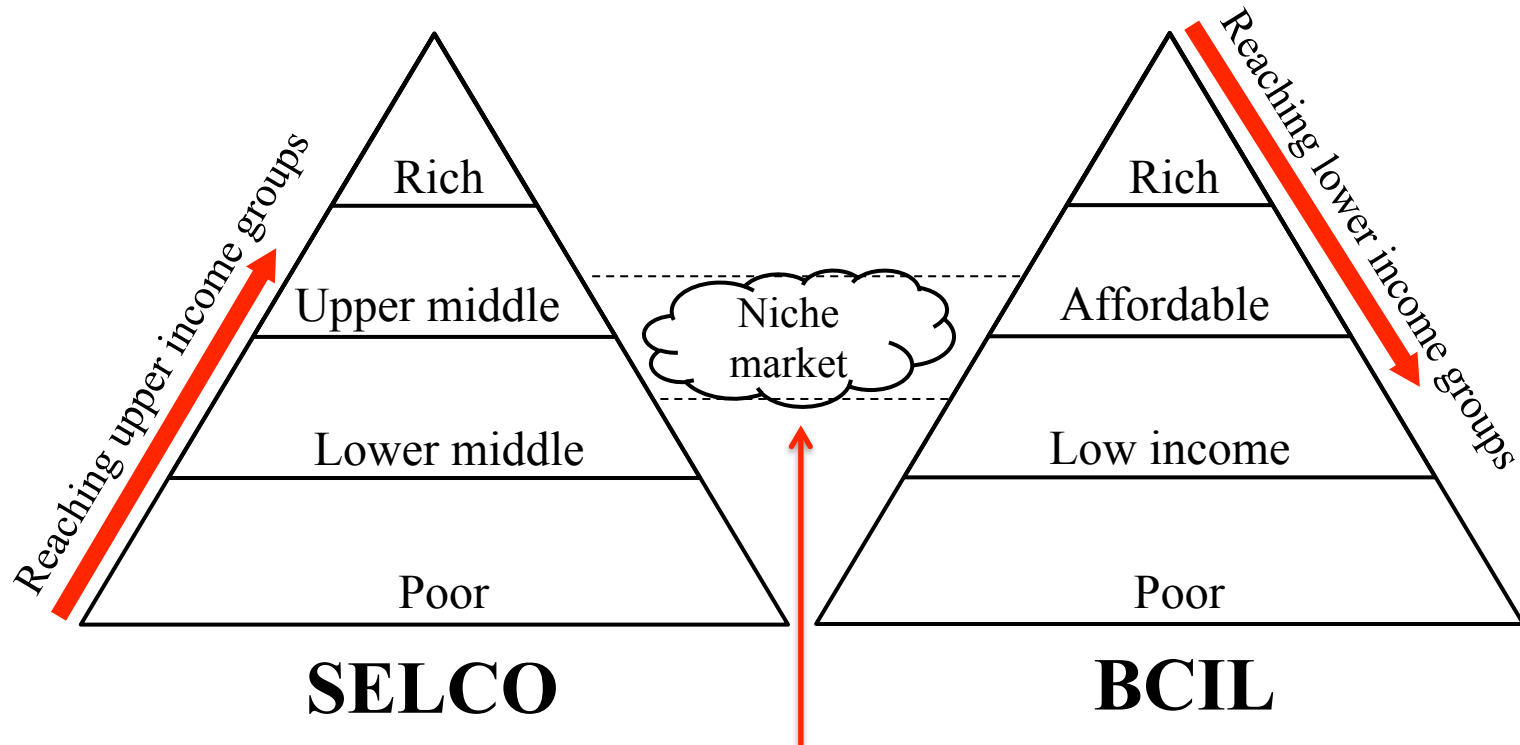
2007 - 2014



↓

Cost (Rs.)	Residence	Income (Rs./month)
20 million	Upper	400 thousand
4 to 5 million	Affordable	100 thousand
2 to 3 million	Low-income	20 - 30 thousand

Definition of the niche market by Cies.



Niche market for off-grid energy supply systems.

Motivations driving SELCO's customers?

4 profiles

1. **Resilience** > **Customers exposed to grid power problems**
willing to solve acute problems



2. **Sustainability** > **High-income customers**
willing to use eco-friendly energy systems



3. **Economic Rationality** > **Saving-minded people**
willing to save energy to save money



4. **Holistic Perspective** > **Environmentally conscious customers**
willing to sell energy back to the grid



Motivations driving BCIL's customers?

Limit: **No access yet** to the customers of BCIL (e.g. ZED homes)

Next step: Explore the possibility to have access to the customers

How PV system is **diffused** within this new category of customers?

- Development of the market by cross-pollination
 - # Traditional marketing approach
 - > Maturity of the customers / communities
- Communities function as communication channels, which are indispensable for the diffusion
- > “the essence of the diffusion process is the information exchange by which one individual communicates a new idea to one or several others” (Rogers, 1983)

Questions in Conclusion

“Archipelago” of population living in wealthy ecosystems
= “lead users” (Hippel 1986)

How to reach the customers who are not convinced?
= whole society?

How to reach the next customers beyond the niche market?
= Market expansion toward “affordable” and “low-income”
> Lowering down the price of the service? (Sonnberger, 2013)
> Economical parameters + Evolution of behaviors