



Affordability/Willingness to pay for energy services

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Issue: Unpaid electricity

- The reduction of non technical losses (unpaid electricity) is a huge challenge to power utilities.
- This is particularly important because peri-urban areas will probably be main centers of poverty in the next decades (and increasing).

Main challenges:

- Management of the proposed services
- **Pricing of the services** which will have to be adapted to low income populations and a largely informal business sector.



Electricity theft –
Source: Leonardo_energy.org



Issue: Financing Framework – rural electrification

- With a generally low willingness-to-pay and low household savings, rural people are unable to meet the relatively high costs of rural electricity
- Therefore if there is to be a large uptake of rural electrification, both loan financing availability and subsidies will be needed.
- Mechanisms could include:
 - Loans to households
 - A Rural Electrification Fund
 - Provide capital subsidies, i.e. subsidies that target access to electricity, not consumption
 - Waive import duties, etc on approved renewable energy equipment



Loans to households

Loans to households for:

- Access,
- Purchase of small-scale power systems,
- Purchase of appliances

- E.g. Microfinance institutions, loans through savings and credit cooperatives, dealer credit...
- Case Malawi – suggestion for loan mechanism for solar PV:
Small scale dealer credit
 - Loans for PV system offered by the local dealer to the consumer.
 - Payments can be broken up in ways that are convenient to the dealer and the consumer.
 - If consumer fails to pay, the dealer takes back the system.



Provision of Capital Subsidies

Subsidies that target access to electricity, not consumption

- Example: EF project in Côte d'Ivoire

Subsidy to generation facility

- Example: Possible new Hydro-power plant with access to donor:

Investment Grant	IRR	NPV
0%	3%	-10,000 EUR
15%	5%	-4,400 EUR
25%	7%	4,090 EUR



Productive use projects

- Studies find that productive use projects are more sustainable, from a financial perspective, than conventional energy projects because:
 - Income generation is a component of the project and income from the project can pay for its continued operation, maintenance, and expansion
 - Production is easier to finance than consumption



Solar drying of agricultural products, Tanzania



Issue – How to pay

- Conventional meters:
 - Electricity costs increase if you are not using energy in an efficient way
 - Electricity costs may increase if you have to go to another town to pay the monthly bill (transport, time) using conventional meters
- Pre-paid meters:
 - Electricity costs may increase if you have pre-paid meters, and the electricity distributor has to set up vending points



Useful reading

- *Transforming Electricity Consumers into Customers: Case Study of a Slum Electrification and Loss Reduction Project in São Paulo, Brazil.* USAID, 2009.

[Http://www.leonardo-energy.org/webfm_send/2766](http://www.leonardo-energy.org/webfm_send/2766)



Presentation by Energy Facility projects

- “Up scaling the Smaller Biogas Plants for Agricultural Producers and Processes”, Kenya [GTZ, KENFAP]
- “Best-Ray (Bringing energy services to Tanzanian rural areas)”, Tanzania [Oikos East Africa]



Questions to be discussed

- Can a connection and tariff system be devised to combine both « social » clients and more creditworthy clients while ensuring financial sustainability in the operation of the networks?
- What are the pros and cons of various payment methods for use of energy from the project (electricity / cooking / others) from the point of view of both the supplier and the consumer? Examples for electricity: Pre-paid meters, monthly bills, fixed monthly amount, other?