
Webinar:
Productive uses of electricity in rural populations. Experiences and challenges.
PRACTICAL ACTION

Dynamics of the presentation

1. Productive use of energy: evolution of the concept

2. Our experience and approach in productive uses

3. Cases in Cajamarca and Cusco

4. Lessons and conclusions

1. Productive use of energy: Evolution of the concept

PRACTICAL ACTION

Evolution of the concept

"Older" version. The "productive use of energy" in rural areas, mainly associated with the provision of motive power for agricultural uses.

Kittelson states that: "A productive use of electricity is all use of electricity that helps generate income for the user (consumer of electricity)".

Kittelson: "A productive use of electricity is any use of electricity that improves the consumer's financial situation and/or contributes to the development of the community and the nation."

2.
Our experience and approach in productive uses

PRACTICAL ACTION

The approach of the experience

- **Demand approach.** It takes the explicit demands of productive uses of different groups of users as a starting point; and prioritizes productive activities (including services) that have effective demand in the market.

- **Communicative approach.** It seeks to promote and disseminate possibilities of an entrepreneurship, evidencing the opportunities to obtain an economic benefit.

- **Systemic approach.** It promotes the strengthening and expansion of mechanisms of articulation and communication among all the actors involved in the process of generation and use of energy.

Our experience and approach

Off Grid micro hydropower systems / Solar systems

Electrified areas (Electricity companies)

3.
Cases in Cajamarca and Cusco

PRACTICAL ACTION

Cajamarca case: Rural electrification through the use of renewable energies

Funds for the promotion of hydroelectric power plants

Agreement with the Inter-American Development Bank (IDB)

1992 - 2010

The project

- **Promotion Funds for Hydroelectric Power Plants** was a project whose objective was to implement a financing model for isolated electric generation systems and appropriate management models for the sustainability of the systems.
- Cajamarca, Apurímac, Lambayeque, Amazonas
- 1992-2008
- Financing: Inter-American Development Bank (IDB)

Intervention model

- **Promotion and dissemination.** Field visits, information brochures, advertising spots. Visits to public and private organizations (spaces for consultation). Demonstration and participation in national and international events.

- **Technical and financial assistance**. Technical and socioeconomic evaluation visits. Engineering studies and financial feasibility. Technical supervision and construction management. Reception and start-up.

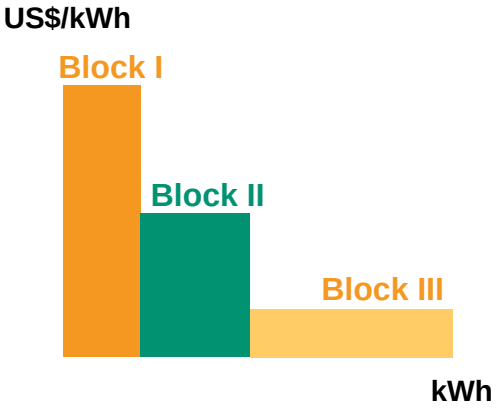
- **Organization and training.** Implementation of a local management model. Training for members of the company and population.

- **Recovery of credits**. Consultations to the bank. Frequent contact with customers. Credit follow-up.

Criteria for management and promotion of productive use

Management → **Microenterprise**

Rate scheme →



Training → **Operators, administrators, leaders, authorities and population**

Services for families

Productive chains

Key aspects of the project

- Pioneering project at national level that introduced in practice a **productive approach in the rural electrification process.**
- The most important immediate productive impact is at the level of **small family businesses.**
- More **"intensive" productive uses** in energy use: metal and woodwork.
- The dynamics of these activities can be significant but it is very determined by the size of the **market**.
- Difficulty of promoting productive activities for external market: **isolated localities.**

Cajamarca case: Promotion of the appropriate use of electricity in the areas of electric boundary expansion projects

Japan International Cooperation Agency

March 2010 – February 2011

The project

- **364 localities in Cajamarca**, distributed in San Pablo(11), Contumazá (32), San Miguel (41) and Celendín (280).
- **Period:** March 2010 – February 2011
- **Beneficiaries:** Homes, small businesses, local businesses, public institutions.
- **Problem:** It has been found that the introduction of electricity has not contributed enough to improve the living conditions of the rural population or in the promotion of small-scale productive activities.
- **Objective:** To seek the implementation of a process of awareness about the benefits of the use of electricity and promotion of productive activities.

Problem to face

Problem detected:

It has been found that part of the population living in the areas related to PAFE I and PAFE II have not been benefited as originally expected, so **that the introduction of electricity has not contributed** enough to improve the living conditions of the population nor in the promotion of small-scale productive activities.

Possible consequences:

The low consumption of electricity can cause not only **insufficient benefit** to the population but also critical **problems in the Operation and Maintenance** of the System and as a consequence the sustainable provision of the service.

Strategy by type of user

Households with consumption less than 25 kWh/month	Radio communication program Brochure distribution Demonstration activities Training of young electricians
Households with consumption greater than 25 kWh/month	Radio communication program Brochure distribution Demonstration activities Training of young electricians Demonstration modules
Small entrepreneurships	Demonstration activities with greater intensity Adequate technical assistance in every case Commercial articulation Information on funding sources Radio programs
Institutions	Information service Informative workshops Demonstration modules
Business	Greater relationship with Hidrandina (the Electric Company) Technical assistance for the conversion of combustion engines to electric motors Preparation of technical files for expansion of electrical installations.
New entrepreneurships	Promotion of new activities Technical assistance and training Commercial articulation Search for productive chains Internships Information on funding sources Relationship with Hidrandina Company

Intervention model

- Segment the beneficiary families by target groups.
- Develop modules of various services according to the differentiated demands of each of the target group.
- Sensitize and promote the uses of electric power through group days and the use of mass media.
- Promote the productive uses of electricity through training actions, technical assistance and the use of demonstration methods.

Consumption and billing by connection type

Type of connection	N° of connections	Average consumption per month (kWh)
Households	6742	15.5
Institutions	397	60.2
Companies	10	705.8
Total	**7149**	**0**

Cusco case: National Rural Electrification Fund

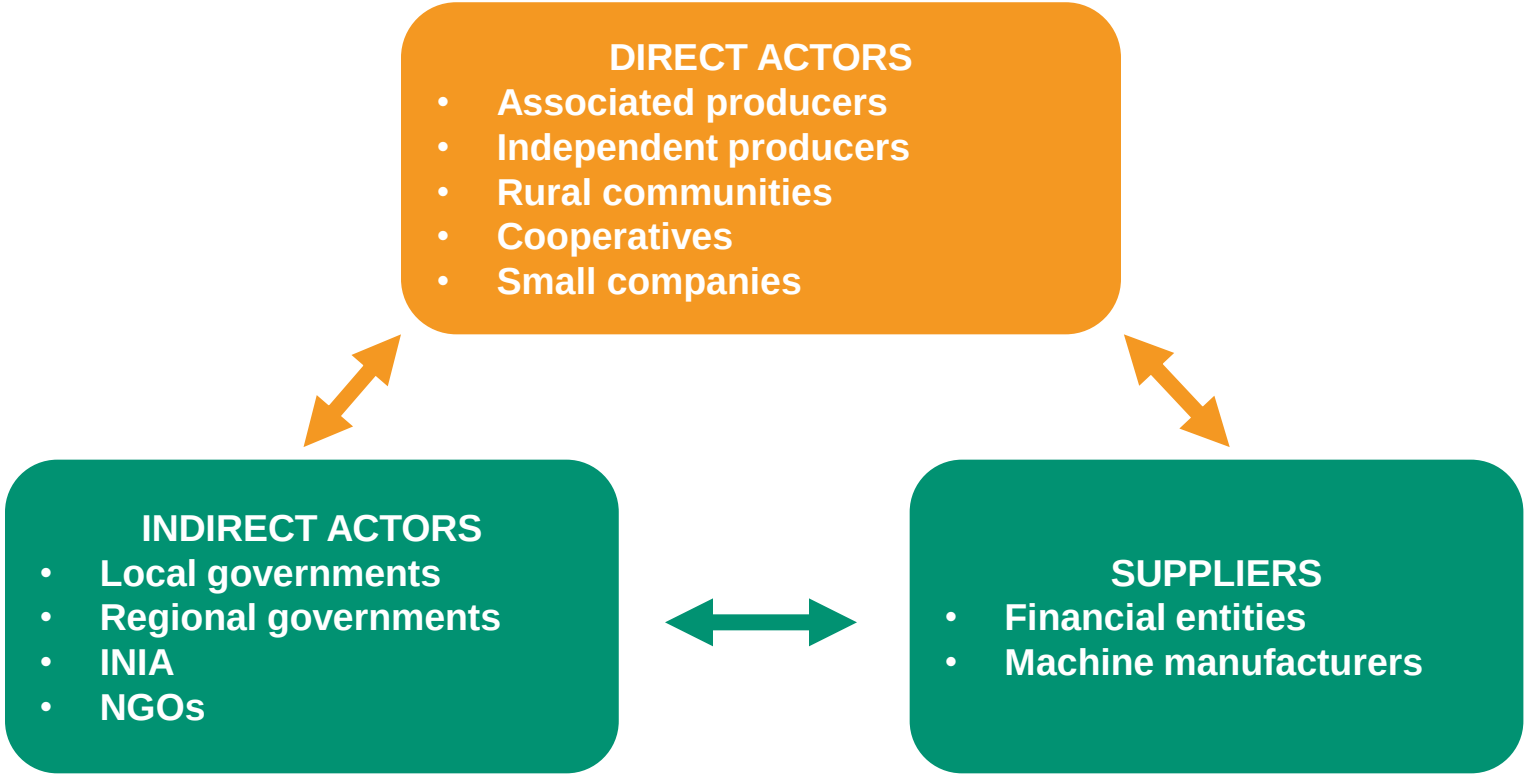
Ministry of Energy and Mines
World Bank

March 2010 – December 2011

Objectives

- Increase the income of the producers of the electrified rural areas of the ELSE Distribution Concession in the Cusco Region, as part of the national policy of economic development with redistribution and social inclusion.
- Increase electricity sales in sustainable productive activities in rural areas and the use of ELSE distribution installed capacity in these places.
- Design and validate an effective and replicable methodology for the promotion of the productive use of electricity in electrified rural areas.

Actors


DIRECT ACTORS
• Associated producers
• Independent producers
• Rural communities
• Cooperatives
• Small companies
INDIRECT ACTORS
• Local governments
• Regional governments
• INIA
• NGOs
SUPPLIERS
• Financial entities
• Machine manufacturers

Achievements of the project

Projects (group and individual)	Planned productive units	Productive units attended	Estimated consumption (kWh / year)
For group assistance	900	1875	292 480
For individual assistance	105	110	24 077
For project reinforcement	1418	761	69 467
Total	**2423**	**2746**	**386 024**

4.
Lessons and conclusions

PRACTICAL ACTION

Lessons

- Identify the **target population**. (Diagnosis or a baseline study).
- Establish and prioritize the **productive potential**. (Identify the characteristics of the main activities and productive chains).
- Respond to the identified **electricity demands**. (Address the demand most relevant aspects of your specific energy needs).
- Implement a constant **communicative strategy**. (Design promotional campaigns adapted to each type of end user).
- Ensure **institutional sustainability**. (Promote establishment of strategic alliances).
- **Permanent learning**. (Implement a monitoring and feedback modality).
- In the design of the plans and projects for expansion of the electric border by the State, it is necessary to **know in depth and take into consideration existing demands and economic opportunities**.
- The promotion of the productive use of electricity must be a **permanent and persistent component in the plans and projects in rural areas**.

Contact

Speaker: Rafael Escobar
rescobarport@gmail.com

Energy Thematic Leader: Ivo Salazar
isalazar@solucionespracticas.org.pe

Coordinator at the Cajamarca Office:
Benito Ramírez
bramirez@solucionespracticas.org.pe

Regional Office for Latin America
(51) 441-2950
www.solucionespracticas.org

PRACTICAL ACTION