



# Peru Community Energy

## Solar and Pico Hydro to Light Up 12 Villages in Peru's Highlands

### Location

Chirinos District,  
Cajamarca Department  
Northern Peru

### Project Period

2005

### Project Cost

\$196,908

### People Directly Benefiting

3,658 People

### Technology Types

10 Villages using solar  
2 Villages using pico hydro

Energy is inextricably linked to poverty alleviation. Yet in Peru approximately 70% of rural and isolated areas lack electricity. Since many areas of Peru are only accessible by pack animals or on foot, the national grid does not reach them. In isolated areas, renewable energy sources are more cost effective, environmentally friendly, and socially responsible than grid extension. The lack of access to energy in Peru's rural highlands is a contributing factor in maintaining the highest poverty level in the entire country.

### Community Installations

The program envisions generating sustainable power for:

- 7 Rural Health Clinics -- general lighting, and power for immunization refrigerators in 4 of the clinics
- 10 Village Schools -- general lighting and power for educational equipment (e.g., DVD players)
- 5 Community Centers -- general lighting and power outlet
- 10 Churches -- general lighting



A family in front of a previously installed solar powered home

### Project Team

**Intermediate Technology Development Group (ITDG)** aims to demonstrate and advocate the sustainable use of technology to reduce poverty in developing countries worldwide. Founded in 1966, ITDG has a commitment to poverty reduction, environmental conservation, and technology choice. Since 1985 ITDG's Latin American regional office has been in Peru. With 7 Peruvian locales, and a staff of approximately 100, ITDG has implemented dozens of renewable energy projects in Peru and throughout Latin America.

**Green Empowerment** promotes community-based renewable energy, water, and related watershed restoration to generate social and environmental progress. Through partnerships with overseas NGOs, Green Empowerment has been instrumental in establishing community-owned and operated projects in Nicaragua, Guatemala, Ecuador, Malaysia, Thailand, Burma, and the Philippines -- bringing reliable electricity and potable water to thousands of people.



The dry, mountainous landscape is ideal for off-grid solar and micro hydro development.

## Renewable Energy Development From the Bottom Up

After a training and capacity-building visit on the capabilities of the solar power systems, the residents of each village selected their priorities for electrification. Green Empowerment and ITDG use a unique development model that promotes local leadership and community decision-making. The development model is from the bottom-up – driven by residents’ needs – rather than top-down, driven by political or policy decisions. The project’s emphasis on the non-engineering aspects (e.g., training, community decision-making, and ownership) of village-scale renewable energy projects as the most critical element to long-term project success is unparalleled. While appropriate technology implementation is necessary to project success, it is not sufficient alone. Often the lack of local capacity, not the failure of equipment, is the reason projects fail.



A previously installed hydro power station

Each village will own the project and operate its system through a local organization, so it will be in its best interest to make it economically sustainable. ITDG and Green Empowerment will be working closely with the communities to develop appropriate electricity tariffs and reserve funds to ensure the economically sustainable operation of the project over the long term. A village committee will manage the finances and collect tariffs for system operations. Additionally, each village will incorporate income-generating livelihood uses of the electricity whenever possible. This will allow the villages to periodically replace parts and keep the systems operational for many years.



### Table of Village Installations

Villages	Residents	Buildings to be Electrified	Energy Type
Balcones	315	School, Church, Community Center, Clinic	Pico Hydro
Nueva Esperanza	307	School, Church, Clinic	Pico Hydro
Chulalapa	405	School, Church, Community Center	Solar
Lambayeque	426	School, Church, Clinic	Solar
San Pedro	170	School, Church, Clinic	Solar
Las Juntas	221	School, Church	Solar
Nuevo Paraíso	162	School, Church	Solar
La Tranca	633	School, Church, Community Center, Clinic	Solar
Cunia	413	School, Church, Community Center, Clinic	Solar
Pampa La Quinua	182	School, Church, Community Center, Clinic	Solar
El Puquio	155	School, Church, Clinic	Solar
Shimanilla	269	School, Church, Community Center, Clinic	Solar
Total Population	3,658		



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You can help us bring renewable energy to Peru by making a tax-deductible contribution to Green Empowerment by sending a check or contributing online at the address above.