

Renewable Energy Jobs & Access

A SERIES OF CASE STUDIES

Nepal Hydro/Solar/Biomass

PROJECT PROFILE

Renewable Energy for Rural Livelihood (RERL) is a joint program of UNDP and the World Bank with the Government of Nepal. It was initiated in April 2011 upon conclusion of the Rural Energy Development Programme (REDP), started in 1996.

The main objective is to increase equitable access to energy services for the poor, women, and socially excluded groups. RERL is primarily promoting micro-hydro plants (MHPs; 10-100 kilowatt (kW)), as well as solar home systems (10-30 Watt peak), biogas (4-6 m³) and improved cookstoves.

To date, close to 58 000 households with 350 000 people have derived energy access benefits, in the form of lighting, refrigeration, communications, operating irrigation pumps and running a variety of rural businesses.

REDP/RERL works with multiple community and private sector partners in tandem at various levels (community, district, national). There is a strong focus on decentralised planning and implementation.

JOBS AND TRAINING

As of late 2011, 555 micro-enterprises had been established in REDP/RERL program areas. Of these, 323 are MHPs that were completed and put into operation since 1998. The number of new plants completed per year has fluctuated considerably since 1998, from as few as five in 2006 to as many as 75 during the following year. A typical MHP requires two persons to operate.

The total man-days required to run the growing number of MHPs has expanded from 8 760 in 1998 to 225 570 in 2010 and 117 895 during the first half of 2011. Figure 1 expresses this information in terms of full-time equivalent (FTE) employment — rising from 24 FTE jobs in 1998 to 618 in 2010. For the first half of 2011, the number is 323 jobs.

Capacity development has been a priority. It has included training for staff and community representatives on how to operate and manage MHPs and other renewable energy technologies; establishment of Rural Energy Service Centres (RESCs); income generating and environmental related activities; institutional development; book-keeping; and decentralised planning. Priority is accorded to women, dalits, ethnic groups, and the poorest of poor.

So far, a total of 34 050 people, including 15 000 women, have received training. Some 2 596 people have been trained on the technical aspects of MHP operations.

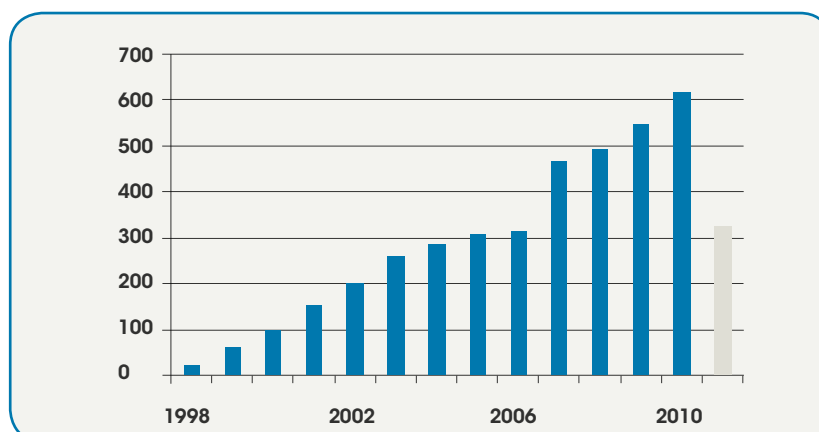


Figure 1. Direct MHP Employment, 1998-2011* [* = first 6 months in 2011]





PROJECT SNAPSHOT

The Renewable Energy for Rural Livelihood (RERL) succeeded the Rural Energy Development Programme (REDP). The program primarily promotes micro-hydro schemes in rural Nepal. It emphasises equitable energy access and social inclusion.

- » **Technology**
Hydropower, solar PV, improved cookstoves
- » **Employment**
323 micro-hydro plants (MHP) put in operation since 1998; 2 persons to operate an MHP

COUNTRY INFORMATION

- » **Population**
30 million people
- » **GDP/capita**
USD 438
- » **Electrification rate**
43.6% average
34% rural
89.7% urban
- » **Access to modern fuels***
16.2%

*The data from the case study was provided by project staff at the Renewable Energy for Rural Livelihood (RERL) program. Population and GDP data are from the World Bank Indicators (<http://data.worldbank.org/indicator/>). Energy access data from United Nations Development Programme and World Health Organization (2009) report, *The Energy Access Situation in Developing Countries: A Review Focusing on the Least Developed Countries and Sub-Saharan Africa*. Photographs were provided by the REDP/RERL team.*

** Modern fuels refer to electricity, liquid fuels, and gaseous fuels such as LPG, natural gas and kerosene.*

SUPPLY CHAIN

Upstream Linkages

The Programme puts strong emphasis on enterprise development and especially its contribution to community development. This is done through the Enterprise Development Fund (EDF). Each Micro Hydro Functional Group (MHFG) receives assistance to create an enterprise fund to provide loans to needy villagers at convenient terms.

Downstream Benefits

All households equally contribute to, own, and benefit from local MHPs (electricity and revenue). Communities have instituted mechanisms to help poor households gain access to electricity:

- » Poor households unable to contribute cash or raise collateral for a bank loan are allowed to contribute in kind and labour.
- » Those unable to pay the electricity tariff in cash are allowed to contribute through canal cleaning and/or repairing.

In RERL-supported communities, 100% of Dalit, Janajati and ethnic/religious minorities are connected to energy services. A quarter of all energy enterprises are owned by these groups and 41% are owned by female entrepreneurs.

FINANCING

RERL provides grants in support of local energy projects. Project funds are channelled via a District Energy Fund, which in turn channels funds to Community Energy Funds (CEF). CEFs are established by each MHFG and by Micro Hydro Cooperatives to receive funds and to collect revenues from local households and businesses that use energy from RERL-supported projects.

RERL makes an initial contribution of 10 000 Nepalese Rupees (USD 125) per kW (up to a maximum of 250 000 Rupees, or USD 3 125) to each MHFG for creating the enterprise fund. Priority is given to poor households to obtain loans to carry out income generating activities or create micro-enterprises.



The Policy Advice and Capacity Building Directorate (PACB) welcomes your comments and feedback at pcb@irena.org.

These local case studies were prepared by IRENA in cooperation with the organisations described. They intend to explore the employment dimension of renewable energy development and deployment in rural areas in the developing world. For a more detailed version of this case study, please see IRENA (2012), *Renewable Energy Jobs and Access*, which is available at:

http://www.irena.org/DocumentDownloads/Publications/Renewable_Energy_Jobs_and_Access.pdf.

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