



Energising Development Partnership – EnDev Country Project Nepal

Country	Nepal
Technology	grid, hydro, stoves
EnDev 1	-
EnDev 2	05/2009 – 12/2019
Budget	€ 7,915,000
Partners	Ministry of Energy, Water Resources and Irrigation - Nepal Electricity Authority (NEA), and Alternative Energy Promotion Centre (AEPCC), National Association of Community Electricity Users Nepal (NACEUN), SNV, Practical Action, HELVETAS Swiss Intercooperation
Objective	The objective is to promote (1) On-Grid electrification and (2) Off-Grid electrification, and (3) Result Based Financing Scheme for Sustainable Hood-stove Market
Achieved until 12/2017	More than 70,160 people supplied with improved cook stoves and about 231,981 people supplied with lighting or electrical energy in households. Additionally households. Additionally, 603 social institutions and 3,325 small to medium-sized businesses have gained access to modern energy services.

Table 1: EnDev Nepal Facts

Background

In 2012, Nepal's electrification rate was estimated at 76 %, leaving 6.6 million people without electricity. While about 94% of people living in urban areas have electricity access, this applies to only 61% of citizens in rural locations. With no major fossil resources, Nepal relies on biomass (85%) and imported petroleum products (9%) for its energy use, while coal, hydro power and other renewables accounted for 5% of primary energy sources in total. Despite vast hydropower resources the demand exceeds the supply by far. Nepal's current dependence on large centralised

hydropower is especially obvious during the dry season, forcing the Nepal Electricity Authority (NEA) to cut power up to 16 hours per day. This hampers both economic development and access to information and education, particularly in rural areas. Additionally, the severe earthquake in 2015 destroyed a lot of the previously built energy infrastructure.

Project Approach

EnDev Nepal is based on **three main components**: the project works towards the (1) On-Grid electrification and (2) Off-Grid electrification, and (3) Result Based Financing Scheme for Sustainable Hood-stove Market

(1) The **grid extension** sub-component supports the Community Rural Electrification Programme (CREP) implemented by the NEA. EnDev signed a grant agreement with NEA to partially finance the grid extension to 55 Community Rural Electrification Entities (CREE). The repayment of these funds from the communities to NEA shall turn into a revolving fund for further support of CREEs in future. EnDev also provides technical, administrative and financial training to CREEs that manage electricity distribution within the community and to employees to operate as an independent village utility. Despite the success, during this year's CREEs have also observed that still many households are not connected to the lines mainly due to the high initial connection investment costs. Thus, the present **grid densification programme** deals with this issue by providing an incentive to those CREEs that can enable poor households with effective access to the grid while at the same time promoting productive uses of electricity in their operation areas.

(2) The second component supports the efforts of remote communities to gain access to **electricity from micro hydropower (MHP) plants** via a debt fund, enabling them to repay the high upfront costs over a long period of time, and encouraging private banks to finance rural energy sector projects. In addition, Improved Water Mills Electrification (IWME) Programme is implemented by

Funded by:



Coordinated and
implemented by:



SNV on behalf of EnDev; this programme supports rural people to upgrade improved water mills to generate up to 5 kW of electricity.

(3) The **stove component** operates on a result-based financing (RBF) approach. It supports the dissemination of improved cook stoves as well as the installation of stove hoods by training manufacturers and by granting subsidies to sales vendors for each stove sold or installed as well as cooperatives for each loan issued to end-users to purchase hood stoves.

As a crosscutting approach EnDev is also promoting **productive use of grid electricity** in order to increase sustainability of CREEs. Hereby local champion entrepreneurs are trained as enterprise service providers for start-up processes.



The grid connection provides this carpenter with sufficient electricity to light his workshop and run the machinery.

Impacts

Due to EnDev Nepal's intervention about 231,981 people and 603 social institutions and 3,325 enterprises have gained access to electricity. This results mostly from awareness and sensitisation campaigns. Due to the electricity access new income-generating activities emerged: new rice mills were installed, and new jobs were created in timber processing and poultry farming.

18 enterprise service providers have enrolled for training in the provision of business services to potential enterprises in the area. Meanwhile, EnDev's capacity building support for the community organisations is enhancing their knowledge of the productive uses of electricity. These organisations have also shown a willingness to provide incentive packages for businesses based on subsidized tariffs.

The developers of 26 MHP plants have so far benefited from

financial support through the Micro Hydro Debt Fund of the two commercial banks. The banks have around 4 more projects in the pipeline, awaiting appraisal and funding commitments.

The stove component started only in 2015 and was strongly affected by the earthquake; so far only 70,160 beneficiaries have been supplied with improved cook stoves.

A productive use facilitator

"I am Dolraj Poudel. I am the manager of Okobara CREE in Syangjha district as well as one of the members of Productive Use (PU) facilitator team. We have been providing services to the new emerging entrepreneurs in the village. Basically, a PU team consists of CREE members who are well exposed to financial and technical sectors. The PU team therefore provides assistance in overcoming technical as well as financial difficulties while starting a new business. People have begun to understand that electricity can be used not only for lighting purpose but also for productive use. We guide them through the technical issues in procuring new machines. Similarly, we ease the process of installing the necessary technical equipment."

Lessons Learnt & Outlook

The government of Nepal plans to electrify 100% households by the end of 2030. In this regard, the EnDev programme supports the government plan by providing access to electricity to rural households. In close coordination with NEA, the revolving fund has started to function and more CREEs are being benefited from the fund.

Moreover, the MHP sites supported by the Micro Hydro Debt Fund are rehabilitated quickly with joint effort of AEPC, EnDev and the communities. This has been possible only with continuous timely follow up. It is observed that the community managed micro hydro project requires continuous support both in terms of technical and managerial aspects to insure smooth operation of the plant. Therefore, continuous monitoring, supervision is essential to update the status of the MHPs and making them aware about the timely loan repayment. In addition, changing the management model to effective and efficient approach such as public private partnership could be effective tool for the sustainability of MHPs.

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