

# Shared Pico Hydropower Demonstration Project in Angsang Village Officially Opened

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With support from Sunlabob, LIRE (Lao Institute for Renewable Energy) completed the commissioning of an innovative shared pico-hydropower system with an official opening ceremony, held on 10<sup>th</sup> February 2010 in Angsang village, Huaphanh Province, with the participation of various representatives from government departments and offices at provincial and district levels. These include Provincial Department of Energy and Mines, District Administration Office, District Energy and Mine Office, District Lao Women Union and local authorities. The demonstration site was co-financed by the Embassy of the Federal Republic of Germany in Vientiane and the Bremen Overseas Research and Development Association (BORDA) as well as material, labour and financial contributions from Angsang village. The implementation was accomplished by a group of companies and organisations, namely by LIRE, the Institute for Hydropower Research (IHR) in Vietnam and Sunlabob Renewable Energy Ltd. All activities were executed within a close exchange and communication with the villagers, the Provincial Department of Energy and Mines (PDEM), and local authorities in Viengxay District.



**Opening ceremony witnessed by LIRE, PDEM, Chief of Angsang Village and Local authorities**

The shared pico-hydropower system, including 2 x 1kW low head turbines, electronic load control measures, and a 1.5 km low voltage grid, aims to demonstrate how a rural village can use pico-hydro as a community-based service, sharing the financial costs and workload, to provide a safer and more reliable service. Using a best practice installation, the system provides power to 24 households plus communal buildings, and represents a showcase sharing system, with a novel operational model that shall be carefully studied by LIRE through dedicated monitoring and evaluation activities over the following year. Furthermore the scheme will be used to investigate the technical and operational issues pertaining to such a system. It is envisaged that this configuration could potentially fill a niche between individual pico-hydropower installations and larger micro-hydropower projects, which have to date demonstrated poor cost-effectiveness over the long term.

Angsang village, which is located 22km from the district capital Viengxay, has been chosen for this demonstration project since the village is located in an inaccessible and remote setting where no plans exist to connect the village to the grid connection in the near future. Pico-hydropower is well established in the village but experiences the same problems seen throughout Laos. The safety and reliability of the systems in use, as well as the cost of maintenance and labour requirements are all issues the shared pico-hydropower project aims to address.





**Two 1 kW pico-hydro turbine units are installed to supply 24-hour electricity to 24 households plus communal buildings**

LIRE has been working in the field of pico-hydropower since 2008, and works with BORDA, Sunlabob, and other partners to explore the opportunities to improve the utility of this technology.

In late 2008, LIRE launched its “Pico-hydropower Innovation and capacity building program” in partnership with the Dutch NGO, ETC Energy. The aims are to scale up and improve the quality, safety, efficiency and reliability of pico-hydro technology through existing and potential new market channels in Lao PDR. Current activities focus upon the training of district and province staff of the Department of Energy and Mines (PDEM), as well as independent technicians and shopkeepers in Huaphanh, Xiengkhoang and Phongsaly provinces, selected for the high dependence on pico-hydro power found in rural parts of these provinces. As part of this initiative, LIRE has developed pico-hydro installation manuals in Lao language, and advice on products such as Electronic Load Controllers (ELC).



**Household electrical connection and part of the village grid**