AEPC e-Newsletter, April-June, 2012

# AEPC e-NEWSLETTER

An electronic quarterly publication of Alternative Energy Promotion Centre

Volume 22 July 2012



## AEPC - CNI Collaboration for RET Promotion

Alternative Energy Promotion Centre (AEPC) and Energy Development Council (EDC) of Confederations of Nepalese Industries (CNI) have unanimously agreed to work together for the development of renewable energy technologies in the country.

Alternative Energy Promotion Centre; the focal agency for the promotion of renewable energy technologies in Nepal working under the Ministry of Environment Science and Technology and CNI recently signed a Memorandum of Understanding (MoU) for the promotion and development of renewable energy technologies in Nepal.

The MoU was signed with the purpose of working together to expand the AEPC and CNI's services with focus on rural areas. Its chief objectives are to enhance energy access and employment while reducing poverty through Public Private Partnership (PPP) modality to foster growth of industrial sector of the country.

It has set out the general terms and principles of the institutional collaboration between AEPC and CNI. Its main concerns are to implement renewable energy technologies promotion programs to alleviate poverty through industrial growth in rural area and to carry out environmental protection activities.

So, AEPC and CNI are agreed to guide, coordinate, lobby and harmonize the relationship and work on a public-private partnership modality.

AEPC is hopeful for the better collaboration to achieve common goal in the near future. "AEPC has planned to upscale renewable energy applications in Nepal and to accomplish this mission role of private sector like CNI is indispensable" the Executive Director Prof. Dr. Govind Raj Pokharel said.

CNI is a non-governmental, non-profit and corporate led and managed organization that plays a vital role in the country's private sector development process.


*CNI President Binod K Chaudhary & AEPC Executive Director Prof. Dr. Govinda Raj Pokharel exchanging the MOU, (Photo: CNI)*

Success Story

# Baphukhola: A Model VDC of Salyan on Renewable Energy

Baphukhola Village Development Committee (VDC), located in Salyan district; the eastern part of Nepal once was far behind in energy sector due to inadequate management of energy.

The details regarding the new energy systems and technologies were not well known to the people. Due to inaccessibility of electricity people used to go far away to buy kerosene. Beside this, various health problems were emerged due to the indoor air pollution. Similarly, deforestation was also on a great pace. But after the involvement of AEPC through one of the Regional Renewable Energy Service Centers of AEPC/ESAP; Beautiful Nepal Association (BNA) of Surkhet was the village has been changed.

While conducting a program on Decentralized Energy Management Initiative (DEMI) in the probable sectors of energy people realized the significance of renewable energy technologies. In that condition the village was considered an area with feasibility of energy generation through various technologies. With an objectives of establishing the village as an model village in Sylyan, BNA Surkhet with the help of AEPC, having necessary consent with the VDC and the District Development Committees decided to launch a three years energy plan and related program in the village. With the support of AEPC this plan came in to effect.

This program was specially to inform about the renewable energy systems (Mini/micro hydro power, Gobar gas, Improved Cooking Stove (ICS), Solar etc.) and it's utilization and subsidy.

A three year plan book was also prepared collecting

Photo: BNA, Surkhet

Community members at the powerhouse,

Photo: BNA, Surkhet

the energy related data of the village. A number of positive changes and improvement were gradually observed after implementation of this program. About 50% of ICS have already been constructed out of total 706 households. Likewise, 200 households got benefitted along with the completion of 10 kW are surveyed. Remaining all others are scheduled to promulgate via solar energy.

This gradual change has identified Baphukola VDC as a model village of Salyan District. Since then Baphukola has come a long way. Lanterns are now out of use; electric bulbs now light up the whole village.

Computer education which was a far away has now become possible. Several schools have included computer course in their syllabus. Email, internet, cell phone etc have become indispensible parts of the life for young generation of the village.

Establishment of rice and grinding mills has replaced the traditional home made appliances. Similarly, air pollution has been controlled to greater extent, better health facilities have been made available. The problem of deforestation has been eliminated.

All in all, Baphukhola is a turning as a model village of Salyan.

*(With the help of Ramesh Khadka, Sub-engineer, BNA Surkhet)*

## Wind Mill Water Pumping Project in Biratnagar

AEPC has supported to install a multi-blade wind pumping system in Biratnagar. The second pilot project of wind mill at Thalaha VDC, Morang district has been just completed in mid of July 2012. The first pilot project was completed in the FY 2066/67 in the same district.

System design flow of driver 450 has a single piston type with tower height is 10 meter above the ground level and blade diameter of 4.5 m.

The main objective of this project is to pump water for drip irrigation by freely available wind energy as well as to replace diesel generators. Local people commonly use diesel generators for irrigation for cash crops. Through this project community people are expected to be benefited for cash crops by drip irrigation system.

The implementation of wind mill also measures with the introduction of pilot techniques and practices like drip irrigation among beneficiaries in order to reinforce their resilience towards climate change.

# Replacement of Fossil Fuel by RE in the Brick Factory

AEPC has carried out a pilot project on Demonstration of biomass fuel as an alternative to brick kiln in the fiscal year 2068/69 under National Bio-fuel Program in Lalitpur.

In Satya Narayan Vertical Shaft Brick Kiln (VSBK) of Imadol bricks with selected renewable solid and conventional fuels are fired in VSBK and their impacts on energy, environment and economical performance have been recorded for the analysis.

It has been demonstrated that this biomass-based carbonized fuel (char), can substitute 50% of the imported and expensive coal to fire bricks. The environmental performance (45% less emission of SPM and 50% less emission of SOx) of the kiln was further improved with the use of char as energy/fuel for brick firing. Total 2 lakh green bricks were prepared for the demonstration. The green bricks were molded mixing renewable solid fuel as internal fuel. All bricks were prepared using the same soil quality mined from same location. Both types of internal fuel bricks were prepared by mixing fuel at the ratio of 50 % of specific energy consumption. For all types of green bricks same size (240 mm* 120 mm * 60 mm) of mold box were used. The project has been done with technical support of MinErgy Pvt. Ltd.

The heating value of char is 20% higher than coal thereby having the potentials of reducing energy (char) consumption compare to coal to fire bricks. Char dust can be used as internal fuel to fire bricks.

Nepal imports 420,000 metric ton of coal annually, and brick industries are the main consumer of imported coal. Coal, a non-renewable fossil fuel, has to be imported from India and the price has increased by 200% in last seven years with unreliable supply. Hence, there is an established need and subsequent demand in the brick industries for alternative fuel to fire bricks taking into consideration the economic and environmental perspectives.

If we can only substitute 10% of this imported fossil fuel by using renewable char we can replace 42,000 metric ton of coal annually. With the ever increasing cost of fossil coal, this amounts to NRs. 9.24 billion worth of coal being replaced by bio char produced in Nepal.

# Some of the Activities on Solar Energy

## Quality Assurance and Monitoring Training:

Solar Energy component (SEC) conducted a training program on Quality Assurance and Monitoring (QA &M) of solar home systems for seven consultancies qualified for the task. Seven team leaders one from each consultancy, fifty six field technicians eight from each consultancy and seven account/finance staffs one from each consultancy were trained during the training period. Under the same training course, 14 data entry operators two from each consultancy were trained.

## Training for school science teachers:

The training was conducted in seven different districts namely Kavre, Tanahun, Baglung, Palpa, Surkhet, Doti and Sunsari. In total, one hundred seventy five science teachers from rural schools were informed about government subsidy policy, AEPC and its programs and solar energy technology.

## Repair and Maintenance (R &M) Training:

Repair and Maintenance training was conducted for two batches of solar technicians on repair and maintenance of the installed solar home systems in the district level. Total of 40 technicians twenty for each batch were trained. Now the cumulative number of such technicians is 60 in sixty different rural districts including one previous batch.

## 11th Round Monitoring of Solar Home System:

The 11th round of monitoring of solar home system (SHS) has been started and is ongoing. Total of 110 field trips are design by solar energy component (SEC) and the monitoring is being done by the seven qualified independent consultancies.

## Rural community based Solar Drinking Water Projects:

Ten numbers of Rural community based Solar Drinking Water projects are conditional approved by Photovoltaic Technical Committee (PVTC) and Rural Energy Fund (REF), tendering was done and now in the process of final approval. Another ten such projects are now conditional approved by PVTC and are in further progress.

# Promotional programs of Biogas in LPDs

Biogas Support Program (BSP) of Alternative Energy Promotion Centre (AEPC) has conducted various promotional programs in seven different Low Penetration District' (LPD) of Terai with less installation of biogas plants less than the five percent of total technical probability.

Such programs were held in Saptari, Siraha, Dhanusha, Mahottari, Rautahat, Bara and Parsa. Though, having the technical probability to construct more than three lakhs (0.3 million) biogas plants, only less than 5% biogas plants have been constructed in those districts owing to the various socio-economic causes.

During a function, in local language and attires, various public informative programs on Gobar gas were organized; street plays were performed; different promotional programs via public FMs of concerned districts were aired/ disseminated. Likewise, biogas related programs were held in different schools and through the placement of hoarding boards on different locations, the biogas technology was promoted. Those programs were facilitated/ conducted through District Energy and Environment Units/Sections (DEEU/S) under the District Development Committees (DDCs) of respective d istricts.

Government of Nepal has declared 27 districts as 'Low Penetration District' (LPD) of biogas and has arranged additional subsidy for those districts.

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