



Interview with Professor Dr. Govinda Raj Pokharel

Executive Director, Alternative Energy Promotion Center, Nepal

Dr. Govinda Raj Pokharel granted an interview to Mr. Jeewan P. Thanju, Editor-in-Chief, Hydro Nepal Journal. Excerpts from the Interview.

AEPC is mandated to promote alternative energy in Nepal. How do you assess its roles and activities in this regards?

Alternative Energy Promotion Centre is a national focal organization for promoting renewable and alternative energy technologies in Nepal. Since establishment its 1996, AEPC's main focus is to maximize the service delivery efficiency in the use of renewable energy resources and technologies in the rural areas and to provide opportunity to low-income rural households to use RETs.

AEPC is acting as an intermediary institution between the operational level i.e. NGOs/private promoters of renewable energy and the policy decision levels in relevant ministries. AEPC's activities include renewable energy policy formulation, planning and facilitating the implementation of the policies/plans, standardization, quality control and monitoring.

With advancing technology and reducing costs, role of solar power is promising. How do you see the future of solar power in Nepal?

According to report published by WECS in 2010, around 2,920 GWh of energy can be harnessed by solar PV with utilization of just 0.01% of the total land area of Nepal. This shows that there is vast potential of solar energy in Nepal. The study carried out by AEPC shows that price of solar PV home system have decreased by approximately 20% over the last 4 years in Nepal. On other hand, the development of hydro power plants in the country is moving at a very slow pace due to several constraints and it is not able to keep up with economic development and its induced increase in electricity demand. Therefore, I can see solar power future is promising.

With the alarming scenario of petroleum products imports in the country, it is high time promoting investment in renewable energy and formulate aggressive renewable and sustainable energy plans to increase the share of the alternative energy mix in the system. Is there any plan to move aggressively towards solar power with sizable capacity to increase energy security for the country?

There is no doubt that to enhance energy security in the country, it is most urgent to have energy mix with multiple energy resources. Solar power can be one energy resource option which AEPC is currently promoting. We are planning to implement a few mini grid solar projects under NRREP based on public private partnership approach. We have collected and are

collecting information for potential sites for solar mini grid sites. The detailed feasibility study for solar mini grid has been conducted for four locations namely Gumba in Sindhupalchowk, Gobargada in Morang and Ramite in Surkhet. Moreover, with the support of Danida, we are installing a 40 kWp solar system in our own building. We also supported installation of 23 kWp system in Central TU library and 11 kWp systems in the president's palace last year. We are also in discussion with ADB and the WB to implement a few solar mini grid projects based on utility concept.

However, to increase energy security for the country we need to rationally utilize all our abundant renewable resources such as solar, biogas, wind, mini and micro hydro, biofuel etc.

Replacing imported oils with renewable energy must also be a targeted goal of AEPC to increase energy security for the country in addition to provide access to energy in remote off grid areas of the country. What is your opinion?

Though AEPC main focus is in providing access to energy in remote off grid areas of the country, but AEPC is also supporting in replacing imported oils with use of renewable energy technologies and increase energy security for the country. For example, urban domestic biogas promoted by AEPC replaces 4 cylinders of LPG every year. Similarly, Solar Home System saves 3-4 liter of kerosene per month used for lighting. Improved water mill replaces diesel based generators.

APEC has comfortable sources of funding available under NRREP with single modality programme. How the programme is moving ahead?

In first year, we spent most of our time in preparatory work and streamlining organizational setup, hiring staffs, developing new subsidy policy and delivery mechanism, selection of Regional Service Centre, pre-qualifying companies etc. Now most of these things are in place, therefore the programme is progressing smoothly now and hopes to accelerate in coming days.

Improved cooking stoves, bio-gas, solar power, micro hydro are said to have success stories in AEPC. What are the reasons for the success?

There are several reasons for the success of these programmes. Some of the success factors are:

- Government and development partners' long term commitment towards increasing access to energy in remote off grid areas through renewable energy

technologies.

- Sector development and demand based approach.
- Public Private Partnership model.
- Emphasis on necessary policies, systems and structures.
- A Government programme working with several existing institutions and other players.
- Compliance and coaching/nurturing.
- Promotion of local employment and other value addition.

Regarding wind power development, we have been hearing for last two decades that there is a lack of wind data for wind power development. Does AEPC have any programme in wind power development?

Of course, AEPC has programme for wind power development. Nepal has a great potential for harnessing of wind energy. Utilization of only 10% of the total area could commercially generate more than 3,000 MW of electricity with consideration of the installed capacity of 5MW per km². AEPC is carrying out wind mapping in several districts. The collected data is very crucial for designing wind power systems. AEPC is developing policy to promote wind energy technology. There is also subsidy provision for wind energy in current subsidy policy 2069. The subsidy for wind energy is up to Rs. 125,000 per KW and up to Rs.15, 000 per household covered depending on remoteness of location, capacity; but not exceeding 50% of costs.

What is the status of the proposed subsidy in solar electricity system in urban areas? What are the reasons for subsidy in urban areas? Is that necessary in urban area?

In the current fiscal year, as the government has allocated Rs. 500 million for urban solar program, we are preparing our detailed plan to implement the URBAN solar program to provide power back up during the load shedding hour. Subsidy in urban areas is needed because of the following reasons:

- 14 hours of load shedding is affecting children's education.
- Major industries are shut down due to power shortage.
- Rs. 95 billion was spent last year just to import petroleum products from the third world affecting our national economy.
- Big hotels use imported kerosene to run their boiler
- Solar is a source of green energy which could create green job in the country.
- There are many more benefits of solar .

How is the bio-fuel programme of AEPC moving ahead? We feel that after several years of efforts, there is no substantial increase in the production in commercial scale. What level of the viability of bio-fuel do you see in Nepal?

AEPC had conducted some R&D to promote bio-fuel (Jatropha based) in past. We trained relevant stakeholders on Jatropha bio diesel production. We also supported plantation of Jatropha in Palpa, Dolakha, Chitwan and some other districts. Besides, we have

MOU with Nepal Oil Cooperation for jointly developing transesterification plant in order to blend with diesel and we have supported some private sector to install transesterification plant. Currently, AEPC is drafting bio-diesel policy.

Yes, there has not been substantial increase in the production in commercial scale. In order to increase, production proper policy should be in place and there should be commitment from all stakeholders including NOC. AEPC is working towards it.

Several of national grid connected mini hydro plants are having poor financial health. In this regard, we feel that fulfilling 25 MW target in coming four years will be a great challenge. What is your view point?

It's always been issue, what is the minimum plant size of a hydroelectric power project to be financial viable, meaning giving the returns in the going rates. But, hydropower projects are site specific, capacity and investments are related but not linearly. Some sites are less costly in terms of construction and other are more. Hydrology of the plant matters a lot where the return is related. So the financial health of the project is depends on many factors not only to plant size.

Yes a there is big challenge to develop 25 MW of micro/mini hydro power. But, to the given new subsidy policy, if villagers can arrange 15-20 thousands for 200 watts per household, it's possible.

The off-grid micro hydros are facing problems with regard to limited end users resulting wastage of resources and investment. How this problem can be solved?

Using electricity generated by a micro hydro for income generation in the day time is the main issues in the development of bigger schemes. It is felt that electricity is only one of the factors of production so there has to be raw material for processing and subsequently market for the finished goods for enterprising. AEPC is really struggling through its Productive End Use (PEU) Component to create some local enterprises that can use energy and some urban investors to invest in rural areas for processing local products using locally produced electricity.

There are several institutional constraints in mini/ small hydro development such high license fee by DOED, environmental service fees required by the Forest & Soil Conservation Dept. if forest land is used etc., years required for EIA approval etc. Does AEPC plans to coordinate with line agencies to remove or lower these hurdles?

Actually AEPC is working in the micro and mini hydro schemes of capacity less than 1MW where the co-operative and user's committee does not need license to develop a project so we are not much familiar all the requirements of DOED, IEE/EIA, forestry etc. But, as a development worker, I strongly believe that government policies should always facilitate, support and lubricate the areas where there is friction. It should not be the barricade for the developers; this also strongly applies to hydropower

development. In Nepal we are facing acute shortage of electricity so we should motivate and acknowledge the efforts of private sector in hydropower development.

Considering regional perspectives, how AEPC's equivalent agencies in our neighbouring countries doing. Can you give us some idea?

Our neighboring countries India, Bangladesh, Pakistan, etc. are doing quite well in implementation of Renewable Energy projects. In India, Ministry of New and Renewable Energy (MNRE) is the nodal ministry of Government of India for all matters relating to new and renewable energy. Under this ministry several institutes and agencies are created to promote specific renewable energy technologies. Similarly, in Bangladesh, Sustainable Energy Development Agency (SEDA) is a focal point for sustainable energy development and promotion. In Pakistan, Alternative Energy Development Board (AEDB), under Ministry of Water and Power is focal organization to promote renewable energy in the country.

In India, total installed renewable energy technologies are around 30 GW including both on grid and off grid. Similarly, total installed renewable energy technologies are around 7 GW in Bangladesh.

Are there any lessons from AEPC's success or not so success for other developing countries?

AEPC's major success is bringing together all donors promoting Renewable Energy in Nepal in single modality

programme named National Rural and Renewable Energy (NRREP). NRREP is a five years programme starting from 2012. This has enhanced donor's harmonization and synergy and has helped effective and efficient implementation of the programme. Besides, public private partnership approach adopted by AEPC has been successful in providing RE services in rural areas, generating rural employment and improving rural livelihood.

Good management systems with transparent functioning are fundamentals for achieving goals. AEPC is government undertaking with ample sources of funding to achieve its targets. Are there any constraints and limitation that hindered AEPC to achieve its goals?

There are some challenges that AEPC is facing to achieve its goals. Some of these challenges are inadequate policies, inadequate knowledge among decision makers, financial sectors and relevant stakeholders, inequitable access to finance and credit, difficult terrain, poor population, inadequate trained human resource etc.

Would you like to give some message to the stakeholders of the Alternate Energy sectors and users in Nepal?

Let us work together towards a clean energy future for to keep our economy competitive, to protect our environment and to reduce disparity.