

Source: The Himalayan Times

## **Being dependent on other countries for energy is not good for the economy**

At a time when the country has been facing a difficult situation due to the short supply of petroleum products from India, the Independent Power Producers' Association, Nepal, has suggested the government to set a long-term vision to develop hydropower projects eyeing the long-term energy security in the country. Issuing a whitepaper on the recent situation of energy supply in the country, IPPAN has urged the government to declare 'energy emergency' until the country starts generating at least 10,000 megawatt hydro electricity that is required to address the severe energy crisis. Despite having tremendous potential of hydropower, the country has not been able to harness it. Khadga Bahadur Bisht, President of IPPAN, opines that it is time for Nepal to develop mega hydropower projects to fulfil the country's aspiration to graduate to a developing nation.

by 2022. Pushpa Raj Acharya of The Himalayan Times caught up with Bisht to know how the country can expedite the works of energy projects.

### **Nepal has been facing severe energy crisis after the short supply of petroleum products from India as the country has been entirely reliant on the southern neighbour for petroleum products. What can the government do to immediately cope with this challenge?**

The country has been facing an energy crisis since long, but after the disruptions in supply of petroleum products from India it has created an even more severe energy crisis in the country. The country's policy of relying on one source for petroleum products is responsible for this situation. The government needs to talk to India to resolve the current crisis caused by disruptions in supply lines from India to Nepal. Secondly, the government must diversify the import of petroleum products and develop appropriate strategic petroleum reserve. The government has been talking about importing one-third of consumption of petroleum products from China, which doesn't look easy as of now, but in the long term that could be a viable solution if we develop adequate infrastructure like pipeline and storage facility. Thirdly, we have to promote alternative energy sources like solar, which can be installed in areas owned by hydropower projects and can be connected to the national grid, which is in practice in many countries as energy mix system. And lastly, we have to focus on hydropower, which can be a good substitute for petroleum products in the long run. Being dependent on other countries for energy is not good for our economy; energy plays a vital role in stimulating economic growth. This is why we have urged the government to declare 'energy emergency' to expedite the development of hydropower because it is crucial from the perspective of energy security.

### **Will the declaration of 'energy emergency' speed up development of hydropower sector in country?**

Declaration of 'energy emergency' alone is not the solution; the government had done this and brought a package for developers a few years back when Bharat Mohan Adhikari was deputy prime minister and energy minister. The government needs to implement it in a serious manner. We have urged the government for 'energy emergency', which will also give a message that the country is doing its best to cope with the current crisis. That will also encourage investors to

invest in hydropower. So the government should focus on harnessing our own endowment. Now we have to develop hydropower to an extent that we can meet the country's demand over the next decade. We have urged the government to declare 'energy emergency' until the country starts generating at least 10,000 MW of hydropower and in that period the government needs to address the major roadblocks in the development of hydropower sector in a bid to expedite the works of hydropower projects. Emergency is an unconventional situation but that does not mean we are talking about skipping vital aspects associated with project development like approval process, environmental impact assessment, and concerns of local community, among others.

### **What can the government do to boost the confidence of investors for rapid development of hydropower sector?**

We've been seeking a single-window authority to facilitate project approval, land acquisition, and environmental impact assessment processes, among others. Investors have been facing various problems related to these issues, which is discouraging them. There is unequal treatment between power projects being developed by Nepal Electricity Authority (NEA) — the government undertaking — and those being developed by independent power producers. Likewise, the government has been delaying in adjustment of tariff, which has been hindering power purchase agreement (PPA) and NEA that had earlier been signing PPA with fixed rate has been urging independent power producers to sign dispatchable PPA citing surplus energy will be generated by the end of 2017. How can investors get financing from banks and financial institutions when there is no revenue guarantee after the project starts commissioning power. We all know that demand for power has been increasing as families have started using induction stoves and heaters but NEA has been arguing about energy surplus by 2017. NEA has said that there is a deficit of 1,300 MW at present and annual demand is increasing by 100 MW per year, which is not realistic. The demand forecast of NEA does not match with the forecast of National Planning Commission, Ministry of Energy and other agencies. NEA's calculation is based on suppressed demand but there would be much higher demand if we are able to give better access to all. Similarly, we have also given an option to differentiate the tariff of peak time and normal time. If we are able to charge more from consumers in peak time — that could be three hours in the morning and three hours in the evening — then that could create room for signing PPA on pay basis. As the government has been talking about reducing import of petroleum products by developing hydropower projects, it has to properly forecast the demand of energy. It is ridiculous that at present hydro energy has been contributing only two per cent to our total energy demand but NEA has been saying there will be surplus energy by the end of 2017. The government should also start developing Budhi Gandaki (1200 MW), Nalsing Gad (410 MW) and West Seti (750 MW) projects at the earliest. The government has already signed a pact with China Three Gorges Corporation to develop the West Seti project, which should be expedited. The other two projects should also be developed in company model. There is efficiency in company model as witnessed in Chilime and Upper Tamakoshi projects. Thus, we will have 4,000 to 5,000 MW reservoir projects which is like a diesel generator; it will tackle the power shortage in winter season. Likewise, there should be a good combination of solar and storage projects. China is doing this. They have been optimising energy from the existing projects by installing solar plants beside the penstock pipe, dam and powerhouse site (where enough land is available to install solar plants) and supplying solar power in day time and operating storage power plants only when there is no sunlight.

**The government has been saying that there will not be any load-shedding by the end of next fiscal. How realistic is this announcement?**

I think the government has talked about ending load-shedding by next fiscal eyeing the generation from the 456 MW Upper Tamakoshi project and another 120 MW from projects being developed by private sector which are expected to be completed by next year. But these projects will not be completed within the stipulated time due to damages caused by the earthquakes and shortage of petroleum products. Due to shortage of diesel, developers have halted construction works since the last two months. The government might have also thought of importing power from India after the completion of Dhalkebar-Muzzaffarpur cross-border transmission line, however, this project has also been delayed due to protests in the Tarai. Also, it seems the installation of transmission lines will not be completed by the time the said projects start commissioning power. Such problems have been seen in Solu, Kaligandaki, Marsyangdi and Kabeli corridors. The government has made a commitment to develop transmission line projects with developers, but there is no proper synchronisation with hydropower projects and transmission line projects because the government is caught up with issues like procurement process. Some projects like Solu corridor transmission line are under the radar of Commission for the Investigation of Abuse of Authority which has caused anxiety among hydropower developers of Solu corridor. We have also requested the government to bring in the private sector to develop transmission line projects under Build, Own, Operate and Transfer model.

**Do you think the government is serious regarding declaration of ‘energy emergency’ to cope with the energy crisis?**

We think the government is serious about seeking alternatives to cope with the current challenge and will expedite the development of hydropower sector. Most of the nations are assertively working on ensuring food and energy security, which shows the importance of energy security. While talking to us, Energy Minister Top Bahadur Rayamajhi expressed his commitment to be a man of action. The government and private sector need to sit down together and assess the government's and private sector's responsibility behind the underdevelopment of hydropower sector. And we hope that the government will be serious in harnessing our hydropower potential. We know that it would not be possible to substitute petroleum products with hydro electricity, but if we are able to contribute 60 per cent of the total energy demand from hydro electricity we can save money that is being spent on petroleum import. In our energy system, bio-mass has contributed 84 per cent, petroleum products (nine per cent), hydro electricity (two per cent) and the rest by alternative energy sources. However, 80 per cent of the money that is being spent on energy is for petroleum products and the annual import bill of petroleum products has exceeded Rs 120 billion. The government should set a long-term vision to cater to 60 per cent of the energy demand through hydropower, which means the government should also think of more electrification, and promoting electric vehicles, trams and trolley buses for mass transportation. If we could replace liquefied petroleum gas and encourage people to cook food using electricity, we can save about Rs 47 billion that is being consumed to import LPG per annum. We can develop a 300 MW hydropower project from that amount.

Source: My Republica; 30 Nov 2015

## **Shift to electric cookers brings cheer to hydropower developers**

RUDRA PANGENI

A rise in electric cooking-appliances in households in recent times has spiked demand for electricity. This additional demand will be a reason to cheer for hydropower developers who will now hope to get better energy sales agreements.

A sizable number of households in urban centers -- including Kathmandu -- have turned to electricity for cooking food after the short-supply of LPG started due to the Indian blockade. Use of induction stoves and rice cookers has increased the demand for electricity during cooking-hours has soared, Bhuwan Kumar Chhetri, chief of Load Dispatch Center at Nepal Electricity Authority (NEA), said. Chhetri projects daily energy demand to spike above at least 20 million units from the current 1.92 million units.

NEA should now revise its energy demand forecasts in line with the increased demand due to the use of induction stoves and other electrical cooking equipment. Those who have invested in the appliances are likely to keep using them in the longer term, energy expert Amrit Man Nakarmi says. "It is a good sign in the energy consumption scenario as people have voluntarily shifted to safer, efficient and cost-effective cooking and NEA has now focused on energy generation."

Use for cooking accounts for very little in NEA's energy demand forecasts and its low demand forecast is said to be a conservative and a rather suppressed one.

Shift in consumer behavior from LPG to electricity means something more for hydropower plant developers, several of their proposals have been turned down by NEA saying the future market demand has already been exhausted.

According to NEA's demand forecast, peak load demand of electricity will be only 2,000 MW by 2019/20 and NEA says it has already signed power purchase agreements (PPAs) with a combined installed-capacity of 2,000 MW that will come into generation by 2016/17.

In the last two years, NEA has agreed to purchase electricity from 28 hydropower plants with a combined capacity of 510 MW but on the condition their electricity will be consumed in the market only if there will be demand. The state-run power utility is the sole buyer of electricity from power plant developers in the country.

Shailendra Guragain, vice-president of Independent Power Producers' Association Nepal (IPPAN), expects NEA to revise its policy for purchasing electricity with the new rise in demand.

"Massive use of induction stoves alone have created demand of an additional 600 MW during peak hours. Electric cars and other electrical appliances will demand more electricity than the current suppressed demand in rolling blackouts," adds Guragain, who has been waiting for a take-and-pay Power Purchase Agreement for Super Nyadi project of 40 MW instead of a conditional PPA.

A thousand households using 1,000-watt cooking appliances for an hour increases demand for

electricity by 1 MW. Guragain rejects NEA's proposal of signing conditional PPAs and is waiting for NEA to change its policy. Project developers with a combined installed capacity of about 1,000 MW are also waiting for PPAs.

The country's electricity utility has its own argument, and fears that electricity from plants designed to maximum utilization of flood-water from June to October will go to waste after 2016/17.

However, a yawning gap in energy supply and demand will still prevail during wet months as rivers produce up to less than half of installed capacity.

"It is a compulsion for NEA to offer only conditional PPAs as its capacity to buy has already been exhausted," Anil Rajbhandari, chief of Power Trade Department at NEA, says.

"Expectations are to sell wet season surplus energy to India but it's uncertain until we have entered into a commercial agreement," added Rajbhandari, who however is not sure the current rise in demand from cooking will remain long term.

"Bank and financial institutions have turned down proposals for 'project finance' for projects having conditional PPAs," Guragain says. However, developers have no option but to enter into such agreements as their project licenses will expire.

Hydropower projects demand huge investment and 'project finance' covers a minimum 70 percent of the project cost.

Two weeks ago, Prime Minister K P Sharma Oli announced he would take steps to expedite signing of power purchase agreements with hydropower developers, but his statement has not come into implementation yet.

Source: The Himalayan Times; 3 Dec 2015

## **NEA increases load shedding hours**

The Nepal Electricity Authority has increased load shedding to nine-and-a-half hours a day and 56 hours in a week.

Issuing a statement on Thursday, the state-owned NEA said that the new schedule will come into effect from tomorrow.

NEA said that decrease in water level in rivers, increase in demand of electricity and the damage caused by April 25 devastating earthquake and its subsequent aftershocks on hydro projects had forced it to increase the load shedding hours.

Currently, the Valley denizens are bearing the brunt of load shedding for 44 hours a week.