

## **Avenues Interview**

**Interviewee- Dr. Uttam Kuwar, Project Manager, EEC-FNCCI**

**Dr. Narayan Prasad Chaulagain, Team Leader, GIZ-NEEP**

**Mr. Dinesh Tuladhar, Managing Director, Hotel Himalaya**

**Question (To Dr. Chaulagain):** The terms 'Energy audit' and 'Energy efficiency' are used these days to define better ways of energy use. What does energy efficiency and energy audit mean?

**Answer (Dr. Chaulagain):** Using energy in an intelligent way to make use of the energy being wasted, for productive outcome and to increase the amount of productivity with the same amount of energy. Energy audit means observation of the use of the energy and finding out the energy being wasted and where and how the unnecessary use of energy can be minimized and how more efficient use of energy can be achieved. Like financial audit shows income and loss, energy audit shows the source of energy, its consumption and the loss.

**Question (To Dr. Chaulagain):** Is Energy Audit applicable in industrial sector only?

**Answer (Dr. Chaulagain):** No. It is applicable in every sector that uses energy. Industries use energy in a huge amount and in a centralized way so even a small intervention can result in better energy efficiency and can save significant amount of energy being wasted due to losses. Hence it is more applicable in industries.

**Question (Dr. Chaulagain):** Does that mean it is also applicable in household?

**Answer (Dr. Chaulagain):** It is applicable in household, commercial buildings, industries and in all those places where energy is used. As it is necessary to find out the amount of energy consumed, losses and the possible areas where the use of energy can be cut down, energy audit is essential in every sector where energy is used.

**Question (Dr. Uttam Kuwar):** How does EEC work for energy efficiency?

**Answer (Dr. Uttam Kuwar):** Observing household energy uses in terms of energy efficiency, the traditional stoves used in rural areas have efficiency less than 20%. The appliances used in households like gas heater and gas stoves are only 40-50% efficient. There's a general misconception that energy refers to only electrical energy and hydropower only. Our work is to find out the amount of electrical and thermal energy consumed by the machineries and appliances in industries, losses and its possible remedies and point out the places where things can be improved for achieving better efficiency. Energy Audit was first done in Nepal by World Bank in 1996 and then by a project named Environment Sector Program Support (ESPS) with the support of Danish Government. At that time 360 industries were audited. The result of the audit illustrated that the total electrical energy consumed by the industries could be brought down by 15% and the total thermal energy consumption could be brought down by

30%. On this basis, NEEP was initiated in 2010. Under the Component-3 of NEEP program, FNCCI has founded Energy Efficiency Centre (EEC).

**Question (To Dr. Uttam Kuwar):** What does EEC do?

**Answer (Dr. Uttam Kuwar):** EEC promotes energy efficiency, provides training and also does energy audits in industries. It lists out the name of industries and creates a selected sample of the industries consuming large amount of energy. EEC monitors energy efficiency of those industries and finds the amount of energy consumed, possible places for intervention for enhancing energy efficiency and minimizing losses. It also finds the technology required for enhancing energy efficiency, its vendor and its cost for implementation and payback period. It evaluates the energy efficiency level of industries, produces skilled human resources and promotes public awareness on energy efficiency.

**Question (To Mr. Dinesh Tuladhar):** Your hotel, Hotel Himalaya was audited. How did you come to know about energy audit?

**Answer (Mr. Dinesh Tuladhar):** I came to know about Energy Audit through FNCCI. I came to know that FNCCI had been working in coordination with GIZ and it also had provided services of auditing. Besides hotel sector, I am also into energy sector so I decided to have my hotel audited.

**Question (To Mr. Dinesh Tuladhar)** What was the result of energy audit?

**Answer (Mr. Dinesh Tuladhar):** I found it to be fruitful. They have a team of specialists who visited my hotel and carried out energy audit. They provided me with an audit report with necessary steps to be implemented for improvement included in it. After implementing the suggestions, I personally felt much saving in energy.

**Question (Mr. Dinesh Tuladhar):** What percent of energy is saved?

**Answer (Mr. Dinesh Tuladhar):** On an average, 3% is saved.

**Question (To Mr. Dinesh Tuladhar):** What is your monthly electricity bill?

**Answer.** It's NRs. 1300000. The 3% saving has increased efficiency level and now the saved energy could be used for something else. In this time of energy crisis, 3% saving in industry is huge. It is equivalent to 4000 unit in my hotel.

**Question (To Dr. Chaulagain):** Do the existing policies on energy also include energy efficiency part? What are the policy wise necessary works to be done?

**Answer (Dr. Chaulagain):** Nepal doesn't have an integrated energy policy yet. As energy efficiency is a part of energy policy, policies on its sector and subsector does not exist either. The existing energy policy is supply driven and much priority is given to supply side of energy only. The efficient use of the supplied energy through minimizing losses and increasing the productivity with the same amount of supplied energy has not been given much attention. Of the two parts that are supply side and demand side, supply side is focused very much whereas demand side is neglected.

**Question: (To Dr. Chaulagain)** Is it necessary to formulate new policies and renew existing ones to address this gap?

**Answer (Dr. Chaulagain):** Yes. Formulation of policy on demand side management and energy efficiency is necessary.

**Question (To Dr. Chaulagain):** Will it be easier to implement if these policies are formulated?

**Answer (Dr. Chaulagain):** Yes. Our program Nepal Energy Efficiency Programme (NEEP) is working for this. Component one under the program NEEP is supporting government to draft strategies. One of the works is supporting in formulation of Energy Efficiency Strategy (EEST) within which Demand Side Management / Energy Efficiency is included. The other activity under the same component is supporting in formulation of Biomass Energy Strategy. As biomass is the largest source of energy in our context and the efficiency being very low, to formulate the Biomass Energy Strategy is very important.

**Question: (To Dr. Chaulagain)** Does that policy also address this issue?

**Answer (Dr. Chaulagain):** Yes. It does.

**Question (To Dr. Uttam Kunwar):** How are the private sectors taking energy efficiency issues?

**Answer (Dr. Uttam Kunwar):** We have completed energy audits in 22 industries so far. On the electrical part the results have illustrated that about 15%-20% of energy can be saved. In case anyone wants to see the reports we are open to it. We are very much confident on the results of the audits because audits were done by internationally qualified and experienced auditors. On the thermal part, approximately 30% of energy could be saved. If 15-20% of electrical energy and 20-30% thermal energy is saved through the energy efficiency measures, then the production cost of the similar amount of energy also could be decreased.

**Question (To Dr. Uttam Kunwar):** Are industries ready for energy audit?

**Answer (Dr. Uttam Kunwar):** Most of the large scale industries are located in eastern region of Nepal. The industries in the eastern region are already taking initiatives themselves and approaching to us for energy audit. They come to us and ask for energy audit with the fees. We have done energy audits of 5-7 industries in the east and around 7-8 industries in Birgunj corridor. We have done energy audit of a hotel in Kathmandu and also of a dairy industry. Industries like Hetauda Cement and Indushankar Sugar Mill were also audited. The demand for energy audit is increasing.

**Question (To Dr. Uttam Kunwar):** Are we capable of providing the service as per demand?

**Answer (Dr. Uttam Kunwar):** Certainly we can. Because we have 45 trained auditors from electrical, mechanical, industrial and chemical engineering background. They were provided 21 days training in which 10 days were spent for class and rest 11 in the field and they were asked to make a report. They were supervised under the international consultants. Those auditors are sent for auditing in industries.

**Question (To Mr. Dinesh Tuladhar):** Does energy audit involve disclosing of private issues of the industries?

**Answer (Mr. Dinesh Tuladhar):** Unlike financial audit it involves only energy sector's audit, hence it doesn't involve disclosure of any private issues.

**Question (To Dr. Uttam Kunwar):** What are your plans for forthcoming days?

**Answer (Mr. Dinesh Tuladhar):** We are doing energy audits. But until policies to address these issues are formulated these works can't be taken to national level and will not sustain long. Hence these topics should be addressed by related polices and should be in line with national policy.

**Question (To Dr. Uttam Kunwar):** Energy generation is prioritized but energy efficiency is not given priority. We came to know that energy efficiency should be prioritized. What is your opinion about this?

**Answer (Dr. Uttam Kunwar):** Energy consumption is somehow also one of the development indicators of a country. Generation of energy is important for the development of country and its efficient use is also equally important. In our context electrical energy from the central grid is not derived from thermal plant but from hydropower. Due to increasing load-shedding hours, the significant part of the electricity demand is fulfilled by the captive generators and the significant part of the imported petroleum fuel is spent for this. By applying energy efficiency measures, the huge amount required to import diesel and furnace oil can be saved. Investment in supply side is necessary as the energy generated at present is insufficient for industries. At the same time, the investment in promoting efficient use of the energy supplied is also necessary. This will benefit the nation. Nepal has 1100 ton oil equivalent per GDP which is highest among India, Srilanka and is 50% more than Bangladesh. Nepal is economically and also in terms of energy availability one of the poorest countries with per capita annual electricity consumption of around 100 units.

**Question (To Dr. Chaulagain):** For maintaining energy efficiency, when can be the advantage seen? (Beginning or in the end?)

**Answer (Dr. Chaulagain):** Technically, 1 unit saved is 1 unit generated. 1 MW of electricity can be saved with much lesser cost than required for generating 1 MW. Saving can be done by being aware of energy use and with some small investment if required. With even a smaller investment higher energy efficiency can be achieved. In the beginning 5-10 years, energy efficiency is highly beneficial. Even many banks are already interested in investing in energy efficiency, as financing energy efficiency has a very rate of return.

**Question: (To Dr. Chaulagain)** Does that mean energy audit should be done in the beginning?

**Answer (Dr. Chaulagain):** Energy Audit however should be done anyway. Only after the audit, the amount of energy used and the possible areas of intervention can be determined.

**Question (To Mr. Dinesh Tuladhar):** What are the messages from your side for other entrepreneurs?

**Answer (Mr. Dinesh Tuladhar):** Energy efficiency level should be enhanced. Because the energy cost has been a major cost in organization/industries these days. It also helps to increase the efficiency of the business.

**Question (to Mr. Dinesh Tuladhar):** What was the cost of Energy Audit for your hotel?

**Answer (Mr. Dinesh Tuladhar):** Rs. 50,000. We came to know about new technologies and energy saving methods now available in the market.

**Reporter:** Today we discussed about a new issue. Although the topic seemed to be more of technical, we came to know that it is closely related to our daily life. We shall discuss about it in greater depths in our coming episodes as we have time limitations today. I am very thankful to all of you for providing your valuable time for this show.