



# IPPAN

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INDEPENDENT POWER PRODUCERS' ASSOCIATION, NEPAL

## Remarks From The President



Dr. Sandip Shah

companies are joining the national and international debate on and are participating in the hydropower development process in Nepal. All of this is positive, and we feel that genuine progress has been made over the last one year, which was unheard of over the last 3 decades or so. Again, this is all because of the active role of the private sector and IPPAN takes pride in being a catalyst in the accelerating the process.

Six key impediments to Nepal-India cooperation in hydropower were identified in the USAID-SARI/E sponsored study that IPPAN conducted in association with Confederation of Indian Industry (CII). Among these, we seem to have made reasonable progress on the factor – political will. The eight-party alliance in Nepal is now discussing power sector issues actively and is taking the private-sector into confidence as a key stakeholder in the development process. South Asian leadership – political, bureaucratic and private-sector – is also taking keen interest in this sector, and gradually there seems to be a decrease in the mistrust and suspicion that was prevalent in earlier times. Confidence-building measures are being taken up at various levels in both countries. This indeed is a dividend of the peace process, but then we should also be aware of the fact that the current stage of the country should lead to an equitable distribution of opportunities to all stakeholders.

The issues of lack of infrastructure and funds for projects remain still largely unresolved. The cross-border transmission lines are a first, major step in the power evacuation process, but project access roads and project transmission lines are still major issues. Development banks and multi-lateral lending agencies are visiting Nepal more frequently with the possibilities of increased avenues of investment. Access to the power market in India and the possibility of participating as an integral part of the Power Exchange in India, engaging in the short- and long-term markets are potentially exciting opportunities for IPPs in Nepal. However, a lot of work still needs to be done on the legal and regulatory issues of cross-border power trade. This would facilitate setting up of a stable regime within which IPPs can develop projects in Nepal and look at exporting power. This would eliminate the type of unhealthy competition brewing up as seen in the case of the two projects put out to international competitive bid. The last issue of treating power as a commodity and de-linking it from water issues seems to have moved forward; however, the current issues with the West Seti Project seem to gravitate away from the concept of commodity trading. Gradually, we need to move towards a market-driven economy in the power sector.

Overall, the process seems to be moving, though at times slow but at a steady rate. IPPAN firmly believes that information dissemination, transparency in decision making, inclusiveness and involvement of all stakeholders are key issues that need to be adopted by the Government to move this sector at a rapid pace.

At the end, I would like to stress two key issues from the UN Charter: the right to development and the right to self-determination of how we want to harness and develop our natural resources, without any undue pressures or considerations. These issues have great significance in Nepal's development process, especially in the current times.

I certainly believe and hope that we all will move forward carefully and tread, without trepidation, on ground, hitherto not walked over, that will lead us to greater prosperity. As I have been saying, we have moved a lot, but as Robert Frost hath said, we have miles to go before we sleep ...

## Power Sector Activities

Interest in the hydropower sector of Nepal has reached amazing proportions since the Power Summit 2006, organized jointly by IPPAN and PTC India in September 2006. Government of Nepal, Ministry of Water Resources, Department of Electricity Development, Nepal Electricity Authority and the private sector has responded appropriately in this context, though at their own pace. Internationally, developers from India, China, Norway, Australia, Korea, etc. have shown great interest in developing projects in Nepal. The public sector institutions of India as well as their private sector have shown interest in participating in power sector in Nepal. Mechanisms for setting up real-time power trade are being facilitated by organizations such as Norad and NordPool. This is all very positive development and IPPAN takes great pride in being an active partner in the process of energizing this vital sector. We at IPPAN are very positive about the future, but we recognize the fact that the momentum needs to be sustained from all quarters so that investments in the hydropower industry in Nepal is increased, and open, non-discriminatory access to the markets within and outside the country is made available to the IPPs.

"Powering Opportunities" was a very pertinent tagline that IPPAN and PTC India had adopted for Power Summit 2006. Yes, a number of opportunities have been initiated and we anticipate the development process to move forward, albeit with some apprehension. The cross-border transmission lines, which IPPAN had been advocating for since 2001, are a major outcome of the Power Summit. The December 2009 timeline for commissioning at least two of the power lines is indeed an aggressive target, and we realize that the sooner these lines are commissioned the better for Nepal for alleviating the current power crisis within Nepal that may persist for the next 8-10 years. Furthermore, private sector sponsors, banks, financial institutions, insurance

### IPPAN'S Vision, Mission, Goal & Purpose

- To contribute to the development of Nepal's vast untapped hydropower potential, in line with Nepalese aspirations.
- To help mobilize private capability, both national and international, to overcome the constraints confronting hydropower development.
- To make optimal use of Nepal's water resources endowments, to serve long term national and regional needs in the context of future fresh water and energy scarcity.

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## PROCEEDINGS OF "POWER SUMMIT 2006" LAUNCHED

After the grand success of Power Summit 2006, IPPAN launched the proceedings of the seminar on June 4<sup>th</sup> 2007 at Hotel Yak and Yeti. The document was launched by Honorable State Minister for Water Resources, Mr. Gyanendra Bahadur Karki. The publication contains the event's transcript and presentations along with an interactive CD containing pictures, videos, presentations and list of participants. The publication is available on sale.

At the function, Dr. Sandip Shah highlighted the major achievements of the Power Summit and the progress of the follow-up activities. He also elaborated on the fact that the six impediments outlined in the IPPAN-CII research on "Nepal-India Cooperation on Hydropower" are making some progress. He also urged the government to make decisions in a time-bound and transparent manner. Mr. A.K. Bhalla, Executive Director, PTC India Limited, appreciated the role of IPPAN as an independent body in the field of hydropower development in Nepal and urged the private sectors of both countries to be actively involved for mutual benefit. Mr. Jawed Ashraf, Counsellor, Indian Embassy appreciated the initiative of dialogue taken by private sectors of both the countries that would result in further exploration of opportunities and would go a long way in relationship building. Furthermore, he emphasized on the continuous support of the Government of India to the Government of Nepal for further development of hydropower and urged to address the issue as a holistic one rather than segregating as private or public. Hon'ble Minister Karki reiterated the commitment of Government of Nepal to accelerate the process of hydropower development in Nepal with the involvement of all stakeholders.



## WORKSHOP ON "PHYSICAL MODELLING"

IPPAN, Hydro Lab Pvt. Ltd and Nepal Hydropower Association jointly organized a half-day workshop on "Physical Modeling-a tool for minimizing risk on hydropower development" on May 18<sup>th</sup> 2007 at the Hydro Lab premises. The objective of this workshop was to create awareness among financing institutions about risks related with headwork design and operations in hydropower projects and the role of physical modeling in minimizing some of these risks.



The workshop was mainly targeted towards commercial bankers to familiarize them with the concept of hydraulic modeling which would assist them in making investment decisions. President Dr. Sandip Shah welcomed all participants and highlighted the necessity of conducting a good physical model test of critical components of the hydropower project. He also highlighted the necessity of conducting regular efficiency measurements of turbines and other equipment. The workshop had three presentations: "Importance of Physical Hydraulic Modeling" by Mr. Meg Bahadur Bishwakarma; "Khudi Hydropower-A Sample Model" by Mr. Gyanendra Pradhan, and; "Turbine Efficiency" by Mr. Manohar Shrestha. The presentations were followed by model demonstrations of different hydro projects. Senior officials of various banks participated actively in the seminar.

### Interview with Ms. Marit Strand

First Secretary,  
Royal Norwegian Embassy



**Q. How do you identify the role of Independent Power Producers' Association, Nepal (IPPAN) in the mode to encourage the private sector in the development of hydropower in Nepal?**

Obviously IPPAN as an organization represents the private sector. I wish IPPAN has an important role in encouraging national debate. IPPAN has developed a very good opportunity to develop the sector. IPPAN has taken a broader sector than only limited to private sector. I think this is very positive.

**Q. How do you evaluate the status of hydropower development in Nepal?**

I am afraid that I have to agree with many other people who have different statements on the potentiality of Nepal. Unfortunately, things have not developed for many years. Perhaps, people of Nepal are very disappointed. I have not seen so much development.

**Q. You have been associated in Nepal for three years. During your tenure, what do you feel?**

I have been involved in Nepal for three years. These three years saw a very rapid political development in Nepal. There is no doubt that the political agenda has been the main issue as it should be. I will be very happy to see the progress. I have seen the progress in the dialogues only. At the same time, the main challenge is to implement. We have energy talking and now its time to show the action.

**Q. What is the future of hydropower development in Nepal?**

I think I would like to ask a question. What does Nepal plan for a future of hydropower development? I think the plan should be to develop strong national unity to power develop the hydropower sector of country. It is a good opportunity to Nepal. I think it needs clear focus of Nepal's interest. Government should give benefit to the people.

**Q. What are the activities supported by Norwegian Embassy in the field of hydropower development at present?**

At present, we have very large projects. We worked together with the government, private sector and academic sector, some NGOs. Our project is general, in grouped into CB projects. We are quite active in rural electrification and alternative energy. At present, we provide aid about 6-7 million US\$ in a year. We hope to increase this in the near future. May be 10-12 million US\$.

**Q. Could you highlight the major focus areas of Norway in Nepal?**

We have Memorandum of Understanding with the Government of Nepal from 1996. At this stage, good governance, education and energy are the three main areas of our support and our support is mainly concentrated in these three areas.

**Q. Both the countries Nepal & Norway have huge potential in hydropower. Norway has utilized almost all the potential capacity. How much you are optimistic about the hydropower development in Nepal?**

In Norway, we have actually protected about 20% of hydropower resources. These water ways are protected from any development. In addition to that there is about 13% that has not been developed and the production in Norway is about 130,000 GWh per year. It's a very large production. So we do import some. When it comes to

Nepal I'm very optimistic because Nepal has very large market right next door in India where the prices are going up and demand is going up and hydropower as environmental friendly energy source so it becomes more important in the near future.

**Q. Few months back, Royal Norwegian Embassy organized a seminar with NordPool focusing on Power Marketing. What are the achievements and implications you have found in the area of Power Marketing?**

Well things are still at early stage in Nepal, I think we can see rapid development in the next couple of years. I think it's very much positive that people are much interested this sector. We also would like to inform that NordPool is coming back in July. They have an agenda with NEA to further develop this area. We also note that work on transmission line to India is progressing. This is a very positive step. I think the power has a challenge here because the development of power market in India is very rapid and Nepal needs to look at development in India and see how Nepal can use their benefit.

**Q. Except hydropower, what other sources of energy do you suggest the country should focus?**

I think its more to look at Nepal as more than 8% of resources energy comes from biomass. I think Nepal needs to look at Biomass which is actually the main source today and look at the sustainable ways to utilize the source and Nepal is one of the leading country in biogas. While hydropower is important for local level, village level and the matter of local environment is very important to follow up the biogas issue.

**Q. How important do you think the rural electrification with the overall development of the area?**

It is one of the number one issues. If you go to village that does not have road, power & if you ask them what they want. They reply road as number one and power in number two. Nepal has to some how manage that challenge.

# IPPAN ACTIVITIES

## Information Management Unit

IPPAN Information Management Unit consists of IPPAN library, GIS system & the discussion forum.

**Enhancement of IPPAN Library:** In an effort to enhance its library resources, IPPAN has collaborated with other libraries, procured new books, collected energy-related documents through different sources and digitized its publications. An efficient "IPPAN Online Library Database" has been developed. This will aid internal members and other interested parties to browse through the list of publications and their introductory pages as a reference. This is a very effective tool for easy access to some of IPPAN's valuable knowledge resource.

**GIS SYSTEM:** A well-organized GIS system for power projects in Nepal has been developed with the help of GIS expert Mr. Shankar Pathak, who was engaged as a short term consultant to initiate this project. The current GIS system covers Nepal's physical boundaries, state boundary, district boundary, road network, river systems, national parks and protected area, ecological zone, contour maps and physical maps. In addition to this, the system also has information on existing hydropower plants including those under construction and those which have been proposed. Transmission and distribution networks are also included in the GIS. An IPPAN GIS Handbook has been developed to document these facilities.

**DISCUSSION FORUM:** An efficient "IPPAN online discussion forum" has been developed under the domain name [www.ippanforum.org.np](http://www.ippanforum.org.np) with the provision of having discussions among IPPAN members on different topics. A virtual executive committee meeting room has also been setup within the system. This system will facilitate open discussions on different energy related issues and each discussion topic will be facilitated by a moderator. Initially, this facility is only accessible to EC members but following a few weeks of trial period, it will be open to other IPPAN members as well.

## Meeting with NordPool

IPPAN organized a meeting with NordPool representatives on 31st January 2007 at IPPAN office. During the meeting, views were shared regarding the prospect of power trading between Nepal & India, and the infrastructure to be developed to initiate the power trade.

**FRIDAY FORUM:** A forum on review of GIS and recommendations for the next phase of the GIS Program at IPPAN was organized on February 9th 2007. This forum focused on the current status of GIS systems and further suggestions for improvement as recommended by the members. The second Friday Forum was on IPPAN online discussion forum and online library system. This forum was with the executive committee members on June 8th 2007.

## Meeting with Honorable Minister of Water Resources

Officials of IPPAN met with Honorable Minister of Water Resources Mr. Gyanendra Bahadur Karki on February 8th 2007. Issues such as private sector participation for development of transmission interconnection project, tax & VAT, delays in PPA signing, evaluation process for competitive bids for projects were discussed.

## Meeting with Managing Director, Nepal Electricity Authority

IPPAN officials met with Mr. Arjun Kumar Karki, Managing Director of Nepal Electricity Authority on February 22nd 2007. Mr. Karki appreciated IPPAN's feedback on different aspects of power development in Nepal and further requested IPPAN to conduct a study among its members to identify various problems faced in power evacuation and to develop a proposal on ways to overcome these problems.

## Meeting with Vice Chairman, National Planning Commission

Dr. Sandip Shah and Mr. Gyanendra Lal Pradhan called upon Hon. Dr. Jagdish Chandra Pokhrel, Vice Chairman of National Planning Commission on April 27th 2007. Mr. Pradhan presented a paper on the hydropower facts in the context of the current scenario and some solutions for the future. A second meeting was held on June 6th 2007 which was also attended by Dr. Shah and Mr. Pradhan.

## PTC delegates meet with IPPAN members

A PTC delegation comprising Mr. T.N. Thakur, Chairman and Managing Director and Mr. S.K. Dube, Director of Operations met with IPPAN members. The meeting was also attended by Mr. Jawed Ashraf, Counsellor, Embassy of India. Dr. Shah welcomed the delegation to IPPAN and reiterated the close cooperation between the IPPAN and PTC in the past and the possibilities of the future. Discussions were focused on exportable surplus from existing plants and power projects under construction by IPPs, capacity addition program by IPPs, evaluation/connectivity of projects and some collaborative activities between IPPAN and PTC. PTC had requested IPPAN to collect information on the export possibilities from existing power plants. IPPAN has compiled this information and provided the details to PTC at this meeting.



**FAREWELL TO MR. ANIL NEUPANE:** IPPAN EM Anil Neupane has left IPPAN for further studies in Australia. A farewell program was organized for him on June 8th 2007. Mr. Neupane's contribution to IPPAN was recognized at this function.

# IPPAN'S PARTICIPATION IN KEY SEMINARS AND WORKSHOPS

## NordPool Seminar

IPPAN actively participated in the organization of the NordPool Seminar on "Selling Hydropower on the open market" organized on 2nd February 2007 by Royal Norwegian Embassy. IPPAN members, Ministry of Water Resources, Department of Electricity Development, NEA, representatives of various government agencies and donor organizations participated in the seminar. Nord Pool presented the Nordic Power system including market design, pricing systems, experience sharing of power marketing of Norway and the overall effects for power supply in Norway.

## Water and Energy Commission Secretariat Seminars

Water and Energy Commission Secretariat (WECS) organized a seminar on 1st March, 2007 on "Opportunities and Challenges of Hydropower Development in Nepal". IPPAN President Dr. Sandip Shah, Executive Committee Members Mr. Gyanendra Lal Pradhan and Mr. Amar Jibi Ghimire, and Mr. Anil Neupane, Executive Manager (EM) participated in the program. Mr. Pradhan presented a paper on "Opportunities and Challenges in Hydropower Development of Nepal".

Executive Member Mr. Gyanendra Pradhan and EM Anil Neupane participated in the workshop on "Preliminary meeting to formulate energy policies for the consistent development of different sources of energy" organized by WECS on 13th May 2007. Various issues such as technical, legal, institutional, environmental, social, and economic/financial were put forwarded by a sub-committee to discuss on the three forms of energy – commercial energy, traditional energy and renewable energy.

## International Conference on "India-Nepal Relation; Looking towards the Future"

At the invitation of Embassy of India in Kathmandu, Executive Committee Member Mr. Amar Jibi Ghimire participated in the International Conference on "Nepal-India Relations – Looking at the Future" organized by the Indian Council of World Affairs (ICWA) held on 20-21 April, 2007 in New Delhi. Mr. Ghimire presented an intervention paper briefing IPPAN's role in Nepal-India cooperation in hydropower development.

## Program by Ministry of Environment, Science and Technology

Ministry of Environment, Science and Technology (MoEST) organized a program on 23rd April, 2007 with an objective of sharing knowledge and experience of Clean Development Mechanism (CDM) activities in other countries. During this program, a presentation was made by Mr. Ivo Besselink, CDM Advisor, SNV. On behalf of IPPAN, Executive Committee Member Mr. Suman Basnet and EM Anil Neupane participated in the program.

## Course on "Legal Framework in Hydropower"

EC Member Amar Jibi Ghimire attended a legal course named "Legal Framework in Hydropower" organized by International Centre for hydropower (ICH) in Oslo from 19 to 23 March, 2007.

## NEWS FROM MEMBERS

### New Members of IPPAN

IPPAN welcomes Rairang Hydropower Development Company Limited as its new Corporate Member, and ICTC Pvt. Ltd and Himal Hydro & General Construction as its new Associate Members.

### Bidding on Kabeli-A Hydroelectric Project (30 MW)

Department of Electricity Development (DOED) of Ministry of Water Resources (MOWR) of Government of Nepal (GON) had requested technical and financial proposal from the four pre-qualified bidders for the development of Kabeli-A Hydroelectric Project located in Panchthar district to finance, build, own, operate and transfer (BOOT) the project. Among four pre-qualified bidders, only two bidders namely i) BPC in JV with SEL, Nepal; SCP, Canada; APP, China and KHL, Nepal and ii) Sinohydro Corporation Ltd. China submitted the proposal. After evaluating technical proposals DOED opened the financial proposals on April 13th 2007. As per the opening records, following are the figures as submitted by the bidders in their financial proposals: BPC in JV with SEL, Nepal; SCP, Canada; APP, China and KHL, Nepal - proposed tariff: 5.8 USc with 6% escalation annually for 10 years without the inclusion of VAT in cost data in support of tariff; Sinohydro Corporation Ltd. China - proposed tariff: 8.34 USc with 3% escalation annually for 10 years with the inclusion of VAT in the cost data in support of tariff. Based on the proposed tariff, there is high possibility to award the development contract to BPC's JV.

## Power Purchase Agreement of Mai Khola Small Hydropower Project

Himal Dolakha Hydropower Company Ltd. and Nepal Electricity Authority signed an agreement on April 2nd 2007 for power purchase from Mai Khola Small Hydropower Project having installed capacity of 2.4MW. The project has targeted to generate electricity from the beginning of April 2009. The project is located in the Godak VDC of Ilam district in the Eastern Development Region. It is a simple run of the river scheme that will utilize a discharge of 6.18m<sup>3</sup>/sec from Mai Khola to generate annual energy of 17.97GWh with a net head of 45.76m. The main features of this project are:



- Free flow gravity dam of span 100m
- Under sluice, Side intake with three orifices, Gravel Trap
- Double chamber Desanding Basins
- Concrete Approach Canal
- Head pond
- 733m long Headrace Tunnel
- Reinforced Concrete Surge Tank
- 325m long Steel Penstock Pipe
- Surface Powerhouse to accommodate two units of Francis Turbines
- Tailrace Canal
- 4km long 33kV Transmission Line to Tilkeni Sub-station at Ilam
- Project Construction Period 2 years



### Interview with Mr. Kiran Malla Director, Rairang Hydropower Development Company (P) Ltd.

**Q. Could you provide details of your project? Who are the promoters of this project?**

1a. Rairang Small Hydropower Project is the first project in Nepal which uses spring water for energy generation. This project came into commercial operation on November 2004 and has been selling electricity to Nepal Electricity Authority since then.

The project is located in Thakre VDC of Dhading District, only 35 km away from Kathmandu city. The Power House is located at 7 km from Naubise just below Tribhuvan Highway. Water from the spring source is conveyed to the power house with the help of 1350 m long and 400 mm penstock pipe. A pelton turbine 500 KW in Capacity generates the power using a gross head of about 325 m

1b. Promoters of this project are:

- Mr. Shiva Kumar Sharma
- Mr. Agya Prasad Shrestha
- M/S Shakti Holding Pvt. Ltd.
- Mr. Kiran Malla

**Q. Recently, your company has been received IPPAN Membership. What are the factors that motivate you to take the membership?**

- National and International recognition of IPPAN
- IPPAN's recent activities – Power summit, seminar, interactions etc
- Feeling ownership / stake holder as an Independent Power Producers
- IPPAN is an appropriate platform to discuss the issues related to IPPs and IPPAN can approach to Government and stake holders effectively of any important issues of IPPs

**Q. What steps you would like to add to enhance the IPPAN activities?**

Being a member I am committed to support, help and encourage every activity of IPPAN which, I believe will support to built nation directly or indirectly. I shall also try hard to increase the membership of IPPAN so that IPPAN could able to get input from maximum and different members and income of IPPAN will also increase as well.

**Q. How can you evaluate IPPAN activities to act as a facilitator between government organization and private sector?**

IPPAN activities must play key and most vital role as a facilitator between Government and private sector in coming days than as of today. IPPAN should work hard to develop some understanding, principle and mechanism with the Government to act as an effective facilitator between Government and private sector.

**Q. What sort of programs you think IPPAN has to conduct 3to promote the IPPs?**

Programs like Interaction, workshop, seminar/ summit, etc between IPPs (National and International), Government Authorities (Nepal and other foreign countries), Multinational Companies, Bankers, Insurances and other stakeholders have to frequently conducted and input from the out come of these programs to be given to the Government by IPPAN to focus the need of Development of Hydropower on following areas:

- i) Transmission, Distribution of Power and Installation of Hydro Plants
- ii) Issues related to IPPs as P PA, prevailing countries rules regulations, wheeling power, tariff, insurance, tax, technical, financing, legal issues related to the development of Hydropower
- iii) Up date the research & development activities related of power projects
- iv) Exchange of power (Inter-Country / Cross Boarder) etc
- v) IPPAN should give input and continue dialogue with the Government from time to time and as and when needed related to major issues and concern of IPPs.

**Q. What are the major issues you would like to address the Small Hydropower Producers are facing nowadays?**

- Existing poor infrastructure facilities primarily Power Evacuation and secondarily Access road ( good projects are located in remote area ) are main hindrance to develop Hydropower
- PPA ( some difficult conditions), NEA is the only one buyer
- Lacking in technical know how
- Local issues/ demands, governments issue on forest land, tree cutting, EIA etc
- Project Financing, Insurance etc