

Source: The Kathmandu Post; 30 December 2017

## **EnergyMin, IBN clash over hydro projects**

**IBN claims the right to implement hydro projects with a capacity of 500MW or more  
Energy Ministry refutes that claim; officials say they have sole authority**

*BIBEK SUBEDI*

The Law Ministry has tried to resolve a disagreement between the Energy Ministry and Investment Board Nepal (IBN) over the right to implement two large hydropower projects by holding talks with them on Friday.

The dispute flared up after IBN asked the Energy Ministry for the implementation rights for the 688 MW Betan Karnali and 617 MW Bheri-1 hydropower projects in western Nepal claiming it held the sole authority to execute schemes with a capacity of 500 MW or more.

After the Energy Ministry issued survey licences for the Betan Karnali and Bheri-1 projects to Betan Karnali Sanchayakarta Hydropower Company and Vidhyut Utpadan Company respectively, IBN asked it to send the related documents. Betan Karnali Sanchayakarta Hydropower Company is a subsidiary of the Employees Provident Fund.

Subsequently, the Energy Ministry decided to consult with the Law Ministry before reaching a decision and forwarded IBN's letter to it. The Law Ministry then called the two parties to state their cases.

IBN officials told the meeting that the installed capacities of the two projects were well above 500 MW, and that they held the right to implement them. "We clearly mentioned that the project should be implemented by the board," said an IBN source present at the meeting.

Meanwhile, Energy Ministry officials said they had the sole authority to issue survey licences for hydropower projects. "We said that the installed capacity of a hydropower project will be determined only after the detailed survey report has been prepared. The installed capacity claimed by IBN is based on preliminary desk study," said Energy Joint Secretary Dinesh Kumar Ghimire who participated in the meeting.

"After the detailed survey determines the capacity of the project, IBN can claim its right to implement it. At the moment, IBN has no role to play regarding these hydropower projects." However, the Energy Ministry will reach a decision based on the Law Ministry's advice, Ghimire said.

This is not the first time that the Energy Ministry and IBN have been at loggerheads over implementation rights of hydropower projects with an installed capacity of 500 MW and above. The Energy Ministry issued a survey licence for the 650 MW Tamakoshi 3 to TBI Holding on October 12, while IBN was preparing to invite international bids to develop the much-awaited hydropower project.

Source: The Kathmandu Post; 31 December 2017

## **Upper Trishuli 3A project completes 80pc civil works**

Upper Trishuli 3A Hydroelectric Project, which was hit hard by the earthquakes of 2015, has completed over 80 percent of civil works, putting it on track to meeting the revised power production deadline of April 2019.

The fate of the 60MW project had plunged into uncertainty after China Gezhouba Group Company (CGGC), the project's contractor, stopped all works following the quakes and did not resume them for a long time.

But construction works are now moving ahead at an accelerated pace, according to Nepal Electricity Authority (NEA), the state-owned power utility and the owner of the project.

The Chinese contractor has so far completed excavation of 4.1-km headrace tunnel. It is now concreting areas of the tunnel where "weak rocks" are present. "Weak rocks"

are present in around 25 percent area of the tunnel, NEA said.

"Of around 1,000 meters that need to be concreted, works on around 400 meters have been completed," said Ambikesh Jha, the NEA appointed site in-charge of the project. "The remaining work will be completed within a couple of months."

The CGGC is also assessing the damage inflicted by the earthquakes to the dam. "For this, water has been diverted towards the dam to check the resilience," said Jha. "No major problem has been detected so far."

Lately, the Chinese contractor has also started building the project's power house in full swing. Currently, foundations are being built to install the turbines. "We are planning to install the turbines before the start of monsoon," said Jha.

In the meantime, a technical team of the Nepal Army has repaired the access road that leads to the project site and is carrying out works to mitigate the landslide risk on both sides of the dam.

The earthquake-triggered landslides had affected areas close to the dam site, posing a threat to safety of workers. The army team has since completed shotcreting the hill that lies on the right side of the dam. Shotcreting is the process of spraying concrete throughout the surface of hills to avert landslides.

To prevent landslides on the left side of the dam, the army is building fences with a special type of wire. "The army has built a small cable car to transport construction materials and is likely to complete the netting and fencing works on the hill within a couple of months," said Jha.

The NEA is building the 60MW project located in Rasuwa and Nuwakot districts with concessional loan of \$114.7 million from the Export-Import (Exim) Bank of China.

Source: The Himalayan Times; 1 January 2018

## **SEBON directs hydel companies to disclose financial details before issuing IPO**

Securities Board of Nepal (SEBON) has directed hydropower companies to publish a public notice disclosing their net worth and per share income before issuing initial public offering (IPO). Issuing a guideline for hydropower companies that are planning to issue shares to public, SEBON has directed the companies to publish their net worth according to their latest audit report.

SEBON has also directed such companies to disclose some relevant information like per megawatt production cost, assumption of time to complete the project and the payback period. Similarly, the grade provided by the credit rating agency should also be published in the notice. “SEBON hopes that the public issuing process will be more transparent and organised after this guideline. Such disclosures will also protect the rights of investors and they would have the basic information of the company in which they are investing,” NirajGiri, spokesperson for SEBON, informed.

Hydropower firms listed in the secondary market would also have to submit their annual financial report to the SEBON. As per SEBON, earlier hydropower operators were not obliged to submit their annual report to the capital market regulator.

“Investors have registered their grievances at SEBON about lack of proper information in notices published by hydropower firms while issuing public offering. So, we have directed them to disclose basic information for the benefit of the investors,” Giri stated.

Hydropower companies should inform investors if they have received low grade from credit rating agency. Likewise, if the per share net worth of the firm is less than face value, that information should also be made public through the notice.

As per data maintained by SEBON, 15 hydropower companies are in pipeline to issue IPO and four others have been granted final approval from the regulator to issue the IPO.

Source: The Kathmandu Post; 1 January 2018

## **Nepal adds 150mw of hydro energy in 2017**

*BIBEK SUBEDI*

The country's energy sector marked the beginning of 2017 with addition of 50MW of electricity to the national grid. The power was generated by Lamjung-based Upper Marshyangdi-A Hydroelectric Project. As the year 2017 drew to a close, 15 other hydropower projects with total installed capacity of around 100MW started generating electricity, giving a much needed lifeline to Nepal's energy sector suffering from acute power shortage.

Altogether, 16 hydropower projects with total installed capacity of around 150MW started generating electricity in 2017.

These projects were built by private companies while Nepal Electricity Authority (NEA)—the state owned power utility—contributed nothing in electricity generation in 2017.

Nevertheless, the construction work of a few key projects owned by the NEA was carried out at war footing with these projects set to generate electricity within a few months.

One such example is the Chameliya Hydropower Project, which will start generating 30MW of energy within a couple of weeks. Likewise, the 456MW Upper Tamakoshi Hydropower Project owned by the NEA is nearing completion, with more than 90 percent of the construction finished. It is set to generate electricity in July.

Along with these hydropower projects, the energy sector also witnessed a major milestone in the area of transmission line construction. The 132 kV Blanch-Attariya transmission line which will evacuate electricity produced by Chameliya Hydropower Project to the national grid, has been brought into operation.

Recently, the NEA successfully conducted tests of the crucial transmission line that links hilly areas in the far western region to the national power grid in far western business hub of Attariya.

However, other transmission line projects failed to make a headway as they were bogged down by delays. One of the main reasons behind the delay was the inability to secure rights-of-way (ROWs) from private landowners. The ROW refers to the land where transmission towers are erected and the corridor above which the electricity cables pass through. Majority of the projects are facing disputes with private landowners who are demanding compensation well above the existing provision of 10 percent of the value of the land to award ROW of their land parcels.

The Energy Ministry, in January, formed a taskforce to recommend a modality on securing ROWs from private landowners to develop transmission corridors, but it is yet to submit a report.

On the other hand, there was noteworthy achievement in the development of the cross-border transmission lines with Nepal and India agreeing to construct 400kV New Butwal-Gorakhpur cross-border transmission line; and Nepal and China signing memorandum of understanding to construct 500kV power line linking Rasuwagadhi and Kyirong across the northern border.

Nepal has already arranged funds to develop the portion of New Butwal-Gorakhpur transmission line that falls within its territory. It is planning to build the line in its territory using the grant provided by the Millennium Challenge Corporation (MCC), an independent US government agency. An agreement to this effect has been signed. On the other hand, China has proposed to build the 500kV power line through its grant financing.

The year 2017 also witnessed another major milestone with Parliament endorsing Electricity Regulatory Commission Act 2017 paving the way to establish Nepal Electricity Regulatory Commission (NERC), an independent body to regulate the power sector of the country. The law has allowed the Energy Ministry to establish regulatory commission to govern entire organisations and entities of the power sector. This body will supersede the existing Electricity Tariff Fixation Commission.

The commission, according to the act, will also establish a code that various entities under its jurisdiction will have to follow. The code will specify standards for the construction of hydropower plants, transmission lines and distribution networks. It will also determine the voltage of electricity that will be supplied to customers.

Last year, the Energy Ministry also issued a power purchase guideline introducing a range of rates at which reservoir, peaking and run-of-the-river projects could sell electricity to the state-owned power company. The introduction of the guidelines will accelerate the pace of signing power purchase deals.

Likewise, the ministry has also issued a guideline to sign dollar-denominated power purchase agreements with hydropower projects that resort to foreign loans. As per the guidelines issued by the ministry, NEA will make payment in convertible currency for a period of 10 years or until the time the project pays back the foreign debt whichever is earlier. NEA, however, cannot sign dollar-denominated PPA with projects if portion of foreign debt exceeds 80 percent of the total project cost.

Source: The Himalayan Times; 2 January 2018

## **42.9MW AKHP achieves financial closure**

The financial closure of the 42.9-megawatt Aankhu Khola Hydropower Project (AKHP) concluded today, paving the way for developer to go ahead with project construction. A consortium of eight financial institutions, under the leadership of Sunrise Bank, has committed Rs 4.7 billion for the project, which has total financing requirement of Rs 6.3 billion.

Along with Sunrise Bank, Hydropower Investment and Development Company, Bank of Kathmandu, Century Commercial Bank, Jyoti Bikas Bank, Laxmi Bank, NCC Bank and Prabhu Bank have joined hands in consortium financing.

In this regard, an agreement was signed between Gyanendra Lal Pradhan, chairman of Hydrosolutions Pvt Ltd — developer of the project — and Ratna Raj Bajracharya, CEO of Sunrise Bank, here today.

Located in Dhading district, AKHP is a run-of-the-river project with rated capacity of 42.9 megawatts. The project is expected to be completed within four years after construction begins. The project will have five km headrace tunnel. The electricity generated from the project will be connected to Nepal Electricity Authority substation of Trishuli 3B project.

The developer has so far developed the 20-megawatt Modi hydropower as well as small hydropower projects like Charnawati and Khudi.

Source: The Kathmandu Post; 3 January 2018

## **Tanahu Hydro running late on naming builder**

The Tanahu Hydroelectric Project has missed its initial deadline to appoint a contractor as one of its financiers, the Asian Development Bank (ADB), delayed evaluating the technical proposals of potential builders.

Tanahu Hydro Limited (THL), a wholly-owned subsidiary of the Nepal Electricity Authority (NEA) and the developer of the 140 MW reservoir project, had planned to hire a contractor by December 2017. With the deadline passed, it is now planning to do so by March 2018.

Last July, THL had forwarded the technical proposals submitted by three companies vying to get the contract for the first package which includes formulation of a detailed design of the project and construction of the headworks to the ADB for its examination.

However, the multilateral lender is yet to complete the evaluation of the proposals. "Such delays by the ADB have already pushed back the implementation of the project," said the source at the THL. "It will take around three to four months to mobilise the contractor after it is selected. Therefore, even if the ADB selects the contractor now, we can mobilise it only by March."

In a meeting with the Manila-based multilateral lender around a month ago, NEA Managing Director and THL Chairman Kul Man Ghising had requested the ADB for an early completion of the bid evaluation.

"But we are yet to hear positive news from them," said the source.

Meanwhile, THL is all set to hire a contractor for the construction of the second package of the project which includes construction of waterways and a powerhouse at the project site.

The project office has evaluated both technical and financial proposals of the two contractors vying for the job and forwarded them to the financier, the Japan International Cooperation Agency (Jica), for its okay. THL will enter into an agreement with the selected company after getting the no objection letter from Jica.

So far, the project developer has almost completed pre-construction works like construction of the access road to the powerhouse and a camp for project officials and the consultant. It has also provided compensation to over 80 percent of the landowners whose properties were taken over by the project. The Tanahu Hydroelectric Project, located 150 km west of Kathmandu on the Seti River, will be one of the biggest reservoir type projects in the country with an estimated annual energy generation capacity of 587.7 GWh in the first 10 years of operation. The project can generate energy for six hours daily during the dry season. It is being built using credit facility extended jointly by the ADB, Jica and European Investment Bank (EIB).

Source: The Himalayan Times; 2 January 2018

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Source: Urja Khabar; 3 January 2018

## **United Modi approves 5 percent cash dividend**

The third and fourth Annual General Meeting of United Modi Hydropower Limited has approved a proposal to offer 5 percent cash dividend (Rs 57.5 million) to its shareholders, a statement issued by the company on Friday said.

United Modi Hydropower Limited is the promoter of Lower Modi-1 Hydropower Project (10 MW). It has also received generation license of Lower Modi -2 Hydropower Project (10MW), according to the statement.

The AGM also nominated Narendra Ballav Panta in the vacant post of board directors from promoters group, while Subodh Bhattarai and Renuka Pandey were unanimously elected as representative of public shareholders in the company's board of directors. Company's chair Shakunta Lal Hirachan chaired the AGM held in Kathmandu, the statement added.

Source: Narendra Ballav Panta

Source: My Republica Post; 4 Jan 2018

## **Alternatives for Budhi Gandaki**

*Christopher Butler, Satis Devkota and Bishnu Sharma Nepal*

**Big challenges to Budhi Gandaki comprise technical, social and economic questions that are yet to be fully resolved.**

Since its inception, Budhi Gandaki Hydroelectric Project (BGHEP) has been proposed as the definitive means to resolve Nepal's power crisis. But the actual execution of BGHEP has been characterized by indecision and missteps. Initially, the government of Nepal intended to build BGHEP as a 1,200 MW storage project that would include fisheries, a state-of-the-art environmental impact assessment and a man-made lake as a tourist destination.

But beset by criticism and opposition from locals for years and unable to gather the needed finance, the government awarded the project to China Gezhouba Group Corporation in June 2016. This contract prompted a hue and cry from many who claimed the award violated country's Public Procurement Act. The contract was then nullified in November 2016—posing yet another obstacle for this “national pride project.”

So while BGHEP appears to be in another holding pattern for the moment, perhaps it is a good time to revisit some of the technical, economic, and social factors that make the project a challenging venture and explore some alternatives to overcome those challenges.

The premise for BGHEP rests upon a perceived need for storage projects to balance out run-of-river projects that currently dominate Nepal's hydro portfolio. However, as most Nepali rivers are snow fed and the impoundments are mostly run-of-river type, water levels fluctuate heavily. During the dry season, power production drops by as much as 40 to 60 percent of the installed capacity. This creates problems in meeting peak demand during the times when electricity consumption rises.

Storage projects promise to off-set this issue by holding water that can be released strategically during the times of peak demand. And just a few storage projects would be needed to shore up these potential gaps of electricity supply in a complete run-of-river portfolio.

### **Great challenge**

The greatest challenges to BGHEP comprise technical, social and economic questions that have not yet been fully resolved.

The proposed dam height for BGHEP is 263m with a length of 760m. Its reservoir will inundate 6,637 hectares of land, of which 3,260 is currently being used for agriculture and settlement. Once constructed, the dam will affect 27 VDCs—14 Gorkha and 13 in Dhading districts. All but two settlements are comprised of populations that make land-based livelihoods, which means inundation and changes to river flow will impact their ability to make money. In addition, two major trade centers (Aarughat and Bisalbazar) that help to feed the northern parts of Gorkha and southern Dhading will be inundated.

More than 45,000 Nepalis stand to be displaced and no alternatives have yet been offered for their resettlement and rehabilitation. This has caused great consternation among those who will be affected. The current economic projections of cost and revenue are not favorable. The projected cost for BGHEP is US\$ 2.5 billion, which does not include resettlement and rehabilitation costs for the 45,000 displaced people. Resettlement cost could raise the total bill by nearly one-third, as much as 3.35 billion US\$. The estimated cost per unit of energy for BGHEP is 21.5 cents, which is approximately four times the price per unit in the local market. If we add resettlement and rehabilitation costs, the energy cost per unit rises to 30 cents—which is not viable for today's competing market.

Furthermore, the current project configuration will also inundate and preclude several other potential run-of-river sites downstream, thus negating the potential for electricity and revenue returns from those areas to local governments.

## **Two alternatives**

Given these formidable obstacles, we suggest that renewed focus be laid on height of the dam. The government should explore two potential alternatives.

First, it should reduce BGHEP dam height from 263m to 225m and develop it as a multipurpose project like the Tehri dam in India. The Tehri project (261.5m) generates 2,400 MW, controls flooding, irrigates 0.27 million hectares of land, and provides drinking water to millions in Delhi and Uttar Pradesh. It is situated at a similar geologic setting of BGHEP.

BGHEP's dam height is not being optimized in the current configuration. If we compare incremental benefits with incremental costs, 700-750 MW project at 225m dam height would be a better option. On the direct benefit side, a preliminary calculation shows that a 225m high dam can provide approximately 750 MW and 2,800 GWh of annual energy. The estimated cost for this option is around 1.5 to 1.75 billion dollars—more than one billion US\$ savings on labor, materials and equipment.

A 225m configuration would also lower the number of people requiring resettlement and rehabilitation from 45,000 to 15,000, which would save an additional 600 million US\$. With a savings of nearly 1.6 billion US\$, Nepal could construct another 500-800 MW storage project to generate 2,500-3,500 GWh of annual energy.

Lowering the dam will also save two to three years on construction time and make the operations more manageable. The reduction of generation capacity will be compensated for by lowered costs and social impact.

Second, we should reduce BGHEP to 185m and develop six projects upstream in cascade. At this height, most of Arughat Bazar, agricultural land, and associated infrastructure will be spared. The number of people displaced would be reduced to only a few thousand, and construction and maintenance costs will be low. This configuration will generate around 575 MW power and 2,200 GWh energy at the cost of 1.5 billion US\$.

Presently there are six projects planned for upstream of BGHEP that would generate a combined 1,200 MW of power and 6,000 GWh of energy annually. Reducing BGHEP to 185m will increase the capacity of these upstream projects by 100 MW (or 400GWh annually). This cascade development alternative would save the planned amenities for the Budhi Gandaki corridor and offer tremendous potential for integrated development opportunities for the entire river basin.

### **Cascade model**

Cascading dams require smaller reservoirs and thus enable full use of reservoir storage to redistribute water resources more efficiently while also maximizing economic benefit. In other words, Nepal could draw greater value and equivalent power generation for every ounce of water.

This is not to say that a cascade configuration would be without challenges. As climate change impacts affect water resource distribution in the hills, optimal scheduling of cascade hydropower stations would be demanding and require significant coordination.

Therefore, we would recommend that a cascade configuration be operated by a single power producer rather than several separate entities. As one suggestion, NEA could collaborate with foreign investors for the cascade development, but maintain the lead in operation and management.

While these additional options are considered we would also encourage the government and Nepal Electricity Authority to reconsider options for drawing investors. While Nepali financing options should be considered first, foreign investors will likely be more attracted to BGHEP with a cascade design, as it will reduce the time and costs associated with its construction.

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Source: The Kathmandu Post; 4 Jan 2018

## **CTGC threatens to pull out from West Seti project**

*BIBEK SUBEDI*

China Three Gorges Corporation (CTGC), the potential builder of the West Seti Hydropower Project, has threatened to pull out if Nepal doesn't revise its guidelines regarding the power purchase rate. The rate offered by the guideline doesn't make the project bankable, said the Chinese company in a letter to Investment Board Nepal (IBN) about the 750 MW reservoir type scheme located in far west Nepal.

"The development of the project is very challenging from the technological and economic point of view. But we understand the importance of the project for Nepal, and being a good friend of Nepal, we have tried our best to make the project technically feasible and economically viable," the company said.

"But as Nepal doesn't like to revise its power purchase rate policy, the project will not be financially viable, and it is not necessary to consider any next plan or action."

CTGC had requested that the power purchase rate be revised during a meeting with IBN and its joint venture partner the Nepal Electricity Authority (NEA) last November. However, the NEA said that it couldn't be done. The state-owned power utility and CTGC have agreed to form a joint venture company to develop the project.

As per the power purchase rate made public by the Energy Ministry in January 2017, reservoir type projects like the West Seti will get Rs12.40 per unit during the dry season which lasts from December to May, and Rs7.10 per unit during the wet season which lasts from June to November. According to a highly placed source at IBN, the board is planning to ask the Chinese developer to propose a rate which will make the project viable. "We will then decide our next step," said the source.

CTGC and the NEA signed a joint venture agreement less than two months ago to implement the project. In August 2012, the government and CWE Investment Corporation, a subsidiary of CTGC, signed a memorandum of understanding (MoU) to construct the hydropower project.

As per the MoU, the Chinese company will have a 75 percent stake in the joint venture company while the NEA will hold the rest of the shares. But it took more than five years to establish the venture company.

The West Seti Hydropower Project will extend across Baitadi, Bajhang, Dadeldhura and Doti districts and is expected to generate 2.8 billion units of electricity per year. The estimated construction time of the project, which will have a 207-metre tall dam, is six and a half years.

The scheme will cost \$1.8 billion including interest charges incurred during the construction period and \$1.4 billion excluding interest charges, according to the NEA. The two partners will invest in the project through their proposed joint venture company, West Seti Hydropower Project Development Limited.