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Question of exporting hydropower

By Krish Krishnan and Dr. Charles K. Ebinger

Sunil Thapa's "Can Nepal Afford to Export (Hydropower, TKP, June 9) and an similar article "Myth of the hydro dollar" (eKantipur.com, June 22) represents the tunnel vision that continues to plague the development of Nepal's hydroelectric resources that alone offer an alternative for the nation's economic transformation. Bilateral and multilateral donor agencies, besides local and international hydro experts, have for years touted Nepal as the second most richly water-endowed country with 2.3% of the world's fresh water resources. While Thapa correctly states that this does not translate to Nepal having the world's second largest hydropower potential, no serious observer questions that of the nation's 83,000 MW of theoretical potential at least 20,000-40,000 can be economically developed, in comparison to 600 MW in operation.

If Nepal develops hydropower only to meet its own needs as advocated by Thapa, why historically has every politician, bureaucrat, and donor agency concluded that the development and export of hydropower offers a way to improve the quality of life? With fuelwood being consumed at an alarming rate and no other large scale energy resources available, how else can successive governments' commitments to 100% rural electrification be achieved without significant revenues generated from hydropower exports?

A recent survey shows that 92 percent of respondents believe that hydropower is vital to develop the country; 80 percent believe that hydropower is essential for the development of rural Nepal. Eighty two percent believe that the pace of hydropower development is slow and ask where the money will come from, if not from exports? Given these facts, it is time for the people and the government to review why Nepal has failed to develop its hydropower potential, why it makes sense to export hydropower, and to reaffirm the nation's commitment to develop hydropower.

Electricity is a commodity in great demand and in short supply, particularly in the subcontinent. An electricity consumer tries to purchase electricity from the cheapest source as long as it is available at an acceptable quality (voltage) and when it is needed. The Nepal Electricity Authority (NEA) and the Butwal Power Company conduct their generation planning based on acquiring power at the lowest cost. Clearly, the country needs hydropower to meet its current and future demand.

What is not understood is why electricity tariffs to consumers in Nepal are among the highest in the world. NEA's average cost of hydropower is NR 3.0/kWh, much less than what Thapa calculates. NEA rightly argued that the following factors account for its high cost:

(1) Cost of Money: GON finances NEA's projects. GON obtains money from bilateral and multilateral donors at very low cost (1-2% per annum interest). These loans are usually long-term (40-50 years) and in some cases repayments are waived. It is likely that additional waivers on existing projects will occur. Despite these favorable terms, GON on-lends this money to NEA at an interest rate of 10.25%, which is higher than market interest rates. GON argues that the cost of on-lending is high to take account of foreign exchange risk. However, WB studies show that the cost of on-lending can be reduced providing relief to NEA resulting in reduced tariffs to consumers.

(2) Cost of ancillary infrastructure such as access roads: On average, the cost of access roads and transmission lines amount to 20-30% of a project's costs which makes the generation cost high in Nepal given the difficult terrain and remote location of many hydel sites. Much of the road access serves local communities and not only hydropower development. We believe there is an alternative approach to allocate these costs to the rightful user. These are costs of basic infrastructure and GON should solicit donor-assistance in developing roads to local communities as the process of connecting villages and towns allows producers to gain enhanced access to markets for their agricultural and other products. Hydropower developers can, then, develop necessary secondary roads to connect their plants with their load centers. It is also possible under the BOOT Ordinance of 2004, to build these roads on a private or private-public partnership basis, paid for by a user-fee or GON subsidy. Surely, the new GON can request donors to assist in this endeavor significantly revitalizing the countryside and offering increased opportunities for greater participation in rural governance, a key concern for Nepal and the international community.

(3) Cost of purchased power from IPPs: Often, critical articles in the press regarding the high-cost of energy purchases from IPPs, particularly the two IPPs which came with overseas private investment when the country

confronted major black-outs with attendant economic havoc on commerce and industry. However, we believe those in power at that time had the foresight to sign contracts at NR 3.5/kWh compared to other alternatives such as imported diesel (10-12 cents/kWh) or doing nothing and having significant reduction in economic growth. One reason for the tariff effects of these contracts is that while the Nepali rupee was trading NR 58 per US dollar at the time the contracts were signed, it was devalued to NR 75 when the plants started operation and the NEA had to absorb the exchange fluctuations.

Clearly, NEA needs to reduce its generation costs, which form a major portion of its tariff but broader reform of the sector needs to accelerate and there is no doubt, NEA is working towards this. West Seti has a contract with India for export at NR3.5 per kWh, which includes a profit. With the improved political situation, the project may start construction in 2007. To implement the Hydropower Development Policy 2001, the private sector is to be encouraged through a new Electricity Act and an Act to create a Nepal Electricity Regulatory Commission to expand its involvement throughout the sector. Both these draft Acts are currently with the Government and we urge that they be passed as quickly as possible. Institutional change is disturbing to those used to doing things in a traditional manner but today's Nepal needs and is committed to a better way of doing things. With private generation accounting for 25% today and new projects such as the competitively bid Kabeli 30MW in the pipeline, we believe the private sector/private-public partnership is well positioned to contribute to the nation's economic growth.

Nepal is one of the poorest countries in the world with only a minority of the people having access to electricity. Endemic power shortages and a high tariff regime have played a major role in driving out the modest amount of heavy industry the country once enjoyed. Distribution losses (technical, commercial and pilferage) are officially in excess of 23% and probably higher.

Thapa is correct; Nepal has a hydropower potential it does not need to develop for its electricity needs for the next several decades. It has an option to do nothing now or it can do what countries such as the Peoples Democratic Republic of Lao and the Kingdom of Bhutan have done and the central Asian nations are commencing to do, which is to develop their vast hydropower resources for export to generate revenue that will lead to the economic and social transformation of their countries.

In four short years, Bhutan by exporting hydropower to India and creating a climate conducive for foreign investment has raised its per capita income several fold with further advance likely once the 1,060 MW Tala hydroelectric facility is completed later this year. After more than a decade of civil strife, it is unclear why Thapa wants to keep Nepal's people in social and economic darkness when the expanded provision of electricity funded by revenue from enhanced exports will allow infrastructure such as schools and roads to be built, health clinics to be financed, refrigerated vaccines to be available in rural areas, micro and macro enterprises expanding to provide employment, women and children having time to be educated rather than gather fuel wood for 15-18 hours every day, produce to be refrigerated rather than spoil in fields, and opportunity in rural areas to study at night improving job skills and literacy. And, is it not in Nepal's interest and pride that it contribute some of its own resources towards such improvement rather than be totally dependent on others?

Developing hydropower for export opens up an avenue of possibilities for the economic and social transportation of the country. From the 750 MW West Seti project alone, Nepal is likely to get a 10% net generation value (approximately NR 0.35/kWh) generation value. Thapa hides under the lame excuse of being "cheated" by India in the past for not going for a Bhutan-type arrangement. Bhutan gets net revenue of NR 2.2 to 4/kWh for its energy from the Chuka and the Tala hydro projects. When does getting more value for a product become meaningless to Nepal or to anyone, for that matter? Maybe, Nepal has not been able to negotiate good deals with India in the past. But who has the prime responsibility to rectify this, if not the elite bureaucrats, professionals, and especially a new Government committed to affecting a new future for its citizens?

Nepal is at a historical cross-road today. It can look inwards as Thapa seems to suggest or it can open itself to opportunities and meet the challenge of the future. In our view, Nepal has no option but to move forward; Nepal cannot afford NOT to export hydropower.

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