

## Editorial

Dear Reader,

*Nepal is renowned for its enormous potential for hydro power and no wonder why our energy focus is mainly, if not entirely on hydro-electricity. There is nothing wrong in it, everyone wants to play on their strengths. But come to think of it, how good had our strategy been by focusing on only hydro for grid electricity. Rather than being effective with such pin pointed focus, have we not risked ourselves as being a case of putting all egg in one basket. Perhaps it is time we borrow a traditional risk management strategy from the financial sector to the energy industry- portfolio diversification.*

*Our neighboring countries China and India have installed thousands of wind turbines and solar PVs in last few years, and they are still doing so as we speak. There are successful cases of installed and fully operational solar home systems in almost every corner of Nepal, including in Kathmandu. Hence, it should be a no brainer that the technology is a viable one in Nepal for grid scale projects too. Conversely, wind power generation is bit complicated without a proper wind resource assessment. Nepal isn't the windiest countries in the world, but one report prepared by UNEP in 2008, says that we do have at least 3000MW of wind power potential. When the country is reeling under acute power shortage any extra addition of power generation will be highly appreciated from all walks of life. Meanwhile, biomass electrification could be relatively expensive and could have issues with raw material sourcing. Nonetheless, power generation from biomass projects is more reliable and efficient.*

*There is a growing concern among various stakeholders for Energy Mix. We have been reading it in the newspaper for last couple of years that the World Bank has approved funding for some Megawatt scale Solar PV grid-tie projects that would be undertaken by Nepal Electricity Authority. The Asian Development Bank has recently offered a Technical Assistance program for Supporting Rural Electrification through Renewable Energy. Some private companies have been working out to generate electricity from our municipal waste. Alternative Energy Promotion Center has also step up their activities from smaller lighting projects to building inter village mini-grid systems.*

*All these are positive steps toward energy mix. However, there could still be a major issue that needs to be resolved, sooner than later, if we were to attract private investment in other than hydro projects. That is Power Purchase Rate. Our government policy for project licensing and power purchase agreement have been modeled for hydro projects that it is quite hard to comply for other renewables. We need to have a separate policy to buy power from the renewable energy projects, as it could be a quick fix for our ongoing electricity crisis. At the moment there is subsidy scheme for urban households to install solar PV systems. We have yet to see how effective it would be in making urban households self reliant on electricity. Conversely, have there been a provision of feed-in tariff for renewable energy projects, we might actually have witnessed more houses installing the PV Systems as seen in many other countries, especially Germany.*

*There is no denial that despite all the political uncertainties, our country is still heading in the right direction, albeit at snail's pace. Let's hope that in the coming days, our government will focus into bigger picture of devising attractive policies, rather than spending too much time and money on developing projects themselves.*



**Mr. Kushal Gurung**  
Executive Committee  
member

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## EDC Activities

### Visit by the Embassy of the United States of America

Mr. Todd Jungenberg, Economic and Commercial Officer of Embassy of USA, Kathmandu was invited at the Energy Development Council office, Kamaladi on 21<sup>st</sup> January, 2015. Mr. Sujit Acharya, Chairperson of the Council introduced EDC and relayed its vision and objectives. The meeting brought up a good potential collaboration of working together in the energy sector of Nepal. We will be organizing a round table interaction with economic specialist of the embassy and EDC members. Mr. Jungenberg also mentioned that USA has a strong interest in making investments in the hydropower sector of Nepal.

### Meeting with Royal Norwegian Embassy

EDC met with energy sector related officials of the Norwegian Embassy, Pulchowk, Lalitpur on 23<sup>rd</sup> January, 2015. Mr. Jan Eriksen, Counsellor and Mr. Bibek Chapagain, Energy Advisor were briefed about EDC's objectives and activities by Chairperson of EDC and vice versa. Both sides agreed to continue further interactions in the near future and explore areas of collaboration.

### EDC's first public advocacy

Energy Development Council expressed its first public advocacy in the field of energy sector through a leading weekly newspaper, Nepali Times. EDC would also like to acknowledge Nepali Times and express gratitude to Mr. Kunda Dixit, Editor and Publisher of Nepali Times for allowing us to contribute a monthly column. We hope that this initiative is crucial for knowledge dissemination and influence in policy level decision making.

The first publication was released on 9<sup>th</sup> January, 2015 and the council will continue to convey opinions and facts on energy.

### Mirage of Prosperity

Nepal would be silly not to hitch her hydropower potential to the Indian grid, but conditions apply.

A parched man traversing a great hot desert sees an oasis in the distance. Summoning the last bit of strength, he makes a dash across the dunes. He never pauses to consider if it might be a mirage. So it is with Nepal's hydropower.

Nepal has journeyed through the last decade of load-shedding and a stagnant power sector. India's electricity market has now appeared as an oasis across the southern border. Nepal has seized upon it like the desperate parched man. Perhaps we ought to pause to consider if it might be a mirage.





In October, Nepal and India signed a historic Power Trade Agreement (PTA) that had been in the making for close to two decades. Consisting of eight articles, the agreement recognizes the business of cross-border power trading provides non-discriminatory access to each other's markets and creates an institutional framework for detailing the operational issues.

The agreement brings closure to a long held assertion that the absence of a cross-border PTA was stalling investment in Nepal's hydro-power. The idea has always been that the Indian marketplace is the key to hydropower in Nepal: that Nepal's bountiful rivers (particularly in the wet months) could only be tapped if we could sell it to India.

This belief stems largely from assumptions about the Indian power market that have never been challenged. India still has 600 million people living in poverty, and its imperative is not just expanding electricity supply but expanding electricity supply at affordable rates. Even as it seeks out new sources of energy to fuel economic growth, it must find ways to make electricity accessible to the vast majority of the population that will not always have the capacity to pay for it.

Nepal must be prepared to supply power in a low value market where top dollar won't always be paid and long term power prices could consistently remain under INR 4 per unit (kWh).

Indian power markets are messy. A decade after the transformative Electricity Act 2003, which unbundled the sector, ushered in competition and opened power trading, many distribution utilities are broke. Their accumulated losses were approximately \$11.6 billion in 2011-2012 – all of that incurred within a decade of the restructuring that wiped out all previous losses.

India is now due for another round of major power sector reforms. The Indian power market is not a monolithic whole but a patchwork with success in some pockets and dismal failure in others. Electricity in India is also a dual subject within its federal structure with both the national and state governments share jurisdiction. For instance, although the Electricity Act 2003 was passed at the national level, the states will have to implement many of its key covenants.

This poses a challenge to implementing India's PTA with Nepal. Implementation will require the engagement of states and entities that are beyond the immediate jurisdiction of the central government. Despite all its promise, the Indian power market remains challenging and few have managed to successfully navigate it. It beckons, but vexes.

Nevertheless, India is one of the fastest growing economies of the world that is desperately in need of electricity. Prime Minister Narendra Modi has announced that by the end of this decade every Indian will have 24x7 power supply. Nepal would be silly not to hitch her hydro-potential to the promise of India.

The question for Nepal is how to approach the promise of the Indian power market. It shouldn't be, as it is often these days, like the parched man crawling towards a mirage in the desert. We need a calmer, more studied approach, without desperation, recognizing that the Indian market is full of paradoxes which in pockets fare no better than our own.

Exploiting Nepal's hydro potential must begin first by flushing our minds of antiquated assumptions about India's power requirements. We must take into account our own suppressed demand, and the tariffs on both sides of the border. We must also factor in the cost regulated water.

We have already spent a decade in darkness. We can't spend the next merely chasing a mirage of prosperity from exporting electricity.

( This article is derived from Nepali Times published on January 9<sup>th</sup>, 2015

Post available at: [http://issuu.com/nepalitimes/docs/nepali\\_times\\_740?e=6921549/10853984](http://issuu.com/nepalitimes/docs/nepali_times_740?e=6921549/10853984) )

## EDC Newsletter Readership Base Touches 1000

EDC has been successful in reaching over a thousand readers within just four months of its newsletter publication and shall continue to expand this reader database. All the readers are working in the field of the energy sector or have a keen interest in this subject.

## Articles from our members

### Solar Micro Grids- New possibilities of Lighting up rural Nepal

by Peter McDonough, Gham Power Private Limited

On the third floor of a temporary office building, an engineer hunches over his decade-old laptop, a small charcoal burner glowing a dull orange beneath his chair. He and his colleagues sport colorful scarves and tasseled hats - after all this is Kathmandu, Nepal, and it is December. The engineering team is carefully wading through the years-long preparation for a rather unusual task: to electrify their country.

Their company, Gham Power, is a leader among almost 150 different solar companies in Nepal and, for a country so thoroughly blessed with hydro resources, the solar competition is surprisingly fierce. The company's success, however, has earned it the attention of development organizations both nationally and internationally, bringing a large funding support and even larger responsibility. Gham Power, in conjunction with the Asian Development Bank (ADB) and numerous NGOs and private suppliers, will be among the first to attempt rural electrification in Nepal using the risky and uncommon method of solar energy micro-grids.

The concept is fairly simple on paper: instead of slapping a few solar panels and LED lights on someone's tin roof somewhere in the Himalayas, micro-grids are designed to supply a localized community with reliable and sufficient power to run whatever appliances or industries the community finds useful. Essentially the micro-grid works like any other grid, supplying power to customers in the quantity they need and at the time they need it, except that the energy is generated locally by entirely renewable means, and consumed locally by the very people who own the grid.

Many in the energy world believe micro-grids are the answer to the trillion-dollar question: how can the developing world electrify in a way that is affordable, culturally appropriate, and clean? After all, the world can't afford a tripling of its electricity-based greenhouse gas emissions and many if not most developing countries do not have the resources to extend their national grids to be, well, national. But what if individual communities can electrify themselves with their own renewable resources, thereby leapfrogging the whole problem of large grid-based pollution and infrastructure? After all, they did it with cell phones instead of land-lines, and LEDs instead of incandescent - why not electricity generation?

The big "but," of course, is cost. These communities are poor, really poor, certainly too poor to drop \$50,000 on a medium-scale solar array in one go. Some countries have found ways around this by using only the cheapest materials and cashing in on large government subsidies or international aid. The results have been varied, with some claiming great success and others falling by the wayside as maintenance issues and corruption bring the micro-grids to a halt. The truth is that no one has really figured out the "right" way to do micro-grids. This is the playing field onto which Gham Power and the ADB now venture.

The ADB knows as well as anyone that the classic methods of rural electrification just don't cut it. Power can't be tossed around villages - a watt here, another watt there - and still result in sustained economic development and energy independence. It takes scalability, adaptability, and transparent management practices to make it a long-term solution. Gham Power has made this a habit and is approaching its three pilot village micro-grids from the angle of long-term sustainability. The company is invested, literally: Gham Power will own a share of each of its rural systems along with the ADB and the village shareholders themselves for the first 10 years, ensuring ongoing technical support and the stability of the community's own, homegrown electric utility. When those 10 years are up the community will own the micro-grid in its entirety.

While these three pilot villages represent the first such attempt in Nepal, they are by no means the last. Other solar PV companies are pursuing their own methods of micro-grids in other villages, and even Gham Power will begin development in five more villages around the country chosen by the AEPC. The big question now is: will they work? If so, solar micro-grids may be the best alternative to the now-dominant micro-hydro systems in Nepal, especially in dry areas and where rainfall and snowmelt timing shifts due to global climate change. Within a few months the micro-grids will be up and running, and soon after we may have an answer.



## Announcement from Arun Valley Hydropower Company Limited

The financial closure of Kabeli-B1 Hydropower Project with capacity of 25 MW has been done. The consortium of seven financial institutions has approved loan of Rs. 2.8 billion for the construction of Kabeli B-1 Hydropower project on Wednesday January 28th, 2015. The estimated project cost is NRs. 4 billion where 70% is debt from the financial institution and 30% i.e. 1.2 billion as equity share from the company. The amounts of loan given by various banks are: Nepal Investment Bank Limited as a lead bank (NPR 600 million), Nabil Bank as a co-lead (NPR 550 million), Everest Bank (NPR 500 million), Global IME Bank (NPR 500 million), Laxmi Bank (NPR 250 million), Prabhu Bank (NPR 200 million) and Hydropower Investment Development Company (NPR 200 million). The project is to be completed in 3 years.



The project has already done agreement on grid connection and power purchase agreement with the NEA. The electricity generated will be connected to the national grid through 132 KV sub-station that is being constructed in Amarpur VDC, Panchthar.

The electricity generated will be used for the terai and himal region of Mechi zone. The company believes that the electricity produced will boost to run the current stagnant industries.

(Source: Abhiyan newspaper)

## Welcoming new EDC members



























Chilime Hydropower Company Limited was incorporated in 1995 with an objective of hydroelectricity generation. NEA holds majority ownership with 51% shareholdings and remaining 49% is from general public including 10% equity ownership of local people. It owns and operates 22.1 MW power plant commissioned on 2003 located in Rasuwa district with the annual energy generation about 150 GWh.

The company has established following three subsidiaries: 1. Rasuwagadhi Hydropower Company Limited 2. Madhya Bhotekoshi Jalvidhyut Company Limited 3. Sanjen Jalvidhyut Company Limited. Through these subsidiaries, Chilime is developing four hydropower projects with total capacity of 270.3 MW.

ENERGY  
DEVELOPMENT COUNCIL

## List of EDC members

S. No.	Name of the Company	Company logo	S. No.	Name of the Company	Company logo
1.	Nepal Electricity Authority		14.	Wind Power Nepal	
2.	Alternative Energy Promotion Center		15.	Reliable Hydropower Pvt. Ltd.	
3.	Butwal Power Company Private Limited		16.	Sanvi Energy Pvt. Ltd.	
4.	CEDB Hydro Fund		17.	Dantakali Hydropower Pvt. Ltd.	
5.	IDS Energy Pvt Ltd		18.	Prime Commercial Bank Ltd.	
6.	Nabil Bank		19.	Century Bank	
7.	Himalayan Infrastructure Fund		20.	Arun Valley Hydropower Development Co. Ltd	
8.	Transweld Pvt Ltd		21.	Hydroelectricity Investment and Development Company	
9.	Clean Energy Development Bank		22.	TSN Energy Pvt. Ltd	
10.	Nepal Hydropower Association		23.	Madhya Bhotekoshi Jalvidyut Company Limited	
11.	Global IME Bank Limited		24.	Rasuwigadhi Hydropower Company Limited	
12.	Gham Power Pvt. Ltd.		25.	Chilime Hydropower Company Limited	
13.	Lotus Energy Pvt. Ltd.				



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