

## Editorial

Dear Readers,

*Happiness is what everyone seeks in their life. Our happiness has increased since we celebrated Dashain and Tihar; both the festivals having been celebrated with no load shedding, thanks to the new MD and the entire team of NEA.*

*As per NEA, this has been possible due to control of leakages, demand side management, 300 MW energy bought from India and 25 MW from Upper Marshyangdi (which has the total capacity of 50 MW) being added to the national grid. The distribution system of the Kathmandu valley has improved and work in progress would make it even better. Whatever Demand side management (DSM) measures were taken up by NEA, they have been helpful in providing general public relief from load shedding.*

*In order to serve the increasing capacity and Energy demand, NEA can initiate following loss reduction and improvement activities:*

- *Consumer indexing, codification, metering upgrades and consumption and revenue data management, so that distribution transformers are better planned and outages, losses are minimized. Keeping pace with the advances in metering technology, replacement of conventional electromechanical meters with high accuracy static meters could be welcome to avoid pilferages, under billing.*
- *High Voltage Distribution system adoption for loss reduction and metering at distribution transformers towards better accounting.*
- *Incorporation of power factor capacitors in distribution system for loss reduction.*
- *Upgrading, strengthening and improvement of the transmission and distribution system for efficient and reliable power network.*
- *Replacing the entire sodium/mercury vapor lights with efficient LED lights with automatic control system.*
- *Provide efficient solar lighting system for new installation wherever feasible.*
- *Conduct of regular substation, Feeder, distribution transformer detail Energy audits to enable loss reduction for better accounting and revenue management.*
- *Introducing kVAh based consumer billing in place of kWh billing for better reactive power management.*
- *Review of technical specifications of various procurement guidelines of NEA in present context of energy efficiency.*
- *Venturing into a comprehensive renovation and modernization program of existing assets so that plant load factor of the present assets is maximized before huge investments for new plants are considered.*
- *Prioritize renewable energy for clean and sustainable source of generation.*

*Energy efficiency deserves to be pursued as a cheap source of generation, and no less, but a lot needs to be done in this regard.*

*Let us all wish for more power to NEA in their endeavors, and hope that load shedding become thing of past.*



Mr. Roshan Silwal  
MD, Comtronics Pvt. Ltd  
EDC Member Organization

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## EDC Activities

### Keynote Speech on China Energy Storage Innovation & Technology Summit



EDC Chairperson Mr. Sujit Acharya presented a key speech on the title **“Billion Dollar Microgrid Opportunity in Nepal”** on 3<sup>rd</sup> Annual China Energy Storage Innovation & Technology Summit which was held on 17th-18th, November 2016, Shenzhen, China.

## EDC Meeting with China Electricity Council (CEC)



EDC Chairperson Mr. Sujit Acharya meets President of China Electricity Council Mr. Yang Kun on November 4, 2016 at CEC Office, China. The discussion was about cooperating in the development of energy sector between both countries and possibly establishing a formal linkage.





## EDC Meeting with China Economic Cooperation Centre (CECC)

**EDC Chairperson Mr. Sujit Acharya meets Vice President Mr. Wu Baocai of China Economic Cooperation Center on November 4, 2016 at CECC Office, China for cooperation on energy sector. The meeting concluded to cooperate in the energy sector between both countries.**



**EDC Chairperson Mr. Sujit Acharya meets Deputy Secretary General of China Energy Storage Alliance, Ms. Vivian Wei. The meeting was about agreeing in establishing a formal linkage and exploring various projects together.**

## Media Coverage

### EDC signs MOU with HRC

**KATHMANDU:** Energy Development Council (EDC) and Hangzhou Regional Centre (HRC) have entered into a memorandum of understanding (MoU).

The MoU was signed by Sujit Acharya, chairperson of EDC and XuJincai, director of HRC. This agreement will create a comprehensive hydropower and renewable energy cooperation between stakeholders in both the countries.

HRC is an organisation formed in 1981 by the Chinese government and the United Nations to help developing countries build their technical capacity in hydro and renewal energy.

EDC is the umbrella organisation of the entire energy sector of Nepal and comprises leading energy organisations of energy developers, energy associations and energy financiers and other funds, contractors and energy institutions from both the private and government sectors.

A version of this article appears in print on November 07, 2016 of The Himalayan Times.

The article is available at the link: <https://thehimalayantimes.com/business/edc-hrc-agreement/> published on November 7, 2016.

### ईडीसी र हाङजाउकेन्द्रबीचउर्जा विकासको लागि समझदारी



कार्तिक २९, काठमाडौं (अस)। इनर्जी डेभलपमेन्ट काउन्सिल (ईडीसी) र चीनको हाङजाउ क्षेत्रीय केन्द्र बीचउर्जा विकास, विस्तार तथाप्रर्वद्धनका लागि समझदारी पत्र (एमओयू) मा हस्ताक्षर भएको छ । समझदारी पत्रमा ईडीसीका अध्यक्ष सुजितआचार्य र केन्द्रकानिर्देशक सु जिनसाईले हस्ताक्षर गरेका छन् । हाङजाउ क्षेत्रीय केन्द्र चीन सरकार तथा संयुक्त राष्ट्रसंघको सहयोगमा स्थापनाभएको संस्था हो ।

समझदारीको उद्देश्य दुवै देशमा जलविद्युत तथा नवीकरणीय उर्जाको विकास, विस्तार तथाप्रर्वद्धन गर्नु रहेका ईडीसी बताएको छ । त्यसकालागि मैत्रीपूर्ण वातावरण सृजनागर्दै दुवै पक्ष

बीचउच्चस्तरीय छलफल र तालिमको आयोजन गर्ने कार्यक्रम रहेको ईडीसीद्वारा जारी विज्ञप्तिमा उल्लेख छ । साथै उर्जा प्रर्वद्धनका लागि एक अर्का देश भ्रमण लगायतक्रियाकलापनिहुने बताइएको छ । केन्द्रको यस संस्थाको मुख्य उद्देश्यविकासशील देशमाजलविद्युततथानवीकरणीय उर्जाको विकास तथाविस्तार गर्नु रहेको छ । त्यसै गरि

नेपालको उर्जा क्षेत्रका सरकार तथा गैर सरकारी निकायहरुको प्रतिनिधिमूलक संस्थाईडीसी नेपालको सम्पूर्ण उर्जाक्षेत्रको विकास तथाप्रर्वद्धनमा क्रियाशील रहदै आएको छ ।

(The article is available at the link: <http://www.abhiyan.com.np/new/Articles/view/87467> published on November 7,2016.)

### Where have all the Nepalis gone?

- By Bishal Thapa

The challenges in Nepal's energy sector are not just the results of poor policy, politics and investment. The real cause lies in the fact that Nepalis have deserted their true values.

**CIVIL SOCIETY MUST REGAIN ITS  
INDEPENDENCE AND REASSERT ITSELF**

Just as you don't get dentists without toothaches or cardiologists without heart attacks, Nepal's inability to get its energy sector performing has spawned an industry of energy therapists.

The diagnosis by Nepal's energy therapists contains the standard list: inadequate planning, policy uncertainty, political instability, weak governance, lack of investment and poor investment climate. In short, everything that ails poor underdeveloped countries ails Nepal – except in our case the lights are off most of the time.

The diagnosis is not surprising, or at least, not new. But it is wrong. To make things better, we have to start with the honesty and courage to face up to what truly ails our sector.

Nepal's overall policy and structural framework on energy is broadly adequate for its state of development, size and needs. Could it be improved – of course. Could there be greater efficiency – of course. But merely adopting these reforms will not make Nepal's energy sector spark up.



Nepal's fragmented political context with constant changes in government and uncertain environment is always cited as the critical factor that has stalled progress. Certainly, these factors haven't created an enabling environment for investment. But it is a stretch to argue that these factors have been the key causes of stalled progress. Even in the face of such uncertainty, the basic structures of the state do

remain: justice, law and order, basic services, health, education. In other words, despite the challenges, at the core the state continues to function.

The prime cause of Nepal's failing electricity sector is the extremely high levels of political interference and the culture of corruption it has institutionalized. No amount of policy or structural reform can repair that unless there is a counterbalancing force that can withstand political interference and prevent corruption.

Consider the case of Nepal Electricity Authority (NEA). NEA is Nepal's monopoly electric utility, vertically integrated across generation, transmission and distribution. The unbundling of NEA is one of the big reform tickets have been put forth as a solution. Unbundling, reformists have argued, will allow a healthy electricity market to develop. But will it really?

Unbundling is a standard text book approach, widely implemented around the world and an easy prescription. But Nepal doesn't have the prerequisites that will allow unbundling to produce the impact it has in other countries. More importantly, it will not address the problem that currently ails the country: political interference and the resulting corruption.

What will happen with the unbundling of NEA?

First, in the true spirit of bhad-phad (sharing the spoils), the Nepali Congress will get the generation company, Maoists will get the transmission company and UML will get the distribution company (or some variant of it). Then circumstances will change and bhad-phad will result in a new configuration of control.

Patronage will continue exactly as it was. Four unions, each representing the interests of a political party, will multiply into twelve unions. The politically driven process of appointments will continue – except there will be three times more seats to fill, which political parties should welcome with relish. Political interference and corruption will continue exactly as before – except it will be far more dispersed, far for more difficult to spot and impossible to control.

In the absence of a counterbalancing force, the net result of unbundling will simply be further decay—perhaps more swift and non-reversible. The policy and structural reform of unbundling doesn't create the counterbalancing force that can fight back political interference.

So what is this counterbalancing force?

Simple, civil society, Across all our institutions, including NEA, civil society is actually represented with a seat on the table, often as independent directors, observers, advisers, etc. However, in the face of such widespread political interference and corruption, what have they done so far – nothing. Most are merely political appointments whose sole purpose is to return the favour to those that appointed them.

Civil society must regain its independence and reassert itself. It is the only force that can get institutions to perform in the true spirit of the policy; it can participate, monitor and demand correction when a lapse is spotted. It can fight back political interference and create a corruption free environment.

As Nepal returns from Dashai and Tihar holidays, celebrating the victory of good over evil, Nepalis have a simple choice to make: do we as civilians simply crumble to the pressure of corruption because it has become the norm, or do we adopt the values we celebrated over the holidays.

Fulfilling the aspiration of reliable electricity for all of Nepal doesn't require policy and structural reforms. It requires Nepalis to return home to the values of integrity, honesty and courage.



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Jai Nepal.

*(The article is published on November 13, 2016 and is available on page 22 at the link: <http://epaper.thehimalayantimes.com/index.php?pagedate=2016-11-27&edcode=71&subcode=71&mod=1&pgnum=2> )*



## Decentralised Energy System A Viable Option

- By Kushal Gurung

We have no shortage of plans, each government comes with new plans and ambitions, but what we actually lack is the execution of those plans

The last month has been a busy one for energy sector. We were delighted by the news of successful completion of the 50MW Upper Marsyangdi A hydro project. As half of the project has already begun generating power to the grid, it is likely to reduce the loadshedding hours during the festival seasons. The Energy Ministry concluded an initial signing of the Project Development Agreement (PDA) for 216MW Upper Trishuli-1 Hydroelectric Project. This could be of great significance for foreign investors, as in the PDA there is a provision to sign PPA in convertible currency for 10 years to cover the foreign debt and also government has agreed to provide guarantee payment in case the NEA defaults. Our new Energy Minister also came up with a 38-point plan to eliminate load shedding in the next two years.

Among different things, he has a plan to generate 800MW from hydropower, 150MW from solar, 50MW from other sources and as well as import 500MW of electricity from India. We have no shortages of plans, each government comes with new plans and ambitions, but what we actually lack is the execution of those plans. The last government also came up with energy crisis prevention and electricity development decade plan, however before they could implement the policy, the government changed. Hence, we have to see what actually this new government would achieve during its tenure. But looking at our track record, it is very hard to believe that the loadshedding would be eliminated in the next two years. Our transmission lines and distribution system are not sufficient to bring the generated power to load centers. Hence, it seems we still have to depend on decentralised options like using diesel generators, solar panels and battery backups.



While many of us are arguing if decentralised energy system is actually a viable option, despite the power deficit, some developed countries like US where they barely have any loadshedding are actually already adopting this concept. Last year, when Tesla launched its powerwall system, which is basically a home battery that charges using solar PV or grid electricity, they received \$800 million worth booking within the first week that they were completely sold out for one year! Likewise, there is also growing trend for micro-grid, localized grid that can disconnect from the traditional grid to operate autonomously. Back in the days, microgrids were mainly built for rural and isolated communities where it was very expensive to build the national grids. However, nowadays with advancement in transmission technology and renewable energy systems, it is increasingly becoming popular even in urban areas too, especially among schools, hospitals,



gated communities, fire departments and other emergency service areas. This shift in paradigm is redefining the concept of electric utility from being cheaper and centralised to reliable and decentralised. And Nepal, with all the constraints that have been hindering our power development sector, is definitely not going to stay immune from this paradigm shift.

Hence, it might be about time that the government think of bringing rules and regulations for urban Microgrids too.



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## Guest Corner

# US

Tesla powers a whole island with solar to show off its energy chops

-James Vincent

Tesla completed its \$2.6 billion acquisition of SolarCity this week, and, to celebrate, the company has announced a major solar energy project: wiring up the whole island of Ta'u in American Samoa. Previously, the island ran on diesel generators, but over the past year Tesla has installed a microgrid of solar energy panels and batteries that will supply "nearly 100 percent" of power needs for Ta'u's 600 residents.

The project seems intended to show off the potential benefits of the SolarCity acquisition, with Ta'u's microgrid comprised of 5,328 solar panels from SolarCity and Tesla, along with 60 Tesla Powerpacks batteries for storage. But buying SolarCity remains a risky move for Tesla, with the purchase including billions of dollars of debt for a company that's far from profitable (Solar City spends \$6 for every \$1 it makes in sales). Nevertheless, Tesla CEO Elon Musk describes the acquisition as "blindingly obvious" — a necessary step in his so-called "Master Plan" to integrate clean energy generation and storage.

The project in Ta'u shows the benefit of this. It was funded by American Samoan and US authorities (including the Department of Interior), and Tesla says it will offset the island's use of more than 109,500 gallons of diesel per year, as well as the expense of shipping that fuel in. (Confusingly, the "Factoring in the escalating cost of fuel, along with transporting such mass quantities to the small island, the financial impact is substantial," said Tesla in a blog post.



Source: SolarCity | YouTube

The microgrid will allow the island to stay fully powered for three days without sunlight, and its capacity will recharge fully in seven hours. Local businesses, along with essential services like the hospital, police, and fire stations, will all use solar power "This project will help lessen the carbon footprint of the world," local resident Keith Ahsoon said in a Tesla blog post. "Living on an island, you experience global warming firsthand. Beach erosions

and other noticeable changes are a part of life here. It's a serious problem, and this project will hopefully set a good example for everyone else to follow."

( The article is available at the link: <http://www.cnbc.com/2016/11/22/tesla-powers-a-whole-island-with-solar-to-show-off-its-energy-chops.html> published on November 22, 2016.

# CANADA

Canada speeds up transition to clean energy while Trump sees a future for fossil fuels

- AnmarFrangoul

The government of Canada has announced that it is to accelerate its investments in clean energy while, in the U.S., President-elect Donald Trump has backed cutting red tape for fossil fuels.

On Monday Catherine McKenna, Canada's minister for environment and climate change, said that the country would speed up the transition from traditional coal power to clean energy by 2030.

In a news release, the Canadian government said the acceleration of a coal power phase-out would improve air quality and the health of Canadians.

Canada is already home to regulations that, according to its government, "apply performance standard to new coal-fired electricity-generation units and to units that have reached the end of their useful life."

'End of useful' life is usually seen as 50 years of operation after a unit was commissioned, the government says. If nothing had changed, some of these units may have continued to operate "for decades to come."

The amendments announced on Monday, however, will seek to make sure that all traditional coal-fired units will have to meet a "stringent performance standard of 420 tonnes of carbon dioxide per gigawatt hour... by no later than 2030."

This, the government says, would speed-up the phase-out of traditional coal-fired units – those which don't use carbon capture and storage – in Canada.

"Taking traditional coal power out of our energy mix and replacing it with cleaner technologies will significantly reduce our greenhouse gas emissions, improve the health of Canadians, and benefit generations for years to come," McKenna said in a news release. "It sends a clear signal to the world that Canada is a great place to invest in clean energy."



bobloblaw | iStock | Getty Images



The Canadian government said this transition to greener sources would be supported by using the Canada Infrastructure Bank to "finance projects such as commercially viable clean energy and modern electricity systems between provinces and territories."

In a speech on Monday, McKenna further added that "the action announced today will reduce Canada's greenhouse gas emissions by more than five megatonnes by 2030. This is the equivalent of taking 1.3 million cars off the road."

Canada's move came on the same day that U.S. President-elect Donald Trump said he had asked his transition team to "develop a list of executive actions we can take on day one to restore our laws and bring back our jobs."

Among other things, Trump said he would "cancel job-killing restrictions on the production of American energy, including shale energy and clean coal, creating many millions of high paying jobs."

(The article is available at the link: <http://www.cnbc.com/2016/11/22/canada-moves-to-clean-energy-trump-sees-a-future-for-fossil-fuels.html> published on November 22, 2016.)

## Welcoming New Member



"United Modi Hydropower Ltd. ("UMH" or the "Company") is a public limited company incorporated in Nepal under the companies act, 2063. The registered office of the company is at Kathmandu and its site office is located at Kushma, Parbat.

Its principal business is to generate hydroelectricity & sell it to Nepal Electricity Authority. It owns & operates the Lower Modi-1 Hydropower Project, with installed capacity 10 MW. The project is located at the Modi River in Parbat District. The construction of the project had been completed & the commercial production had started since Mangsir 09, 2069 (23 Nov, 2012). In addition to this, the company is developing Lower Modi- 2 Hydropower Project (10.5 MW), the cascade project of the earlier one."







S&S has been actively engaged into import, sales, service, site survey and installation of renewable energy products with a great emphasis in solar. S&S has been actively engaged into import, sales, service, site survey and installation of renewable energy products with a great emphasis in solar energy. At this initial phase, we focus on providing turn-key solutions for off-grid solar applications where national grids are not available, not desired, or just too expensive to bring in.

## List of EDC members

S. No.	Name of the Organization	Organization logo
1.	Nepal Electricity Authority	
2.	Alternative Energy Promotion Center	
3.	Chilime Hydropower Company Ltd.	
4.	Madhya Bhotekoshi Jalvidyut Company Ltd.	
5.	Rasuwagadhi Hydropower Company Ltd.	
6.	Sanjen Jalavidhyut Co. Ltd.	




S. No.	Name of the Organization	Organization logo
7.	Butwal Power Company Ltd.	
8.	Hydroelectricity Investment and Development Company Ltd.	
9.	IDS Energy Pvt. Ltd.	
10.	Arun Valley Hydropower Development Co. Ltd	
11.	Dantakali Hydropower Pvt. Ltd.	
12.	Reliable Hydropower Pvt. Ltd.	
13.	Himalayan Infrastructure Fund	
14.	Sanvi Energy Pvt. Ltd.	
15.	Dibyashwari Hydropower Ltd.	
16.	Shiva Shree Hydropower Co. Ltd	
17.	Chhyandi Hydropower Ltd	
18.	SaraUrja Nepal	
19.	Rara Hydropower Development Co. P. Ltd	

S. No	Name of the Organization	Organization logo
20.	Wind Power Nepal	
21.	Gham Power Pvt. Ltd.	
22.	Lotus Energy Pvt. Ltd.	
23.	Sun Farmer Nepal Pvt. Ltd	

S.No	Name of the organization	Organization logo
30.	Transweld Pvt. Ltd.	
31.	TSN Energy Pvt. Ltd.	
32.	WaibaInfratech Pvt. Ltd.	
33.	North Hydro & Engineering Pvt. Ltd	
34.	Nepal Hydro & Electric Ltd.	
35.	Nepal Hydropower Association	

S. No	Name of the Organization	Organization logo
24.	CEDB Hydro Fund	
25.	Nabil Bank Limited	
26.	NMB Bank Limited	
27.	Global IME Bank Limited	
28.	Prime Commercial Bank Ltd.	
29.	Century Bank Limited	

S.No.	Name of the Organization	Organization logo
36.	National Association of Community Electricity Users Nepal	
37.	Dudhkoshi Power Pvt. Co. Ltd	
38.	ICTC Energy Pvt. Ltd	
39.	High Himalayan Hydro Construction Pvt. Ltd	
40.	Himalayan Bank	
41.	Ankhukhola Hydropower Pvt Ltd	

42.	Comtronics Pvt.Ltd	
43.	United Modi Hydropower	
44.	Source and Solutions Private Limited	



ENERGY  
DEVELOPMENT COUNCIL

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