ENERGY DEVELOPMENT COUNCIL

ENERGY COMMUNIQUE

Issue 30 | April 2017

EDITORIAL

Dear Reader,

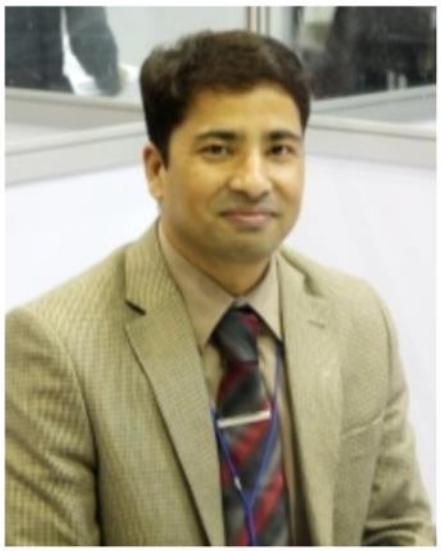
There was time when people used to be comfortable using diesel and petrol generators as if it is their original right to emit carbon. When someone talks about an alternative solution, the user used to boast on diesel/ petrol generators. Story is different these days however burning fossil fuels should not be an alternative to electricity production in a country like ours at any cost.

The burning of fossil fuels produces around several Giga tons of carbon dioxide per year, and natural processes can only absorb about half of that amount, so there is a significant increase of billion tons of atmospheric carbon dioxide per year.

One ton of carbon is equivalent to: MWCO2 /MWC = 44/12 = 3.7 tons of carbon dioxide.

Electricity production with fossil fuels and transportation fuels account a large part of total carbon dioxide emissions. Therefore, targeting electricity generation and transportation fuels will address about 70% of the carbon dioxide emissions. For example, the use of renewable energy for electricity generation does not cause additional carbon dioxide emissions, and is sustainable into the future. The major challenges with greatly expanded use of renewables are the cost, intermittency of supply, and distance between the resources and the end use.

Some possible renewable energy sources are concentrating solar power, geothermal electric plants, wind power, distributed rooftop photovoltaic, and solar hot water heaters. Hybrid elec-



Mr. Purna Bahadur Pariyar

CEO, Source And Solution Pvt. Ltd

An EDC Member Organization

INSIDE THIS ISSUE

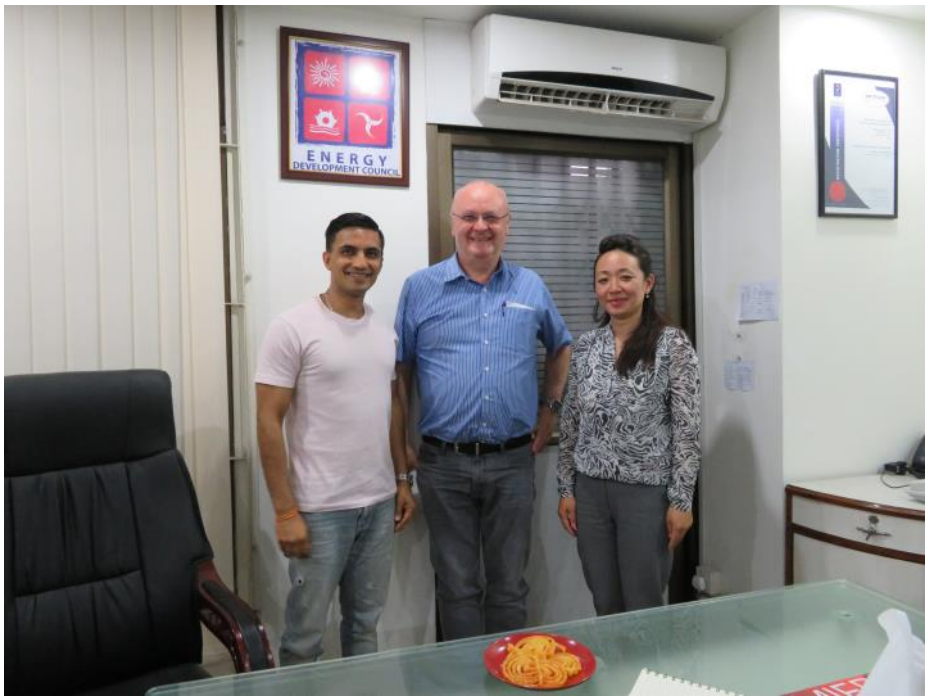
tric vehicles represent an important advance. An electric vehicle can cover a distance of about 200 to 250 Kms and if it can be plugged into the grid to be recharged, it is possible to greatly reduce the amount of fuel the vehicle uses. Using E85 (85% and 15% blend of ethanol and gasoline, respectively) may help reducing carbon dioxide emission. Ethanol can be obtained from sugar mills.

Each generation has its own crisis, in which people are gravely affected. Some generations have wars or famine, however my generation will certainly have both if our energy crisis is not addressed. Our reliance on fossil fuels has become an addiction. We enjoy many luxuries such as air conditioning, television, and the ability to surf the web or make a call across the country. All of these luxuries are telling of the modernized society we live in, but sadly in times where energy is scarce, we are hardest hit. It would be hard to believe that the generation following the greatest rise in human ingenuity could be blind to such an issue. Our fossil fuel energy resources are limited and many scientists say the expiration date is within our lifetime. We need to better understand the basic principles of energy and its usage so that we can make better choices and change the direction we are currently heading.

New and emerging renewable energy technologies are still under development. Renewable energy generally gets cheaper in the long term, while fossil fuels generally get more expensive. Fossil fuel technologies are more mature, while renewable energy technologies are being rapidly improved to increase the efficiency of renewable energy and reduce its cost. In rural and remote areas, transmission and distribution of energy generated from fossil fuels can be difficult and expensive; therefore producing renewable energy locally can offer a viable alternative.■

ACTIVITIES

Visit by Mr. Tom Solberg, MD of ICH at EDC



On 3rd April, 2017 Mr. Tom Solberg , MD of International Centre for Hydropower, Norway visited EDC Office. The meeting was about the interest of ICH in having a training session on the upcoming Nepal Power Investment Summit to be organized by EDC scheduled to be on November 2017.■

Call for Participation at the Energy Storage Conference

The 6th Annual Energy Storage Conference and Expo going to held on Beijing, China from May 22-24th, 2017 organized by CNESA (China Energy Storage Alliance), EDC's partner organization has extended an invitation to Ms. Itnuma Subba, Executive Manager of EDC to participate at the event.■

Meeting with Prof. Dr. Jibaraj Pokharel, Vice-Chancellor of NAST

EDC visited Nepal Academy of Science and Technology on 7th April, 2017.

The meeting with Prof. Pokharel was about the possible collaboration between the two organization in specific research areas and exploring the interconnection and the market viability of NAST's innovation.■

NEPAL'S SCENARIO

MoE approval paves way for new rates for PRoR, storage projects

Developers of peaking run-of-the-river and reservoir projects will soon get new power purchase agreement rates from Nepal Electricity Authority as the Ministry of Energy has endorsed the recommendation of a sub-committee formed by the NEA board to study the financial impact on NEA while implementing the new tariff.

The MoE approval has paved the way for the NEA board to decide on new rates, after which generators of reservoir projects can sell per unit electricity at Rs 12.40 during dry season (from December to May) and at Rs 7.10 during wet season (from June to November).
For PRoR projects, the rates have been set at Rs 10.55 and Rs 4.80 per unit for dry and wet seasons respectively. Currently, NEA has been offering Rs 8.40 and Rs 4.80 per unit for the dry and wet seasons respectively to RoR projects.

In January this year, the MoE had proposed these aforementioned rates for PRoR and reservoir projects and also extended the dry season period from four to six months.

However, the sub-committee formed by the NEA board has floated a few recommendations on implementation of new rates. The NEA board has sought consent from the MoE before taking any decision on the subcommittee's recommendations.

The sub-committee led by board member Chet Raj Joshi set a standard for PRoR projects to provide a level playing field so that all the projects could operate in full capacity even if it was only for an hour during peak load time. The sub-committee recommended the peaking rate for such projects by calculating the standard tariff fixed for PRoR projects of six hours worth Rs 10.55 per unit.

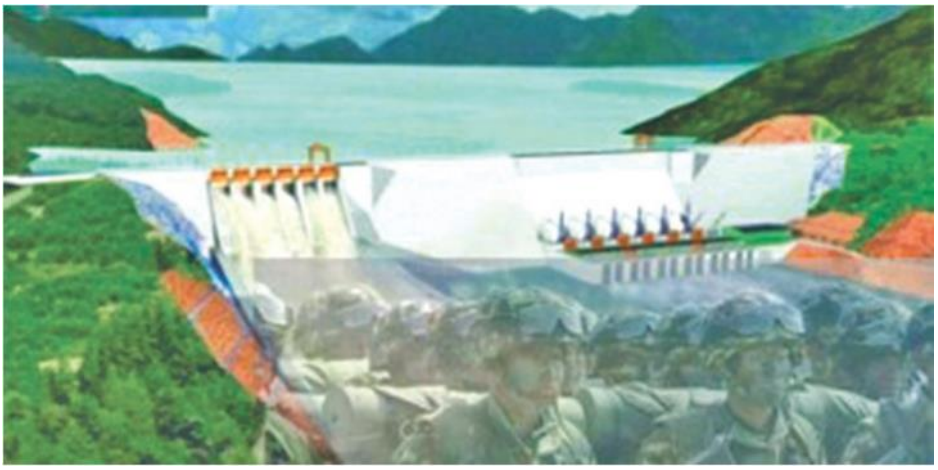
"This means projects operating in full capacity during peak hour in dry season will also get reasonable rates for the electricity they produce," said Power Trade Department Chief of NEA Prabal Adhikari, who is also spokesperson for the NEA.

As the MoE has instructed NEA to expand the dry season from four to six months (from December to May), it has also sought 30 per cent of total energy production in the dry season. To meet this provision, power plants need to operate in full capacity for a longer period and developers have to lower the capacity of the project to meet the energy demand during dry season.

The sub-committee, however, has recommended that the earlier provision of a four-month dry season (mid-December to mid-April) and 15 per cent energy requirement during dry season should not be scrapped. It has also said both options should be provided to developers. Most importantly, the sole power off-taker has sought timely revision of electricity tariff for consumers as it is hindering implementation of the new tariff structure for generators.■

Source: https://thehimalayantimes.com/business/ministry-of-energy-approval-paves-way-new-rates-peaking-run-of-the-river-storage-projects/

Army gets green light to build hydropower project



The Nepal Army will be diversifying into the hydropower sector following the go-ahead from the Energy Ministry to own and build its first plant.

The ministry has approved the Nepal Army's proposal to build the 32 MW Bhimdang Khola Hydropower Project in Manang district. This is the first instance of the defence force being engaged in exploiting the country's hydropower potential.

The ministry had written to the Defence Ministry more than a month ago saying that it had no problems letting the army build a hydropower project.

The Department of Electricity Development (DoED) had received the Nepal Army's proposal to build the 25 MW Dudh Khola and 32 MW Bhimdang Khola projects through the Defence Ministry.

Both schemes are located in Manang district in north central Nepal. The DoED had chosen the Bhimdang Khola project for the army and forwarded the proposal with its recommendation to the Energy Ministry.

However, the ministry is yet to hear from the army or the Defence Ministry. "It has been more than a month since we decided to allow the army to build the project, but we haven't got any reply from them," said Dinesh Kumar Ghimire, spokesperson for the Energy Ministry.
"We are expecting to receive details from them regarding the modality under which they will build the project."

The Energy Ministry has approved the Nepal Army's proposal to build the 32 MW Bhimdang Khola Hydropower Project in Manang district

The army, according to Ghimire, can either build the project by forming a separate company or its engineering directorate can do it. In both cases, the Defence Ministry has to get the Cabinet's approval. "If the army decides to form a company, it can apply for a licence with the DoED," said Ghimire. "If it wishes to develop the project directly under its engineering directorate, the directorate can apply for the permit."
The Cabinet, however, will also have to decide the modality under which the project will be given to the army. The government will have to clarify if the army can promote the project and own it.

Likewise, it should state clearly how long the project will remain in the army's possession. When private companies construct hydropower projects, they have to transfer ownership to the government after 30 years.
The Cabinet should also clarify the role of the Nepal Electricity Authority (NEA) when purchasing power from the army as it is the sole buyer in the country.

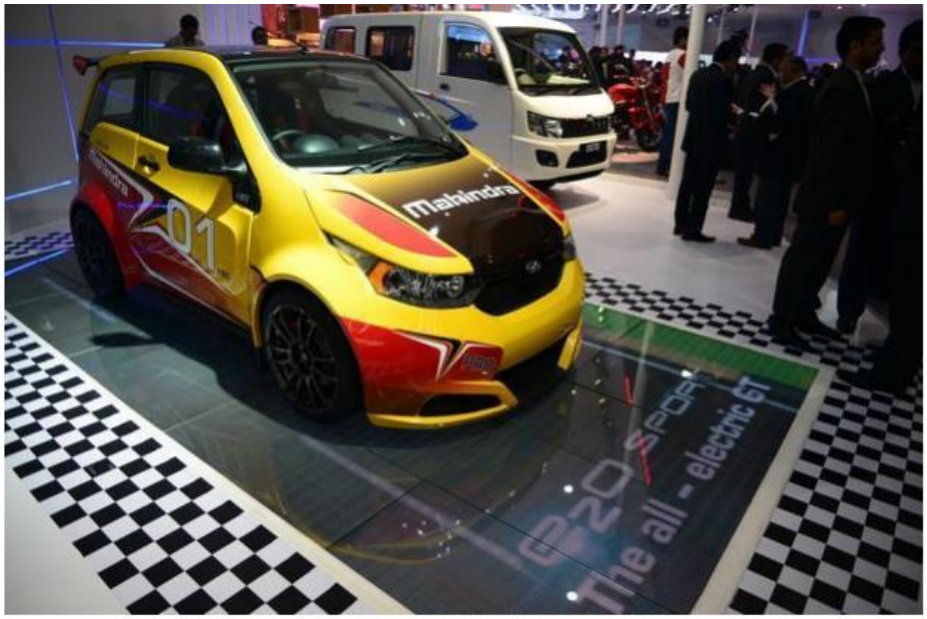
The government has frequently assigned the Nepal Army to build parts of infrastructure projects, especially roads; but it has never awarded an entire project to the military. It was the Nepal Army that opened the track of the much touted Kathmandu-Tarai fast track.

Also, recently, an army team was deployed to repair the Upper Trishuli 3A Hydropower Project that has lain non-operational since being damaged by the 2015 Gorkha Earthquake. The squad will repair the access road and build protection on either side of the dam of the 60 MW project.■

Source: http://kathmandupost.ekantipur.com/news/2017-04-29/army-gets-green-light-to-build-hydropower-project.html

GLOBAL PERSPECTIVE

India eyes all-electric car fleet by 2030, says Piyush Goyal



Goyal is of the view that initially the government can handhold the electric vehicle industry for 2-3 years to help it stabilise. Photo: Ramesh Pathania/Mint

Power minister Piyush Goyal says India is looking to have all-electric car fleet by 2030. The idea is not a single petrol or diesel car should be sold in the country.

New Delhi: India is looking at having an all-electric car fleet by 2030 with an express objective of lowering the fuel import bill and running cost of vehicles. "We are going to introduce electric vehicles in a very big way. We are going to make electric vehicles self- sufficient like Unnat Jyoti by Affordable LEDs for All (UJALA). The idea is that by 2030, not a single petrol or diesel car should be sold in the country," power minister Piyush Goyal said while addressing the CII Annual Session 2017 in New Delhi on Saturday.

Goyal is of the view that initially the government can handhold the electric vehicle industry for 2 -3 years to help it stabilise. Citing the example of Maruti, which has logged over 30% profit this time, he explained that the government had supported India's largest car maker initially, which eventually led to development of the big automotive industry in the country.

Goyal said that the ministry of heavy industries and the NITI Aayog are working on a policy for promotion of electric vehicles. The minister pointed to the cost factor, saying people would like to buy electric vehicle when they find it cost effective. About off-shore wind projects, Goyal said these are more like an R&D project. The minister suggested that big public sector undertakings (PSUs), including NTPC, can initially invest in such projects that will lead to development of this segment in coming years.

Goyal said that in the last 3 years, India's energy consumption has grown by about 6.5% compounded annual growth rate (CAGR), more than the figure for the last 10 years. He said, "Through UJALA, the LED distribution programme, we have already seen about 500 million LED bulbs sold in the last two years. My job is to improve India's energy efficiency to reduce consumption wherever it is wasteful and ensure that demand is met fully."
He made a point that Ujwal DISCOM Assurance Yojana (UDAY) has not been just about financial re-engineering but financial discipline. The UDAY scheme is meant for revival of debt stressed discoms. ■

Source: http://www.livemint.com/Industry/JvyUPmrumUS832KL5BKzhN/India-eyes-allelectric-car-fleet-by-2030-says-Piyush-Goyal.html

China continues to lead global wind energy market, says new report

David McNew | Getty Images

Over 54 gigawatts (GW) of wind power were installed in 2016 and cumulative capacity grew by more than 12 percent to hit 486.8 GW, according to a new report from global trade association, the Global Wind Energy Council (GWEC).

Released on Tuesday, the GWEC's Global Wind Report: Annual Market Update forecasts nearly 60 GW of wind installations this year, with cumulative installed capacity seen reaching more than 800 GW by the end of 2021.

The GWEC said that Asia would lead growth, with China – which installed 23 GW in 2016 – leading all markets. The report further outlined that the 2016 market had not met expectations set by the GWEC in early 2016. This was due to several reasons, including China installing "only" 23 GW in 2016 and smaller-than-expected markets in Mexico, Brazil, Canada and Africa. The majority of these issues were seen as cyclical, the GWEC said, and it expected the market to pick up this year.

"Wind power is now successfully competing with heavily subsidized incumbents across the globe, building new industries, creating hundreds of thousands of jobs and leading the way towards a clean energy future," Steve Sawyer, GWEC secretary general, said in a statement.

"We are well into a period of disruptive change, moving away from power systems centered on a few large, polluting plants towards markets increasingly dominated by a range of widely distributed renewable energy sources," Sawyer added.

Wind energy is becoming an increasingly important source of power, with the International Energy Agency stating it is "developing towards a mainstream, competitive and reliable power technology."

Looking forward, the GWEC said that Africa was set to have a "big year in 2017" while the Australian market was due to "come roaring back with a pipeline of projects" to be built over the coming years.

"Overall, we have a lot of confidence in the wind power market going forward, as the technology continues to improve, prices continue to go down and the call for clean, renewable power to reduce emissions, clean our air and create new jobs and new industries only gets stronger with each passing year," Sawyer added.■

Source: http://www.cnbc.com/2017/04/26/china-continues-to-lead-global-wind-energy-market-says-new-report.html

Honda introduces two new 'green' cars that are joining its lineup

Andrew Harrer | Bloomberg | Getty Images

A Honda Motors' Clarity fuel cell vehicle sits on display after being unveiled during the 2017 New York International Auto Show (NYIAS) in New York, on Wednesday, April 12, 2017.

Honda unveiled two new additions to its Clarity lineup at the New York Auto Show Wednesday, in a bid to offer drivers more alternatives to gas-powered cars. The vehicles are variations of the original Honda Clarity, a hydrogen fuel cell car the automaker first introduced in December.

Steve Center, a Honda vice president, said the company still sees hydrogen as the best long-term bet to balance environmental concerns with customers' needs.

Yet because the infrastructure required for its wide adoption is not yet in place, the company will also offer plug-in hybrid and fully electric versions of the car.

The full-electric version has an 80-mile range and can be recharged in three hours on a 240-volt outlet. It charges 80 percent in 30 minutes on a direct-current fast connection. It will primarily be aimed at commuters, Center said.

The hybrid charges on a 240-volt connection in about two and a half hours, and can go about 330 miles on a full tank and battery. Being a hybrid, it will offer drivers greater flexibility in fuel choices.

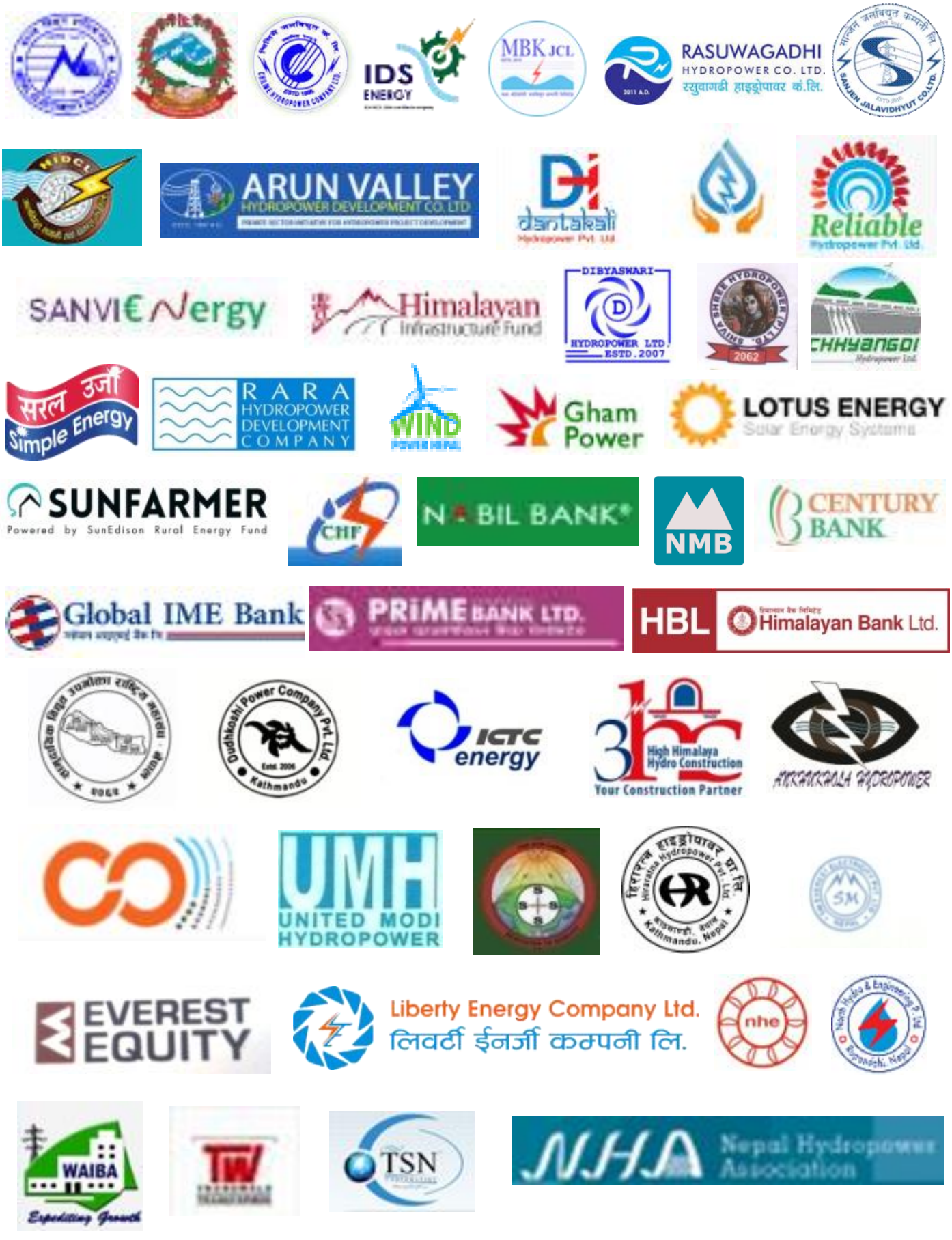
Honda expects to sell a combined 75,000 Clarity models in the first four model years. That would contribute to its larger goal of making two-thirds of its vehicles sold globally electric by 2030.

The fuel cell version is expected to the smallest contributor in the short term and is now "for the true believer," Center said.

Despite boasting a range of 366 miles — the highest of any zero-emission vehicle in America — only about 100 of the hydrogen fuel cars are on the road, according to Honda.

Source: http://www.cnbc.com/2017/04/12/honda-introduces-two-new-green-cars-that-are-joining-its-lineup.html

MEMBERS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nhe
WAIBA Expediting Growth
TSN
NHA Nepal Hydropower Association

PARTNERSHIP

Investment Board of Nepal
Government of Nepal

Energy Development Council (EDC) is a non-profit umbrella organisation of the entire energy sector of Nepal established to ensure every Nepali has access to energy and energy security by promoting favourable policies and investments. EDC consists of Energy Developers, Energy Associations, Energy Consumers, Energy Financiers and other funds, Consumer Institutions, Energy Contractors from both private and government sectors involved in hydropower, solar, wind and other renewables, generating more than 80 percent of the nation's total electricity.

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