ENERGY DEVELOPMENT COUNCIL

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Editorial

Dear Reader,

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In 2010, United Nations came up with the goal of providing sustainable energy for all (SE4All) by 2030. The goal has three objectives which are ensuring universal access to modern energy services, doubling the share of renewable energy in global energy mix and doubling the rate of improvement in energy efficiency. Ensuring access to affordable, reliable, sustainable and modern clean energy for all is also the part of Sustainable Development Goal (SDG) set by UN. To realize this huge task, apart from formulating coherent policies, building the capacity of institutions and mobilizing qualified human resources, mobilization of investment in affordable and clean energy is one of the most challenging one.

As estimated by many experts, in order to achieve SDG and SE4All targets, over US$1 trillion annual investment from both the public and private sectors during the period of 2010-2030 is needed. As per the objective set, the required investment globally is about US$ 50 billion per year on access to modern energy, US$650 billion annually for promotion of renewable energy and US$560 billion annually for energy efficiency improvement.

Nepal's energy scenario is very pathetic and supply is vulnerable. Broadly seen, problem is created due to insufficient commitment and ownership, no clear mandate for organizations involved, poor coordination among ministries, inadequate commercialization of renewable energy solutions, etc. Access to modern energy desperately needed for Nepal as reliable and adequate energy supply is required to stimulate sustained economic growth and energize rural areas for country's overall socio-economic development as Nepal is envisioning to be the middle income country by 2030.

Apart from that Nepal's energy security is vulnerable as we cannot still ensure our people a continuous quality energy supply. We have challenges for reducing dependency on single energy source by diversifying sources, increasing renewable energy share in national energy mix and scaling it up as we are endowed with abundant renewable energy resources like hydro, solar, wind, and biomass. Increasing energy efficiency by using efficient technology and changing the behavior of energy use should also be the part of our energy strategy.

Looking at the investment requirement, private sector has a key role to play in delivering the set results. Mobilizing investment through governmental institutions alone cannot address the energy challenges. Such scale of investment can only be mobilized by promoting private sectors' participation which demands a mix of various types of coherent policies and financial incentives to create enabling environment. Government must give priority and be innovative in setting rules and creating a facilitating mechanism so that existing bottlenecks and hurdles like land acquisition, forest clearances, etc. can be addressed.

By introducing proper financing mechanism and commercial business model for the sector will attract more private investment. Innovative governance and capacity building measures in the sector targeting investment will be key to meeting the goals. A public-private partnership approach can also build the confidence of private sector in the large energy projects. Country needs collaboration with the private sectors to deliver these developmental goals of energy access in a defined period of time.

In this Issue

EDC Activities

EDC Chairperson Mr. Sujit Acharya on Investment For Change

Chairperson of Energy Development Council Mr. Sujit Acharya had an active participation on Interaction with five Nepali Young Entrepreneur on Changing Nepal's Business Climate On Newbiz Conclave and Business Excellence Awards Ceremony 2016 organized by New Business Age which was held on August 19, 2016 at Hotel Soltee Crown Plaza.

Interview with Mr. Dije Shrestha, Manager, ICTC Energy

1) Please tell us about your organization?

Upper Solu Hydro Electric Company (USHEC) is a venture of ICTC Energy Pvt. Ltd. It is currently executing two hydropower projects both in Solukhumbu District of Nepal. The first project is 23.5 MW Solu Hydroelectric Project and the second is 2.8 MW Sisa Khola "A" Hydroelectric Project. The survey license for Solu HEP was obtained through a competitive bidding process of the Government of Nepal inthe year 2010 and SisaKhola "A"HEPProject was identified by USHEC and applied directly through the standard application process.

2)Can you elaborate on the key current activities or projects that your Company is executing?

23.5 MW Solu HEP has completed all studies including (feasibility study of the project was carried out by DoED) detailed project report (DPR), detailed engineering design and all related environmental studies. It has also already obtained generation license and concluded Power Purchase Agreement with NEA, financial closure with consortium of local banks &financial institutions, completed selection of all contractors and construction of the project is currently ongoing. Sisa Khola "A" HEP on the other hand has completed all studies and is in process of obtaining Generation License and conclusion of Power Purchase Agreement with NEA.

We are currently more focused on streamlining the development of Solu HEP. In spite of disturbances and turmoil caused by the April 2015 earthquake and the border/customs blockade, the project has already made around 30% progress in construction.

2) What are the major challenges you have been facing during execution of your project?

It is inevitable that once a country faces up to 17 hours of load shedding a day, there is going to be an environment of panic and haphazard reactions towards the development of its energy resources. A sector that requires massive coordination and cooperation efforts from multiple government & private sector organizations as well as many parts of civil society cannot evolve smoothly through unplanned and uncoordinated policies, decisions, priorities and actions.

In a very broad sense, this lack of proper planning and coordination has been the underlying cause of problems in the energy sector in Nepal. This was the reason we faced an energy crisis in the first place and it is the reason we continue to face a number of challenges during the development of hydropower projects and transmission lines.
Solu HEP for example, was an initiative of the Government of Nepal itself. It is a project that was obtained by us through the upmost transparent and openly competitive bidding process. A qualification criteria filtered out capable developers from others, a bidding process whereby the highest bidder gets the project meant only serious developers as opposed to "*jhola ma khola*" ones would be interested and a requirement for a performance guarantee unlike in any other project would further mean only capable and serious parties would show interest.
The Government on the other hand reciprocated the commitment shown by developers by providing its own commitments mainly in the form of ensuring power purchase through NEA and construction of trunk transmission lines for evacuation of power to the National Grid. While this was a great initiative by the Government, it took us around 3 years pursuing the PPA from the Government's own power utility due to confusions and issues that should

have been discussed thoroughly and coordinated between the government and NEA before inviting the competition for bids itself.

Similarly, as of date, the actual construction of the trunk transmission line has not started although it has been clear to everyone since 2009 that the line would be required. Unfortunately, this is not an issue over which we have direct control and authority. Executing public sector infrastructure projects(especially transmission line)in Nepal has it's own magnitude of problems and complications.

Besides these, we have faced only regular challenges of developing hdyro projects that we had expected and prepared for.

3) How do you propose such issues can be resolved? Can you also suggest the key changes you think will help take the energy sector forward?

There have been river basin planning and studies conducted by the government in the past. An ideal situation would have been one where developing transmission lines and issuing survey/generation licenses would have been based on these plans and in close coordination with important stakeholders like NEA. This would have given a clear picture regarding which transmission lines are to be developed when and subsequently which projects are to be developed based on those lines, either by the government or the private sector.

However, as mentioned before, in a situation where everyone is trying to contribute through uncoordinated efforts, solving immediate problems with ad-hoc solutions, it is difficult to suggest practical ideas that will address the fundamental issues. While the country does need more electricity as soon as possible, it may be more effective insteadto take a step back to reflect on our overall approach and make a better plan and strategy at a national level before moving ahead.

There is obviously a lack of sync between hydropower development and the development of transmission lines in the country as a whole. NEA obviously has its limitations and the government should take this into consideration before encouraging unlimited private sector participation. There should be more effective planning and coordination between government authorities like Ministry of Energy, Department of Electricity Development and NEA so thatthere is a common plan being executed by all these organizations. This will make the hydropower development strategy of the country clear to everyone. Once strategies and policies on power purchase and transmission lines are clear and predictable, serious developers can focus on the main challenge of completing projects on time and within cost.

Interaction Program with Honorable Minister of Environment

Environment Minister calls for a written proposal from EDC to implement its plans to end load shedding and get rid of imported fossil fuels in Nepal.

Meeting with H.E. Ambassador of Brazil

EDC visits H.E. Maria Teresa Mesquita Pessoa, Ambassador of Brazil. Present political instability of the nation and how to become less dependent on imported fossil fuel with the efficient use of available natural resources were the major topic for discussion on the session.

Media Coverage

विद्युतीय प्रविधिको विकास : लिखित प्रस्ताव ल्याउन मन्त्रीको आग्रह

- दुर्गा लामिछाने

भदौ १४, काठमाडौं । विद्युतीय प्रविधिको विकासका क्षेत्रमा काम गर्न 'डकुमेण्ट' आवश्यक भएकाले लिखित प्रस्ताव ल्याउन जनसङ्ख्या तथा वातावरण मन्त्री जयदेव जोशीले आग्रह गरेका छन् । ऊर्जा विकास परिषदद्वारा मङ्गलवार यहाँ आयोजित स्वागत तथा परिचयात्मक कार्यक्रममा उठाइएका मागहरूलाई सम्बोधन गर्ने क्रममा उनले यस्तो आग्रह गरेका हुन् ।

कार्यक्रममा मन्त्रीसमक्ष प्रमुख तीन माग÷सुझाव प्रस्तुत गरिएका थिए । तिनमा अर्बान माइक्रो ग्रीडको व्यवस्था गर्ने विषयलाई प्रमुखताका साथ उठाइएको थियो । सौर्य ऊर्जा प्रविधि र विद्युत्को प्रयोगबाट न्यूनतम विद्युत् खपतमा अधिकतम मात्रामा ऊर्जाको मागलाई पूर्ति गर्न सो प्रविधिले मद्दत पुर्‍याउने कार्यक्रममा बताइएको थियो । त्यसैगरी दोस्रोमा, विद्युतीय सवारीसाधन चार्जिङ पोइण्टको व्यवस्था गर्न सुझाव दिइएको थियो । इन्धन खपतलाई घटाउन मद्दत पु¥याउने विद्युतीय सवारीसाधन चार्ज गर्ने स्थानको अभाव रहेकाले त्यसका लागि सरकारले निश्चित ठाउँको व्यवस्था गर्नुपर्ने माग पनि कार्यक्रममा राखिएको थियो ।

त्यसैगरी परिषद्लाई वैकल्पिक ऊर्जा प्रवद्र्धन केन्द्रको बोर्डमा सदस्यता दिन पनि मन्त्रीसमक्ष आग्रह गरिएको थियो । सोका आधारमा केन्द्रमा हुने ऊर्जा प्रवद्र्धनसम्बन्धी छलफलहरूमा सम्बन्धित क्षेत्रका व्यक्तिहरूलाई सहभागी गराई समस्या समाधानमा सहायक हुन सकियोस् भन्ने उद्देश्य रहेको परिषद्का अध्यक्ष सुजित आचार्यले बताए । हाल परिषद्मा वैकल्पिक ऊर्जा प्रवद्र्धनमा सक्रिय ४१ ओटा सङ्घसंस्था आबद्ध छन् । लोडशेडिङको मार खेपिरहेको वर्तमान समयमा वैकल्पिक ऊर्जाका माध्यमबाट जीवनलाई सहज बनाउने कार्यमा यी कुरा आवश्यक रहेको आचार्यको जोड थियो । अर्बान माइक्रो ग्रीडका बारेमा बोल्दै उनले आफूहरूले ललितपुरको भैंसेपाटीमा सय किलोवाटको प्यानल तयार गरी केही घरमा सोलार, ब्याट्री तथा मिटरसहित उदाहरण शुरू गरिसकेको जानकारी दिए ।

कार्यक्रममा ६ लाख घर रहेको काठमाडौंमा जलविद्युत्को हालको अवस्थाले धान्न नसक्ने हुँदा वैकल्पिक ऊर्जा राम्रो स्रोत हुने बताइएको थियो । परिषद्का कार्यकारी सदस्य एवम् वायु ऊर्जा नेपालका अध्यक्ष कुशल गुरुङले वायु नेपालको ऊर्जाको राम्रो विकल्प रहेको बताए । ऊर्जा सुरक्षा ऊर्जा विकास परिषद्को मूल चासोको विषय रहेको कार्यक्रममा बताइएको थियो ।

The news is available at the link: ***http://www.abhiyan.com.np/new/Articles/view/84196*** published on 31st August, 2016.

युवा उद्यमी भन्छन् : नेपालमा लगानीको प्रशस्त अवसर

-शकुन्तला जोशी

भदौ ४, काठमाडौं । सरकारले लगानीमैत्री वातावरण बनाई दिने हो भने नेपालमा लगानीको प्रशस्त अवसर रहेको युवा उद्यमीहरूले बताएका छन् । व्यवसायमैत्री ऐन, नियम जारी गर्न तथा स्थायित्वको प्रत्याभूति दिन सरकारले छिटो कदम चाल्नुपर्ने उनीहरूको भनाइ थियो । न्यू बिजनेश एज प्रालिले राजधानीमा आयोजना गरेको 'तेस्रो न्यूबिज बिजनेश कनक्लेभ तथा अवार्ड' कार्यक्रमको प्यानल डिस्कसनमा सहभागी युवा उद्यमीहरूले उक्त कुरा बताएका हुन् । यो छलफल कार्यक्रम न्यू बिजनेश एज प्रालिका अध्यक्ष मदन लम्सालले सञ्चालन गरेका थिए । सहभागीहरूले अहिलेसम्म राजनीतिक परिवर्तनहरू धेरै भए पनि आर्थिक विकासको मुद्दालाई गम्भीरतापूर्वक नलिँदा अर्थतन्त्र पछाडि परेको पनि उनीहरूको ठहर थियो ।

नेपाल उद्योग वाणिज्य महासङ्घका उपाध्यक्ष तथा गोल्छा अर्गनाइजेशनका कार्यकारी निर्देशक शेखर गोल्छाले रोजगारी सृजना, उत्पादनमूलक क्षेत्रको विकास गरी निर्यात प्रवद्र्धन र त्यसबाट व्यापारघाटा सन्तुलनमा ल्याउनु राज्यको दायित्व भएको बताए । तर, रोजगारी सृजना नभएपछि आयआर्जनका लागि विदेशिएका युवाबाट आएको रेमिट्यान्स (विप्रेषण)ले देश चलाउनु पर्दा पनि सरकार र नेतृत्वलाई कुनै फरक नपर्नु दुःखको कुरा भएको उनको भनाइ थियो । 'न त विप्रेषणबाट आएको पैसाले इन्धन आयात गर्नु परेकोमा नै कुनै चिन्ता छ । विप्रेषणबाटै प्रशस्त विदेशी मुद्रा सञ्चिति भइरहेकाले सरकार ढुक्कले बसेको छ,' उनले भने, 'तर, सरकारको सोच र कार्यशैलीमा अहिले नै परिवर्तन नहुने हो भने भविष्य निकै असुरक्षित छ ।'

नेपाल उद्योग परिसङ्घका उपाध्यक्ष तथा एमएडब्ल्यू इण्टरप्राइजेजका प्रबन्ध निर्देशक विष्णुकुमार अग्रवालले उच्च दरको आर्थिक वृद्धि प्राप्त गर्न भने उद्यमशीलता विकास र निजीक्षेत्रको लगानी अपरिहार्य भएको बताए । उनले भने, 'सरकारले यो बुझ्नु जरुरी छ कि सरकार एक्लैको लगानीले देशमा केही हुनेवाला छैन ।' हालै आएको सार्वजनिक निजी साझेदारी नीतिले पूर्वाधारमा निजीक्षेत्रको लगानी आकर्षित गर्न नाफालाई आधारभूत तŒवका रूपमा स्वीकार गरेको छ ।

सरकारले नाफालाई स्वस्थ प्रतिस्पर्धा र उद्यमशीलता विकासको औजारका रूपमा अङ्गीकार गरेको बुझ्न सकिने उनले बताए । उक्त नीतिले परिलक्षित विषयहरू प्रभावकारी रूपमा कार्यान्वयन भएमा नाफा र नाफाखोरीको प्रश्नै नरहने उनको भनाइ थियो । उद्यमीहरूलाई नाफाखोरीका रूपमा मात्र बुझ्ने गलत सोचलाई सरकारको उक्त नीतिगत व्यवस्थाले भत्काउनेमा उनले विश्वास व्यक्त गरे ।

सार्क योङ आन्त्रप्रेनरशिप फोरमका अध्यक्ष तथा ज्योति ग्रूप अफ कम्पनीजका निर्देशक सौरभ ज्योतिले नेपालको आर्थिक समृद्धिको महŒवपूर्ण आधार जलविद्युत् क्षेत्रमा ठूलो लगानी आकर्षित गर्ने वातावरण बनाउनुपर्ने बताए । जलविद्युत्मा

अत्यधिक ठूलो लगानी चाहिने आन्तरिक तथा बाह्य लगानी प्रवद्र्धन हुने खालको स्पष्ट कानूनी प्रावधानको आवश्यक रहेको पनि उनले औंल्याए । 'जलविद्युत् विकास राष्ट्रको मुख्य मुद्दा भए पनि व्यावहारिक रूपमा यस क्षेत्रका प्रवद्र्धकहरूले अहिले पनि विभिन्न प्रशासनिक, कानूनी तथा स्थानीय तहका झमेलाहरू बेहोर्दै आएका छन्,' ज्योतिले भने, 'जलविद्युत् वा अन्य कुनै पनि ठूला लगानी हुनुलाई समग्र राष्ट्रिय हितमा हो भन्ने धारणा माथिदेखि तलसम्म विकास हुनैपर्छ ।' त्यस्तै, जलविद्युत्को पीपीए दरमा सरकार र निजीक्षेत्रका कम्पनीहरूलाई दिइने दोहोरो नीति भएको र यस्ता गलत अभ्यासलाई सच्याइए मात्र जलविद्युत्मा लगानी आउँछ । उनका अनुसार लामो द्वन्द्व र राजनीतिक अस्थिरताले थिलथिलो भएको अवस्था पनि नेपाली उद्यमको क्षेत्र एउटा गतिमा अगाडि बढिरहेको छ । त्यसो हुनुमा अपवाद छाडेर पारदर्शी र स्वस्थ व्यावसायिक अभ्यास नै मुख्य आधार भएको उनले बताए । तर, सरकारकै कार्यशैलीमा देखिने द्वैध र अस्पष्ट कार्यशैली नै आर्थिक समुन्नतिको बाधक रहेको उनको भनाइ छ ।

गुणात्मक आर्थिक वृद्धि गर्न देशमा राजनीतिक स्थिरता र स्थायित्वको जरुरी छ । प्रजातान्त्रिक परिपाटीमा सरकार परिवर्तन भइरहनु जायज अभ्यास भए पनि नीतिगत स्थायित्व भने महत्वपूर्ण रहेको उनले सुझाए । साथै, जलविद्युत् क्षेत्रको तीव्र विकास गर्न लामो अवधिदेखि रिक्त रहेको स्थानीय निकायको निर्वाचन हुनु अत्यावश्यक रहेको पनि उनले बताए । अर्का प्यानलिष्ट सुधीर मित्तलले उद्योगी व्यवसायीलाई हेर्ने गलत धारणामा सुधार ल्याउनुपर्ने बताए । उनले भने, 'हामी आर्थिक रूपान्तरणको चरणमा छौं । त्यसले गर्दा सबैभन्दा पहिले निजीक्षेत्र, लगानी र मुनाफा आर्जनप्रतिको धारणामा परिवर्तन ल्याउनुपर्छ ।' त्यस्तै व्यापारघाटा सन्तुलनमा ल्याउन निर्यात प्रवद्र्धन गर्नु आवश्यक रहेको बताउँदै उनले नेपाली ब्राण्ड कायम हुने वस्तुको उत्पादनमा लाग्नुपर्ने बताए ।

इनर्जी डेभलपमेण्ट काउन्सिलका अध्यक्ष तथा आईडीएस इनर्जी प्रालिका संस्थापक सुजित आचार्य उद्यमशीलता र लगानी प्रवद्र्धन गर्न विद्यमान सोचमा परिवर्तन हुनुपर्ने कुरामा जोड दिन्छन् । भाडा र ब्याज मात्र खाने सोचबाट माथि नउठे आर्थिक समृद्धिको सपना पूरा नहुने उनको भनाइ छ । नेतृत्वको सोच भाडाबाट आउने आम्दानीमा आश्रित छ । 'ब्याज खाने, व्यापारबाट रातारात कमाउने, भन्सारको आम्दानी बटुलेर देश ढुकुटी चलाउने सोचले हामी ग्रसित छौं । उत्पादनमूलक क्षेत्रमा लगानी र काम गर्ने हाम्रो राष्ट्रिय सोच र योजना नै छैन,' उनले भने 'हाम्रो अहिलेसम्मको सोच आयातमुखी र केही मूल्य अभिवृद्धि गरेर व्यापार गर्ने आधारभन्दा माथि उठेको छैन । अनि कसरी आर्थिक समृद्धिको सपना देख्न सकिन्छ ?' राष्ट्रकै क्षमता अभिवृद्धि गर्ने गरी उत्पादनमूलक क्षेत्रमा लगानीको आवश्यकता रहेको उनको धारणा थियो ।

जलविद्युत्मा नेपाल दक्षिण एशियाकै सबैभन्दा आकर्षक गन्तव्य उदाउँदो बजार भएको आचार्यले बताए । उनका अनुसार यस क्षेत्रमा धेरै भेञ्चर क्यापिटल र लगानीकर्ता आएका छन् र आउने क्रममा पनि छन् । तर, सरकारमा बस्नेहरूसँग जलविद्युत्का लागि लगानी कसरी आकर्षित गर्ने ? भन्ने सोच तथा ठोस योजना बनाउने क्षमताको अभावमा अपेक्षित लगानी आउन सकिरहेको छैन ।

प्यानलको अध्यक्षता गरिरहेका न्यू बिजनेश एज प्रालिका प्रमुख कार्यकारी अधिकृत एवम् आर्थिक अभियानका प्रधान सम्पादक मदन लम्सालले वर्तमान पुस्ताका युवा उद्यमी नेतृत्व नेपालमा अझ लगानी गर्न प्रतिबद्ध देखिनुले उनीहरू नेपालको भविष्यप्रति सकारात्मक भएको देखाएको बताए । साथै नयाँ उद्यमीहरूले नयाँ आन्त्रप्रेनरलाई दिशानिर्देशका लागि आफैले पहल लिनु पनि अर्को महत्त्वपूर्ण पक्ष भएको उनको भनाइ थियो ।

This article is derived from the link:***http://www.abhiyan.com.np/new/articles/view/83650*** published on 21st August, 2016

काठमाडौँ, ०८ भदौ: इनर्जी डेभलपमेन्ट काउन्सिलको तर्फबाट कार्यकारी सदस्य श्री कुशल गुरुङ्ग तथा गान्सु न्याचुरल इनर्जी रिसर्च संस्था , युनीको इन्टरनेसनल सोलार इनर्जी सेन्टर फर टेक्नोलोजी प्रोमोशन एण्ड ट्रान्सफरका तर्फबाट प्रो. लि सिमिनले साउन ३२,२०७३ मा नविकरणीय उर्जा विकास, विस्तार तथा प्रवद्र्धनका लागि समझदारी पत्रमा गान्सु प्रोभिन्स चाइनामा हस्ताक्षर गर्नुभएको छ । आपसी समझदारीमा द्विपक्षिय हितको लागि कार्य गर्ने, आपसी समझदारीमा उच्चस्तरीय मिटिङ्ग गोष्ठि, कार्यक्रम, तथा आयोजना गर्ने, मिटिङ्ग, सम्मेलन, गोष्ठि तथा कार्यक्रममा एक अर्कालाई निमन्त्रणा दिनेमा साथै आवश्यकता हेरी सम्बन्ध विस्तारको लागि दुबै पक्षले एक अर्काको अधिकारिक छाप प्रयोग गर्न सकिने र दुबै पक्षले एक अर्कालाई स्वतन्त्र संस्थाको रुपमा सम्मान व्यक्त गर्ने समझदारी पत्रमा हस्ताक्षर गरिएको हो ।

इनर्जी डेभलपमेन्ट काउन्सील स्वदेशी उर्जा विकास र खपतका लागि देशका सरकारी निजी क्षेत्र गैरसरकारी र विभिन्न प्रबुद्ध वर्ग तथा विज्ञ सम्मिलित भई स्थापना भएको गैरनाफामुलक संस्था हो । संस्थाले विशेष गरेर जलविद्युत, सौर्य उर्जा र अन्य वैकल्पिक उर्जा क्षेत्रमा देखा परेका समस्या उजागर गनर्ृ,ो तिनलाई समाधान गर्न, आवाज उठाउने र नीति निर्मातालाई स्वदेशी उर्जा विकासका लागि घचघचाउने काम गर्दै आएको छ ।

गान्सु न्याचुरल इनर्जी रिसर्च संस्था , युनिको इन्टरनेसनल सोलार इनर्जी सेन्टर फर टेक्नोलोजी प्रोमोशन एण्ड ट्रान्सफर. चीनमा स्थापित एक अन्तराष्ट्रिय संस्था हो । दक्षिण एसियाली मुलुकहरुको विकास तथा विस्तार विशेष गरी विकासोन्मुख मुलुक तथा विश्वलाई नै आर्थिक तथा सामाजिक वातावरणमा स्थिरता ल्याउनु नै यो संस्थाको उद्देश्य रहेको छ ।

(The news is available at the link:
http://urjanews.com/details/3776/*उर्जा-विकासको-लागि-समझदारी* posted on Urja news online on 25th August, 2016.)

EDC Signs MOU with UNIDO

Energy Development Council, Gansu Natural Energy Research Institute (GNERI)/UNIDO International Solar Energy Center for Technology Promotion and Transfer (UNIDO-ISEC) is an international organization located in Lanzhou city, China. It aims at facilitating the promotion and transfer of solar and other renewable energy technologies.

Energy Development Council, Gansu Natural Energy Research Institute (GNERI)/UNIDO International Solar Energy Center for Technology Promotion and Transfer (UNIDO-ISEC) is an international organization located in Lanzhou city, China. It aims at facilitating the promotion and transfer of solar and other renewable energy technologies. It promotes the South-South cooperation and economic and social sustainable development of the whole world and developing countries in particular.

According to a press release issued by EDC is not-for- profit umbrella organization of the entire energy sector of Nepal established with aim of operating and representing the entire energy sector of Nepal and comprises of leading energy organization operating and working in energy sector of Nepal.

The signing ceremony was done at (GNERI)/UNIDO-ISEC, Lanzhou City, Gansu Province, China on August 16, 2016. For signing the MOU, (GNERI)/UNIDO-ISEC was represented by its Deputy Director-General Prof. Li Shimin while Energy Development Council was represented by its executive member Kushal Gurung.

Through this MOU both parties have agreed to work together for the mutual benefit of their respective organizations, organize high level meeting and various events, conferences, summits and programs about energy upon mutual consent, invite each other to all its conferences, summits and various programs. Both parties may use each other's logo in necessary and appropriate circumstances to promote their relationship upon mutual consent. Both parties will herein also understand and commit to respecting each other's independent status and work in an environment of mutual respect.

(The news is available at the link: ***http://spotlightnepal.com/News/Article/EDC-Nepal-Sings-MoU-with-UNIDO*** published on 25th August, 2016.)

Learning experience sharing from solar training

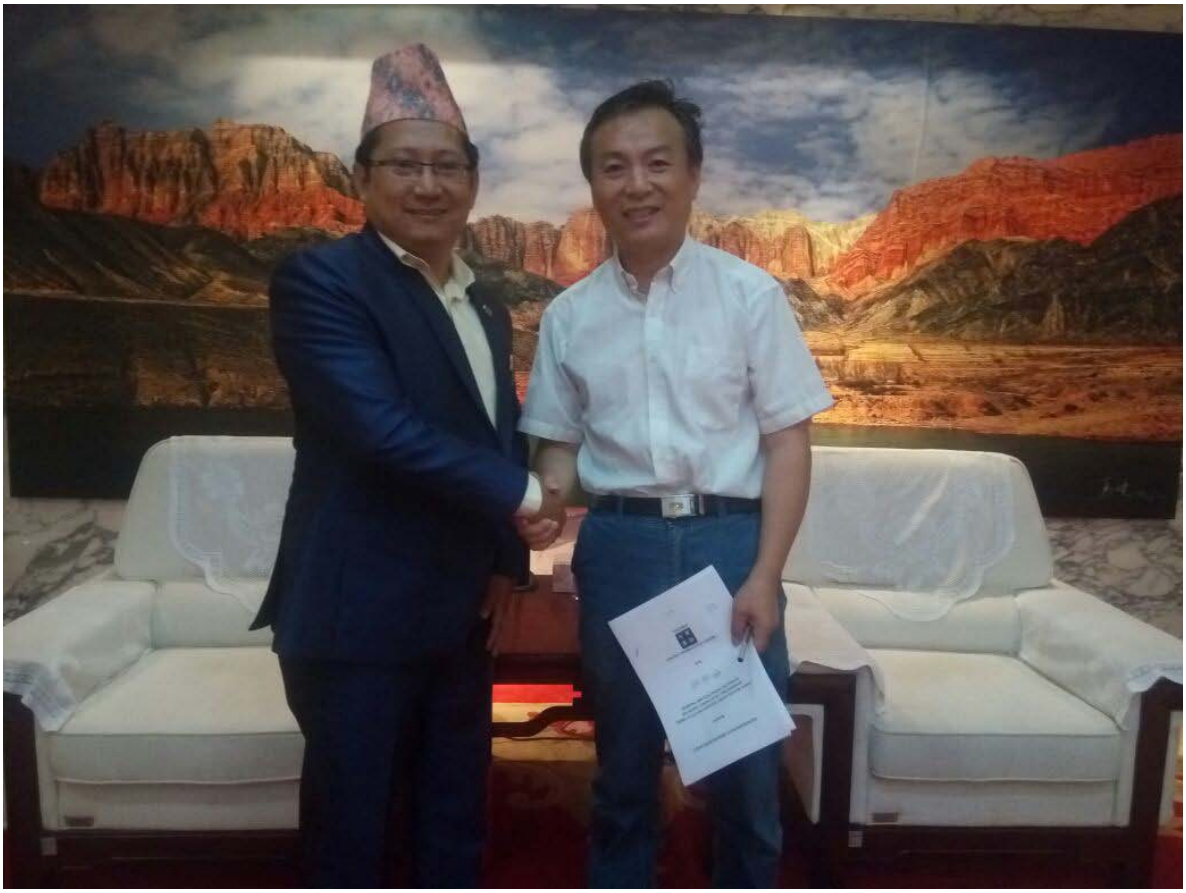
-By Kushal Gurung

We were invited by the People Republic of China's Ministry of Commerce to attend the "2016 Seminar on Solar Energy Applications for Developing Countries" in Lanzhou city, Gansu Province, China. The training was organised by United Nations Industrial Development Organisation – International Solar Energy Center (UNIDO-ISEC) which was located at the Gansu Natural Energy Research Institute, Lanzhou.

There were altogether 34 participants from 14 different countries. The training included seminars and field trips. Seminar included classes on different topics related to solar and other renewable energy. We learned about large scale on-grid solar PV farm design and Passive solar building design, called "solar south-wall" plan. The training also touched on themes such as solar thermal technologies, like solar cooker and solar water heater, as well as on biogas. For field trips, we went to visit a solar PV manufacturing factory of CPI Solar Plant Xi'an Company's branch in Xining city, Qinghai Province and a Wind turbine Manufacturing Plant in Jiu Quan city, Gansu Province. The solar factory manufactures Poly crystalline solar panels, whereas the wind plant was an assembly site of Gold wind's wind turbine. Gold wind is the largest wind turbine manufacturer in China with more than 30,000MW of global installed capacity. We also went on a trip to visit a 330MW solar PV farm near Jiu Quan city and a Vocational and technical college where they provided training on wind and solar technology, among other programs.

Beside field visits, we also attended the "7th China (Gansu) International New Energy Expo", a forum on new energy international cooperation under the belt and road initiative. The Expo which was held in Jiu Quan city, was inaugurated by the Governor of Gansu Province. Finally, at the end of the training program, each country representatives were requested to deliver a presentation explaining their respective countries' renewable energy status. As such, we gave a presentation, titled "Possibility of Renewable Energy Development in Nepal". Overall, the entire training was a great learning experience, as we got to understand the technicality of designing on-grid solar PV projects and also got a firsthand experience on managing a large scale solar farm.

EDC Signed MOU with Gansu Natural Energy Institute/UNIDO International Solar Energy Centre for Technology Promotion and Transfer



EDC member Mr.Kushal Gurung, CEO of Windpower Nepal and Deputy Director General of GNERI/UNIDO-ISEC Prof, Li Shimin

Nepal's Scenario Page

Customs tariff exceeds income tax in first month

The dynamics of major contributors in tax revenue have slightly changed in terms of collection amount in the first month of this fiscal. Income tax, which used to be the second largest contributor to the government coffers, slightly missed the collection target in the review period and lost its position to come third after being overtaken by customs tariff.

Revenue collected from customs points as customs tariff surpassed income tax collection in the first month, according to the Revenue Division under the Ministry of Finance. As per the Revenue Division, collection from customs tariff in the first month stood at Rs 7.85 billion whereas income tax contributed Rs 7.5 billion.

At a glance

Heading	Target	Collection
VAT	14.5	13.6
Customs tarriff	7.33	7.85
Income Tax	7.79	7.46
Excise	5.22	6.31
Registration fees	0.84	0.63
Vehicle tax	0.75	0.72
Education tax	0.098	0.099
Health Tax	0.23	0.17
Other	0.84	1.8
Non-tax sources	2.21	2.46

Amount in Rs billion, Source: MoF

Customs tariff became the second largest contributor for tax revenue as there was a shortfall in the collection target under the income tax heading. The government had expected to collect Rs 7.79 billion through income tax and Rs 7.33 billion under customs tariff. But the collection target under income tax heading has been missed while customs tariff collection has exceeded the target.

There was a slight shortfall in the income tax collection target in the first month of this fiscal after the government took a decision to revise the income tax slab. The government has revised the annual slab of income tax for both single individuals and married persons from Rs 250,000 to Rs 300,000 and Rs 350,000 to Rs 400,000, respectively, along with the increment in salary of government staffers from this fiscal.

As per the Revenue Division, overall revenue collection in the first month of this fiscal exceeded the monthly target by Rs 1.25 billion as the collection of customs tariff, excise and non-tax was more than the set target. Revenue collection stood at Rs 41.07 billion against the target of Rs 39.82 billion in the review period, according to Revenue Division.

However, major tax headings like value added tax (VAT) and income tax failed to meet the set target in the first month. Collection of VAT — the largest contributor in the tax revenue — stood at Rs 13.6 billion against the target of Rs 14.5 billion.

The government had aimed to collect Rs 7.79 billion from income tax but was able to collect only Rs 7.46 billion. All the three sub-headings under income tax, namely, individual and corporate income tax, land and building rental tax, and interest income tax have missed the target.

Revenue collection under excise, on the other hand, exceeded the target. The government was able to collect Rs 6.3 billion under excise against the target of Rs 5.2 billion. Collection under education service tax stood at Rs 99.9 million, which was also higher than the set target of Rs 98 million. Health service tax collection stood at Rs 165.6 million, which was below the set target. The government had set an aim to collect Rs 232.5 million from health service tax.

Revenue collection target under registration tax and vehicle tax also failed to meet its given target of Rs 842.5 million and Rs 754.08 million, respectively. Collection under registration tax stood at Rs 633.7 million and Rs 716.6 million was collected under vehicle tax, according to the Ministry of Finance.

The government collected Rs 1.8 billion from others tax heading and Rs 2.46 billion from non-tax revenue sources in the review period.

The government has set a target to collect Rs 565.9 billion in fiscal 2016-17.

This article is derived from the link: ***http://thehimalayantimes.com/business/customs-tariff-exceeds-income-tax-first-month/*** published on Sep 1, 2016 at Himalayan Times

Guest Corner

CHILE

Chile: A Hotbed for Renewable Energy Investment

BY MAURICIO MUNGUIA, LATIN AMERICAN DESK HEAD, SANTANDER CORPORATE & COMMERCIAL

With over 6,000 km of coastline, 123 active volcanoes and numerous deserts and mountains, Chile's renewable energy market is teeming with potential.

And with some of the highest utility bills in the world and a history of energy crises — resulting from dependence on fossil fuel imports — the country has prioritized the development of renewable energy. Certainly, Chile is one of the first countries in the world to reform its energy market to permit renewable projects to compete directly with other sources.

Long-term Energy Objectives

The need for a global transition to a clean energy economy has been well-publicized in recent years with many governments, banks and international companies making significant investments in alternative sources.

Despite having a relatively small energy market, Chile is considered by many to be one of the world's top renewable energy markets. Indeed, World Bank figures estimate that, since 2012, the sector has attracted US $9.2 billion in investment — almost double the figure Chile received the previous 20 years combined.

One of the key catalysts spurring Chile's renewables growth is the Energy Ministry's ambitious target to produce 70 percent of the country's energy from renewable sources by mid-century. What's more, the Chilean government has taken drastic steps to liberalize its energy market by enabling intermittent renewable suppliers to bid on specific slots corresponding to times during the day and night.

Furthermore, it has restructured its energy supply auctions, and established a tax on carbon emissions, in an effort to mitigate the barriers to entry for non-conventional sources.

Such measures have resulted in the country being placed fourth in Ernst & Young's Renewable Energy Country Attractiveness Index (RECAI) — a quarterly publication ranking 40 countries according to a number of macro, technology and market specific indicators. Indeed, Chile's policy enablement, renewable potential and investment in projects make it an attractive destination for foreign investors.

Renewable Energy Opportunities

With an estimated 261 projects in the pipeline, renewable energy companies thinking of branching out to Latin America should take a good look at Chile. We have outlined the following key sectors for exporters.

Already the region's leading solar market, Chile's Atacama Desert provides myriad opportunities for renewable energy firms. Northern Chile is also home to an expanding mining sector, which has, to date, been a key driver in renewable energy development. More recently, Chile announced plans to develop a 1,865-mile transmission line to aid the transfer of solar power to other parts of the country.

As the largest untapped form of renewable energy in the world, wave and tidal energy may also hold enormous potential for Chile. However, a lack of technological and financial capacity has stymied efforts to convert such energy into electric power so far. Given the government's renewable energy imperative — as well its openness to international business — Chile would, therefore, be an ideal location for wave energy research and development.

Chile's strategic position in the "Pacific-Ring of Fire" — an area of intense volcanic and seismic activity — has long been regarded as a key source for geothermal power generation, and yet it is certainly less developed than other renewable resources.

Finally, Chile enjoys excellent conditions ideal for building wind farms. Launched late 2014, the El Arrayán Wind Farm, one of the largest in the country, utilizes Siemens-produced turbines to serve the energy needs of approximately 200,000 homes per year. Following this, Chile has a further 52 wind projects in the pipeline.

The Future

Clearly, the export potential is there. But how can businesses crack international markets such as Chile? Exporting products abroad and investing in foreign projects can be a somewhat challenging process, as businesses must navigate language barriers, regulations, complex administration and international tariffs — all of which can pose significant hurdles and risks.

Indeed, for businesses thinking of venturing into global markets, research and planning are vital components for success. Teaming up with the right partner, who can provide invaluable resources and on-the-ground expertise, should also be a priority.

Certainly, businesses can benefit from accessing the reputation and network of a large bank — benefiting in particular from trade missions to key export destinations. During these guided visits businesses are introduced to key contacts — helping to build invaluable connections and even secure deals.

With unparalleled natural resources — and a government committed to improving its energy security — Chile's energy market is set to continue attracting interest from international players and ever-larger sums of foreign investment. Renewable energy businesses should get in there early, and make their mark.

(This article is derived from the link: ***http://www.renewableenergyworld.com/articles/ucg-content/2016/08/08/chile-a-hotbed-for-renewable-energy-investment.html***published on8th August , 2016.)

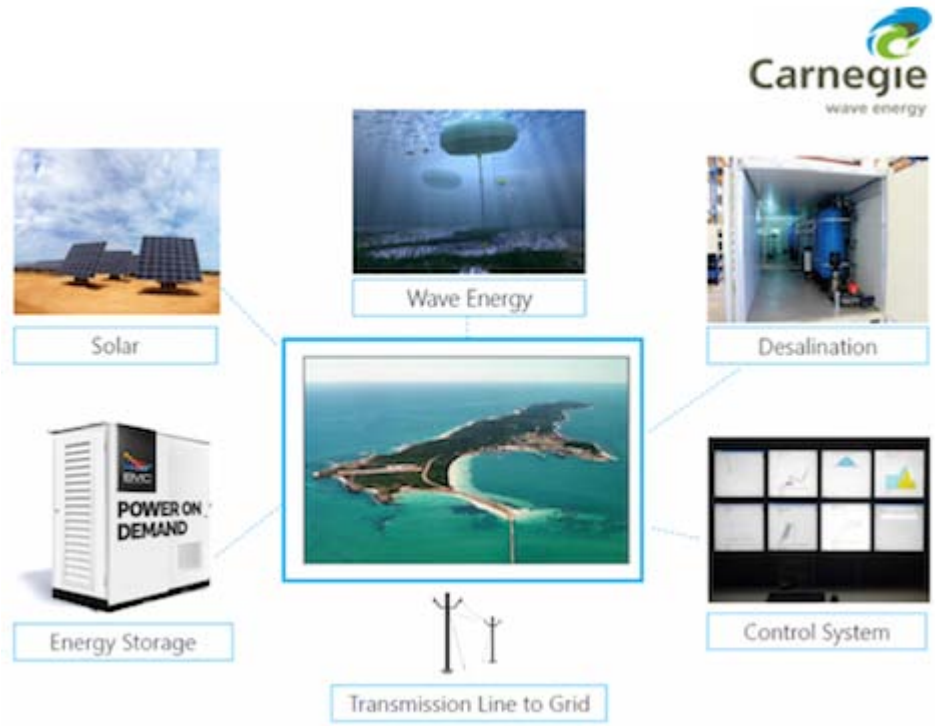
MAURITIUS

Mauritius Takes Great Step Forward for Wave Power, Microgrid Design

BY WILLIAM STEEL

Australian marine energy developer Carnegie Wave Energy has embarked on an ambitious project in the Indian Ocean nation of Mauritius to establish new benchmarks in microgrid solutions tailored for high penetration renewable energy.

"The Mauritius project will clearly show how islands can achieve very high penetration of renewables by using a combination of wave energy, solar PV, wind energy, battery energy storage systems and smart microgrid control systems," Project Manager Neil De Tisi told *Renewable Energy World*.



In meeting its goals, the project will showcase several innovative solutions split over the main island of Mauritius and the island of Rodrigues.

While the microgrid will serve to demonstrate how multiple sources of renewable energy may be effectively incorporated into an isolated grid, it will also provide a test bed for deployment of Carnegie's latest generation of wave energy capture technology, CETO 6. The microgrid will also incorporate a new desalinization plant — being developed by Mak Water — to serve the neighboring island of Rodrigues.

The project's scope includes provision of a renewable energy road map for Mauritius, outlining the technical and financial feasibility of high penetration renewable energy.

Installing CETO 6 Wave Energy Technology

Aiming to replicate successes of their flagship Garden Island project in Australia, the developers plan to outfit the microgrid with CETO 6 technology.

CETO 6 generating components are housed in a fully submerged buoy tethered to the seabed, with each unit rated to 1 MW. The technology will be installed in Blue Bay on the southeastern coast of Mauritius — a site selected on account of existing wave energy data indicating it to hold the strongest wave resources in the region.

Seeking to refine their understanding of this energy potential, however, Carnegie recently announced successful deployment of a wave-monitoring buoy that will collect fresh data over about six months. Jessica Kolbusz, analysis

engineer at Carnegie responsible for the assessment, told *Renewable Energy World* that this data will "provide validation of our [existing] wave resource model," but will also inform much about the final design and scope of the microgrid.

"Wave resource assessment is a necessary first step, but undertaking this concurrently to microgrid planning and the renewable energy road map is really beneficial, as it provides opportunity for designing a very effective, climate friendly solution from the ground up," Kolbusz said.

Presently, it's uncertain how many CETO 6 devices may be incorporated into the microgrid, but Carnegie is optimistic about the project's potential.

"The project represents a really big step forward for Carnegie, and offers an excellent opportunity to demonstrate the CETO wave energy solution," Kolbusz said.

In regards to what's new with the latest iteration of CETO technology, Kolbusz explained: "The key development with CETO 6 is that it incorporates complex hydraulics and generator components directly into the offshore system. This removes the need for additional pipelines to shore and reduces hydraulic losses. In terms of infrastructure to shore, all that's needed is a transmission cable."

Microgrid Design

Supporting Carnegie as partner on the project is Australian microgrid specialist Energy Made Clean, which holds a portfolio of grid-connected, commercial-scale solar PV projects and microgrids.
That experience, Carnegie's De Tisi believes, is important to the success of the project.

"Carnegie's alliance with Energy Made Clean means the first stage of installing solar PV with battery storage and a smart control system can be completed and would allow for the integration of the wave energy converters at a later stage," De Tisi said.

The early stages of the project are being supported with a grant from a partnership between the Australian and Mauritius Governments of AUS $800,000 (US $600,000).

Carnegie believes the project will set a highly valuable, but attainable, benchmark for other countries and regions that stand to benefit from microgrid solutions.

"There's great potential for this kind of solution being introduced to other island nations, where there's high demand for water and energy security," Kolbusz said. "Combining multiple sources of renewable energy in a grid like this is really a well-rounded solution. This is especially true for Mauritius."

This article is derived from the link : ***http://www.renewableenergyworld.com/articles/2016/07/mauritius-takes-great-step-forward-for-wave-power-microgrid-design.html*** published on July 19,2016

USA

An electric-powered plane that can take off from your garden

-By Maureen O'Hare, CNN

Photos:

Lilium – Lilium is a new ultralight two-seater electric plane concept, designed by four German engineers.

(CNN) Imagine an aircraft that can be powered from a wall socket, take off from the garden, and with electric engines so quiet the noise won't bother the neighbors.

That's the vision behind Lilum, an ultralight electric plane concept that its German design team hope to have on sale by 2018.

The egg-shaped two-seater would take ascend and descend vertically, like a helicopter, so it could use helipads.
It requires only a flat area of 15 meters by 15 meters to take off and land.

It's only at the prototype stage, but its engineers say it could reach a top speed of 400 km/h, with a range of 500 kilometers.

Everyday aircraft

Lilium is a start-up founded by four Munich University graduates: Daniel Wiegand, Patrick Nathen, Sebastian Born and Matthias Meiner

The company's hosted in a European Space Agency (ESA) business incubator.

In an ESA release, Wiegand emphasized the concept's practical and environmental benefits.

"Our goal is to develop an aircraft for use in everyday life.

"We are going for a plane that does not need the complex and expensive infrastructure of an airport.

"To reduce noise and pollution, we are using electric engines so it can also be used close to urban areas."

It uses ducted fan engines, which the team says make it a lot quieter than helicopters or traditional private jets.

Its compact size means it wouldn't have to fit into airport scheduling to land and take off.

Then there's the battery, which could be charged by an ordinary domestic supply.

Fair-weather flying

Blue-sky flying: Good weather conditions needed.

The plane -- as well as being only at the concept stage -- is not without its downsides.

It's designed to only be flown in good weather conditions in uncongested airspace in the daylight.

So forget about landing with at the front of the nightclub queue.

In fact, the aircraft will primarily be using airfields for landing and take-off, although ESA says "the goal is for it to take off vertically from almost anywhere -- even from back gardens."

The two-seater fits into the Light Sports Aircraft category, so a pilot's licence with at least 20 hours of training are needed to fly it.

What's the price tag?
There's no price tag yet, but ESA says it'll be cheaper to buy and run than similar sized aircraft currently on the market.

So far it says it's proved the concept with 25 kilogram scaled-down prototypes.

A full-size unmanned prototype is planned for later in 2016.

"In the longer term, our target is to build an aircraft that not only the super-rich can afford, and that can make private air transportation possible for a much wider number of people," says Weigand.

The article is derived from the link : ***http://edition.cnn.com/2016/05/13/aviation/lilium-electric-plane-concept/*** published on June 16, 2016

Renewable Power Future Needs Facilitative Power Grid

BY JON E. JIPPING
EXECUTIVE VICE PRESIDENT AND COO, ITC HOLDINGS CORP.

Can America's power grid accommodate a more dominant role for renewables in the energy mix? As the grid stands today, the answer is no. Our society is putting increasing demands on electric infrastructure that wasn't designed for today needs — much less what we're asking of it to support a cleaner energy future. Modern, robust and flexible infrastructure for delivering electricity generation over long distances is essential to the nation's successful transition to a larger share of renewable energy.

The fact is, the current grid is outdated and inadequate for the task of tapping America's virtually unlimited clean energy resources. Seventy percent of high-voltage transmission lines and power transformers — the backbone system of electricity delivery — are over 25 years old. In fact, the majority of our grid was built more than 30 years ago — long before we fell in love with modern-day electronics and before electric cars became a viable solution for drivers.

We need to overhaul our nation's electricity transmission system, creating one with the capacity to carry renewable energy resources to where they're needed well into the future. As we move toward greater use of renewable resources, a remodeled grid will be needed to facilitate the balancing of associated intermittent flows on the system when the wind isn't blowing and the sun isn't shining.
Unlike renewable generating facilities, transmission projects can take up to 10 years to complete, from conception through regional planning processes, to state siting and then ultimately to the construction phase. That's why we need a more proactive approach to grid planning, done in concert with generation planning.

Connecting more renewables to the grid is only part of the equation. Factor in energy storage and other innovative technologies, a heightened focus on grid security, and how we'll go about maintaining resource adequacy and grid reliability amid decreasing energy from coal plants, it's clear that our country needs a more adaptable, 21st century grid for delivering power.

Many entities have a role in modernizing the grid, including federal and state energy regulators, regional planning organizations, renewable energy companies, and industry voices like WIRES — the group that promotes investment in electric infrastructure. A white paper issued in June by WIRES in partnership with economists at The Brattle Group urges grid planners to move beyond today's outmoded planning methodologies toward a more proactive and immediate approach to identifying transmission solutions that can address long-term uncertainties and provide a broad range of customer benefits. Reforming transmission planning processes could save electricity customers $47 billion annually, according to WIRES.

The good news is that transmission investment has an outsized benefit in that it lowers the price of power to customers by providing them access to lower cost of supplies. Transmission is the smallest portion of a customer's

bill — about 9% nationally, according to the U.S. Energy Information Administration. Therefore, smart and timely transmission investment is the best means for delivering customer savings in the evolving energy landscape by facilitating lower-cost energy generation.

Collaboration is key. Our company works with various stakeholders to modernize transmission infrastructure and plan for a cleaner energy future. The more transparent the planning process for generation facilities, the more efficient transmission planning can be. This is not always easy. With the swirling debates around the EPA's Clean Power Plan, grid security and reliability concerns, we must forge ahead and build new transmission lines and improve the ones we have despite this uncertain environment.

A great example of what our industry can accomplish with collaboration from the outset is ITC's Thumb Loop 345-kV electric transmission line in Michigan. The 140-mile project, completed last year, has so far added more than 1,000 MW of wind energy into the state and regional mix (the line capacity is 5,000 MW). Together with the company's V-Plan and KETA transmission projects in Kansas completed in recent years, these projects demonstrate the value of proactive, collaborative planning among industry, regulators and state policymakers to increase transmission system capacity and reliability to support the more efficient transmission of wind energy. To date, ITC has connected more than 5,200 MW of wind energy production capacity to the grid across our footprint, with another 1,400 MW in production, and we are prepared to connect 372 MW of solar generation currently in regional approval processes.

Harnessing the sun or wind to power your own home or neighborhood is an attractive idea. Though it might initially seem counterintuitive, distributed generation — power produced at or near the location where it is consumed — is an application of renewable energy generation that requires proactive transmission planning. While there is discussion around how distributed generation will impact a local or regional power grid, it will never be a simple either/or proposition.

Transmission infrastructure and central generation will still be needed to maintain reliable electric service when those non-dispatchable intermittent facilities are not generating. Distributed generation and other emerging technologies that decrease system load should be viewed as a complement to transmission rather than a substitute. These limitations of distributed generation must be addressed before its market penetration is so widespread that it's too late to make the necessary policy reforms that will support the safe growth of this technology.

Our views on these issues are based on promoting what's best for the nation's power grid, and therefore electricity customers. Customers generally want safe and reliable electricity service at affordable rates. We believe that a well-planned energy future featuring a diverse energy profile supported by modern transmission infrastructure can meet these customer needs.

This article is derived from the link : ***http://www.renewableenergyworld.com/articles/2016/08/renewable-power-future-needs-facilitative-power-grid.html*** published on August 18,2016.

Tesla lays claim to world's fastest production car

DETROIT (AP) — Tesla Motors says a new version of the Model S electric car is the quickest production car in the world from zero to 60 miles per hour.

The company says the Model S P100D sedan can go from stopped to 60 in 2.5 seconds.

A Tesla Model S charges at a Tesla Supercharger station in Cabazon, California, U.S. May 18, 2016. REUTERS/Sam Mircovich/File Photo
REUTERS

The LaFerrari and the Porsche 918 Spyder with gas engines were faster, but they were million-dollar specialty cars that can no longer be bought new, CEO Elon Musk said Tuesday.

The new P100D has a new 100 kilowatt-hour battery pack that extends the car's range to about 315 miles. The top range of the previous Model S was 294 miles. The new battery also is available on the Model X SUV.

Musk says the battery cell chemistry is the same but Tesla had to reconfigure the battery pack to store more energy in the same space and handle increased cooling requirements.

New customers can pay $10,000 for the larger battery pack. Existing owners must pay $20,000 because their existing batteries must be recycled.

The Model S P100D starts at $134,500, while the Model X P100D starts at $135,500. The SUV will be able to go from zero to 60 in 2.9 seconds.

The article is extracted from the link: ***http://www.boston.com/cars/news-and-reviews/2016/08/24/tesla-lays-claim-world-fastest-production-car/6kPRtMtCe3NOEfrfQU0geM/story.html*** published on August 24, 2016.

INDIA

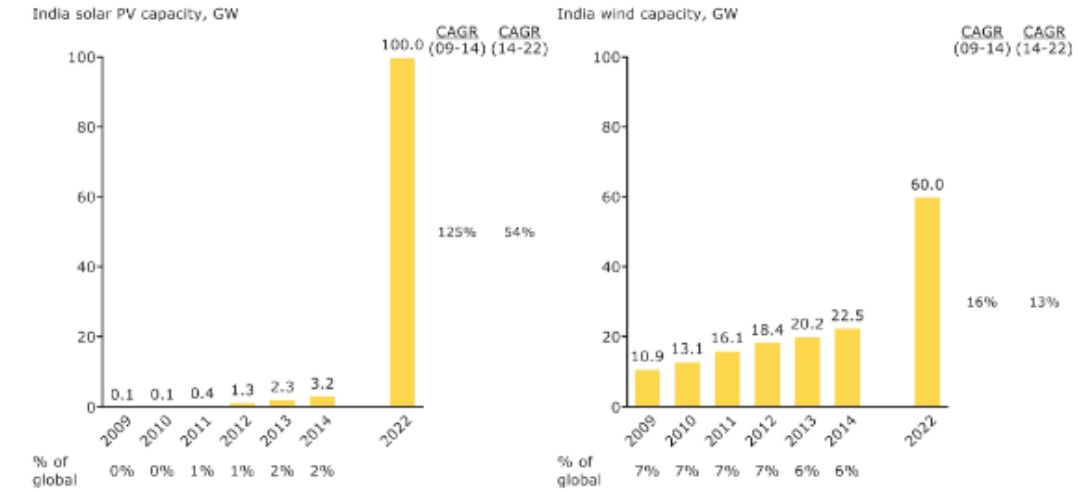
Thanks to solar power, this airport is no longer paying for electricity

India will invest $100 billion in solar energy over the next decade Image: REUTERS/Amit Dave

If you fly over Cochin International Airport in Kerala, India, you will find yourself staring down at over 46,000 solar panels. The airport, India's seventh busiest, last year became the first airport in the world to run completely on solar power.

The airport has now stopped paying for its electricity altogether, and even sends energy back to the grid.

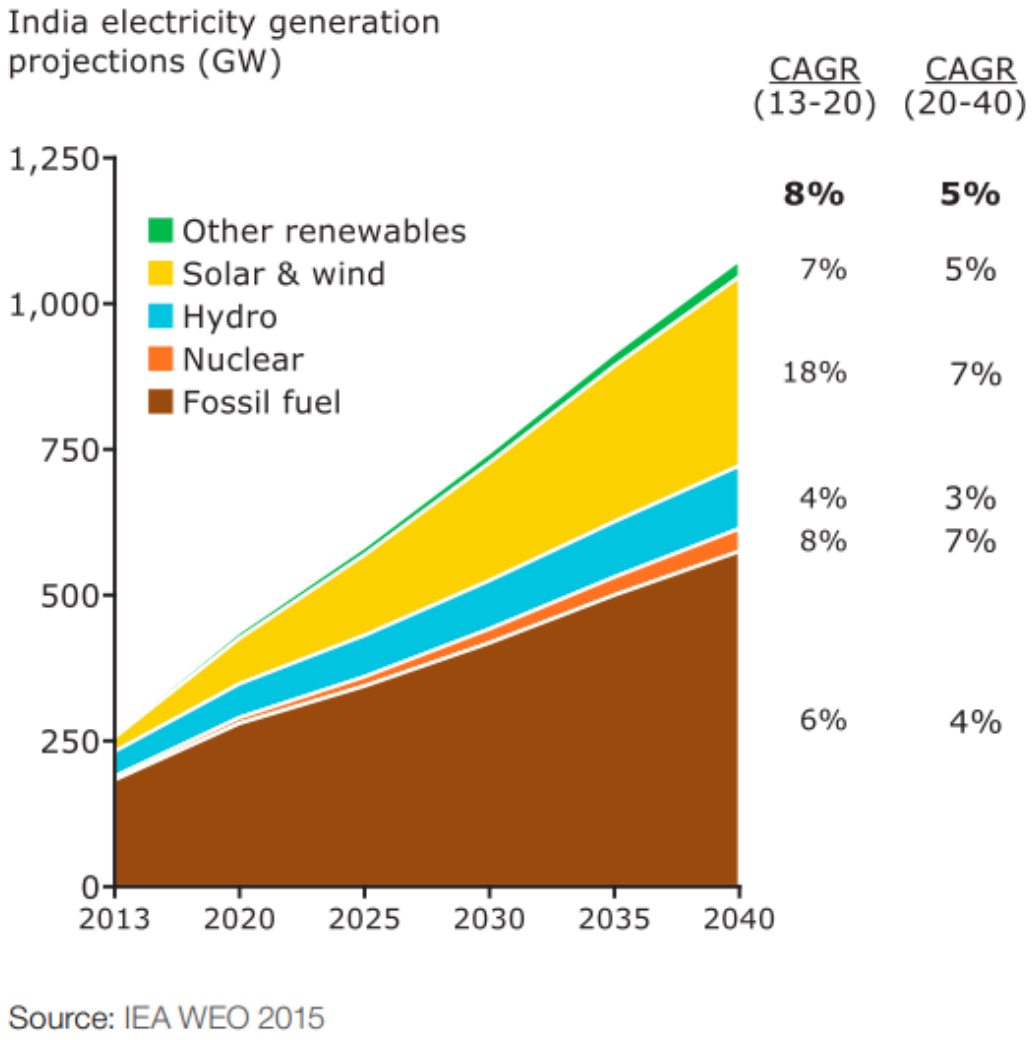
It started as a pilot project in 2013 with 400 panels on the airport rooftop, an attempt by management to lower the airport's energy bills. After the installation of a 12 megawatt solar plant, the airport was able to run entirely on solar power.



Source: Ministry of Energy; REN21; IEA; GWEC

Solar energy has become a cheap option in India - the price has dropped to a similar level to that of coal.

India's Prime Minister Narendra Modi has said the country's investment target for the source of renewable energy will be increased to $100 billion, five times greater than current levels, scaling solar power to more than 10% of India's total energy sector by 2022.



Source: IEA WEO 2015

The successful project has inspired other airports both nationally and internationally to invest in renewable energy. Kolkata's international airport in India is now also looking to build a solar plant to reduce its electric bill by a third.

South Africa recently opened the continent's first solar-powered airport in George, in the Western Cape. It's expected to save an excess of 1.2 million litres of water every year, and will contribute to around 40% of the airport's electricity needs.

The article is derived from the link: ***https://www.weforum.org/agenda/2016/07/thanks-to-solar-power-this-airport-is-no-longer-paying-for-electricity?utm_content=buffer36ae0&utm_medium=social&utm_source=facebook.com&utm_campaign=buffer*** published July 19, 2016.

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.	Hydroelecticity 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.	Saral Urja 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
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
30.	Transweld Pvt. Ltd.	
31.	TSN Energy Pvt. Ltd.	
32.	Waiba Infratech 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
36.	National Association of Community Electricity Us-ers 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	

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