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INNOVATIVE TECHNOLOGIES

From DG's Desk

In our effort to make Green Energy news in our newsletter more contemporary, we have decided to take out a monthly E-newsletter on developments in the Green Energy space. This edition includes the excerpts of the Prime Minister's speech on August 15, 2016, which included major references to energy including references to renewable energy and his grand vision for India.

There is a major shift that is taking place in India which focuses on renewable sources of energy. The spotlight has been on Solar Power but, despite much attention, other sources of renewable energy are making steady strides. The month of August also saw a major conference on Biofuels being organized by Ministry of Petroleum & Natural Gas on the occasion of World Biofuels Day on August 10, 2016. This was a very well attended event which saw attendance not only from India but abroad. The highlight of the conference was the speech of the Minister of Petroleum & Natural Gas whose commitment to biofuels was evident. Many aspects of the Biofuels were discussed during the day long deliberations. The good news is that this year we may be on our way to achieve the target of 5% blending of Ethanol for the first time.

This and other interesting news are being covered in this issue of the monthly Newsletter. We wish you all pleasant and fruitful reading!

IFGE ACTIVITIES AT A GLANCE

PAST EVENT

Summary of Conference on 'Clean & Green Transport for Delhi-NCR, Alternatives & Solutions

The one-day conference on 'Clean and Green Transport for Delhi-NCR: Alternatives and Solutions' was organized by IFGE on 8th July, 2016 at India International Centre in Delhi. The conference was attended by nearly 125 participants from various relevant organisations including transport technology providers, manufactures of fuels and vehicles, transporters, transport authorities, consultants, various environmental organizations and agencies such as Central Pollution Control Board (CPCB) and academic institutions such as IIT and School of Planning and Architecture, to name a few. The conference had the proud presence of about 25 renowned speakers who are expert and eminently recognized in their respective areas of air pollution, transport planning and

operation.

The conference was inaugurated by the Hon'ble Minister of State (I/C) for Environment, Forest and Climate Change (MoEFCC) Shri Anil Madhav Dave, who is a hands on ecologist and environmentalist. The Minister was welcomed warmly & succinctly by Dr. Vidya Murkumbi, the Founder President of IFGE, in her welcome address. Shri Annasaheb M K Patil, founder Vice chairman of IFGE and a former cabinet minister for Rural Development, introduced Shri Dave to the audience citing brief account of his illustrious journey of life and accomplishments especially work for the protection of river Narmada and people living in its valley. He also set the agenda for the proceedings for the day by his wise advice.

Shri Dave, with his profound knowledge and practical experience in environmental protection and natural resource conservation, left the audience awestruck by his thought provoking inaugural address which was his first public appearance after taking charge as a minister. He emphasized the need for an integrated and practical approach towards tackling the pressing environmental challenges of the present which has multidimensional impact on the lives of the millions in India and globally. He suggested that we all share the responsibility of providing clean air and water to all our citizens. He expressed his keen interest in bringing in and testing new ideas, applying innovative technologies and working with relevant stakeholders from multidisciplinary areas. He gave the three fold Mantra of 'Sun, Cycle & Saving' which should be adopted universally. Leading by example, Shri Dave stressed the need for mass scale adoption of low carbon technologies in our day-to-day activities.

The vote of thanks for the inaugural function was delivered by Shri Jai Uppal, the DG of IFGE, who highlighted the challenge faced by the Minister to meet the twin goal of Development and protection of the environment. He also emphasized the complexity of transport issues for a large metropolis such as Delhi-NCR.

The conference, divided into four technical sessions (Agenda attached), witnessed real thought provoking discussions across various focus areas:

- « Session I: An overview of transportation system and its environmental impact in Delhi-NCR
- « Session II: Clean transport roadmap –Mainstream technologies
- « Session III: Clean transport roadmap –Alternative technologies
- « Session IV: Panel discussion on 'Policy needs, initiatives, the Next steps and the way forward

The status, issues and challenges pertaining to the increasing load on transport infrastructure and services in Delhi-NCR was discussed at length in the first session. The session had interesting and informative presentations of the findings from various researches on the status-quo of air pollution and overall transport system by renowned institutions. The session concluded the air pollution has aggravated enormously in not only Delhi-NCR but also other metropolitan cities in India. It was informed that although the transport sector contributes significantly to the overall air pollution but a large part of it is attributed to various other sources such as industries, construction, biomass combustion and power plants.

Session-II primarily focussed on continuous developments in conventional fuel and transport technologies, international experience and alternative technologies. The presentations and discussions informed and analysed various available fuel standards, improvements in technologies and standards, pathways and challenges and in the adoption of higher standards such as Euro-VI/BS-VI.

In session-III, Alternative technologies such as Ethanol fuelled buses, electric buses, potential of bio-CNG for vehicles and application of information technology to develop intelligent transport systems net were discussed prominently in connection with their applications for public transport. The last session of the conference concluded with a profound panel discussion participated by eminent panelists bringing in their views on multitude of perspectives related to transport and associated issues in Delhi-NCR. The important conference was organized with the financial supported by M/s Oil and Natural Gas Corporation (ONGC) and Rajasthan Electronics & Instruments Limited (REIL), which was appreciated. We hope that the conference will trigger some bold and effective steps towards solving one of the most pressing problems of air pollution in Delhi-NCR. Overall, it was an exhilarating experience for the participants, speakers and organizers. According to some of the participants, it was the first conference on the need for clean and green transport in Delhi-NCR.

IFGE ACTIVITIES AT A GLANCE

PROPOSED UPCOMING EVENT

- « Conference on Opportunities in & Promotion of Green Energy with focus on Solar in Nagpur, Maharashtra
- « Bamboo Summit Nov 2016 at Shillong
- « International Green Energy Congress & Awards, Nov 2016 at New Delhi
- « Renewable Energy Conference. Dec 2016

News by NEWS MAKERS

HON'BLE PRIME MINISTER OF INDIA, SHRI NARENDRA MODI'S SPEECH ON 15 AUGUST, 2016 EMPHASIZES ON RENEWABLE ENERGY

Excerpts of the text of the English rendering of PM Narendra Modi's address to the Nation from the ramparts of the Red Fort on the 70th Independence Day regarding Renewable Energy, Energy Efficiency & Rural Electrification: -

"We have laid emphasis on energy, specifically renewable energy in our country. That was a time, when after so many years of independence, we started working on wind energy. Within a period of last one year we have increased it up to 40%. So this is the scale of up acceleration. Whole world is focusing on Solar energy. We have increased it approximately 116%-118%. This is not only a substantial incremental change; it's a huge leap forward. We intend to enhance the things in quantum way. "

"Today, for middle class or for common people the ownership of a car is a matter of pride. There was a time when gas stove at home was deemed as a standard and as a symbol of social status. During the last 60 years of independence, 14 crore LPG gas connections were given. Brothers and Sisters, it is a great satisfaction to me that on one side, 14 crore gas connections were given in 60 years, while on the other side, we have given 4 crore gas connections in just 60 weeks. Please compare the two figures - 14 crore in 60 years and 4 crore in 60 weeks."

"I had earlier announced from the ramparts of the Red Fort that we would electrify those 18 thousand villages, which are still without electricity. We are going to complete 70 years of independence, but they had not seen electricity. They were forced to live in the 18th century. We undertook this task of making possible the impossible and today I am glad to say that, though we have not been able to complete even half the task within a thousand days, we are still away from the half-mark, out of the 18 thousand, electricity has reached ten thousand villages. I have been told that there are many among those villages who are watching Independence Day celebrations for the first time today on television in their homes. Today, from here I extend special greetings to those villages."

"Brothers and Sisters, the LED bulbs were developed by the science and the researchers for welfare of every citizen. But in India it used to cost 350 Rupees. Who would buy it? And even the government would think, "It's alright. The work is done. Someone must be using it." But this should not be the attitude. If LED bulbs can bring about a change in the life of a common man, if it can ameliorate the environment, then the government must make efforts in this direction. It is the nature of the government that it intervenes where it is not required and shies away from intervening where it is needed. We tried to change this situation, this work culture. And therefore, the bulb which used to be sold at 350 Rupees do not want to ask where all this money used to go, however, thirteen crore bulbs have been distributed till date."

"The politics of our country has become populist; the economic policies have become populist. If three hundred Rupees subsidy for each bulb had been given from public exchequer, the Prime Minister would have been applauded for doling out five hundred crore to the people. But we have ensured that they save thousands of crores by providing bulbs at only fifty Rupees. We have already distributed thirteen crore bulbs and we have resolved to distribute 77 crores and I would like to appeal to my countrymen to use LED bulbs in their homes and save 200, 300, 500 Rupees in a year and save energy and save our environment. The day we achieve the target of 77 crore bulbs, we would be saving 20 thousand Mega Watt of electricity. When we save 20,000 Megawatt electricity, it means we save around 125,000 crores rupees. Brothers and Sisters, you can save 125,000 crore rupees of the country by using a LED bulb at your home. We can fight against global warming by saving 20,000 Megawatt electricity and contribute a lot towards the efforts aimed at the protection of environment and a common man can also contribute to it. So, brothers and Sisters, we have worked in that direction-making the impossible possible. "

"You know that we depend on other countries of the world for energy and petroleum products and for that we have signed long term agreements with them so that we could get these products at fixed prices for a long period. We have entered into an agreement with Qatar for buying gas till 2024 but the prices are so high that it is costly for our economy. It was a result of our foreign policy relationship that we were able to renegotiate with Qatar, and the agreement which was the right of Qatar, and we were bound to buy gas from it till 2024, we negotiated with them and today, I can say with satisfaction that we made an impossible task possible, they renegotiated their prices and it will save 2000 crore rupees of the exchequer of India. They were entitled to get these 20,000 crore rupees but the nature of relationship that we have with them and our policies have made it possible. The negotiations have been going on during the tenure of all the Governments and efforts were also made for Chabahar Port, which is an important link for connecting us with Central Asia, but today I feel satisfied to see an impossible task becoming possible. When Iran, Afghanistan and India collectively march ahead in a planned way for the construction of Chabahar Port, an impossible task becomes possible."

Please read more...

<http://economictimes.indiatimes.com/news/politics-and-nation/full-text-of-pm-narendra-modis-70th-independence-day-speech/articleshow/53710263.cms>

News by NEWS MAKERS

UNION MINISTER SHRI NITIN GADKARI SAID THE GOVERNMENT IS PLANNING TO TAKE THE BLENDING LIMIT OF ETHANOL IN PETROL TO 22.5 PER CENT AND DIESEL TO 15 PER CENT.

Government will soon come up with a new policy on non-conventional resources as it plans to take up ethanol blending in petrol to 22.5 per cent and in diesel to 15 per cent, Union Minister Nitin Gadkari on Friday said.

“Next week, we will have a meeting of Petroleum Minister, Rural Development Minister, Agriculture Minister, Environment Minister. We will formulate a new policy for non-conventional resources,” Road Transport and Highways Minister Gadkari said on the sidelines of an event here.

He said the government is planning to take the blending limit of ethanol in petrol to 22.5 per cent and diesel to 15 per cent, as also second generation ethanol production from bamboo, rice straw, wheat straw, cotton straw etc to power vehicles.

“If we start making ethanol from bamboo in North-East, lakhs will get employment and several industries will come up,” he said.

The minister said recently he saw such successful industries in Italy and as per rough estimates 40,000 litres of second generation ethanol could be produced here easily.

He said boost to ethanol production could cut India’s huge crude oil imports bill, which is pegged at Rs 7 lakh crore per annum. “Government is ready to purchase the entire quantity of ethanol produced by the industry. It could think of ways for economically viable production of ethanol,” the minister had recently told ethanol producers.

Chairing a meeting of Indian Federation of Green Energy earlier, the minister had said ethanol could be a game changer as it is economically viable and environment-friendly. Citing the example of flex-fuel cars in Brazil, Gadkari said India was also on the way to promote such vehicles as this could minimize pollution. To augment supplies of ethanol to oil marketing companies (OMCs) under EBP, the policy for procurement of ethanol has been modified to smoothen the entire ethanol supply chain to provide remunerative price of ethanol. In December 2014, the Cabinet had approved usage of non-food feedstocks besides molasses as source of ethanol to be used for blending in fuel.

Please read more...

<http://indianexpress.com/article/india/india-news-india/ethanol-blending-to-go-up-to-22-5-says-nithin-gadkari-2888256/>

News by NEWS MAKERS

SHRI ANIL MADHAV DAVE, HON’BLE MINISTER OF STATE (I/C) OF ENVIRONMENT, FORESTS & CLIMATE CHANGE, EXCERTS OF SPEECH AT CLEAN & GREEN TRANSPORT FOR DELHI-NCR, ALTERNATIVES & SOLUTIONS ORGANIZED BY INDIAN FEDERATION OF GREEN ENERGY ON JULY 8, 2016

“ADOPT THREE-FOLD MANTRA OF SUN, CYCLE AND SAVING IN ENERGY SECTOR, SOLAR ENERGY IS THE ENERGY OF FUTURE”:
ANIL DAVE

The Minister of State (Independent Charge) of Environment, Forest and Climate Change, Shri Anil Madhav Dave, has strongly emphasized the need to adopt the three-fold ‘mantra’ of “Sun, Cycle and Saving” in the energy sector for clean and green energy. Inaugurating the Conference on Clean & Green Transport for Delhi NCR – Alternatives and Solutions” here today, Shri Dave said that solar energy is the energy of the future and Research & Development (R&D) needs to be done on solar energy, as it will revolutionize the energy sector.

The Minister advocated cycling as the best mode of transport for short distances and cited additional health benefits as another

The Minister advocated cycling as the best mode of transport for short distances and cited additional health benefits as another factor for adopting of cycling. Shri Dave also said that energy should not be used carelessly, as energy saved is energy produced. He added that individuals must lead by example in saving energy and also stated that non-practicing environmentalists and non-practicing scientists were not required.

The Environment Minister pointed out that those involved in R&D must keep in mind the difference between the success achieved in laboratories and success while implementing solutions on the roads. He also urged researchers and scientists to be completely immersed in their subjects of research.

[Please read more...](#)

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=146903>

News by NEWS MAKERS

SHRI PIYUSH GOYAL, HON'BLE MINISTER FOR PETROLEUM & NATURAL GAS, EXCERPTS OF SPEECH AT WORLD BIOFUEL DAY ON AUGUST 10, 2016

Bio-fuel itself can double the income of farmers & cut down our imports, says Power & Renewable Energy Minister Piyush Goyal. Speaking at a function on the 'World Bio-fuel day', Piyush Goyal said, "It's a great thing that we are celebrating the Biofuel day. This sector needs proper thrust. The world is still behind us in terms of concentrating on the environmental concerns for a better world." "Biofuels are closely linked to our own lives, our health and well being," Goyal said, adding that "people need to see the potential of processing food waste." "Food waste has terrible consequences if it is left to rot," he added.

Expressing anguish over the challenges that the industry faces, Goyal said, "Biofuel is a very viable industry, but my personal anguish is that there are challenges including bad implementation of policy. All of us as stakeholders have to take up the task of addressing these challenges and work together on this." "Let's not get deterred by small failures," he added. Goyal went on to say, "I believe the success of any programme lies in its scale, honesty & implementation and the ownership of programme by all stakeholders. We are now witnessing game-changing transformation of the Indian economy & in the way India works now. The pace at which we work now is rapid, so we cannot put off anything for tomorrow - what has to be done has to be done today." "Speed, Skill, Scale - let's make that as the mantra - these are the 3S that PM Narendra Modi has spoken of. Let's scale up the programme," he urged. "It's time for stakeholders to become whistle blowers against the corrupt so that biogas plants remain viable. Addressing the problem of pollution has been main concern of our government so that quality of life for our citizens improves," he said.

[Please read more...](#)

<http://www.financialexpress.com/economy/bio-fuel-can-help-double-the-income-of-farmers-piyush-goyal-at-world-bio-fuel-day/342999/>

News by NEWS MAKERS

SHRI DHARMENDRA PRADHAN, HON'BLE MINISTER FOR PETROLEUM & NATURAL GAS, EXCERPTS OF SPEECH AT WORLD BIOFUEL DAY ON AUGUST 10, 2016

New Delhi: "There is a large potential of biofuel business in India to grow from present Rs 6500 crore to Rs 1 lakh crore in the next 10 years," mentioned the Minister of State (Independent Charge) for Petroleum and Natural Gas, Mr Dharmendra Pradhan while speaking at the National Conference on the World Biofuel Day in New Delhi on August 10, 2016. He said that the Prime Minister has set a target of 10 percent import reduction in crude by 2022 and biofuels can play an important role in achieving the target. Shifting the fuel consumption profile to biofuels derived from domestic feed stocks would lead to decrease in this dependence on crude oil imports. He said in the last 2 years, lot of work has been done in Ethanol Blending Programme, biodiesel as well as using the biowaste for converting to energy but more needs to be done speedily. He said India's energy consumption is increasing very fast and it has become the third largest consumer in the world.

Mr Dharmendra Pradhan said that the biofuel programme has the capacity to provide better remuneration for farmers, address environmental concerns, reduce dependence on imports and help in foreign exchange savings. The Petroleum Minister said the government is willing to provide conducive policy environment to support development of Biofuel but import of raw material or waste for this purpose cannot be allowed.

[Please read more...](#)

<http://www.biovoicenews.com/world-biofuel-day-india-offers-large-potential-of-growth-for-biofuels/>

NEWS ABOUT GREEN ENERGY

SOLAR ENERGY

- **Mumbai-Nagpur expressway to soon become India's first solar-powered highway**

Maharashtra State Road Development Corporation (MSRDC) is planning to make Mumbai-Nagpur Super expressway as the country's first solar-powered highway. According to a report in the Asian Age, installation of solar panels along the highway stretch will not only generate solar power for the whole Expressway but also for the neighbouring villages which are located alongside the proposed E-way. Various international institutions have also proposed to install the solar panels on the expressway.

[Please read more...](#)

<http://localpress.co.in/2016/06/mumbai-nagpur-expressway-soon-become-indias-first-solar-powered-highway/>

- **Govt announces policy to make Delhi solar city**

Giving a major push to clean energy, the AAP government today came out with an ambitious policy announcing incentives and tax breaks to promote solar power and making it mandatory for government and public institutions to install rooftop solar panels.

[Please read more...](#)

<http://indiatoday.intoday.in/story/govt-announces-policy-to-make-delhi-solar-city/1/685718.html>

- **Solar power tree launched to harness maximum energy using minimum land**

NEW DELHI: Seeking to harness solar power without getting into the hassle of acquiring big tract of land, the CSIR-Central Mechanical Engineering Research Institute, Durgapur has developed and designed a 'Solar Power Tree' which will help harness maximum solar energy by utilising minimum land.

[Please read more...](#)

<http://timesofindia.indiatimes.com/city/delhi/Solar-power-tree-launched-to-harness-maximum-energy-using-minimum-land/articleshow/53344897.cms>

- **Mytrah Energy bags mandate for solar projects across four States**

Mytrah Energy Ltd has bagged mandate to develop about 500 MW of solar photo-voltaic projects in Telangana, Punjab, Karnataka and Andhra Pradesh, having won them amidst stiff competition from global and domestic players.

[Please read more...](#)

<http://www.thehindubusinessline.com/companies/mytrah-energy-bags-mandate-for-solar-projects-across-four-states/article8824799.ece>

- **India to generate 146 MW of solar power at airports**

The government on Saturday said that it plans to generate a total of 146 MW of solar power at various airports across the country.

[Please read more...](#)

<http://www.greentechlead.com/solar/india-generate-146-mw-solar-power-various-airports-30368>

- **India's SECI expected to install around 275MW from 500MW rooftop tender**

Solar Energy Corporation of India (SECI) is expected to install just 250-300MW of capacity from its 500MW rooftop tender, according to the latest forecasts from consultancy firm Bridge to India. SECI received bids totalling 602MW as part of its 500MW tender for residential and institutional segments.

[Please read more...](#)

<http://www.pv-tech.org/news/indias-seci-expected-to-install-around-275mw-from-500mw-rooftop-tender>

- **Indian Railways to install solar panels in all railway buildings**

Union Railway Minister Suresh Prabhu has said that in the near future, solar panels would be installed in all railway buildings across the nation. The Minister made this announcement on Sunday when he laid the foundation stone of one Megawatt solar power plant at the Amritsar Railway Station.

[Please read more...](#)

<http://indianexpress.com/article/india/india-news-india/indian-railways-to-install-solar-panels-in-all-railway-buildings-2920748/>

NEWS ABOUT GREEN ENERGY

GENERAL ENERGY

India's power deficit may reach 5.6 percent in 2021, 22-year study

- **India's power deficit may reach 5.6 percent in 2021-22 says study**

India's power deficit is likely to rise to 5.6 percent in 2021-22 as demand starts to outstrip supply, says a study, adding that incentivizing hydropower can play a crucial role in filling the deficit.

[Please read more...](#)

<http://www.firstpost.com/india/indias-power-deficit-may-reach-5-6-percent-in-2021-22-says-study-2806334.html>

- **Tata Power CEO Anil Sardana: The only investment that has really gone well in India is in renewable sector**

CEO and MD of Tata Power Anil Sardana has turnaround Tata Power Delhi Distribution story and under this, the discom has scripted a success story. Sardana, who has worked with NTPC, BSES in his career spanning more than three decades, is not only a well-known name in the energy sector but is also known for his acumen and no-nonsense style of functioning.

[Please read more...](#)

<http://www.businessinsider.in/Tata-Power-CEO-Anil-Sardana-The-only-investment-that-has-really-gone-well-in-India-is-in-renewable-sector/articleshow/52503698.cms>

- **Environment Minister Inaugurates Conference on Clean and Green Transport for Delhi-NCR**

The Minister of State (Independent Charge) of Environment, Forest and Climate Change, Shri Anil Madhav Dave, has strongly emphasised the need to adopt the three-fold 'mantra' of "Sun, Cycle and Saving" in the energy sector for clean and green energy. Inaugurating the Conference on Clean & Green Transport for Delhi NCR - Alternatives and Solutions" here today, Shri Dave said that solar energy is the energy of the future and Research & Development (R&D) needs to be done on solar energy, as it will revolutionise the energy sector.

[Please read more...](#)

<http://newsmantra.in/environment-minister-inaugurates-conference-on-clean-and-green-transport-for-delhi-ncr/>

- **CLP set to buy Suzlon's Rs 800 crore Telengana project for India solar debut**

MUMBAI: Hong Kong's CLP Group, the largest overseas investor in power in India, wants a piece of the country's solar energy action. CLP (formerly China Light & Power), is finalising its solar debut through an acquisition. Its local arm is in advanced negotiations to buy stakes in a 100 MW solar park project in Telengana from Suzlon Energy, according to people in the know. The diversification of CLP India's clean energy portfolio comes after the company established itself as the leading wind power generator in the country with almost a gigawatt of operating assets.

[Please read more...](#)

http://economictimes.indiatimes.com/industry/energy/power/clp-set-to-buy-suzlons-rs-800-crore-telengana-project-for-india-solar-debut/articleshow/52496714.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

- **To Sidestep Pakistan, India Embraces An Iranian Port**

Indian Prime Minister Narendra Modi was in Tehran on Sunday and Monday to ink a major trade deal between India, Afghanistan, and Iran, which is in the process of unshackling its economy from years of sanctions imposed by the West. He used his public addresses there to evoke the "past glory" of India and Iran's shared history, which dates back millennia, and even quoted Ghalib, an Indian poet who wrote often in Persian.

[Please read more...](#)

<http://www.ndtv.com/india-news/to-sidestep-pakistan-india-embraces-an-iranian-port-1409494>

- **India's Punjab hosts 11.5-MW solar roof, world's largest**

May 19 (SeeNews) - A 11.5-MW solar installation, described as the world's largest single rooftop solar power plant, was inaugurated Tuesday by state officials in the Indian state of Punjab.

[Please read more...](#)

<http://renewables.seenews.com/news/indias-punjab-hosts-11-5-mw-solar-roof-worlds-largest-525569>

- **Renewable energy companies worried about GST impact on cost**

NEW DELHI: While the passing of the Goods and Services Tax (GST) bill has been hailed as a giant step forward in tax reforms, renewable energy developers are deeply worried about its implications.

[Please read more...](#)

http://economictimes.indiatimes.com/articleshow/53714730.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

NEWS ABOUT GREEN ENERGY

FINANCE & POLICY

- **Green power policy: Scaling up hydel's share in energy mix**

A hydropower policy push is in the works, with the government specifically focusing on ironing out the regulatory impediments and catalyzing financing options, specifically tuned to the long-gestation hydel sector.

[Please read more...](#)

<http://indianexpress.com/article/business/business-others/green-power-policy-scaling-up-hydels-share-in-energy-mix-2853331/>

- **Solar, wind power set for cost reductions of 59% and 26% by 2025 - IRENA**

Global average costs for solar and onshore wind electricity could fall by 59% and 26%, respectively over the next 10 years, the International Renewable Energy Agency (IRENA) says in a new report.

[Please read more...](#)

<http://renewables.seenews.com/news/solar-wind-power-set-for-cost-reductions-of-59-and-26-by-2025-irena-528910>

- **NFU pushing for Congress to drop loophole exempting military from biofuels use**

In Washington, repeated attempts to undermine the national security benefits of advanced biofuels through previous defense spending bills have been unsuccessful.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/20/nfu-pushing-for-congress-to-drop-loophole-exempting-military-from-biofuels-use/>

- **Wind energy developers in Rajasthan face losses as discoms curtail intake**

Wind developers in Rajasthan have been facing losses for the last two months because the state discoms have been arbitrarily curtailing their intake of wind power, at times two or three times a day. These 'backdowns' by the state load dispatch centres (SLDCs) have cost the developers around Rs 100-150 crore in the months of April and May.

[Please read more...](#)

<http://economictimes.indiatimes.com/industry/energy/power/wind-energy-developers-in-rajasthan-face-losses-as-discoms-curtail-intake/articleshow/52787510.cms>

- **Solar power projects in India to get \$1 bn boost; here's how**

The World Bank on Thursday said it would extend \$1 billion (around R6,700 crore) to support solar power generation programmes in India. The amount could come in handy for the country aiming to generate solar power of 100 gigawatt by 2022 as part of its initiatives to reduce greenhouse gas emissions.

[Please read more...](#)

<http://www.financialexpress.com/article/economy/india-to-get-1-billion-world-bank-funding-for-solar-projects/302827/>

- **Rate contract for Supply Erection Commissioning of LED Based Solar Street Lights at Various Locations of District Rudraprayag including 10 Years Warrantee.**

Sealed & separate tenders are invited by the undersigned for Rate contract for "Supply, Erection Commissioning of LED Based Solar Street Lights at Various Locations of District Rudraprayag including 10 Years Warrantee and Comprehensive Annual Maintenance Contract".

[Please read more...](#)

<http://www.eqmagpro.com/rate-contract-for-supply-erection-commissioning-of-led-based-solar-street-lights-at-various-locations-of-district-rudraprayag-including-10-years-warrantee/>

- **Govt to unveil solar zones policy in June**

To encourage solar power generators and equipment manufacturers, the New and Renewable Energy Ministry will unveil a policy on solar zones that would be spread over one or more districts of a state.

[Please read more...](#)

<http://economictimes.indiatimes.com/industry/energy/power/government-to-unveil-solar-zones-policy-in-june/articleshow/52488121.cms>

- **India engaged with US on visa, solar issues: Com Secy**

India is holding consultations with the US to resolve the issues relating to visa fee and the solar power case at the WTO, Commerce Secretary Rita Teatia on Monday said.

[Please read more...](#)

<http://www.dnaindia.com/money/report-india-engaging-with-us-to-resolve-visa-fee-solar-power-issues-commerce-secretary-2218126>

- **MNRE, UNIDO tie up to create awareness on use of solar thermal tech**

The United Nations Industrial Development Organization (UNIDO) and the Ministry of New and Renewable Energy (MNRE) are on a mission to sensitize industries about the use of solar thermal technologies in heating and cooling applications.

[Please read more...](#)

http://www.solarmango.com/360/single?post_id=119

- **Country's biggest Container Cargo handling Port gears up to Procure its Power via Solar Energy**

JNPT, the country's biggest container cargo handling port, has embarked upon a major solar power project. The 25MW project, estimated to cost around Rs170 crore, has the potential to meet nearly 55% of the port's requirement.

[Please read more...](#)

http://www.solarmango.com/360/single?post_id=121

- **Solar going through the roof in India**

For India to meet its ambitious PV targets, both utility-scale and rooftop, many commitments are going to have to be made across the country. Tomorrow marks the inauguration of the National Workshop on Roof Top Solar Power to start the rooftop PV roll

the country. Tomorrow marks the inauguration of the national workshop on Rooftop Solar Power to start the rooftop PV ball really rolling, and central ministries are expected to use the occasion to pledge to install 5 GW of rooftop solar on their sites and lands.

[Please read more...](#)

http://www.solarmango.com/360/single?post_id=123

- **Utility Renewables Rise, But Fail To Lift All Boats; State Policies Play A Big Role**

This just in: Americans are getting more and more of their electricity from renewable sources. Okay, so maybe that isn't exactly "news" if you follow the sector, but it's important to underline from time to time regardless.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/2016/07/utility-renewables-rise-but-fail-to-lift-all-boats-state-policies-play-a-big-role.html?cmpid=renewable07132016&eid=341047706&bid=1460254>

- **CAG expresses displeasure over dismal performance of renewable energy sector in Maharashtra**

The Comptroller & Auditor General (CAG) of India has expressed displeasure over the Maharashtra government for dismal performance in the renewable energy (RE) sector especially due to delay in the release of solar energy development policy, lack of execution of energy purchase agreements and violation of the statutory provision due to diversion of fund.

[Please read more...](#)

http://www.business-standard.com/article/economy-policy/cag-expresses-displeasure-over-dismal-performance-of-renewable-energy-sector-in-maharashtra-116080501678_1.html

- **National lab policy for renewable energy soon**

NEW DELHI: The ministry of new and renewable energy is in the process of finalising a national lab policy to set norms for testing, standardisation and certification of renewable energy related products, and define the infrastructure required for testing centres.

[Please read more...](#)

http://economictimes.indiatimes.com/articleshow/53371213.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

NEWS ABOUT GREEN ENERGY

WIND ENERGY

- **Himachal to get India's first solar wind power plant inSpiti**

State-run Himachal Pradesh Electricity Board Ltd (HPEBL) and Solar Energy Corp of India (SECI) on Wednesday signed a pact to set up India's first solar wind hybrid power plant in the hill state.

[Please read more...](#)

http://www.business-standard.com/article/news-ians/himachal-to-get-india-s-first-solar-wind-power-plant-116051800998_1.html

- **Government Launches Scheme for setting up 1000 MW CTU- connected Wind Power Project**

Ministry of New and Renewable Energy (MNRE) has launched Scheme for setting up of 1000 MW Wind Power Project connected to transmission network of Central Transmission Utility (CTU) with an objective to facilitate supply of wind power to the non-windy states at a price discovered through transparent bidding process. Ministry has designated Solar Energy Corporation of India (SECI) as nodal agency for implementation of the scheme.

[Please read more...](#)

<http://pib.nic.in/newsite/PrintRelease.aspx?relid=146194>

- **Large wind capacity in China tops 136 GW at end-May 2016**

<http://renewables.seenews.com/news/large-wind-capacity-in-china-tops-136-gw-at-end-may-2016-529067>

- **Great Wind Energy Deals Are Swaying Major Players**

Planetsave In search of low-cost, fixed-rate electricity, great wind energy deals are swaying Fortune 500 companies and other major players to throw their money "into the wind." Signing contracts for over 2,000 megawatts (MW) of electricity, big brands, high-tech companies, and other non-utility customers represented 52 percent of wind energy generating capacity in 2015.

- **Largest U.S. Offshore Wind Farm Planned in New York Waters**

Bloomberg The Long Island Power Authority plans to approve a 90 megawatt wind farm off the coast of New York that would become the largest in the U.S. when completed. Deepwater Wind LLC was selected to install 15 offshore turbines about 30 miles (48 kilometers) east of Montauk for a project that the utility's board expects to approve at a meeting on ...

- **TPI Composites - A Wind Energy Stock**

Nalyze Solar energy seems to dominate the headlines as the "clean energy source" which investors stand to benefit the most from. While solar has taken a hit lately, clean energy promises to be the way forward and arguably may be contributing to the

utter demise of the coal industry lately. While solar continues to sound promising, we've often wondered about wind ...

- **Forward says 5-MW turbine approaches Fukushima floating wind site**

SeeNews July 5 (SeeNews) – The third piece of the Fukushima Forward floating offshore wind farm demonstrator is travelling to the project site off the Japanese coast, said the consortium developing the scheme. The 5-MW Hitachi HTW 5.0-126 wind turbine, mounted on a floating platform, left Sumoto port on July 2 and is expected to arrive at the project site off the ...

- **Indian offshore wind in sharper focus as FOWIND scrutinizes supply chain**

Recharge news The early outlines of a future Indian offshore wind sector are in sharper focus thanks to a comprehensive study of how the nation's ports and supp

ly chain infrastructure could support commercial-scale turbine deployment in its seas. The strengths, weaknesses and future potential of India's infrastructure are tackled in the latest report from FOWIND – a high-level international consortium led by ...

- **India's Potential in Offshore Wind Power**

Maritime Professional The Global Wind Energy Council (GWEC) launched a new report: "Supply Chain, Port Infrastructure and Logistics Study" for offshore wind development in the states of Gujarat and Tamil Nadu in India. This study is a significant step forward in preparing a roadmap for offshore wind power in India by the GWEC led FOWIND consortium. The key supply chain elements of the ...

- **Turkish Wind Energy Congress**

Record wind growth creates 1.1 mln employment globally

Caspian Energy Global wind employment grew 5 percent in 2015 and created 1.1 million jobs globally, Global Wind Energy Council (GWEC) announced Wednesday, Caspian Energy News (www.caspianenergy.net) reports with reference to Anadolu Agency. According to the announcement within the scope of the Global Wind Day, the 5 percent global growth in the wind sector attracted \$110 billion.

- **Cedar Lodge pupils mark Global Wind Day**

Newtownabbey Times To mark Global Wind Day, a group of pupils from Cedar Lodge School travelled to a local wind farm to find out more about renewable energy. The Year 9 Eco Club pupils visited Gaelectric's Carn Hill wind farm near Straid on Wednesday, June 15, to coincide with the annual environmental event. The trip provided the students, who are currently studying Alternative ...

- **GWEC report addresses challenges of developing offshore wind in India**

Offshore Wind Journal The Global Wind Energy Council (GWEC) has published a new report, Supply Chain, Port Infrastructure and Logistics Study, for offshore wind development in the Indian states of Gujarat and Tamil Nadu. It says the study is "a significant step forward" in preparing a roadmap for offshore wind power in India by the GWEC-led facilitating offshore wind in India ...

- **Spotlight on Indian offshore**

reNEWS The Global Wind Energy Council (GWEC) has set out the basis for future offshore wind feasibility assessments in the states of Gujarat and Tamil Nadu in India. In a new report – Supply Chain, Port Infrastructure and Logistics Study – GWEC assesses key supply chain elements of the offshore wind industry, together with a preliminary evaluation of companies entering the sector.

- **GWEC presents supply chain study for Indian offshore wind**

SeeNews The Facilitating Offshore Wind in India (FOWIND) consortium released a new supply chain study that reveals what is already available and what needs to be upgraded or started from the beginning. The key supply chain elements of the offshore wind industry are assessed as part of the study and there is also a preliminary evaluation of companies entering the offshore wind ...

- **India's Potential in Offshore Wind Power**

MarineLink.com The Global Wind Energy Council (GWEC) launched a new report: "Supply Chain, Port Infrastructure and Logistics Study" for offshore wind development in the states of Gujarat and Tamil Nadu in India. This study is a significant step forward in preparing a roadmap for offshore wind power in India by the GWEC led FOWIND consortium.

- **Offshore Wind Development in India: FOWIND Launches New Report on Supply Chain, Ports and Logistics**

Facilitating India's transition towards low carbon economy by development of offshore wind power NEW DELHI, 29 June 2016 – The Global Wind Energy Council (GWEC) launched a new report today: "Supply Chain, Port Infrastructure and Logistics Study" for offshore wind development in the states of Gujarat and Tamil Nadu in India. This study is a significant step forward in preparing a ...

- **China's offshore wind power plans lag, 2020 target under threat**

Reuters BEIJING, June 24 China is lagging far behind its target to boost the country's offshore wind power capacity due to technical problems and high costs, which is the absence of more state subsidies could dent its plans to install 10 gigawatts (GW)

technical problems and high costs, which in the absence of more state subsidies could dent its plans to install 10 gigawatts (GW) by 2020, developers said. China is the world's top generator of electricity from wind turbines, with 145 GW of ...

How small data from material science accurately predicts failure rates and more

Windpower Engineering & Development Wind power set a record breaking 22% increase in annual installations for 2015. There are at least 281,924 wind turbines generating 432,883 MW of power around the globe. In the United States alone, about 48,500 turbines generate 74,471 MW, enough to power about 20 million American homes, according to the Global ...

- **Gamesa, Siemens join forces to create global wind power leader**

Channel News Asia The announcement followed months of negotiations between the two companies and it comes as demand for wind power surges with countries developing more renewable energy to comply with emissions cut targets. Spanish renewable energy group Gamesa and German engineering giant Siemens said on Friday (Jun 17) they have agreed to combine their wind power businesses to create one ...

- **US Wind Industry Highlights 66% Drop In Costs Of Wind Generated Electricity**

Clean Technica The US wind industry has celebrated the 10th annual Global Wind Day this week by highlighting the 66% drop in the costs of wind-generated electricity. According to the American Wind Energy Association (AWEA), over the past six years the cost of wind-generated electricity in the US has dropped by 66%. "From the corn fields of Iowa to the windswept plains of ...

- **Global Wind Employment Passes 1 Million**

CleanTechnica Global wind employment grew by 5% during 2015 to reach 1.1 million, according to new figures published by the Global Wind Energy Council. New figures published by the Global Wind Energy Council (GWEC) this week reveal that the record growth of the wind industry's installed capacity was reflected by growth in the industry's employment figures, which increased 5% during 2015, reaching ...

[Please read more...](#)

<http://www.gwec.net/news/latest-news/>

- **Whirlpool Amps up Commitment to Clean Energy with Newest Ohio Wind Farm**

<http://www.renewableenergyworld.com/articles/2016/05/whirlpool-corporation-amps-up-commitment-to-clean-energy-with-newest-ohio-wind-power-farm.html>

- **Minimizing Worker Safety Risks in the Wind Energy Industry**

<http://www.renewableenergyworld.com/articles/print/volume-19/issue-6/features/wind/minimizing-worker-safety-risks-in-the-wind-energy-industry.html>

- **Cape Wind Project Suffers Loss at Federal Appeals Court**

<http://www.renewableenergyworld.com/articles/2016/07/cape-wind-project-suffers-loss-at-federal-appeals-court.html?cmpid=renewablewind07212016&eid=341047706&bid=1473106>

- **Largest US Offshore Wind Farm Planned in New York Waters**

<http://www.renewableenergyworld.com/articles/2016/07/largest-us-offshore-wind-farm-planned-in-new-york-waters.html?cmpid=renewablewind07212016&eid=341047706&bid=1473106>

- **Major Australian Wind Farm Joins the Grid**

<http://www.renewableenergyworld.com/articles/2016/07/major-australian-wind-farm-joins-the-grid.html?cmpid=renewablewind07212016&eid=341047706&bid=1473106>

- **The Global Wind Market: China Versus the World**

The figures for 2015 wind installations are in, and they show two major trends. First, wind capacity continues to be installed at a major rate globally. Second, there are effectively two wind markets: China and the rest of the world.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/2016/07/the-global-wind-market-china-versus-the-world.html?cmpid=renewablewind0772016&eid=341047706&bid=1452773>

- **National Grid Marks Progress on Power Line for Block Island Wind Project**

National Grid said June 30 that a few days before, a 20-mile undersea cable between the Rhode Island mainland and Block Island came to shore.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/2016/07/national-grid-marks-progress-on-power-line-for-block-island-wind-project.html?cmpid=renewablewind0772016&eid=341047706&bid=1452773>

- **New Advocacy Group to Drive Political Support for Wind Power in the US**

A new issue advocacy group has been formed under the name American Wind Action with the goal of helping elect candidates who are strong advocates for wind power in the U.S.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/2016/06/new-advocacy-group-to-drive-political-support-for-wind-power-in-the-us.html?cmid=renewablewind0772016&eid=341047706&bid=1452773>

- **World's Longest Wind Turbine Blade Unveiled in Denmark**

Offshore wind turbine provider Adwen and blade provider LM Wind Power have unveiled what they say is the longest wind turbine blade in the world.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/2016/06/world-s-longest-wind-turbine-blade-unveiled-in-denmark.html?cmid=renewablewind0772016&eid=341047706&bid=1452773>

NEWS ABOUT GREEN ENERGY

BIOFUEL

- **Indian railroads beginning blending biodiesel at Palakkad depot**

The Palakkad Division of Southern Railway has introduced a biodiesel blending and dispensing facility at its Railway Consumer Depots at Palakkad in partnership with Indian Oil Corporation Ltd., where High Speed Diesel would be mixed with biodiesel up to five per cent before being used in diesel locomotives.

[Please read more...](#)

<http://www.thehindu.com/todays-paper/tp-national/tp-karnataka/biodiesel-blending-facility-opened-near-palakkad-junction-station/article8635099.ece>

- **Karnataka public transport may team with biodiesel producer for in-state supplies**

In India, Karnataka State Road Transport Corporation may team with Advait Bio Fuel to produce biodiesel that would supply the state agency with the fuel needed for its growing biofuel-powered bus fleet.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/08/karnataka-public-transport-may-team-with-biodiesel-producer-for-in-state-supplies/>

- **Ethiopia sets up state-owned company to develop biofuels, fossil fuels and mining**

In Ethiopia, the government has set up a state-owned Mineral, Petroleum and Biofuel Corporation with the goal of establishing biofuel as well as fossil fuel and mining operations in the country.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/08/ethiopia-sets-up-state-owned-company-to-develop-biofuels-fossil-fuels-and-mining/>

- **Govt plans to spend Rs10,000 crore during FY18-22 on integrated bio energy mission**

The central government on Tuesday proposed an integrated bio energy mission which will focus on progressive blending and substitution of fossil fuels like petrol and diesel with greener fuels like bioethanol and biodiesel.

[Please read more...](#)

<http://www.khabarindia.in/govt-plans-to-spend-rs10000-crore-during-fy18-22-on-integrated-bio-energy-mission/>

- **Biox buys Methes Energies Canada biodiesel plant for \$4.5 million**

In Canada, Hamilton, Ontario-based biodiesel producer Biox Corp. announced it has acquired a 13.2 million gallon nameplate capacity biodiesel facility in Sombra, Ontario, from Methes Energies Canada Inc. for \$4.5 million.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/20/biox-buys-methes-energies-canada-biodiesel-plant-for-4-5-million/>

- **Brazil sets up working group to study higher biodiesel blends**

In Brazil, the Ministry of Mines and Energy has created a working group to study and monitor opportunities to expand the biodiesel blending mandate, currently at 7%.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/20/brazil-sets-up-working-group-to-study-higher-biodiesel-blends/>

- **Swedish biofuel producer agrees 10-year offtake agreement for district heating**

In Sweden, Södra Cell Mörrum has signed a 10-year agreement to supply residual heat from its biofuel production process to Karlshamn Energi for its district heating system that supplies more than 1,500 customers.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/20/swedish-biofuel-producer-agrees-10-year-offtake-agreement-for-district-heating/>

- **Global Partners may begin transloading ethanol later this month**

In Oregon, Global Partners may begin transloading ethanol later this month at the Columbia Pacific Bio-Refinery at Port Westward.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/20/global-partners-may-begin-transloading-ethanol-later-this-month/>

- **Why is ATJ renewable jet fuel rockin' it?**

If you've seen the astonishing leap in Gevo's valuation over the past 2 weeks and the jump in Amyris' value this week, you might have noticed they have one important element in common: both are making major announcements regarding supply of renewable jet fuel.

[Please read more...](#)

<http://www.biofuelsdigest.com/bdigest/2016/06/14/why-is-atj-renewable-jet-fuel-rockin-it/>

- **Kolkata To Have Piped Natural Gas In 3 Years, Says Dharmendra Pradhan**

KOLKATA: The oil ministry has drawn up plans to provide piped natural gas in and around Kolkata over the next three years for which a Rs. 12,000-crore investment has been earmarked, Petroleum and Natural Gas Minister Dharmendra Pradhan said today.

[Please read more...](#)

<http://www.ndtv.com/kolkata-news/kolkata-to-have-piped-natural-gas-in-3-years-says-dharmendra-pradhan-1444084>

- **Energy Security for India-Creating a Biofuel Economy**

The Minister of State for Power, Coal, New and Renewable Energy and Mines (Independent Charge), Shri Piyush Goyal addressing at the inauguration of the National Conference on "Energy Security for India-Creating a Biofuel Economy", on the occasion of the World Biofuel Day, in New Delhi on August 10, 2016. The Minister of State for Petroleum and Natural Gas (Independent Charge), Shri Dharmendra Pradhan and the Secretary, Ministry of Petroleum and Natural Gas, Shri K.D. Tripathi are also seen.

[Please read more...](#)

<http://powermin.nic.in/en/content/prime-minister-shri-narendra-modi-laying-foundation-stone-1600-mw-thermal-power-station-ntpc>

NEWS ABOUT GREEN ENERGY

OTHER RENEWABLE ENERGY & CLIMATE CHANGE

- **Hydrogen Energy Fuel Cell In India- A Way Forward**

One of the biggest problem that world is facing today is the global energy crisis. The dependence of the man to produce the energy from the non-renewable energy source has lead towards the extinction of these sources. This is why there is need to shift our focus on the more sustainable and efficient source of energy. The heavy use of the conventional sources has increased the level of pollution.

[Please read more...](#)

<http://indianpowersector.com/2016/06/hydrogen-energy-fuel-cell-in-india-a-way-forward/>

- **New Installed Energy Storage Systems for Renewable Energy Integration Capacity Is Expected to Total 45.1 GW from 2015 to 2025, According to Navigant Research**

<http://www.businesswire.com/news/home/20160617005433/en/Installed-Energy-Storage-Systems-Renewable-Energy-Integration>

- **Corporations Are the New Drivers for Renewable Energy Growth**

<http://www.renewableenergyworld.com/articles/print/volume-19/issue-8/features/wind-solar/corporations-are-the-new-drivers-for-renewable-energy-growth.html?cmpid=renewable07132016&eid=341047706&bid=1460254>

- **BC Hydro, McLeod Lake Indian Band reach agreement on 1,100-MW Site C hydroelectric project**

Canadian utility BC Hydro and the McLeod Lake Indian Band have forged an agreement that will give the aboriginal group "economic development opportunities and other benefits" related to the construction and operation of the Site C hydroelectric project.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/hydro/2016/07/bc-hydro-mcleod-lake-indian-band-reach-agreement-on-1-100-mw-site-c-hydroelectric-project.html?cmpid=renewable07132016&eid=341047706&bid=1460254>

- **Author Amitav Ghosh has bad news for Mumbai, says city's location makes it vulnerable to climate change**

What is common between Mumbai's coastline and Miami beach? Writer Amitav Ghosh says both are likely areas to be worst affected by climate change. "When you look at the Mumbai coastline, you see these beautiful homes.

[Please read more...](#)

<http://economictimes.indiatimes.com/magazines/panache/authoramitav-ghosh-has-bad-news-for-mumbai-says-citys-location-makes-it-vulnerableto-climate-change/articleshow/53372442.cms>

INNOVATION TECHNOLOGIES

1. Indian Scientists Harness Solar Energy From Silk Cocoon

Indian scientists have discovered a UV-sensitive substance on silk cocoon membranes which converts light into electricity, a finding they say has opened up possibility of designing a bio-solar battery for medicine and also has potential applications in development of third generation solar cells.

[Please read more...](#)

http://www.solarmango.com/360/single?post=Indian%20Scientists%20Harness%20Solar%20Energy%20From%20Silk%20Cocoon&post_id=20

2. World's first electric road opens in Sweden

Sweden just opened on the E16 in Sandviken a test electric road of two kilometres, which allows electric vehicles to connect to an overhead system similar to light rail.

[Please read more...](#)

http://www.climateactionprogramme.org/news/the_worlds_first_electric_road_opens_in_sweden

3. Solid-state Batteries for Sensors, Electric Cars and the Grid

The solid-state batteries that are on the market today are thin-film batteries, which, on account of their limited capacity, can only be used for micro-storage, for example to provide power for sensors. But as a result of innovations in materials and architecture, solid-state batteries may soon be used also for large storage systems, for example for electric cars or the smart grid.

[Please read more...](#)

<http://www.renewableenergyworld.com/articles/2016/07/solid-state-batteries-for-sensors-electric-cars-and-the-grid.html?cmpid=renewablestorage07282016&eid=341047706&bid=1480429>

4. Artificial Leaf That Produces Fuel From CO2 And Sunlight

Conversations about the state of the planet's climate are often dire and mostly negative, given the human-induced changes to it and the seeming inability to even control the degradation, let alone turn the clock back. And so, it should be cause for cheer that scientists from the University of Illinois at Chicago (UIC) have created a solar cell that converts atmospheric carbon dioxide into a usable fuel.

[Please read more...](#)

<http://www.ibtimes.com/artificial-leaf-produces-fuel-co2-sunlight-2396417>