

# EMERGING TECHNOLOGY NEWS

## VOLUME 2 ISSUE 4 OCT-DEC



2015

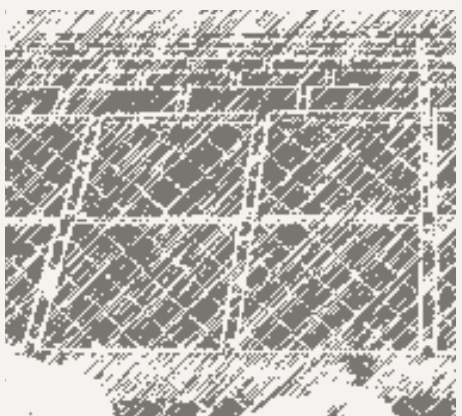


### INDIA INVITES RENEWABLES-INTEGRATED STORAGE DEVELOPERS

India's Ministry of New and Renewable **7TH SEP** Energy (MNRE) has invited expressions of interest (EOI) for energy storage demonstration projects to integrate renewables, recognising that the technology "has the potential to become highly attractive for both grid-connected and off-grid renewable energy applications".

The government ministry published the EOI documents yesterday, calling for demonstration projects that support the increased deployment of renewable energy sources. However, in addition to trialling effective ways to mitigate the variable power output of technologies including solar PV and wind power, MNRE also highlighted the potential network benefits of energy storage.

The ministry wants interested parties to also consider the



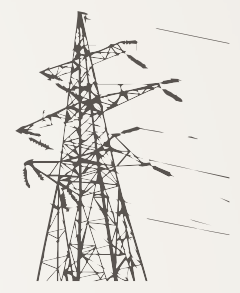
use of energy storage for applications including "time shift" (load shifting), grid stabilisation, peak shaving, "improved generation efficiency and improved transmission capacity utilisation," it said. Among a number of other aims, MNRE also wants to find ways to scale up deployment once the



### NATIONAL SMART GRID MISSION LAUNCH

Government has approved the National Smart Grid **7TH SEP** Mission (NSGM) -an institutional mechanism for planning, monitoring and implementation of policies and programs related to Smart Grid activities. This was stated by Sh. Piyush Goyal, Minister of state for Power, Coal & New and Renewable Energy (IC) in a written reply to a question in the Lok Sabha today. The total outlay for NSGM activities for 12th Plan is Rs 980 crore with a budgetary support of Rs 338 crore.

NSGM has three tier structure:  
•At the apex level, NSGM has a Governing Council headed by the Minister of Power. Members of the Governing Council are



### FAME INDIA: GOVT SCHEME OFFERS UP TO RS 1.38 LAKH INCENTIVES FOR ELECTRIC, HYBRID VEHICLES

**9TH APR** To promote eco-friendly vehicles, the government today formally launched the FAME India scheme offering incentives on electric and hybrid vehicles of up to Rs 29,000 for bikes and Rs 1.38 lakh for cars.

FAME India - Faster Adoption and Manufacturing of Hybrid and Electric vehicles in India - is a part of the National Electric Mobility Mission Plan. The scheme envisages Rs 795 crore support in the first two fiscals starting with the current year.

"We are starting the scheme in metropolitan cities. Eventually the scheme will be launched in Smart Cities and all major cities across the country," Union Heavy Industries Minister Anant Geete said.

ReutersReuters He said the heavy industries ministry has estimated a total requirement of about Rs 14,000



### PM MODI MEETS TESLA'S ELON MUSK

**28TH SPET** When Prime Minister Narendra Modi visited the Tesla Motors headquarters near San Francisco last week, he was almost reading the writing on the wall, that solar is going to be the fuel of this century. At Tesla, Modi was not really looking to bring the technology behind Elon Musk's highly successful, but extremely expensive, cars to India.

In fact, the Indian delegation had its eyes on his Powerwall and how this solar battery could help us tap one resource we have in abundance. The \$3000 Tesla Powerwall, or any similar concept, could help make a lot of Indian households self-sufficient in their energy needs at least for most of the year.

The Powerwall now costs \$3000 upwards without the panels in the US. According to some reports, power generated by the rig would be at least double what regular customers pay in the US per KW. But all that could change and very soon.

Solar power is nothing new to the world and even India has used it for a few decades. Mass adoption, on the other hand, has been prevented by the prohibitive costs that we mentioned before. However, according to academic Vivek Wadhwa, the pace at which solar technology is advancing now a hundred percent of the world's energy needs can be



## || India's first battery operated building (BoB) by ACME

ACME has turned its headquarter at Gurgaon into one-of-its-kind 'Battery-Operated-Building' in the India through the installation of a technologically advanced energy back-up solution. The whole building has been powered using a stack of lithium-ion batteries to the tune of 270 KWh.

This Make-in-India solution has been developed at the 27 acre plant of ACME at Rudrapur, Uttarakhand. The completely silent solution produces no noxious fumes and occupies a fraction of the space required for a comparable diesel generator. The green technology product has no health hazards. With a lifecycle of over 10 years, the installation requires zero maintenance.

Battery gets charged fully from deep discharge condition in about two hours time and is available for the next discharge. Unlike the existing solutions, this solution does not consume any electricity to sustain itself till the next use. However, it goes into Sleep-mode and conserves electricity to deliver complete power back-up.

The major components of the installation are Lithium Ion batteries, Battery Management System and a hybrid inverter.

At the moment, this battery is being charged with the

Grid only. However, it can be connected solely with renewable energy like solar, wind, biogas and others or integrated with renewable energy generation and grid-tied as well. It has the scope of helping residential, commercial and industrial segments to satiate their need for reliable, contiguous and clean energy.

Through this installation, ACME has demonstrated to the world, the immense scope of lithium-ion in energy storage solutions and it will truly change the manner in which we manage and store energy.



Leading Through Innovation

India's first Building on Battery (BoB)



EcoGrid  
Lithium-ion based ESS

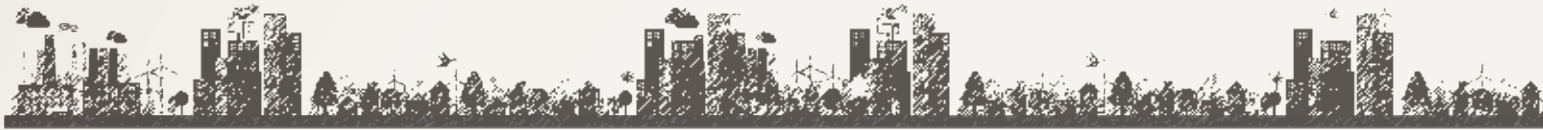


Building on Battery



Key Loads	
HVAC	: 100KVA
Lighting	: 50 KVA
IT Loads	: 50KVA
Elevator	: 20KVA
Other Utility Loads	: 30KVA

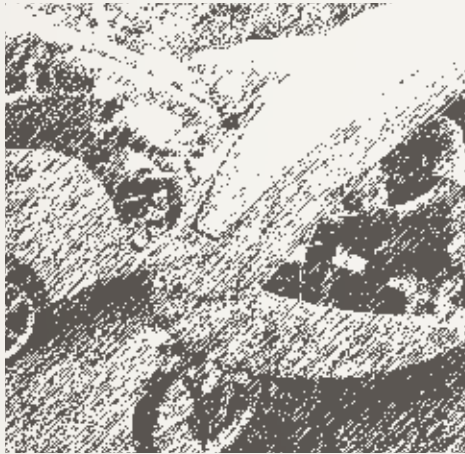
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●	Tube Lights



## RAJYA SABHA GIVES FINAL NOD TO E-RICKSHAWS IN DELHI

The Rajya Sabha on March 11, 2015 **12TH MAR** has passed The Motor Vehicle (Amendment) Bill, 2015 to amend the 1988 Act by a voice vote. However, the measure was adopted by the Lok Sabha on March 3, 2015.

Parliament approved of the Bill in order to permit the plying of e-rickshaw on the roads of the capital state.



Nitin Gadkari, Minister of Road Transport and Highways claimed that the approval of the Motor Vehicle (Amendment) Bill would not only benefit the poor, but also boost 'Make in India' initiative lead by Prime Minister Narendra Modi.

As per the Bill, It should be noted that:

The government has considered a proposal to provide credit to buy these battery vehicles E-rickshaws, that were earlier being imported from China, would now be manufactured in Pune, so as to bolster the 'Make in India' initiative

Taking a major step in its bid to recast the country's urban landscape, the Union Cabinet Wednesday approved Central government spending worth Rs 98,000 crore under two new urban missions over the next five years.

Chaired by Prime Minister Narendra Modi, the Cabinet cleared the Smart Cities Mission — under which 100 smart cities would be built — and the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) for 500 cities with outlays of Rs 48,000 crore and Rs 50,000 **7TH SEP**

Central govt announces 98 Smart Cities, Venkaiah Naidu terms them 'safe investments for pvt

## 100 SMART CITIES: CABINET CLEARS SMART CITIES MISSION WITH OUTLAY OF RS 48,000 CR



## SUNEDISON BUYING IMERGY BATTERIES FOR MICROGRIDS IN RURAL INDIA

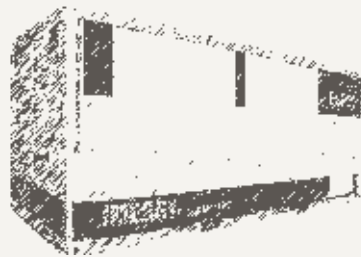
**25TH MAR** SunEdison Inc., a U.S. solar panel maker and power-plant developer, is buying 1,000 batteries from closely held Imergy Power Systems Inc. to build microgrids in rural India.

Each battery will be able to provide one village with 10 hours of daily power, said Tim Derrick, general manager of advanced solutions and energy storage for SunEdison.

SunEdison is seeking to develop 5,000 such systems by 2020 to store solar energy for 20 million people who otherwise wouldn't have electricity. The first 1,000 will be developed in the next two to three years.

"This application with rural microgrids is a way to bring solar and storage together and make that dispatchable, and ultimately deliver 24-7 energy to villages that don't have that kind of power," Derrick said Tuesday in a telephone interview.

Imergy's batteries employ vanadium, a metallic chemical element, as a key ingredient that it recycles from industrial



## MAKE IN INDIA - STORAGE

There is a high tide of hope for change in India. This May, across India's immense diversity, 1.25 billion people spoke unequivocally for political stability, good governance and rapid development. India has a government with a majority in the Lok Sabha, our lower house of parliament, for the first time in 30 years. A young nation with 800 million people under age 35, India is brimming with optimism and confidence. The young people's energy, enthusiasm and enterprise are India's greatest strength. Unleashing those attributes is my government's biggest mission. **11TH JUN**

We will pursue this mission by eliminating unnecessary laws and regulations, making bureaucratic processes easier and shorter, and ensuring that our government is more transparent, responsive and accountable. It has been said that doing the thing right is as important as doing the right thing.

We will create world-class infrastructure that India badly needs to accelerate growth and meet people's basic needs. We will make our cities and towns habitable, sustainable and smart; and we will make our villages the new engines of economic transformation. "Make in India" is our commitment—and an invitation to all—to turn India into a new global manufacturing hub. We will do what it takes to make it a reality.

