

# seem news

society of energy engineers and managers



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**VIEW POINT** 

National Hydrogen Energy Mission and Energy Trilemma.

The discovery that hydrogen can serve as an energy vector is about two century old. The quest for alternative to fossil fuels had inspired experiments and exploration s with hydrogen too put it to beneficial use economically without consequent ill effects. World over the talks of a shift from carbon economy to hydrogen economy had been quite active since a long time. We at SEEM had brought out one our issues of our magazine "energyn manager" way back in 2014 with theme as ' towards a sustainable hydrogen economy'. Now there is a renewed focus on hydrogen as fuel. It has gained currency in the wake of the yearning for the world to go net zero to avoid degeneration to climate calamity. The challenges in production, the economics and safety in storage of hydrogen are all parts of the consideration.

The most common two methods of production of hydrogen are natural gas reforming which is an endothermal process and the electrolysis. Electrolysis holds promise as a carbon free process when the electricity deployed is from renewable energy sources.

This prompts policy makers and stakeholders to classify the hydrogen based on its source of energy used for production. Thus hydrogen produced from coal becomes brown hydrogen, and when it is produced from natural gas or petroleum it is known as grey hydrogen. Grey hydrogen production when combines processes of carbon capture, sequestration and storage the outcome is referred as blue carbon. When hydrogen gets produced by electrolysis deploying electricity from renewable or nuclear sources, it gets the sobriquet green energy.

World is now seized of the challenge to reduce the cost of green hydrogen to \$2/kg H<sub>2</sub> by 2025 as an interim target and then to \$1/kg H<sub>2</sub> by 2030. The improved performance of electrolyzer, better understanding of cell stack degradation, and workable tradeoffs of improved electrolyzer systems with different carbon free electricity are the factors under research to bring down the cost of green hydrogen.

In the backdrop of our Government's clarion call for self reliance, our over dependence on imported fuel continues to be a bane. Our PM has made clear the resolve to make India energy independent before we celebrate 100th year of our political independence. Rightly, so he sees green hydrogen as a vital piece in the scheme of things which can lead us to this energy independence. Probably this can be developed as an export idea too, earning us financial stability as well. With all these in sight the ambitious National hydrogen mission has been launched. We can wish for its full realization which will be a boon to India , along with other significant components of renewable energy and energy efficiency to solve the energy trilemma of energy security, energy equity and environmental sustainability.. Jai Hind!

> **G** Krishnakumar Immediate Past National General Secretary & Chief Operating Officer

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# Training on Electrical Safety on 27-28th August, 2021

SEEM Karnataka Chapter is organizing a training on 'Electrical Safety' on 27-28th August, 2021 at 07:30pm to 08:30pm. Mr. Jayaprakash Narayan, Chairman, SEEM Karnataka Chapter is the trainer for the Program. Course details is as below.

# TRAINING On

## ELECTRICAL SAFETY

27-28 August 2021 7.30 pm to 8.30 pm

# Organised by



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Website: www.seemindia.org

E Certificate will be issued on successful completion of training

## Training on **Electrical Safety**

## Day - 1

- 1. Electrical Safety overview
- 2. Electricity ACT and CEA Regulations
- Safety Audit and methodology
- 4. Q&A

## Day - 2

- 1. Grounding, Earthing and Lightning
- 2. Electrical Fire Causes and Control
- Electrical Incidents First Aid
- Case Studies
- 5. Q&A

## Course Fee

General -Rs. 700 + 18% GST SEEM Members- Rs. 500+ 18% GST Students -350+ 18% GST

## **Registration Link:**

https://forms.gle/wVqXptqKqTZExosL8

## **Payment Link:**

https://pages.razorpay.com/pl\_EforYEySHEVDK7/view

## Trainer



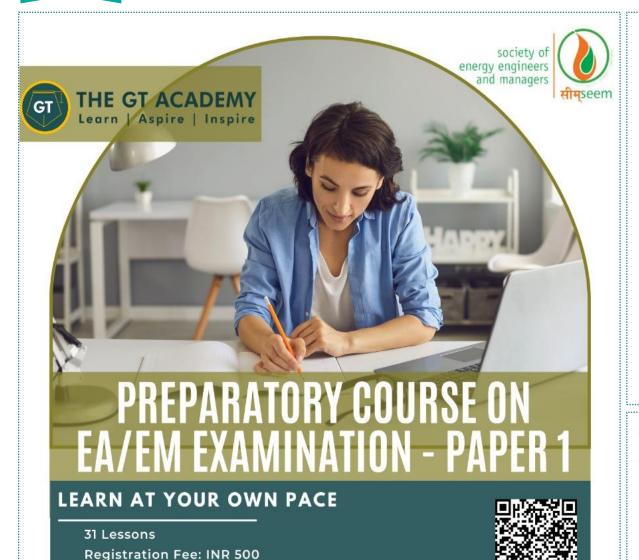
Jayaprakash Narayan

(Founder and Tech Head, e-Xcel Energy, Bengaluru) BE, MSc Engg- IISc, MIEEE, MIETE, MISHARE. Chairman SEEM Karnataka Chapter. He has worked as scientist GOI. Founder Director Enercon Systems (Later Conzerv Systems) and Sr VP R&D Alarcity Electronics Limited (Atandra). He has around 35 years experience in R&D, product development, power quality and electrical safety. He has carried out power quality and safety audits in 21 countries.

## Contact

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**NEWS** 



## **Registration fee:**

Paper 1 - Rs. 500 + GST

Certificate Awarded

Paper 2 - Rs. 1250 + GST

Paper 3 - Rs. 1250 + GST

Paper 4 - Rs. 1500 + GST

Total Cost - Rs. 4500 + GST

If you would like to register for all 4 papers, the fees will be only Rs. 4000 + GST.

## What Will You Learn?

This is the 21st National Certification **Examination of Energy Managers and** Energy Auditors, conducted by the Bureau of Energy Efficiency. This exam certifies energy managers and energy auditors in India.

This course will take you through Paper - 1 of the 4 books that needs to be referred during this examination.

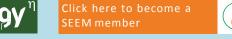
Dates of examination - 25th & 26th September 2021

## **Topics Of Interest**

- Energy Conservation Act 2001 & Related Policies
- · Energy Scenario Global & Indian
- · Energy & Financial Management
- Energy Monitoring & Targeting
- · Project Management Cycle
- · Renewable Energy
- · Measurement & Verification
- · Material & Energy Balance

For more details and registration, please click here

Contact: Ms. Donna Arcangela Mob: 09594776372 E-mail: donnaarcangela21@gmail.com **REPORT** 



# Webinar on "Vibration Analysis through predictive maintenance"

Society of Energy Engineers and Managers Tamil Nadu Chapter organised a webinar on "VIBRATION ANALYSIS THROUGH PREDICTIVE MAINTENANCE" on 21st August, 2021 at 6:30 PM to 7:55 PM. 30 Participants were attended the webinar.

## **Key Take Aways were:**

- Relationship between Machine Abnormalities and Vibration
- Basic Concepts of Vibration Analysis
- Energy Wastage due to Misalignment
- Equipments required for Condition Monitoring through Vibration Monitoring
- Benefits of Predictive Maintenance
- Case Studies in Vibration Analysis

#### Presenter:

Mr. P. Deivabalan having 4 decades of experience in various Auto Component Manufacturing Industries. He is a Mechanical engineer from Anna University and Masters in Manufacturing Management from BITS – Pilani. He is affiliated to 25+ Institutions and Societies including SEEM He is specialised in Energy, environment & Fuel conservation, renewable Energy Projects besides Machine Maintenance through Predictive Maintenance, RCM,TPM etc., He is also specialised in implementing various ISO Systems for his organisations.



# Webinar on "Aligning energy investment with 2050 climate goals."

Society of Energy Engineers and Managers, Karnataka Chapter conducted a webinar on "Aligning energy investment with 2050 climate goals" on 14th August 2021.



Mr. Baraneedharan V (Director, Renewable Cogen Globe World Bank Consultant) was the presenter. He is an international expert in fields of sustainable development, energy management and renewable energy. He has executed several institutional projects under World Bank & UNIDO, government agencies and private sectors in India and several other Asian & African countries. Besides being a Master's degree holder in Energy Engineering, he is also a BEE Certified Energy Auditor.

Presenter given insights on history of climate agreements, why energy sector is key target, changing investment scenario, impacts on power generation, impacts on policy and regulations. He also shared opportunities and challenges and key "To Dos" for industries/investors.

Webinar was well accepted by the participants.

## **NEWS**

# Solar energy to contribute 300 GW to India's RE target: Amitesh Sinha, Jt. Secy, MNRE

New Delhi: Solar energy will contribute almost 300 gigawatt (GW) to the 450 GW of renewable energy target that India aims to achieve by 2030, said Amitesh Sinha, joint secretary, Ministry of New and Renewable Energy on Wednesday.

He said that the country has a clear road map on the part of demand visibility.

"India needs to add about 25 GW of solar energy capacities every year... Apart from this, we are also moving towards a green hydrogen ecosystem," he said at a virtual event organised by industry body, the Associated Chambers of Commerce and Industry of India (ASSOCHAM).

Sinha also said that the government was now focusing its attention on how manufacturing equipment can be supplied and how India can become self reliant in this sector.

"The earlier efforts were not encouraging to the solar equipment manufacturers. Now, with the government deciding to impose 40 per cent basic customs duty on solar modules and 25 per cent on solar cells from 1 April 2022, imports would become more expensive and local manufacturing would be encouraged," he added.

The 450 GW of renewable energy target that the central government has aimed to achieve by the year 2030, almost two-third of the same would come from solar energy stated the honorable.

Bhagwant Khuba, Minister of State for renewable energy, said that almost two-third of the 450 GW target will come from solar, which was a huge opportunity for businesses to tap the sector for the next nine years.

"India, till recently, was only importing the solar power manufacturing equipment to generate solar power, however, a lot has changed since then," said Khuba.

Vineet Agarwal, managing director of TCI and president, ASSOCHAM said that indigenous manufacturing of the equipment will reduce the recurring forex outgo by \$2.5 billion to \$5 billion per annum to meet the projected demand of 450 GW by 2030.



Source:: https://energy.economictimes.indiatimes.com/news/power/farm-use-drives-powerdemand-across-gujarat-to-new-high/85448152



**REPORT** 

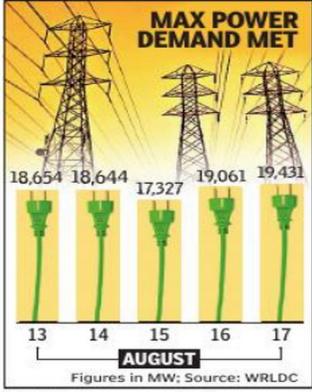
# Farm use drives power demand across Gujarat to new high

AHMFDABAD: Power deman d across Gujarat soared to a record high on Tuesday, thanks to the increased consumption of electricity in the agriculture sector amid the stalled monsoon. With more and more farmers drawing groundwater using pumps to save their crops, the electricity demand from the agriculture space, too, has reached near its all-time high level.



so far, shows the daily data compiled by the Western Region Load Dispatch Centre (WRLDC), which is a central government entity. Previously, the power demand had touched a high of 19,360MW in April this year.

13 14 15 16 17 The state's maximum power demand stood at 19,431MW on Tuesday, which is the highest AUGUST Figures in MW; Source: WRLDC The surge in demand is primarily attributed to the growing usage of electricity by farmers for irrigation purposes. "The consumption in agriculture has spiralled as farmers are drawing more ground water to save their crops in the wake of the stalled monsoon," said people closely monitoring power



The state government also raised the time for supply of power to farmers to 10 hours a day, which has also contributed to the higher consumption.

According to sources, around 110 million units (MUs) or average 4,583MW of power consumed in the agriculture sector on Tuesday, a tad lower than the all-time high of consumption of 111MUs (about 4,625MW) in agriculture in the state.

It may be mentioned here that subdued monsoon has caused 48% rain deficit in the state when compared with the normal rainfall till August 15.

"Poor wind and solar power generation amid record high demand has put pressure on the state-run Gujarat Urja Vikas Nigam Limited (GUVNL) to procure costly electricity from the power exchange," said K K Bajaj, a citybased regulatory and energy expert

The power demand of 17,947MW was recorded at 6pm on Wednesday, according to the State Load Dispatch Center-Gujarat.

#### Source::

https://energy.economictimes.indiatimes.com/ news/power/farm-use-drives-power-demandacross-quiarat-to-new-high/85448152

# demand-supply in the state.

# Realizing India's EV vision: how these startups are giving a push towards electric mobility

NEW DELHI: It is not only biggies such as Ola and Aether that are pushing towards electric mobility, a host of startups across India, too, have taken the first few steps towards that change.

Startups such as BluSmart, Zypp Electric and Charge+ Zone are betting on the fact that India is facing climate change and is on the brink of experiencing extreme weather anomalies such as excessive rainfall, abnormal heat waves and frequent cyclones.

Transition to electric vehicles (EVs) may prove to be a groundbreaking solution in this regard, with the potential to significantly reduce the pollution levels induced by fossil fuel emissions.

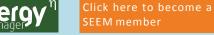
"India is home to 22 of the world's 30 most polluted cities and globally, road transport is one of the fastest growing sources of carbon emissions," said Anmol Singh Jaggi, founder & CEO at BluSmart.

Founded by Jaggi and Punit Goyal, BluSmart is building an affordable and sustainable all-electric ride-hailing service, an industry-first in India.

The startup has a fleet of 512 BluSmart EV cabs and 301 EV Charging Stations (across 6 BluSmart EV Superhubs). BluSmart has already completed 510,000 emission-free rides and covered 16 million emission-free km. The company promises zero ride denials and zero price surging.

"With the theme of responsible mobility, BluSmart has adapted sustainable practices not only to minimize the burden on the very environment where we exist but also to ensure a stress free earning opportunity for the driver partners without any asset ownership burdens on them, making the BluSmart experience truly sustainable for the people and planet we touch," said Jaggi.

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Similarly, Zypp Electric, a brainchild of Akash Gupta and Rashi Agarwal, has made significant strides in the EV last-delivery market, and its clientele includes the likes of Amazon, Flipkart, Big Basket, Myntra and Grofers, among others.



Source:: https://energy.economictimes.indiatimes.com/news/power/realizing-indias-ev-vision-how-these-startups-are-givinga-push-towards-electric-mobility/85448117

# Jamshedpur: JREDA to light up Golmuri with 1,650 solar LEDs

JAMSHEDPUR: The cable town area in Golmuri, which was reeling in darkness for the past 20 years, is set to light up soon as the Jharkhand Renewable Energy Development Agency (JREDA) entered into pact with Jamshedpur East MLA Saryu Rai's office to install 1,653 solar LED lights at every nook and corner in the area.

Notably, since the closure of the cable company, the entire cable town area is experiencing shortage of drinking water and lack of street lights. The drive to illuminate the areas commenced on Wednesday with the formal launch of the programme.

JREDA will bear the subsidy part while the remaining cost of the installation scheme will be incurred by the MLA, under Local Area Development (LAD) scheme, as per the agreement reached between the two parties. The total cost of the project is Rs 2.10 crore. The MLA has contributed Rs 85 lakh from MLA LAD funds.



"Along with executing the project, JREDA would be responsible for the maintenance of the lights for the next five years. "In Jharkhand, this is the first such project in any assembly constituency wherein an urban area is being covered with solar LED facility," Rai said while launching the project.

"It is a good initiative by the MLA. Hope several other areas in Jamshedpur East would be covered by solar LED street lights in the coming days," said 43-year-old G K Ojha, a resident of zone one, Birsanagar, Telco.

"There was a need for lighting up the streets as residential areas in cable town were reeling in darkness for long," said retired Tata Steel employee Dharmendra Rai, a resident of Golmuri.

Source: https://energy.economictimes.indiatimes.com/news/renewable/jamshedpur-jreda-to-light-up-golmuri-with-1650solar-leds/85476486

# Five engineering students in Goa build solar powered e-cycle

PANAJI: Five students of Agnel Institute of Technology and Design have built a custom solar electric bicycle that can comfortably cover the distance between Panaji and Vasco on a single charge. The electric cycle is powered by 20 lithium ion batteries which can be charged by two solar panels or a conventional power supply point at home.

The five mechanical engineering students from the institute began toying with the idea of building a self-sustained cycle powered by energy from the Sun a year back as part of their final semester project. Endless power with little to no damage to the environment is the holy grail for transportation and the five boys wanted to help reduce carbon emissions.

Beginning in early July, the students -Veloy Fernandes, Hrishikesh Mandrekar, Rohan Naik, Annal Prabhu Ajgaonkar, Beniston Ribeiro fabricated a cycle frame made of stainless steel. They mounted two solar panels on the cycle to charge the 20Ahr 18650 Li-Ion batteries.

"The cycle weights 29 kilos at present. We could have made an aluminium frame or even from carbon to reduce the weight but it would have been very expensive," said Ribeiro, one of the five students who worked on the project.

A pulse width modulation (PWM) charge controller ensures that the batteries do not overcharge or short circuit. The batteries power a brushless DC (direct current) motor which is mounted onto the rear wheel.

Charging your electrical vehicle (EV) on renewable energy such as solar or wind minimizes these emissions even more. All these energies available are eco-friendly when compared to traditionally-used fuels which cause serious problems of environmental pollution," said the students while explaining their concept

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Due to growing environmental concerns, high fuel costs and supporting policies, most automobile manufacturers are moving towards large-scale manufacturing of electric vehicles.

Ribeiro admits that at 29 kilos the e-cycle is a bit on the heavier side and that if the weight is reduced, the cycle can travel a longer distance.

Source: <a href="https://energy.economictimes.indiatimes.com/news/renewable/innovation-five-engineering-students-build-solar-powered-electric-cycle/85476310">https://energy.economictimes.indiatimes.com/news/renewable/innovation-five-engineering-students-build-solar-powered-electric-cycle/85476310</a>

# Govt. expects Rs 39,832 crore from sale of power generation assets by FY25

Government's think tank NITI Aayog has valued state-owned power generation assets at Rs 39,832 crore which can be monetised by the financial year 2025, according to the National Monetisation Pipeliner released on Monday. Finance Minister Nirmala Sitharaman on Monday announced a Rs 6 lakh crore National Monetisation Pipeline (NMP) that will look to unlock value in infrastructure assets across sectors ranging from power to road and railways.



The assets considered for monetisation over FY 2022-25 aggregate to 6.0 gigawatt (GW). Out of which, about 3.5 GW is from hydel assets and about 2.5 GW is renewable energy (RE) assets which includes solar and wind. The total value of assets considered for monetisation is estimated at Rs 39,832 crore over FY 2022-25, the NMP document said.

Together, 6.0 GW asset base considered for monetisation constitute about 6 per cent of the total generation capacity under central PSUs. Key entities whose assets have been considered are NHPC, NTPC and SJVNL who own bulk of the hydel assets and NTPC (under Ministry of Power) and NLC (under Ministry of Coal) that own renewable assets.

"The book value approach has been adopted to determine an indicative value of the above-mentioned assets varying based on the vintage value of the asset," it said.

The average realisation value for hydel assets has been tentatively considered as Rs 7.5 crore per MW, while the average realisation value for solar assets has been tentatively considered as Rs 5.5 crore per MW.

The Union Budget 2021-22 had identified monetisation of operating public infrastructure assets as a key means for sustainable infrastructure financing.

Source: https://energy.economictimes.indiatimes.com/news/power/govt-expects-rs-39832-crore-from-sale-of-power-generation-assets-by-fy25/85582079

# India can lose \$35 trillion over next 50 years due to climate change: Deloitte

New Delhi: India must act now to prevent it from losing \$35 trillion in economic potential over the next 50 years due to unmitigated climate change, according to a latest report from the Deloitte Economics Institute.

It added that India can gain \$11 trillion in economic value over the same period by limiting rising global temperatures and realising its potential to 'export decarbonisation' to the world.

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## **NEWS**

"We have a narrow window of time — the next 10 years — to make the decisions needed to alter the trajectory of climate change. No one is immune to the impact of climate change, but for India this is a window of opportunity to lead the way," said Atul Dhawan, chairperson, Deloitte India. According to the report titled 'India's turning point: How climate action can drive our economic future', over the next 50 years, the top five most impacted industries in terms of economic activity will be — government and private services sector, manufacturing, retail and tourism, construction, and transport.

Deloitte report estimates that by 2070, these five industries alone would experience an annual loss in the value added to GDP of more than \$1.5 trillion per year.

"By making the right choices now, India could chart a more prosperous path towards a low-emission future, accelerating progress in the rest of the world by exporting key technologies, processes, and know-how," said Viral partner and Thakker, sustainability leader, Deloitte

The report said that India can achieve significant economic growth by supplying the products, services, and financing the world will need to limit temperature increases.



#### Source:

https://energy.economictimes.indiatimes.com/news/renewable/india-canlose-35-trillion-over-next-50-years-due-to-climate-changedeloitte/85557376

# Changes observed in climate unprecedented in thousands of years: IPCC

New Delhi: The climate is changing at a rapid rate and unless there are immediate, rapid, and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach, according to the latest Intergovernmental Panel on Climate Change (IPCC) Report, released on Monday.

The report said that emissions of greenhouse gases from human activities are responsible for about 1.1°C of warming since 1850-1900, and finds that averaged over the next 20 years, global temperature is expected to reach or exceed 1.5°C of warming.



Scientists are observing changes in the Earth's climate in every region and across the whole climate system.

"Many of the changes observed in the climate are unprecedented in thousands, if not hundreds of thousands of years, and some of the changes already set in motion – such as continued sea level rise – are irreversible over hundreds to thousands of years," the report said.

The report projects that in the coming decades climate changes will increase in all regions.

"For 1.5°C of global warming, there will be increasing heat waves, longer warm seasons and shorter cold seasons. At 2°C of global warming, heat extremes would more often reach critical tolerance thresholds for agriculture and health," it added.

However, strong and sustained reductions in emissions of carbon dioxide (CO2) and other greenhouse gases would limit climate change. While benefits for air quality would come quickly, it could take 20-30 years to see global temperatures stabilise, said the report titled 'Climate Change 2021: The Physical Science Basis'.

The Working Group I report was approved on Friday by 195 member governments of the IPCC and is the first installment of the IPCC's Sixth Assessment Report (AR6), which will be completed in 2022.

This assessment is based on improved observational datasets to assess historical warming, as well progress in scientific understanding of the response of the climate system to human-caused greenhouse gas emissions.

Source: https://energy.economictimes.indiatimes.com/news/power/changes-observed-in-climate-unprecedented-inthousands-of-years-ipcc/85184699



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DATA

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Options	Size	Published rate (Rs.)	Special discounted rates
Back Cover		1,50,000	25000
Inside Front Cover	Bleed size : 21cmx29cm Trim size : 20cmx28cm	1,20,000	20,000
Inside Back Cover	Type safe area: 18cmx 24cm	1,20,000	15,000
Inside Full Page		70000	10,000
Half Page	18cmx12cm	45000	7,500
Inside Quarter Page	9cmx12cm	25000	5,000

Special Offer: 30 % discount for one year contract

