

## First of its kind Energy Storage Roadmap of India released by ISGF

**India Smart Grid Forum (ISGF), India, a member organization of Global Smart Grid Federation has released an Energy Storage Roadmap for India.** The objective of the project is to help policy makers and utilities in decision making related to investments in energy storage for integration of renewable energy leading to a reliable and low carbon grid in India. Solar rooftop penetration have already been doubling year on year across India. The increased penetration of distributed energy sources, particularly solar PV and small wind turbines is affecting grid stability on the low voltage distribution network. The project evaluates the impact of distributed energy generation sources and electric vehicles on the distribution grid and the techno-commercial viability of energy storage solutions to overcome the grid integration challenges.

The key outcomes of the study are: 1. Energy Storage Roadmap for India; 2. Energy Storage India Tool (ESIT) that will help in conducting Cost-Benefit Analysis of various Energy Storage Technologies and; 3. Guidelines for determining the Variable Renewable Energy (VRE) hosting capacity on LV and MV grids. This Energy Storage Roadmap will help in decision making related to investments in energy storage for integration of renewable energy leading to a reliable and low carbon grid in India. This roadmap will also help Government to further engage the stakeholders for accelerating the deployment of energy storage systems in the country.

The draft of the report was released in a Stakeholder Consultation Workshop for Energy Storage System Roadmap for India jointly organized by ISGF, NITI Aayog and Ministry of Power Govt. of India.

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# Global Stories on Smart Grid

## AutoGrid works with Amazon Web Services to improve the Digitalization of the Global Energy Industry

AutoGrid, a worldwide energy flexible software provider, announced a partnership with Amazon Web Services (AWS) on 13 August 2019 to introduce artificial intelligence distributed energy management to its clients in the energy industry. AutoGrid, which has recently become a part of the AWS Partner Network (APN), will use its AutoGrid platform's AWS IoT services suite to identify, retrieve, organize and operate advanced data analytics. AWS services will deliver new insights into operations across energy facilities that will optimize production and improve process efficiencies of distributed energy resources and demand response. Amazon Web Services customers in the power and utility space are increasingly looking in applying IoT, machine learning and artificial intelligence to improve their productivity and efficiency. By delivering transformational and scalable technologies to the energy sector, AutoGrid's relationship with AWS will allow AutoGrid clients such as CLP Holdings to rapidly deploy new services in demand-response, microgrid management, and electric vehicles (EV) charging management for their end customers.

Read more: <https://prn.to/2L4rTo4>

## Global 21700 Lithium-ion battery market 2019-2023, expanding EV charging infrastructure investment

According to Technavio's latest market research report, the global 21700 lithium-ion battery market is expected to post a CAGR of over 19% over the period 2019-2023. The decline in the cost of the Lithium-ion battery is the result of economies of scale resulting from the automotive industry's increased adoption of battery technology as well as the vendors development of cost-effective production methods. In addition, continuing research and development on lithium-ion batteries has also led in improved vehicle efficiency. Lithium-ion battery prices are expected to continue to decline in the coming years as production capacity continues to rise due to strong demand from EVs. In addition, the 21700 Lithium-ion batteries usually cost about 10%-20% less than other EV lithium-ion batteries. Such cost reductions, coupled with government support for EVs, will drive growth in the forecast period of the global market for 21700 lithium-ion batteries. The growing investment in EV charging infrastructure, according to Technavio, will have a positive impact on the market and significantly contribute to its growth over the forecast period.

Read more: <https://yhoo.it/2L719WO>

## Power Ledger Completes KEPCO's Blockchain-Enabled P2P Test

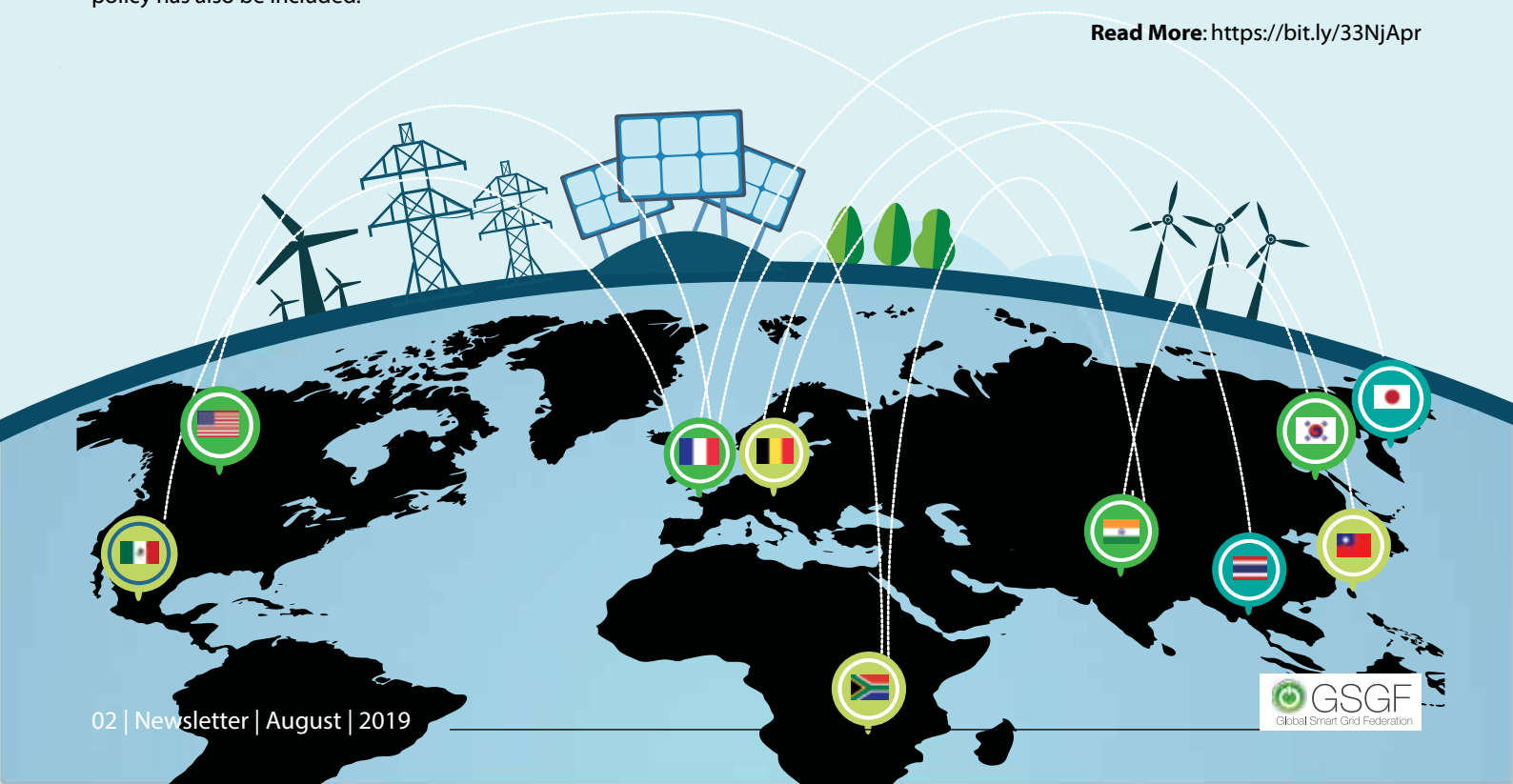
Power Ledger, a blockchain-enabled energy trading company, has completed a five-month trial with Japanese utility, KEPCO Peer-to-Peer (P2P) post-Feed Tariff (FIT) excess energy transaction in Osaka. The trial demonstrated an autonomous P2P surplus power transaction including cryptocurrency settlements regardless of fluctuations in PV generation and customer requirements. Power Ledger supplied KEPCO with access to its trading platform to promote and monitor participants power trading in order to improve the incentive to develop renewable distributed energy resources (DERs). Power Ledger-KEPCO's peer-to-peer energy trading test findings were that over 55 kWh of solar energy was traded per week, which would amount to 2,860 kWh if measured on an annualized basis. There were more than 3,500 energy transactions every week in Phase 2. Approximately 20 percent of the participants energy consumption was renewable. The platform of Power Ledger allows solar owners to maintain their quicker payback choices.

Read more: <https://bit.ly/2HkmTup>

## Global Smart Grid Integrated Digital Protection Systems Market 2019 to Experience Rapid Growth by 2024

Global Smart Grid Integrated Digital Protection Systems Market Report has been prepared based on an in-depth market analysis with inputs from experts. Global Smart Grid Integrated Digital Protection Systems Market report 2019 covers the market landscape and its growth prospects over the coming years till 2024. Based on the Smart Grid Integrated Digital Protection Systems industrial chain, this report mainly elaborates the definition, types, applications and major players of Smart Grid Integrated Digital Protection Systems market in details. Deep analysis about market status (2014-2019), enterprise competition pattern, advantages and disadvantages of enterprise products, industry development trends (2019-2024), regional industrial layout characteristics and macroeconomic policies, industrial policy has also be included.

Read More: <https://bit.ly/33NjApr>



# Global Stories on Smart Grid

## Smart Grid Project in Parry Sound, Canada Receives \$2.9 million from Government of Canada

The Government of Canada has announced a \$2.9 million investment in a smart grid project in the town of Parry Sound, led by Bracebridge Generation and utility software engineering pioneer Opus One Solutions. The project aims to help the utility reduce system costs and improve the long-term flexibility and reliability of the grid by leveraging a set of grid intelligence tools that monitor and control locally connected renewable energy generation, storage, and residential demand management resources. The funding announcement was made on July 23, 2019 by Parliamentary Secretary. The investment comes from the Smart Grid Program, which is part of the Government of Canada's more than \$180 billion investing in Canada Infrastructure plan.

**Read More:** <https://bit.ly/2KRgLw8>

## EDF, SMUD to Test Blockchain-Based Electricity Market Software

Omega Grid, in partnership with Electricity de France (EDF) and the Sacramento Municipal Utility District (SMUD), will deploy its blockchain-based local electricity market software to coordinate electric vehicle (EV) charging with solar generation in Northern California. The project is backed in part by an American Public Power Associate (APPA) grant. This local energy market project will demonstrate the use of blockchain technology to coordinate EV charging with local solar generation and wholesale prices in a blockchain-based incentive program. The program will show how distribution utilities can use a blockchain-based local energy market to add millions of new solar panels, EVs, and batteries to their grids without expensive infrastructure upgrades.

**Read More:** <https://bit.ly/2TXxK2G>

## Saudi Arabia Wind Farm claims World Record Low Energy Cost

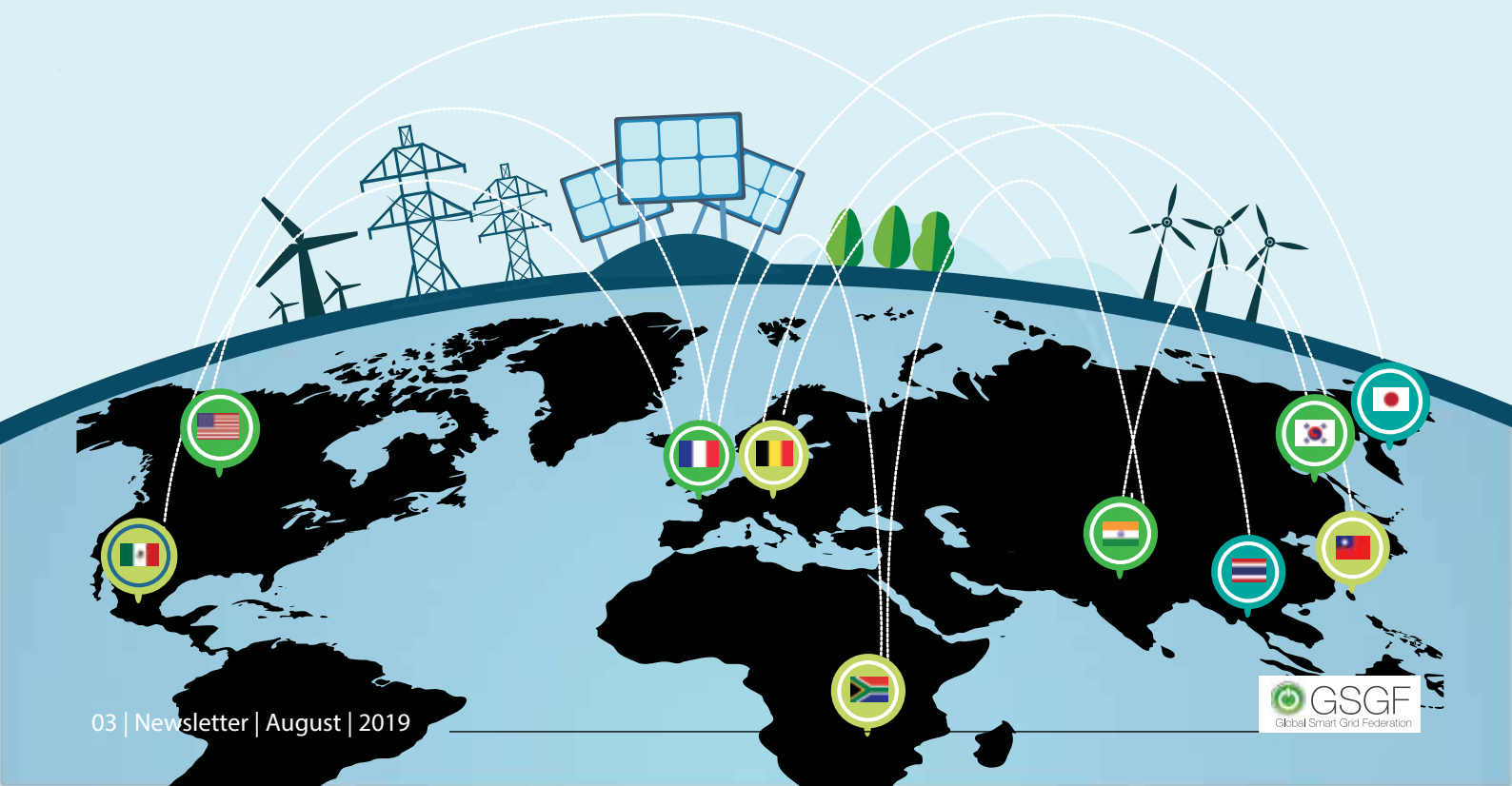
The Dumat Al Jandal onshore wind farm – set to be located more than 800kms north of Riyadh in the Al Jouf region of north-western Saudi Arabia – will be the country's first wind project and the largest in the Middle East. The developing consortium – led by French renewable energy group EDF Renewables and renewable energy developer Masdar, a subsidiary of Mubadala Development Company – was awarded the project in January at an already-impressive low price of 2.1 cents/kWh, a record for the Middle East and North Africa region. It was not until late-July, however, that the developing-consortium completed the financing for the project and announced financial close, during which time the project had made a 6.5% improvement on LCoE, bringing it down from 2.13 US cents/kWh to what the developers are now describing as a world-record 1.99 cents/kWh. Construction of the project is expected to begin shortly, with commercial operations due for start in the first quarter of 2022. Further, the project is expected to create 800 jobs during the construction phase of the project and another 150 jobs during operation. Ultimately, the 400 MW wind project will supply electricity enough for the equivalent of 70,000 average Saudi homes.

**Read more:** <https://bit.ly/2MoE8z1>

## Electric Boats Could Be Floating Batteries for Island Microgrids

Researchers at the University of New South Wales in Sydney, Australia, created an algorithm that can theoretically turn electric boats into small renewable power plants. They tested the algorithm with a microgrid in their lab, using four 6-volt gel batteries connected in a 24-V series as a stand-in for a boat. In their experiment, they found that the algorithm could manage power flows reliably enough to allow electric boats to provide peak load support to a grid directly after a trip. To implement this approach, they'd need an electric boat with its own PV system, which would charge the boat's batteries when the boat was adrift. Then when the boat is docked, it could act as a small power plant, providing electricity to homes on the island. With the algorithm in place, boat owners could decide when to sell electricity—and how much they wanted to sell. They might, for example, set their system to automatically sell 10 percent of its stored energy, and only if the batteries are at least halfway charged.

**Read more:** <https://bit.ly/31NuB8t>



# Global Stories on Smart Grid

## Millions in funding for GGF initiative Climate Action in Middle East and North Africa

The Green for Growth Fund (GGF) has attracted 4 million euros in dedicated funding from the initiative Climate Action in the Middle East North Africa (CAMENA). Combined with €5 million in support from the European Investment Bank (EIB) through the Luxembourg-EIB Climate Finance Platform in 2018, the GGF has increased its capacity to leverage further private investments for green lending in the region. The GGF has seen remarkable growth in its MENA investment portfolio, which increased by over 50% in volume in 2018 to cross the 133 million euros mark. The GGF leverages public and private capital to fund pioneering green energy initiatives such as the Phoenix 50 MW sub-project of the Benban Solar Park in Egypt, the largest solar farm in the world.

**Read More:** <https://bit.ly/2TNQkdC>

## California opens one billion USD in efficiency funding to electrification

California Public Utilities Commission updated a decades-old energy policy to allow the state's one billion USD annual budget for energy efficiency to be directed toward building electrification efforts, giving a boost to the state's move away from natural gas. This change will unlock an amount of funding that has the potential to really transform the marketplace for energy efficient appliances and will help to achieve the California's greenhouse gas emission goals which requires abandoning of fossil fuels entirely.

**Read More:** <https://bit.ly/2Zpvqn6>

# Smart Grid Event

**September 03 - 04 2019:** Asian Utility Week, Malaysia

<https://www.asian-utility-week.com/>

**September 03 - 05 2019:** Intersolar Mexico 2019, Mexico

<https://www.intersolar.mx/en/home.html>

**September 04 - 06 2019:** Smart Cities & Buildings (SCB) Asia 2019,

Singapore, <https://www.eco-business.com/events/smart-cities-buildings-scb-asia-2019/>

**September 04 - 06 2019 :** World Smart City Expo 2019, Republic

of Korea, [www.smartcityasia.net](http://www.smartcityasia.net)

**September 09 - 13 2019:** Power Week Africa Conference, Africa,

<http://www.power-week.com/Africa/index.html>

**October 02 - 04 2019:** 3<sup>rd</sup> Powermax 2019, Indonesia

<http://www.myexpo.co.id/>

**October 09-10 2019:** Innovation for Cool Earth Forum, Tokyo,

<https://www.icef-forum.org/>

**October 16 - 18 2019:** Korea Smart Grid Week, Seoul

<http://www.ksgw.or.kr/ver2019/main/main.php>

**November 12-14 2019:** European Utility Week, Paris

<https://www.european-utility-week.com/>

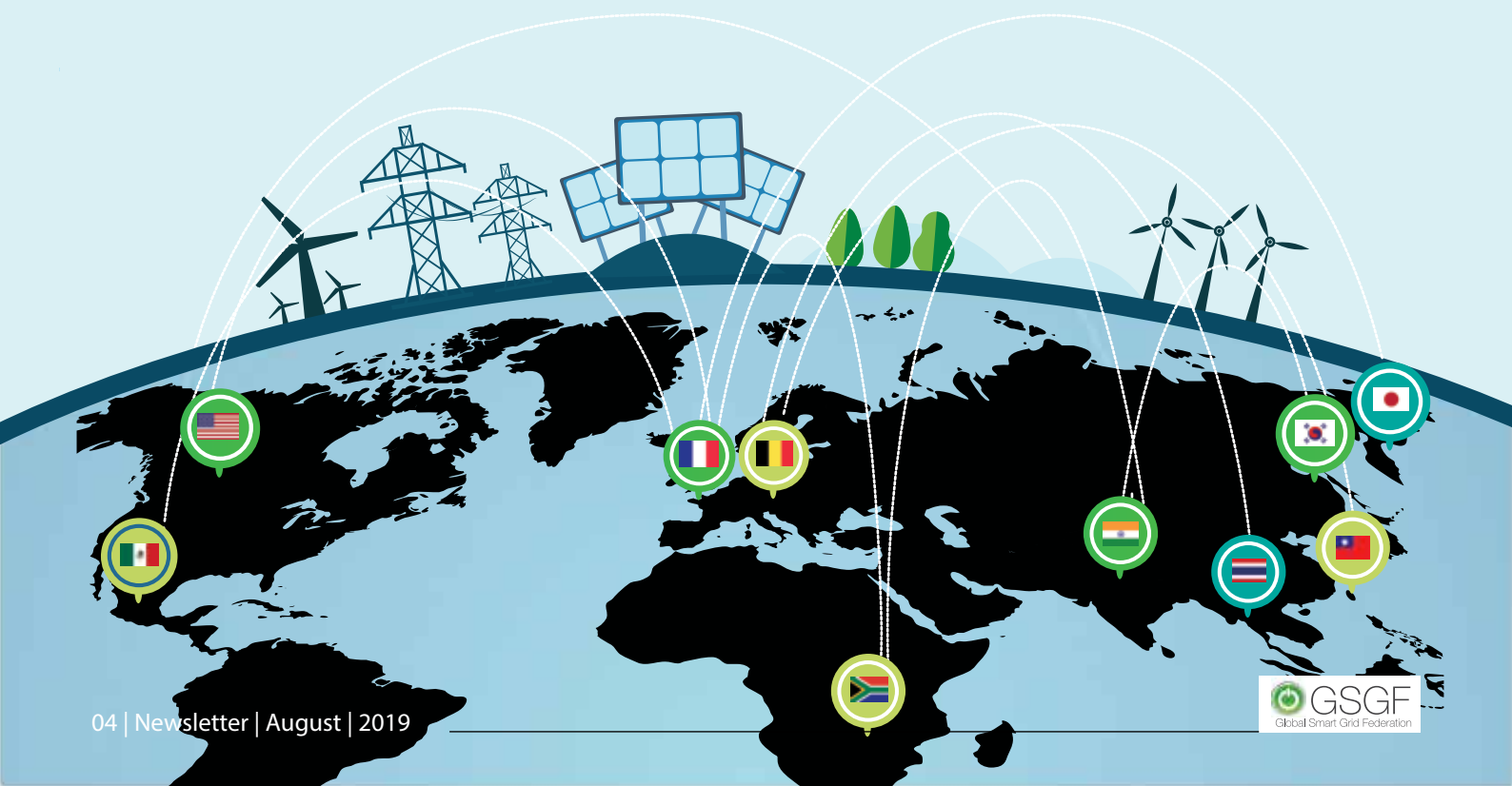
**December 10 - 12 2019:** GridConnex 2019, Washington DC

<https://gridconnex.com/>

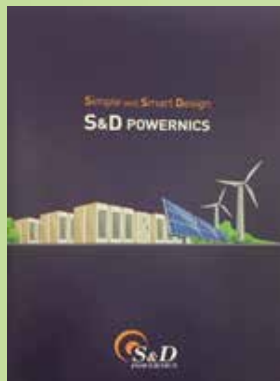
**June 04 - 05 2020:** CIRED Berlin 2020 Workshop, Berlin

<http://www.cired2020-workshop.org/>

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# Member Updates



## Korea Smart Grid Association introduces SND POWERNICS

SND POWERNICS is a professional company in the field of electric power and electronics. They develop manufacturing systems necessary to convert energy generated from renewable energy into electricity needed in daily life and to improve the quality of power produced.

As a research and development company, the company has developed its own unique technology since its establishment in 2003. Since 2010, the company has been commercializing the products based on accumulated technology and launching them into the market. It has installed systems mainly in the United States, Japan, Mozambique, Laos, Myanmar and Kuwait in Africa. Business area is multi-source-based DC coupling-type Hybrid ESS system, DC fast charging, discharge-based V2G. VPP system, and wide input response-capable power stabilization device.

The retention technologies include DC coupling power conversion technology for multisource operation, ESS + UPS for electrostatic operation, EMS technology for parallel operation, EMS technology for multi-source optimal operation, Digital PWM AVR, and High Efficiency PV PCS.

## Events Supported by GSGF



For participation in the above events please write to [info@globalsmartgridfederation.org](mailto:info@globalsmartgridfederation.org)

## Malaysia needs RM33billion investment to hit renewable energy target 20% by 2025

Malaysia, KUALA LUMPUR: Energy, Science, Technology, Environment and Climate Change Minister Yeo Bee Yin stated that Malaysia needs investments totalling RM33 billion in order to achieve its target of 20 per cent electricity generation from Renewable Energy (RE) sources by 2025. She further added that the investments would be contributed by the Government, Public-Private Partnerships and Private Financing.

"The Securities Commission has already done a six-month study on green financing; it had formed the financing taskforce (for this purpose). It gave a report on 21 action items to facilitate the RM33 billion investment in RE and the government will look at all the action items and implement them accordingly.

Ms Yeo further added that the government would continue all the current incentives such as the Green Technology Financing Scheme and the Green Investment Tax Allowance to incentivise the growth of RE. The third round of large-scale solar (LSS3) bidding saw the cost of generating per kilowatt-hour (kWh) from solar energy was lower than energy generation from natural gas sources.

Ms Yeo said the lower cost of solar generation is due to the advanced solar panel development Technology that allowed the project to be bid at a cost of as low as 17.77 sen per kWh. Earlier in her speech, she said that LSS3 projects were in the offing for Malaysia in an effort to provide more affordable, reliable and sustainable electricity to the people. Malaysia was already seeing the solar energy being cheaper than the gas generation cost; thus in the future, the government expected the cost to trend down further for RE.

Citing an example Ms Yeo informed that in the LSS3 bidding which had just been completed, the first four projects which encompassed 365 MW out of 500 MW were actually bid below the gas-generation price of 23.22 sen per kWh.

**URL Link:** <https://www.thestar.com.my/business/business-news/2019/09/03/malaysia-needs-rm33bil-investment-to-hit-renewable-energy-target#byshm8TXDAOye9AD.99>

## Newsletters of GSGF Members



**Country:** India

**Name of the Newsletter:** ISGF Smart Grid Bulletin

**ISGF Smart Grid Bulletin:** <http://www.indiasmartgrid.org/newsletter.php>

# GSGF at a glance

## Charter Members



Think Smart Grids



India Smart Grid Forum



Japan Smart Community Alliance



Korea Smart Grid Association



Smart Grid Mexico



Prakarsa Jaringan Cerdas Indonesia (PJCI)



GridWise Alliance

## Utility Members



Electricity Generating Authority of Thailand (EGAT)



Electricity Supply Commission of South Africa (ESKOM)



EDM Mozambique



Tenaga Nasional Berhad Malaysia

## Associate Members



Green Business Certification Inc.



Florence School of Regulation (FSR)



Energy Block Chain Consortium

## Current Working Groups

- **Smart Grid Roadmaps:**  
Chair-Smart Grid Mexico
- **Smart Grids for EVs:**  
Chair - Think Smartgrids, France

## Working Groups in Pipeline

- Blockchain for Utilities
- AI and Advanced Analytics for Utilities
- Robotic Process Automation for Utilities

# Contact us for more information.

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