



Global Smart Energy Federation
Formerly known as Global Smart Grid Federation

NEWSLETTER

March 2021

7th India Smart Utility Week 2021 An Exclusive and Outstanding Digital Conference and Exhibition



The 7th edition of ISGF's flagship annual event, the India Smart Utility Week (ISUW) 2021, an International Conference and Exhibition on Smart Energy and Smart Mobility for Smarter Cities was held from 02 - 05 March 2021 on a 3D Digital Platform. ISUW 2021 has witnessed participation of 457 Visionary Leaders, Utility CEOs, Regulators and Subject Matter Experts from 23 Countries as Speakers. From the overwhelming feedbacks we received, ISUW 2021 was an astounding success attended by over 2700 Conference Delegates including 564 Utility Officials and 2531 Exhibition Attendees from 50+ Countries.

ISUW 2021 provided an effective platform for virtual interactions on themes related to : (1) Innovation in Utilities During the Pandemic; (2) Regulatory Support in Different Countries for Revival of Utilities; (3) Smart Meter Rollout in India; (4) Energy Storage Systems – Technologies, Business Models and Regulations; (5) Disaster (and Pandemic) Resilient Utilities and Cities (In partnership with NIUA); (6) Cyber Security for Digital Utilities; (7) Disruptive Technologies and Innovations for Utilities; (8) New Revenue Opportunities for Utilities; Special Plenary - 1: Customer Rights Protection Order by Ministry of Power – Action by Utilities and Regulators; Special Plenary - 2: Grid Integrated Vehicles (GIV) and Standards for GIVs.

Bilateral and Special Workshops conducted at ISUW 2021 included (1) 10th EU-INDIA Smart Grid Workshop in Partnership with European Union; (2) 5th SWEDEN - INDIA Smart Grid Workshop (In partnership with Department of Science and Technology (DST), Swedish Energy Agency and Business Sweden; (3) 7th US - INDIA Smart Grid Workshop - In partnership with US Commercial Services; US DoE; and USIBC; (4) 5G for Smart Utilities and

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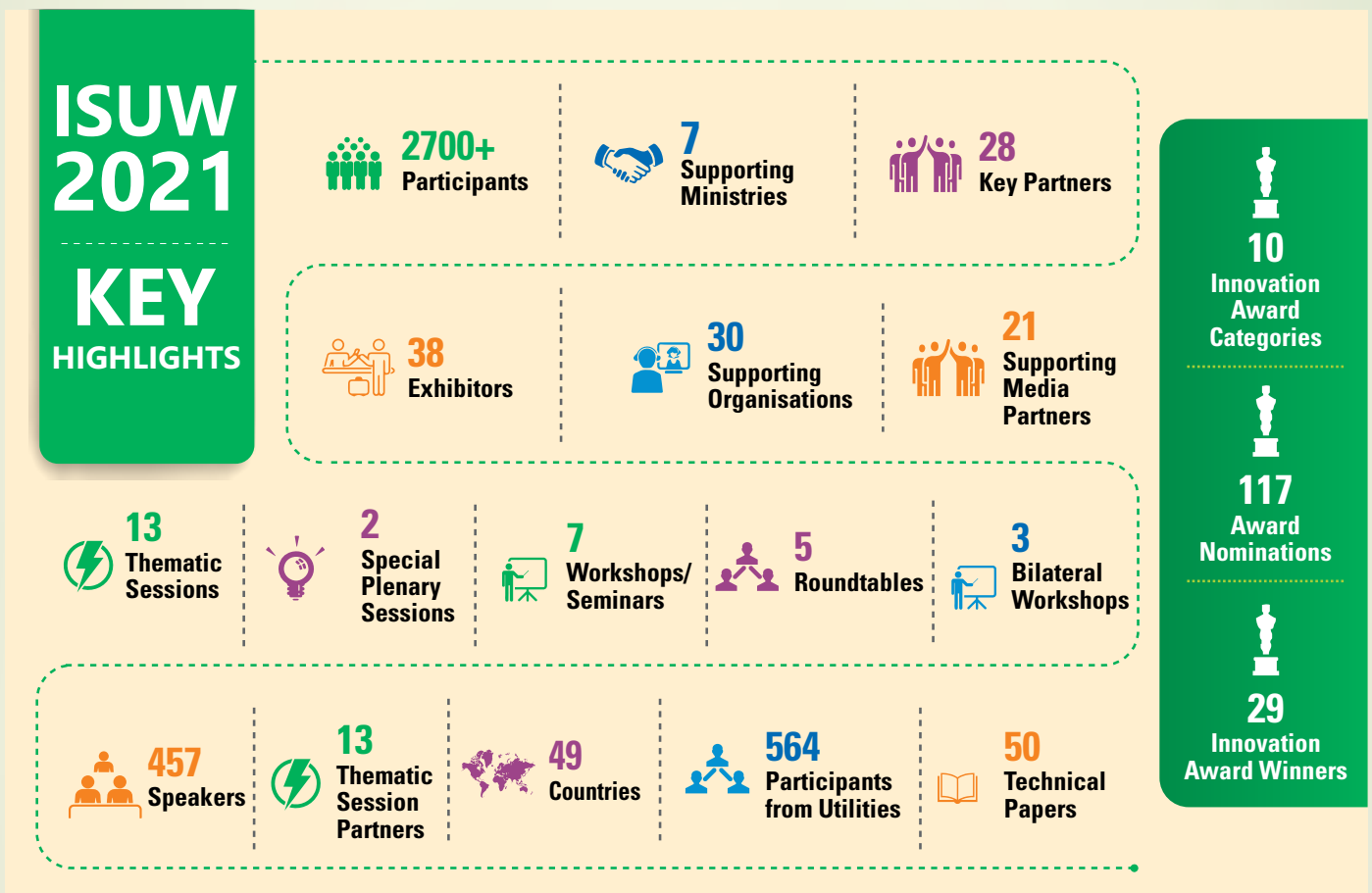
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Smart Cities - In partnership with TSDSI; (5) IEC – IEEE World Smart Energy Standardization Coordination Workshop (6) Workshop on District Cooling Systems - In partnership with APUEA; (7) Workshop on Live Line Maintenance in Utilities. Roundtable Meetings conducted during ISUW 2021 were (1) Interconnection of Regional Grids in Asia; (2) Electric Cooking; (3) Digital Architecture and System Integration for Smart Metering; (4) Urban Air Mobility Systems (UAM); (5) Blockchain Applications in Energy Sector. Seminars at ISUW 2021 were conducted on topics such as (1) Smart Water Distribution ~ Powered by Amazon Web Services; (2) Presentation of Select Technical Papers; (3) Smart City Gas Distribution and Green Hydrogen.

Virtual Live Performances by a renowned Band, Musicians and Dance Artists were also there for all the attendees. Mornings at ISUW started with Virtual Yoga sessions. ISUW also witnessed Celebrity Talk by Devdutt Pattnaik. The Valedictory Session was conducted in Hybrid format with 5th edition of ISGF Innovation Awards that were given to 29 Winners under 10 Categories out of 117 Nominations received. These awards were given to recognize and promote some of the outstanding innovations by utilities, technology providers and start-ups.

ISUW 2021 offered an excellent platform for utility and government officials, regulators, experts from technology providers and academia for networking and experience sharing with their peers from around the globe. Over 564 delegates from Indian utilities, regulatory commissions and government departments participated to discuss on the latest developments, trends and technologies. The event was supported by Ministries of Power; New and Renewable Energy; Science and Technology; Environment, Forest and Climate Change; Jal Shakti; NITI Aayog; Housing and Urban Affairs; and institutions such as GBCI, FSR, TiE Delhi NCR, VJTI, MacArthur Foundation, ETSI, CEN-CENLEC, India CGD Forum, TERI, WWF, BOCI, PHD Chamber of Commerce, Natural Gas Society, Think SmartGrid, France, IEEE, CWC, AEEE, APUEA, CSEP, GERMI, IESA, IGEF, ICLEI, NIUA, SCGJ, CBIP, CIGRE and GSEF.

India Smart Grid Forum announced that ISUW 2022 will be held in New Delhi from 01 - 05 March 2022. For Partnership, Exhibition and Participation queries, please write to us at isuw@isuw.in. For more details, kindly visit www.isuw.in



Global Stories on Smart Grid

Biden Administration sets target for 30 GW of Offshore Wind by 2030

The Department of Energy (DOE) expects to offer USD 3 billion in loans to the offshore industry

The Biden administration announced a concerted effort between the Environmental Protection Agency and the departments of the Interior, Energy, Commerce and Transportation, to deploy 30 GW of offshore wind in the U.S. by 2030, and 110 GW by 2050. The Department of Commerce's National Oceanic and Atmospheric Administration also announced a memorandum of agreement (MOA) with offshore wind developer Ørsted to use its data from projects for ocean mapping, unlocking data-sharing potential with offshore developers.

Read More: <https://bit.ly/31SBcAn>

Singapore Innovates Transformer Technology to Accelerate Smart Grid Development

Technology firm Hitachi ABB Power Grids has partnered with research institute Nanyang Technological University, Singapore (NTU Singapore) on a government-led smart grid development project. The project is part of the Singapore government's Energy Grid 2.0 initiative aimed at shaping the next-generation grid system and transforming how energy is managed by consolidating multiple energy sources into a single intelligent network that is more efficient, sustainable and resilient. Hitachi ABB Power Grids and NTU Singapore will focus on transformers as the component is key to smart grid development. This project is designed to support power system transformation towards more flexible AC and DC mixed system configurations, facilitating the integration of renewable energy sources close to DC loads.

Read More: <https://bit.ly/3rPSEA7>

Tata Power Unveils Blockchain-Enabled Solar Trading for Delhi Customers

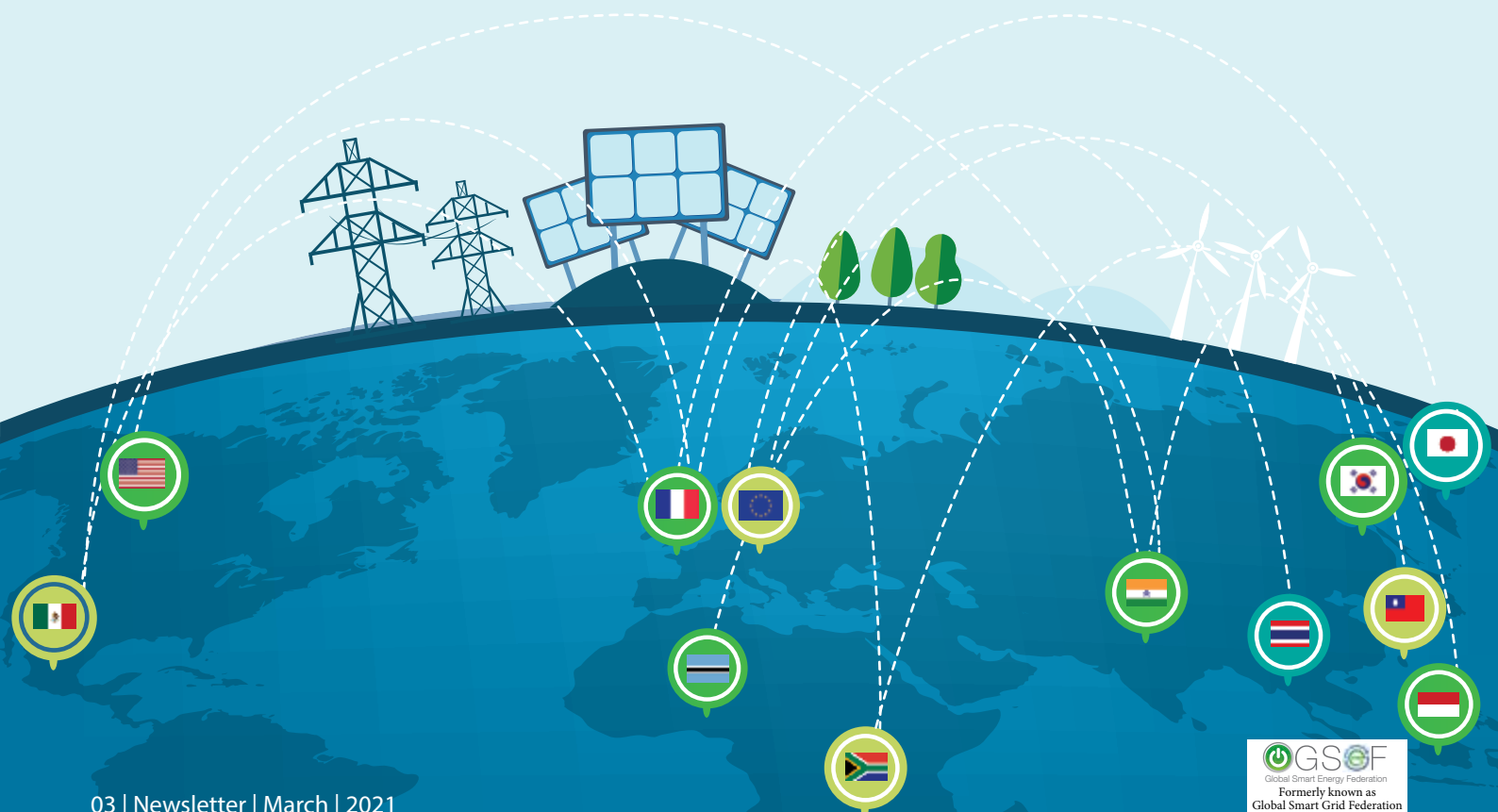
Energy distribution firm Tata Power, in partnership with India Smart Grid Forum and Australian technology firm Power Ledger, has launched a first-of-its-kind peer-to-peer solar energy trading project in Delhi. Power Ledger has provided its blockchain-enabled technology to facilitate peer-to-peer (P2P) trading of electricity from over 2MW of solar PV between multiple consumers in North Delhi. This is the first live solar energy trading project in Delhi. Under the project, an end total of about 150 sites that include Tata Power Delhi Distribution Limited's (TPDDL's) locations, as well as their actual customers with solar generation (prosumers) will be using the platform to sell their excess energy to other residential and commercial sites in a dynamic pricing environment, with benefits from P2P energy trades.

Read More: <https://bit.ly/3uocu7i>

India's 'First Grid-Connected Community Energy Storage System' Inaugurated in Delhi

A lithium-ion battery energy storage system that has been switched on in Rani Bagh, Delhi, will serve multiple applications and could pave the way for adoption of smarter energy networks based on renewable energy across India. The battery system is relatively small by the standards of some of the grid-scale systems that are starting to be deployed worldwide, but nonetheless provides valuable services to the local electricity grid and community. Described as India's first grid-connected community energy storage system, it could also help prove the case for wider rollout of similar solutions across India.

Read More: <https://bit.ly/3sRthzf>



Global Stories on Smart Grid

South Africa Proposes Reduced 2030 Greenhouse Gas Emission Targets

South Africa's government released a revised climate change policy document for public comment, significantly reducing the upper limit target for harmful carbon emissions seen over the next decade. The draft Nationally Determined Contribution document, which updates a previous 2015 study, outlines the mitigation, adaptation and financing policies Africa's worst polluter and most industrialised country will pursue. Once finalised, the NDC will be deposited at the United Nations Framework Convention on Climate Change before November 2021.

A key new policy proposal shows that greenhouse gas emission targets will likely be in a range of 398 million tonnes of carbon equivalent to 510 MTCO_{2e} in 2025, and in a range of 398-440 MTCO_{2e} by 2030. South Africa has already introduced a carbon tax and intends to decommission several coal-fired power plants by 2030 as it diversifies its energy mix to include solar and wind projects.

Read more: <https://reut.rs/2PpS7rg>

Xiaomi to Make Electric Vehicles, Lays Out Plan for \$10 Bn Investment

Chinese tech giant Xiaomi has now officially confirmed its entry into the electric vehicle (EV) space. The smartphone giant will set up a wholly-owned subsidiary to operate a smart EV business, it said. Xiaomi will initially invest 10 billion yuan (\$1.52 billion) into the venture, with the total investment expected to reach \$10 billion over the next ten years. Xiaomi founder and Chief executive Officer Lei Jun will serve as the CEO of the new EV venture.

As the auto industry is moving from traditional internal combustion engine-powered vehicles to battery powered vehicles, the EV market continues see the entry of tech behemoths. In January, Chinese search giant Baidu Inc had announced it would develop an EV unit, while Huawei and Apple have also long been planning an entry into the electric vehicle market.

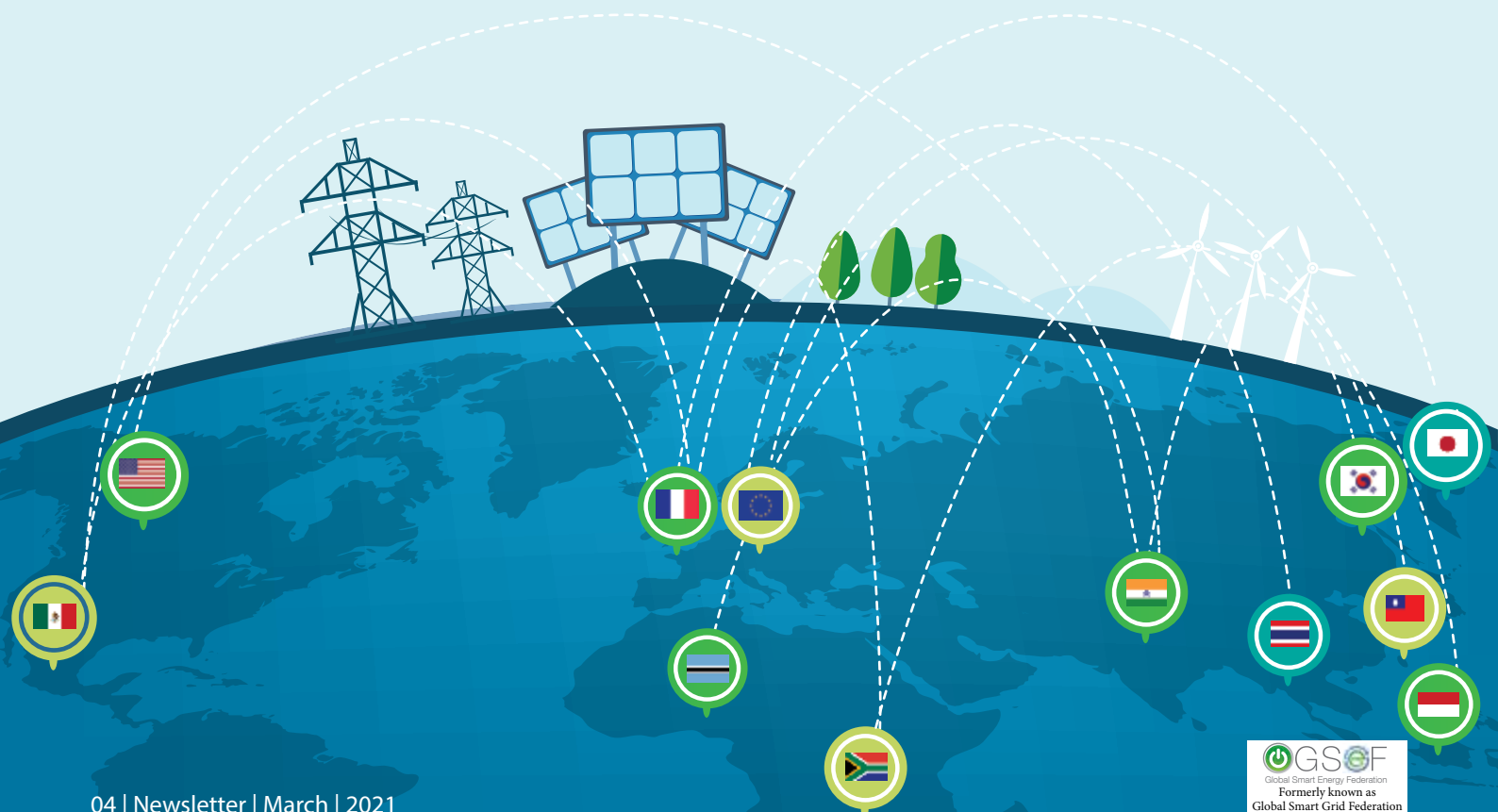
Read more: <https://bit.ly/3diyiuc>

Asia to Deploy more than 570 Million Smart Electricity Meters

Between 2021 and 2025, China, India, Japan, and South Korea will install 572.3 million smart electricity meters. At the end of 2019, these markets had a 69 percent smart meter penetration rate, corresponding to a 653.3 million smart meter installed base.

China is expected to account for as much as 70–80% of smart electricity meter demand across Asia in the next few years with refreshment rounds replacing early smart meter installations now beginning at a larger scale in the country. This demand continues to be fulfilled entirely by domestic manufacturers of which many have now grown to match the largest global smart metering players in terms of output and revenues. While China has already completed first-wave rollouts, Japan and South Korea will be the next markets to reach nationwide coverage with likely completion in the next 3–4 years. India, on the other hand, had only reached a penetration of around 1% at the end of 2020 but is expected to be the main driver behind overall smart meter penetration growth in Asia-Pacific in the coming years.

Read more: <https://bit.ly/3dBsmg3>



Global Stories on Smart Grid

Commission approves modified German support scheme for offshore wind energy

The scheme is approved until 2026

The European Commission has approved, under EU State aid rules, a German operating aid scheme to further develop offshore wind energy generation in Germany. The scheme will increase the target for installed offshore wind capacity from 15 GW to 20 GW by 2030 and set a target of 40 GW of installed offshore capacity by 2040. The new scheme is based on the centralised model, where the State pre-selects and tenders specific sites for offshore wind development. The aid will be granted in the form of a premium on top of the electricity market price that will be set on the basis of the lowest bid in open and transparent competitive tenders, and will be paid for a period of 20 years.

Read more: <https://bit.ly/3dFfrJL>

Blockchain Technology in Energy Market Research Report 2021

Blockchain technology has the potential to revolutionize the energy industry in terms of energy transacting, regulatory reporting and compliance and asset management and optimization. Nonetheless, several technical challenges lie in the path of the technology's full implementation in the energy sector.

The study conducts SWOT analysis to evaluate strengths and weaknesses of the key players in the market. The researcher provides an extensive analysis of the Blockchain Technology in Energy market size, share, trends, overall earnings, gross revenue, and profit margin to accurately draw a forecast and provide expert insights to investors to keep them updated with the trends in the market.

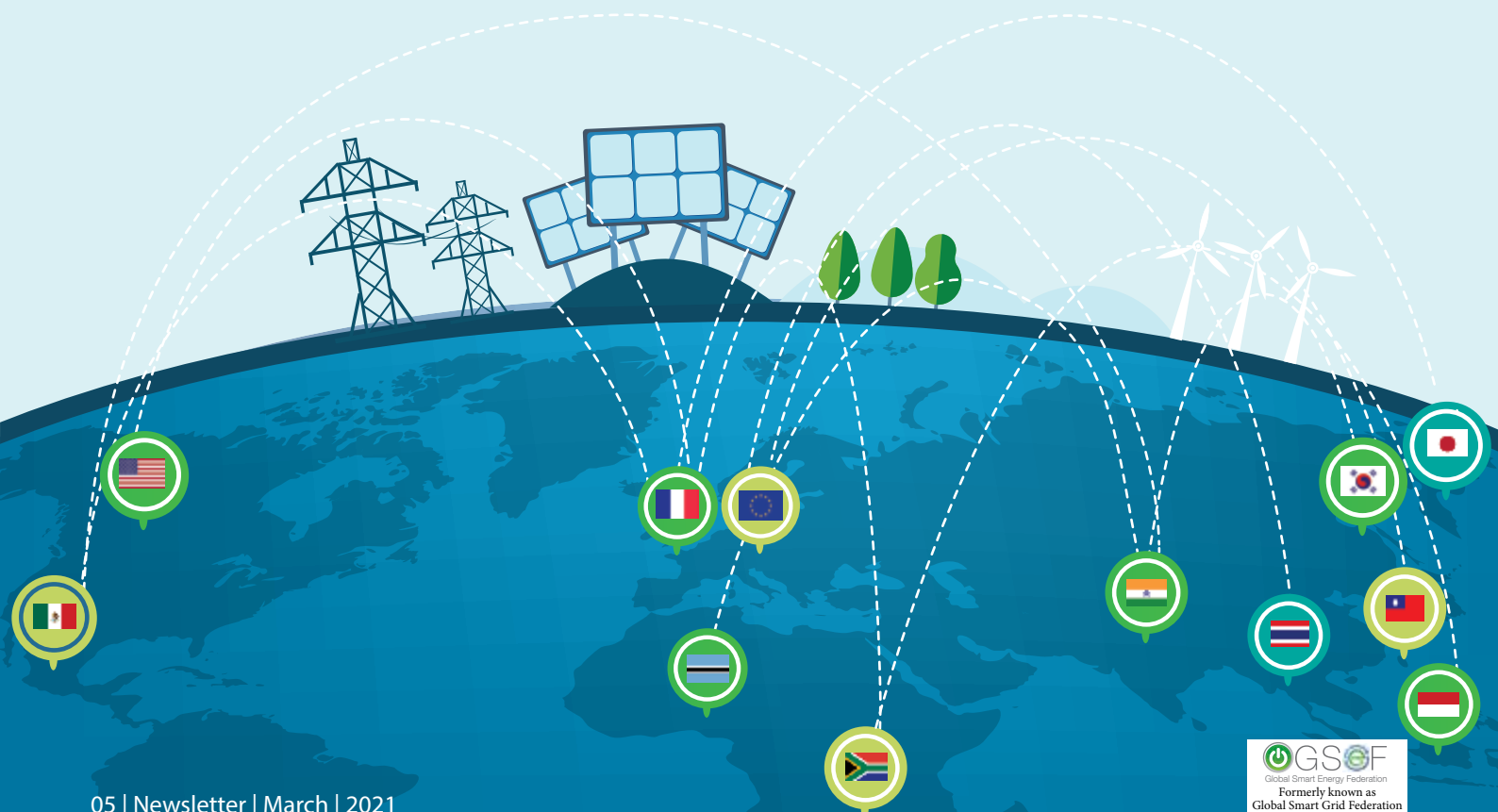
Read more: <https://bit.ly/3utPPqe>

Artificial Intelligence Use in the Energy Sector Targets Operations Visibility

With energy sector operations seeking to balance efficiency, profitability, and sustainability, technologies such as artificial intelligence (AI) are increasingly making their way into power generation, transmission, and distribution. Finding ways to squeeze more efficiency out of assets is perhaps even more important in energy than it is in manufacturing—particularly in fields such as oil and gas where margins have shrunk substantially since the onset of COVID-19 as people have stayed in place and transportation has ground to a halt. Not only that, but cutting costs by increasing efficiency may also yield a reduction in carbon emissions, which is becoming a growing priority for many companies as pressure mounts to invest in more environmentally-friendly operations.

Canvass AI, a cloud-based AI platform (from Toronto) delivered via a software-as-a-Service (SaaS) model, was recently adopted by two major energy companies specializing in oil and gas and geothermal, respectively. Canvass AI employs a “no code” approach, which the company hopes will place the benefits of AI more directly within reach of operators and engineers.

Read more: <https://bit.ly/2Q3zaKW>



Member Updates

GSEF & APUA JOINT INTERNATIONAL WEBINAR ON INTEGRATION OF RENEWABLE ENERGY SOURCES (RES)



Global Smart Energy Federation (GSEF) and Association of Power Utilities of Africa (APUA) conducted a very successful International Webinar on the Integration of Renewable Energy Sources (RES) on 6th April, 2021

The webinar brought together technical experts, electricity distribution operators, regulatory and standardization bodies, design and implementation companies for renewable energy projects, investors, and private developers for decentralized systems across the globe.

Mr. Reji Kumar Pillai, Chairman GSEF and Papa Mademba Biteye, President, APUA welcomed the audience and gave the opening address.

Mr Marc Boillot, GSEF Ambassador, Europe & Africa moderated the webinar making the panel discussion interesting and informative for all attendees

The global panel of experts included i) Michael Coddington, Principal Engineer, The National Renewable Energy Laboratory (NREL) USA, ii) Mr. Nick Singh, Smart Grid CoE Head, Eskom South Africa, iii) Mr. Henry Paul Batchi Baldeh, Director Power System Development, African Development Bank (AfDB), iv) Mr. Ravi Seethapathy, GSEF Ambassador for Americas, v) Ms. Juliette Chatel, Energy Grid and Interconnection Analyst, Enedis, France, vi) Mr. Abderrahim Jamrani, Renewables Engineering Director Masen, Morocco. After a series of rich deliberations the panel concluded that the Standardized Distributive Renewable Integration is very critical for the stability of the Grid.

The main objective of webinar was to learn about maintaining the voltage level on the distribution network, distribution network protection against the faults, short-circuit current, calibration of the network, procedures to insure the minimum risk in distribution networks. One could also learn about the synchronization between distribution and transmission networks to exchange information and regulatory framework to define the basic requirements across the power system.

Ms. Valerie-Anne Lencznar, Vice-Chair, GSEF and Mr. Abel Didier Tella, Director General, APUA made the concluding remarks and thanked the eminent speakers for their excellent work and productive and informative presentations and the incredible audience for being enthusiastic.

Member Updates

WHAT ARE THE KEY SKILLS FOR THE ELECTRICAL INDUSTRY OF TOMORROW?

In France, the Ministry of Labor had commissioned eight professional organizations from the electrical industry and territorial in 2019 to conduct a major study on employment and skills in the electrical industry (FFIE, FIEEC, Gimelec, IGNES, Industries Méditerranée, SERCE, UFE, Think Smartgrids). Conducted by PwC and coordinated by the Union Française de l'Electricité (UFE), the study's objectives were to take stock of existing jobs in the electricity sector, analyze their future prospects and identify the jobs that are in demand.

600,000 jobs mobilized for the energy transition in France

Aimed at companies, professional branches, employees in the sector, as well as young people in training and employment institutions, the study revealed a number of lessons:

The French electricity sector has 600,000 skilled and permanent jobs throughout the country, including 300,000 in the electricity system (production, transmission, distribution and supply of electricity), 220,000 in construction, 40,000 in industry and 40,000 in urban and mobility infrastructures;

30% of these jobs are considered "short-staffed", with high recruitment needs;

The electrical sector includes 30,000 companies spread across the entire value chain, 40% of which are SMEs;

The implementation of the "Pluriannual Energy Program", a strategic document for steering the energy transition in France, could create 200,000 jobs by 2030, including 80,000 for the energy renovation of buildings and 60,000 dedicated to renewable energies and their integration.

The energy transition, which involves the digitization of networks and the collection and use of data, is disrupting many professions, with new skills to be integrated.

By mapping the jobs that are in short supply and establishing detailed projections, the study has made it possible to draw up a set of recommendations to meet the challenges the electricity sector is facing. At the end of March 2021, the organizations of the electrical industry involved in this "Commitment to employment and skills" defined three areas of work to meet the challenges of the industry in terms of recruitment and skills development.

The first priority is to adapt the continuous professional training offer to the evolution of jobs and skills in the electrical sector. The training offer must correspond to the current and future needs of the industry. This involves pooling existing training courses, creating short, operational training modules and co-constructing new programs with training organizations, and then facilitating access to continuing vocational training for all, particularly within VSEs and SMEs.

The second priority is to make the electrical industry and its professions more attractive to young people, employees and job seekers. This will involve broadening the recruitment criteria and creating additional training modules to manage shortage jobs and increasing the participation of electrical industry players in national and regional employment events.

The third priority is to strengthen the role of the regions in anticipating employment and skills needs. In particular, the challenge is to support regional initiatives aimed at anticipating skills needs and managing career paths in connection with the energy transition.

Finally, support for VSEs/SMEs is seen as essential to meet the sector's future needs. At the European level, the prospective approaches of the sectors and regions must be shared and promoted.

Link: <https://bit.ly/3s9JkY8>

Article contributed by Think Smartgrids



Member Updates

“THE BASIC POLICIES FOR THE PROJECT FOR THE GREEN INNOVATION FUND” FORMULATED


The Ministry of Economy, Trade and Industry (METI) formulated the Basic Policies for the Project for the Green Innovation Fund in order to optimize the results of the Green Innovation Fund.

Towards the goal of achieving carbon neutrality by 2050, METI decided to develop a Green Innovation Fund at the level of 2 trillion yen under the FY2020 Tertiary Supplementary Budget as part of the New Energy and Industrial Technology Development Organization (NEDO). The plan, based on the specific goals shared by public and private sectors, is to continuously support companies and other organizations for the coming ten years, which show their commitment to challenge such ambitious goals as their business issues ranging from research and development (R&D) to demonstrations to social implementation of the outcomes.

METI inaugurated the Committee on the Green Innovation Project in February 2021. Thanks to the attendance of experts, the committee has aimed to efficiently and effectively make use of funds. Since then, the committee has held discussions on basic policies for managing and operating the fund project as a whole. Against this backdrop, METI formulated the Basic Policies for the Project for the Green Innovation Fund” based on the discussion results of the committee.

For more details, please refer to URL: <https://bit.ly/3mEm3fC>

Article contributed by Japan Smart Community Alliance (JSCA)



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Member Updates

WELCOMING CARILEC

We are pleased to announce the joining of Caribbean Electric Utility Services Corporation (CARILEC) as an Associate Member of GSEF

The Caribbean Electric Utility Services Corporation (CARILEC) is an association of electric energy solutions providers and other stakeholders operating in the electricity industry in the Caribbean region, Central and South Americas and Globally. CARILEC was established in 1989 with nine (9) members as part of an electric utilities modernization project funded by USAID and implemented by NRECA under a five-year "Co-operative Agreement." The CARILEC Secretariat endeavors to improve communication among its members, providing technical information, training, capacity building, conference, and other services. The Secretariat plays a leading role in electric utility advocacy, growth, and sustainability in the Region.



CARILEC
An Association Of Electric Energy Solution Providers

Currently, CARILEC has over one hundred and ten members (110). This includes thirty-three (33) Utility Members that are electric utilities and over 80 Independent Power Producers (IPPs), Associate and Affiliate Members that are companies involved in some aspect of servicing the electric utility business.

CARILEC Values:

1. **Collaboration:** We foster and celebrate teamwork across the Caribbean region and beyond, bridging gaps between private and public sector, local, regional, and international organizations, technical and policy expertise.
2. **Innovation & Agility:** We are catalysts for change in our region: we create multiples opportunities for our stakeholders to experience and adopt the latest technologies and opportunities in the fields of energy solutions.
3. **High Ethical & Professional Standards:** We cultivate trust from all our stakeholders by maintaining the highest quality of service and integrity standards.
4. **Social & Environmental Responsibility:** We ultimately work for the benefits of the people of our region and the welfare of our planet: we orient our decisions to increase the prosperity and sustainability of the Caribbean way-of-life.

Leveraging GSEF's expertise and experience for electric grid modernization to accelerate energy transition all around the world will be one of the main objectives of CARILEC and GSEF collaboration.

We believe that the joining of CARILEC to the GSEF family will be mutually rewarding and will contribute towards a smarter and cleaner world.

For more information you can visit www.carilec.org

Member Updates

REPUBLIC OF SINGAPORE ON A GREEN MISSION

Solar power: The 5MW-peak system installation is expected to produce six million kilowatt hours of energy per year. — The Straits Times/ANN

The Republic is now home to one of the world's largest floating solar farms, which is capable of potentially offsetting more than 4,000 tonnes of carbon dioxide per year.

This is roughly equivalent to the greenhouse gas emissions from more than 900 passenger vehicles a year. An official from Sustainable Energy Provider Sunseap Group, Singapore said that it took close to a year to set up the solar farm in the waters in the Strait of Johor off Woodlands, given the restrictions during the Covid- 19 lockdown. It involved a total of 13,312 panels, 40 inverters and more than 30,000 floats.



The 5MW-peak system installation is expected to produce an estimated six-million-kilowatt hours of energy per year. It can potentially offset an estimated 4,258 tonnes of carbon dioxide, bringing the country closer to decarbonization.

In land-scarce Singapore, the success of such a sea-based floating system could lead the way for more such projects to tap energy from the sun here and in the region.

The solar farm is equipped with electrical panels, control systems and a 22-kilovolt transformer. It is also a landing point for the subsea cable that transmits the generated power to the national grid.

The floating system is designed to withstand changing weather conditions, keeping the platform and all of the operational equipment on board steady.

There is also an air-conditioned second deck that doubles as a visitor centre and viewing gallery.

Mr. Frank Phuan, Co-founder and Chief Executive Officer of Sunseap Group, said "This is an important milestone for Sunseap as we believe that offshore space like the sea, reservoirs, lakes etc offers exciting opportunities for land-scarce and densely populated cities to tap solar energy. They are places that are unobscured from the sun and with low risks of vandalism or theft."

The project was more challenging compared to other land-based or rooftop installations due to the unpredictable nature of the open sea, the need to avoid shipping routes and the presence of barnacles, Sunseap said. Marine expertise was also required for mooring installation and system design.

The Covid-19 lockdown in the year 2020 has posed an additional challenge as foreign workers hired by Sunseap's contractor were unable to leave their dormitories.

"I am so thankful to many members of our team who rolled up their sleeves to fill in the gap during this period said Mr Phuan. He further said that their professionalism and esprit de corps were key to the completion of the project in the face of the numerous challenges.

A key part of protecting the planet from global warming involves shifting from the use of fossil fuels to renewable energy. Singapore is committed to reducing carbon emissions intensity by 36% from 2005 levels by 2030, and the country's high levels of solar exposure make solar power a viable option.

URL Link: <https://bit.ly/3s2N65w>

Article contributed by Dr. Ir. Cheong Kam Hoong, GSEF Ambassador (Asia Pacific Region)

RETAIL DELIVERY CHARGE TO ENABLE CUSTOMER CHOICES



In most day-to-day purchases, we pay for what we actually procure. Rarely is a fixed or a cover charge imposed and the total price we pay, includes such fixed costs. The various government ad-valorem taxes such as VAT/GST/HST support this view as well. The more you consume, the more taxes you pay. However, utility regulation is going the other way. Due to the monopolistic nature of electric utilities, many integrated utilities have undergone (or are undergoing) regulatory reforms to separate their “Carriage” (delivery/wires) from their “Content” (commodity/energy). The public benefit purportedly lies in making elements of the electricity supply value chain more competitive, with the remnant (delivery/wires) continuing to remain a regulated monopoly.

Segregating “Carriage and Content” introduces two separate bill components (a) a “fixed or delivery” charge for the wire infrastructure (regardless of the energy consumed) and (b) a commodity or energy charge based on a tiered tariff set to a consumption scale. In a few others, a time-of-use (TOU) tariff mirrors the hourly wholesale market prices. So, while the wholesale market functions well on the above principles, the retail/distribution segment is unable to find its feet, due to frequent policy changes and fear of distribution stranded-assets. The “nirvana” for retail electricity consumers is yet to come. A second casualty is conservation efforts.

The fixed charge component is often a dis-incentive to conservationists and low-income segments. In many global jurisdictions, retail reforms have not yielded significant bill reduction opportunities for the average consumer despite smart meters, TOU, PV, and net-metering schemes. All this has dampened the use of intelligent load management, energy storage and automation technologies, even though such products are commercially available. The falling costs of solar PV is still not truly reflected in retail tariffs either, due to existing long term supply contracts.

In jurisdictions that separated Carriage and Content years ago, retail customers are seeing their delivery charges rise far enough to almost equal the variable energy charges. These delivery charges are projected to still keep rising for the next decade, as utilities replace older and/or unreliable assets. But ever-rising fixed charges do not help customer choice or conservation investments (much longer ROI/payback). Hence, behind-the-meter energy conservation/efficiency, energy storage and rooftop PV have not been deployed extensively.

There appears little meeting of the minds on this Carriage-Content separation, with each side being entrenched in its own ideological silo. The utility’s need to allocate last-mile capacity (KVA) to each retail consumer is a valid one. This allocated capacity is the consumer’s right to draw (based on their main breaker rating). For this potential maximum draw, a fixed delivery charge is levied by the utility. This poses two aspects for discussion, (a) rarely does the consumer utilize the full capacity for long periods of time (day or season); and (b) for the most part, standardized conductor sizes deployed by the utility do not differentiate each such varying capacity feed.

With smart meters, it is possible to obtain (calculate) the 15-minute demand (KVA) for any time period in a given billing period. Such efforts establish true capacity utilization by the customer. Over the past 20 years many appliances have become very energy efficient and draw much less KW power, while other non-linear devices (TV, PC, LEDs) pull down the power factor to increase KVA draw. Hence, a delivery charge based on capacity utilization (KVA) rather than generic connection, would be more prudent. Such an approach will enable consumers to lower their demand, thereby freeing up capacity to the utility. This would allow the utility to actually manage “capacity headroom” as opposed to relying on just planning assumptions. The deployment of advanced distribution management system (ADMS) was to leverage this, but this has not happened.

The above approach encourages customer-centric efforts to not only lower their energy charge but also their fixed charge. Customers may even choose to lower their breaker ratings permanently if incentivized. In my view, this is a better way to bring the carriage and content pieces together. For this to happen, two changes need to be made to the delivery charge:

1. Create a stepped-scale delivery charge. This could be based on the consumer’s breaker rating. The lower end (30A, 60A, 100A) should be incentivized for conservation (also recognizing low consumption segments), while the higher-end (200A, 400A) should be set slightly punitively to discourage “load exuberance”. For example a flat residential \$40/month delivery charge, could be split as follows:

Breaker Panel Rating (Amps)	Fixed Charge (\$/month)
30-60	20
100	40
200	90
400	220

2. Offer monthly rebates for lowering KVA below a threshold. In places where the local distribution tap circuit is at 90%+ capacity, additional rebates could be offered (to postpone asset upgrades). A generic example is given below:

Monthly Peak to last Quarter Av. Peak (%)	Fixed Charge Rebate (%)	Capacity Alleviation Rebate (if applicable)(%)
-5	5	10
-10	10	10
-15	15	10
-20	20	10

In closing, most facets of the electricity distribution sector are ripe for enabling customer choices with the industry making strides to bring products and services to bear. But the retail regulated electricity sector is still grappling with yesteryear business models, thereby hindering such adoptions. The treatment of fixed delivery charges to mimic a “volumetric” approach, would go a long way to ensure consumer choices in managing and/or reducing their own bills.

Article contributed by Ravi Seethapathy, GSEF Ambassador for Americas

Smart Grid Events

April 29-30, 2021: ICSGSE 2021: 15. International Conference on Smart Grid and Smart Energy, On Digital Platform, [//waset.org/smart-grid-and-smart-energy-conference-in-april-2021-in-jerusalem](http://waset.org/smart-grid-and-smart-energy-conference-in-april-2021-in-jerusalem)

4 to 5 June 2021: ICSG Istanbul 2021, Digital Platform
Link: <https://icsgistanbul.com/en/>

9 - 11 June, 2021: EM-Power Europe Munich, Germany, <https://www.em-power.eu/en/home>

10 - 12 October 2021: Turkey Energy Summit
<http://turkeyenergysummit.com/en/>

30 November - 2 December 2021: European Utility Week (Enlit Europe) <https://www.enlit-europe.com/>

25 - 28 May 2021: Eurelectric Power Summit 2021
<https://powersummit2021.eurelectric.org/>

04 - 05 June 2021: 8th International Istanbul Smart Grids and Cities Congress and Expo (ICSG 2021)
<https://icsgistanbul.com/en/>

10-12th June 2021: Solarex Istanbul
<https://solarexistanbul.com/en/about-the-fair/>

2-6 November 2021 / Antalya, Turkey
EIF World Energy Congress and Expo
<https://events.b2match.com/e/eif2020-virtualexpo>

26 - 28 January 2022: DistribuTech International
<https://www.distributtech.com/>

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GSEF at a glance

Charter Members



Think Smart Grids



India Smart Grid Forum



Korea Smart Grid Association (KSGA)



Prakarsa Jaringan Cerdas Indonesia (PJCI)



GridWise Alliance

Regular Members



Smart Grid Mexico



Japan Smart Community Alliance

Utility Members



Electricity Generating Authority of Thailand (EGAT)



Electricity Supply Commission of South Africa (ESKOM)



EDM Mozambique



Tenaga Nasional Berhad (TNB) Malaysia



European Distribution System Operators (E.D.S.O)



Botswana Power Corporation

Associate Members



Green Business Certification Inc.



Florence School of Regulation (FSR)



Energy Blockchain Consortium



Caribbean Electric Utility Services Corporation

Current Working Groups

- Blockchain for Utilities
- Regulatory Changes or Regulatory Reforms for the post Covid Digital Utility
- AI and Analytics for Utilities

Working Groups in Pipeline

- Green Recovery Playbook for Utilities

Contact us for more information.

Global Smart Energy Federation (GSEF)

1800 M Street, NW, Suite #400S, Washington, DC 20036

@ info@globalsmartenergy.org

www.globalsmartenergy.org

Newsletter Team

Aashima Chaney | Bindeshwary Rai | Sudhasatta Kundu | Balasubramanyam Karnam

Parul Shribatham | Shuvam Sarkar Roy | Ravi Seethpathy | Marc Boillot | Dr Cheong Kaam Hoong | Nick Singh