Global Smart Energy Federation
Formerly known as Global Smart Grid Federation

NEWSLETTER

October 2021

GSEF and ISGAN Successfully Conducts a Virtual Webinar on "System Challenges and Opportunities in Electric Vehicle Integration with the Grid"

Global Smart Energy Federation (GSEF) and International Smart Grid Action Network (ISGAN) successfully conducted a virtual Webinar on "System Challenges and Opportunities in Electric Vehicle Integration with The Grid" on 27th October, 2021.

Globally renowned subject matter experts shared their insights and knowledge on Electric Mobility and EV Integration with electric grid and the standards and emerging technologies in this domain.

Topics of the webinar included Impact of EV user behaviour on the potential of flexibility by EV fleets, smart charging implementation, Market and stakeholder perspectives of EVs as a flexible resource in the power system, TSO perspective on importance and urgency of Smart Charging vs "passive" charging etc.

Reji Kumar Pillai, Chairman Global Smart Energy Federation; Luciano Martini, Chair, ISGAN; Pauline Henriot, Energy Policy Analyst, International Energy Agency; Ravi Seethapathy GSEF Ambassador for Americas; Magnus Olofsson, Swedish National Expert and Knowledge Transfer Platform Lead, ISGAN; Magnus Brolin, Director Electric Power Systems at Research Institutes of Sweden (RISE); Lonneke D. Mutters, Director Standardization, ElaadNL and Executive Director, Open Charge Alliance; Antonio Iliceto, Co-Chair of WG1 on Grids & Systems, ETIP SNET; Mark McGranaghan, EPRI Fellow, EPRI; Makoto D Yoshida, Secretary General, CHAdeMO Association; Marc Petit, Professor, Centrale Supelec; Kijun Park, V2G Project Manager, KEPRI were the expert panelists at the webinar.

Table of Contents

Page	News Topic
1	**Cover Story:** GSEF and ISGAN Successfully Conducts a Virtual Webinar on "System Challenges and Opportunities in Electric Vehicle Integration with the Grid"
2-3	**Stories across the Globe on Smart Grids:** • Black & Veatch to Design, Build Canada's first Electric Smart Grid • SDG&E sets New Goals and Accelerates Actions towards Net-Zero GHG Emissions by 2045
4-5	**Member Updates:** • International Webinar Series Part 2- "Smart Technologies to Improve Customer Service and Business Continuity for Electric Utilities" • Building Resilient Grid Through Peer at Penssylvania State, USA • Smart City: The Competitive Edge of Driving and Enabling Technologies • Eighth Annual Meeting of the Innovation for Cool Earth Forum (ICEF) 2021
6-7	**GSEF Smart Grid Editorial:** Achieving Net-Zero: Unpacking the Pieces
7	**Smart Grid Events**
8	**GSEF at a Glance**

The webinar provided a platform for Industry experts, academia, technical executives from utilities and experts from standardization bodies, power distribution companies, fleet operators, private developers to explore EV-Grid integration technologies and business opportunities.

The webinar was a huge success, and recorded an impressive 483 registrations. It was concluded that V2G and/or integration with energy storage will play an important role in overall grid resiliency, smart charging and V2G must be highly prioritized, through win-win solutions. Incentivized plug-in and customer education and engagement will help to expedite the e-Mobility transition.

Link to access the recording of the Webinar: https://bit.ly/3ElBxNg

Global Stories on Smart Grid

ABB Launches the World's Fastest Electric Car Charger

ABB has launched an innovative all-in-one Electric Vehicle (EV) charger, which provides the fastest charging in the world. ABB's new Terra 360 is a modular charger can simultaneously charge up to four vehicles with dynamic power distribution. The new charger has a maximum output of 360 kW and is capable of fully charging any electric car in 15 minutes or less. The charger will be available in Europe from the end of 2021, and in the USA, Latin America and Asia Pacific regions in 2022, Terra 360 gets innovative lighting system that guides the user through the charging process and shows the State of Charge (SoC) of the EV battery and the residual time before the end of an optimal charge session.

Read more: https://bit.ly/3G1xuY8

SDG&E sets New Goals and Accelerates Actions towards Net-Zero GHG Emissions by 2045

San Diego Gas & Electric Company (SDG&E) released its annual sustainability strategy update, as outlining new and accelerated goals to help meet its pledge to reach net zero greenhouse gas emissions by 2045. SDG&E's new sustainability goals includes, operating a zero emissions fleet by 2035, achieving net zero energy facilities by 2030, piloting a virtual power plant by 2022. It also includes, energy storage facilities, construction of a renewable microgrid by year end to support a rural community and completing a decade-long project to harden electrical infrastructure inside the Cleveland National Forest – replacing more than 2,300 wood poles with steel poles

Read more: https://bwnews.pr/3C9IYXj

WHO's Launches Household Energy Policy Repository

The Repository is intended to be a knowledge base that can support transitions to cleaner household fuels. The Repository is a global catalogue of household energy policies that have been implemented since 2010, including, where available, evidence of their effectiveness. The Repository currently includes information on over 120 clean household energy policies or policy statements from more than 30 countries and the European Union (EU), representing all WHO regions. Policymakers and other stakeholders can use the repository to find examples of how other countries have implemented certain policies, understand the challenges that were encountered, and use this information to inform the design of their own policies.

Read more: https://bit.ly/3n7uhh0

Romanian Government has Adopted the Integrated National Plan for Energy and Climate Change

The Romanian government has adopted an integrated energy plan that calls for two new nuclear reactors at Cernavoda by 2031 and the refurbishment of an existing unit there in 2037. It would double the country's nuclear power supply in a decade. The plan is designed to address the five main aspects of collective energy policy for countries in the European Union: energy security, decarbonization, energy efficiency, the internal energy market, and research, innovation and competitiveness.

Read more: https://bit.ly/3G287W4

GSEF Global Smart Energy Federation
Formerly known as Global Smart Grid Federation

Global Stories on Smart Grid

Black & Veatch to Design, Build Canada's first Electric Smart Grid

Black & Veatch to design & build Canada's first electric smart grid, which aims to reduce consumer energy costs, reduce emissions, and enhance the resilience and reliability of the power grid. PUC Distribution Inc, billed as Canada's first such community-wide utility effort. Sault Smart Grid Project-Sucent's local power distribution utility. Marie, Ontario-Black & Veatch, including the design and deployment of state-of-the-art networks with proven technology to increase reliability and efficiency, improve outage management, and reduce energy consumption.

Read more: https://bit.ly/3pgFfDx

Grid Modernization for Harsh Weather and DER Bottlenecks

CPS Energy planning to deploy smart grid and renewable energy technologies for helping the utility to ensure grid resilience and reducing the impacts of power disruptions during events such as flooding and hurricanes. The smart grid investments have helped in ensuring the 28 harsh weather events experienced in San Antonio in 2020 had less impact on CPS Energy's grid network and services. In 2020 alone, CPS Energy managed to record $700,000 in cost benefits within the San Antonio area. In addition to the financial benefits, the utility managed to ensure customer services remained constant through quick restoration of power for consumers who were affected by outages.

Read more: https://bit.ly/3BWYe9M

Eskom to collaborate with coal suppliers on Renewable Energy Projects

The Government of South Africa is currently seeking USD 5.1 million from the U.S., UK, and the European Union to assist in the country's energy transition.

South African state-owned power utility, Eskom, has signed a Memorandum of Understanding (MoU) with its two largest coal suppliers, Exxaro and Seriti Resources, for the development of renewable energy projects at its mining operations. The agreement is aimed at reducing the power utility's carbon footprint and achieving net zero emission status by 2050 by taking advantage of the low production cost of solar photovoltaic power generation. The first phase of the project will involve the construction of solar photovoltaic facilities at Eskom mining sites and will include subsequent installations capable of facilitating energy storage.

Read More: https://bit.ly/3BEdozF

Commission launches public consultation to feed into action plan to digitalize the Energy System

The European Commission has this week launched a public consultation on digitalizing the energy sector as part of the preparation of a Commission Action Plan on the Digitalization of the energy system, due for publication in 2022. The Action Plan should be seen in the context of the European Green Deal objectives to reduce greenhouse gas emissions by 55% by 2030 and achieve climate-neutrality by 2050. The Action Plan will also build on the Communication on "A European Strategy for Data", on the Regulation on the Free Flow of Non personal Data - (EU) 2018/1807 and on the Regulation on the General Data Protection - (EU) 2016/679 in order to ensure a transparent and well-functioning data framework.

Read More: https://bit.ly/3bE5wU9

Power Ministry, India Proposes Amendment to Energy Conservation Act, 2001 To Promote Clean Energy Consumption

The Ministry of Power has prepared amendments, after consultations with stakeholders. The proposal includes defining the minimum share of renewable energy in the overall consumption by the industrial units or any establishment. There will be provision to incentivize efforts on using clean energy sources by means of a carbon saving certificate. Power Minister RK Singh, reviewed the proposed amendments recently and was directed to seek comments and suggestions from concerned Line ministries/departments and State Governments. Accordingly, a meeting was held by Shri Alok Kumar, Secretary (Power) with the stakeholders' Ministries and Organizations on 28th October 2021 to give a final shape to the proposed amendments in the EC Act.

Read More: https://www.indiasmartgrid.org/viewnews.php?id=5486

India, Italy Join Hands on Strategic Partnership In Energy Transition

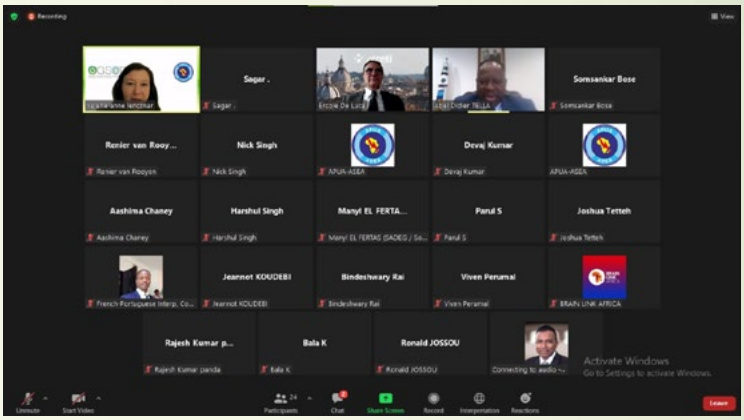
At a bilateral meeting on the sidelines of the G20 Leaders Summit at Rome, hosted by Italy in Rome on October 30-31, 2021, Modi and Draghi acknowledged the significant progress in bilateral relations since the adoption of the Action Plan for an enhanced Partnership between India and Italy on November 6, 2020. both sides agreed on the utmost importance of cost-effective integration of a growing amount of renewable energy into their respective power systems, as a key asset for an effective clean transition that generates jobs, GDP growth, reinforces universal energy access while eradicating energy poverty, a release from the Prime Minister's Office said in New Delhi.

Read More: https://www.indiasmartgrid.org/viewnews.php?id=5487

GSEF
Global Smart Energy Federation
Formerly known as
Global Smart Grid Federation

Member Updates

GSEF-APUA INTERNATIONAL WEBINAR SERIES PART 2: "SMART TECHNOLOGIES TO IMPROVE CUSTOMER SERVICE AND BUSINESS CONTINUITY FOR ELECTRIC UTILITIES"



Global Smart Energy Federation (GSEF) and the Association of Power Utilities in Africa (APUA have organised the Second Edition of the International Webinar on "Smart Technologies to Improve Customer Service and Business Continuity for Electric Utilities" on October 20, 2021 on a virtual platform.

The webinar provided a global platform for discussions on Digitalization and Automation of processes and operations of electric utilities to enhance customer satisfaction and business continuity with adoption of new technologies and innovation in services. The specific focus of the webinar was to support African Utilities find relevant information on new technologies and developments.

Eminent Speakers from renowned organizations like Edison Electric Institute (EEI), Electric Power Research Institute (EPRI), ESKOM, E.DSO, Conlog Utility, Orange Engies etc. have joined to share their experience with global perspectives through presentations and panel discussions. The webinar also witnessed participation from technical executives and executives from African electricity grid operators, experts from regulatory and standardization bodies, design and implementation companies for renewable energy infrastructure projects and funding agencies, and private developers of decentralized systems in the African electricity sector.

The recording of the complete Webinar has been uploaded on the GSEF Website and is available at http://globalsmartenergy.org/video/category/all.

BUILDING RESILIENT GRID THROUGH PEER AT PENSSYLVANIA STATE, USA

Three Pennsylvania institutions prepare for climate impacts; earn national recognition for improving reliability, resilience, sustainability

Green Business Certification Inc., the world's leading sustainability and health certification and credentialing body, announced that Penn State Health Milton S. Hershey Medical Center, Lafayette College, and Chatham University have all earned certification under GBCI's Performance Excellence in Electricity Renewal (PEER) rating system. The PEER rating system recognizes power grid improvements across multiple sectors and rewards power users who enhance energy grid reliability, resilience, and sustainability.

Losing power puts lives at risk and disrupts economic activity. 2021's extreme weather events make clear that U.S grids are vulnerable to climate change. In February 2021, a blizzard in Texas knocked out power for over four million people. September, 2021 Hurricane Ida left over a million Louisianans in the dark, some of whom still do not have access to reliable power. One in three Americans were impacted by an extreme climate-related event this summer alone. Grids must adapt quickly to build resilience and prepare for future events to keep occupants safe and prepared to bounce back.

Through GBCI's third-party verification, the communities of Lafayette College, Chatham University, and Milton S. Hershey Medical Center now have the reassurance that their power infrastructure is equipped to perform without interruption. The partnership between GBCI and these institutions was made possible by funding and support from the Pennsylvania Department of Environmental Protection and the U.S. Department of Energy.

PEER certification signifies that a system is resilient, reliable, and sustainable. The certification system supports global grid modernization efforts and recognizes industry leaders for improving efficiency, operational reliability, and overall resiliency. The PEER rating system assesses performance across four categories, including (1) reliability and resiliency, (2) energy efficiency and environment, (3) operations, management, and safety, and (4) grid services.

"DEP is pleased to support Hershey Medical Center, Chatham University, and Lafayette College in taking action to protect the resilience, reliability, and sustainability of our electric grid. This certification demonstrates their leadership in using energy resources responsibly and safeguarding their infrastructure," said DEP Secretary Patrick McDonnell.

Link to the Article: https://bit.ly/3kbdg4G

Article contributed by Green Business Certification Inc. (GBCI)

Member Updates

SMART CITY: THE COMPETITIVE EDGE OF DRIVING AND ENABLING TECHNOLOGIES

Smart cities harness data and digital connectivity to improve their operations, including sustainable energy management. On 13th October 2021, Think Smartgrids took part in a webinar on smart cities organized by the Indonesian Association of Electricity Companies (MKI), in order to explore enabling technologies and data sharing methods to make cities smarter and more sustainable. Indonesian government representatives and international experts shared their views on the future of smart cities, and the best technologies available to make them cleaner and leaner.

Think Smartgrids, which federates and represents the French smart grid ecosystem, has been working with Indonesia for several years. In 2017, the association signed a MoU with Perusahaan Listrik Negara (PLN), which led to a feasibility study for the development of microgrids on the islands of Sulawesi and Lombok. The MoU was renewed in March 2019 and more recently, the association was invited by MKI to participate in several webinars to present French know-how in smart grids.

In this 7th Smart Grid Webinar organized by MKI, Think Smartgrids was represented by Mr. Kaveh Razazian, CTO Energy and Telecom at Sagemcom. Mr. Razazian presented G3-PCL hybrid technology, a secure, interoperable and cost-effective powerline communication technology with a wide range of applications. Combining PLC and RF with automatical routing to choose the best channel at any time, it offers extended capabilities for smart grid and IoT applications. Mr. Kaveh presented the benefits of this technology for the integration of electric vehicle charging stations into a smart electric grid.

Other speakers included ICT Applications, Smart City & Community Innovation Center, Jeju Energy Corporation, Jakarta Smart City, TIDE smart energy solutions, and PT Indonesia Comnets Plus.

Read More: https://bit.ly/3ESSbnP

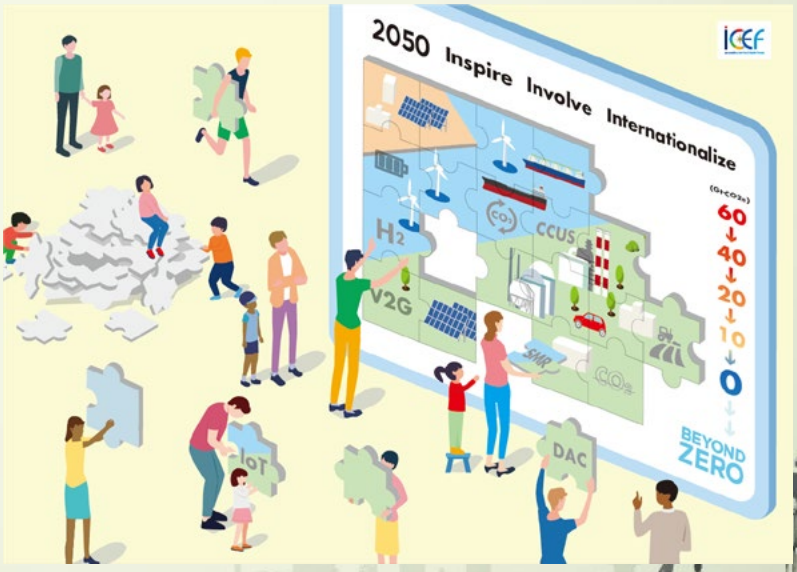
Article contributed by THINK SMARTGRIDS

SMART CITY: THE COMPETITIVE EDGE OF DRIVING AND ENABLING TECHNOLOGIES

The Ministry of Economy, Trade and Industry (METI) and the New Energy and Industrial Technology Development Organization (NEDO) digitally held the Eighth Annual Meeting of the Innovation for Cool Earth Forum (ICEF) 2021 was held on 6th & 7th October, 2021

With "Pathways to Carbon Neutrality by 2050; Accelerating the Pace of Global Decarbonization" as the main theme, the forum brought together industry, government, and academia experts from all around the world to discuss concrete and realistic pathways to achieve carbon neutrality by the target year. More than 2,000 people from 87 countries and regions registered to attend the event.

Read More: https://www.meti.go.jp/english/press/2021/1008_002.html



GSEF Global Smart Energy Federation Formerly known as Global Smart Grid Federation

ACHIEVING NET-ZERO: UNPACKING THE PIECES

I have recently been partaking in roundtable discussions on Net Zero. Most believe it is achievable, albeit with great social coordination and heavy investments. The upcoming COP26 meeting will likely have concluded by the time this goes to print. It will be interesting to see if any (or all) of the discussions below gets any international resolution. While the aspirational goal is clear, the pathway is not. This article unpacks the various pieces.

Simply put, being Net Zero means "we retrieve all the carbon emissions we put out" (personal, public, business, industry). This can be achieved by (1) using clean energy (renewables); (2) consuming less (conservation); (3) growing trees (carbon offset); (4) purchasing market offset credits (financial offset); and (5) storing CO2 (carbon capture). In most cases it would be all of the above.

Finance and Policy groups are examining the economic impact, affordability and market mechanisms, assuming all this is technically feasible. Several questions arise:

1. *Financial Reconciliation*: Global fossil energy assets are US$ 2.5 trillion (3% of global GDP of US$ 84 trillion). Total new clean investments are projected at US$ 1.0 trillion (1.2% global GDP). Government "unproductive" debt globally stands at US$ 15 trillion (17% global GDP). Developed nations have not made their US$ 100 billion annual contributions. How can these be reconciled?

2. *Stranded fossil assets*: Repurposing fossil assets is very limited. Many governments also indirectly own fossil energy assets. Given this, what is the transition strategy? Also, what would be a "just" transition for the labour markets and reskilling?

3. *Affordable carbon pricing*: Estimates project carbon levies (currently US$18-35/ton) rising to $100/ton by 2030. However, large emitters count on falling levies (down to $60/ton) post 2030. Is there a compromise here without risking price inflation?

4. *Net Zero does not mean zero carbon fuel, rather less consumption*: A carbon market must offer choices for "net" emissions offset (avoid, reduce, offset). Removal costs are not linear (last 10% removal is more expensive than first 10%). Can such markets operate globally?

5. *Mandated technology switching*: High carbon levies will not reduce consumption in transport and shipping. In such cases, alternative technologies (EV, hydrogen) must be mandated.

Technical and industrial groups are exploring efficacy and permanence for sustaining net-zero beyond 2050 and perhaps even improving it. Several questions arise:

1. *Source emissions sequestration is best*: Large emissions at source (>10,000 ppm) offer efficient capture as opposed to a more diluted form after release (400 ppm) at the tail-end.

2. *Additional atmospheric CO2 removal is needed*: To limit temperature rise to within 1.5 deg C, direct-air capture (DAC) is needed to remove past CO2 accumulation. However, this method should not become "business as usual" for large emitters (their emphasis must be greener production methods and source capture). DACs could be effective to reduce urban pollution.

3. *All carbon sequestrations are not equal*: Terrestrial, biosphere and geosphere sequestration are not equally effective. Trees and soil return CO2 back. Geosphere store is more permanent and large emitters must be mandated to 50% sequestration (rising to 100%).

4. *All carbon credits are not the same*: Carbon-avoidance offset credits (growing trees) is not zero sum (one emits, the other does not, so net carbon increase), whereas carbon-removal offset credit is carbon neutral (one emits and the other removes). Clear and prescribed distinction is needed.

All this is alphabet-soup even for the best of minds. At a global level this becomes even more challenging given varying levels of affordability and enforcement. I am a believer in climate change; however, I have several viewpoints that (I believe) have not been explored. These are focused closer to the community side and their implementation:

1. *Consumer's net-zero effort*: Can supply-chain (goods/fuel) be net-zeroed (or 'carbon negative') at source, to compensate for its retail use? This will alleviate complex retail net-zero effort. Will the retail carbon levy be purely financial (tax) or other metered methods?

2. *Tally mechanism*: How will the tally mechanism and enforcement work for a geographical area (community, city, state/province, country) given unequal clean resources and inability to remove/offset effectively (location, affordability)?

GSEF Global Smart Energy Federation
Formerly known as Global Smart Grid Federation

3. *Legislation should precede Regulation*: Base-line legislation makes for transparent regulation. Green-leaning policies cannot be effectively regulated (cost/benefit may still point to fossil fuels).

4. *Hydrogen Roadmap requires clarity*: Today, hydrogen is a feedstock not a global fuel commodity. Being a light gas, its transportation cost is high (unless liquified). So, its production at demand-hubs appears best strategy. Is grey hydrogen transitioning to blue hydrogen and then to green hydrogen, a good start to boost large scale hydrogen production?

5. *Defining roles for T&D utilities*: T&D utilities can enable clean energy transition particularly in managing distributed renewables. High penetration of renewables is essential for low-cost EV charging and low cost distributed green hydrogen production.

6. *Redefining mobility roadmap*: EV charging (using low cost RE) will compete with distributed green hydrogen production. Will BEVs and charging infrastructure become a medium-term play only ultimately giving way to hydrogen vehicles?

There are many pieces that need to be worked out, otherwise our transition to Net Zero 2050 will be delayed. Local communities and public implementation must be the focus of all such discussions. Let us hope the upcoming COP26 meeting will address many of these practical issues.

Article contributed by Ravi Seethapathy, GSEF Ambassador for Americas

Smart Grid Events

18-19 November 2021:
Distribution Utility Meet, India
http://dumindia.in

20-22 November 2021: International Conference on Smart City and Green Energy (ICSCGE 2021)
http://www.icscge.org/

22-23 November 2021: Global Oil and Gas Expo
https://oil-gas.annualcongress.com/

23-24 November 2021: European Gas & LNG Conference
https://plattsinfo.spglobal.com/europeangaslngvirtualconference_register.html?

24-26 November 2021: Smart City 360° Summit
https://smartcity360.eai-conferences.org/2021/

25 November-01 December, 2021 :
Mastering Clean Hydrogen
https://www.infocusinternational.com/hydrogen

30 November 2021- 01 December 2021: Hydrogen North America 2021
https://reutersevents.com/events/hydrogen-north-america/?utm_source=Energy+Global+&utm_medium=listing&utm_campaign=launch

30 November – 02 December 2021: Enlit Europe, Milan (formerly known as European Utility Week)
https://www.enlit-europe.com/

1-2 December 2021: ASIA-TECH 2021
https://europetro.com/event/377

7-9 January 2022: 8th International Conference on Renewable Energy Technologies (ICRET 2022)
http://www.icret.org/

26-28 January 2022: DistribuTECH 2022
https://www.distributech.com/

31 January - 02 February, 2022:
8th European Gas Conference
https://energycouncil.com/event-events/european-gas-conference/

01 - 04 March 2022: India Smart Utility Week 2022
www.isuw.in

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.DSO)

Botswana Power Corporation

Associate Members

Green Business Certification Inc.

Florence School of Regulation (FSR)

Energy BlockChain Consortium

Caribbean Electric Utility Services Corporation

Electric Power Research Institute

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 | Bhushan Khade | Ravi Seethpathy | Marc Boillot | Nick Singh