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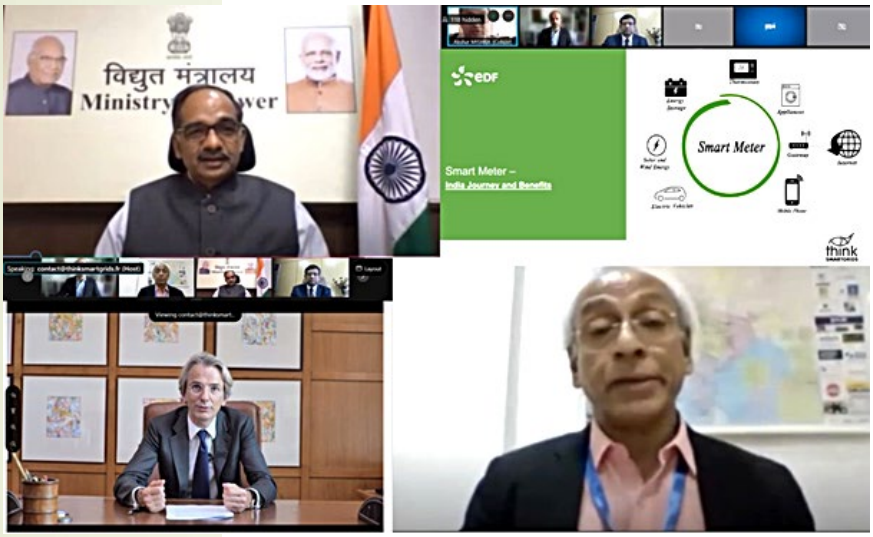
NEWSLETTER

July 2021

France-India Partnership for Advanced Metering Infrastructure

Smart meters are a key step in the digitalization of utilities. India plans to install more than 250 million smart meters as part of its national smart meter programme. French-Indian cooperation has enabled a pilot deployment in the state of Bihar and the first feedback was given during the Webinar on "Building A Secure And Efficient Advanced Metering Infrastructure" An Indo-French Journey held on 8th July, 2021.



An Advanced Metering Infrastructure (AMI) is essential for the successful transition to a sustainable, low-carbon energy mix. It contributes to optimal management of the electricity network, a significant reduction of technical and non-technical losses, and supports the integration of intermittent renewable energies and the deployment of electric vehicles.

Both India and France have launched ambitious programmes to develop smart grids in their territories. In France, 35 million Linky meters will be deployed by the end of 2021, concluding a six-year programme with a budget of €5 billion. In India, the Smart Meter National Programme aims to install more than 250 million smart meters over the next few years, making it one of the largest deployment programmes in the world.

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Following a tender won by EDF International Networks from India's Energy Efficiency Services Limited, 100,000 smart meters have already been installed in the state of Bihar by the end of 2020, with a further 4.0 million expected to be installed in the coming years.

The webinar on "Building A Secure and Efficient Advanced Metering Infrastructure organized in partnership with India Smart Grid Forum (ISGF) debated over the deployment of an advanced metering infrastructure and the French-Indian cooperation behind the project, featuring the Secretary, Ministry of Power, the French Ambassador to India and the French government, through the Directorate General for Energy and Climate (DGEC). Based on the experience of the Linky smart meter deployment in France, the expected benefits were numerous: smart meters allow remote operations from the DSO, detection of anomalies and frauds, reduce technical losses, facilitate the identification of flexibility levers and optimize the use of the existing grid as well as the use of energy by the consumers.

Link of the article: https://bit.ly/3CT48cX

Article by Think SmartGrids, France

Global Stories on Smart Grid

Siemens to Build 100-MW Battery Storage Facility in Germany

Siemens Smart Infrastructure and Zukunftsenergie Nordostbayern GmbH (ZENOB) have signed a letter of intent in Wunsiedel for the turnkey construction of a 100 MW battery storage facility in the German town. The plant, with a storage capacity of 200 MWh, is intended to use surplus renewable energy and cover demand peaks in the power grid. The 5000 sqm energy storage facility is capable of supplying 20,000 average households with electricity. The lithium-ion battery storage system will be provided by Fluence, a joint venture between Siemens and AES. Siemens will handle project management, including a technical implementation concept, as well as the construction of a medium-voltage switchgear system and connection to the high-voltage grid.

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

Vision Mechatronics Delivers India's First Mega Watt Scale Hybrid Energy Storage Project

Vision Mechatronics, a leading name in the Energy Storage Industry, has offered a Zero Blackout Solution to Brahmakumaris at Om Shanti Retreat Centre. The Retreat Centre has opted for a solar-based unique combination of MW scale hybrid battery storage system, i.e., lithium-lead hybrid which has utilized the existing old batteries with the fresh new lithium batteries to have a long duration backup to ensure that there is a smooth power transition when the grid fails. Opting for hybrid energy storage model can help commercial entities reduce their initial capex investment by 35 to 40% for a long duration energy storage project. Lithium-based energy storage is usually commercially viable only upto 4 hours, so it was important to have a commercially viable solution for 8 to 18 hours and it could be achieved by hybrid energy storage which is a combination of 'World's Smartest Lithium Batteries' together with tubular gel batteries.

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

Australian Firm Partners with JSW Energy on Green Hydrogen Projects in India

Australia's Fortescue Future Industries (FFI) has signed an agreement with JSW Future Energy Limited, an arm of power producer JSW Energy Limited, to explore green hydrogen development and use in industrial and transport sectors in India. FFI is committed to producing zero-emission green hydrogen from 100% renewable sources. It is actively establishing renewable green hydrogen and green industrial projects globally. Under the agreement, FFI and JSW Energy will collaborate and conduct scoping work on potential projects in green hydrogen production. They will also explore opportunities to utilize green hydrogen for steel making, hydrogen mobility, ammonia, and other mutually agreed industrial applications in India. JSW Energy aims to reach 20 GW of power generation capacity by 2030, with about 85% of the portfolio comprising green and renewable energy sources.

Read More: https://bit.ly/2U5tNNY

Ampol to add EV Fast Chargers at 121 Petrol Stations around Australia

Petrol retailer and oil refiner Ampol is to install electric vehicle fast charging bays at more than 100 of its service stations around Australia, as part of a funding agreement with the Australian Renewable Energy Agency. Ampol will receive $7.05 million of the $26.8 million awarded to four different groups to expand EV charging infrastructure. The recipients, which includes Evie Networks, Chargefox, Engie and Electric Highway Tasmania will deliver a total of 403 new fast charging stations, each capable of charging at least two vehicles concurrently at 50kW or above. Ampol will install renewable powered DC fast chargers (2 x 50 kW bays to charge two cars at a time) at 121 of its petrol stations across Sydney, Melbourne, Brisbane and Perth.

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

AES looks to Grid Virtualization to grow Clean Energy

AES and X, formerly Google X, are developing and using the tools to simulate and virtualize AES's distribution grids in Indiana and Ohio. The near real-time virtualization is intended to accelerate the addition of clean energy resources on to the grid by testing new ideas, improving reliability and optimizing operations and ultimately reducing costs. The goal is to build a modern and green grid to benefit all.

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

DEWA installs over 2 million Electricity and Water Smart Meters

Dubai Electricity and Water Authority (DEWA) has installed more than 2 million electricity and water smart meters in Dubai. This is part of DEWA's efforts to develop a state-of-the-art digital infrastructure according to the highest international standards. Smart meters increase efficiency and reduce consumption, as well as enable customers to monitor their consumption anytime and anywhere. DEWA has also started operating the Smart Meters Analysis and Diagnosis Centre, where smart meters are read and monitored remotely every 15 minutes.

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

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NCS to Facilitate Tech Innovation for Digital Transformation

Nigeria Computer Society (NCS), the umbrella body of all Information Technology (IT) professionals and interest groups, has reiterated its commitment in aligning with government in achieving the drive for digital transformation. The conference will create a platform for developing strategies, processes, systems and technologies needed to drive and run digital economy. It will also spur the culture of building innovative systems for digital economy. This conference will also facilitate to address the relevant key components of digital economy such as government policy and regulation, digitalization, broadband infrastructure, emerging technologies, mobile applications, grid infrastructure, e-government, smart cities, e-health, e-agriculture.

Read More: https://bit.ly/3z4GqIt

ABB to deliver Artificial Intelligence modelling for Data Centre Energy optimization in Singapore

ABB has signed up to a pilot study with ST Telemedia Global Data Centres (STT GDC) to explore how artificial intelligence (AI), machine learning (ML) and advanced analytics can optimize energy use and reduce a facility's carbon footprint. Singapore-headquartered STT GDC, which is one of the fastest growing global data center operators, is leveraging the digital transformation expertise of technology leader ABB as it bids to become net carbon-neutral by 2030.

ABB is conducting the pilot in two phases, beginning with initial data exploration, modelling and validation, studying historical data to establish how digital solutions would impact existing operations and energy use. Once proven, it will be followed by AI control logic testing in a live data center environment. STT GDC aims to achieve at least 10 percent in energy savings from its cooling systems, which is the largest consumption of electrical power in a data center after IT equipment.

Read more: https://bit.ly/3io7ISX

Next-gen energy blockchain launched to Boost Energy Efficiency

Australian energy blockchain pioneer Power Ledger is migrating its Energy Blockchain platform from Ethereum to more energy efficient Solana. Solana utilizes Proof-of-History (POH) and Proof-of-Stake (POS) consensus mechanisms, unlike the Proof-of-Work (POW) of Ethereum and Bitcoin.

In addition, Solana offers faster speed and higher transaction throughput. The POH as a timing mechanism allows Solana to achieve scalability, enabling short block times of 400ms and fast throughput of more than 50,000 transactions per second all while maintaining censorship resistance.

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

IoT Turns Agri Waste into Renewable Energy

Melbourne-based renewable energy company, AgBioEn, is using a combination of IoT devices, drones, and telemetry as part of an AUD 2 billion initiative to turn agricultural waste into renewable fuels. The company plans to take waste from high-yielding, sustainably-grown crops and then process it to produce renewable diesel, bio-jet fuel, LPG, heat (for on-farm glasshouses), food-grade liquified CO2, and a soil nutrient that can be plowed back to grow more crops.

AgBioEn has three key divisions: Agriculture, Bioenergy, and Environment. The agriculture division is currently exploring innovative ways to grow better crops that achieve an increased yield in the grain or cobb, higher biomass, more carbon sequestered in the soil, and use less water.

Read more: https://bit.ly/3BgQP56

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Member Updates

UNIVERSITY OF TEXAS AT AUSTIN FINDS SUSTAINABLE SOLUTIONS THROUGH PEER

The PEER Rating System Helped Prepare A Campus For Extreme Weather

When temperatures dropped and snowflakes began to fall over Texas in February 2021, the weather was so rare that Roberto DelReal could count on one hand the number of times he'd experienced it before. "I've been in Austin for 17 years, and I'd seen snow here maybe three times—only a centimeter or half an inch or so," says DelReal, associate director of energy management and optimization at the University of Texas at Austin.

As the frigid days passed and the inches of snow accumulated, he saw a calamity unfolding on television: The surprise storm had crippled the Texas power grid, from natural gas infrastructure to wind turbines to coal-fired power plants. More than 4 million Texans were without electricity, clean water or heat, and the state's Department of State Health Services said that the storms contributed to at least 111 deaths.

However, when DelReal logged in to a VPN-connected energy dashboard, he saw the microgrid that powers University of Texas at Austin—more commonly called UT Austin—operating more or less without issue. The lights were on. The heat was running. By the time the weather abated, the 160-plus buildings on UT Austin's campus hadn't lost power for even a moment.

UT Austin possesses one of the largest microgrids in the country, providing 100% of the power and thermal energy to a campus with 20 million square feet of buildings that accommodate more than 70,000 students, faculty and staff. Lately, the university's utilities department has made significant strides toward more reliable, resilient and efficient energy infrastructure: In 2020, UT Austin became the first campus to earn Platinum recertification under PEER v2, mitigating carbon emissions and saving more than a million dollars in energy costs each year (the university originally certified in 2014 under PEER v1). With winter storms once again spotlighting the vulnerabilities of power systems, the approach taken at UT Austin exemplifies one approach to meeting the challenges of the future.

Read More: https://www.usgbc.org/articles/university-texas-austin-finds-sustainable-solutions-through-peer

Article contributed by Ishaq Sulthan, Associate Director, GBCI India

Member Updates

SUNSEAP INKS DEAL TO BUILD WORLD'S LARGEST FLOATING SOLAR FARM AND ENERGY STORAGE SYSTEM IN BATAM, INDONESIA

SINGAPORE - Energy firm Sunseap Group will build the world's largest floating solar farm and power storage system on the Indonesian island of Batam.

The US$2 billion (S$2.73 billion) complex will be on the Duriangkang Reservoir in Southern Batam island, near Singapore, with construction slated to begin in 2022 and be completed in 2024.

Sunseap signed an agreement to develop the project with BP Batam, the local investment and development authority. The floating solar farm is projected to have a capacity of 2.2 gigawatt-peak and will span around 1,600ha, making it the largest in the world.

The energy storage system will have a capacity exceeding 4,000 megawatt-hours.

Sunseap also expects the solar farm to generate more than 2,600 gigawatt-hours of electricity per year, potentially offsetting over 1.8 million metric tons of carbon a year. This is equivalent to taking around 400,000 cars off the road a year

Read More: https://bit.ly/37KibmA

GSEF Smart Grid Editorials

ESG REPORTING FOR UTILITIES: A NEW BEGINNING

I was recently asked to present my views on ESG framework, metrics and process at a meeting of utility executives. My talk was modeled on the Balanced Score Card approach (process similarities) that I had implemented years ago in my utility days.

Environmental, Social, and Corporate Governance (ESG) refers to the three central factors in measuring the sustainability and societal impact of a business. These criteria are supposedly better determinants of a company's future performance in a socio-environmental context. ESG purports to achieve a stronger and more coherent reporting involving (a) environment safeguards (natural materials, water conservation, CO2 reductions); (b) advancing social issues (diversity, human rights, poverty reduction); and (c) ethical corporate governance (anti-corruption, pay equity, fair trade).

While the metrics are still evolving, it appears ESG reporting is here to stay. It will likely replace "green" and CSR metrics going forward. Currently, there is no accepted nor published ESG standards. Typically, natural materials and extractives intensive companies face ESG headwinds and this includes integrated utilities.

Since its coinage in 2019, the first movers on ESG reporting have been the financial markets i.e., rating agencies, pooled funds, Sustainability Finance Disclosure Regulations (SFDR), Accounting Standards (IFRS), and boards of large multinationals (MNEs). Such early starts in defining ESG reporting for market disclosures, has been to get ahead of the curve and shape best practices (also future tort laws) and to correct imbalances in various global geographies. The United Nations plans to fit its 17 SDGs into ESG by 2030, spread amongst – People (poverty/opportunity), Planet (land, water, air, sanitation), Prosperity (economic opportunity, decent working), and Peace (reduced inequalities).

The utility business model can be complex. They often have varying holding structures i.e. (a) 100% govt. owned; (b) part-govt owned; (c) private; and (d) public/listed. Further, based on the regulatory frameworks, their operations could include (a) generation, (b) transmission, (c) distribution or combinations thereof. Other business diversifications could include (a) electricity, gas, and/or water; (b) multiple geographies and (c) multiple regulators.

Choosing ESG metrics for utilities needs careful introspection. Once launched there is little or no turning back. Secondly, international/national agreements, local policies/regulations, together with NGO voices, may impose additional comparator metrics. Thirdly, the flow of such metrics (as a cascade) from the Board level down to each business unit (BU) and divisional levels (with differing weights), needs transparency for staff buy-in. Yet, when rolled up for corporate reporting, it must be cohesive enough for external scrutiny. ESG reporting should drive a consistent message and be the enabler for behavioral change across all levels of the organization.

All of the above activities (targets, process, reporting, deliberations, consensus and framework), reminds me of my days in the utility when the Balance Score Card was implemented. It also had an add-on annual "performance-pay" component for each BU/Division executive, based on the score-card results. The board approved the annual corporate score-card (having both qualitative and quantitative targets) for the CEO, which cascaded down with differing weights/measures, to each BU/division and their executives' annual performance (bonus) pay. Effectively, the divisional performances when rolled up, had to align and achieve corporate targets to "release" the corporate performance-pay pool (all or in-part) for the BU/Division payouts. A few metrics (customer satisfaction, credit rating, etc.) required external benchmarks.

In my view, ESG framework and reporting mirrors the Balanced Score Card approach in formulation, implementation and reporting (simple, understandable, effective). The following steps come to mind for a successful ESG implementation:

1. **Board Deliberation:** (a) need; (b) strategic risk/reward/liabilities; (c) fiduciary; (d) organizational behavior; (e) internal/external messaging; (f) process; (g) oversight

2. **Framework Consideration**: (a) 360-degree business landscape, standard of care; (b) laws, regulation, "green-washing" disclosures, markets, stakeholder impacts; (c) risks and future uncertainties; (d) data collection, processing, validation; (e) reporting platforms, frequency, analysis, messaging; (f) supply-chain inclusion; (g) audits and compliance

3. **Metric Formulation and Target Setting**: (a) corporate, business units, divisional metrics; (b) grouping options (asset class, systems, geography); (c) targets and weight allocations; (d) executive performance pay inclusion; (e) organizational culture

4. **Project Implementation:** (a) project team, executive authority, budget, charter; (b) corporate, BU, Division sponsors/champions; (b) project monitoring/reporting, management/board updates; (c) internal and external communications

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5. **Operations and Custody:** (a) Core team (corporate/BU/division/country); (b) managing data repository, collection, validation, analysis, reporting; (c) reports, presentations, Q&A; (d) staff training

For utilities the following variables are likely to be dominant for ESG reporting:

- Environment: fossil generation emissions, SF6 gas leakage, oil-spills/PCBs, ground/water pollution, operation wastage, transport fuel consumption and overall CO2 footprint reduction plan
- Social: worker/contractor safety, working conditions, gender diversity, advancing local content, community poverty reduction, social responsibilities and their improvement plan
- Governance: anti-corruption, pay equity, fair-trade, human rights violations and an overall plan for improvement

In summary, ESG (in its nascency) is currently an "alphabet soup" with no established reporting, no consistency, nor harmonization standards. There is also no globally accepted "green regulatory standards" for benchmark comparison. Nevertheless, it is here to stay and hopefully will gradually get better. It is in the utilities' best interest to initiate a "shadow-play" now and get ahead of the learning curve.

Article contributed by Ravi Seethapathy, GSEF Ambassador for Americas

Smart Grid Events

21 – 25 August 2021: CIGRE, Paris
https://www.cigre-exhibition.com/

22 - 25 September 2021: Solar Istanbul
https://www.solaristanbul.com.tr/

06 – 07 October 2021: Innovation for Cool Earth Forum (ICEF), Tokyo
https://www.icef-forum.org/

13 - 15 October 2021: EIF World Energy Congress and Expo
https://www.enerjikongresi.com/

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

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

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

20 – 23 September 2021: CIRED, Geneva
https://www.cired2021.org/

06 -08 October 2021: EM Power Europe
https://www.em-power.eu/home

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

25 – 29 October 2021: Singapore International Energy Week
https://www.siew.gov.sg/

03 – 05 November 2021: 14th International Energy Congress and Expo
https://www.worldenergy-congress.com/

26 - 28 January 2022: DISTRIBUTECH International
https://www.distributech.com/event-information

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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.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.

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