ISGF
India Smart Grid Forum

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SMART GRID Bulletin

August, 2019

KEPCO's Open Microgrid Project from Korea Awarded ISGAN and GSGF Global Excellence in Smart Grid Projects

International Smart Grid Action Network (ISGAN), in partnership with the Global Smart Grid Federation (GSGF), announced the winners of the fifth annual ISGAN Award of Excellence, during a special ceremony during the ISGAN-Mission Innovation (MI) IC1 Forum at the tenth Clean Energy Ministerial (CEM10) in May 2019 in Vancouver, Canada. Amanda Wilson, the Director General of Natural Resources Canada and Youngjoon Joo, the Korean Deputy Minister for Trade, Industry and Energy, presented the ISGAN Award to the winning projects. Karin Widergren, Chairperson of ISGAN and Steve Houser, Treasurer of GSGF attended the award ceremony.

The Theme for 2019 was Excellence in Smart Grids for Local Integrated Energy Systems (Smart Microgrids). The 2019 ISGAN Award of Excellence was awarded to Korea Electric Power Corporation (KEPCO) for the Open Microgrid Project in Korea. The Open Microgrid Project of KEPCO covers the construction and demonstration of two types of microgrids designed and operated by KEPCO: a consumer community-based independent microgrid and a grid-connected microgrid, involving different types of distributed energy resources such as renewable energy, Energy Storage System etc. The project stemmed from KEPCO's recognition of the importance of microgrid technology that can ensure reliability and resilience in energy supply while contributing to resolving energy production and consumption problems.

A wide range of smart grid project nominations were received for this award, representing projects from 10 different countries throughout the world. The winning projects were selected by an independent, international jury of smart grid experts, led by Reji Pillai Kumar, Chairman, Global Smart Grid Federation (GSGF) and President,

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India Smart Grid Forum (ISGF). The jury selected the winning projects based on four criteria's: 1. Potential impact, 2. Economic rationale, 3. Potential for replication and adaptation, 4. Innovation and other benefits.

Members of the Jury who contributed their time and expertise to the evaluation process were the following: Steve Hauser (United States), CEO, GridWise Alliance; Oscar Miranda Miranda, Chairman- Smart Grid Mexico; Michele de Nigris, Director, Ricerca sul Sistema Energetico, RSE SpA; Valerie-Anne Lencznar, Managing Director, Think Smart Grids, France; Robert George Stephen, President, CIGRE; Cheong Kam Hoong (Malaysia), GSGF Ambassador for Asia; Kentaro Akiyama, Professor, Seijoh University - Japan and Ravi Seethapathy, GSGF Ambassador for Americas.

The 2020 ISGAN Award for Excellence is announced with the theme Digitalization Enabling Consumer Empowerment. Nomination to be submitted by 15 November 2019 at link: https://www.iea-isgan.org/awards-2020/

ISGF Welcomes New Members

- Aditya Silver Oak Institute of Technology as Associate Member
- Regional Centre for Urban & Environmental Studies, Lucknow as Associate Member
- Oriental University, Indore as Associate Member

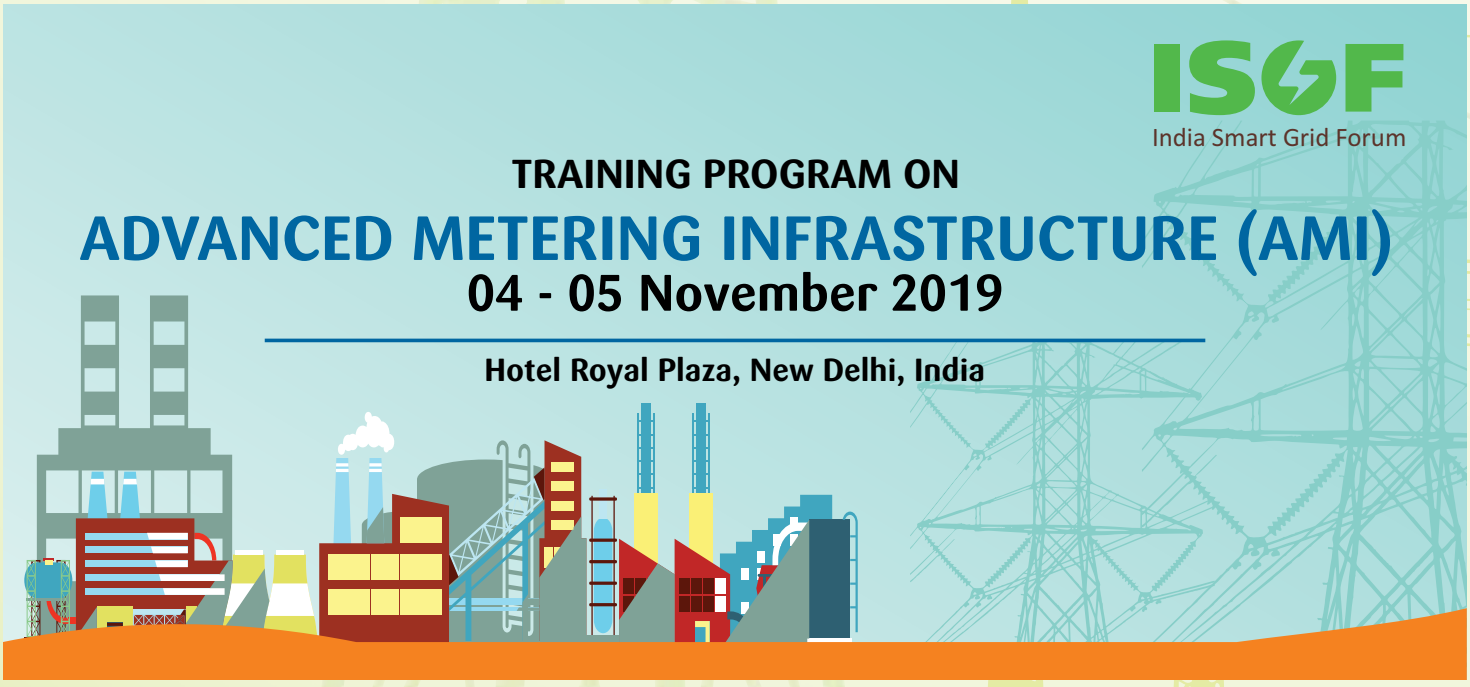
EU-India Smart Grid Workshop, 14 – 15 November 2019, Paris, France

European Commission and ISGF announces the 8th EU – India Smart Grid Workshop in Paris, France scheduled on 14 - 15 November 2019. The importance of EU-India cooperation on Smart Grid has been underlined in the Joint Declaration on a Clean Energy and Climate Partnership adopted by EU and India on the occasion of the visit by India's Prime Minister Modi to the European Leaders in Brussels on 30 March 2016. The Paris Workshop will involve Indian and European Policy Makers, Network Operators, Regulators and Technology Providers in interactions on the following themes:

- Regulatory Frameworks enabling RE Integration
- European and Indian demonstration projects on Energy Storage to promote the integration of Renewable Energy and Electric Vehicle
- Evolving role of Distribution System Operators in the context of Smart Grids
- Upscaling and transferring promising Smart Grid demonstrations in Indian and European contexts

The event will be held in conjunction with European Utility Week (EUW) scheduled from 12 - 14 November 2019 in Paris.

To join the delegation from India, please contact Ms. Reena Suri at India Smart Grid Forum (reena.suri@indiasmartgrid.org)



Smart Grid Updates: Policy, Regulations & Standards

INDIA

5,595 Electric Buses to be deployed across 64 Indian Cities

Department of Heavy Industry (DHI) under the Ministry of Heavy Industry and Public Enterprises, has granted the approval for 5,595 electric buses comprising of 5095 buses for intracity operation, 400 buses for intercity operation and 100 buses for last-mile connectivity to Delhi Metro Rail Corporation (DMRC), to be deployed in 64 cities under the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME-II) program. The buses will run 4 billion kms during their contract period and are expected to save nearly 1.2 litres of fuel will in turn help in reducing 2.6 million tons of carbon dioxide emissions. Read More: https://bit.ly/31Lzy1n

Net Metering Regulations for Solar Projects

The Joint Electricity Regulatory Commission (JERC) for the state of Goa in India and union territories has finalized the net metering regulations which will be applied to grid-connected rooftop-mounted, ground-mounted and floating solar PV power projects in Goa and the union territories of Andaman and Nicobar Islands, Chandigarh, Dadar & Nagar Haveli, Daman & Diu, Lakshadweep, and Puducherry. Under the new regulations, the group net metering framework will apply to all the consumers. The consumer will pay the developer for all the energy generated at a mutually agreed tariff. The commercial arrangement between the developer and the prosumer will be submitted to the DISCOM for records, and the DISCOM will not have any role in such a commercial agreement. Read More: https://bit.ly/2z6dan0

Reduced Tariff for EV Charging to promote Electric Mobility

Delhi Electricity Regularity Commission (DERC) has reduced the electric vehicle charging tariff to promote the usage of electric vehicle in the city. For LT supply like residential charging stations will now have to pay INR 4.5 (~0.065 USD)/kWh instead of INR 5.5 (0.07 USD)/kWh whereas public charging stations requiring HT supply will now attract a tariff of INR 4 (0.057 USD)/ kVAh instead of INR 5 (~ 0.07 USD)/kVAh. Read More: https://bit.ly/33JeH0H

Blueprint ready for setting up EV Charging Stations in Karnataka, India

The Bangalore Electricity Supply Company (BESCOM) has drawn a plan for setting up 678 electric vehicles (EV) charging stations across the state of Karnataka and is in line with the FAME India program being implemented by the government of India. As per the new proposal, after covering Bangalore, Mysore, Hubbali-Dharwad, Davanagere are supposed to come up with charging stations, followed by Shivamogga and Belagavi. The BESCOM proposal envisions setting up charging stations between every 20-25 km, for a stretch of 50 km distance on either side of the road along the Bangalore-Tumkur highway, and a 100 km stretch along the Bangalore-Mysore highway. The charging stations would be mostly set up in the premises of government buildings. Read More: https://bit.ly/2xJJHi3

New Regulations for granting Electricity Trading License

The Central Electricity Regulatory Commission (CERC) has issued a notification to address the procedure, terms, and conditions for the grant of licenses for electricity trading. The regulator has proposed net-worth requirement for Category-I trading licensees to INR 750 million (10.79 million USD) for trading between 5,000 million units (MUs) and 10,000 MUs. In terms of trading margins, the CERC mentions that for short-term contracts and contracts through power exchanges, the trading licensee should charge a minimum trading margin of INR 0 per kilowatt-hour (kWh) and a maximum trading margin of seven INR 0.07 (0.00099 USD)/kWh. Read More: https://bit.ly/2P1nFmD

Additional Charges for Sustained Deviation in Scheduling of Power

The Rajasthan Electricity Regulatory Commission (RERC) has issued a methodology for sign change and additional charges for its violation under the Deviation Settlement Mechanism (DSM). The commission has said that each violation will attract an additional charge of 10% of the DSM charge payable or receivable for that time block, excluding the additional charge for the deviation. The payment of an additional charge for the failure to adhere to sign change requirement will not apply to a forced outage of state generating station (SGS) in case of collective transactions on power exchanges. Read More: https://bit.ly/2KOMAUT

Reduced GST on Electric Vehicles

The central government decided that the applicable rate of Goods and Services Tax (GST) on electric vehicles (EVs) will be reduced from 12% to 5%. Moreover, the GST rates on chargers or charging stations for EVs have been reduced from 18% to 5%. The GST council also decided that the hiring of electric buses (carrying capacity more than 12 passengers) by local authorities will be exempted from GST. These changes will come into effect from August 1, 2019. Read More: https://bit.ly/2MgntgO

INTERNATIONAL

European Commission Launches Consultation on the Establishment of Smart Readiness Indicator for Buildings

The European Commission has launched a consultation on the Smart Readiness Indicator to help ensure that building owners, occupants and other interested parties are made aware of the significant benefits that smart technologies and ICT can bring to buildings, particularly in terms of improved energy performance and enhanced comfort and well-being. The Smart Readiness Indicator is a new instrument to rate the smart readiness of buildings, to be established under the Energy performance of buildings directive (EPBD) 2018/844. The aim of the consultation is to collect a broad feedback on some of the structuring factors of the SRI scheme, in order to inform and orient the policy making process. Read More: https://bit.ly/2ZeTSqt

Malaysia's Tenaga Nasional Berhad to Restructure Amidst Market Liberalisation

Malaysian power utility Tenaga Nasional Berhad (TNB) has proposed an internal restructuring of its three divisions: generation company (Genco), TNB housing the regulated transmission & distribution as well as the international businesses, and retail company (Retailco). The corporatisation is to prepare for sector liberalisation under MESI 2.0. With independently appointed boards of directors and management teams, the separate divisions can focus more on opportunities, efficiency and better financial performance. Read More: https://bit.ly/2H9j4lw

FERC Strengthens Cyber Security Standards for Bulk Electric System

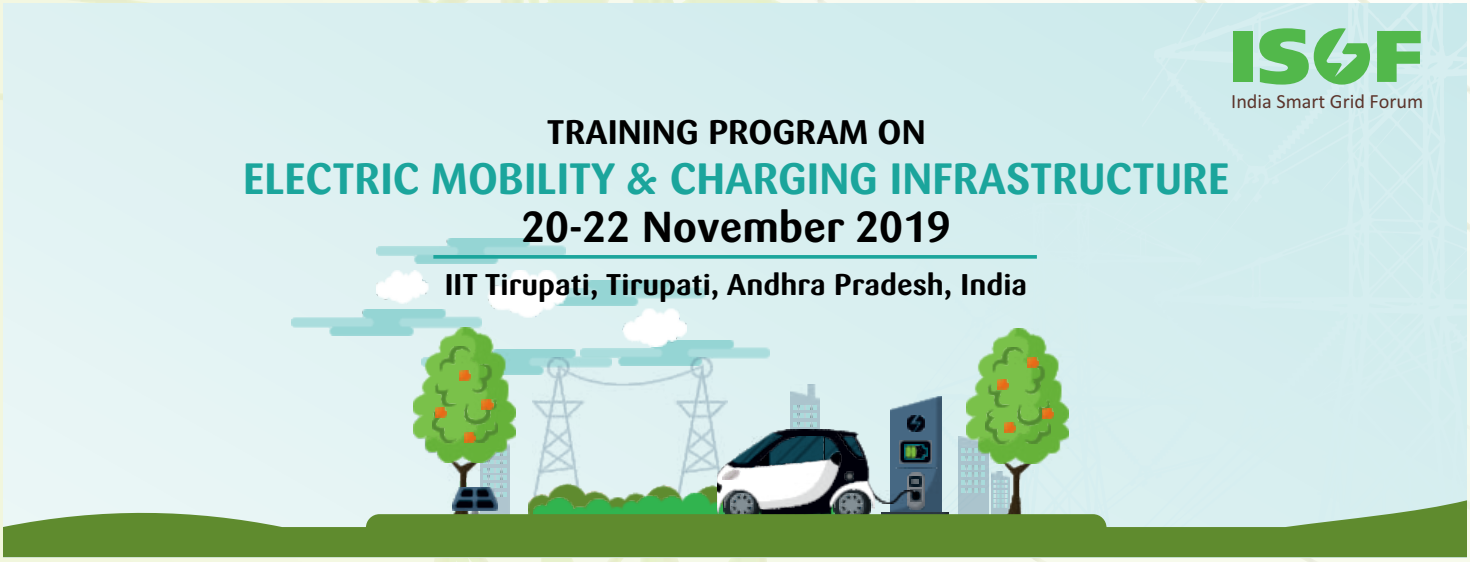
The Federal Energy Regulatory Commission (FERC) of US, recently bolstered the cyber security of the nation's bulk electric system by expanding the reporting requirements for incidents

Policy, Regulations & Standards (Contd...)

involving attempts to compromise operation of the grid. The action closes a gap in the prior Critical Infrastructure Protection Reliability Standards that required entities to report only when an incident has compromised or disrupted one or more reliability tasks. The approved new Critical Infrastructure Protection Reliability Standard CIP-008-6 (Cyber Security - Incident Reporting and Response Planning) now requires reporting of cyber security incidents that either compromise or attempt to compromise Electronic Security Perimeters, Electronic Access Control or Monitoring Systems, and Physical Security Perimeters associated cyber systems. Read More: https://bit.ly/2RLfbxD

California Grid Operator asks FERC for Broader Authority to Maintain System Reliability

The growth of intermittent renewable generation has California ISO in US, looking for new solutions to balance the grid, and when making reliability-must-run decisions, it proposes to consider relative operating characteristics of the resource including dispatch ability, ramp rate, and load following capability. The ISO told FERC in its initial filing that modernizing its retirement and backstop procurement provisions can help ensure that the necessary resources to maintain system reliability and integrate renewable resources remain operational and that retirement requests are processed in a timely, orderly, and efficient manner. Read More: https://bit.ly/2KoVl7S



Join the Indian Delegation to Korea Smart Grid Week 2019 from October 16 -18 in Seoul, South Korea

ISGF is taking an official delegation from India to the Korea Smart Grid Week (KSGW) 2019 which will be held from October 16 -18 in Seoul, South Korea. KSGW has been growing in conjunction with Korean Smart Grid Industry. It serves as a mutual exchange arena for sharing strategies and cases for global market advancements, market opportunity, up-to-date technologies with all players. KSGW conference is visited by world class experts and the exhibition covers more than 200+ Leading Smart Grid Companies and 30,000+ Buyers. Visit the event's website for additional information: http://www.ksgw.or.kr/ver2019_eng/main/main.php

To join the delegation or for more information, please contact: Ms. Reena Suri, Email id: reena.suri@indiasmartgrid.org

Appointments and Transfers

- Mritunjay Kumar Narayan has been appointed as Joint Secretary – Distribution in Ministry of Power, Government of India.
- DS Dhesi has been appointed as Chairman, Haryana Electricity Regulatory Commission
- Jiban Krishna Sen has been appointed as Member, Tripura Electricity Regulatory Commission
- Lalzirmawia Chhangte has been appointed as Secretary, Power & Electricity Department, Government of Mizoram
- Mahendra Jain has been appointed as Additional Chief Secretary – Energy in Karnataka
- D Radhakrishna has been appointed as Chairman, Tripura Electricity Regulatory Commission
- AK Gupta has been appointed as Managing Director, Jaipur Vidyut Vitran Nigam Ltd
- Puneet Goel has been appointed as Principal Secretary – Power, Environment and Forest, Goa

Smart Grid Updates: Technology & Projects

Grid Modernization and Smart Metering

Central Electricity Authority (CEA), India, draws up plans to boost Power Distribution Infrastructure

The Central Electricity Authority (CEA), India has anticipated a 40 % increase in power distribution infrastructure till 2022. The projection of a 38% increase in distribution substation capacity, 32% increase of distribution transformation capacity and an increase in different types of feeder lengths by 27-38% till 2022 have been made in the Draft Distribution Perspective Plan for the power sector. The draft plan is the first ever plan at the distribution level which has been prepared by Central Electricity Authority (CEA) under the guidance of the Ministry of Power. The Distribution plan is aimed at sustaining the goal of 24x7 uninterrupted power for all with increasing demand of electricity by consumers. The plan lays emphasis on 100% metering of all consumers and providing an electricity connection on demand. The plan also envisages conversion of all electricity consumer meters into smart meters in prepaid mode within the next three years. Smart metering would empower consumers with tools to help them conserve energy and plan their electricity usage in an efficient and optimum manner. Read more: https://bit.ly/2Z4cokU

Electric Vehicle and Energy Storage

Energy Storage investments boom as Battery costs halve in the Next Decade

Energy storage installations around the world will multiply exponentially, from a modest 9GW/17GWh deployed as of 2018 to 1,095GW/2,850GWh by 2040, according to the latest forecast from research company BloombergNEF (BNEF). The total demand for batteries from the stationary storage and electric transport sectors is forecast to be 4,584GWh by 2040, providing a major opportunity for battery makers and miners of component metals such as lithium, cobalt and nickel.This 122-fold boom of stationary energy storage over the next two decades will require $662 billion of investment. It will be made possible by further sharp declines in the cost of lithium-ion batteries, on top of an 85% reduction in the 2010-18 period. There is a fundamental transition developing in the power system and transportation sector. Falling wind, solar and battery costs mean wind and solar are set to make up almost 40% of world electricity in 2040, up from 7% today. Meanwhile passenger electric vehicles could become a third of the global passenger vehicle fleet by 2040, up from less than half a percent today, adding huge scale to the battery manufacturing sector.

Demand for storage will increase to balance the higher proportion of variable, renewable generation in the electricity system. Batteries will increasingly be chosen to manage this dynamic supply and demand mix. Read more: https://bit.ly/2H3cNhz

Madhya Pradesh consults on 500MW of Energy Storage and Manufacturing

Madhya Pradesh Power Management Company (MPPMCL), India, has invited expressions of interest (EoI) for setting up 500MW of grid-scale energy storage capacity as well as a storage manufacturing facility in the central Indian state. Under Prime Minister Narendra Modi's first term heading the government, the Saubhagya Yojna electrification scheme brought an extra 2.7 million customers online in Madhya Pradesh, where distribution companies now supply power to 11.5 million domestic consumers out of a total population of 82.3 million. On top of the added pressure on the grid from a major uptick in customers, India is also seeing increasing penetration of solar and wind generation, which brings its own grid integration challenges. With its wide availability of barren lands, Madhya Pradesh is a well-suited state for such clean energy ventures, although power demand is limited when compared to many other states.

Utility-scale storage is expected to play a prominent role in providing the necessary ancillary services in the state, whether through batteries, pumped hydro storage, compressed air energy storage, flywheels or other forms of storage technology.Read more: https://bit.ly/31ySnET

1.2 Gigawatt Renewable Energy Storage Tender issued by SECI, India

The Solar Energy Corporation of India (SECI) has issued renewable energy storage tender. This time the agency has issued a tender with a special clause that may result in lower tariff bids and attractive buying rates for buyers. India has offered project developers a renewable energy capacity of 1.2 gigawatts equipped with energy storage. According to tender conditions, developers can set up wind or solar or hybrid projects of solar and wind energy. The size of any project shall range between 50 megawatts to 300 megawatts while a group company can bid for a maximum capacity of 600 Mw. The tender has been issued under the central government policy and is thus a part of the inter-state transmission system scheme which allows bidders to set up the projects at the site of their choosing. SECI will look for power distribution utilities interested in buying power from these energy storage projects and then sign power purchase agreements with them, likely spanning 25 years.Read more: https://bit.ly/33rfzXB

Nissan, BMW in Talks to pull South Africa into Electric Car Era

Nissan Motor Co., BMW AG and Volkswagen AG are among carmakers in talks to bring the electric-car revolution to South Africa, as the nation's auto-factory floors risk being left behind in the global switch to greener vehicles. The industry is preparing a unified stance on electrification to present to the government by the end of the year. Among the goals is persuading lawmakers to reduce or drop a 23% import tariff on electric vehicles to help ramp up nascent domestic sales. Another is to roll out a charging infrastructure in a country where the state-owned power monopoly is in deep financial crisis. Till date, there are no firm plans for electric-car or hybrid production in South Africa, but the government and industry agreed in 2018 to extend a manufacturing incentive program, creating jobs and enabling models like the BMW X3 sport utility vehicle and Nissan's Novara pickup to be produced locally. Read more: https://bit.ly/31CEZzH

Nissan Partners with EVgo to Install EV Charging Infra in US

Japanese auto manufacturer Nissan has joined hands with EVgo to set up electric vehicle charging infrastructure in US. Under their joint venture, these two companies will install 200 direct current fast chargers (DCFC) across US over the next six years. Each of these new DCFC is capable of delivering 100 kW and have both CHAdeMO and CCS connectors that will benefit the

Nissan and EVgo will jointly install 200 fast chargers across US

EV owners. As Nissan claims, the automaker has installed more than 2,000 quick charge connectors across US since 2010 and has invested more than $60 million in charging infrastructure to help all types of EVs. The release also claims that more than 100 million Americans currently live within a 15-minute drive of an EVgo fast charger, including those built in partnership with Nissan. The joint venture between these two companies will also work to increase awareness among US electric vehicle drivers about the advantages of going electric. Read more: https://bit.ly/2MexXgU

Electric Vehicle Charging Points at MahaMetro Stations

As a part of its drive to promote green transport in the city, MahaMetro has decided to start electric vehicle charging stations at some of its stations. Solar power generated at the stations will be used to charge the cars and two-wheelers. MahaMetro has signed a memorandum of understanding (MoU) with Energy Efficiency Service Limited (EESL), a government company under Union power ministry, in this regard. The charging stations will not be started at all stations, but wherever space is available. The official assured that the vehicle being charged will not be an obstruction to traffic. MahaMetro has installed solar panels atop its existing stations and plans to do so at all the under-construction ones. It has also installed solar panels atop its office Metro Bhavan. It plans to meet 65% of its energy need through solar. So far, it has installed 965 solar panels at various places. Till now, this service has been provided by Delhi and Chennai Metros. Now, Nagpur has joined the list.Read more: https://bit.ly/2MYrFS5

Renewable Energy and Microgrids

World's Lowest Tariff awarded in Portugal at $16.54 per MWh

Portugal has seen a project development rush and new connection licenses for 938 MW of utilityscale solar PV projects were issued until mid-2018

Portugal has become the country with the world's lowest-cost solar PV contract. The lowest tariff awarded in the country's first solar PV auction – held in July 2019 – was just €14.76 per Megawatt Hour (MWh), or $16.54 per MWh at today's exchange rates. This narrowly beats the recent $16.95 per MWh contract awarded in Brazil. In order to manage the multi-gigawatt pipeline of projects queuing behind licensed sites, Portugal took the decision to hold a series of auctions which would award both grid connection capacity and either guaranteed or general remuneration support to successful bidders. Under the latter of the two remuneration models, developers bid for grid connection rights and are then able to sell their output into the wholesale market or via bi-lateral PPAs. A total of 862 MW was awarded under guaranteed remuneration and 288 MW under the general remuneration arrangement. The July auction is the lowest-cost contract awarded through a public auction in Europe so far and gives a measure of solar PV's increasing economic competitiveness in the region. Read more: https://bit.ly/2MTastk

The Growth of Rooftop Solar Continues to have a Major Impact on Australia's Electricity Grids with the Australian Energy Market Operator (AEMO) Reporting Significant Declines in Operational Demand in the Latest Quarter

The increase in rooftop solar, along with the big growth in large scale solar and wind energy, is changing the dynamics of the market, usually pushing down demand in the middle of the day. AEMO says that overnight generally remains the time with the lowest demand in most of the National Electricity Market, but this is now being challenged by the impact of rooftop solar. In South Australia, the minimum demand is now almost exclusively in the middle of the day, or late morning. It used to be between 3am and 6am. A new record low for minimum demand in South Australian was set at 1.30pm on April 27, when operational demand dropped to 749MW. This was 44MW lower than the previous second quarter record last year. At this time, rooftop PV provided approximately 600MW of output. Read more: https://bit.ly/33wZyPA

Hydropower back in play in India's Energy Mix

With the scrapping of the Article 370 and Article 35A in Jammu and Kashmir by the National Democratic Alliance (NDA) government, industry captains believe that hydropower is back in play in India's energy mix. Also, Arunachal Pradesh that had awarded a raft of projects to private companies has now approached state run NHPC Ltd to execute them.

Hydropower projects, often located in remote regions, are crucial to stabilize the grid as India looks to add 175 gigawatts (GW) of renewable capacity. However, given the issues regarding resettlement of the affected population and infrastructure development, many projects have been stuck and delayed leading to a decreasing share of hydropower in the country's energy mix. Hydropower projects are ideal to meet peak load compared to thermal power plants. These plants can be swiftly turned on and off, compared to thermal power plants, helping the grid withstand fluctuations caused by intermittent supplies from solar and wind. With nearly 100 GW of electricity potential in India's rivers lying untapped because of high tariffs, the NDA government has approved a slew of measures under the hydro policy to make it competitive. Read more: https://bit.ly/2M9zncr

Green Certificate Sales down 61% to 6.29 Lakh in July 2019 in India

Indian Energy Exchange (IEX) and Power Exchange of India (PXIL) are the two power bourses in the country which are engaged in the trading of renewable energy certificates (RECs) and electricity. According to official data, IEX saw total trade of 4.92 lakh RECs in July as compared to 10 lakh in the same month last year. Similarly, PXIL recorded sale of 1.37 lakh RECs in the month as compared to 6.18 lakh in July 2018. IEX data showed that the decline in the volume and increase in prices has mainly been due to continuing crunch on the inventory/supply side since March 2019. Under the renewable purchase obligation (RPO), bulk purchasers like discoms, open access consumers and capacitive users. They can buy RECs from renewable energy producers to meet the RPO norms. Read more: https://bit.ly/2KEXeO2

US-Israel Companies Partner to take Renewable Energy Microgrids into the AI and Machine Learning Age

Introspective Systems, LLC announced recently that it has finalized its contract with the Binational Research and Development Foundation (BIRD US-Israel Foundation) to begin a commercialization project with its Israel-based partner, Brightmerge. The companies will leverage their areas of expertise to create an end to end AI-based data solution for Microgrid design, development, and operations. Brightmerge currently has several premium, paid pilots with large clients that understand the potential of the microgrid revolution. These clients wish to

move now instead of waiting and keep losing money. The project is expected to reach alpha stage of development by Q2 2020 with first production versions ready at the beginning of 2021. Read more: https://bit.ly/2H5vJMu

Rising Demand for enhanced Microgrid Connectivity with Affordable and Clean Energy Storage will propel the Microgrid Market Growth

The microgrid market is driven by the improved Distributed Energy Resources (DER) technologies such as micro turbines, combustion turbines, hybrid system, wind system and others. These technologies can integrate with microgrid and reduce carbon footprints significantly as compared to conventional grid. Moreover, several government initiatives are accelerating the demand for microgrid technology. Additionally, the evolution of IoT based platform are also increasing the ability of microgrid system. IoT enabled microgrids are convenient for utilities to track real-time energy consumption. Similarly, the demand response (DR) market is expected to grow by more than 10% CAGR during 2019-2025, due to rising government initiatives for achieving optimum energy utilization. The overall rapid growth in DR market will create opportunities for microgrid system. Read more: https://prn.to/2ZYpYYz

Ireland's Reewable Power Development will Attract Huge Investment to 65% of the Country's Installed Capacity by 2030

Ireland is expected to attract massive investment as the country is set to add 5.8 gigawatt (GW) of non-hydro renewable power capacity over the next decade to reach a total 9.6GW by 2030 and account for 65% of the country's installed capacity. During the forecast period, offshore wind capacity is set to increase from 25 megawatt (MW) to 1.9GW at a compound annual growth rate (CAGR) of 48.8%, and solar PV will rise from 25MW to 1.3GW at a CAGR of 43%. Ireland's offshore wind and solar PV capacity, has considerable potential, which will push the contribution of renewable power to installed capacity to 62% by 2025 and 65% by 2030. Renewable capacity expansion will necessitate grid modernization in order to manage much higher volumes of renewable energy with inherent variability. Read more: https://bit.ly/2H4ce7e

Standards and Cyber Security

Electric Utilities can Reduce their Cyber Risk

Within the enterprise, energy suppliers should identify and map assets and their connections, prioritizing them by degree of criticality. Next, utilities should determine whether any critical assets or networks have well-known vulnerabilities (such as unchanged default passwords) that can be exploited. Then, power companies should assess the maturity of their controls environment for proactively managing threats, before finally building a framework — incorporating people, processes and technology — to protect critical assets. Read More: https://biztechmagazine.com/article/2019/07/how-electric-utilities-can-reduce-their-cyber-risk

CLP India to Invest in Cyber Security Technology

Power generation and transmission company, CLP India, a part of CLP Group and CDPQ, with a focus on non-carbon generating sectors, is going to significantly invest in technology-cyber security, data analytics, artificial intelligence and machine learning. The company, which forayed into India in February 2002, has a portfolio of a gas-fired plant, a coal-fired plant, 12 wind farms and three solar projects (including a 100-MW plant at Veltoor in Telangana). Read More: https://telanganatoday.com/clp-india-to-invest-in-core-technology

Disruptive Technologies

The United States Department of Energy (DOE) has awarded a grant worth $1.05 million to organizations working to commercialize a blockchain-based energy transaction platform.

US DOE Dedicates $1.05M to Blockchain Energy Management Platform

DOE has shown growing interest in using blockchain in energy grid applications. In January, the department announced $4.8 million in funding for tech research including blockchain for purposes like securing data from fossil power generation sensors. In April, the DOE announced a partnership with Colorado-based security firm Taekion to deploy blockchain in power-plant security.

The new project is reportedly a continuation of BEM Controls' existing DOE-funded work on software to enhance energy efficiency in buildings. This latest grant is to expand and promote a new blockchain-based energy marketplace, with ComEd to use its Grid of the Future Lab to demonstrate the new system's functionality. The new initiative is expected to be in development for three more years. Read more: http://www.indiasmartgrid.org/viewnews.php?id=5811

Power Ledger completes Blockchain Enabled P2P Trial with KEPCO

Blockchain-enabled power trading company Power Ledger has completed a five-month trial with Japan's utility, KEPCO of Peer-to-Peer (P2P) transaction for post-Feed in Tariff (FIT) surplus power in Osaka. The trial demonstrated P2P surplus power transaction to be completed autonomously including settlements with cryptocurrency regardless of fluctuations of PV generation and customer demands. Power Ledger provided KEPCO access to its trading platform to facilitate and monitor energy trading between participants to increase the incentive for the development of renewable distributed energy resources (DERs). During the trial, KEPCO shared meter data from eight participating meters that simulated prosumers and consumers at Tatsumi Research Lab in Osaka. Read more: http://www.indiasmartgrid.org/viewnews.php?id=5829

AutoGrid collaborates with Amazon Web Services to further Global Energy Industry Digitalization

AutoGrid, a flexibility management software provider for the global energy industry recently announced a collaboration with Amazon Web Services (AWS) to bring artificial intelligence-powered distributed energy management to its energy-industry customers. AutoGrid, which recently became a member of the AWS Partner Network (APN), will employ the suite of AWS IoT services in its AutoGrid Flex™ platform to detect, collect, organize, and run sophisticated 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. AutoGrid's customers will use Amazon SageMaker, a fully-managed service that provides developers and data scientists with the ability to build, train and deploy machine learning models quickly. Those models will help optimize operations in a modular design that can be scaled for all types of customers—from large investor-owned utilities to small municipal utilities, electric cooperatives and retail electricity suppliers. Read more: http://www.indiasmartgrid.org/viewnews.php?id=5837

Smart Cities

Trichy Corporation has put forward 14 more proposals under Smart City Mission

The Trichy Corporation on 16 July 2019 Tuesday inducted 14 new proposals under the ambit of smart cities mission programme to improve the city's basic infrastructure and develop recreational spots,

at an estimated cost of Rs 85 crore. After proposing 18 projects in the first phase of the Smart Cities Mission, the urban local body faced criticism for not proposing adequate futuristic projects emphasizing on road infrastructure. Acknowledging the need to develop roads, the civic body on Tuesday released a list of 14 projects with a majority focus on developing the city's needed transport infrastructure included. The proposed projects are in various phase of development such as request for proposal (RFP) and detailed project report (DPR) preparation. Read more: https://bit.ly/2TtYXtw

Russia's First 5G Zone Launched in Moscow

Working with Ericsson, Tele2 has launched Russia's first 5G zone in central Moscow, using its commercial network. The coverage includes outdoor areas in Tverskaya Street, the busiest part of the Russian capital, stretching between Red Square to Sadovoe Ring. The 5G pilot zone uses the 28 GHz band in non-standalone (NSA) mode. From the very beginning of its work in Moscow, the Tele2 network has been technologically ready for the future implementation of the fifth-generation communication standard. In the near future, Muscovites will be able to see for themselves what 5G will bring to the daily life, entertainment and development of a smart city. The government has called for 5G in all the country's main cities by 2024 as part of its Digital Economy programme. Read more: https://bit.ly/33xhKZD

Smart Gas

Gas Firms to set up 340 CNG Outlets in Two Years in India

To push the idea of electric vehicles by doling out tax incentives, CGD companies are embarking on their most ambitious network expansion plan ever and reaching out to customers. In this regard CGD's like Indraprastha Gas Ltd (IGL), Mahanagar Gas Ltd (MGL), and Gujarat Gas Ltd will set up nearly 340 compressed natural gas stations across their geographical areas in the next two years. Delhi-based IGL will add 100 CNG stations taking its tally to over 600 CNG stations on an expenditure of INR 600 crores. They further said that EV market in the country is currently at an early state and with the Government's big boost the future of CGD will be bright. Read More: https://bit.ly/31n6TQ7

PNGRB Identifies 19 Districts from Odisha India for CGD Project

Petroleum and Natural Gas Regulatory Board (PNGRB) has identified as many as 19 districts of Odisha for authorizing the development of City Gas Distribution (CGD) network.The move is in synchronization with the development of natural gas pipeline connectivity, natural gas availability and techno-commercial viability to provide Piped Natural Gas (PNG) in the state.

The 19 districts of Odisha identified for CGD projects are Khordha, Cuttack, Angul, Dhenkanal, Sundargarh, Jharsuguda, Balasore, Bhadrak, Mayurbhanj, Bargarh, Debagarh, Sambalpur, Ganjam, Nayagarh, Puri, Jagatsinghpur, Kendrapara, Jajpur & Keonjhar. PNGRB is the authority to grant authorisation to the entities for the development of CGD network in Geographical Areas (GAs) as per PNGRB Act, 2006. PNGRB has authorised 228 GAs covering 406 districts spread over 27 States and Union Territories up to 10th CGD bidding round. Union Petroleum Minister Dharmendra Pradhan distributed the Letter of Intents (LOIs) to 12 successful entities for 50 Geographical Areas (GAs) under the 10th CGD Bidding Round March 2019 awarded by PNGRB. Read More: https://bit.ly/2Z8uPVX

Smart Water

NEERI's Unique Software detects condition of Pipes and Water

The National Environmental Engineering Research Institute (Neeri) has developed the first-of-its-kind technology to combat water scarcity and contamination called the Risk-PiNet. The unique software assesses information regarding water distribution system, condition of pipes and contamination risk in water supply areas. This unique technology was demonstrated to officials from various municipal corporations including Navi Mumbai, Pune, Bilaspur, Raipur, Akola and Chennai at Neeri headquarters. While operating and maintaining a huge network of pipelines that are underground, the civic bodies are unable to assess deteriorating conditions of pipes, leakage or other risks relating to age of pipes, operation conditions or soil contamination. Read More: https://bit.ly/2MpZ6xE

Nashik Municipal Corporation (NMC) proposes to strengthen its City's Water Distribution Network

After technical approval from the Maharashtra Jeevan Pradhikaran (MJP), the Nashik Municipal Corporation (NMC), Maharashtra, India has submitted its proposal worth Rs 226 crore for strengthening city's water distribution network to the urban development department of the state government. In order to get rid of issues like leakages and non-revenue water (NRW) loss, the distribution lines across the city need to be strengthened. The NRW loss to the civic body is around 45%.

"All old water pipelines in the city will be replaced to curb leakages and reduce the NRW," an NMC official said.

After getting the technical nod, a proposal has been submitted to the urban development department.
Read More: https://bit.ly/31NXyRq

Join the Indian Delegation to DistribuTECH 2020 from January 28 - 30, 2020, San Antonio, TX, USA

ISGF with support from US Department of Commerce (USDOC) of the American Embassy, New Delhi is taking an official delegation from India to the DTECH 2020 which will be held from January 28 - 30, 2020, San Antonio, TX, USA. DistribuTECH (DTECH) is the premier North American trade show for equipment vendors and service providers from across the transmission, distribution, and smart grid technology industries, attracting around 12,000 attendees and around 500 exhibitors from around 70 countries. The event also attracts attendees from electric utilities, water utilities, gas utilities, federal power agencies, energy service companies, energy service providers, energy end users (retailers, hospitals, data centers, etc.) and a wide-range of manufacturers and vendors. Visit the event's website for additional information: http://www.distributech.com.

As part of the Indian Delegation, the delegates will be entitled to the following benefits:

- Complimentary Pre-Registration for the show (value of the exhibit hall access is $125)
- Discounted Registration for full conference
- Pre-arranged and facilitated briefings, meetings (including Meet and Greet meetings) with U.S. Exhibitors and U.S. industry associations, customized according to the delegates interests
- List of exhibitors who export or indicate an interest in exporting to the group's country and/or region of the world
- Optional site visits to smart grid project sites and technology companies. Please note that the site visit will be organized subject to response received from the delegation.

To join the delegation or for more information, please contact: Ms. Reena Suri (reena.suri@indiasmartgrid.org)

Smart Grid Events

INDIAN

August 21 - 23 2019: 10th World Renewable Energy Technology Congress & Expo-2019, New Delhi, http://wretc.in/

September 18 - 20 2019: Renewable Energy India Expo, Noida, https://www.renewableenergyindiaexpo.com/

September 18 2019: Sustainability Innovation Summit 2019, Hyderabad, India, www.indianchamber.org

October 23 2019: Global Summit on Decommissioning & Asset Recovery, New Delhi, www.chemlogindia.com www.indusexpo.in

November 04 - 05 2019: Training Program on Advanced Metering Infrastructure by ISGF, New Delhi http://indiasmartgrid.org/

November 07 - 08 2019: Distribution Utility Meet, New Delhi http://dumindia.in/

November 20 - 22 2019: Training Program on Electric Mobility and Charging Infrastructure by ISGF, Tirupati http://indiasmartgrid.org/

November 21 - 22 2019: Nirma University International Conference on Engineering (NUiCONE 2019), Gandhinagar http://www.nirmauni.ac.in/

November 20 - 22 2019: Traffic Infratech Expo, Parking Infratech Expo and Smart Mobility Expo, Mumbai https://trafficinfratechexpo.com/

December 20 - 22 2019: 5th Electric Expo 2019, Ahmedabad, Gujarat, http://www.electricexpo.in/

March 03 - 07 2020: India Smart Utility Week 2020, New Delhi, India, **www.isuw.in**

March 06 - 2020: ISGF Innovation Awards 2020 http://www.isgfinnovationawards.in/

INTERNATIONAL

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

September 09 - 13 2019: Power Week Africa Conference, Africa, http://www.power-week.com/Africa/index.html

October 02 - 04 2019: 3rd 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: GridConnext 2019, Washington DC https://gridconnext.com/

June 04 - 05 2020: CIRED Berlin 2020 Workshop, Berlin http://www.cired2020-workshop.org/

Disclaimer: This information is from the public domain. ISGF does not hold any responsibility for the information provided in this section.

Smart Grid Projects in India

All Smart Grid Pilot Projects are declared Go-Live. Details about the Pilot Projects are given at: http://www.nsgm.gov.in/en/sg-status

Ongoing Tenders

Sl. No.	Utility	Tender Details	Submission Dates	Source
1	Energy Efficiency Services Limited (50,00,000 smart meters for Pan India)	Bihar (Purnia, Katihar, Saran, Patna, Bhagalpur, Darbhanga) – 11,05,000 smart meters	17th September, 2019	https://bit.ly/2P1ZmVp
		Odisha (Bhubaneshwar, Cuttack, Behrampur) - 5,65,000 smart meters		
		Telangana (Medak, Nagarkurnool, Nalgonda, Adilabad, Hyderabad, Janagaon) - 11,10,000 smart meters		
		Andhra Pradesh (Vishakhapatnam, Anantpura, Chittoor, Guntur, Srikakulam) - 5,55,000 smart meters		
		Rajasthan (Ajmer, Jodhpur, Jaipur, Nagaur, churu) - 5,55,000 smart meters		
		Jharkhand (Ranchi, Jamshedpur, Palamu, Godda, Bokaro, Dhanbad) - 5,45,000 smart meters		
		North East (Guwahati, Dibrugarh, Itanagar, Shillong, Imphal, Gangtok, Agartala) - 5,65,000 smart meters		
2	Punjab State Power Corporation Limited (PSPCL)	Tender for supply, installation, commissioning of LT AC 3-Phase, 4-Wire whole current static, watt-hour DLMS category D-2 compliant smart meters of rating 10-60 amps, 50 Hz, 415 volts of accuracy class-1 with optical port and integration of these smart meters with existing MDM system of PSPCL	20th September, 2019	https://bit.ly/2xOBeKI
3	MECON Limited	Supply of Smart Metering System	29th August, 2019	https://bit.ly/2HeCYSB
4	Paradip Port Trust	Supply, installation, testing and commissioning of smart meter at Paradip Port	27th August, 2019	https://bit.ly/2THtF2i

Expected Tenders

Sl. No.	Utility	Tender Details	Status
1	Meghalaya Power Distribution Corporation Limited	Supply of 2,00,000 smart meters	DPR and budget under approval
2	Himachal Pradesh State Electricity Board Limited	Supply of 2,00,000 smart meters for Dharamshala area in Himachal Pradesh	DPR being prepared
3	Chhattisgarh State Power Distribution Company Limited	Supply of 4,40,000 smart meters for Raipur and Bilaspur area in Chhattisgarh	DPR under approval
4	Daman & Diu Electricity Department	Supply of 60,000 smart meters for Daman & Diu	DPR being prepared

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DISTRIBUTION UTILITY MEET DUM 2019

3rd Annual Conference of Power Distribution Utilities for Collaborative Growth

07 - 08 November, 2019 | Eros Hotel, New Delhi

Third edition of DUM 2019 will be held on 07 - 08 November 2019 in New Delhi and will be hosted by BRPL, BYPL, TPDDL and Tata Power Mumbai. DUM provides a unified voice to influence and enable the DISCOM community to leverage each other's experiences for successful nationwide smart grid roll outs and to bridge the gap between strategy and execution. Leading Utilities from USA, Canada and Europe also participated in DUM 2018 and shared their experiences in implementing Smart Grid Technologies. Smart grid is still an emerging concept and utilities around the world have started gaining experience in smart grid technologies. As India embarks on its Smart Grid journey, it is imperative that we do not make the same mistakes but learn from each other's experiences.

OBJECTIVES

- Evaluate Regulatory, Policy, Financial and Business Challenges of Discoms for Sustainable Solutions
- Discuss and Evaluate New and Emerging Business Models and Monetization Options
- Emerging Technologies, their Benefits and Brainstorm Demonstration Projects.
- Discuss Case Studies and Best Practices from Across the Globe

THEMES

New Programs & Projects

- 24x7 Quality Power Supply – What needs to be done on ground to achieve this?
- 300 Million Smart Meters -Rollout Plans and Challenges
- Preparedness of Discom and the Industry for 300 million Smart Meters

Sustainibility of Discoms

- Business Models for Discom's Sustainability
- Impact of SAUBHAGYA on AT & C Losses and Discom Finances
- Training & Capacity Building
- EVSE Business Models
- New Revenue Streams

New Technologies & New Challenges

- Grid Stability with increasing penetration of DER and Electric Vehicles
- Peer to Peer Trading of Rooftop Solar Energy on Blockchain
- Leveraging Artificial Intellegence (AI) & Machine Learning (ML) in Utility Operations
- Business Case for Energy Storage Systems
- Next Generation Distribution Automation Systems
- Augmented & Virtual Reality for Utility Operations
- Cyber Security for Power Systems

Voice of the Customer

- What Customers want?
- New Platforms for Customer Engagement
  - Customer Portal
  - Chatbots
  - Voicebots

Special Session with City Gas Distribution Utilities

- Common Billing and Collection Systems for Electricity and Gas Utilities
- Sharing of Customer Data
- Common Call Centers
- Sharing of GIS Maps
- Sharing of Last Mile Communication Systems

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