

Nominations Open for Sixth Smart Grid Award of Excellence

Honoring Excellence in Smart Grids for Digitalization Enabling Consumer Empowerment



International Smart Grid Action Network (ISGAN), in partnership with the Global Smart Grid Federation (GSGF), launched its Sixth Award of Excellence Competition to showcase leadership and innovation in smart grid projects around the world. With a theme of “Excellence in Smart Grids for Digitalization Enabling Consumer Empowerment,” the competition highlights the critical role of smart grid technologies for grid digitalization that offer opportunities to save energy for customers and to operate the grid in a more efficient and reliable way for grid operators.

Karin Widegren, Chair of ISGAN’s Executive Committee, said, “Customer engagement and empowerment offers opportunities to save energy for customers and to operate the grid in a more efficient and reliable way for grid operators. Grid operators want to shift or reduce energy consumptions during times of peak consumptions, so they have engaged and empowered customers to do that by proposing some benefits.”

Projects nominated for the ISGAN competition are also eligible to win the GSGF Best Smartgrid Project Award. “This year’s competition focuses on a critically important objective of digitalization of the grid,” stated Reji Kumar Pillai, Chairman of the GSGF. “Digital technologies are increasingly being deployed to enhance flexibility of the grid with rapid proliferation of variable and distributed renewable energy resources. The digitalization is also bringing out massive amounts of data about the grid status and operations which were not known in the past. The new data is both empowering the customers as well as the grid operators.”

ISGAN and GSGF encourage entities engaged in grid modernization or smart grids to submit their projects by 15 November 2019 for consideration for both awards. Official rules, nomination forms, and other information can be found at <http://www.iea-isan.org/Award>. The winning projects will be selected by an international jury of smart grid experts. They will receive prestigious recognition during an awards ceremony at the Eleventh Clean Energy Ministerial in Chile in May 2020, a global gathering of energy ministers and high-level international organizations. They will also be showcased in ISGAN and GSGF collateral and events, affirming their position as global exemplars of excellence.

Table of Contents

Page	News topic
1	Cover story: Nominations Open for Sixth Smart Grid Award of Excellence
2-3	Stories across the globe on Smart Grids: Special: New York passes 100% Clean Energy Law
4-5	Member Updates Special: Energy Web Foundation launches world’s first open source Blockchain for the energy industry
6-7	GSGF Update Special: VA Lencznar, Think Smartgrids (France) elected Vice Chair of the GSGF
8	GSGF at a Glance



Global Stories on Smart Grid

EBRD to provide Ukraine €149 million for Power Grid Modernization

The Cabinet of Ministers of Ukraine approved a decree on the expediency of attracting a loan from the European Bank for Reconstruction and Development (EBRD) in the amount of €149 million to implement a project to modernize the transmission network. The project will be implemented by Ukrenergo National Power Company. It will improve the efficiency and reliability of power transmission in western, northern, southern and central regions of Ukraine.

Read more: <https://bit.ly/2J1kNRy>

New York passes 100% Clean Energy Law

The state of New York, on July 18, 2019, enacted the Climate Leadership and Community Protection Act (CLCPA), law that requires the state to produce 100% of its power from renewables and nuclear by 2040. The legislation includes agreements to build two offshore wind projects worth a combined 1.7 GW by 2025, the single largest renewable energy procurement in the nation. The law will seek to achieve the stringent GHG emission cuts through the installation of 9 GW of offshore wind by 2035, 6 GW of distributed solar by 2025, and 3 GW of energy storage by 2030. It tasks a climate action council, led by the “expert heads” of specific state agencies, with crafting a roadmap of policies to achieve the mandates.

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

Washington start-up develops Porous Silicon Battery for EVs and Grid Storage

XNRGI, a start-up in Washington, USA, has designed a “porous” silicon battery that has better energy density and lower manufacturing costs than traditional lithium-ion batteries, and is also safer to use. XNRGI makes its batteries using silicon wafers that are similar to those used by semiconductor companies to produce their chips. After etching a very dense, 20 by 20 micron honeycomb pattern into those wafers, they coat them with lithium and other metals to form the anodes and cathodes of so-called “micro-batteries”. XNRGI’s batteries are recyclable, and are not as susceptible to thermal runaway as traditional lithium-ion batteries. Their energy density of over 400 Wh/kg makes them less expensive to make and thus an ideal candidate for EVs and grid-storage. That said, the company claims it can achieve the same \$150/kWh regardless of the application or scale, which means these benefits are also available for all manner of consumer electronics such as wearables, smartphones, tablets, and laptops.

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

Special EVs Designed for Tokyo 2020 Olympics

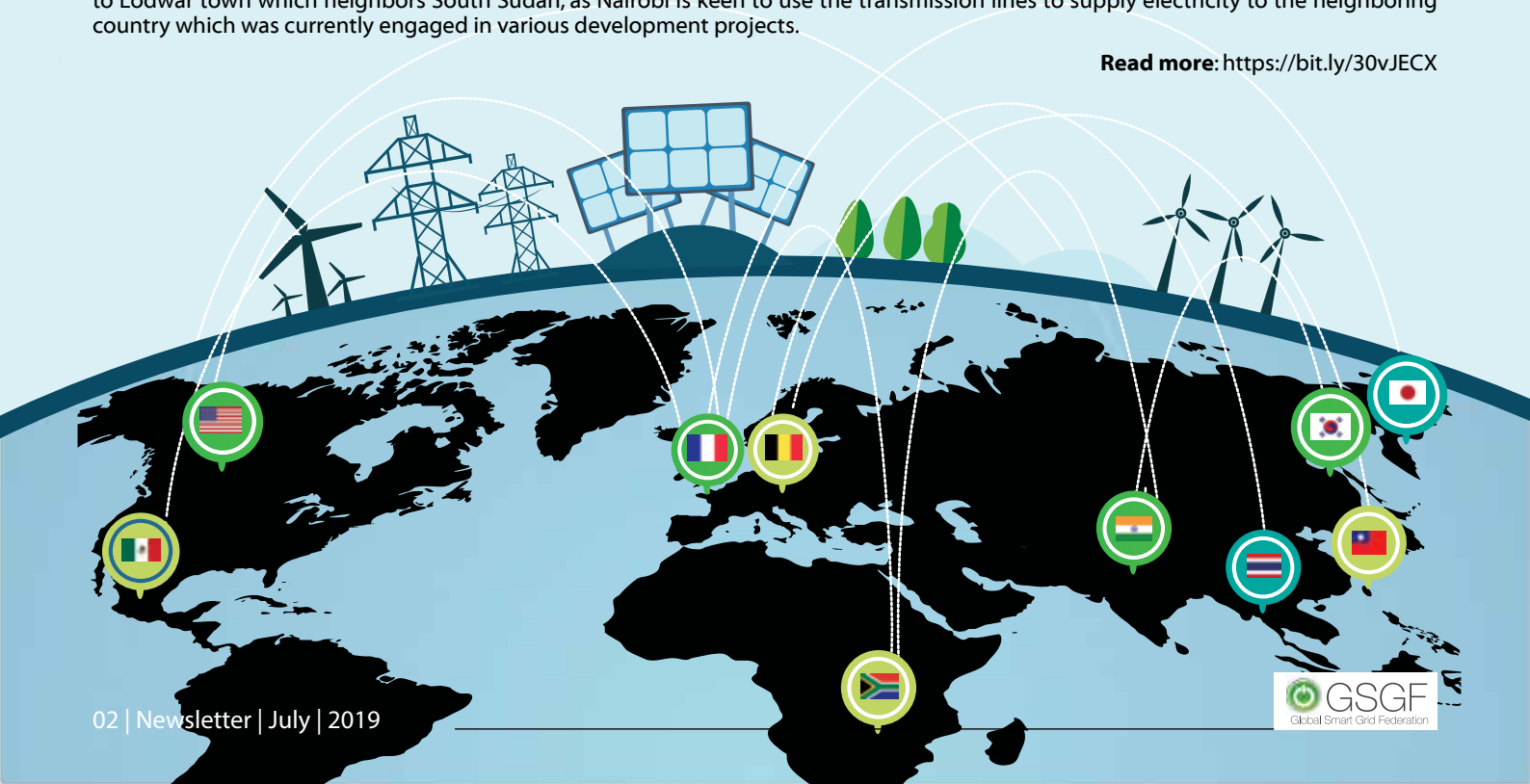
The APM (Accessible People Mover), Toyota’s specially designed vehicle aims at enhancing the experience for visitors who will flock down to Tokyo next year for the 2020 Olympics. The APMs will help visitors cover last-mile distances between events and venues, and specially designed variants will even serve as ambulances in emergency scenarios. Shaped much like a mini-van, the APM will be commanded by a driver that sits in the front-centre, with two rows at the back for passengers, or a single row and an on-board ramp with space for passengers in wheelchairs or with accessibility issues. The driver gets an unobstructed view, thanks to a panoramic windscreen, while passengers also get a seat with a view as the APM’s design is completely open on both sides, much like a golf-cart. The APM facilitates zero-emission transportation at a relatively low speed of 19km/h, and a closer look even shows the presence of air-less tires, much like the ones unveiled by Michelin. Toyota plans on deploying 200 APMs during Olympic season, specifically to help people shuttle between locations.

Read More: <https://bit.ly/2LAc0ss>

Geothermal power for South Sudan

Kenya and South Sudan are working on a deal to address the acute shortage of electricity in Juba. Under the deal, Kenya will offer electricity from geothermal in exchange for gas from oil fields in South Sudan. Currently, work is underway to construct transmission lines to Lodwar town which neighbors South Sudan, as Nairobi is keen to use the transmission lines to supply electricity to the neighboring country which was currently engaged in various development projects.

Read more: <https://bit.ly/30vJECX>



Global Stories on Smart Grid

National Grid Launches First-of-its-kind Battery Storage System

National Grid recently unveiled a new battery storage system in Pulaski, New York, that will reinforce electricity reliability for regional customers during periods of peak demand, and alleviate the need for traditional infrastructure upgrades and investments. The installation is the first-of-its kind battery storage system in the company's U.S. service area. The Pulaski 2 MW / 3.8 MWh battery storage system is designed to sustain a 2,000 kilowatt customer demand, or the equivalent of powering approximately 1,600 homes for up to two hours. The clean energy benefits of the project include increasing the resiliency of the electricity network while modernizing the distribution system, deferring infrastructure and system upgrades, and reducing system peak loads.

Read More: <https://bit.ly/30tVBcn>

Japan to Partially End Feed-In Tariff Programme

Japan's industry ministry eyes partially ending the country's feed-in tariff programme seven years after its introduction. Additional burden on households and businesses brought about by the FIT programme is expected to reach 22.32 billion USD in 2019. The ministry to start in-depth discussions on the FIT system overhaul with a group of experts and plans to revise a law in 2020 to adopt a competitive bidding system for electricity generated by businesses using large-scale facilities.

Read More: <https://bit.ly/2SfEnwq>

Tennessee Valley Authority plans for 14 GW of Solar by 2038

Tennessee Valley Authority (TVA) expects to add up to 14 gigawatts of solar and 5 gigawatts of energy storage over the next 20 years, a massive new clean energy addition to its current hydropower, nuclear and coal-dominant generation mix. TVA's recent Integrated Resource Plan doesn't set any specific procurements in motion, and its various scenarios over the next 20 years do not predict the same high level of solar and storage penetration. For example, its solar estimates run from 3 gigawatts to 14 gigawatts by 2038, while its storage shows a range of zero to 5.3 gigawatts.

Read More: <https://bit.ly/2YT8RGS>

'Post Blockchain' Tech used in Local Mini-Grids

An Australian energy technology company is using post blockchain technology and utilising artificial intelligence to overhaul the way people use and trade power

By making use of machine learning algorithms, RedGrid, which has been in operation for a year, has "created a new distributed architecture to underpin the energy grid and turn neighbourhoods, apartment blocks or shopping centres into their own mini-grids." This will allow for devices and appliances within the mini-grid – air conditioners, refrigerators and pool pumps – to communicate with each other and autonomously adjust energy consumption. This would allow for the redistribution of energy to other areas or products, as needed. The technology will also help prevent blackouts during the summer when demand is at its peak. The company is working with EnergyAustralia to run a pilot programme which will test whether machine learning could help manage peak energy times more efficiently.

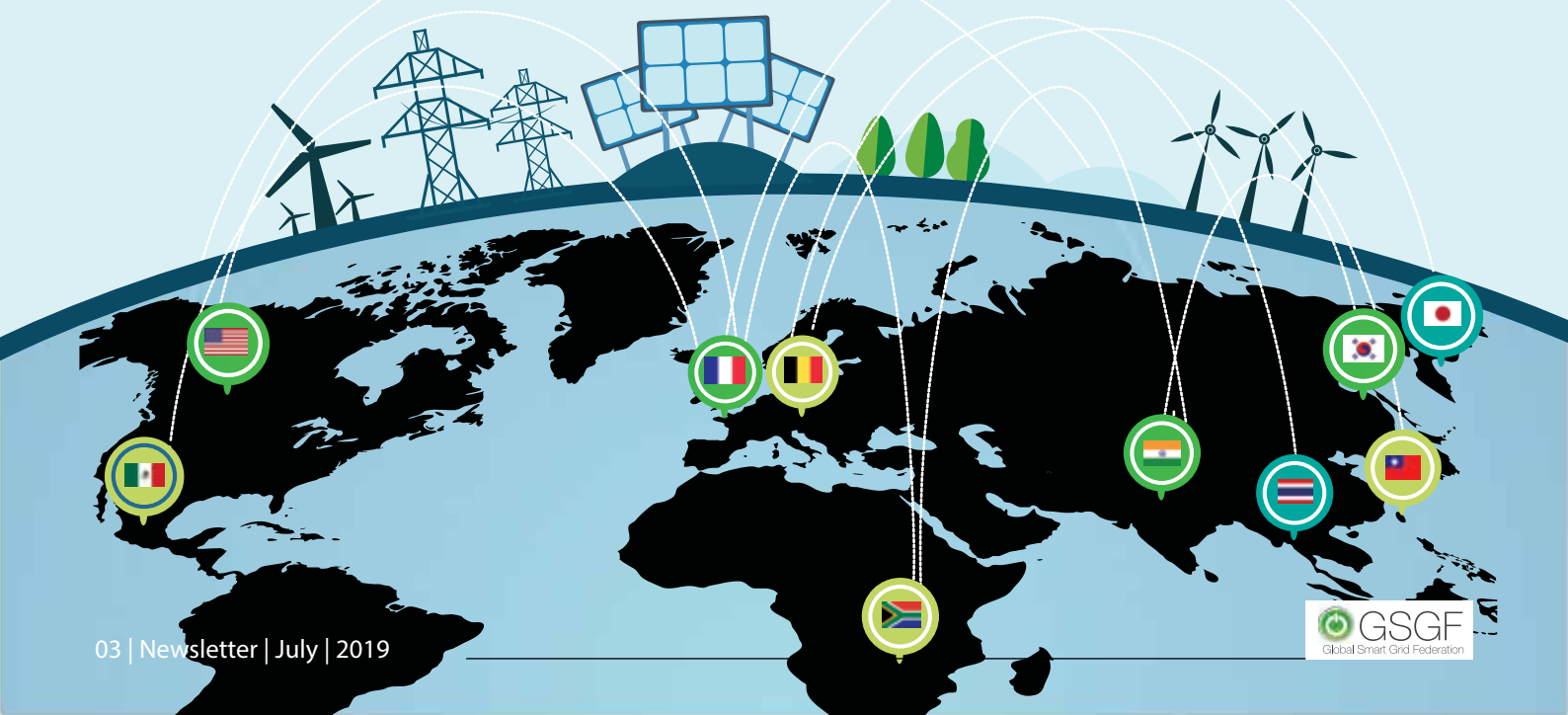
Read More: <https://bit.ly/2Lv0FJo>

California Mandates Zero-Emission Buses at Its Largest Airports

Transporting passengers from airport terminals to parking lots, rental car agencies and hotels is getting cleaner in California

California air quality regulators voted unanimously to require fleet operators to use 100 percent zero-emission shuttles at the state's largest airports by 2035. The new regulation adopted by the California Air Resources Board (CARB) applies to public and private operators of the vans and buses that carry travellers between parking facilities, rental car agencies, hotels and airport terminals. The new rules establish three deadlines for fleets to transition to zero-emission fuel cell or battery electric models. Under the regulation, shuttle fleets at the state's 13 largest airports are required to be at least 33 percent zero-emission vehicles (ZEV) by the end of 2027, 66 percent ZEVs by the end of 2031, and 100 percent ZEVs by the end of 2035.

Read More: <https://bit.ly/2RlpKRS>





Energy Web Foundation launches world's first open source Blockchain for the energy industry

After years of hype, Blockchain has taken a major step towards delivering on one of its energy sector promises. Energy Web Foundation (EWF) a joint venture between Rocky Mountain Institute and Grid Singularity launched what it described as the world's first public, open-source, enterprise-grade blockchain tailored to the energy sector – the Energy Web Chain (EW Chain).

Several EWF affiliates, including utilities and grid operators in Belgium, France, Southeast Asia and Central America plus at least one Fortune 500 global power company and blockchain developers OLI Systems, FlexiDAO, Wirepas and Digital Virtues, will host multi-national validator nodes for the public, ethereum-based network.

At the same time, the chain's validators are permissioned — they are known energy market participants identified and affiliated with EWF. This Proof of Authority (PoA)-based design comes with three additional benefits for the energy sector: scalability, energy efficiency (which also equates to low transaction costs for energy market participants using the network), and increased regulatory compliance.

EWF is currently tracking 17 decentralized applications (dApps) running on Energy Web test networks that are expected to transition to the live network over the coming weeks. This first wave of dApps focuses on creating customer and business value by expanding markets for renewable energy trading, increasing the effectiveness and depth of demand response programs, and streamlining electric vehicle charging.

Read More: <https://bit.ly/3357eIH>



Gearing Up For Power On Wheels

Storage, smart charging and V2G: How Think Smartgrids Member Renault became a player in Smart Grids

In October of 2017, The Group Renault announced the creation of a subsidiary, Renault Energy Services. Its aim: "to position the group on the energy sector and smart grids, a key element of electric mobility". Renault announced, on this occasion, a stake of 25 % in Jedlix, a Dutch start-up specialized in smart charging. The two companies will work together to develop ZE Smart Charge, a smart charging smartphone app to take full advantage of renewable energies and the lowest rates.

The ambition announced by Renault in October 2017 has already been concretized in part gotten a few concrete applications, through various tests and partnerships:

- A partnership with the British Powervault to test the reuse of electric vehicle batteries for fixed energy storage. 50 units, equipped with second-life batteries supplied by Renault, in homes of customers already equipped with solar panels have made it possible to explore the technical performance of the second life of the batteries, as well as the response of customers to the storage of energy at home. The batteries used in electric vehicles generally have a lifespan of 8 to 10 years. However, they still have important useful capacities for stationary applications, which gives them extra life before being recycled. (In Issy-les-Moulineaux, Renault had already supplied Kangoo ZE's end-of-life batteries to store the electricity produced by the solar panels installed on the Issygrid buildings).

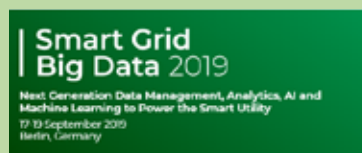
Member Updates

- A partnership with Connected Energy to install rapid charging stations on highway areas equipped with a stationary energy storage system, based on the re-use of ZOE and Kangoo batteries. By storing energy via a low-power power supply and releasing the energy thus stored at a high power, the E-STOR technology makes it possible to offer fast charging solutions for electric vehicles in places where it would be very expensive to build a direct connection to the grid.

Article By: **Maurice Ronai**, for *Think Smartgrids*

Read More: <https://bit.ly/2yuhvjA>

Events Supported by GSGF



For participation in the above events please write to info@globalsmartgridfederation.org



Valérie-Anne Lencznar

Think Smartgrids (France) elected Vice Chair of the GSGF

The Global Smart Grid Federation (GSGF) chose its vice chairperson, Valerie-Anne Lencznar. The responsibility of the Vice Chair is to support the Chairman of GSGF, Mr Reji Kumar Pillai (who is also President of Indian Smart Grid Forum) in the implementation of the GSGF activities.

The board of the GSGF unanimously elected Valérie-Anne Lencznar from Think Smartgrids, France as Vice Chairperson on Thursday July 11th 2019. Mrs. Lencznar is currently the Managing Director of Think Smartgrids, the professional association federating the french smart grids ecosystem.

Valérie-Anne Lencznar is a communication (CELSA- Paris Sorbonne university) and Executive MBA (HEC) graduate. She has worked and led as a Communication Director in various public structures. She joined the Energy sector 20 years ago, as the Communication Director of the main nuclear power plant in Europe situated in the northern part of France, then she worked on the expansion of EDF group communication and brand in Poland, Hungary and continental countries.

From 2009 until 2015, she became general secretary of the Franco-Spanish joint venture Inelfe. Inelfe consisted in building underground electricity interconnection between Perpignan and Figueras, a world first, with a total budget of 700 million euros. Launched in 2015, this transmission line doubles the electric capacity between France and Spain and prefigured the setting up of smart grids transportation in Europe.



Urban Water - Distributed-Discrete-Digital

By

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“Ambassador for the Americas”, Global Smart Grid Federation, USA

Executive Chairman, Biosirus Inc., Canada

I was very pleased to be invited to New Delhi by the India Smart Grid Forum (a member of GSGF) to speak/partake in a Brain Storming Session on the subject of Smart Water/Smart Cities, earlier this month and share my views on newer models to deal with the urban water crisis.

By the Indian government’s own (Niti Ayog) studies, about 21 of its 32 major cities will be in a water crisis by next year. This water crisis is not just in India, but the world over in developing countries, where over 400 cities will be affected (WWF study) in a few years. The gist of my talk/thoughts are below:

Urban water will be the single biggest threat to any developing country and its urban citizen. This segment of the population is a growing one (in search of economic prosperity) and the “trust” in the development of cities, managed by elected civic bodies, to expand essential services (electricity, water and sewage), is simply untenable and un-sustainable.

Urban expansion takes place in two ways, (1) an ever-expanding outer circle of new settlements and (2) densification of its inner cities through high-rises. In both cases, expanding water and sewage systems is a challenge. In the former case, to lay new piping systems to new settlements and/or add new treatment plants at its periphery; and in the latter case increase the capacity and throughput of existing systems to meet the increased demand (densification). In the absence of any such long-term plans for such expansions, there is simply no way to add water/sewage services in an ad-hoc fashion.

In the case of the expanded outer-ring new settlements (many duly authorized with promise of city water and sewage systems to follow), this fails to happen. It is not uncommon in many major cities (e.g. OMR in Chennai) for expanded settlements to wait for more than 15-20 years (with none coming), and manage themselves with only tanker waters and local inadequate septic tank systems. Due to the small land footprint, water tankers and sewage trucks come to each apartment complex several times a day. Other major cities in India have similar stories to tell. In the cases of city densification, the existing water pipes begin to run dry due for many hours a day, due to poor water pressures or water inadequacy or failure of the treatment facilities. So, the tanker water system gets adopted. The existing water treatment facility and piping thus becomes a stranded asset in just a few decades with no return for the taxes paid in its build.

The trust in civic bodies to manage such critical assets have failed the world over in developing countries. Paying for its water systems upgrade/expansion/rebuild is throwing good money after bad after years of no tax-paid benefits. It is better to examine alternative models (particularly new technologies that are available today) for the people take charge of their own destiny.

My view is that the days of centralized urban water treatment and effluent treatment systems in cities have become the very antithesis to rapid new urban development (particularly in developing countries that have no long-term urban planning). The only way to manage this urban expansion is through distributed-discrete-digital water systems that are scalable with such growth. Technologically this is feasible today (happy to discuss this), but requires some fundamental changes to the way urban communities will accept to live:

1. A maximum of 150 litres per capita per day will become the rightful norm for every urban citizen (each man, woman, child) to expect. This is quite adequate for a modern urban life, if conservation of water is adopted (taps, toilets, showers).
2. Rainwater harvesting will be compulsorily imposed and such water stored locally within premises. Many developing countries are amply endowed with annual rain. For example, every one sq. meter of terrace or land area can harvest 1 cu. m of water for every 1 mm of rain. It is a waste not to capture this resource.
3. Intake tanker water together with collected rainwater will be treated locally to bring it to drinking water standards and distributed to apartments/homes.
4. Output sewage water will be treated locally to quality “grey-water” standards and re-used many times before a percentage (say 5%) discharged to the open (garden).
5. Digital water quality measurements and control systems together with web-enabled information should be employed to manage these local treatment systems and inform the residents of any alerts or quality. Such systems are not expensive anymore.
6. From a technology perspective, “retrofit cut-in” systems are available for water disinfection and organic waste removal from sewage water, that are better than Ozone, UV and other water treatment systems. These occupy a very small footprint and consume far less power (a few hundred watts).

All in all, there is a new way out, if only we give such decentralized, discrete, digital systems a try.

GSGF at a glance

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Think Smart Grids



India Smart Grid Forum



Japan Smart Community Alliance



Korea Smart Grid Association



Smart Grid Mexico



Prakarsa Jaringan Cerdas Indonesia (PJCI)



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Energy Block Chain Consortium

Current Working Groups

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

Working Groups in Pipeline

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

Contact us for more information.

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