"The flavour of ISUW 2019 will be very different"

Interview with Reji Kumar Pillai

The India Smart Grid Forum (ISGF), which was set up in 2010, has been a key agency involved in furthering the development of smart grids in the country. Ahead of its flagship event, India Smart Utility Week (ISUW), Reji Kumar Pillai, president, ISGF, spoke to Power Line on the latest developments in the smart grid space and the forum's key initiatives. Excerpts…

What have been the key developments in the smart grids space during the past one year?

In the past 12 months, we have seen the successful completion of five smart grid pilot projects – Mysore, Shimla, Panipat, Tripura and Gujarat. The results of these projects are very encouraging. Other than the pilot projects, several smart metering projects have been awarded in different states. The entry of Energy Efficiency Services Limited (EESL) in the smart metering and electric vehicle (EV) domains is another highlight. Finally, smart metering projects covering millions of meters are a reality in India and have set the momentum for the journey towards 300 million smart meters. Besides the above, smart technologies are being implemented in bits and pieces under ongoing programmes like the IPDS, DDUGJY, UDAY and Saubhagya. The 10 MWh battery energy storage system commissioned in February 2019 at Tata Power Delhi Distribution Limited (TPDDL) is the largest grid-connected battery energy storage system (BESS) in South Asia. Another notable highlight is in the EV space, particularly the release of EV policies and EV charging tariffs in many states.

How would you assess the progress made under the pilot projects and the NSGM so far?

The Government of India (GoI) had originally allotted 14 smart grid pilot projects in 2012. These projects took a few years to commence. Four projects were cancelled. Of the remaining 10, as of January 2019, five projects have been completed and the rest are at various stages of progress. The latest generation of PLC technology trials in Panipat and Tripura are very successful and make us relook at the efficacy of PLC for smart grid applications. The objective of these pilot projects was to carry out technology trials for developing

technology selection guidelines and building business cases for adapting these technologies in India. Since these projects could not be completed in two to three years, as had been initially envisaged, that objective is not relevant anymore as the roll-out of large projects has already started. While the lowest bidding route has shown good results for regular utility projects, it has proved to be a flawed approach for executing smart grid pilot projects. Another important learning from the pilot project is the need for standard architecture and integration of blueprints for smart grid projects with existing IT and automation systems in utilities. While the pilot projects were funded with 50 per cent grant from the Ministry of Power (MoP), the grant component has been reduced to 30 per cent for National Smart Grid Mission (NSGM)-funded projects, which is making them less attractive to utilities. Hence, the progress of projects under the NSGM has been slow.

How has been the progress in the EV charging infrastructure segment? What are the challenges that remain in meeting the 2030 goals?

From a policy standpoint, the progress has been very good, with multiple states releasing EV policies recently. A mobility roadmap focused on investments in EV manufacturing was issued by the GoI. The Bureau of Indian Standards (BIS) issued the basic standard (IS:17017 Part-1) for EV Charging Infrastructure in August 2018. Associated standards for communication protocols and connectors are expected to be issued by April 2019. As per the IS:17017 standard, India chose the Society of Automobile Engineers Combined Charging System-2 (CCS2) as the primary charging system. However, almost all the 6,000 plus electric cars currently running in India are made with components imported from China, and those follow the Chinese GB/T standards. In 2017, the Department of Heavy Industries had issued the Bharat Charger Specifications, which are based on the GB/T standards. Some Japanese automobile manufacturers who follow the CHAdeMO standards have expressed interest in manufacturing electric cars in India. Suzuki India has announced its EV launch in 2020. In view of these developments, the IS:17017 has permitted both Bharat Chargers and CHAdeMO charging standards to co-exist in India along with CCS2. An MoP order in April 2018 allowed the setting up of charging stations by private entrepreneurs, and several states have issued tariff orders with subsidised rates for EV charging. However, another set of guidelines issued by the MoP in December 2018, specifying minimum requirements for public charging stations, is not in the right direction as a public charging station would, as per those guidelines, cost over Rs 20 million and there are no EVs in India at present that could take advantage of such high-power charging points. ISGF has already requested the MoP to review those guidelines. The government priority is to push for EVs for public transportation - buses, three-

wheelers, taxi fleets, delivery vans, buses, school buses, trucks, etc. Electric buses will come with proprietary chargers supplied by the bus manufacturers (or their OEMs), which will be installed at bus depots and terminuses. Similarly, taxi fleet operators will install charging stations suitable for their EVs in their hubs. Three-wheelers are ideal candidates for battery swapping, wherein a three-wheeler driver can rent a charged battery from a battery leasing agency, which will charge the batteries at bulk charging stations. Two-wheeler batteries can be charged at any electric connection. These four categories of vehicles, which constitute over 95 per cent of the vehicle stock in the country, do not require public charging stations. Hence, a delay in the issuance of charging standards is not an impediment in EV roll-out in India.

What are the recent initiatives taken by the ISGF? What are its next priority areas?

From among the various activities, projects, whitepapers, technical reports, advisory services and training programmes undertaken by ISGF in the recent past, the most important work was our study report, "Implementation Plan for Electrification of Public Transportation in Kolkata". The World Bank has approved a loan of $150 million for the transport sector in West Bengal and part of the money is being allocated for the creation of enabling infrastructure for EVs in Kolkata. ISGF is working closely with BIS for the finalisation of standards for EV charging infrastructure. We also published a white paper, "EV Charging Infrastructure Business Models for India", in September 2018. Apart from this, ISGF has prepared Smart Grid Roadmaps and EV Roadmaps for SAARC Countries on behalf of the SAARC Energy Center. Based on the work, ISGF has pursued with the Department of Telecommunications and in the recommendations for free spectrum for machine-to-machine (M2M) communication, the telecom regulator has allocated 7 MHz of licence-free spectrum for smart grid and smart city applications. Our annual event, the India Smart Grid Week (ISGW), held in March 2018, attracted over 2,000 participants from 38 countries. We conducted several workshops and training programmes, of which the highlight was the five-day Smart Grid Foundation Course held in Delhi for participants from eight ASEAN countries, which was funded through a grant from the ASEAN Secretariat. We also organised the second edition of the Distribution Utility Meet (DUM) in November 2018 in Mumbai, which was hosted by Tata Power Company Limited. Another significant achievement was ISGF's MoU with Think Smartgrids, France, the smart grid association of France, which was signed during the visit of President Macron to India in March 2018. We have been actively involved in standards development and enabling regulations for grid modernisation. At present, we are engaged in preparing an Energy Storage Roadmap for India. This is a very comprehensive work we are carrying out in consultation with the Central Electricity Authority and the Ministry of New and Renewable Energy. The India Energy Storage Alliance is our partner in this task. The draft roadmap will be issued by end-April 2019. We have been conducting bilateral smart grid workshops with Sweden, the US, the European Commission, France and Canada. The European Commission has already allotted a smart grid demonstration project (iElectrix) under a grant from the Horizon 2020 Program, in which one demonstration site will be at TPDDL. Similarly, collaboration arrangements are under discussion between French distribution utility ENEDIS and BESCOM. We are also preparing and discussing a very ambitious plan to interconnect the regional grids in Asia – the ASEAN Grid, the SAARC Grid and the GCC Grids. The 6th European Union-India Smart Grid Workshop hosted by the Florence School of Regulations in November 2018 was a very successful event with participation from several regulators and utility CEOs. We are expanding our activities to city gas distribution and city water distribution. The primary driver for this initiative is to leverage the digital assets of electric utilities for water and gas distribution, at marginal cost. Blockchain technology is gaining momentum and there are several successful use cases that are relevant in the Indian context. We have signed MoUs with the Energy Web Foundation (EWF) and the Energy Blockchain Consortium (EBC). We will soon be launching an Indian chapter of EBC. We are at an advanced stage of finalisation on select blockchain pilots in India. Another area we wish to focus on is vehicle-to-grid integration. We are also collaborating with international research teams on synthetic inertia for the grid.

What will be the highlights of ISUW 2019? How will it be different from earlier ISGWs?

Firstly, it has transformed into the India Smart Utility Week from India Smart Grid Week, with the inclusion of gas distribution and water distribution utilities, which are equally relevant in the smart city domain. The key themes of ISUW 2019 are digitalisation, mainstreaming renewables, energy storage and mobility transition. Several top-notch experts on these subjects will be speaking at ISUW 2019. There are several parallel workshops on a variety of topics such as Blockchain for Utilities, organised in collaboration with EWF, and EBC; Future Skills 2030–Skilling for Jobs in 2030, organised in collaboration with the Indian School of Business, CII and the Skill Council for Green Jobs; Results of Smart Grid Projects, organised in collaboration with NEDO, Japan and the NSGM; Power Market Design, organised in collaboration with the European Commission and the Florence School of Regulations; Advance Microgrids, organised in collaboration with the US Department of Energy; Women in Energy, organised in collaboration with the C3E Initiative of the IEA; and a high-level roundtable of grid operators from the ASEAN, SAARC/BIMSTEC and GCC regions on Interconnection of Regional Grids in Asia–ASEAN GRID, SAARC/BIMSTEC GRID and GCC GRID. These are in addition to the full-day sessions on water and gas distribution. Besides, three bilateral workshops are being organised with France, the US and the European Commission to facilitate experience sharing, project partnerships, collaboration and knowledge dissemination. So, the flavour of ISUW 2019 will be very different from that of previous editions of the ISGW. ■