



How Indian Discoms can thrive in the digital era?

To succeed and survive, Indian Discoms need to embrace digital transformation tapping the sophisticated technologies like IoT, analytics, automation and cloud to generate higher efficiency. This will make the energy value chain more intuitive and customer centric through grid modernisation, asset optimisation, improving resiliency of the ageing infrastructure, minimising T&D losses and boosting the efficiency of power distribution - and leveraging connected distributed energy resources.

This is vital as the financial health of Indian Discoms has been a cause of concern not only for the power sector, but also for the government. Cross-subsidising of power, open access through power exchange, surplus power contracts for certain Discoms and high aggregate technical and commercial (AT&C) losses over the years have weighed on the bottom line of Discoms, while having a cascading effect on the entire sector and consumers. Despite government's intervention, marked by schemes like UDAY and Integrated Power Development Scheme, many Indian Discoms are still reeling under substantial financial stress and operational inefficiencies.

While finances of Discoms are expected to show improvement with the implementation of these schemes, total losses in the current fiscal year are

expected to be substantial (reported estimation Rs 25,000 crore) for the 27 states and UTs that have signed up for the UDAY scheme. The dilapidated financial health of Discoms impacts their operational efficiency as well. Besides, load shedding due to high AT&C losses and huge unmet demand end up in aggravating woes of consumers. India records 12,400 customer outage minutes in a year, while the US and Germany have only 228 and 34 customer outage minutes per year, respectively.

It is imperative for the Discoms to adopt technology, digitalise and modernise network, and improve power management, to become efficient and

financially healthy. Each of these elements can be made smart. A smart Discom has efficient/optimised network built on GIS-enabled platform with user category-based segregation to identify critical service loads/ priority or category-based loads with alternate supply options.

These monitor health of network and equipment with latest technologies to reduce unplanned interruptions and breakdowns by pre-empting failures and attending to them before a breakdown. The households do need an alternate source of supply like DG sets, invertors and energy storage solutions. Also, smart Discoms could source power through distributed generation from



renewable sources and distribute clean energy to households on DC or low-voltage direct current. Smart Discoms entails having 100% metering and low technical and commercial energy losses. Smart metres allow customers to check their consumption any time and control consumption as per the day tariff.

Smart Discoms do not need to have any physical customer centres but virtual service centres available on customer smartphones, providing interruption information, commercial billing, application processing, e-billing, e-payment, customer chat bots, energy conservation tips, access to discom officials, enquiry management mechanism, consumption pattern information, sourcing options, etc. A smart Discom leverages existing tech like IoT and big data to operate in an efficient and cost-effective manner. They manage the distribution network on a real-time basis to identify faults, minimise outages, and ensure quick

restoration of services. This is achieved by self-healing grids, which utilise a decentralised approach for network management. They provide value-added services to customers, including information on their energy consumption that helps them manage their usage. They can also improve the overall reliability of the otherwise erratic power supply by reducing outage time. Further, the agricultural sector—which comprises a large part of electricity consumption in India—stands to gain significantly from smart distribution wherein Discoms manage remotely located segregated agricultural feeders. Smart Discoms are capable of detecting and checking theft and meter tampering. By ensuring minimum human intervention, they reduce manual errors, while aiding real-time and data acquisition that aids smart decision-making. Starting with 100% metering to 100% billing and ensuring online monitoring of energy balance on each feeder and distribution

transformer helps in reducing losses.

Embracing digital transformation and undertaking grid modernisation can help provide 24X7 affordable and reliable power to all, with extend network access. Although there is development in the adoption of data analytics, and other digital infra to monitor distribution networks, there is still a long way to go in terms of usage and wide adaptability. The government has expressed its commitment to digitise power distribution by March 2019. This transition will be led by prepaid smart metres. In order to become smart in true sense of the word, Discoms in India should adopt advanced digital solutions to become efficient, customer-centric, and bringing their books back in black. Therefore, being smart is not only a wise decision but probably a survival issue for Discoms. The moment is opportune for them to transform from being a vanilla entity to a smart utility that caters efficiently to multiple sectors. ◊



Mr Ashok Sethi, COO & Executive Director, Tata Power Ltd.

Mr. Ashok S. Sethi, is a B.Tech from IIT, Kharagpur. He was Chief - Corporate Operations Management and was also Executive Director of Maithon Power Limited, a subsidiary of the Company. He has wide experience in power sector ranging from Thermal & Hydro Generation, Transmission & Distribution, Commercial & Regulatory and also Advocacy. He has been with the company for the last 38 years and has deep understanding and commitment to the business and stakeholders. He is also on the board of other companies.