Smart Metering: A Status Check

By Khileshwar Kumar Priya

The power sector is in the throes of a transition. This change is being driven mainly by renewable energy integration, energy storage technologies to support the renewables, and smart meters. By tracking electricity usage round the clock, smart metering facilitates dynamic pricing (raising or lowering the cost of electricity based on need), helping distribution companies (DISCOMs) cut down on commercial losses. Smart meters, which are connected through a web-based system, also promote energy efficiency by helping consumers track energy usage instantaneously.

The Smart Meter National Programme (SMNP), launched by the Government of India in 2017, aims to replace 250 million conventional meters with smart meters by 2022. According to the National Smart Grid Mission (NSGM), as of 17 May 2021, 24,22,120 smart meters have been installed; 75,22,949 are being installed; 8,02,000 meters are in the pipeline; and deployment of 69,26,379 smart meters has been shelved for various reasons.

With such growth in smart meter installation, it is instructive to look at the outcomes vis-à-vis the perceived benefits. According to the SMNP dashboard, smart meters enabled DISCOMs across India to record a 20.5% average increase in monthly revenue per subscriber. Bihar showed the highest increase in revenue collection, i.e., 168.62% (INR 370) increase per month per meter, as of July 2021.

To help streamline future installations and to reap the envisioned benefits, it's important to take stakeholder experiences into account. One recurring issue with consumers seems to be high smart meter bills — these could be due to consumers underestimating appliance usage, but even penalty costs, defective meters, unit rates, and standing charges can inflate bills. Smart metering also opens up cyber vulnerabilities; major incidents include the sudden illegal disconnection of 12.3 lakh smart meters and unauthorised generation of user IDs (both in Uttar Pradesh).

With so much riding on smart meter deployment, it is concerning that there are data discrepancies in the number of installed meters, and the absence of installation updates on utility portals. For instance, the NSGM portal lists 24.26 lakh installed smart meters, while the SMNP puts the figure at 15.79 lakh.

There is little publicly available information about customer and utility experiences following smart meter installation. Such a large and capital-intensive upgrade of the power system coupled with the conspicuous lack of reliable information and feedback is problematic. Utilities should make comprehensive data on the effectiveness of smart meters public. Only with sufficient stakeholder awareness can the SMNP achieve its ambitious vision.

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