

# To Continue That Electric Feeling



**Davinder Sandhu**

India has made remarkable strides to ensure universal access to electricity for every household, even as it is moving on a reforms agenda for affordable and sustainable energy systems. The success of energy policy and implementation is gauged along the touchstones of availability, access and sustainability. This has demonstrated lessons for global energy transitions and climate actions.

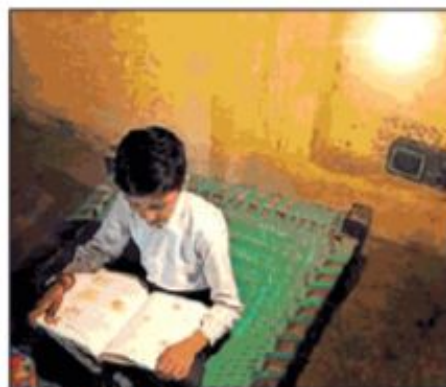
Since 2014, India has added 182 GW of generation capacity, the bulk of which is in renewables. It exports 8,000 million units of power annually to Nepal, Myanmar and Bangladesh. It has also added 142,000 circuit km of transmission lines, connecting the entire country to a single grid with one national control centre. These steps have enabled the increase of interregional transfer capacity to more than 100,000 MW.

A national market has emerged, with generators now able to sell power to any discom, ensuring open access to consumers. The MERIT (Merit order despatch of Electricity for Rejuvenation of Income and Transparency) system links 132 generating units with installed capacity of 55,940 MW, leading to savings and efficiencies.

According to the Council on Energy, Environment and Water (CEEW), an average Indian household received 20.6 hours of power supply from the grid in 2020. Today, the average daily supply in urban and rural areas is 23.36 and 22.5 hours of power supply respectively.

Universal household electricity access was a central political commitment in the 2014 Lok Sabha elections, and the government placed a high priority on following it through. On August 15, 2015, Narendra Modi had announced a target of connecting every village with electricity within 1,000 days. It is to the credit of the power ministry that the stiff target was achieved in time, including for villages in the Himalayan belt and the deserts of Rajasthan.

This was followed by the launch of the Saubhagya programme aimed at bringing electric power to every home in India. Over 28 million houses were given access to electricity in just 18 months. The universalisation of



**Read all about**

access to electricity was also done with an aim of eliminating the dependence of households on traditional fuels such as kerosene for lighting and cooking, and firewood and cow dung cakes for cooking.

Ensuring more efficient use of grid resources, till date, over 25.23 lakh smart meters have been installed across states, and about 81 lakh smart meters are under deployment.

Connecting India with an integrated grid has led to the emergence of a national electricity market, with discoms able to buy power from any generation company across the country. There are now two national exchanges, with intra day-ahead and term-ahead markets, and a separate green term-ahead market.

Energy transition has also kept abreast at a remarkable pace, with renewables capacity increasing by over three times in the last seven years. Pursuing consistent and transparent procurement methods, India has emerged as an attractive destination for investment in renewables, attracting more than \$42 billion in the last six years.

With the universalisation of power, a significant reduction in kerosene consumption by households was recorded — from 8,920 million litres in 2014-15 to 2,040 million litres in 2020-21. This 77% reduction in kerosene consumption, in turn, led to a reduction in CO<sub>2</sub> emissions by 17.2 million tonnes a year. Additionally, India had distributed billions of LEDs (light-emitting diodes) by July 2021, reducing CO<sub>2</sub> emissions by 171 million

tonnes a year. This measure has made electricity consumers equal partners in India's energy transition journey.

The PM-KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan) scheme launched in March 2019 provides energy security to farmers, with a target of solarising 35 lakh diesel and grid-connected agriculture pumps. Based on the demand, 3.59 lakh standalone solar pumps, solarisation of 76,000 individual grid-connected pumps, and feeder-level solarisation of over 9.25 lakh grid-connected pumps have been sanctioned under this scheme.

The next big push can come on achieving the ambitious target of 40 GW capacity from rooftop solar by 2022. Financial benefits to companies that switch entirely to renewable power, battery storage systems, connection portability, effective monitoring operations, active expansion of corrective measures like the smart metering systems and other AI-supported advancements, all with a consumer-centric approach, will further improve the reliability of power supply across the country.

The current power sector transformation around energy availability, access and sustainability places India as a global leader in climate action and transition to clean energy. India's power sector story, and its ensuing energy transitions, present a real-time case study of actions that can be replicated in other geographies.

*The writer is senior adviser, infrastructure, World Bank*