



Reliability, Energy Access, and India's Electricity Distribution Sector

Harvard Kennedy School Energy Policy Seminar Series, Spring 2019

Monday, May 6, 2019

By Louisa Lund, Program Director, Consortium for Energy Policy Research

Since a “major overhaul” of electricity governance that took place in 2003, opening up access to the electricity system for private generation, India has made “remarkable progress in expansion of generation” in the electricity sector, nearing 100 percent electrification, according to government reporting. However, the picture for distribution is “less rosy,” with a complex interaction of low profitability and poor service quality, according to research from HKS PhD candidates Shefali Khanna and Kevin Rowe, presented by Rowe in Monday’s energy policy seminar.

Poor reliability is a key part of the problem, as Rowe explained it. Although there are “few comprehensive surveys on reliability in India,” a survey of six relatively poor Indian states found that “households faced about 11 hours of outages on average per day.”

Rowe’s and Khanna suggest that this poor reliability is tied to problems with electricity pricing in India, where “electricity prices are a really central political issue.” As a result of political pressures to keep prices low, along with a system in which it is the norm for large amounts of electricity to recoup no revenue at all, either due to theft, or as a result of India’s policy of providing unmetered agricultural connections, distribution utilities face a “growing gap between revenues and costs,” Rowe said. “Some utilities are losing a lot of money.”

In this situation, distribution utilities are unable or unwilling to invest in greater reliability, and may even prefer not to provide power at times when wholesale power prices are greater than the revenues available from power delivery. In essence, Rowe suggested, what India is seeing is “Power outages as non-price rationing.”

A danger here is that Indian electricity service has entered a “low quality, low price equilibrium,” in which, on the customer side, poor service reinforces customer expectations about low prices, along with the widespread non-payment of bills, and, on the utility side, low revenues discourage investment in better service provision. This dynamic may be taking place despite the possibility of a win win scenario, in which consumers might be willing to pay more in exchange for better reliability.

In order to better understand this dynamic, Rowe and Khanna are undertaking research designed to evaluate how customers would choose to trade off electricity prices and reliability, and whether the evidence supports the idea that widespread non-payment is in part a response to poor reliability. They are currently working on a case study of a private distribution utility in Delhi. Initial data shows that increased investment in reliability (in response to government incentives) has been correlated with improved payment rates and financial performance. This summer, Khanna and Rowe plan to survey the utility’s customers to better understand what poor reliability has been costing them in terms of things like expenditures on back up power—an analysis that may shed light on consumers likely willingness to pay for more reliable electricity service.

Rowe spoke as part of the Kennedy School’s Energy Policy Seminar Series, which is sponsored by the Consortium for Energy Policy Research of the Mossavar-Rahmani Center on Business and Government and by the Belfer Center for Science and International Affairs.

