Prepayment Metering in Bangladesh
How to Improve Electricity Delivery and Eliminate Theft

Overview

What can a utility company do to prevent the theft of electricity, a major problem in many developing countries? This case examines how the public utility in Chittagong, Bangladesh’s second-largest city, completely eliminated the theft of electricity that had plagued its operation since the early 1990s by installing prepaid meters.

The Bangladesh Power Development Board (BPDB) used to lose millions of dollars a year to electricity theft, a practice facilitated by corrupt meter readers and metering technology that made it easy to illegally tap power lines. These losses prevented the company from operating and maintaining the system properly or making new investments. Insufficient power generation to cover demand and low plant efficiency resulted in erratic power supply and blackouts, which reduced the quality of life of the city’s residents both directly and indirectly (by making manufacturing uncompetitive).

Lessons Learned

- Acceptance of the prepayment metering system was achieved and resistance from meter readers, their trade unions, and electricity consumers overcome through a holistic approach that addressed their concerns.
- The implementation consultant played a significant role in supporting BPDB, closing capacity gaps and successfully implementing the project.
- Outsourcing operation of the prepayment system to a private company contributed to the efficiency and success of prepayment metering.

Development Challenge

- The supply of electricity was inadequate and unreliable, hampering economic development and reducing well-being.

Delivery Challenge

- Improving the power sector required political reforms; regulatory, organizational, and technological changes; and new investments in the power sector.
- The utility lacked the institutional, technological, and human capacities to control and deter theft of electricity.

Key contextual conditions: Only about 60 percent of Bangladesh’s people have access to electricity. High levels of electricity losses (due to a variety of causes, including maintenance problems and theft) mean that only about 75 percent of the country’s power generation capacity is considered available. Insufficient power generation to cover demand and low plant efficiency resulted in erratic power supply and blackouts. Per capita power consumption of about 320 kWh per year is one of the lowest in the world.
**Key stakeholders:** Key stakeholders included the Bangladesh Power Development Board (BPDB), the German Federal Ministry for Economic Cooperation and Development (BMZ), and the KfW Development Bank. The implementation consultant (Fichtner) and the operator of the prepayment metering system (KCJAL) played significant roles in implementing the project.