

# Problem Statement: Electricity Bill Management System (EBMS) – Bangladesh

## Problem

In many regions of Bangladesh, electricity billing is still conducted manually. Meter readers visit households, note meter readings on paper, and later input them into a system — often introducing errors, delays, and inefficiencies. This manual process also lacks transparency and real-time updates for customers. Additionally, physical bill delivery and in-person payment methods make the entire process inconvenient for users and time-consuming for utility providers.

## Background

The conventional electricity billing system used by local power distribution companies in Bangladesh depends heavily on manual labor. In rural and semi-urban areas, meter readers are responsible for physically collecting readings door-to-door. These readings are then entered into legacy systems for bill generation. The customer must wait for the printed bill and visit the billing office or bank for payment. This outdated approach has become increasingly inefficient in the digital age, where speed, accuracy, and remote accessibility are expected.

## Relevance

As Bangladesh continues its journey toward "Digital Bangladesh," transforming core public utilities like electricity billing is essential. With widespread access to smartphones and internet services, both urban and rural users now have the capability to participate in smarter billing systems. An online EBMS with features like **meter image upload**, **automated bill generation**, and **online payments via VISA/MasterCard** will significantly enhance user convenience, ensure accuracy, and reduce the workload on administrative staff.

## Objectives

The main objective of the **Electricity Bill Management System (EBMS)** is to automate and modernize the billing process. Specific objectives include:

- ❖ Allow customers to **upload meter images** through an online portal.
- ❖ Enable admins to **review submitted images**, extract readings, and generate bills accordingly.
- ❖ Support **tiered tariff calculations** as per BERC guidelines.
- ❖ Allow users to **view and pay bills online** using secure gateways (VISA/MasterCard/SSLCommerz).
- ❖ Provide **SMS and email notifications** for bill updates and payment confirmations.
- ❖ Generate **PDF bill copies** for downloading and printing.
- ❖ Maintain historical logs, user activity, and real-time billing analytics for admin use.

