

# Smart Electricity Billing System

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**Abstract:** Billing is critical function of the electricity board towards getting meter reading. Meter reading, even though it looks simple, is far from simple and involves processes that can give various problems, most problems currently seen, result from the manual processes followed. Calculation errors, delays in system updating and fault tracking issues are the major problems that companies find difficult to find answer for this paper suggests a smart electricity billing system to collect process and notify consumers about consumption. This system will be reliable, efficient and accurate to suit the requirements of these companies. The burden on the meter reader is lessened and other new features have been introduced. Customer interaction with the system is improved and customers can easily view their current electricity bill using their respective account. Most of the problems related to electricity billing are addressed through this system and might prove to be best solutions for specific companies to optimize services on low budget.

**Keywords:-** meter reading, electricity billing

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## I. INTRODUCTION

Billing automation system for public utilities (e.g. electricity, gas and water) has been widely studied and implemented in developed countries across the world. The Automated Meter Reading (AMR) was started in 1962 by AT&T, but this experiment was not successful. The modern era of AMR started in 1985; since then different techniques have been utilized to get better reliability and performance. Therefore currently in developed countries, many successful AMR systems are being used to facilitate the consumers of water, gas and electricity. SMART ELECTRICITY BILLING SYSTEM has been developed to computerize the billing system where all dealing was done manually earlier. Now a day's computerization is spreading with great speed. Many organizations are being computerized and are surely enjoying the benefits of computerizations. In our project we are designing a web application to implement the smart electricity billing system. The current procedure with regard to the billing process for electricity is not a fully automated system. It involves manual processes from the time the meter reader starts reading the meter until the system is updated with the current reading. Earlier one person was gone to collect the meter reading, then another one check the unit charge and another person calculate the total charge. These details are all stored in special records. Though all the most importance, tedious a care needed job is the bill calculation. Any one of mistakes

may cause severe consequence. Computerization helps to overcome all these problems, by integrating the system that is the above said jobs can be done by a single person. That is one computer user Electricity Billing System helps to create accurate bills, with great speed. This includes the consumer details report generations.

### 1.1 EXISTING SYSTEM:-

A system can be regarded as a set of interacting elements, producing outputs from a set of inputs. Existing system is completely manual. A meter reader visits a house, does the meter reading and then manually calculates the amount considering the units consumed. Back in the office a data entry officer enters the meter readings into the system manually. There may be a lot of chance of clerical and procedural errors. Existing system has several disadvantages such as Redundancy in stored data, Lack of security, Data is inconsistent, More time required, Waste storage space, Manpower required, Errors may occur, Regular watching and supervision is necessary.

### 1.2 PROPOSED SYSTEM:-

Smart Electricity Billing System helps to send the electric bill of our monthly consumption to us direct via the text message or through email with the help of a web application. This concept provides a cost efficient manner of electricity billing. The working of smart electric billing system is more than the existing system and it is time saving also. The procedure is far from satisfactory and it is

believed a better system using available technology would definitely be an advantage. In this web application there are various phases to generate electric bill like input phase, processing phase, output phase this are the three basic phases of smart electricity billing system. The existing system is manual and prone to defects and ultimately the consumers mentally and financially suffer in such billing system. Therefore to replace the manual and traditional billing techniques, we designed and implemented a cost effective, but still reliable Smart electricity billing system for electricity provider companies. In this way the electricity provider companies would not have to completely replace their existing setup facilities and they would be able to replace their existing billing methods with our Smart electric billing system.

## II. SYSTEM CONFIGURATION

There are three four major modules of this system

### 2.1 ADMIN MODULE

The admin module consists of an admin who is the authorized employee of the electricity board. The admin is able to add, remove, and view consumers and employee.

### 2.2 CONSUMER MODULE

In the consumer module first the consumer's have to register himself by filling the consumer registration form. Then the consumer is having the consume rid and password which helps consumer to view his details by logging in.

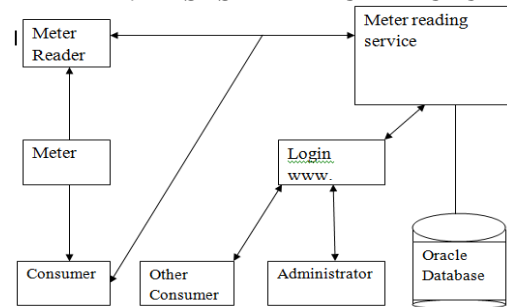
### 2.3 EMPLOYEE MODULE

The employee is the person who goes to home to home and captures the meter reading. Then the employee uploads the captured reading to our website and reading is recorded by the system.

### 2.4 BILLING MODULE

Billing module is one of the most important module. In the module the actual bill generates by using the meter reading which is uploaded by the employee i.e. meter reader. The billing module generates the bill by considering all the parameters such as electric charge, electric per unit cost, monthly meter cost FCA etc.

## III. SYSTEM ARCHITECTURE:-



## IV. ADVANTAGES

1. Customer interaction with the company is improved and customers can easily view their current electricity usage using their email or mobile.
2. Reduce the manual processing time.
3. Faster performance than existing system.
4. Time& cost saving.

## V. CONCLUSION:-

There is need to develop a Smart Electricity Billing System. These will lesser the manpower require to dothe work in minimum possible time. The proposed system will act as a principle idea to implement such a system Smart Electricity Billing System is a reliable accurate and efficient system. This gives an advantage over the current system. Detailed study and experimentation will support to reduce the time to do the work as quick as possible.

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