SYNOPSIS OF MAJOR PROJECT

PREPAID ENERGY METER

submitted in partial fulfillment of the award of Bachelor of Technology in Electronics and Communication Engineering

under the guidance of:

Department of Electronics and Communication Engineering

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Synopsis: Major Project
**Prepaid Energy Meter**

**Motivation:**

As we know that today time is important and everyone wants to be out of the long billing queues as everyone is in hurry so we bring scheme of recharging meter just as we charge our cellular mobiles. In this system the consumers are required to purchase the electricity before consuming it. One gets a “token” in exchange. The token is used to “credit” the meter with “units of electricity” or “money value”. After the energy at credit is exhausted, the power is switched off to the consumer.

**Problem Statement:**

Basically we want to make a hardware system in which one can use the electricity until one is having the credit with the units of electricity in terms of token. The meter has a built in disconnecting device .and so the Consumption is restricted to payment. Automatic disconnection of the meter takes place on expiry of credit. The device is based on 8051 microcontroller. It uses IC-AT89S52 of 8051 family. The project is being made with the intention of getting into the practical application.

**Overview of Method:**

Prepaid meter is essentially an energy recorder cum controller. Controller in the sense that, after the energy at credit is exhausted, the power is switched off to the consumer. In this system the consumers are required to purchase the electricity before consuming it. Prepaid Metering Policy forms part of debt recovery and retailing. They also help the Corporation in managing its level of bad debt as well as the consumers to be more responsible and in control of their levels of electricity consumptions. Prepaid meters can improve retailers’ cash flow and can reduce retail operating costs through avoiding meter reading costs and reducing the incidence of bad debts. The two main attributes of prepaid meters that distinguish these meters from standard credit meters are: The requirement for
the customer to pay for electricity before consumption can take place and the more active involvement of customers in their electricity supply. These attributes of prepaid meters have important implications for electricity Utilities and residential customers.

WORKING OF PROJECT:

As we know that microcontroller is a programmable device. So according to our project’s requirements we had programmed atmel-89s52 (microcontroller). This is accomplished by using matrix keypad for entering amount to be recharged and relays which connect digital and electrical circuit (or low voltage to high voltage circuit). This project also provides with improved cash flow management in energy utilities and reduces problems related to billing for consumers in isolated or remote areas. The consumer can refill the amount for which the power would be made available for the given units of electricity. When the amount is over, the relays will automatically shutdown the whole system. In our project we also have a provision to provide one extra unit so that the consumer can also have a chance for recharging the meter.

CIRCUIT DIAGRAM: