Abstract

Presently smart home, smart meters and Internet of Things are being included hugely to advance the conventional analog meters. This helps in digitizing the collected data and the reading in the meters. This data can be transmitted through wireless medium and minimizes the manual work.

However, this also involves the risk of theft. These theft are not detected accurately due to the lack of certain methods in the existing solution.

The objective of the proposed project is to design a system to track the electricity spent per load and to trace, remove the theft of electricity in current line and meter.

This project also involves informing the Electricity Board officials about the theft occurred by using IOT. A network of devices such as sensors are connected together which helps in transmitting transmit real-time data over the Net. Here, the Microcontroller Atmega328p is used to recognise energy theft and pass the information to the WIFI module which in turn passes the information of the theft to the Electricity Board.

Introduction

Theft of electricity increases the costs paid by customers and can have serious safety consequences. It leads to misallocation of costs among suppliers that can distort competition and hamper the efficient functioning of the market. The costs faced by an electricity supplier in detecting electricity theft by its customers may be greater than the costs to the industry as a whole. In particular, when it detects electricity theft by one of its customers, the supplier may need to pay amount of electricity stolen by that customer.

This project is about to develop and fabricate the circuit that can detect the electricity theft by using IOT .In this proposed system there are three sections, detection, monitoring &controlling. The detection is done by Hall sensor. The monitoring is done through IOT (Internet Of Things) and separate web site for project. Controlling section consist of microcontroller.

The Web site used here display the theft is detected or not. Microcontroller gives the order of suggestions received to all network & sensible factor. The meter 1 & meter 2 is at home. Microcontroller reads energy pulses & current signals. If current is drawing & energy pulses are normal, then no power theft is being done. If balanced is finished and load is operating, then it indicates power theft. Microcontroller is communicating with IOT. When power pilferage is done then it displays ‘**THEFT IS DETECTED**’ in IOT & also on Web site.

Proposed Work

In this proposed system, the information of theft detection is informed to the Electricity Board officials by using Internet Of Things technology. This system interfaces with the Microcontroller and the sensors interconnected with the Microcontroller to predict the current and voltage.

Therefore our project aims to prevent and remove the thefts occurring and saving the country from further energy wastage. In this proposed system, the parameter such as power, current, voltage is checked based on that the energy is calculated and notified to consumer and EB through Internet.

If there are increases in load the power supply to the load is cut off and message sent to regarding power usage is sent to the electric board and display on the LCD. Further any increase in load, the power supply to the load will cut off and the electric board is intimated and also the individuals who own the house using WIFI and a buzzer is also fitted to alert the theft to have occurred, it will notify the bill based upon the usage of power supply.

A ThingSpeak Software is used to store the usual load consumed and to find the increase in load due to theft and it’s also used to detect the theft. In this project, the microcontroller Atmega328p based System will continuously monitor the load based on the- parameter such as voltage, current, power. The system again continues on monitoring the load power.