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WIRELESS POWER THEFT MONITORING SYSTEM IN POWER LINE

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ABSTRACT

The theft of the electricity is the major concern of the transmission and distribution losses in the supply of the electricity worldwide. Mainly the electricity is being stolen via bypassing the poles therefore this system is utilizes to overcome this type of the theft of the electricity and is very beneficial for the authorized agency to control its revenue loss as all of us know that the cost of fuel is increasing day by day hence the intensity of stealing the electricity and using it as a substitute is also increasing therefore it is needed much to design a system that can detect the theft of the electricity. It is a known fact that every investment made by either individuals or government should yield a positive profit returns in order to continue with different projects in other sectors of the economy. But it has always been a difficult task for the government of the day and the Electricity Company to achieve their aim due to power theft activities. Previous attempt to monitor the activities has not yielded positive results due to the corrupt practices of some of these personnel. This project aims at eliminating all these difficulties by designing a simple device to send a message whenever there is a power theft activity at a certain cluster of an area.

I. INTRODUCTION

Power theft is the biggest problem in recent days which causes lot of loss to electricity boards. In countries like India, these situations are more often, if we can prevent these thefts we can save lot of power. Now in India, there is not any technique to detect the specific location of the fault immediately. Power theft is another major problem faced by Indian electrical system. The aim of this project is to detect the power theft and prepaid energy meter using gsm. Power theft has become a great challenge to the electricity board. The dailies report says that Electricity Board suffers a total loss of 30 % in revenue due to power theft every year, which has to be controlled. Microcontroller is giving control signals to tripping various equipment provides controlling feature. Output can then be displayed in the LCD (Liquid Crystal Display). The difference with other existing system is that even transmission line theft can also be detected apart from the meter bypassing. The additional feature of this system is that there is no need of manual interface as the entire system is fully automated and also meter reading also accurately calculated in this system, which overcomes the traditional manual meter reading. Now a days the traditional manual meter reading was not suitable for longer duration operating purposes as it spends much human and material resource. It brings additional problems in calculation of readings and billing manually. The human error can open an opportunity for corruption done by the human meter reader. So, the problem which arises in the billing system can become inaccurate and inefficient.

II. METHODOLOGY

Block diagram, in this project need to take two power supplies to prototype, one is a DC supply, an AC supply, taking power an adaptor which converts AC to DC supply, this supply connect to Arduino board Ac supply is given to power line. After that turn on the power supply through RPS, and the display is on, After we should connect the Wi-Fi in our mobile or laptop, with the username and password provided Wi-Fi module than in the display we seen the p1 and p2 values this value measured by the current sensors, here two bulbs required One is acting like a normal load another one is a theft load, a normal condition bulb, one glows in display on theft occurred on this line, P1 and P2 values are equal. When the bulb-2 is turned ON means in this line have power theft and the p2 value increases not equal to the p1, then give the buzzer And LED indication, ON display showing the power theft and power theft information sent to mobile or laptop through mobile Telnet

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application. Hence, in this project have a power line, the loads are bulb-1 and bulb-2 here when there is no power theft on this line load values are the same, the value are not same considered as power theft in this power line.

III. MODELING AND ANALYSIS

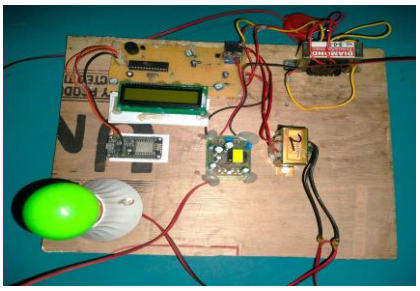
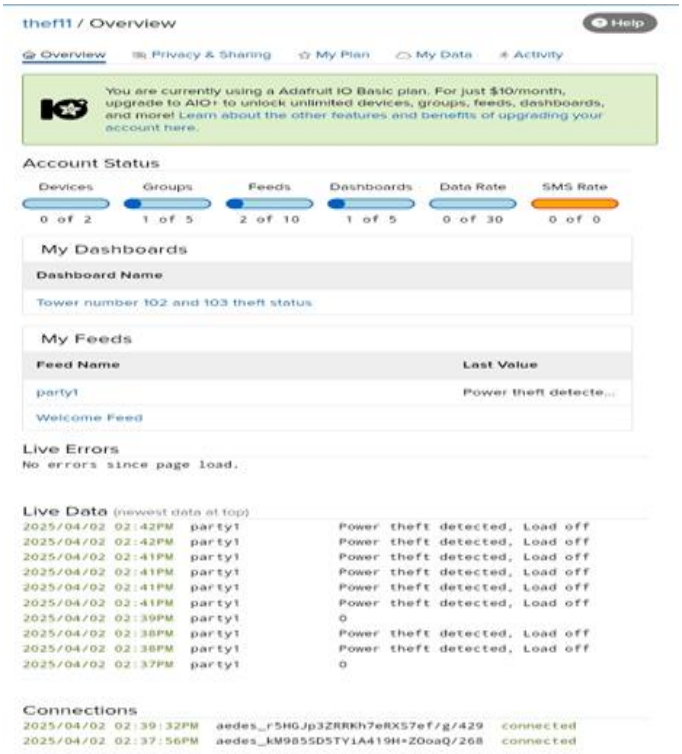


Figure 1: Wireless power theft monitoring system

IV. RESULTS AND DISCUSSION



V. CONCLUSION

This project is working perfectly in the laboratory condition and it can handle a current up to 30A. Adjusting the reference voltage can control the current that is set as maximum current. The relay is tested by putting a bleeder lamp in the line.

VI. REFERENCES

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