

ANTI-THEFT ELECTRICITY

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ABSTRACT

Energy theft is one of the most important concerns related to the smart grid implementation. It is estimated that utility companies lose more than \$25 billion every year due to energy theft around the world [4]. Electricity theft is closely related to governance indicators, with higher levels of theft in countries without effective accountability, political instability, low government effectiveness and high levels of corruption [1]. The study estimates the Fixed Effects models through the least squares dummy variable (LSDV) technique and Generalised Method of Moments (GMM). Our results indicate that per capita income has significant negative and electricity price a positive effect on electricity theft with sufficiently high coefficient values. The probability of detection variable appears with a positive sign in both estimations indicating a poor deterrence. The results of

LSDV show a positive impact of fine on conviction on electricity theft. But in GMM estimation, this variable appears with a right sign. The results from both models are robust in the case of load shedding and temperature variables [2].

Keyword : - CT Sensor, Arduino UNO328, GSM etc....

I. INTRODUCTION

The electricity is needed to be protected for efficient power delivery to the consumer because electricity is indispensable to domestic and industrial development activity. There are two types of losses technical and Nontechnical losses. Every year the electricity companies fare the line losses at an average 20-30% according to power ministry WAPDA Company's loss more than RS.125 billion. T&D losses have been a concern for the Indian electricity sector. Since these have been very high when compared with other developed countries. The present T&D losses including unaccounted energy are about 30% and there is need to reduce these losses through efficient management the best operation and maintenance practice of the transmission and distribution. When we talk about T&D losses it also includes the theft of electricity, although it is the part of commercial loss but there is no way to segregate theft from the T&D losses. Electricity power theft takes place in a variety of forms and thrives with the support of people from different walks of life: utility staff, consumers, labor union leader, political leaders, bureaucrats and high level utility officials. The problem challenging power utilities worldwide is the electricity, in other words using electricity from utility company without the company's consent.

The power grid has become a necessity in the modern society. Without a stable and reliable power grid, tens of millions of people's daily life will be degraded dramatically. For instance, the India blackout in July 2012 affected more than 60 million people (about 9% of the world population) and plunged 20 of Indian 28 states into darkness. If the electric utilities concerned are public monopolies, they may seek public investment and resort to government subsidies for their financial survival and for continued supply of electricity maintaining the status quo.

II. RELATED LITERATURE

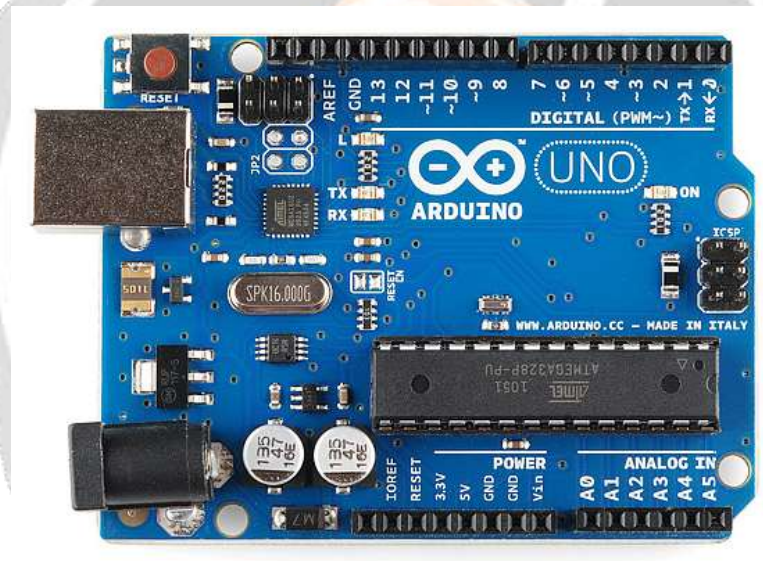
Earlier it was a case that generally takes place in villages because they need more power requirement for their field to drive water pump and for motor. But now a days it is not limited in villages but also industrial area as well as consumer side comes under power theft. There are various modes of power theft such as

- Bogus seal and tampering of seals.
- Meter tampering, meter tilting, meter interface and meter bypassing.
- Changing connection.
- Direct tapping from line.
- By using remote sensing device.

This project gives us the idea about 'Anti-Theft Electricity Transmission' project. Also we have get idea about IOT here.

IOT was first introduced in 1999 at autoID Centre and first used by Kevin Ashton. As evolving this latest burning technology, it promises to connect all our surrounding things to a network and communicating with each other with less human involvement.

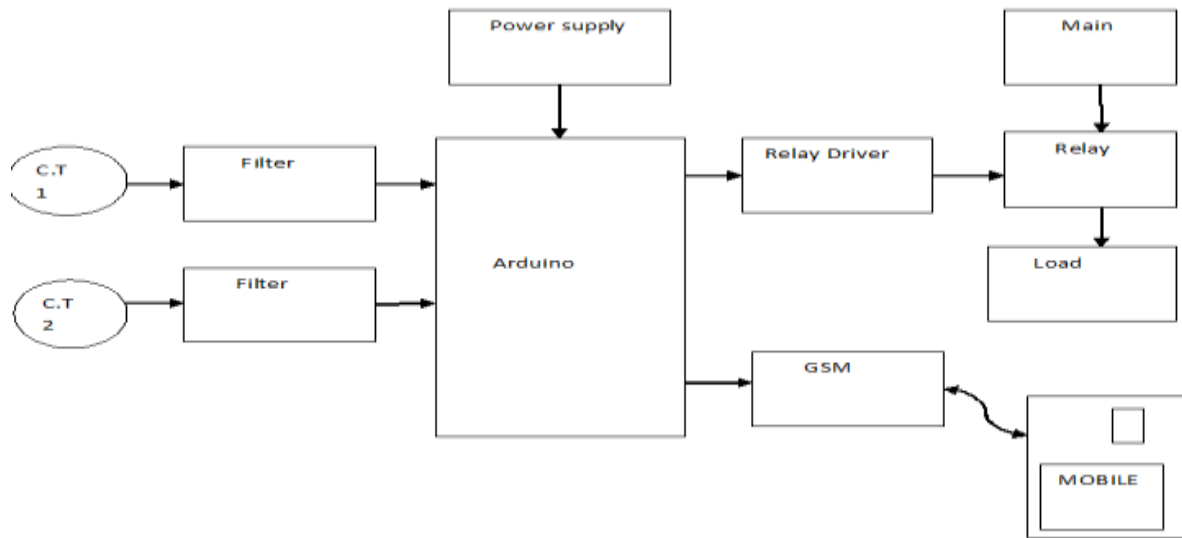
ARDUINO UNO328



Features:

- High-performance, Low-power 8-bit Microcontroller
- Nonvolatile Program and Data Memories
 - 32K Bytes of In-System Self-Programmable Flash
- Endurance: 10,000 Write/Erase Cycles
 - 2KByte Internal SRAM
 - Programming Lock for Software Security

III. BLOCK DIAGRAM



IV. WORKING

In this block dig main supply goes to the CT1 to CT2 by the motor. The $CT1 > CT2$ then the fault finding in connection and this cut off connection gives to the relay driver to the main MSCB circuit. And get finding the connection fault. The power theft monitoring is an important research in electric power system and electricity stealing prevention became a big problem to the electricity. Electricity stealing is a long term problem; however each power supply department has me huge investments of manpower and material, the phenomenon of defending stealing electricity has increased and not abated and the method of electricity stealing is continuously improved.

PROBLEM DEFINATION:

Every year the electricity companies fare the line losses at an average 20-30% according to power ministry WAPDA Company's loss more than RS.125 billion. T&D losses have been a concern for the Indian electricity sector. Since these have been very high when compared with other developed countries.

Mainly the electricity is being stolen via bypassing the energy meter 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. Thus we are designing the Anti-Theft Electricity transmission system.

V. APPLICATIONS

- Transmission
- Residential Areas
- Load shedding control purpose.

VI. ADVANTAGES

1.The dailies report that Electricity Board suffers a total loss of 22% in revenue due to power theft every year, which can be controlled now.

2.The consumer will also get benefit because in most of the cases consumer does not aware of that someone is tapped his line and he has to pay extra charge.

3.With the help of this project we can reduce the total illegal use of power and saves electricity.

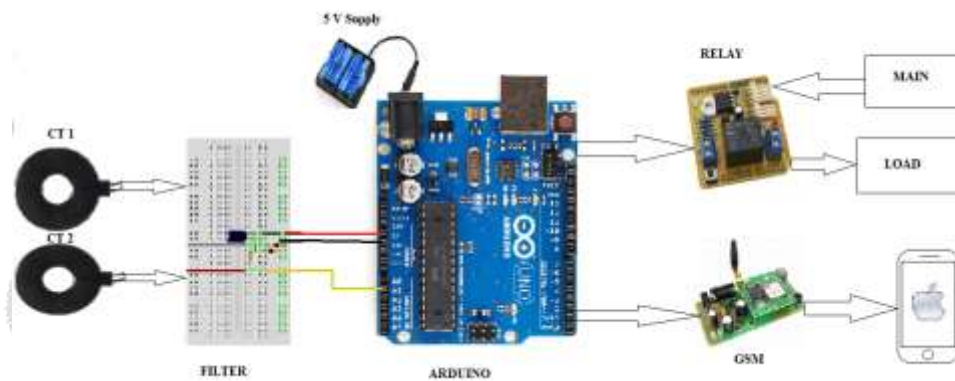
VII. LIMITATIONS

The disadvantages of this project is that only it has high installation cost. But it can be bearable because it requires only once installation cost and can be used for life time.

VIII. SYSTEM DEVELOPMENT:

System Architecture:-

The System Architecture of the system is given below



IX. CONCLUSION

Various systems proposed by different authors helps us to detecting the electricity theft. Researchers have acquired the systems which detects the theft of electricity. Thus, this concludes that the paper simplifies the context for the researchers for innovating various techniques to administrate and solve the problems faced by the consumers day by days.

It is always better to start every design with a good proposal, which will stand as a reference point to the work as it proceeds. The result of any design gives joy if aims and objectives are gotten. Since the project performed its proposal, it indeed satisfactory. Now from the input to the output of each stage was a success. The major input is like an interrupt and up on reception by arduino it goes through the iteration of demobilizing the car, sending text message and starting up alarm. The design is thus a huge success.

XI. ACKNOWLEDGMENT

It is honor and pleasure to express my heartfelt gratitude to those who helped me and also contributed towards the preparation of this seminar. We are indebted to our guide Asst Prof Miss A.S.Shinde , whose invaluable guidance and timely suggestion and constructive encouragement inspired us to complete the project in the present form . We express our thanks to the library of Annasaheb Dange collage of Engineering and technology which is a source of such invaluable information and of course the internet facility of the same. We would like to thank to

entire team of B.E. staff whose direct and indirect suggestion helped us creating this project. Although there some names but none are remain un-thanked.

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