The rising fuel cost and awareness of the need for energy conservation, the need to monitor and reduce energy consumption is gaining attention. The rising need for energy in every aspect of our lives, lead to controlling the energy consumption. But more often, different systems in the market help us monitor consumption and not control this consumption.

We propose a different outlook. Energy monitoring devices help in the analysis of the amount of energy that is being wasted and facilitates further mechanisms to control this wastage. Energy controlling systems help to change the power state of devices (power saving mode, normal mode, and off mode).

This new approach aims to take inputs from Home Energy Monitoring systems to analyze data and make automation decisions to apply the outputs on Home Energy Controlling Systems to manage the energy budget.

**Introduction**

- Home Energy Monitoring system provides the energy consumed per device in a home at an instance of time.
- Home Energy Controlling systems facilitate to change the power state of devices (power saving mode, normal mode, and off mode).
- This new approach aims to take inputs from Home Energy Monitoring systems to analyze data and make automation decisions to apply the outputs on Home Energy Controlling Systems to manage the energy budget.

**Abstract**

Energy monitoring devices help in the analysis of the amount of energy that is being wasted and facilitates further mechanisms to control this wastage. Energy controlling systems help to remotely switch between energy states (power saving mode, normal mode, and off mode). A typical user gets data from energy monitoring devices and interacts with an energy controlling system to manage electricity usage. This paper reviews research on the automation of Home Energy Management and Controlling Systems and proposes an algorithm to automate and interact with energy monitoring systems and energy controlling systems to manage electricity bills.

**Monitoring Systems and Controlling Systems**

- Home Energy Monitoring system provides the energy consumed per device in a home at an instance of time.
- Home Energy Controlling systems facilitate to change the power state of devices (power saving mode, normal mode, and off mode).
- This new approach aims to take inputs from Home Energy Monitoring systems to analyze data and make automation decisions to apply the outputs on Home Energy Controlling Systems to manage the energy budget.

**Architecture for New Home Automation System**

**Fig 1: Home Energy Monitoring Systems**

**Fig 2: Schematic Figure of HEM (Automation Logic is the newly introduced component which helps in managing energy consumption)**

**ALGORITHM**

**Fig 3: Algorithm representing the working**

**Introduction**

- Energy is a valuable resource.
- Home Energy Automation Systems helps to optimize energy costs by understanding energy flow as well as procurement and economics of energy, and reduce its harmful impact on our environment.

**Conclusion**

- Further work in this field to standardize the communication interface of user priority and automation logic with Home energy monitoring and controlling system.

**References**