Introduction
The problem with current home energy monitor system is that all the meters are not connected together and it is difficult for users to monitor them. The information that these meters provide might not be sufficient and useful for end users to achieve effective energy monitoring and reducing. Although, some overseas utilities use smart meters for monitoring and billing purpose, the information presented might not be understandable for non-technical users.

Therefore, in order to for households to achieve effective energy monitoring and conservation, this project developed a home energy monitoring system, which includes a smart meter that enables communication with a computer through a wireless network, and a user interface that provides real-time data of the meter and analysis of energy consumption as a reference for the user.

Aim and Objective
The aim of the project is to build a green power system that consists of:
- A smart meter that collects data regarding power consumption from a particular power socket with a LCD on the meter display to provide real-time reading of power consumption;
- A Zigbee network that allows data to be sent to the computer and;
- A user interface that gathers data from designated meters and stores and analyzes them collectively to provide a better picture of each appliance and overall energy consumption.

The objective of this project is to develop an efficient and more comprehensive energy tracking and management system, which will help energy conservation by providing relevant information of individual appliances.

System Block Diagram
The whole system is divided into three major blocks, which shown below:

Hardware
[Diagram showing hardware components]

Software
[Diagram showing software components]

Conclusion
In this project, we look for a green power system which can make electricity usage monitoring easy, convenient and accurate. The smart meter can provide real time measurement of power consumption. Such data can be sent to a computer for further application. We have constructed a program that can estimate the electricity bill charge and plot a power usage graph.

In the future, this green power system can be improved by:
1) further reducing the size and cost of each smart meter,
2) adding more functions on the smart meter and the program, and
3) mass implementation, for example in HKUST campus, if possible.