

Easy way to cut your Electricity Bill

If you find it difficult to manage your Electricity Bill effectively, a new class of technology products may be the solution you are looking for. Installing lighting automation controller with Occupancy sensor and Time controls to operate lighting systems can often be a wise investment. With the appropriate tools and knowledge, justifying their installation or checking their operation is a relatively simple task.

Occupancy sensor lighting controls can save energy by turning off lights when a space is unoccupied. The light or any other electrical appliance can be activated automatically by the active presence of a human body within the coverage sensing area. When there is no presence, the light will be deactivated automatically. Considerable energy can be saved by switching off the lights when the space is not in use.

In simple installations, automation may be as straightforward as turning on the lights when a person enters the room. In advanced installations, rooms can sense not only the presence of a person inside but know who that person is and perhaps set appropriate lighting, temperature, music levels or television channels, taking into account the day of the week, the time of day, and other factors.

In automation, the savings are huge in larger facilities. Determining the savings potential for the control application is usually difficult and often based on rules of thumb. It has been estimated that a single unit of energy saved at the end use point is equal to 2.3 units of energy produced. In India, if energy efficient methods are implemented properly about 25000 MW equivalent capacity of power can be saved through promotion of energy efficient measures.

Some of the questions that we look for answer frequently

- What are the potential savings associated with a specific time schedule?
- Are the lights on when no one is in the room?
- Are the lights off when they are scheduled to be on?
- Are the lights on when they are scheduled to be off?

If the lights are off during times when they have been programmed to be on, the schedule can be changed to save energy. This is labelled as potential waste. Potential savings identify when lights are on during hours when the lights are scheduled to be off. In this case, energy is saved by reducing use of the space during unscheduled hours. These sensors have excellent performance, good life & are very useful in reducing your electricity bill.

Purple Arrow presents their **Velvet** range of Automation Controller with Passive infrared (PIR) based occupancy sensor and time scheduling ability that has easy solution to this problem with a very user friendly mobile controlled and easy to configure and use application. By installing the automation controller more than 50 % of electricity bill can be saved.

The graphs in the following section plots measured light use patterns versus occupancy patterns and helps to answer the questions:

- Are the lights on when no one is in the room?
- What, if any, are the potential savings if an occupancy sensor controlled the lights in the space?

The Passive Infrared (PIR) based Occupancy Sensor Switch can detect the Infrared rays released by human body.

There are other sensors like Ultrasonic sensor or Microwave Sensor, similar to radar. Both works on Doppler shift principle



Graph of Actual Light-Use Patterns vs. Scheduled Patterns

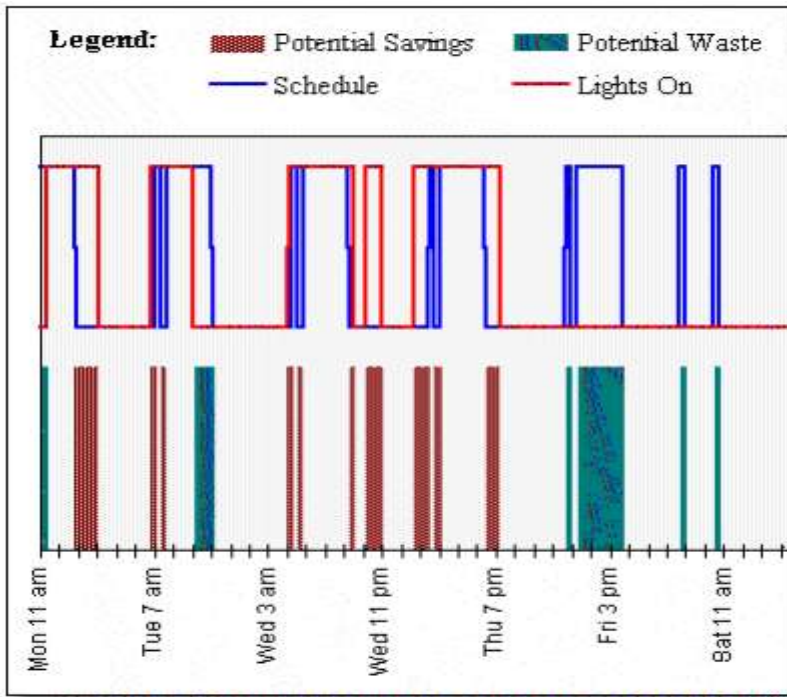


Figure 1: Graph of Measured Light versus Scheduled Light in system operation (*Courtesy- Pacific Gas and Electric Company, USA, Lighting Analysis Worksheet, <http://www.pge.com/pec>*)

Graph of Actual Light-Use Patterns vs. Occupancy Patterns

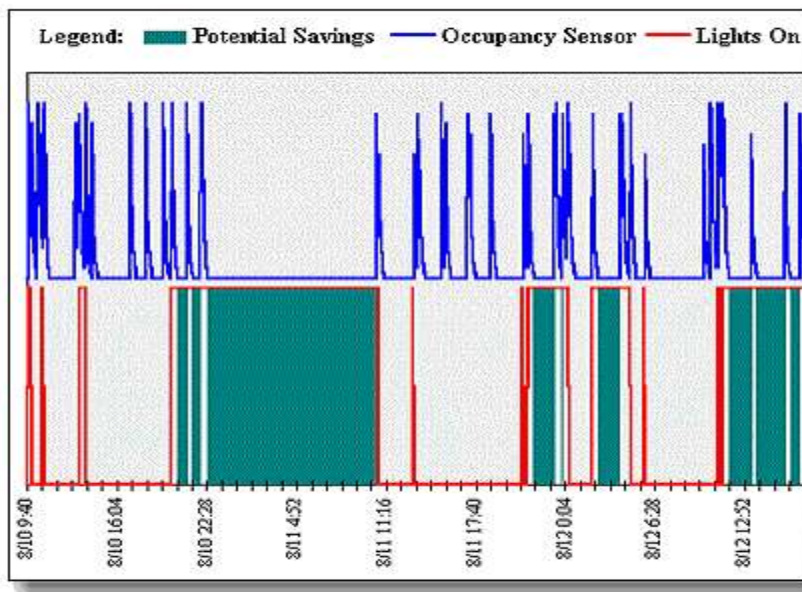


Figure 2: Graph of Occupancy patterns vs. Light Use patterns (*Courtesy- Pacific Gas and Electric Company, USA, Lighting Analysis Worksheet, <http://www.pge.com/pec>*)

The Working Principle

- You have the ability to control your Lighting switches using the Velvet Lighting controller from anywhere in world using the smart phone and internet network.
- In Eco Mode, the Controller with PIR Occupancy Sensor controls the lighting. It senses the motion in a room even when somebody body passes across. The controller saves the status of all lighting fixtures attached to it.
- The lighting load will remain ON until it senses motion. Once the occupancy motion ceases, it auto switches OFF the lighting load attached to the Velvet controller.
- During the night, the lux adjustment can be done through smart phone by using the dimming facility.
- You can prepare Scenes that is configured to do group switching of your Lighting and Dimming using the smart phones.

Purple Arrow VELVET Advantage

- With **8 Relay points and 2 Dimmer controls** the Controller will itself recover its cost by reducing your electricity bills and will further save your electricity cost for the future.
- Very easy installation and can be installed by in-house technician.
- Infrared (IR) integration with devices like TV, AC, Projector etc.
- No separate wiring is required as this is designed for Indian conditions.
- No modification is required and complies with current aesthetics.
- Pay back within your first year of installation

The ROI (Return on Investment)

- Assuming a power capacity of total connected light loads = 2000 W
- Operational hours of connected light's load = 12 hours.
- Then the total consumption in watts per day = 24 KWH
- Number of days in a month 30
- Total power used by connected light's load = 720 KWH
- Assume Cost of electricity marked = ₹10 per KWH
- Amount paid per month @ ₹10 per unit = 7200.00
- Savings per month on connected light's load in ₹3600.00 @ 50% saving.

For higher wattage Electrical Appliances the saving will be much more accordingly.

If controller is used for 12 Months, you will save ₹43,200 (12 months X ₹3600).

Therefore cost saving in 1st year will be ₹43,200/-

Not only you will recover the cost of controller but also you will save electricity worth of ₹43,200/- for every year.

In 5 years you can save ₹2,13,650/-

CALL US TO GIVE YOU A COMPLETE UNDERSTANDING ABOUT THE **VELVET AUTOMATION CONTROLLER** FROM **PURPLE ARROW CONSULTANCY SERVICES PVT LTD.**

AT +91-120-4315656 or WRITE to info@purplearrow-cs.com

OR VISIT US AT <http://www.purplearrow-cs.com>

