

## LIGHTING

Lighting is used for convenience, safety, creating an atmosphere and enhancing security, and can be a significant contributor to energy use and costs. It is also the most visible use of energy, and therefore presents an opportunity to reduce costs while improving illumination and your business reputation.

You can reduce lighting energy use and costs by up to 70 % by:

- reducing the time that lights operate, and
- reducing the power used by the lights and improving the quality of illumination.

### Reduce the Time that Lights Operate

#### *No Cost Actions*

- It's very basic, but the easiest way to save money on lighting is to turn off lights when not in use. Encourage staff and guests to turn off lights using small reminder signs above light switches or in other prominent places.
- Take advantage of natural daylight by opening blinds and curtains rather than turning on lights.
- Don't over-light areas that are not occupied – simply remove any globes from their fittings if lighting is not required in that area.



### Reduce the Amount of Power used by Lighting

#### *Install energy efficient lighting*





The energy efficiency of your lighting is primarily controlled by three factors:

- the efficiency of the globe in converting electricity into light,
- the efficiency of the fitting in directing light from the globe to where the illumination is required,
- maintenance of the globe and fitting

#### *Light globes*

- Replace incandescent (standard) globes with compact fluorescent globes – this will save 70 % of your lighting costs and can be purchased at supermarkets and hardware stores starting around \$ 8 each. As a general rule, a compact fluorescent lamp will require only a quarter of the power (and running cost) to produce the same amount of light as a standard incandescent light. The new range of compact fluorescent globes come in 'warm' white with none of the harsh fluorescent light of previous models.
- Replace coloured globes with standard globes. Coloured globes can cut light output by half, so you need twice as many for the same amount of light.

More demanding visual tasks require more light. By matching lighting level provided to the activities in room or area, you can achieve significant savings without compromising on people's ability to use the area as intended. The following table details the types of light globe for the various functions of a tourism business:

FUNCTION	TYPE OF GLOBE	
Lighting with short running times e.g. bedside, sensor controlled lighting	Incandescent	
Room lighting eg. Ceiling lights, hallways, down-lights	Compact fluorescent	
Display & security lighting	Metal halide	
Most other lighting applications	Fluorescent tube	

### *Light Fittings*

A significant amount of light is wasted due to poorly designed light fittings.

- When purchasing new fittings, look for ones which have a high efficiency or light-output ratio (LOR).

### *Maintenance*

- Keeping light globes clean from dirt build-up will enhance the quality of light and ensure longer-life. This will help to maintain the quality of your premises for staff and customers, and counter the tendency to install more fittings when the existing ones lose performance.
- converting from incandescent (standard) light globes to energy efficiency globes (fluorescent, compact fluorescent and metal halide), will reduce the need for regular replacement of globes, and therefore cut down on maintenance time and costs.

### **Accredited Green Power**

Green Power™ is electricity generated from clean, renewable energy sources, such as solar, wind, biomass and hydro power. When you buy Accredited Green Power, renewable energy is purchased on your behalf and distributed to your business in the usual way through the electricity grid. A National Accreditation Program has been developed to ensure that Green Power offered by Green Power providers is generated from approved renewable energy sources. Many electricity and gas providers offer Green Power options, and a full list can be found at [www.greenpower.gov.au](http://www.greenpower.gov.au)

Depending on your existing tariff or contract, Green Power may cost more than regular coal-fired electricity. However, by shopping around you may be able to switch to Green Power for no more than you are paying now. Even if you need to pay more for Green Power, the tips in this information sheet will allow you to more than compensate for the slightly higher price, by saving electricity.

If your business, Council or Government Agency joins a Green Power program, you may be eligible to use the Green Power customer logo on marketing materials and signage to demonstrate your commitment to the environment.

### ***Utilise natural light***

While you might not think of daylight as an energy source, it is the most cost effective use of renewable energy. Design buildings for daylight, including appropriately sized and protected windows and skylights, light coloured interiors, and lighting circuits which allow people to switch off lights in daylit areas.

In existing buildings, make better use of daylight by using windows to provide light and:

- paint walls, ceilings and undercover areas (ie. car parks) a light colour will reduce the amount of light which has to be provided.
- install clear or translucent sheeting in the roofs of sheds, workshops and carports.
- install skylights.

### ***Improve light switches***

Many people are pretty good at switching lights off, but are sometimes thwarted by poor or non-existent switching.

- Provide a light switch for each distinct lighting area, so people do not have to operate many lights when they need only a few.
- Avoid banks of light switches; try to locate each switch near the light(s) it controls.
- Where there are several switches together, label them so that people can easily find the one they need.

### **Automatic Lighting Controls**

#### ***Photo-Switches***

It's easy to remember to turn lights on when it is dark, but and easy to not notice that they are still on during the day. Photo-switches are dependant on the level of light, and automatically turn on when the sun sets and turn off when the sun rises. Costing around \$60, photo-switches:

- are available with built in timers, to switch the lights on and off regardless of the sun setting.
- are available with an adjustable light level setting, suitable for controlling the lighting in indoor or covered areas which require a higher lighting level than needed for outside lighting.

### ***Time-Switches***

Time-switches control equipment according to the time of day and are suited to the control of:

- lighting on signs and advertising.
- display lighting.
- the main lighting where secondary or "skeleton" lighting provides for access and safety (eg. an outdoor car park or recreation area with low level lighting and flood lights).

### ***Key-Tags***

These are commonly used to control the air-conditioning, appliances and most lighting in guest rooms. To retrofit key-tag control for lighting usually requires rewiring circuits in guest rooms. If rewiring to switch the lighting is too expensive, then installing a key-tag switch adjacent to the air-conditioner to control it alone will often be viable, capturing most of the potential benefit in the room.

As well as guest rooms, key-tag switches can be used to conveniently control loads in any area where people normally need to use a key, such as guests using a gym, pool, spa or sauna staff accessing secure store rooms.

### ***Occupancy Sensors***

Occupancy sensors automatically switch lights off after a period with no movement in the area. They range in price from \$35 for an indoor sensor which replaces a normal switch and are available for both interior and exterior applications. Indoor sensors need to be more sensitive to detect the more subtle movement in areas such as staff rooms.

Occupancy sensors should be selected, positioned and adjusted carefully to maximise savings and avoid turning on or off at the wrong time. Tips for effective control are as follows:

- select a passive infra-red in draughty areas which would fool an ultra-sonic sensor.
- select an ultrasonic sensor where line-of-sight detection is not possible or background temperature can be high.
- position the sensor where it will see people in or entering the area but will not trigger when someone walks past.