



## How to convert downlights to a more energy efficient option

Halogen downlights are common in Australian homes. Halogen lights are designed for 'task' lighting (e.g. bench-tops or pictures), but are an expensive option for general room lighting.

- Low voltage halogen lamps are not low energy lamps: each 50 watt lamp generates more than a kilogram of greenhouse gas every 20 hours.
- Older model low voltage halogen downlights use 50 watts of power and the transformer in the ceiling uses a further 10-12 watts – similar to an ordinary 60 watt globe, but you need more of them to light a room.
- Due to the heat generated by halogens, insulation can not easily be installed over the fitting, reducing the efficiency of roof insulation.

### WHAT CAN I DO?

There are alternatives for each of the halogen downlight types:

- 240 volt downlight lamps (GU10 type globes) can be directly replaced with an 11 watt Compact Fluorescent Lamp (CFL). These are available at hardware stores

and over the internet for approximately \$5-25 per globe. Some CFLs are slightly longer than a normal halogen globe so you should replace one unit initially to determine if the CFL will fit, or have an electrician replace the fitting.

- For 12 volt downlights (MR16 type globes), replace the 50 watt lamp with a lower wattage, higher efficiency globe, such as a 20 watt infrared coated (IRC) globe. These globes are available at hardware stores and cost from \$10 to \$40 and provide a dimmable option. This will reduce lighting costs significantly.
- In 12 volt systems, both 50 watt and 20 watt lamps can be replaced by three watt LED (Light Emitting Diode) globes with an



Replace these 50 watt MR16 globes with 20 watt IRC or LED equivalents

energy saving of around 90% over standard halogen lamps. LEDs provide a 'cold' light (nearer to daylight), so are less suitable





**TANYA'S TIP:**

Remember, 'low voltage' does not mean 'low energy'. When it comes to efficient lighting, it's the wattage that counts. So switch downlights to 240 volt CFLs or to 12 volt LEDs to get the most efficient lighting solutions.

for replacing one or two halogens over a kitchen benchtop (switch to 20 watt halogens for that situation). LED globes and fittings are available from specialist lighting stores for around \$35–45 each. An electrician should wire the new fittings.

## HOW DO I DO IT?

1. Turn off the lamp and wait for at least 10 minutes for the halogen bulb to cool down.
2. Remove the safety tempered glass (by pushing it toward the bulb holder to release the clip or by removing the screws, depending on the model).



Replace these 50 watt GU10 globes with CFL equivalents

3. Use a non-linen cloth to pull the bulb out of the bulb holder.
4. Use a non-linen cloth to hold the

replacement bulb and insert it into the holder.

5. Replace the safety tempered glass: rest it on the clip while pushing it toward the bulb holder in order to make room for the glass to rest on the other end.
6. Turn the lamp or fixture back on.
7. Contact your local council for information on how to dispose of the old globe.

If you are planning to install halogen lights as general room lighting in your home, think again as you could substantially increase your lighting costs. Install 240 volt Compact Fluorescent downlights or a pendant light with a CFL lamp.

## WHY?

Electricity used for lighting in an average Australian home generates around three quarters of a tonne of greenhouse gas and costs around \$160 per year. A home with many halogen downlights could easily spend twice this amount on lighting. Switching a 50 watt lamp to a compact fluorescent or LED alternative will save you money over the life of the globe.

**Switch 10 downlights to 20 watt globes, LEDs or compact fluorescent alternatives and each year:**



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