

How to reduce household energy use

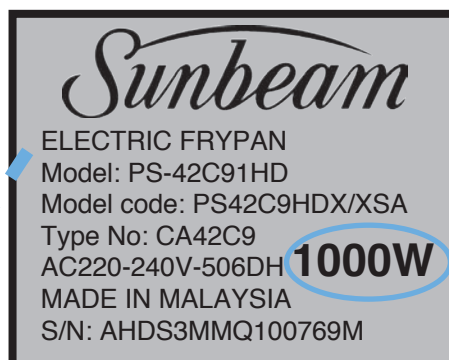
BACKGROUND

Using less energy saves you money and is good for the environment. In this BUSH TECH, we focus on how to choose and use appliances in the home to reduce energy use. Most of the energy used in Australia's big cities is generated by coal-fired power stations, whereas most remote communities burn gas or diesel for their power. Coal, diesel and gas, all non-renewable resources, produce greenhouse gases such as carbon dioxide. These resources must be mined and transported long distances at a great financial and environmental cost. A significant amount of the demand for non-renewable energy comes from households. What appliances we use and how we use them in the household affects the amount of energy consumed and the degree of harm done to the environment. This BUSH TECH is a brief guide to choosing appliances that will save you money on your power costs and lessen your environmental impact.

HOW TO CALCULATE APPLIANCE RUNNING COSTS

The amount of energy different appliances use varies greatly. The easiest way to determine how much energy an appliance uses is to look for the number of Watts on its label. The running cost of an electric appliance is measured by multiplying the Watts by the time it is used and the price per unit of electricity. The current price per kilowatt hour of electricity in the Northern Territory is 19 cents for standard meters and 21 cents for pre-payment meters.

FIGURE 1



For example, the appliance in figure 1 has a 1000 Watt input. To cook with this electric fry pan for 1 hour will use 1 kilowatt hour of electricity. Therefore the running cost of this electric fry pan is about 19 cents per hour.

Some appliances that offer the same energy service such as cooling, differ hugely in their energy consumption. For example when used for 6 hours a ceiling fan will use only half a kilowatt hour of energy compared to a split system air conditioner that would use 12 kilowatt hours.

FIGURE 2



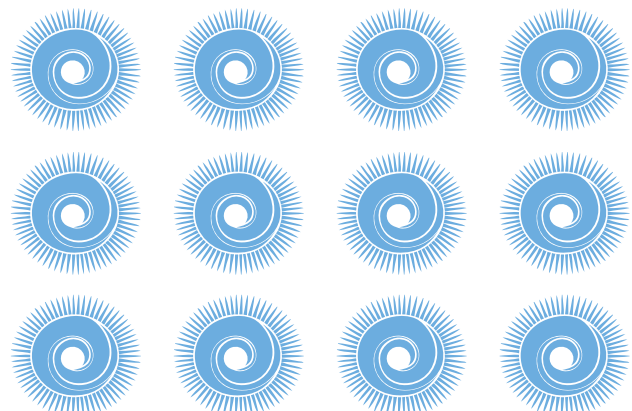
70 Watt ceiling fan on for 6 hours uses 0.5 Kilowatt hour

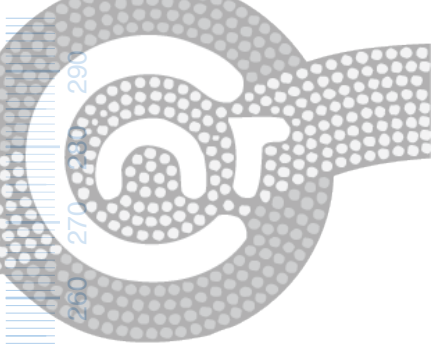


= about 10 cents



2000 Watt air conditioner on for 6 hours uses 12 Kilowatt hours = about \$2.40





The average Australian household emits 14 tonnes of carbon dioxide (CO₂) per year. It is estimated that 1 kW of electricity is equal to 0.792 kg of CO₂. By choosing to use your ceiling fan rather than your air conditioner you could effectively save 3324 kg of CO₂ from polluting the atmosphere. This is equivalent to taking one car off the road for a year.

CHOOSING APPLIANCES

As well as looking at how much energy an appliance uses, it is important to choose an energy efficient appliance over one that is less energy efficient. Many appliances today are required to carry an energy rating label that allows people to compare the energy efficiency of different models. The label gives the appliance an energy rating using a number of stars. The greater the number of stars, the more energy efficient the appliance is, with six stars representing maximum efficiency. The label also shows the approximate energy consumption of the appliance in kilowatt hours per year.

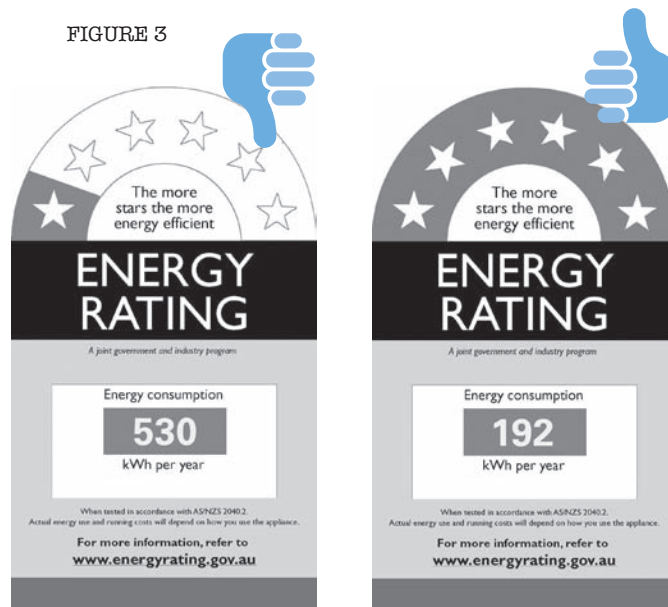
It can be tempting to buy an appliance with a lower star rating as they are usually less expensive than a more energy efficient appliance. However, the electricity costs of running the lower rated appliance over time will be much higher.

A high star rating is particularly important when purchasing appliances that operate continuously such as fridges and freezers. When choosing an appliance it is also important to choose one that is the right size for your needs. Larger appliances usually use more energy.

For appliances that use a lot of water such as washing machines, look for a model with economy cycle settings to save water and conserve energy. Front loader washing machines with separate hot and cold water tap connections usually use less water and energy.

To save energy on lighting switch to compact fluorescent light bulbs (CFL's), not only do they save energy they also last a lot longer than traditional light bulbs.

FIGURE 3



TOP 10 ENERGY SAVING TIPS FOR YOUR HOUSEHOLD

- Buy appliances that have a high energy efficiency rating, particularly those that run continuously such as fridges and freezers.
- Appliances like TVs, DVDs, and stereos often use standby power when not being used. Unplug or turn appliances off at the wall when not in use.
- Limit the amount of time you use high energy appliances.
- Turn off lights and fans when not in the room.
- Replace cracked seals on fridges.
- Use cold water to wash clothes whenever possible.
- Use fans instead of air-conditioning for cooling.
- Where air-conditioning is needed, set to middle setting (25°) for cooling, each degree colder costs 10% more.
- Close doors and windows if the air-conditioner is running (unless it's an evaporative air-conditioner when you'll need one window open).
- Have short showers to save water and energy.

REFERENCES

www.energyrating.gov.au/
www.resourcesmart.vic.gov.au/for_households/ideas_at_home.html#