ENERGY – issues paper

updated December 2010

Energy supply and use underpins modern society. At present South Australia sources its energy needs predominantly from fossil fuel supplies such as coal and natural gas. In burning these fossil fuels we gain essential energy services such as electricity and heat but we also generate the majority of South Australia's greenhouse gas emissions. It is now apparent that action to reduce emissions is more urgent than previously thought. If you want to reduce the impact that your energy use has on the environment, there are several main ways you can do this:

- Do a home energy self audit
- Reduce your energy use
- Switch to renewable Green Power
- Install solar hot water
- Install solar electricity (see separate paper)

It is useful to see how energy is used in our households. The Home Energy Action Worksheet published by the SA Department for Transport, Energy and Infrastructure shows a breakdown of energy use for a typical South Australian home:

- Water heating 35%
- Heating and cooling 26%
- Appliances 13%
- Fridges and freezers 11%
- Cooking, lighting and standby each 5%

These figures suggest where most reductions might be achieved.

House design

A comprehensive and authoritative guide on environmentally sustainable house design, construction and renovation is available in a Commonwealth Government publication *Your Home*. There are sections called Buyers' Guide, Renovators' Guide and Technical Manual. The publication is available on line at www.yourhome.gov.au. It can also be obtained from Your Home, Department of Climate Change and Energy Efficiency, GPO Box 854 Canberra ACT 2601, email buildings@climatechange.gov.au

Do a home energy self audit

Several options are available to help you identify practical ways to be more energy efficient at home:

- Use the Home Energy Worksheet to audit your energy use. Hard copy pamphlets are also available from Energy SA, Tel. 8204 1888; 11 Waymouth Street, Adelaide
- Home Energy Toolkits are held in many council libraries
- Your sustainable home – where to start is available online from the Norwood Payneham St Peters council
- For further advice, call Energy Division's Advisory Service on 8204 1888, 1800 671 907 for country callers or email dtei.energydivision@sa.gov.au.

Reduce your energy use

We all know that reducing energy use and reducing greenhouse gas emissions is good for your pocket and good for the environment. The following practical ideas are easy to implement, are low cost or, in many cases, no cost and have an immediate impact on your wallet and the environment. Please ensure your efforts to use energy wisely do not compromise your health and safety.

1. Take shorter showers

This means less energy to heat the water and less water is used – a double bonus.

2. Wash clothes in cold water

Washing clothes in cold water gets clothes just as clean as hot water in most cases and saves lots of energy. If you need a new clothes washer, check the energy star ratings. The more stars the better. Check that the machine has a cold wash option and you can change the water level to suit your load. Try not to use a dryer. If you do need to use one, spin dry your clothes well before using the dryer. New dryers also have energy star ratings.

3. Turn off standby loads at the wall

Appliances with remote controls or 'soft' switches such as TVs, stereos, computers, microwaves and some washing machines can consume considerable energy when in standby mode. Turn these off at the mainswitch/powerboard/poweroutlet when not in use, or get a watt saver power board from www.originenergy/wattstopper or greentopia.com.au.

4. Use energy saver lights

Fluorescent and LED lights use much less energy than incandescent globes or halogen downlights, and last much longer. Compact Fluorescent Lights (CFL) can replace incandescent globes, and there are some specially designed for dimmers. It's OK to turn fluorescent lights off when you leave the room – even for only a few minutes (it's an old myth that this is a waste of energy). For more info about LEDs see ATA energy saving tips.

5. Keep the fridge clean and well ventilated

Fridges and freezers need space at the top, back and sides to shed excess heat. For appliances with exposed rear coils, vacuum or wipe off dust. Ensure door seals are kept clean and seal well. If you can slide a five dollar note down the door while it is closed you need to replace your door seals. And do you really need that bar fridge?

6. Use heaters and coolers effectively

Only heat or cool the rooms you are currently using, closing off unused areas. Wearing warm clothes and heating only when needed can significantly reduce heating costs. Every one degree of extra heating or cooling of your home can increase energy use by 10%. Air conditioning filters should be cleaned regularly. Ensure you have insulation of at least R3.0 in the roof, and R1.5 in cavity walls (if the cavity can be accessed easily).

7. Control the ventilation in the house

Use special door and window seals, gap filler or door snakes to block draughts. Open windows and doors to take advantage of cooling breezes in summer.

8. Control how much sun comes into your house

Wide eaves on the north side block summer sun while allowing in the low winter sun. It is important to externally shade east and west windows in summer, using blinds, verandas or well-placed vines and trees. In winter, make the most of the sun's warmth by uncovering windows.

9. Protect your windows from the inside

Heavy lined curtains and pelmets help keep heat in during winter and keep heat out on hot summer days. Pelmets (covers over the top of curtains) are important to stop draughts caused by airflow between curtains and windows.

10. Choose appropriate cooking methods

If possible, use gas or solar energy for cooking. The direct use of gas is generally cheaper and less damaging to the environment than electricity generated from coal or gas. Whether you cook with gas or electricity, use the microwave instead of the stove where practical, and heat only the water you need in an electric kettle instead of the electric stovetop. Note that there is some concern that microwave cooking can damage food at the molecular level. Also consider the benefits of eating more raw food. For more detailed information on what you can do, refer to one or more of the following energy conservation pamphlets:

- Creating an energy efficient home
- Insulation for your home
- Smart lighting! Save energy! Save money!
- Heating & cooling
- More information about saving energy at home

Hard copies of above pamphlets are available from Energy SA, 11 Waymouth Street, Adelaide, Tel. 8204 1888. For more publications on energy see dtei.sa.gov.au/energy/publications.html

Switch to renewable Green Power

[See also ATA Green Power]

Renewable energy is energy from sources that are naturally replenished such as solar, wind, hydro, wave and geothermal. Options for clean, renewable energy sources in your home range from sophisticated solar power systems, through to simply purchasing Green Power from an electricity supplier. There are numerous Green Power options offered by retailers, but if you want to make a real difference, choose a product that has been government accredited to stringent standards and given a four star rating by Green Electricity Watch. By buying new renewable energy you are helping to support the development of the renewable energy industry and reducing the demand for electricity from the burning of fossil fuels.

As renewable energy costs more to generate currently, there will be a small increase in the amount you pay each bill. If you cannot afford the extra amount, you may choose to subscribe to one of the accredited partial green energy products that are further down the Green Electricity Watch list, and score fewer stars than the 100% renewable products. For more information on Green Power go to www.greenpower.gov.au.

Install solar hot water

[See also ATA solar hot water]

One of the best ways to reduce your energy consumption at home is by installing a solar hot water system. In most areas of Australia, between 65 and 80% of domestic hot water demand can be supplied by a solar hot water system.

There are government rebates that assist with the purchase costs of solar hot water systems, but they can change. For current information see the Energy Division and the Commonwealth Department of Climate Change and Energy Efficiency. The rebate amount is dependent on the type of system you are replacing (eg electric storage vs instantaneous gas) and the type and size you are installing (gas or electric-boosted or heat pump). For more information on solar hot water systems see the Alternative Technology Association's Solar Hot Water Guide or purchase ATA's Solar Hot Water Booklet.

Please note that you need to keep the RECs for your system if you want to increase the overall amount of solar electricity generated in Australia. RECs not kept by you can be purchased by companies to avoid installing their own systems to meet mandatory requirements.

Install solar electricity

[See our separate resources paper and ATA solar power]

LINKS

Renewable energy

Green Power – national accreditation program that aims to increase Australia's capacity to produce renewable electricity by driving demand for renewables.
www.greenpower.com.au

Green Electricity Watch www.greenelectricitywatch.org.au

Alternative Technology Association www.ata.org.au

Clean Energy Council www.cleanenergycouncil.org.au

Australian Government Department of Climate Change and Energy Efficiency – rebates for domestic solar hot water and solar panels
www.climatechange.gov.au/en/government/programs-and-rebates
- and a link to energy efficiency ratings and standards
www.environment.gov.au/settlements/energyefficiency/index.html

Energy SA www.energy.sa.gov.au

Australian Solar Energy Society www.auses.org.au

Energy Planet – a web directory on renewable energy technology www.energyplanet.info

Energy efficiency

Guide to energy efficient appliances (Federal government program)
www.energyrating.gov.au

Energy Allstars Appliances Product Database – find and compare energy efficient appliances (Federal government program)
www.energyrating.gov.au/library/details200517-allstars-database.html

Energy Star Ratings international standard for energy efficient office equipment and home appliances www.energystar.gov.au

Window energy rating - energy impact and performance of different window types in housing in Australia www.wers.net

Residential Energy Efficiency Scheme – South Australian Government scheme to help households to improve energy efficiency
www.dtei.sa.gov.au/energy/government_programs/REES.html