ENERGY SAVER
SMALL BUSINESS

Save energy and save money!

ENERGY MANAGEMENT

You might view your energy bills as an unavoidable cost of running a business, and pay them with little thought as to how they could be reduced. However, wasted energy can account for up to 10% of your energy bills, and much more in some cases. You could be saving hundreds of dollars, and it can be done surprisingly easily. Energy management means saving wasted energy, choosing the lowest cost energy sources and tariff options, and controlling the time at which energy is used to reduce your overall energy costs.

BASIC ENERGY MANAGEMENT PROGRAM

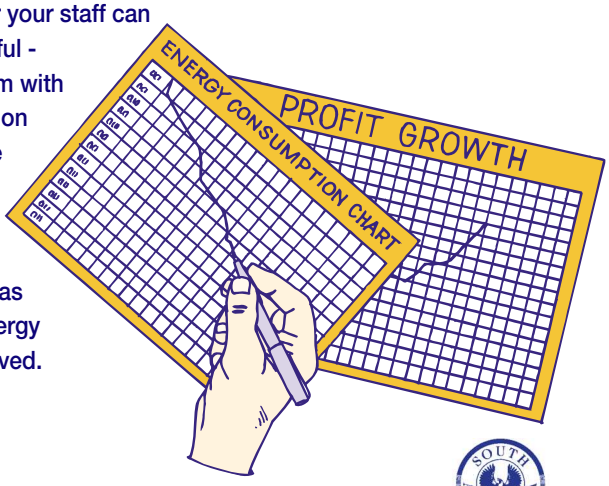
To be successful, energy management programs need an *Energy Manager.* They don't need to be an energy expert, it just means that someone takes overall responsibility for planning and implementing the program. They should be either the manager of the business, or someone who has the full support of the manager.

Energy savings can often be achieved just by making sure that equipment only operates when it is needed. This might be as simple as ensuring that lights are only switched on when required. These measures cost little or nothing, and give immediate savings.

The operating hours of equipment can be controlled manually (free, but may be unreliable), by timers (low cost, but can be inflexible), or by automatic control systems known as Building Energy Management Systems (higher cost, flexible and can give tight control).

Staff can have a big impact on energy use, and can help to identify energy savings. It's a good idea to seek their input as part of an energy audit, and to get their support for your energy management program.

Running an Energy Awareness Program for your staff can also be useful - provide them with information on how to save energy, and encourage them to suggest areas in which energy could be saved.



ENERGY SAVING TIPS

Below we outline some of the main strategies which can be used to reduce energy consumption. More detailed information is provided in other brochures of our *Small Business Energy Saver* series, or can be obtained by contacting the Energy Information Centre.

Air Conditioning

- Control the operating hours of air conditioning - use manual control, timers, automatic controls.
- Keep doors and windows closed when heating, or using refrigerative air conditioning for cooling, so that you are air conditioning the smallest possible area.
- Make sure that thermostat settings on your air conditioning are not set too high or too low - aim for 20°C in winter and 25°C in summer.
- Use insulation to keep heat in during winter, and insulation and external shading to keep heat out during summer.
- Use draught arresters and weather stripping around doors or windows, and seal up any cracks and gaps - this prevents hot air escaping in winter and warm air entering in summer.
- Locate the air-conditioner on the shady side of the building away from direct sunlight where possible.

Lighting

- Control the operating hours of lighting - use manual control, timers, automatic controls, movement detectors and light level sensors.
- Use energy efficient light sources such as fluorescent lights, especially in areas where the lighting is on for long periods.

Office Equipment

- Make sure that photocopiers, computers and printers are switched off at night and on weekends.
- When not using office equipment for long periods of time, switch it off.

- Simply switching off your computer monitor when you are not using it reduces the computer's energy consumption by up to 70%.
- When buying new equipment, make sure that its power consumption, especially on stand-by, is low. Look for equipment which has the *Energy Star* rating - this will have an automatic sleep mode, and fairly low stand-by power consumption.

Refrigeration

- Make sure that the fridge is not bigger than it needs to be, and is installed away from direct sunlight or other sources of heat.
- When buying a new fridge or freezer, use Energy Rating Labels to help you identify the most efficient units - 6 star models are most efficient and 1 star models the least efficient.
- If possible, switch off lights in refrigerator cabinets and cool rooms overnight, as they give off heat which makes refrigeration plants work harder.

Cooking

- Use microwave ovens as much as possible, especially when re-heating food.
- In commercial kitchens, restaurants and take-aways, try and limit the times at which cooking equipment is operating on full power - where possible, switch it off or turn it to a low setting when it's not needed.
- Electric fryers, hotplates and bain-maries can be expensive to run – use natural gas appliances if possible.
- Turn down the temperature of hot plates and fryers to about 140°C, or less, during quiet periods.

Water Heating

- Minimise the amount of hot water you use by fixing dripping hot water taps, and installing aerators on hot water taps and low flow shower roses.
- Kettles and 'instant' water boilers are more efficient than large urns.
- Consider going solar when buying new water heating systems - this gives savings of up to 65% compared to conventional systems.

Electric Motors

- Make sure that motors are correctly sized, and will not be running lightly loaded for long periods of time.
- Where motors are running near full load for long periods of time, consider buying high efficiency models.
- Consider using electronic speed controllers on motors driving variable speed conveyor lines, or pumps with a variable pumping rate.

Compressed Air

- Turn the compressor off after hours when you don't need compressed air, otherwise it will just be servicing leaks.
- Have the compressed air system checked regularly for leaks and repaired if necessary.
- An audit of your compressed air needs can identify other opportunities for savings.

Process Heating

- Process heating is a complicated area, and the best options for you will depend on the product you are manufacturing.
- It may be possible to achieve significant savings, and this is especially the case if you are building a new plant or refurbishing a production line.
- Recovering waste heat from production processes can also be a good source of savings.
- You should seek expert assistance to help identify the most energy and cost efficient options.

Building and Renovating

- Make sure that you incorporate energy efficient design principles, use efficient lighting, and efficient heating and cooling systems - this builds in energy savings right from the start.
- Insulate ceilings and external walls, to keep heat in during winter, and help keep it out during summer.
- Make sure that east, west and north facing windows are well shaded in summer. If you can't use external awnings, blinds or louvres, use tinted or reflective windows.

THE ENERGY AUDIT

A good place to start an energy audit is to keep some statistics on how much energy you use - it's all itemised on your energy bills. Charts to record your monthly energy consumption and costs can be obtained from the Energy Information Centre. Often just by doing this it's possible to identify some simple savings, and you will need to do this anyway to make sure your energy management program is working.

The next step is to conduct your own 'walk through' energy audit to determine *where* and *when* your energy is actually being used. You need to draw up a list or table noting down the power consumption of your electrical (in kW) and gas (in MJ/h) equipment, and the hours during which this equipment is operating. This makes it easier to identify opportunities for saving energy and reducing costs - either by reducing operating hours of equipment or by using more efficient equipment.

EXAMPLE OF WALK THROUGH AUDIT

In an office, the main areas of energy use are likely to be air conditioning (heating and cooling), lighting, office equipment, and perhaps kitchen appliances and hot water. Details of the equipment's power consumption can be found on nameplates or in instruction manuals, or can be obtained from equipment suppliers. The Energy Information Centre, electricity suppliers and gas suppliers can provide further advice.

If you are a large energy consumer, or have fairly complex energy needs, it may be worthwhile having a consultant conduct your energy audit. For a fee, energy auditing companies will conduct a 'walk through' or detailed energy audit, and prepare a report identifying and costing opportunities for energy savings.
Contact the Energy Information Centre for details of energy auditing companies.

FUEL CHOICE AND ENERGY TARIFFS ARE IMPORTANT TOO

The fuels which your business uses - electricity, gas, fuel oil - will have an impact on your energy bills. The best choice will depend on the fuels available, how your business operates, and the equipment you use.

Electricity and gas suppliers usually have a range of tariffs available to their business customers. When electricity and gas markets are deregulated, you may even have a number of electricity or gas suppliers to choose from, each offering their own tariffs. It can be worthwhile having a tariff review to check that you are on the most cost effective tariff. Often this will yield the biggest cost savings and at a relatively small cost to you.

Electricity Tariffs

Most small businesses are on the General Purpose Tariff, and pay for the electrical energy used measured in kWh (see box). Usually, the more electricity you use the cheaper it becomes. If you use a considerable amount of your electricity between 9 pm and 7 am (Monday to Friday) and on weekends, you may qualify for the cheaper Off-Peak Tariff for electricity consumed during these times.

HOW IS ELECTRICITY CONSUMPTION MEASURED?

Electrical power is measured in kilowatts (abbreviation kW). Electrical energy consumption is measured in kilowatt-hours (abbreviation kWh) - this is what you are charged for by the electricity retailer.

One kWh is the amount of energy a 1-bar radiator uses in 1 hour, or the amount of energy a 100 Watt light globe uses in 10 hours of operation.

Are you a large electricity consumer?

For larger consumers of electricity, Demand Tariffs may be an option. This is where a component of the charge is based on the monthly maximum demand measured in kW (see box). Alternatively, Time-of-Use Tariffs, where the cost of the electricity used depends on the time of the day it is used, may apply.

Can you move electricity use to different times of day?

Where a business is on an Off-Peak Tariff, Demand Tariff or Time-of-Use Tariff, cost savings can be achieved by either shifting more electricity consumption into the off-peak period, or by reducing peak demand. If in any doubt, you should seek advice from your electricity supplier or a qualified energy consultant.

Gas Tariffs

Small gas users are charged for the amount of gas they consume measured in MJ (see box). Usually the first block of gas consumed in a quarter is charged at a higher price, the cost per unit reducing for subsequent blocks of gas consumed. While there are less tariff options for gas users, it can still be worthwhile discussing tariff options with the gas retailers.

HOW IS GAS CONSUMPTION MEASURED?

The rate of gas consumption is measured in megajoules per hour (abbreviation MJ/h). Gas energy consumption is measured in megajoules (MJ). 1 kWh is equal to 3.6 MJ.

WATCH YOUR ENERGY BILLS GO DOWN

So you see, saving energy and reducing your energy bills is not that hard, is it? And remember, if you save energy you will also be helping the environment by reducing greenhouse gas emissions and air pollution.

If you want more information so that you can reduce your energy bills even further, contact the Energy Information Centre. The Centre provides free, independent advice on all aspects of energy use and savings.

ENERGY SA
101 Grenfell St &
Level 16, Wakefield House
30 Wakefield Street, Adelaide 5000
South Australia
Telephone: (08) 8204 1888 Facsimile: (08) 8204 1880
E-mail: energy.sa@saugov.sa.gov.au
www.energy.sa.gov.au

IS3429-3 ES-9/97