TCF AUSTRALIA
ONLINE ENERGY EFFICIENCY
TRAINING & MENTORING PROJECT
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Presented by

**Fact Sheet #3**

# Tips on Saving Energy in Your Business

In this fact sheet you will discover:

- *Quick and easy changes to save energy.*
- *Cost effective ways to reduce your heating, cooling, lighting and office energy usage.*
- *Simple strategies for implementation.*

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# Heating and Air Conditioning

As seen in Fact Sheet #2 - Heating, Ventilation and Air Conditioning or 'HVAC' equipment can often account for the majority of energy consumption in TCF businesses. The good news is that significant savings can be achieved with simple adjustments in the way the equipment is used.

## Low cost actions:


- Set the thermostat to around 24°C when cooling and 20°C when heating. Every one-degree change accounts for about 10% of your heating/cooling costs.
- Use fans in addition to or instead of air conditioning.
- Reduce lighting power consumption (see next section) and switch off other equipment in air-conditioned rooms to reduce the heat load.
- Keep systems well-maintained, and clean fans, filters and air-conditioning coils regularly.
- Switch off systems or zones in low usage areas.
- Minimise usage of HVAC equipment during 'Peak' billing times.


## Investments in energy efficiency:

- Install window tinting or external shading to minimise direct sunlight when cooling.
- Reduce the air leakage through external doors with weather-stripping or by adjusting automatic doors.
- Insulate the roof, walls, floor and air conditioning ducts where possible.
- Use 'waste heat' from process equipment when heating and make sure this is vented outside when cooling.
- Install high star rating inverter-style air conditioning units. Compare options at [www.energyrating.gov.au](http://www.energyrating.gov.au)

# Lighting

Lighting accounts for a significant portion of energy costs in TCF businesses and is one of the easiest areas in which you can save energy and money. If you work together with an energy auditor and a licensed electrician, up to 50% of this cost can be saved through energy efficiency.

## Low cost actions:

- Install signage or sensors in low-usage areas where lights are not already being switched off manually by staff.
- Make use of available natural light (open blinds, clear obstructions from windows, etc).
- Try removing one of the lamps in two-tube fluorescent light fittings. Often one lamp will provide enough light.
- Paint walls and ceilings in light colours to maximise internal reflection.
- Display cases and signage need not be switched on all night, if at all.
- Replace all old-style incandescent lighting with energy saver CFL lamps. Choose 'warm white' colour for a warm glow.

## Investments in energy efficiency:

- Replace T8 fluorescent lighting with T5 converters or new T5 fittings.
- Upgrade shoplighters and downlights to high quality LED alternatives.
- Replace hi-bay warehouse lighting with induction or LED alternatives.
- Install multiple light switches so lights can be turned off in unused areas.
- Install lighting controls such as occupancy sensors and light level sensors to reduce unnecessary lighting usage.

***LED Hi Bay***

***LED Shoplighter***

***T8 to T5 Converter***

# Office, Process & Other Equipment

Office and process equipment are easily overlooked when making energy efficiency improvements. Simple techniques can reduce energy wastage in computers, photocopiers, refrigerators, water heaters, air compressors and specialised process equipment.

## Low cost actions:

- **Switch equipment off when it is not in use.** Most equipment continues to use energy when not in use ('standby mode'). You can address this by simply switching off all plug-in devices at the wall. For hard-wired equipment such as hot water tanks an electrician can install a timer switch at the circuit board so items are turned off after hours.
- **Enable energy saving settings on equipment.** Computers, photocopiers, hot water boilers, and process equipment often have an energy saving mode available. Check that available energy saving modes are enabled on your equipment.
- **Ensure that compressed air systems are running smoothly.** Keep the compressor running cool, minimise the intake air temperature, check for and seal air leaks, and run a regular maintenance and cleaning cycle.
- **Reduce temperature settings where possible.** Hot water systems and other process heating systems are often set unnecessarily high – reduce the temperature set point of heating equipment wherever possible.

## Investments in energy efficiency:

- Buy high star rated equipment when upgrading.
- Install variable speed drives on motor operated systems.

***Standby power switches***


***Air compressor energy loss***


***Star rating label***

# Case studies from TCF businesses

Listed below are some of the most common and cost-effective energy efficiency upgrades available to TCF businesses.

### 1. Air conditioning system adjustments (all site types)

Air conditioning systems are often found to be running longer than necessary and at lower set-point temperatures than actually required.

> A small shop with a 6kW (input) reverse cycle air conditioner reduced the run time by 1 hour per day and increased their cooling set point temperature from 22 to 24 degrees. **These changes were free to implement and saved the business over $800 per year on electricity.**

### 2. Fluorescent lighting upgrade (offices, shops and manufacturing)

Most businesses still use regular T8 fluorescent tubes that use 36 watts or more each. Newer technology T5 or LED tubes are now available that use about 28 watts. Many businesses also have areas that are over-lit.

> A design studio previously lit with 20 light fittings (containing two T8 tubes each) changed to T5 light fittings. They also realised that five of the fittings, being in low usage areas, only needed one lamp rather than two. **The upgrade cost $1,600 and saved over $500 per year.**

### 3. Hi-bay lighting upgrade (warehouse, distribution and manufacturing)

Many businesses with large area lighting requirements (storage, workshops, etc) use regular 400 watt hi-bay lamps. These fittings can now be replaced with LED or induction lamps that use 200 watts or less.

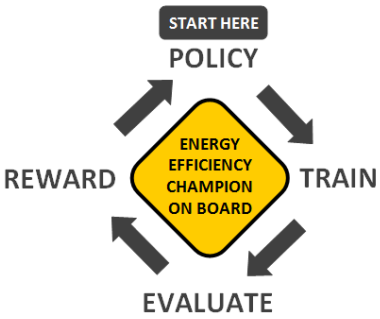
> A warehouse and distribution site changed 15 hi-bay lights to high quality LED fittings, halving their power usage. **The upgrade cost $9,000 to install and saved over $2,600 per year.**

# Strategies for implementation

## Get appropriate advice for your business

- A professional energy audit, although not strictly necessary, will help you identify a range of savings and prioritise their implementation.
- If your business has a relatively simple set-up you should be able to do your own research and obtain quotes from knowledgeable suppliers.
- Test your supplier's knowledge on energy efficiency by asking questions, checking power ratings, and measuring the outcomes of changes made.

## Build an energy efficient office culture




Set good energy efficiency policy, train staff, evaluate performance, and reward good behaviour.

***Does your workplace need an energy efficiency champion?***

## Start small and aim high

- Start by implementing some of the low- and no- cost energy efficiency actions suggested above and track their outcomes by measuring usage (Fact Sheet #1) and checking your bills (Fact Sheet #2).
- Implement cost-effective higher-cost measures once you have confidence in doing so and have engaged a knowledgeable supplier.
- Always consider various options, products and suppliers as new energy efficient technologies are constantly emerging.