Guideline
Energy Conservation

May 2013

Why conserve energy?

Electricity is a major expense for all businesses especially in the face of rising electricity prices. In addition, the majority of energy is greenhouse gas intensive and contributes to global warming and climate change.

Taking measures to reduce energy consumption (and thereby greenhouse gas emissions) can save money in the long term, improve productivity and contribute to a better environment.

Tips for reducing electricity

Completing an energy management program including the energy saving tips below can reduce energy consumption:

- Take advantage of natural light wherever possible
- Maximise intake of fresh air wherever possible
- Acquire energy efficient equipment
- Employ power save features on computers, faxes, photocopiers
- Limit use of computer screen savers
- Turn lights off when leaving the room for extended periods
- Laptop computers are more energy efficient than desktop computers, using about 15 to 25 watts compared to 40 to 50 watts
- Turn off computers, monitors and electrical equipment at the end of the day/work shift (see Table 2 for energy saving opportunities associated with computer usage)
- Clean light tubes and fittings annually – saves energy and limits need for additional lights

- Use 26 mm rather than 38 mm diameter fluorescent tubes and install reflectors
- Replace lighting with energy efficient types (e.g. LED)
- Dress for the season e.g. wear a jumper in winter to reduce air conditioning need
- Adjust the thermostat up or down by a couple of degrees depending upon season
- Only heat or cool the immediate area where practical
- Install shades over windows (especially western facing)
- Incorporate environmentally sustainable design features into new buildings.

Does NGERs apply to you?

The *National Greenhouse and Energy Reporting Act 2007 (NGERs Act)* introduces a single national reporting framework for reporting and disseminating information about greenhouse gas emissions, greenhouse gas projects, and energy use and production of corporations. Under NGERs, businesses who are very large emitters of greenhouse gases are required by law to measure and report their emissions to the government.

The threshold for reporting is presently 25,000 tonne for facility thresholds and 50,000 tonne for corporate thresholds. Organisations that exceed these thresholds must report their:

- Greenhouse gas emissions
- Energy production
- Energy consumption

The NGER Act underpins the current carbon pricing scheme by collating Australia's greenhouse gas emissions data.

Less energy = saving money

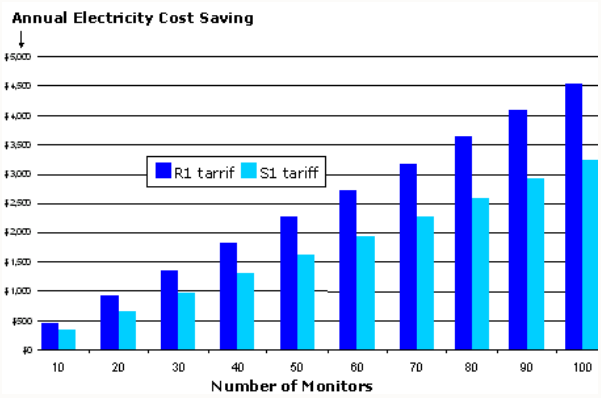
Lighting

One chain of suburban supermarkets installed a new lighting system that improved lighting levels and saved around 50% on lighting energy costs (around $22,000 per annum). It was predicted that the initial payback period would be 13 months.

The supermarket chain converted twin 58 watt lamps to single 58 watt lamps. In addition to using less electricity to light the store, the lower heat output from lighting reduced air conditioning operation costs.

Computer Monitors

Potential savings of up to several thousand dollars a year are achievable, simply from turning monitors off after hours. The following graph shows the savings that can be achieved by turning up to 100 PC monitors off after hours (e.g. 14 hours per day) and on weekends, based on 100 watt monitor (sourced from www.synergy.net.au)



The cost of implementing this electricity conserving measure is $0 and the expected payback period is immediate.

Motors

The running cost of a motor can be several time the initial outlay and in Australia, it is estimated that three-phase electric motors account for up to 40% of the total electricity consumed in the commercial and industrial sectors. Using a high efficiency motor instead of a standard motor can result in significant savings over the life of the motor.

A study undertaken in Perth showed that the cost associated with gradually replacing a standard motor with a high efficiency motor can generally be recovered in 3 to 24 months, depending on the motor operating hours (sourced from www.synergy.net.au).

Case study

Energy Conservation at Adelaide Airport

The following are examples of where AAL has demonstrated its commitment to energy reductions:

- Adelaide Airport partnered with the SA Government to install a 114 kW solar PV array on the terminal (T1) roof. The system is capable of generating approximately 160 MWh, which avoids the generation of approximately 110t of greenhouse gas emissions and saves over $30,000 each year in energy costs.
- Up to 10% of AAL's electricity consumption in T1 is certified renewable energy or GreenPower. Energy efficient design features are incorporated within T1, such as lighting schedules based on activity levels, energy efficient lighting, motorised blinds and a building management system to monitor and manage electricity consumption.
- Conducted energy audits of T1 and implemented recommendations.
- Replacement of hand dryers in toilets with energy efficient Dyson Airblades®.

Further information

- Energy efficiency webpage from the Government of South Australia www.sa.gov.au
- Standards Australia www.standards.com.au/catalogue

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