GREEN @ WORK

Your Work: Facts & Figures

Switch 'em off

The big energy users and greenhouse gas emitters in offices are lights and computers. Switching them off when they're not needed will save more than all your other actions put together.

Lighting

Lighting and office equipment also produce a lot of heat - they account for up to 15% of your air conditioning energy costs and greenhouse gas emissions.

You can make big savings in lighting without spending a cent. Just remove one tube from twin fluoro fittings (called "de-lamping"). If the area seems a bit dim afterwards, give the light fittings, diffusers and tubes a wipe over - dirt reduces their output. If it's still not bright enough try only de-lamping every second pair of lights.

Efficient lights and office equipment give off less heat, so they not only cost less to run - they'll cut your cooling bills too.

> *Lighting is the biggest bang for buck office efficiency measure. Efficient lights are important – turning them off is essential.*

If 15 halogen lights in your foyer are switched off an hour earlier at the end of each working day, the annual savings will be around 220 kg CO_2 (and around $30 on electricity)

If 6 pairs of regular fluoros in a conference room are switched off an extra 20 hours per week, you'll save 516 kg CO_2 in a year ($70 off your bill).

Put display lighting on a timer, so it switches off or dims late at night.

Security lighting that's left on provides just enough light to help burglars see, but not enough contrast for observers to identify dubious activities. Sensor lights triggered by movement are more eye-catching for passers-by, and generate less greenhouse gas. You can link the sensors to a security system to alert security services as well.

Rather than leaving lights in toilets turned on all the time, install an occupancy sensor - it'll save a surprising amount of energy. (It's a good idea to leave one light on a switch so the contemplative among us aren't left in the dark after extended periods without movement).

Computers

If your computer has got a big old-style monitor, you can cut its energy consumption in half by switching to a flat screen. Better still, switch to a laptop - you'll use 90% less electricity.

If you still haven't enabled [Energy Star on your computer](), what are you waiting for?

If your IT department tells you to leave your computers on overnight for upgrades and maintenance, it's time to upgrade your IT department - Most IT systems can be set up to do upgrades the next time a computer is switched on.

Computers in sleep mode usually use less than 10% of the energy they do when they're sitting around waiting for you or are hard at work.

Power management is a great way to make sure your computer sleeps when you're not using it - but only if you set it for a short delay time, like 10 minutes. Longer delay settings like 30 minutes are hardly worth the effort.

Screen savers don't save energy - they save screens.

> *You can just about halve the power used by your LCD monitor by setting it to run on low brightness (20 Watts compared with 34 Watts on full brightness).*

Servers chew up a lot of electricity, and they run all the time. Ask your IT team to set the monitor to shut down when not needed, and set up power management features in the server's software.

Data centres (huge banks of servers and the air conditioning they need to keep their cool) can account for as much as 40% of your office's electricity bill. You can make big savings with the very latest in data centres - virtual servers, optimised heat removal and outdoor air cooling systems.

Other equipment

Most newer model electronic equipment has low standby power (1-5 Watts, compared with older products that needed 10-20 Watts to remain idle). To find out your equipment's standby power consumption either check the manufacturer's spec sheet or manual, or measure it with a power meter. Until then switching them off at the wall will cover all bases.

Unless you know for sure that your copiers and printers have very energy efficient low power/sleep modes (ie you've read the tech specs) AND those modes are enabled AND they're operating properly, switch off your copiers and printers at the end of the working day. You'll save 10-30 kg of CO_2 per week for a large copier, 5-8 kg/week for a large printer.

> *Upgrading to the best of the latest MFD (multi-Function Device) and getting rid of the separate fax, scanner, printer and copier saves over 20-40 kg of CO_2 per week and uses less space. They also warm up quickly and use next to no power on standby.*

A typical battery charger uses around 2 watts when it's plugged in and switched on but doing nothing. Switching off at the power point or unplugging one battery charger saves about 15 kg of CO_2 each year.

Plasma TVs vary hugely in the amount of power they use - from 150 to 300 watts (0.3 kg CO_2/hour) for a 42 inch screen. Check manufacturer specifications or the specification plate on the back of the TV.

Some modern plasma and LCD TVs actually sense the brightness of the surroundings and, if it is less bright, they automatically dim the screen, saving energy.

Data projectors can use up to 300 Watts of power (producing about 0.3 kg CO_2/hour). Dimming or switching off lights when you're using a data projector can save as much energy as the projector uses.

Microwaves with display clocks use more energy to power the clock 24/7 than they do to heat up food. If your microwave has got a clock, keep it switched off when you're not using it.

A bar fridge in the meeting room generates 200 to 600 kg of CO_2 each year, depending on its efficiency.

A refrigerated drink vending machine generates around 3 tonnes of greenhouse gas each year - about half of this is due to the display lights in it. Getting rid of the vending machine cuts these emissions. If

it's really needed, insist that the provider disables the display lighting, and put a timer on it so it only runs from say 5am to 2pm each day (5am so it cools the drinks on cheap power, and 2pm because the drinks will stay cool for hours after the unit is switched off).

Emptying and switching off the work fridge over the weekend saves a little bit of energy, but if the food you chuck out goes into landfill you'll probably come up about even. You'll save as much energy overall by turning off one fluoro over the weekend.

A modern dishwasher generates around 1.4 kg of CO_2 per wash - the quick wash/economy cycle (good enough for most office plates and cups) uses about half as much energy. Unless you're doing one sink wash with no rinsing under the hot tap the rest of the day, you're better off using a dishwasher. And you'll never have to read one of those "your mother doesn't work here/clean your dishes" notices again.

If you have a dishwasher in the office kitchen, the electric hot water system under the bench could be switched off - saving 1-2 kg CO_2 per day from the hot water tank's heat loss and putting you well ahead energy wise.

Paper

Paper makes up more than 50% of office waste. Guess how much double-sided printing saves?

The best office paper is FSC certified, chlorine free and at least 50% recycled content.

> *Save water and trees - put this at the bottom of your emails: "It takes 1L of water to make 3 sheets of A4 paper. Do you really need to print this?"*

Water

The first step in any water saving project will also give you the biggest savings - find and fix any leaks, install flow restrictors in taps and showers, and improve your cooling tower performance. Once that's done you can tackle the toilets.

A single waterless urinal can save around 150,000 L per year – that's as much as 1000 water-conscious Australians use in a year.

> *Urinals account for up to 20% of a commercial building's water use – and they account for around 2% of Sydney's drinking water use!*

Over 10 years a 1-star rated toilet will use 100,000 litres more water than a 4-star toilet. 4 stars – don't settle for less!

Recycling

> *Recycling paper and plastic is great, but using less is always better.*

Alkaline batteries are now being collected for recycling in Australia – don't chuck 'em anymore!

Recycling fluorescent tubes means up to 99.9% of the mercury in them can be reused – and stay out of our waterways.

A tonne of recycled paper saves 13 trees, 2.5 barrels of oil, 31,780 litres of water, 4 tonnes CO_2 and 4 m3 of landfill.

Old mobile phones don't die – they just leach heavy metals into our waterways. Call [mobile muster](#) to collect your old work phones today.

Food & drink

Over-catering by providing too much food in forms that cannot be stored for later use adds to the 'embodied' emissions of food. And if the food waste is dumped in landfill, it will generate more greenhouse gas. Each kilogram of food disposed of to landfill generates the equivalent of 0.9 kg CO2.

Composting organic wastes is far preferable to disposing to landfill - each kilogram of food diverted from landfill avoids 0.9 kg of greenhouse gas emissions. But unless you produce a lot of scraps in your office, or you've got a team of keep composters on staff, you might want to donate your peels to a nearby café that takes part in a food waste collection and composting scheme.

> *A large urn generates more greenhouse gas in an hour than 20 fluorescent lights do. Insulated jugs or 'pump' units are the lowest impact option by far for hot or cold drinks at meetings.*

Chilling water only takes about a quarter as much energy as boiling water does, but chilled water units lose energy to the air around them too. Bottled water coolers generate 0.16 kg CO2 per day from standby losses while units connected to mains water produce from 0.04 to 0.4 kg CO2/day. Removing an unnecessary fluorescent lamp would offset this much greenhouse gas.

Units that deliver both hot and chilled water use a lot more energy on standby - around 2.5 kg CO2/day - than separate units do, because of inadequate insulation between the hot and cold tanks.

Using a coffee mug instead of a disposable one will cut your caffeine-related waste by more than 95% over the life of the mug. But making a ceramic cup takes so much energy you'll have to use it about a thousand times before pays for itself in energy terms.

Re-usable mugs can be significantly lower in greenhouse impact than disposable cups, but it depends very much on how much hot water and energy is used to wash the mug, and how long you use it for. Re-usable plastic mugs that can eventually be recycled are probably the best option - less waste, less energy to manufacture and less energy wasted heating them up in the dishwasher.

Transport

Idling in traffic jams adds about 13 million tonnes of CO2 to Australia's annual emissions. Off-peak commuting makes a difference.

Driving an average car produces 0.33 kg CO2 per km. Compare that to:

- Hybrids or very efficient cars produce - 0.14kg CO2/km
- Catching a bus - 0.008kg per person
- Catching a train - 0.003kg per person
- Walking or riding - 0, unless you need a packed lunch/Sherpa.

(Note: the bus and train figures are for regular scheduled services - extra peak hour services have a greenhouse impact around 20 times greater per person)

If you hop in a lift that's already traveling, the impact is small (less than 0.01kg CO2 per trip) - because the weight of the lift is large compared with the weight of a person.

If you call and ride in an otherwise empty lift, the impact could be up to 0.5kg CO2/trip, depending on how far the lift travels.
On average, a short trip (one that you could walk) produces around 0.1kg CO2.

Replacing the odd interstate flight with a video conference saves a huge amount of transport energy. One hour of videoconferencing generates less greenhouse gas than one person flying 10 kilometres.

A return flight from Melbourne to Sydney produces up to 270 kg CO2. You'd have to leave a fluorescent light switched on for 9 months straight to do the same amount of damage.

> *People who cycle to work tend to have lower levels of stress, anxiety and depression. They've got better legs too!*