

A STRUCTURED APPROACH

Switch-off campaigns are a simple, low-cost approach to reducing energy consumption across a business. CitySwitch has developed this toolkit to provide a simple set of steps to an effective campaign to get everyone to switch off equipment and appliances in the office when not in use:

1. Measuring and Auditing
2. Identify Actions
3. Communicate
4. Feedback and Reward

1. Measurement and Auditing

In order to prepare for a switch-off campaign, it is useful to identify what savings could be achieved by the behaviour you are fostering in your workplace, rather than using hypothetical or averaged figures. These numbers can be collected easily by undertaking a simple energy audit.

- These audit toolkits will help to identify and list all the items to go into the calculations
 - > Energy Audit Toolkit – Office Equipment
 - > Energy Audit Toolkit – Lighting
 - > Energy Audit Toolkit – Lighting Control
 - > Energy Audit Toolkit – Hot Water
- The cheat sheet calculations provide a basic guide to identify potential savings from first principals, including using a power meter (see box on page 2)
- CitySwitch has also developed a simple Computer Energy Management (CEM) Tool (MS Office Excel spreadsheet), based on the averages of many different models.

The purpose of the first audit is to set a baseline for your office.

- Wait until everyone has left for the day so as to keep your audit a secret
- Either count all the equipment in your office, or use a sample
- Use the calculations cheat sheet to determine the real impacts of equipment that was left on
- If using the Computer Energy Management Tool to make estimates, enter the following in the green inputs area:
 - > total number of computers
 - > total number of monitors
 - > total number of computers left on
 - > total number of monitors left on
 - > electricity tariff (found on electricity bill) in cost/kWh

The Tool will calculate:

- percentage of computers and monitors left on
- annual carbon emissions (kg) associated
- equivalent number of black balloons associated (see box top right)
- equivalent number of km travelled in a car
- annual costs to the business.

REMEMBER

Only enter numbers in the 'INPUT' fields of the tool. The 'OUTPUT' fields will fill automatically.

Plan to hold another audit in two to three months and implement a range of communications in the meantime to improve the audit results.

What are 'Black Balloons'?

In Victoria and NSW, a 'black balloons' campaign was run to express the amount of greenhouse gas generated by running appliances when not in use in a visual way. This concept is intended to help make the connection between electricity use and greenhouse gas emissions. One black balloon represents 50 g of carbon dioxide gas. The campaign included some TV and cinema advertising showing black balloons coming out of home appliances and an accompanying website with energy savings advice and information.

<http://theinspirationroom.com/daily/2006/greenhouse-gas-in-black-balloons/>



SEE MORE IDEAS

This toolkit is an introductory guide to auditing, to help small to medium enterprises get started on energy efficiency. For a more comprehensive guide see the NABERS Energy Management Guide for Tenants.

A comprehensive handbook detailing all the steps in the office energy efficiency journey. It includes detailed practical advice and key opportunities for cost savings. CitySwitch Signatories can request a free printed copy of the guide from their program manager.

Visit www.nabers.com.au



CITYSWITCH DOWNLOAD

The Computer Energy Management Tool:
www.cityswitch.net.au/planning

MEASURING ENERGY CONSUMPTION FROM FIRST PRINCIPLES

- Determine the piece of equipment's average power consumption. This can be found either in the manual or stated on the device or measured in actual use
- To measure actual energy consumption, use an energy meter, e.g. PowerMate, which you can borrow from the CitySwitch program or purchase from your local electronics store. Plug your equipment into the meter at the powerpoint and measure actual power consumption in normal use. This avoids any calculation issues
- Once the average power is known, use the CEM tool or table below to convert the figures to greenhouse gas emissions and costs of electricity. When working out multiples of the same piece of equipment simply multiply the average power figure by the number of individual units
- Repeat the calculations, for the energy use, greenhouse gas emissions and costs that would be saved when/if equipment is turned off or switched to energy savings mode, for example:
 - > for lunch time (1 hour)
 - > overnight (15 hours)
 - > on weekends (48 hours)

QUICK CALCULATIONS CHEAT SHEET

Energy consumed under current settings (in kWh)	=	Average power consumed (in watts or kilowatts) by the device/s	×	Number of hours left on per day
Consumption per week	=	Energy consumption	×	7
Consumption per month	=	Energy consumption	×	365 ÷ 12
Consumption per year	=	Energy consumption	×	365
Greenhouse gas emissions (in tonnes CO ₂)	=	Energy consumption	×	Emissions factor for your state*
Electricity costs (in AUD\$)	=	Energy consumption	×	Cost of electricity per kWh (found on your electricity bill)

*State electricity emissions factors
kg CO₂-e/kWh



These factors represent the full fuel cycle greenhouse gas emissions, including both Scope 2 and 3 emissions, which arise from the consumption of purchased electricity from the grid in each state. Source: Australian National Greenhouse Accounts, National Greenhouse Accounts Factor July 2013

The calculations will help develop an understanding of where energy is used and what the potential carbon,

energy and financial savings could be. For example, there are 168 hours in a week, and conservatively 50

office hours, therefore a computer left on could be unused for 118 hours or more.

2. Identify Actions

After completing the audit, you have some results and information to communicate back to your colleagues about the impact of leaving computers, monitors and other equipment or lights on when they are not in use.

The measurements and calculations allow you to be specific about your actual workplace rather than using generic figures. Using the numbers you collect, you can begin to communicate the impact of current behaviour for example:

- Switching off monitors at night could save x kg of CO₂ emissions per year
- Unnecessarily leaving the equipment on this floor switched on when we go home is wasting x kWh, y dollars, and z kg CO₂ on each year

3. Communicate

When creating messages, there are some common channels but different ways to present the information. Some channels are:

- An all staff email to let them know the results of the audit
- Speak to staff, learn about their daily habits and answer questions
- Create stickers to go next to lights and monitors that reflect the program's tone and identity
- Create posters for common areas with frequently changing messages
- Tie black balloons to items consistently left on, or to room door handles
- Allocate a 'switch off' monitor – usually the last to leave
- Send occasional email reminders, e.g. before weekends or holiday periods
- Use the intranet to share audit results and share tips
- Hold staff meetings

Make sure that equipment which must be left on is identified too. This includes servers, fridges, security systems, hot water units, exit signs, and PBX systems.

Ways of communicating your message

Here are some examples of different types of approaches organisations can take in their communications:

Positive and negative



Positive: Small rewards provide a positive association with “doing the right thing”. Be sure to continue this approach for the life of the project, as stopping the positive rewards may lead to loss of participation.

Negative: Using actual balloons can bring attention to when electrical items have been left on overnight.



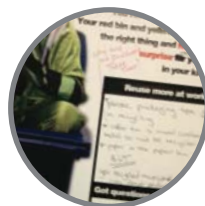
One black balloon equates to 50g of greenhouse gas. However, some have found this triggers negative reactions, if not accompanied by ‘social norming’ and peer-to-peer support by green champions.

Static or dynamic



Static: Pictures and messages that stay the same can lose their impact over time, as people stop noticing them.

Dynamic: With some kinds of signage, messages can be changed and adapted to the situation. They may reflect campaign ‘phases’ targeting different actions. This example is from City of Sydney's waste campaign where the green champions wrote notes on a specially-designed poster showing how people were progressing with the action.



Generic vs. specific actions



Generic: Messages that may reflect the tone and identity of your campaign, but do not give specific actions for people to take.

Specific: Detailed actions attached to the relevant piece of equipment are more focussed on outcomes. These messages can also be combined with actual workplace data.

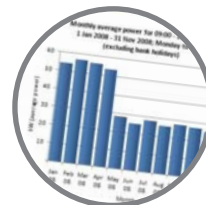


Generic vs. specific impacts for your workplace



Generic: Awareness about computers and energy use is useful in providing context and a sense of how much impact you can have. (Source: the Carbon Trust)

Specific: Figures from your floor or teams gives people something to measure against and work for. They are particularly relevant if you are doing competitions. (Source: Energy Lens)



SEE MORE IDEAS

> Fostering Green Champions at Work
www.cityswitch.net.au/championstoolkit

> Running Workplace Competitions
www.cityswitch.net.au/competitionstoolkit

E-mail template suggestion

Dear Colleague,

As part of [company name] commitment to sustainability and activity in the CitySwitch Green Office program, we are endeavouring to reduce our impact of the environment. One of the simplest ways to do this is to avoid unnecessary energy use in the office.

Last night we conducted an audit of all computers and monitors to see how many people routinely switch-off before leaving for the day. It was found that [X%] of monitors were left on and [X%] of computers were left on.

The carbon emissions associated with leaving this number of machines on, over the period of one year is equal to [Xkg/greenhouse gas or X number of black balloons] or [driving a car around the world X times or driving from Melbourne to Sydney X times]

We are going to conduct another computer audit sometime in the next 3 months and our goal is to reduce the percentage of people leaving their machines on by [X%].

[Company name] can only achieve this goal with your help.

Incentive: When we reach 90% switch-off we will celebrate with [donation to charity, staff morning tea, etc]

4. Feedback and Reward

As behaviour starts to change, or when switch off targets are reached, give staff recognition for their efforts. The formats are unlimited, but some possible approaches include:

- graphs or results displayed in common areas like kitchens
- e-mail circulars or printed newsletters
- energy / audit statistics on computer desktops
- achievements posted on electronic screens in reception areas
- energy / audit / switch-off statistics provided in team meetings
- donation to charity of the amount of money saved in the next audit, when a high switch-off percentage is achieved
- morning tea or lunch to celebrate reducing the percentage of equipment left on
- promote a case study through CitySwitch and achievements celebrate externally – e.g. on the company website, annual report, sustainability report or media releases



RINSE AND REPEAT

Consider running your switch-off campaign annually, or scheduling another switch-off campaign focussing on different areas or equipment



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