SMALL BUSINESS, Big Opportunity

SUSTAINABLE GROWTH

Jon Dee

sensis®

"How can your business make an impact on the economy, society and your environment? What does sustainability mean? And, more importantly, what does it mean for small businesses? This timely and relevant book provides the answers."

— Suzi Dafnis, Community Director
Australian Businesswomen's Network www.abn.org.au

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Small Business, Big Opportunity:
by Rob Hartnett
Published 2006

Small Business, Big Opportunity:
Winning the right customers through smart marketing and advertising
by Rob Hartnett and Karina Keisler
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by Jon Dee
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Sensis commissioned Jon Dee to author this guide and is proud to present this free resource as part of its commitment to sustainable business practices.

Contents

"We all know that we need to change our habits to protect the planet. This book really demonstrates how doing that can also be good for business. For small businesses operating on small budgets – every business practice needs to deliver value. This guide to 'Sustainable Growth' shows us how."

— Michelle Gamble, CEO
Marketing Angels www.marketingangels.com.au

"As much a valuable handbook on crucial environmental issues as a sustainable growth manual for small business, but certainly a comprehensive database which opens the door for SMEs that want to save money, reposition their brand and prepare for the 'beyond business as usual' era.

Dee has provided up to date information, relevant Australian and international examples and identified the importance of leadership and who is providing it.

'Sustainable Growth' explains how reducing resource use, managing waste, transport and buildings' systems and making smart energy choices will both manage your 'bottom line' and build your reputation with customers and suppliers."

— Rob Gell, environmental geographer and sustainability consultant.
Director, World Wind Pty Ltd. www.worldwind.com.au

"Plain-talking and straight-shooting, Dee's book covers all the 'sustainability for SMEs' bases in an effortless, easy-to-read, manual-style format. Comprehensive, sensible and convincing, it's an inspirational book for any small business owner that thinks they don't have the time or expertise to become sustainable.

Throughout the book, Dee zeros in on the legislation, organisations, regulations, myths, technical terms and concepts that are specifically relevant to SME owners, which will no doubt see 'Sustainable Growth' get passed from business-owner to business-owner around the block."

— Kate Hennessy, Features writer
Nett Magazine www.nett.com.au

Message from Bruce Akhurst

Chief Executive Officer, Sensis

Welcome to the second print run of *Small Business, Big Opportunity: Sustainable Growth*, a free resource for small and medium enterprises in Australia.

We first launched the *Sustainable Growth* book in May 2010 and distributed nearly all 50,000 copies in the first six months! We decided to print extra copies because we wanted to continue spreading the word about environmentally sustainable business practices. Also, the growth and prosperity of the SME sector is key to our success. By supporting this sector to operate more efficiently, we're investing in the long-term prosperity of new and existing customers.

At Sensis, we have been helping Australians find, buy and sell for more than 130 years through our Yellow Pages® and White Pages® directories, which generates significant economic value. Our products play a vital role in delivering customers to small businesses throughout Australia and as such play an important role in contributing to Australia's economic prosperity.

Today, Sensis' multichannel network spans across print, online, mobile, over the phone, and new devices including the iPhone, iPad, Android phone and Telstra's T-Hub®. Our content is available via search engines including Google™, Bing and Yahoo!, and information can be shared from online to mobile and social networking sites. Our network connects people with businesses, services, government departments, community organisations, individuals and local information, anywhere, anytime and in any way people choose.

In the same way we recognise the importance of connecting people with information, we also understand that sustainability needs to be at the heart of our corporate strategy, guiding our behaviour and daily operational decisions. This means how we do things at Sensis is just as important as what we do.

We're proud of our sustainability achievements, such as the carbon neutral certification of our Yellow Pages® and White Pages® print and online directories through the Australian Government's Greenhouse Friendly™ program.* The carbon emissions created through the production of our directory products from 1 February 2010 will be offset through accredited providers and projects in Australia.

We made environmental sustainability the topic of this book to help small businesses understand how to save resources and become more sustainable. *Sustainable Growth* follows the popular *Small Business, Big Opportunity* advertising and marketing editions we published in 2006 and 2008. We have proudly given away 130,000 copies to SMEs all over the country free of charge.

You can download both books online at www.about.sensis.com.au/small-business along with other useful resources for your business.

On behalf of us all at Sensis, I wish you every success with your business.

Kind regards,

Bruce Akhurst

* The Greenhouse Friendly™ program transitioned to the National Carbon Offset Standard, Carbon Neutral Program on 1 July 2010.

Introduction from Jon Dee

Founder and Managing Director, Do Something!

Why should you read this book? After all, you're incredibly busy and your first priority is to look after your customers and your business' bottom line.

If that's what you're thinking, then this book is for you. It has been written to help Australian businesses, especially small and medium businesses, increase their efficiency and productivity. Caught up in daily management, most of us are too busy to explore the many ways we can do more with less. But consider this: in many cases, using fewer resources will save your business money. So you can help the environment, support your community and make more money all at the same time.

Business sustainability can:

- enhance operational efficiency
- improve productivity
- save you money.

It's not just about helping to create a sustainable environment; it's also about maintaining a sustainable business and a sustainable society. Businesses need to take into account the expectations, standards and laws of the communities in which they operate. As such, this book shows you that being a sustainable business is about building sustainable relationships with your employees, customers, business partners and communities.

The move to sustainability in business is gathering momentum across the world and Australian SMEs are discovering that companies already on the path to sustainability increasingly prefer to do business with other sustainable companies. That's why understanding sustainability has become a vital part of continuous business development.

This book is also about positioning your business for the future. The world is starting to put a price on carbon pollution and your customers will start to prefer doing business with companies that are sustainable. If you don't prepare and adjust for these changes, then the opportunities for your business could be severely undermined.

Your business has the potential to make a real and positive difference to the environment and at the same time enhance its bottom line. *Small Business, Big Opportunity: Sustainable Growth* shows you how. In many cases, the tips and strategies in this book do not require significant time, money or resource investment.

For the modern and efficient business it's not a case of having a successful company OR a healthy environment. In a truly sustainable world, you must have both.

Jon Dee

Understanding the bottom line

‘It makes good business sense to pay attention to the social and environmental bottom line.’

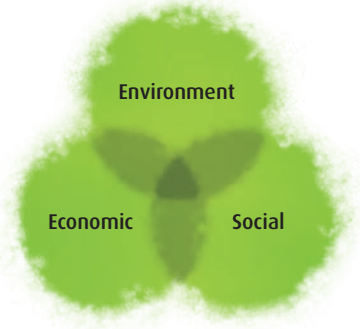
1

Sustainability: a turning point for your business

Sustainability is defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'[1] Sustainability is simply ensuring that economic, environmental and social developments go hand in hand.

1 Report of the *World Commission On Environment And Development: Our Common Future,* The Brundtland Commission, United Nations, 1987

The three elements of sustainability



Being sustainable means taking into account the impact your business has on the environment and communities in which it operates. By paying attention to the social and environmental bottom line, you can run your business in a more efficient and effective way. This can have a positive impact on your financial bottom line and it makes good business sense.

Sustainability expert John Elkington coined the term 'triple bottom line' and argued that there should be three bottom lines:[2]

1. The 'profit' bottom line which is a measure of the traditional 'profit and loss' financial bottom line.
2. The 'people' bottom line which is a measure of how socially responsible a business has been.
3. The 'planet' bottom line which is a measure of how sustainable and environmentally responsible the business has been.

This book focuses mostly on helping businesses to understand environmental sustainability and how to adapt it to your business so you can start making changes and saving money by using fewer resources straight away.

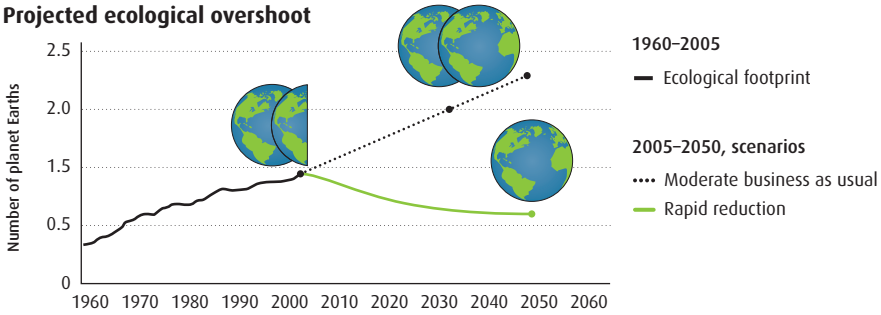
All of us understand the basic concept of living within our means. If we spend more than we earn then at some point we hit the wall financially. However, when it comes to the environment and our use of its resources, the people of the world are not living within their means.

According to the Global Footprint Network, we currently use the equivalent of 1.4 planets to provide the resources we use and to absorb the waste we produce.[3] This is not sustainable. Using more resources than the planet can generate is called an 'ecological overshoot'.

2 *Cannibals With Forks: The Triple Bottom Line Of 21st Century Business.* John Elkington, Capstone, 1997

3 See www.footprintnetwork.org

Projected ecological overshoot



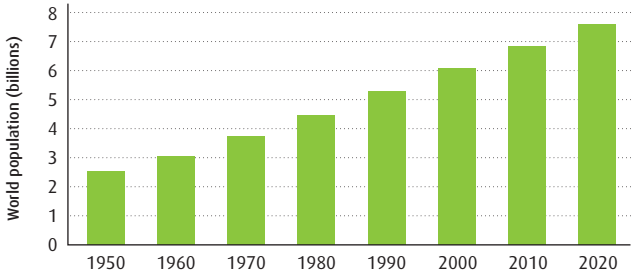
Source: Global Footprint Network[4]

Based on estimates from the United Nations on resource use and population, the Global Footprint Network predicts that between 2035 and 2050 we will reach the point where we need the equivalent of two planets to support us. If you ran your business the way humanity runs the planet, you'd go bust very quickly. Indeed, on its current trajectory, one could say that humanity is well on the way to environmental insolvency.

The fundamental issue is that as the world's population increases and consumerism continues to grow, the demand for the planet's limited resources will also increase.

In 1950, global population stood at 2.55 billion people. In 2010 it is more than 6.8 billion and by 2020 it is estimated that it will be 7.6 billion and will exceed 9 billion in 2050.[5]

World population growth since 1950



Source: US Bureau of the Census Total Midyear Population for the World. See www.census.gov

4 See www.footprintnetwork.org

5 Total Midyear Population for the World. See www.census.gov (US Census Bureau)

The 1950s signalled the beginning of a consumer spending boom that started in the USA and quickly spread across the globe. This consumer-led boom generated major improvements in the quality of people's lives but it also changed the way we interacted with, and impacted on, the environment.

Case study: Sensis – Sustainability Strategy and Green Office Champions

The team at Sensis believe *how* they do business is just as important as what they do. They are committed to a sustainable future, which means they make decisions that consider the environment and community impact, as well as the cost. Sustainability is now integral to everything Sensis does.

Sensis introduced the Green Office program in 2003 to encourage employees across the country to make simple changes in the office to lessen the company's impact on the environment.

Green Office Champions around the business encourage their co-workers to 'Switch Off', 'Use Less' and 'Recycle'. They have implemented programs such as the 'Turn it off' campaign, where they undertook an audit of computer monitors after hours and left a small reward for people who had switched their monitors off. This campaign generated talk among employees the next day and provided an incentive for people to turn their monitors off at the end of the day. This not only saves Sensis money, it also reduces the company's environmental footprint.

Today, it means that the world is living on 'environmental credit'. At some point, future generations are going to have to pay a price for the over use of our natural resources. Indeed, our current use of oil could also lead to us running out of easily accessible fuel.

The number of vehicles purchased each year has increased from less than 10 million in the 1950s to more than 50 million in 2007.[6] At the same time, oil consumption has increased by tens of millions of barrels per day.[7] In addition to using up the world's limited supply of oil, this has led to increased exhaust emissions that harm humans and contribute to global warming.

This is the only planet we've got and as businesses, we can play a key role in making sustainable use of the resources that it gives us. A failure to do so is a failure of common business sense.

Sustainability and your business

Managing your business sustainably means managing it in a way that maximises the bottom line but optimises environmental, economic and social benefits for society as a whole.

The initiatives which sit under such a sustainability strategy are what many large businesses call 'corporate responsibility', 'corporate social responsibility' or 'corporate citizenship'. It's about businesses taking into account the needs and expectations of the environment and communities in which they operate.

Business is changing

A 2008 IBM worldwide survey[8] of senior executives highlights this business shift towards sustainability. 68 per cent of business respondents said they were implementing sustainability "as an opportunity and platform for growth" and more than 50 per cent said their companies' sustainability activities were giving them an advantage over their top competitors.

This is an extremely positive development. But for any such sustainability strategy to succeed, it also has to be backed and driven by the leaders of the business.

Despite this positive shift, nearly two-thirds of businesses questioned by IBM admitted they didn't fully understand their customers' concerns around sustainability. Understanding and responding to your customers on this issue is vital for your business relationships. As it currently stands, only 17 per cent of the IBM survey respondents said they really engaged and collaborated with customers regarding their sustainability activities.

6 See www.worldwatch.org

7 See www.earth-policy.org

8 *Attaining Sustainable Growth Through Corporate Social Responsibility,* IBM Institute for Business Value, IBM, 2008. See www.ibm.com/ibvcsrstudy

The report also highlighted the need to involve employees in any sustainability initiatives. A key reason for this is your customers will increasingly be asking your employees about the actions your business is taking for the community and the environment. Properly educated, your employees can be wonderful ambassadors for your business. However, the IBM survey showed that only 27 per cent of businesses engaged their employees on their sustainability initiatives.

KPMG's international survey about Corporate Social Responsibility reporting

In 2008, KPMG interviewed the 100 largest companies by revenue in 22 countries about their corporate social responsibility reporting. In total, 2200 companies were surveyed.

KPMG found that 80 per cent of the world's 250 largest companies now published CSR reports. This compared with only 45 per cent in Australia.

However, Australia's 2008 CSR reporting rate was nearly double that of 2005, showing real growth in this area of corporate accountability.

The main drivers for corporate social responsibility reporting were reported to be:

- ethical and economic considerations
- reputation or brand
- innovation and learning
- employee motivation.

In his introduction to the report, Lord Hastings, KPMG International's Head of Citizenship and Diversity stated that CSR reporting is now "becoming the norm instead of the exception within the world's largest companies."

KPMG in Australia has developed a good practice guide for companies and organisations who want to prepare such sustainability reports. Go to www.kpmg.com.au to download a copy.

What do Australians think about businesses and sustainability?

There is a large range of research and examples that shows Australians want companies to be sustainable and want products and services that are environmentally sound.

Australians are also sceptical; companies claiming to be sustainable need to be honest and open in their communication.

How big is the SME sector in Australia?[9]

According to the Australian Bureau of Statistics (ABS), the SME sector accounts for 73 per cent of trading businesses in Australia. It employs more than 4 million people or 42 per cent of total employed persons. These business entities are broken down as follows:

CATEGORY	EMPLOYEES	NUMBER
Micro-enterprises	0–4	1,699,277
Small firms	5–19	228,313
Medium-sized firms	20–199	78,304

It is estimated that SMEs contribute 46 per cent of the value of Australia's domestic production.

In 2008, Unilever Australia commissioned AMR Interactive Research and Newspoll to look at Australians' attitudes towards corporations and sustainability. It found:[10]

- 90% wanted Australian businesses to invest more in sustainable practices
- 72% thought companies had a broad responsibility to act responsibly
- 81% thought companies could still make a profit while being environmentally responsible and taking the welfare of their workers into consideration
- 64% thought companies needed to focus on sustainability to maintain their future profits

9 See www.abs.gov.au (ABS Sources: Cat. No. 8165.0, Cat. No.1321.0, Cat. No. 8155.0, Cat. No. 6202.0, Cat. No. 81550.0)

10 *Sustainable Australia?,* Unilever, AMR and Newspoll, 2009. See www.unilever.com.au

- 69% believed that businesses needed to prove their sustainability credentials in order to maintain future profits
- 75% believed there was a need for more sustainable products
- 37% said they were sceptical about the sustainability claims found on products
- 71% said they hadn't bought a certified or sustainable product because they hadn't noticed them.

The Net Balance / Australian Fieldwork Solutions (AFS) SME Sustainability Index

The Net Balance / AFS SME Sustainability Index was compiled from interviews with 800 decision makers from across 14 industries, with companies that employ five to 199 people.[11]

When asked which challenges they considered a major concern for their businesses, compliance and economic sustainability issues scored highest:

- maintaining revenues – 74%
- finding the right talent for your industry – 70%
- meeting government regulations – 55%.

However, the results also suggest that some Australian SMEs were not yet fully aware of the cost saving benefits that come from improving the efficiencies of their operations. 6 out of 10 SMEs did not consider energy efficiency a major concern when it came to saving money, yet this is one of the easier money-saving actions businesses can implement as part of their sustainability strategy.

There's an old saying that 'waste is another word for lost profit', yet only a third of SMEs had a major concern about managing their waste. And despite the extensive media coverage about the need for businesses to reduce their greenhouse emissions, only 25 per cent of SMEs said this was a major concern.

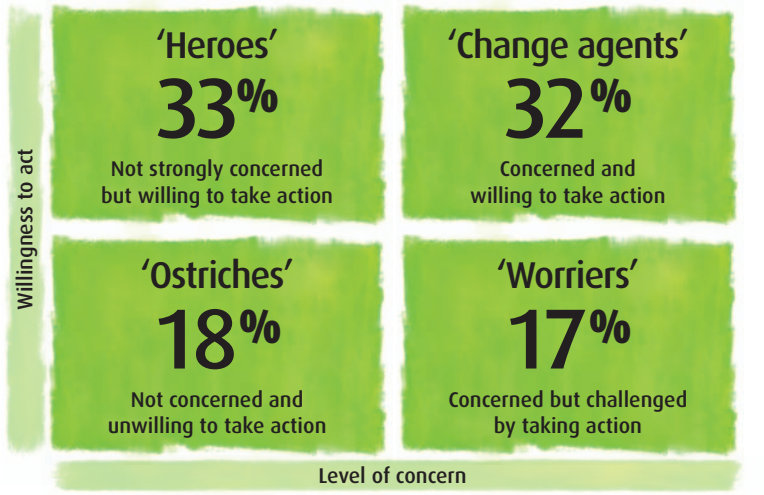
The survey did, however, uncover some positive indications. On the recruitment front, 26 per cent of organisations nationally said a 'sustainable image' helped them to recruit the best employee talent. The Index found that 'finding talent' ranked as one of the top priorities for SMEs with 70 per cent of companies surveyed saying it was a major concern for them.

11 See www.netbalance.com/reports/SME-Report.pdf

On a very positive note, 65 per cent of SME managers said they wanted to take action on climate change. Of particular note was that one-third of SMEs were not strongly concerned about climate change but were willing to act, with a further 32 per cent both concerned and willing to act.

The breakdown is shown in each quadrant below.

SME interest in sustainability



Source: Net Balance / AFS SME Sustainability Index[12]

The research showed there was a gap between perception and reality when it came to how SMEs saw themselves on environmental issues. Asked if their business was 'environmentally friendly', 72 per cent of those surveyed indicated that they were. However, the term 'environmentally friendly' is open to broad interpretation. When the actions they claimed to be undertaking were reviewed, less than 15 per cent were actually undertaking relevant activities that are sustainable enough to be considered environmentally friendly. Clearly there is still a long way to go.

According to the Index, those SMEs that had undertaken sustainability-related actions had experienced cost savings. Furthermore, 70 per cent of SMEs surveyed said they were moving forward on sustainability-related initiatives.

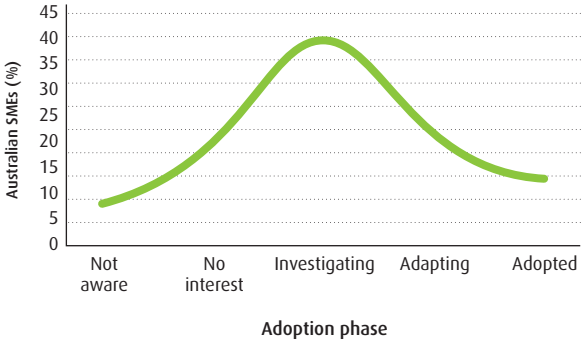
12 See www.netbalance.com/reports/SME-Report.pdf

Those who were experiencing success were very positive about the sustainability results that were being obtained. New business opportunities, manufacturing efficiencies, improved employee morale, cost savings and resource savings were just some of the benefits outlined by SMEs interviewed by AFS.

The Index showed that more than half of all SMEs were being influenced in some way to become more sustainable. The major influencers for SMEs were their internal cultures or promoters offering sustainable alternatives.

Sustainability adoption curve

Self-assessment – October 2009



Source: Net Balance / AFS SME Sustainability Index[13]

The results also show more than one in five SMEs were being pressured directly by customers (including government procurement) to be more sustainable.

How will sustainability benefit my business?

Embracing environmentally sustainable practices in the workplace goes hand-in-hand with many benefits for SMEs:

- the public is behind the need for social and environmental change
- the public want change that is driven by government and businesses
- the public want to see leadership that brings about real and measurable change
- change represents new opportunities

13 See www.netbalance.com/reports/SME-Report.pdf

- change can be a driver for good
- change can create new jobs
- change encourages new ways of designing and manufacturing products
- change inspires innovation
- saving resources can also save you money.

It is reasonable for Australians to want the same lifestyle and opportunities they have right now, but, as the Unilever research noted earlier reveals, they want business to fix the problems caused by their current lifestyles. This is where the opportunity lies. Businesses that respond to this concern with a price-sensitive quality product or service that makes a difference will stand a better chance of getting a sale.

Case study: Toyota Prius – the petrol/electric hybrid car

Prior to the release of the Toyota Prius petrol/electric hybrid car, there was no real environmental alternative car that had mainstream appeal and potential.

Even though the Toyota Prius is more expensive than similar-sized cars, Toyota has sold more than 1.5 million of the vehicles worldwide and 13,000 in Australia since the car first went on sale in 2000.[14]

All companies need to look at the potential for change within their own organisation. Within the markets currently serviced by your business, what is your 'Prius equivalent' product or service that your business could offer that your competitors aren't? Companies who take such change seriously stand to improve their reputation and commercial opportunities from 'first-mover' status – particularly as the corporate sector increasingly moves towards a more sustainable way of operating.

14 Figures represent sales at January 2010

Sustainability benefits for SMEs

1. **Contain costs**
   Being as efficient as possible in your use of energy and other resources reduces your overheads as well as input costs. By doing so, when the prices of those commodities go up, you are not as exposed to price fluctuations.

2. **Improve relationships with suppliers**
   Reducing the environmental and social impact of your supply chain is a joint journey that you undertake with your suppliers. When SMEs set out on this journey, they tend to build closer and more positive relationships with their suppliers.

3. **Attract and retain employees**
   Due to the education they've received at school, younger people tend to be far more aware and 'savvy' about social and environmental issues than older people in the workforce. If your business is serious about attracting and retaining the younger, socially aware employee, then they need to see your business is serious about sustainability.

Case study: Barb de Corti – investing in the environment with ENJO

In 1994, Barb de Corti set up a business distributing the ENJO fibre cloth that cleans with water only. She liked the chemical-free microfibre products so much she invested her life savings of $40,000 to become Australia's sole ENJO distributor.

Today, many homes use the product and the business turns over $100 million every year. With more than 1000 consultants directly selling the ENJO range, the business is generating sales from households who want to do something practical to help the environment.

4. **Reduce risk**

   Cost-cutting in the 1990s led to some companies being exposed as using overseas suppliers who used child labour, cheap labour or unfair working practices. Knowing where the goods and services in your supply chain are coming from is vital if you want to minimise threats to your corporate reputation.

   By minimising your use of energy and resources, your business doesn't just save money. You also reduce the risk of being caught out by price hikes or supply shortages.

5. **Increase market share**

   SMEs that are proactive on environmental and social issues are attractive to larger companies that have a sustainable procurement policy. If your business is supplying larger companies then there is significant potential in this space to 'go green' and benefit through increased market share.

   The general public is emotionally engaged on the issue of the environment. If your business can provide a good or service that is price compatible but has a lesser environmental impact than your competition, then you can potentially increase your market share.

How to boost your environmental performance

What makes for a high-performing organisation? In the past, such an organisation was defined solely by the success of its financial bottom line. But in today's world, a high-performing organisation is one that is:

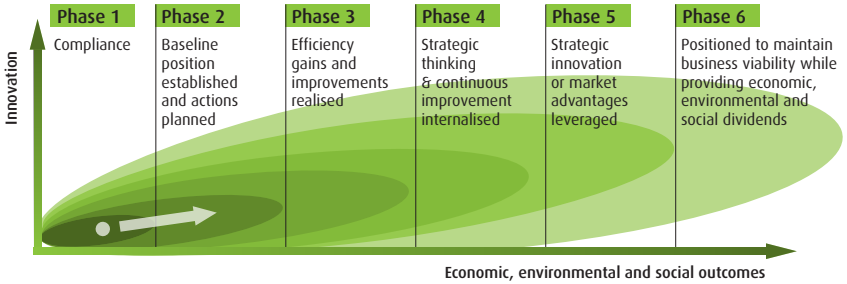
- responsive to its customers' needs and wants
- responsive to the environment in which it operates
- resourceful in times of scarcity
- adaptable in times of change
- beneficial to others through its own prosperity.

On all these measures the small or medium business can be more than a match for a far larger corporation. Just as a small car can accelerate, turn, stop or reverse in much less time than a semi-trailer, the agility of a smaller business can make up for its lack of mass. These characteristics convey the SMEs' competitive advantage in a fast evolving business environment. They also demonstrate why SMEs are perfectly positioned to take advantage of the shift towards a more sustainable way of doing business.

Phases of sustainability

Sustainability is often described as a journey rather than a destination. The Queensland Government's Department of Environment and Resource Management[15] present this journey as a six-step 'sustainability evolution'.

Corporate sustainability evolution



Source: Queensland Government, Department of Environment and Resource Management

The graph shows the path towards sustainability is also about continuous improvement.

Beginning the journey can introduce your business to a wide variety of productivity enhancements and new efficiencies. Cost savings can be identified from doing more with less, such as by being more efficient in your use of energy, water and other resources. New innovation and opportunities can arise through proper engagement of stakeholders and employees. In short, companies that embark on this journey can end up better positioned in the marketplace and future-proofed from a legislative and environmental perspective. Their business image can be enhanced and in the process, employees can also become more motivated and loyal.

Changing technology, new developments and legislation mean new opportunities and challenges will come up which will impact any plans your business puts in place. But remaining adaptable and responsive to a changing roadmap is vital if your business is to take full advantage of the potential of becoming a truly sustainable business.

15 See www.derm.qld.gov.au/environmental_management/sustainability

Sustainability: a risk-management approach

Bringing a risk-management approach to sustainability helps a business identify and prioritise what it should do. It also helps a business align sustainability actions with business goals and practices – it shows what is relevant to you and what you can control.

For example, the current government, consumer and business response to environmental concerns create the following risks that every business should consider:

- changing input costs (energy, water, waste, raw materials)
- tightening of environmental legislation and regulation
- customers wanting 'greener' products and services
- inability to meet the requirements set out by 'green' tenders
- revocation of regulatory licenses and permits.

Top tips to reduce the environmental risks and liabilities for SMEs[16]

1. Walk around your site with a fresh pair of eyes and try to identify things that 'don't seem responsible'. It's important that you address them before they address you.
2. Get an expert to undertake a risk assessment of your business to identify possible non-conformances or potential future liabilities.
3. Obtain licenses and consignment notes from your waste contractors.
4. Identify, record and monitor what legislation, permits or licenses apply to your business.
5. Identify, record and monitor other requirements to which your organisation subscribes. For example, do you have any contracts that require you to fulfil specific environmental criteria?
6. Ensure your contractors are environmentally responsible and compliant on your site.

16 Tips courtesy of Brett Miller, Senior E&S Consultant at Business SA. See www.business-sa.com

‘Carbon dioxide and other greenhouse gases warm the surface of the planet naturally by trapping solar heat in the atmosphere.’

2

The hot issue of climate change

For some time, most people have accepted that climate change is real, is already happening and is the result of human activity and not just a natural occurrence.

As the CSIRO states, "...there are no known natural factors that can explain the observed warming."[17]

The cause is straightforward. Carbon dioxide and other greenhouse gases warm the surface of the planet naturally by trapping solar heat in the atmosphere. This is a good thing because it keeps our planet habitable. However, modern living – especially in developed and major developing countries – relies on using large amounts of fossil fuels such as coal, gas and oil. The resulting pollution and other activities create a dramatic and unsustainable increase in carbon emissions. All of this activity means we have dramatically increased the amount of carbon dioxide and other greenhouse gases in the Earth's atmosphere.

17 CSIRO *Climate questions, science facts*.
See www.csiro.au/resources/climate-questions-science-facts.html

As a result, over the past century the global average temperature has risen 0.74 degrees Celsius. Average Australian temperatures have risen by around 0.9 degrees Celsius since 1950. This temperature rise appears small but small increases in temperature could lead to hotter days, more severe storms, droughts and fire and higher sea levels. This could threaten lives, industries and jobs, sustainable agricultural production, fresh water supplies and the survival of native species and ecosystems. The Intergovernmental Panel on Climate Change (IPCC) assessment is that an average global warming of 2 degrees or more above the pre-industrial level could result in dangerous and irreversible climate change with dramatic social, economic and environmental impacts.[18]

Left unchecked, this problem of global warming will only get worse. The potential impact on Australia's economy is significant – it will create both costs and opportunities for business.

Concern over climate change linked to human activities has existed for many years.

Long before Al Gore's 2006 Oscar® winning documentary *An Inconvenient Truth,* a 1958 documentary film called *The Unchained Goddess* featured a scientist talking about "… the release through factories and automobiles every year of more than 6 billion tonnes of carbon dioxide." This film referred to how "our atmosphere seems to be getting warmer," and calculations that a few degrees rise in the Earth's temperature "would melt the polar ice caps."[19]

That was 50 years ago and since then the science has become far stronger.

18 IPCC 4AR *Summary for Policymakers* Climate Change 2007: Synthesis Report, Intergovernmental Panel on Climate Change, November 2007

19 You can watch a clip of *The Unchained Goddess* at www.youtube.com

What are greenhouse gases?

The ability to sustain our way of life depends on the Sun's warmth being trapped by heat-trapping gases in our atmosphere. These greenhouse gases act like a blanket around the Earth. They trap the Sun's heat and cause the planet to stay at just the right temperature needed for us to sustain our habitat and the way we live.

Without these greenhouse gases, it's estimated the Earth's temperature would be about minus 18 degrees Celsius.

It is critical that your business has some understanding of greenhouse emissions and climate change because through laws, the supply chain, consumer demands and the price we pay for electricity, it will touch every business in Australia.

Unfortunately, too many of these heat-trapping gases have been released into the atmosphere over the past 200 years or so. Other activities such as deforestation (cutting down trees and not replacing them) also have an impact. As a result the world is retaining more heat. This is called the enhanced greenhouse effect.

It is critical that your business has some understanding of greenhouse emissions and climate change because through laws, the supply chain, consumer demands and the price we pay for electricity, it will touch every business in Australia.

Think of it as a bank; a greenhouse bank. For 200 years we've been depositing greenhouse emissions into this bank. Even if we were to stop creating greenhouse emissions tomorrow, we're going to be getting interest on those existing deposits for many years to come. That interest comes in the form of a warming planet.

Fortunately there are things we can do to help and it's not too late to make a difference. Our climate is changing but we have the time and opportunity to minimise that change. SMEs may feel they don't have enough impact to make a difference, but they do.

Which greenhouse gases are generated by human activity?

Most scientists agree that human-induced global warming is caused by atmospheric increases in the following heat-trapping greenhouse gases (also called carbon pollution):

Carbon dioxide (CO_2)

CO_2 is released through deforestation, the burning of vegetable matter and the combustion of fossil fuels such as oil (for transportation) and gas and coal (for energy generation). It is also a gas used in raw form in many production activities.

Methane (CH_4)

CH_4 is usually caused by the decomposition of landfill waste, the exhalation from cows, sheep and other ruminant animals, rice growing wetlands and fossil-fuel production.

Nitrous oxide (N_2O)

N_2O is a greenhouse gas that's generated by commercial and organic fertilisers, the combustion of fossil fuel, the production of nitric acid and the burning of biomass.

Perfluorocarbons (PFCs)

PFCs are by-products of uranium enrichment and the aluminium smelting process and are used in refrigerating units.

Hydrofluorocarbons (HFCs)

HFCs are used in fridges and the manufacturing of electrical equipment such as semiconductors.

Sulfur hexafluoride (SF_6)

SF_6 is mainly used to insulate high-voltage equipment.

When did it all start to change?

Our ability to have an impact on the climate began at the end of the late 18th century. This was the period when Britain experienced a significant transition from a manual labour and draft animal-based economy into one that utilised machine-based manufacturing.

In the process, a major transition in manufacturing, mining, transport and agriculture began that spread throughout the world. All-metal machine tools, canals, improved roads, railways and the introduction of coal-fired steam power fundamentally changed society over a period that became known as the Industrial Revolution. It was during this time humans started to create significant amounts of carbon dioxide pollution.

This was one of the by-products of using and burning coal as a source of energy. It was to have a cumulative impact on the global climate that has led to where we are today.

What about the last hundred years?

In the last century the global climate has been warming. On looking at this, scientists had to ascertain how much was caused by humans and how much was naturally occurring. Some of these increases could easily be explained by natural factors such as radiation outputs from the Sun and natural variations caused by volcanic eruptions.

The evidence linking climate change to human activity is now overwhelming. Developed countries use far more power and resources than they need to and the massive growth in emissions and resource use by developing countries like India and China could alone drive changes in the climate.

However, climate science is at a point where it can show that global temperature increases are caused by the activities of humans. Indeed, the U.S. Geological Survey states that 'human activities release more than 130 times the amount of CO_2 emitted by volcanoes.'[20]

20 See www.usgs.gov

The evidence linking climate change to human activity is now overwhelming. Developed countries use far more power and resources than they need to and the massive growth in emissions and resource use by developing countries like India and China could alone drive changes in the climate. This is why it's vital for the whole world to move in a unified way towards combating the problem.

Even though some people still question whether smoking causes cancer, the majority of us have accepted that it does. We all need to take a similar approach to climate change. The science is solid. The daily impacts of businesses and individuals is having a negative impact on the planet. The key thing is how do we balance that impact? We need to develop in a way that ensures we live sustainably on our planet, but we need to do so in a manner that underpins the viability and prosperity of our business operations.

The climate change caused by global warming will fundamentally affect the way all businesses operate in the future.

What impact will climate change have on Australian business?

The climate change caused by global warming will fundamentally affect the way all businesses operate in the future. Your decision to implement sustainable practices in your business now is a key building block on the path to dealing with this issue.

According to the futurist Dr Patrick Dixon, the debate about climate change could also be shaped by emotion just as much as by the science. His belief is that companies will go faster and further than government when it comes to combating the issue. As the ramifications of climate change begin to hit home, there's a high likelihood that consumer pressure will change every product and service sold. This is why now, more than ever, SMEs need to listen, learn and act.

Dixon argues we have known about the science of climate change since the 1950s. The difference today is that people are now emotionally engaged. As Dixon says, "Most children alive today will find their future lives are deeply affected by new patterns of disease, extreme weather patterns, and by strict controls on energy and carbon use. Future generations will judge us by how we respond (today)."[21]

21 See www.pdixon.blogspot.com and/or www.globalchange.com

These are key issues on which we must challenge ourselves as we move to deal with the problem of climate change. You need to consider how you will improve your financial bottom line while still taking into consideration the future wellbeing of tomorrow's Australians.

The physical risks of climate change are very real for Australian businesses. While climate change cannot be related to any single event, recent trends in extreme weather events show increasing numbers and severity.

For example, in 2006 when Cyclone Larry wiped out about 80 per cent of the Queensland banana crop, it hit the banana industry hard with losses amounting to hundreds of millions of dollars.[22] The knock-on impact was also felt by many SMEs in that region and consumers paid much higher prices for bananas for many months.

According to the re-insurance company Swiss Re, 2008 was one of the worst years in history, with natural catastrophes costing property insurers more than US$44 billion.

Storms caused the greatest number of claims. Industry experts have estimated those businesses in areas at risk of storms and floods due to climate change could see insurance premiums double.[23]

As the ramifications of climate change begin to hit home, there's a high likelihood that consumer pressure will change every product and service sold. This is why now, more than ever, SMEs need to listen, learn and act.

In a speech to the Lowy Institute in November 2009, then Australian Prime Minister Kevin Rudd said that estimates of increased storm surges and rising sea levels could put 700,000 business and residential properties at risk. Mr Rudd stated that the value of coastal property exposed to these risks was between $50 and $150 billion.[24]

In the longer term, businesses may find themselves unable to afford or obtain insurance because they are on a low-lying part of the Australian coast. Or they may not be able to get cover for facilities they own in a part of Asia that's at risk of flooding. These developments could well happen over time and they will have significant impacts on a wide range of businesses when they do.

22 'Cyclone devastates Australia's banana crop', *Sydney Morning Herald*, March 20, 2006

23 See http://business.timesonline.co.uk/tol/business/industry_sectors/banking_and_finance/article5949991.ece

24 *Distinguished Speaker Series,* The Hon Kevin Rudd MP, The Lowy Institute, Sydney, 6 November 2009

Upside for the business

Climate change and the responses to it present opportunities for business. For example, the Australian Government initiative to fund energy efficiency programs in homes created thousands of jobs.

The NSW Business Chamber identifies a number of ways businesses can benefit from climate change:[25]

1. Access to an increasing number of government grants that are available for businesses wishing to undertake eco-efficiency measures.
2. Potential to be a preferred supplier if your business can demonstrate it has reduced the environmental impact of its operations. If you start the shift now to becoming a more sustainably run business, then you might end up with a head start on your competitors.
3. Developing products and services that differentiate and set you apart from your competition (adopting early changes to your business practices).
4. Research and development on new ideas. Have you developed a solution for problems like flash floods, freak storms and increased wind speeds? Got an idea that reduces greenhouse emissions from other companies? If you can find ways that minimise the impact that climate change will have on the way we live our lives and run our businesses, then you could be part of a growing new business sector.

Preparing for change

While reducing greenhouse emissions may keep temperatures down and potentially avoid extremes of climate change, the overwhelming scientific consensus is that some degree of climate change is now unavoidable. In terms of timing, the predictions are that the weather and physical impacts may be beginning now and will become more noticeable over the next ten years.

The timing of regulatory and economic changes is similar. Many companies, governments and people around the world are already making decisions based on changes to the climate and the fact the world is looking to reduce carbon emissions. These changes will increase over time as governments legislate to reduce carbon emissions and provide incentives and transition plans for business. Companies will also seek to reduce the emissions in their own operations and those within their supply chain.

25 See www.nswbusinesschamber.com.au

Predicted climate change impacts across Australia forecast more extreme weather events (storms, floods, droughts etc) as well as changing patterns of temperature and rainfall (less rain and higher temperatures across Australia's south and south-east and more rain and higher temperatures across the central and northern coastal areas).

Many companies, governments and people around the world are already making decisions based on changes to the climate and the fact the world is looking to reduce carbon emissions.

Each of these areas of impact will raise different issues for businesses depending on what they do and where they operate but some key issues to consider are:

- physical impacts on buildings
- supply, transport and distribution interruption
- changing agricultural patterns
- insurance and emergency planning.

Regulatory and economic responses will be positive and negative – there will be increased costs, accounting and reporting requirements but there will also be new business opportunities and transition assistance (both in terms of financial assistance and information and advice). Some issues to consider are:

- changes to energy costs (electricity, gas, petrol, diesel)
- legal compliance with new laws
- accounting for your carbon emissions
- customer and supplier expectations
- opportunities for new business
- opportunities for assistance.

So what are you going to do about it?

Media coverage of environmental issues often focuses on natural disasters or negative impacts. Little coverage is given to the positive impact that environmental improvement can have on our businesses and society if we start to do something about it.

The response to climate change and higher energy prices will impact your business. But it is going to impact on all other SMEs too. Rather than look at this as a negative, why not turn your response to this into a competitive advantage?

It's a given that SMEs have to be sustainable from an economic standpoint. But it's also important for them to become sustainable in the way they interact with the environment and the communities in which they operate.

Think about the four key strategies for responding to climate change:

1. **Adaptation** – how can you change your practices and build resilience into your operation to adapt to the impacts of climate change?
2. **Mitigation** – how can you control your costs and contribute to solving the problem? How can you offset or reduce your carbon emissions?
3. **Research and development** – is there an area of your business where you can build extra capacity to manage the impacts of climate change, is there a new business opportunity to explore?
4. **Communication** – how do you learn more so that you are communicating effectively with your employees, customers and suppliers? Informed communication can underpin sound decision-making on this issue.

For more detailed information on climate change, what it means for various business sectors and the strategies needed to respond to it, go to Australia's CSIRO website: www.csiro.au

The bottom line

At the end of the day the move to combat climate change represents the biggest new business opportunity of the coming century. How your business reacts will decide your place in the low-carbon economy.

Case study: Sensis – Commitment to Climate Change

On 3 February 2010, Sensis launched its Commitment to Climate Change.

As part of the launch, Sensis announced that its Yellow Pages® and White Pages® print and online directories were certified carbon neutral through the Australian Government's Greenhouse Friendly™ program. This program has since transitioned to the National Carbon Offset Standard Carbon Neutral Program.

Sensis will achieve this by offsetting the carbon emissions of its directories through accredited projects and providers in Australia.

Sensis had a Life Cycle Assessment of its Yellow Pages® and White Pages® print and online directories undertaken so the full 'cradle to grave' impact of the directories could be understood. This enabled Sensis to identify opportunities to reduce its carbon emissions and play its part in tackling climate change.

Sensis also announced its target to reduce its operational greenhouse gas footprint by 5 per cent year-on-year. To help reach this target, Sensis has enabled video conferencing at 21 office locations, introduced 4 cylinder diesel cars into the Sensis fleet and is scoping new IT Purchasing Guidelines incorporating energy efficiency.

Sensis will measure and monitor these impacts annually through a detailed Emissions Monitoring Plan and report annually on its carbon footprint and detail improvements.

Go to www.about.sensis.com.au/sustainability for further information on Sensis' commitment to sustainability.

What is emission trading?

At the moment, polluters are able to release carbon pollution into the atmosphere at no financial cost. Emission trading is a program that puts a price on pollution to make it less attractive for polluters to pollute, and make it more attractive for polluters to invest in cleaner production. The idea is the more you pollute, the more you pay.

Under an Emissions Trading Scheme (ETS), a government adds up the pollution generated by top companies and divides it into emissions permits. If you're a leading company that pollutes 100,000 tonnes a year, then theoretically you would have to hold 100,000 emissions permits.

As an ETS puts a price on carbon that is polluted into the atmosphere, a company has an incentive to reduce its emissions if it's cheaper to do so than to buy credits. To ensure that such an ETS reduces the amount of carbon pollution emitted by the leading polluters, each year the government can simply reduce the number of emissions permits that they make available.

Emission trading is not new. Countries have used it in the past to reduce nitrous oxide and sulphur dioxide (which cause acid rain). Australia started one of the first carbon emissions trading schemes in the world when the NSW Government established the Greenhouse Gas Abatement Scheme in 2003. Twenty nine countries are also part of the European Union Emissions Trading Scheme that began in 2005.

Measuring your carbon footprint

When it comes to measuring the size of your business' carbon footprint, you need to measure the greenhouse emissions emitted by your overall operations.

For most SMEs, all you need to do is use a carbon calculator to calculate your carbon emissions. Go to http://calculator.futureclimate.com.au for a good calculator for this type of basic reporting.

However, some SMEs may want to follow the example of their major clients by measuring their direct and indirect Greenhouse Gas (GHG) emissions in far more detail. The www.ghgprotocol.org website has information on how to measure and report on Scope 1, 2 and 3 greenhouse emissions. Swinburne University also has a short course in carbon accounting. Go to www.swinburne.edu.au/ncs for more information.

There is much focus on using emission trading to address greenhouse gases (also called carbon pollution). This is important for business to understand because emission trading for carbon is now on a scale not seen before. Carbon is so inextricably linked to so many things we do that the price impact of any emission trading activity can touch all businesses and consumers.

How will such a scheme affect SMEs?

Emission trading is designed to directly affect large polluters, so SMEs are not required to directly participate in such a scheme – unless they choose to do so.

According to the NSW Business Chamber, the ETS implications for SMEs include:[26]

- increases in energy prices
- further government regulation – potentially covering energy efficiency and energy sources
- corporate regulation – if a major business affected by an ETS is a client of your company, you could face a requirement to be 'greener' in your business operations
- supply chain dynamics – raw materials may become more expensive and companies may demand that SME suppliers become more sustainable and accountable for their environmental impacts
- consumer demands – as consumer awareness and education increases, consumers may purchase products that are seen to be 'greener' than others.

However, by reducing your emissions and becoming more efficient in your use of resources (such as electricity and gas), SMEs can greatly minimise or potentially avoid the cost of an emissions trading scheme. In the energy chapter of this book, there are a range of tips that will show you how to save money and reduce your business' energy use.

How can SMEs reduce their greenhouse gas emissions?

According to the NSW Business Chamber and other bodies, there are a number of things SMEs can do straight away as part of their response to this issue:

1. Understand how much energy is used by your business and work out ways to reduce your consumption levels. It's worth recording your efforts and results in order to show evidence of your achievements in this area.

26 See www.nswbusinesschamber.com.au

2. Assess if your business is part of the supply chain of one of the 1000 or so companies required to report under the *National Greenhouse and Energy Reporting Act 2007* (NGER Act).[27]
3. Think about how your operations would be affected if your energy prices were to go up by 20 per cent or more. Plan for such an eventuality and you will be on the front foot in your response to how climate change and regulations will affect SMEs in your industry. While you're at it, how would you respond if the cost of your raw materials went up by 20 per cent?
4. Increasingly, government grants or assistance will be available to SMEs to help them in the transition to a low-carbon economy. Your company should be on the look out to take advantage of these funding opportunities. Industry groups can assist with this and a guide to grants is available to purchase from Equilibrium OMG at www.eqlomg.com.
5. Look for the 'greener' alternative. Look at your raw materials – are they as environmentally sourced as they could be? When you're buying products and services, ask to be shown the environmentally better option and compare it with what you're using now.
6. Assess how much your customers and stakeholders are motivated by climate change and environmental issues. You might find they have implemented environmental ideas your company could adapt. If they're environmentally inclined, engaging them on this issue is a good way of showing that you share their corporate values.
7. All companies use equipment that uses energy. Obtain a power meter and measure how much energy is used by the appliances your business uses. Understanding this goes a long way to reducing the daily energy use of these appliances or to buying more energy-efficient alternatives when you come to replace them.

27 *National Greenhouse and Energy Reporting Act 2007.* See www.climatechange.gov.au

Carbon offsets – what you need to know

A carbon offset is any activity that:

- removes greenhouse gases from the atmosphere
- captures greenhouse gases that would otherwise be discharged into the air
- avoids the generation of greenhouse gases in the first place.

What type of carbon offsets should you buy?

You should look to purchase carbon offsets that are accredited to a recognised standard. The Carbon Offset Watch initiative says the best available offsets are those that are accredited under the international Gold Standard and Clean Development Mechanism. These as well as those offsets listed as eligible under the National Carbon Offset Standard (NCOS).

What should you look out for?

Carbon Offset Watch recommends that companies get a documented guarantee from their offset retailer that they will 'retire' the offset from the market on your behalf. Alternatively, they should transfer the ownership of the carbon offset to your company so that you can retire it instead, which avoids the offset being used twice.

Carbon offsets can be listed in a register that tracks their ownership. When you buy an offset, this register can record that your offset has been removed from the market. This helps to ensure that it's not sold again.

The Australian Competition and Consumer Commission (ACCC) has developed guidance for consumers and industry on the Trade Practices Act implications of carbon offset claims. Go to www.accc.gov.au/content/index.phtml/itemId/807902 for more information.

The NCOS was introduced on 1 July 2010, following the closure of the Greenhouse Friendly™ program. The NCOS provides national consistency and consumer confidence in the voluntary carbon market. It provides guidance on what constitutes a genuine, additional voluntary carbon offset and sets minimum requirements for achieving 'carbon neutrality' for organisations and products.[28]

How can SMEs offset their greenhouse gas emissions?

No matter how much a business reduces its environmental impact, it will still produce greenhouse emissions. As these emissions contribute to man-made climate change, your company may want to consider carbon offsetting part or all of your emissions.

The basic concept behind a carbon offset is that if your company generates 10 tonnes of emissions, then you fund a project that reduces emissions in the atmosphere by the same 10 tonnes. This can be achieved by funding projects that:

- reduce emissions – this can be achieved via energy efficiency projects that reduce energy use, by generating renewable energy or by capturing methane at landfills
- sequester carbon from the atmosphere – this can be achieved by planting trees or by avoided deforestation.

It may be too expensive to offset all your emissions. If that is the case, as a starting point why not look to offset your business' car and air travel emissions?

28 See www.climatechange.gov.au/government/initiatives/national-carbon-offset-standard.aspx

Boosting your performance

‘Sustainable procurement is when companies buy goods and services based on environmental and social, as well as financial aspects.’

3

Sustainable procurement: 'green up' for business growth

Sustainable procurement has enormous potential to profoundly affect the way SMEs do business.

Sustainable procurement is when companies buy goods and services based on environmental and social, as well as financial aspects. It covers everything from companies asking suppliers for information on the environmental management system (see Chapter 12) they have in place, right through to requesting details on the energy, water and carbon pollution associated with a specific product or service.

Many Australian companies have started to 'green up' their supply chain and the move is having significant ramifications for the SMEs who supply them.

In today's international economy, business processes tend to become standardised a lot faster than they used to, particularly in the area of environmental management and business sustainability. Many companies in the United States of America and Europe have well-established sustainability programs for suppliers and Australian companies are adopting these processes.

Retailers have been leaders in this area. Grocery and bulk discount operator Walmart is the single-largest private employer in the United States. In 2009 the company released a document outlining its desire 'to produce zero waste, to be supplied with 100 per cent renewable energy and to sell sustainable products.'

In July 2009, Walmart brought together 1500 of its suppliers and associates to announce plans to develop a worldwide Sustainable Product Index. As part of its desire to make 'sustainability sustainable', it announced a three-stage plan for the project.[29]

Walmart Sustainable Product Index

The following questions have been adapted from the Walmart Sustainable Product Index.[30]

Energy and climate – reducing energy costs and greenhouse gas emissions:

1. Have you measured your corporate greenhouse gas emissions?
2. What is your total annual greenhouse gas emissions reported in the most recent year measured?
3. Have you set publicly available greenhouse gas reduction targets? If yes, what are those targets?

Material efficiency – reducing waste and enhancing quality:

4. If measured, please report the total amount of solid waste (rubbish and recycling) generated from the facilities that produce your product(s) for the most recent year measured.
5. Have you set publicly available solid waste reduction targets? If yes, what are those targets?
6. If measured, please report total water use from facilities that produce your product(s) for the most recent year measured.
7. Have you set publicly available water-use reduction targets? If yes, what are those targets?

29 See www.walmartstores.com/sustainability

30 Reproduced and adapted with permission from Walmart

The first stage was a survey that was distributed to its 100,000 suppliers around the world. The questions were designed by Walmart with input from suppliers, government, academia, not-for-profits and others in the retail community, and were based around four key areas: energy and climate; material efficiency; natural resources; and people and community.

By establishing a Sustainable Product Index, Walmart aims to help its suppliers '… identify both cost savings and opportunities for new revenue.' Walmart believes this process represents a tremendous business opportunity for its company and its 100,000 suppliers.

Natural resources – producing high quality, responsibly sourced raw materials:

8. Have you established publicly available sustainability purchasing guidelines for your direct suppliers that address issues such as environmental compliance, employment practices and product/ingredient safety?
9. Have you obtained third-party certifications for any of the products that you sell?

People and community – ensuring responsible and ethical production

10. Do you know the location of 100% of the facilities that produce your product(s)?
11. Before beginning a business relationship with a manufacturing facility, do you evaluate the quality of, and capacity for, production?
12. Do you have a process for managing social compliance at the manufacturing level?
13. Do you work with your supply base to resolve issues found during social compliance evaluations and also document specific corrections and improvements?
14. Do you invest in community development activities in the markets you source from and/or operate within?

What does this mean for you? Being able to answer these questions is vital for any SME that doesn't want to miss out on an opportunity to work with a large company because it doesn't know its own environmental and social sustainability position.

Creating your own sustainable procurement system

The best place to start developing sustainable procurement processes is to ask yourself key questions and assess their relevance to the materials and services your business both purchases and sells:

1. Is there a more environmentally responsible version of the same product?
2. Does the product have any recycled content?
3. Is it made from sustainably derived materials? With regards to paper or furniture, is it certified as having come from sustainably-managed forests?
4. Is it energy-efficient? Do other versions of this product use less energy over time?
5. Can it be reused or refilled?
6. What has the manufacturer or supplier done to reduce the environmental impact of its products and services?
7. Does the manufacturer or supplier release any type of environmental reporting?
8. Has the supplier ever breached environmental regulations or used toxic ingredients in its manufacturing processes? You can search records at each state and territory environment protection agency or authority or look at the company's annual reports.
9. What has the manufacturer done to 'green up' the supply chain for its products?
10. Are they supplying products to any existing, well-known sustainable procurement scheme, such as ECO-Buy?

As you develop a better understanding of the specific elements of sustainable procurement which are applicable to your business, consideration and documentation of the following principles can form the basis of a good sustainable procurement policy.

Principle one – avoid unnecessary consumption:

1. Assess the need for making a new purchase. Consider alternatives such as refurbishment, reconditioning or purchasing a second-hand item.
2. Consider alternatives to acquisition, such as short-term hire or using a service provider.

Principle two – select products and services with the lowest environmental impact:

1. Analyse goods from a whole-of-life-cycle perspective. That means looking at everything that goes into making, distributing, selling and using a product or service as well as its end-of-life disposal. Factor in both the initial cost and also operational efficiency, expected life-span, reuse/recycling options at the end-of-life, and cost of disposal/replacement. The cheapest product is not always the most cost-effective option.
2. Look for evidence of environmental management. If a company is large enough it may have environmental certification. The most common is the International Organization for Standardization (ISO) 14000 series.[31]
3. Look for a credible eco-label, indicating the environmental claims are certified by an independent third-party (see the 'Know your eco-labels' section on page 44 for more information).
4. Give preference to products that are reusable, recyclable and/or contain recycled content. Collecting materials for recycling is one thing but your business is not truly recycling unless it's buying recycled-content products.

Principle three – support businesses to create a market for sustainable goods and services:

1. Encourage suppliers to measure and report their environmental management and actions.
2. Favour suppliers who are committed to design, production and operational processes that are more environmentally sustainable.
3. Look for suppliers who accept 'extended producer responsibility'. These suppliers will take responsibility for their product when you have finished with it.
4. Support suppliers who participate in government programs to improve environmental performance (such as the Australian National Packaging Covenant), voluntary reporting protocols (such as the Global Reporting Initiative), or industry groups promoting the uptake of sustainable business practices (such as Environment Business Australia).

31 See www.iso.org

Case study: Marks & Spencer – looking behind the label

In January 2006, UK department store Marks & Spencer launched Look Behind the Label (LBTL), a program to market the environmental and ethical benefits of its products. It was supported by an internal program to make sure products were as sustainable as possible and that marketing claims were true.

With 15 million UK customers a week, Marks & Spencer used the campaign to explain its position on environmental and social issues that mattered most to its customers. Marks & Spencer has a massive supply chain with 30,000 products sourced from 1900 suppliers who employ 100,000 people in 70 countries.

To provide an example of the impact of the campaign, Marks & Spencer worked with 70,000 producers in 12 countries to change 38 of its product lines to Fairtrade coffee and tea. Many of these businesses were SMEs. The switch to Fairtrade increased Marks & Spencer's sales and meant that £340,000 (about AU$690,000) in Fairtrade Premium went back to farmers to invest in their communities.

To communicate the change, Marks & Spencer launched an ad, backed up by real and measurable corporate change, which advised its customers: "Our coffee won't leave a bitter taste in your mouth. It's Fairtrade." You can find more information about communicating your business' commitment to sustainability in Chapter 13 of this book.

The positive reaction to LBTL provided confidence to develop a more ambitious aspirational set of aims which was launched in January 2007 as 'Plan A'. As part of the campaign, the company promotes the fact that 'there is no Plan B' when it comes to protecting the environment.

The Marks & Spencer approach to sustainability is now embedded within the company and with its suppliers. The results achieved by the company in 2008/09 include:

- 31% of the company's energy now comes from renewable sources, with the goal of being carbon neutral by 2012. Over a 12-month period they reduced carbon emissions by 18% and improved energy efficiency in stores by 10%

- in 2009, the company signed a deal to ultimately power all Marks & Spencer stores and offices in England, Wales and Scotland with renewable power
- packaging for one of its Easter Egg lines was reduced by 90% and pizza packaging was reduced by 62% (480 tonnes); non-glass food packaging was also reduced by 12%
- more than 8 million Fairtrade certified cotton garments were sold
- a recycling rate of 41% was achieved and in one year 125 million hangers were collected for reuse or recycling
- a healthier food range now makes up 30% of its total food offer
- fuel use in delivery fleets was reduced by more than 20%
- 50% of all wood used to build and fit out stores now comes from Forest Stewardship Council (FSC) sources
- the company is working with the environment group WWF to reduce the amount of water being used in product sourcing and production stages
- 44% of staff have been with Marks & Spencer for more than five years which is one of the lowest employee turnover rates in UK retail.

In March 2010, Marks & Spencer extended the 'Plan A' program to cover 180 sustainability commitments,[32] with the aim of becoming the world's most sustainable major retailer by 2015. The company also announced that 'Plan A' has helped save £50 million (about AU$82.5 million) in 2009/10.

How could your business achieve similar results, albeit on a smaller scale? Would your business be ready to react and engage in the same way if larger Australian companies you supply developed similar programs?

32 See http://plana.marksandspencer.com

Know your eco-labels

Not all green claims are the same and not all eco-labels are the same either. When looking for products and services, here are the eco-labels that you can definitely trust. Their use on a product indicates that it has been independently verified by a respected third party.

General products

The Good Environmental Choice (GEC) label certifies products that are environmentally preferable from a whole-of-life-cycle perspective compared to others in the same category. The GEC mark is awarded on independently audited and monitored criteria for environmental, quality and social performance. Go to www.geca.org.au for a list of GEC-accredited products.

Paper and wood products

The Forest Stewardship Council (FSC) symbol guarantees timber and wood products (including paper) are sourced from well-managed forests or verified recycled materials. Independent assessment is undertaken according to social and environmental standards agreed to by the FSC, which is an international coalition of timber buyers, traders and non-government organisations. For more information, visit www.fsc.org. You can also go to www.goodwoodguide.org.au to check out the Greenpeace Good Wood Guide.

Office equipment

Energy Star is the international standard for energy-efficient electronic equipment, including computers, printers, photocopiers, monitors, televisions, DVD players and audio equipment. The Energy Star label shows the equipment can automatically switch into energy-saving features such as 'sleep' mode when not in use and can also use less energy when in 'standby' mode. Go to www.energystar.gov.au for more information.

Energy-efficient appliances

The Energy Rating label is mandatory on appliances like refrigerators, freezers, clothes washers, clothes dryers, dishwashers and air conditioners. It is now also used on TV sets. Similar to the Water Rating label, it uses a star rating system to show you how efficient the product is.

The more stars means the more you'll save on electricity. The label also tells you the estimated annual energy consumption in kW/h through typical use. Go to www.energyrating.gov.au for more information.

Case study: Corporate Express & 'Pilot 'B2P'

In August 2010, a 'Pilot B2P' Galaxy study showed that 90 per cent of Australians think businesses should do more to make their products less damaging to the environment.

In response to this growing demand for 'greener' products, Corporate Express has published a sustainable procurement guide for Australian businesses. The 'Go Green Guide – for a Greener Workspace' features more than 1500 EarthSaver classified products that help Australian businesses to make more informed and sustainable choices. Corporate Express has also been active on the emissions reduction front. The company's second Sustainability Report issued in 2010 indicated that it had reduced its gross CO2 emissions by 20 per cent on the previous year.

One of the products featured in the guide is the new 'B2P' (Bottle to Pen) from Pilot Pens. Since its release, 1.7 million old PET bottles have been turned into Pilot 'B2P' pens around the world.[33]

Water-efficient appliances

The Water Efficiency Labelling and Standard (WELS) scheme is an Australian Government mandatory label for products like showerheads, tap equipment, toilets, urinals, washing machines and dishwashers. The label is similar to the energy-rating system for electrical appliances – more stars means it's more efficient. The label also gives an estimate of water consumption. Go to www.waterrating.gov.au for more information.

The Smart Approved WaterMark label is the sister scheme to WELS, certifying products and services that help to reduce outdoor water use. Go to www.smartwatermark.info for more information.

33 See www.ce.com.au and www.pilotpenaustralia.com.au for more information.

Sustainable agriculture

Fairtrade certification promotes more sustainable agriculture by paying a higher-than-market price to producers to ensure that minimum labour, environmental and social conditions are met. Fairtrade-labelled products are sourced directly from local co-operatives, putting more money in the pockets of growers. Go to www.fairtrade.com.au for more information.

Not all green claims are the same and not all eco-labels are the same either.

Rainforest Alliance certification primarily addresses ecosystem conservation and wildlife protection, though it also requires meeting minimum conditions for workers. Coffee bearing this logo is now being stocked in outlets all around Australia. Indeed, every coffee bean that McDonald's Australia use at McCafé® is sourced only from Rainforest Alliance Certified™ farms.[34] Go to www.rainforest-alliance.org for more information.

Travel and tourism

Green Globe is the worldwide benchmarking and certification program for the travel and tourism industry, including hotels, restaurants, resorts and vehicle rental companies. The certification process was developed in conjunction with the Co-operative Research Centre for Sustainable Tourism in Australia. Go to www.greenglobe.org for more information.

Sustainable fishing

The Marine Stewardship Council label certifies that seafood has been fished in a sustainable manner. The standard applies to wild-capture fisheries only, not to farmed fish. Go to www.msc.org for more information.

34 See www.mcdonalds.com.au/mccafe/rainforest-alliance

Responsible investment

The Responsible Investment Certification Program is run by the Responsible Investment Association Australasia. This certifies environmentally and socially responsible investment products and services. Go to www.responsibleinvestment.org for more information.

Organic food produce

There are seven certification organisations, each with its own logo, approved by the Australian Quarantine Inspection Service:[35]

- Australian Certified Organic: www.aco.net.au
- NASAA Certified Organic: www.nasaa.com.au
- The Organic Food Chain (OFC): www.organicfoodchain.com.au
- AUS-QUAL: www.ausqual.com.au
- Bio-Dynamic Research Institute: www.demeter.org.au
- Safe Food Production Queensland: www.safefood.qld.gov.au
- Tasmanian Organic-Dynamic Producers: www.tasorganicdynamic.com.au

In addition to these logos, there is also an Australian Government Certified mark to provide greater assurance for buyers of organic and biodynamic produce. Go to the website of the Organic Federation of Australia at www.ofa.org.au for more information. For small organic producers, you can also sign up with the BFA/OGA Small Producers Program. For membership enquiries, visit www.organicgrowers.org.au

Concentrate

Concentrated cleaning products help to reduce packaging waste and allow for better transport efficiencies. Another benefit of concentrated products is they take up less space in your storeroom.

Make sure your cleaning service or cleaning department only uses non-toxic and phosphate-free cleaning products. This can help to reduce the impact of cleaning products on the environment.

35 See www.daff.gov.au/aqis

Guides to buying green

ECO-Buy

ECO-Buy helps SMEs to 'green' their purchasing and makes it easier to integrate sustainable purchasing into daily business practices. Backed by nine years of experience, ECO-Buy aims to increase the use of green products and services. It has just launched a 'Sustainable Procurement Assessment Tool'. This useful tool helps companies to measure and assess their green purchasing programs and policy. Go to www.ecobuy.org.au for more information.

Good Environmental Choice Australia

This website details those products that have achieved certification with the Good Environmental Choice Label. It also gives useful tips and information about sustainable procurement. Go to www.geca.org.au for more information.

Ecospecifier

Ecospecifier Australasia offers an online knowledge base of more than 3500 eco-products, eco-materials, technologies and resources. It is particularly useful for those companies who want to source products for building and construction projects. Go to www.ecospecifier.org for more information.

Queensland Government Sustainable Procurement

The Queensland Government spent approximately $12 billion on goods, services and construction in 2007/2008. This website is designed to help agencies, suppliers and other interested parties to understand sustainable procurement. Go to the 'Sustainable Procurement' page at www.qgm.qld.gov.au for more information.

Green Purchasing in Australia

The Green Purchasing in Australia report is very useful for organisations who want to implement sustainable procurement into their business operations. Go to www.netbalance.com or www.ecobuy.org.au to download the report.

If suppliers offer you 'degradable' bags, these are not biodegradable (under the AS4736 standard). Indeed, degradable bags can contain metals that breakdown the bags into smaller fragments – such fragments are problematic for smaller animals.

If the sales person says their bag is biodegradable, ask for certification that proves the bag – and the printing on that bag – is compliant with the AS4736-2006 Australian standard for compostable bags.

Visit www.banthebag.com.au for more information about alternatives to plastic bags.

‘Everything your business throws away is something you’ve paid for – and you also have to pay to have it carted away.’

4

Lifting the lid on waste and recycling

What you throw away is a good indicator of how efficient your business is. If you create lots of waste, then you're not operating as efficiently as you could. Reducing waste and recycling more will save you money.

Waste is lost profit

Everything your business throws away is something you've paid for – and you also have to pay to have it carted away.

But that's just the start of it. What is paid for in waste disposal and landfill represents a small percentage of the total cost of producing waste. The hidden waste costs include:

- lost opportunities to convert waste materials into valuable finished products
- the cost of resources, like energy, that go into the processes that created the waste
- the costs of clean-up, storage and waste treatment before disposal
- employee time spent on unproductive waste-management work.

Did you know?

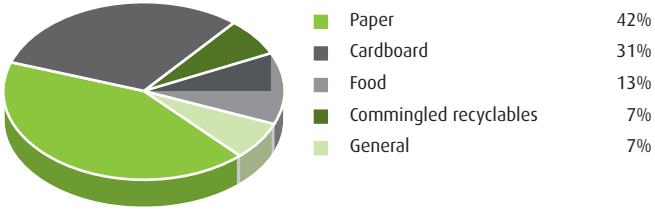
According to MobileMuster, one tonne of mobile phone circuit boards can yield the same amount of precious metals as 110 tonnes of gold ore.[36]

Where to start: conducting a waste audit

You can't manage what you don't measure. A waste audit will help your business to understand the different types and volumes of waste you generate. An audit involves collecting all waste generated over a week then sorting it to determine composition and quantity. This will enable you to understand the effectiveness of your existing approach to waste minimisation.

The waste audit will also need to identify the key areas across your business where waste is being generated. This can include everything from paper to water, right through to raw materials and packaging. It is essential that you involve your employees in this process – ask them where waste is being generated and how they think this could be reduced.

Office – waste composition



Source: ecoBiz Queensland[37]

According to ecoBiz Queensland, one office worker can throw away up to a quarter of a tonne of materials every year. How much is your office throwing away?

36 See www.mobilemuster.com.au

37 *Eco-efficiency for small business*. See www.derm.qld.gov.au

Case study: Reducing waste and saving money

A good way to initiate a review of your waste and recycling practices is to form a waste committee. According to ecoBiz Queensland, one aged care facility in Brisbane achieved significant cost savings when it did the following:

Cardboard

Simply crushing its cardboard boxes enabled the facility to reduce the size of its recycling bins and how frequently they needed to be collected. This immediately saved them hundreds of dollars every month.

General recycling

Prior to the waste audit, the facility had no way of recycling newspapers, milk containers and steel cans. The acquisition of five new recycling wheelie bins led to monthly savings on general waste disposal costs.

Paper recycling

Recycling bins for office paper were placed near all printers, fax machines and photocopiers. This reduced the collections of general waste bins.

Clinical waste

The audit showed that some employees were placing normal waste in the clinical waste bins. Training employees to put standard waste into normal bins saved them money.

Organic waste

The facility was able to take its kitchen and garden waste to a nearby bioenergy facility that captures methane from organic waste and turns it into electricity.

Total saved

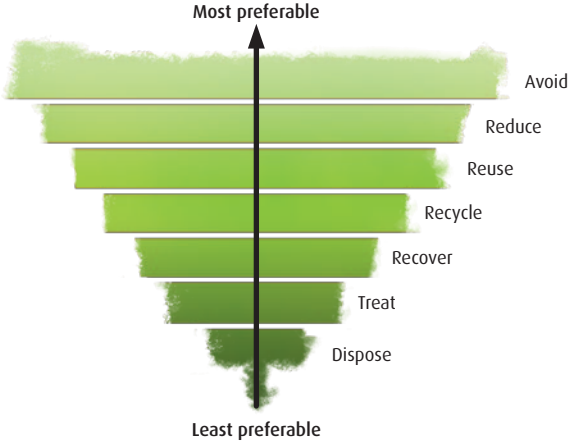
In addition to reducing the amount of waste going to landfill by many tonnes, the facility saved thousands of dollars in reduced waste costs. Helped along by the WasteWise Queensland program and the local recycling business, it was able to achieve a significant result for the environment and its bottom line.

Creating an action plan

After reviewing the tips in this book and listening to advice from your own employees, make up an action list of the measures that will reduce waste in your business.

The action plan should be designed and implemented in accordance with this waste hierarchy diagram:

Waste hierarchy guide



1. Avoid using goods and resources to maximise your savings.
2. Reduce the amount of goods and resources that you use.
3. Reuse products if you can, or sell your waste to a company that will reuse it in the manufacture of new products.
4. Recycle materials that you can no longer use.
5. Recover the valuable and useable components of what is thrown away (with the assistance of waste management and recycling companies if necessary).
6. Treat materials to ensure the potentially harmful impacts of waste materials is minimised (with the assistance of waste management and recycling companies if necessary).
7. Dispose only as a last option.

Reducing your resource use and saving money can be as simple as replacing bottled water in your office with filtered water or tap water. Using reusable mugs and buying coffee, tea and sugar in bulk can also save money and resources.

Recycling should not be the first option that you go with. It is always best to avoid, reduce and reuse materials before you recycle. If implemented correctly, a waste minimisation strategy based on these principles can realise significant efficiencies and savings for your business.

Recycling rules

There are some simple rules to follow when it comes to recycling in the workplace:

1. Make sure your business is recycling all that it can. Go to www.recyclingnearyou.com.au to find out everything that can be recycled in your local area.
2. Talk to your existing recycling contractor to see if they can provide your business with facilities to recycle more materials. For details on recycling companies in your area, use your Yellow Pages® *Book*, visit yellowpages.com.au online or on your mobile, or ask your local council waste officer for advice on recycling in your local community. Some companies can also help you to organise a recycling audit and service for your business. Such companies include Visy Recycling (1300 368 479 or email customerservice@visy.com.au), SITA Environmental Solutions (131335 or www.sita.com.au) and Veolia Environmental Services (02 8571 0000 or national@veolia.com.au).
3. Educate your employees about what can and cannot be recycled. Talk to them about the benefits of recycling and make it as easy as possible for them to play their part. Also talk to your cleaning service to make sure they are putting your recyclables into the right bin.
4. Don't put recyclables in plastic bags. Plastic bags are a major problem for recycling companies and can prevent the material inside from being recycled.

5. Pyrex ovenproof glass, ceramic mugs and broken wine or drinking glasses should not be put in your recycling bins. Just 15g of ceramics or a small piece of ovenproof glass can stop a whole tonne of normal glass bottles from being recycled.[38] The reason why? They melt at a higher temperature and contaminate the glass making process.
6. Take the lids off plastic bottles. The lid is made from a different plastic to the bottle – doing this also ensures there is no liquid left inside the bottle.

Where to go for waste and recycling advice and information

National

The Planet Ark and Sensis Recycling Near You service provides practical information on waste reduction. If you need further advice, contact your local council's waste management officer or the following entities for advice and information.

Recycling Near You (just enter in your postcode): www.RecyclingNearYou.com.au

Australian Government – Department of Sustainability, Environment, Water, Population and the Arts: www.environment.gov.au

Visy Recycling: www.visy.com.au

Australian Capital Territory

Department of the Environment, Climate Change, Energy and Water: www.environment.act.gov.au

Department of Territory and Municipal Services (waste section): www.tams.act.gov.au

New South Wales

Department of Environment, Climate Change and Water: www.environment.nsw.gov.au

NSW Business Chamber (sustainability toolkits): www.nswbusinesschamber.com.au

Northern Territory

Department of Natural Resources, Environment, The Arts and Sport: www.nt.gov.au/nreta

38 Planet Ark. See www.planetark.org

7. Sensitive or confidential documents can be shredded prior to recycling. Alternatively there are a number of waste disposal contractors who specialise in confidential document destruction and recycling.
8. If you have computers, furniture and office equipment that your business no longer needs, talk to local community groups and charities to see if they want them. You can also distribute them for nothing via your local Freecycle or Green Collect group. Go to www.freecycle.org or www.greencollect.com.au for further information.

Queensland

Department of Environment (including the ecoBiz small business program): www.derm.qld.gov.au

Chamber of Commerce and Industry Queensland: www.cciq.com.au

South Australia

Zero Waste SA: www.zerowaste.sa.gov.au

Business SA (go to the sustainable business development unit, in business services): www.business-sa.com

Tasmania

Department of Primary Industries, Parks, Water and Environment: www.environment.tas.gov.au

Victoria

Grow Me The Money: www.growmethemoney.com.au

Resource Smart: www.resourcesmart.vic.gov.au

Western Australia

Zero Waste WA: www.zerowastewa.com.au

Using the services of an accredited waste auditor can also be a very cost-effective approach to developing a waste plan, especially if you haven't done one before. Business-friendly organisations like Grow Me The Money and Business SA can help here.

9. Finally, it's not enough to put material out for recycling. People and businesses can play their part by buying products that are made from that recycled material. Examples include Dr Harry's Light and Easy Cat Litter, which is made from recycled Yellow Pages® and White Pages® *Books* or the SAFE and Earthwise toilet tissue. Thousands of tonnes of used office paper goes into making these toilet tissue brands every year.

Case study: Yellow Pages® and White Pages® – Directory Recycling program

In late 2009, Sensis® celebrated the 10th anniversary of its kerb-side recycling program. Yellow Pages® and White Pages® directory recycling rates have improved from 4 per cent in 1999 to 98 per cent recycled or reused in 2010.*

Sensis® manages the national directory recycling program with assistance from Visy Recycling.

The program now allows for old directories to be included with other paper recycling in most areas throughout Australia, for both residential and commercial services.

If your business has a Visy paper and cardboard recycling service, you can include your old directories in this service. If your business doesn't have a recycling service, you can or visit www.visy.com.au or call Visy Recycling on 1300 368 479.

Old directories are collected with other recyclables and then they're sorted and recycled by Visy Recycling into a range of recycled cardboard packaging products.

* Results exclude the proportion of respondents who indicated that they had not disposed of, recycled or reused their book.

Recycling collaboration

In order to collect quantities that are attractive to a recycling service, small businesses can join with neighbouring businesses to form a 'recycling alliance'. In addition to reducing waste that goes to landfill, it could also potentially reduce your waste disposal and recycling costs.

In an industrial park, the recycling location could be a space that's supplied by park management. Or it could be that one of the businesses has enough space to act as a central recycling drop-off point for all the businesses around them. With a little bit of innovative thinking, this kind of approach is another way to recycle materials that would otherwise end up in landfill.

We're the best in the world

Australians are currently recycling more than two billion newspapers and magazines every year. With a recycling rate in 2009 of 78 per cent, we're the best newspaper and magazine recyclers in the world. Go to www.pneb.com.au for more information.

Reuse

There's an old saying that one person's junk is someone else's treasure. If you have leftover materials from your operations, you can place them on www.wasteexchange.net.au. This free national online database was established by the Victorian Waste Management Association and EPA Victoria. It enables businesses to list unwanted materials that other companies might find useful. If you're in manufacturing, there may be a raw material you use that another SME might currently be throwing out. Investigating this might lead to significant cost savings in your business.

Electronic and electrical waste

In 2005 an estimated 312,930 tonnes of electronic equipment was disposed of in Australia's landfills.[39]

Electronic waste, or e-waste, is the term given to redundant or discarded electronic or electrical equipment. This includes computers, mobile phones, televisions, video and DVD players, stereos, fax machines, photocopiers, printers, printer cartridges, batteries and peripheral devices that came with the equipment.

Mobiles: There are two solutions to this. One is to make your mobile phone last as long as possible, or to pass it on to other people. The other is to recycle your mobile via the MobileMuster recycling bins available in Telstra outlets. When you next decide to upgrade your mobile, put up a poster at work to collect other people's old phones. When you go to the shop to get your new phone, take them with you and put them in the recycling bin. Go to www.mobilemuster.com.au for all recycling locations. To arrange a one-off MobileMuster recycling push at your workplace, call 1800 249 113. Don't forget to remove the SIM cards and wipe the data off the phones.

Printer cartridges: It's easy for SMEs to recycle their old cartridges. You can do this through Cartridges 4 Planet Ark www.cartridges.planetark.org or at Cartridge World retail outlets.

Computers: SMEs can make their computers last longer by installing the maximum amount of RAM and using functions such as cloud computing, where applications and services are hosted by other organisations and accessed via the internet, thereby reducing the need for on-site computers and servers. See the IT section (chapter 11) of this book for other tips.

TV sets: A national recycling scheme is being established so keep old TVs stored until a local recycling service is in place.

Batteries: Companies like Cleanaway, SITA, MRI, Sony, Battery World and others all have rechargeable battery recycling services that your business can use.

Lighting: There are a number of recycling options available including temporary bins, prepaid collection boxes and even a Tube Terminator option for in-house crushing of collected lighting waste. Go to www.cmaecocycle.net for further information.

39 *Waste and recycling in Australia,* Hyder Consulting, November 2008. See www.environment.gov.au

Oil recycling

One litre of oil can contaminate more than one million litres of water. So if your business is using oil in any way, it's vital that you recycle it.

269 million litres of used oil was recycled by Australians in 2008–09.[40] While this has increased over the past five years, there is still more oil that could be recycled. Used oil, also called 'sump oil', can be recycled into industrial burner oil, mould oil, hydraulic oil, bitumen based products and can be used as an additive in manufactured products.

Go to www.oilrecycling.gov.au/safety-tips.html for tips on how to safely recycle your oil. For information about the national oil recycling program visit www.oilrecycling.gov.au; to find out your nearest oil recycling location, go to www.recyclingnearyou.com.au or talk to your local council recycling officer.

Plastic recycling

There is much confusion about which types of plastic can or can't be recycled. The numbers and arrows on the bottom of plastic bottles and on other plastic products are not recycling symbols; they identify the type of plastic the product is made from. However these symbols can be used to help determine whether that plastic can be put in your recycling bin. To find out which types of plastic can be recycled in your area, go to www.recyclingnearyou.com.au or contact your recycling contractor.

How does recycling help the environment?

Recycling doesn't just save resources. It also saves water, saves energy and reduces greenhouse emissions.

40 Department of the Environment, Water, Heritage and the Arts annual report 2008–09 – volume two. See www.environment.gov.au

Recycling one can or bottle at a time, you'd be forgiven for thinking that recycling doesn't add up to much. But when you consider how many businesses and households are now recycling, it all adds up. In a big way.

In 2006, the Australian Council of Recyclers estimated that commodities recycling helped to reduce Australia's CO_2 equivalent emissions by 8.8 million tonnes. It also saved 202 terajoules (TJ) of energy and 92 gigalitres (92 billion litres) of water. They also estimated that the equivalent of 3 million trees, 365,000 tonnes of sand, 4 million tonnes of iron ore and 1.6 million tonnes of bauxite were saved through Australia's commodity recycling activities.

How does recycling and waste management help the economy?

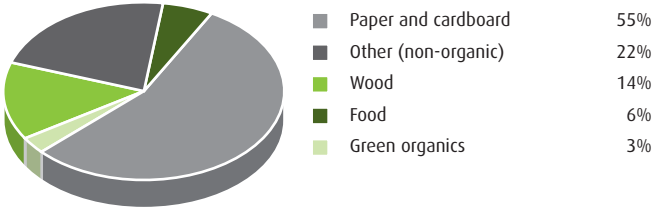
In 2006, the recycling industry directly employed 10,900 people and indirectly employed 27,700. Figures from the Australian Council of Recyclers also show that the industry contributed $11.5 billion to the economy.[41] When it comes to waste, more than 14,000 Australians were employed in 1092 public and private businesses.

In 2002–3, the Australian Bureau of Statistics estimated that waste management, excluding resource recovery, had an industry value of $1.3 billion. Showing how much the clout of small business adds up, 74 per cent of these waste businesses were small enterprises employing up to four people.[42]

How much do we waste?

In 2006–07, Australia generated 14.4 million tonnes of commercial and industrial waste. Of this, 6.4 million tonnes (44.5 per cent) was dumped in landfill and eight million tonnes was recycled (55.5 per cent).

Estimated breakdown of the commercial and industrial waste stream



Source: Hyder Consulting 2008

41 *Australian Recycling Values – A Net Benefits Assessment,* July 2008, Australian Council of Recyclers and Hyder Consulting

42 *Waste Management Services Australia,* ABS Report no. 86980. 2002–3

In 2006–7, Australia managed to recycle 8.5 million tonnes (54.5 per cent) of construction and demolition waste. But 7.1 million tonnes (45.5 per cent) still went to landfill. When it came to municipal waste, 4.6 million tonnes was recycled, while 7.3 million tonnes ended up in landfill.

From a waste-efficiency point of view, Australia is not doing as well as it could. In a single year we dumped an estimated 20.8 million tonnes of waste in landfill. That represents a major inefficiency in our usage of resources.

This situation is worsening. Between 2002–3 and 2006–7, Australia generated 52 per cent more commercial and industrial waste. If this trend continues, by 2020 Australia will generate 33.2 million tonnes of commercial and industrial waste every year.[43]

Every kilogram of that 33.2 million tonnes will represent a hit on the bottom line of Australia's businesses. Implementing a waste policy in your business will help to reduce this.

Case study: Rosedale Leather – composting initiative

With 120 employees processing 7000 hides a week, Rosedale Leather generated a lot of waste when they tanned hides to be used as leather car seats.

After implementing changes to make its tanning process more environmentally responsible, Rosedale Leather worked in partnership with EPA Victoria to see how they could convert what was previously described as prescribed industrial waste into a safe composting material.

The three individual waste products from Rosedale Leather are now composted with local green waste and meet all applicable Australian standards.

In addition to helping the environment, it's also helped the bottom line. By diverting its waste to compost instead of landfill, Rosedale Leather saved $140,000 in 2009.[44]

43 *A National Waste Policy: Managing Waste to 2020,* Department of the Environment, Water, Heritage and Arts, 2009

44 See www.cedaily.com.au

‘When looked at in four key areas – greening your fleet, supply chain, business travel and encouraging employees – there are opportunities for everyone.’

5

Get on board with sustainable transport

Transportation is vital for business. As with other energy-using activities, transportation offers lots of opportunities to save money and reduce pollution at the same time.

Considering and planning for alternative transport arrangements can also deliver productivity increases. The size of the benefit is limited only by the amount of transport you currently use and your commitment to reducing it. When looked at in four key areas – greening your fleet, your supply chain, business travel and encouraging employees – there are opportunities for everyone.

1. Greening your fleet

Buying and leasing

When it comes to making a greener vehicle choice there are some basic rules to follow:

- if your business owns or leases cars, you should undertake an annual review of usage to ensure you don't have too many vehicles
- you also need to assess whether your business is using the right type of vehicles; buying or leasing bigger and more expensive vehicles can seem attractive from a prestige point of view but the rising cost of fuel makes fuel-efficient models a better choice for the bottom line
- think about the most appropriate car for your needs; if you operate in an inner-city area, there are many advantages to having a smaller car – they're cheaper to buy, easier to park, use less fuel and therefore their emissions are a lot less.

What to buy?

Australians buy more than one million cars every year. Our passenger cars account for 8 per cent of our greenhouse emissions, putting 43.7 million tonnes of greenhouse gases into the atmosphere every year.[45] The transportation sector generates 78 million tonnes of greenhouse emissions every year. That equates to 14.6 per cent of our national emissions. The majority of that is from road transportation.[46]

If you operate your own delivery vehicles, try to group pick-ups into geographic zones when collecting or delivering goods. This will minimise the kilometres travelled by your vehicles, while at the same time reducing emissions and saving on fuel costs.

45 *Greener Motoring*, The Australian Automobile Association. See www.aaa.asn.au/documents/reports/2008/FACTA4_EcoDriving.pdf

46 DECC Australian National Greenhouse Accounts – National Greenhouse Gas Inventory, May 2009

The Green Vehicle Guide website at www.greenvehicleguide.gov.au can help your business to save thousands of dollars and reduce its environmental impact at the same time. It gives you information about cars sold in Australia and allows you to compare the car you're interested in with other cars in the same class. The comparisons include:

- fuel type
- fuel consumption on a litre per 100 kilometre basis
- CO_2 emissions on a gram per kilometre basis
- a greenhouse rating
- an air pollution rating
- overall star rating (combining the greenhouse and pollution ratings).

The site has a handy fuel calculator which can determine your annual fuel costs and total greenhouse gas emissions. An information kit is also available from the website which you can show to colleagues and management in your business. The site also lists the fuel efficiency details of older model cars if you're looking to buy a second-hand vehicle.

More tips

1. If you're wandering around a car yard, look out for the Fuel Consumption label on cars that you're interested in buying or leasing. This is on the front windscreen and details the fuel efficiency of the car and its greenhouse emissions performance.
2. Register with the Australasian Fleet Managers' Association Greener Motoring program at www.afma.net.au for detailed guidance on strategies to reduce fleet emissions and costs.

What to rent?

If you're travelling for work and need to hire a car, choosing a more environmentally friendly option will save you money and send a strong message to your professional network that your business walks the talk on environmental issues.

All car-rental companies offer fuel-efficient or hybrid cars. Some rental companies also offer carbon offsets for the cars that you hire. Others have made a public commitment to stock new-generation electric cars when they are released in Australia.

Renting a car is also a great way to 'try before you buy'. If you find a car that has rated well on the Green Vehicle Guide, why not rent it for the day to check that it's the right vehicle for your business?

Choosing the right tyres

When it comes to tyres, the issues of safety and performance are a priority for most people. However, not many people think about the efficiency of the tyres and the amount of fuel they use.

Research conducted by Michelin shows that tyres account for one tank of fuel out of every five.[47] So buying fuel-efficient tyres can save you money and help the environment.

Look for tyres with low rolling resistance and maximum efficiency. Properly maintained and inflated, such tyres can reduce your fuel bills by up to 4 per cent.

Also, make sure you pump up your fleet's tyres to the manufacturer's recommended levels each week. It may sound tedious, but it is safer and more fuel-efficient, and therefore greener.

SME transport innovation

Australian parts manufacturer Futuris has won a PACE Award from the American Society of Automotive Engineers for its enviroTUF™ carpet. The carpet for each car can use up to 100 recycled PET bottles. According to the judges, "Futuris is able to offer PET carpet at lower cost than nylon but with better appearance and feel. And it is 100 per cent recyclable."

47 See www.michelin.com

Efficient driving

If you have a large fleet and a large fuel bill, it often pays to send your employees on eco-driving courses that show them how to drive in a way that saves fuel.

Here are our top ten tips for eco-efficient driving:

1. Avoid hard accelerating and braking. According to TravelSMART, less aggressive driving can reduce fuel consumption by up to 30 per cent.[48] Driving your car too hard can also cause costly wear and tear on the engine, tyres, transmission and brakes.
2. Avoid areas and times of heavy traffic congestion to minimise 'stop-start' driving. Traffic interruptions account for about 40 per cent of average fuel consumption in city driving.[49]
3. Avoid short trips wherever possible and plan ahead to combine multiple errands.
4. Most vehicles do not need to be 'warmed up' except in very cold conditions and after long periods of non-use. Don't leave the motor running when the vehicle is stationary.

Driving your car too hard can also cause costly wear and tear on the engine, tyres, transmission and brakes.

5. Avoid high revs. Engines operate most efficiently when revving at about 1500 to 2500 rpm. In a manual transmission vehicle, shift up a gear as quickly as is practical. An automatic transmission will shift up a gear more rapidly if you ease back on the accelerator once the car has momentum.
6. Clear out clutter from boots and back seats. Every 50 kilograms of extra weight a typical car carries increases its fuel consumption by about 2 per cent.[50]
7. Minimise wind resistance. The faster you drive, the greater the wind resistance and fuel consumption. Remove roof racks and other external attachments when they are not needed. Open sunroofs and windows will also significantly increase fuel consumption at faster speeds.

48 See www.transport.vic.gov.au/travelsmart

49 Bureau of Infrastructure, Transport and Regional Economics

50 See www.racv.com.au

8. Air-conditioning can increase fuel consumption by 5–10% but it is more efficient than an open window at speeds of more than 80 km/h. While an air-conditioner does need to be used regularly, to avoid leaks and operation problems, avoid running it all the time. Use the vents instead.[51]
9. Keep tyres inflated to the highest recommended pressure. Under-inflated tyres can reduce fuel-efficiency. Optimum inflation will also increase tyre life and improve handling.
10. Keep your vehicle well-maintained for optimum performance. Have the engine serviced and wheel alignment checked according to the manufacturer's guidelines (usually every six months or 10,000km, whichever comes first). Also make sure to regularly check oil, coolant and other fluid levels.

Alternative fuels

Alternative fuels are far from new. According to HydrogenCarsNow, the first car designed in 1806 by Swiss Francois Isaac de Rivaz was fuelled by a hydrogen-oxygen mix. Rudolf Diesel designed his engine to run on peanut oil while the iconic Ford Model T was designed to run on either petrol or ethanol.

There are a number of alternative fuels available for cars in Australia. These include:

Biodiesel

Biodiesel is derived from dead animals and vegetable oils, including used cooking oil from restaurants and a number of plants such as canola and mustard seeds. It can potentially be used directly in any existing, unmodified diesel engine. It is now readily available across the country at B2 levels and many fleet operators are using B20, B50 and even B100 biodiesel.

LPG

Liquefied Petroleum Gas (LPG, LP Gas or Autogas) is synthesised from gases found in crude oil and natural gas fields and produced during the oil refining process. Australia is one of the biggest users of LPG on a per capita basis. It is our third most commonly used fuel, accounting for nearly 7 per cent of road transport fuel sales.[52]

51 See www.makecarsgreen.com/10-points.html

52 See www.ret.gov.au

Car-sharing services

Membership of a car-sharing service is a useful and cost-effective addition to promoting walking, cycling and public transport. Cheaper than taxis or rental cars, car-share services can free your business and employees from the expense of vehicle ownership. By joining a service, you get the use of a shared car fleet when needed, with vehicles based at a wide range of locations and accessible 24 hours a day.

Members pay for use according to the distance travelled and the length of time used – you can rent the car for as little as one hour, to as long as you like. Though most common in Sydney and Melbourne, car-sharing services are also starting to take off in other capital cities as higher housing density and traffic congestion makes driving and parking a chore. They're an ideal solution for SMEs looking to save money and reduce emissions.

Ethanol

Ethanol in Australia is currently derived from cereals, sugarcane, crop waste and the waste from flour production. It's a renewable fuel and is mainly added to petrol in blends of E5 to E10 which is now readily available in service stations around the country. E10 is completely safe for most vehicles produced from 1986 and of the cars produced in 2009, 99.44 per cent could take an ethanol blend. However, there are global concerns about the environmental impact of using land to make ethanol from crops like corn when it could be used for food production or forest eco-system preservation.

Electricity

Electric cars don't just reduce pollution in our cities. They're also fast. The first car to break the 100 km/h land speed record in 1899 was an electric car called La Jamais Contente. Hybrid cars that use petrol and electric motors have mainstreamed electric cars, with Toyota selling more than two million of them. Coming soon to the mainstream Australian car market are Extended Range Electric Vehicles (EREV) and a wide range of electric cars. The recharging times for electric cars continues to improve, so in coming years expect wider availability in the marketplace.

Case study: GoGet – a car-share service

As the owner of Meerkat Computer Services, Sven Knutsen is based in inner-city Sydney where car parking spaces are difficult to find.

At no cost, his business joined the GoGet Carshare service which has eight cars in permanent designated parking spots all within 10 minutes walk of his workplace. All he has to do is book a car on the website at www.goget.com.au and then pick it up. For him, using GoGet is sometimes faster than getting a taxi and it works out a lot cheaper.

Using a car-share service has helped to reduce transportation costs of getting Sven to and from clients. He gets to take all his equipment and tools with him and he can hire the car by the hour for as little or as long as he wants. Most important of all, using the service helps the environment, saves him money and he still gets to his clients on time.

SMEs in inner-city Sydney also use station wagons from car-share services to deliver supplies or use hire cars to go to meetings. Using a car-share scheme can be a cheaper way to give your business flexibility in your transportation requirements.

Flexicar has car-share vehicles available in both Sydney and Melbourne. Go to www.flexicar.com.au for further information.

The benefits of car-sharing services include:

- when a vehicle is not needed for frequent daily use, car-sharing alleviates the high fixed costs of ownership, such as registration and insurance (often amounting to thousands of dollars per year), as well as helping to reduce traffic and parking congestion
- many car-sharing fleets use the most modern, eco-efficient models

- research suggests that, because cars are expensive to own but relatively cheap to use, car ownership encourages more driving, even when other options would be as convenient or healthier; car sharing therefore promotes walking, cycling and using public transport, with car sharers driving a lot less than car owners.

2. Supply chain

A number of transportation companies such as Linfox are making real efforts to reduce the amount of fuel they use and their emissions. Is your current delivery company or courier service one of them?

Ask your delivery company about the actions they're taking to reduce their emissions and fuel use. Are they actively measuring the impact they have on the environment? Are they using fuel-efficient or alternative-powered vehicles? Are they driving in a more fuel-efficient way? If not, it is an opportunity to talk to them about 'greening' their performance.

3. Business travel

Here is a quick run-down of the key things to consider.

Telecommuting

Overseas governments are promoting telecommuting from home as a way of combating traffic congestion and air pollution. As Internet speeds soar, more Australian companies are also looking at this option. It doesn't suit every person or workplace – and it does require a workplace culture where output is rated more highly than the length of time a person is 'seen' to be doing their job.

The potential savings make it worth exploring. Workers save time and money on travel, while your business saves on real estate and parking costs. Businesses with employees that telecommute are expected to supply the equipment needed to enable them to work from home. This would include items such as a laptop, webcam and internet connection and the company would also contribute to the cost of electricity. This can often cost far less than having that person full time in the office.

Businesses that do have employees working from home should undertake a site inspection to ensure the office location meets all Occupational Health and Safety standards.

Go to www.lifehacker.com.au/tags/telecommuting/ for more information.

'Virtual' meetings

Remember the Yellow Pages® advertising slogan 'Let your fingers do the walking®'? Well, that's even truer these days. It's not called the information superhighway for nothing!

Online communication is revolutionising business by eliminating the need for employees to hit the road. While 'face time' is still important, there are many instances where meeting in person can be replaced by teleconferencing, web-conferencing or video-conferencing. All involve a fraction of the time, money and energy.

For more information, guides and tips on 'virtual' meetings, see www.telstraenterprise.com/conferencingcollaboration

The great thing about a webcam or video-conference meeting is that you get to see the person you're talking to, allowing you to pick up on their body language. If both parties have high speed internet, you can even have the video meeting in full screen mode on your computer or monitor – something that makes for very productive meetings.

Video-conferencing programs like Skype, iChat and Windows Messenger are free of charge – iChat also allows you to bring in people from multiple locations on video. But you do need to ensure that all parties taking part have good internet connections.

Commercial programs from companies like Adobe and Webex also allow all parties in the meeting to interact with documents as well. There are many tools out there that can help SMEs to be more productive and are far cheaper than a face-to-face meeting.

Air travel

The cost of air travel is not just financial. There's a big environmental cost as well. Air travel produces significantly more carbon emissions than other types of passenger transportation. Aircraft emissions have a greenhouse effect that's a number of times greater than road vehicle emissions. This is because they're released at higher altitude where they remain in the atmosphere for longer periods of time.

According to Qantas, a return trip to London from Sydney generates 3.8 tonnes of CO_2-e per passenger. Going the same distance in multiple short-haul flights produces even more emissions due to the amount of fuel burnt during each take off and landing.

By utilising video-conferencing, SMEs can save time and money by:

- avoiding the need for so many flights – flights between the capital cities can cost hundreds of dollars

- reducing the use of taxis – getting taxis to and from the airport can be expensive and there's often a big queue
- not driving to the airport means no airport parking costs
- the time wasted travelling to and from the airports at both ends is avoided.

Go to www.travelsmart.gov.au for more useful information about travel.

If you must travel, why not carbon offset your air flights? Qantas, Virgin and other airlines offer these offsets as part of the ticket buying process. It's as easy as ticking a box and best of all, it's very cheap to do. Offsetting your flights is a very economical way to make a real difference to your company's greenhouse emissions.

4. Encouraging employees

Walking and cycling – get on your bike

Many people already own a bike and in 2008, bicycles outsold cars with more than one million bikes sold.[53]

In today's busy world, many employees are working longer hours and don't always have the time to keep as fit as they should. There's a downside to this from a business perspective as unfit employees are not going to work to their optimum potential.

An easy way to get your employees fit and reduce your environmental footprint is to get them to ride to work. For those who don't own a bike, how can you make it easy for them to do so?

One Dutch company called Waterschap Veluwe gave a free pushbike to all employees who lived within 10 kilometres of its office. It put in place shower facilities, changing rooms and bike sheds and even offered employees an allowance for getting home on rainy days. As a result, 40 per cent of the employees cycle to work, making for a fitter and more emissions-friendly workplace.[54]

53 'Bicycle sales race ahead as city dwellers go green', *The Australian*, December 6, 2008

54 See www.travelsmart.gov.au

Walking to work

Why not encourage your employees to walk to work? A good time to start such a push is on the national Walk to Work day. Run by the Pedestrian Council of Australia, the scheme encourages businesses small and large to get their employees fitter and become more environmentally friendly in the way they travel to work. Go to www.walk.com.au for more information.

Research suggests that those who get in 30 minutes of physical activity five times a week significantly reduce their chance of developing a serious illness and they also improve their mental alertness. Fitter employees are better employees as they're healthier and less likely to take time off work. Investing in bike-friendly facilities and promoting incentives to encourage walking or cycling therefore makes good business sense.

Walking or travelling to work on public transport one day a week can cut a regular car commuter's weekly fuel use and greenhouse emissions by up to 20 per cent.

If your business is interested in becoming bike-friendly, it should:

- provide showers and lockers for cyclists
- ensure there's a secure, sheltered area to lock up bikes
- provide financial incentives, such as salary sacrificing so employees can purchase bike equipment or consider providing long-serving employees with a free bike as part of their overall package
- make walking and cycling part of a team-building exercise by involving your business' bike riders in charity fundraising events.

Case study: Coles – ride to work initiative

In 2009, the Coles headquarters in Melbourne created secure cage parking facilities for 120 pushbikes. In addition to providing an air pump for flat tyres, they also put in place 30 showers, clothes dryers and ironing boards. For people affected by rain and wind, they've even provided a hair straightener.

Case study: Monash University – Bike Share Scheme

In 2009, Monash University started a Bike Share Scheme at its Clayton campus. Seventy bikes made up of recycled parts have been made available for the scheme and each bike comes complete with a free helmet, lights and a 'shopping trolley' locking system. This makes it very easy for the students and employees to get around. Could your business do something similar for your employees?

For more information on these and other case studies, visit the TravelSmart Victoria website at www.travelsmart.gov.au

For information on creating a more bike-friendly workplace email bicyclevic@bv.com.au or go to www.bv.com.au and type in 'workplace'.

You can read the Australian Greenhouse office case study at www.travelsmart.gov.au/employers/cyclefriendly.html for more information on managing an employee bike fleet.

Go to www.tmr.qld.gov.au for information on setting up a workplace bike pool.

Public transport

If 50 people catch a bus or train that's potentially 50 fewer cars on the road. The environmental benefits are obvious. But let's face it, there's a reason people prefer cars: public transport isn't always convenient, and people's use of it depends very much on the frequency of services and travel times.

Create a workplace culture that actively encourages the use of public transport wherever possible:

- provide interest-free loans or let employees salary sacrifice the purchase of periodic travel passes
- provide easy access to public transport maps and timetables
- where possible provide some flexibility for those who might find it easier to start and finish work earlier or later, depending on available services
- consider giving regular public transport users Cabcharge vouchers as a fallback plan when they work late.

It's also important to promote the positive benefits of public transport to your employees:

- it's cheaper than driving a car to work
- coming to work on a bus or a train allows people time to read a book or a newspaper
- they don't have the stress of traffic jams, so there's a better chance they'll arrive at work happier.

Car pooling

If you've ever been stuck in peak-hour traffic, you might have noticed that the majority of cars only hold one person. Why not encourage your employees to share the commute to work by car pooling. It's better for the environment and it will save them money.

For a typical 6-cylinder family sedan doing the average number of kilometres, the estimated cost of owning and running it in NSW is up to $265 per week.

With car pooling, your employees can potentially halve their costs. This figure can be even higher if your employees go without their car altogether.[55]

55 See www.mynrma.com.au

Car pooling is probably the easiest 'sell' to get employees to reduce their transport eco-footprint. They still get the convenience of car travel but save on petrol costs, reduce pollution and greenhouse emissions and get to use the transit lane.

The basic rules of car pooling for your employees:

- they should agree upfront on the terms of their car pool arrangement and how they will share the costs
- they should never be late for the person picking them up
- they should not expect to stop off for milk on the way home!

To encourage car pooling:

- have a postcode coffee morning at work so people who live in similar postcodes can be introduced to each other and arrange to car pool; you might even extend this to include neighbouring businesses
- incentives can also play a key role in getting people to make the switch; offer a guaranteed car parking space for car pooling employees or offer them a free car tune up – for some companies the cost of tuning a car is far cheaper than having to supply a car parking space
- use an online car pooling service like www.thecarpool.com.au
- provide a fallback transport option so employees are never left stranded when plans go awry; if a car pool partner has to rush home because their child is sick at school, guarantee them a ride home – the UK chemist Boots does this and even though they have 7500 employees, this option is reportedly only required a few times a year.

Flexi-time

Flexi-time arrangements contribute to the morale of employees by giving them a greater sense of control over work-life balance and also support eco-efficient transport.

Commuting during morning and afternoon peak traffic is time-consuming and energy-intensive. Half of all travel on Australian roads occurs in congested traffic (moving at less than one-third of free-flowing speeds) or interrupted traffic (moving at less than half free-flowing speeds).

Analysis by the Australian Bureau of Infrastructure, Transport and Regional Economics indicates traffic interruptions account for about 40 per cent of all vehicle fuel consumption in major cities, contributing 17 per cent of total domestic transport greenhouse gas emissions. Yet as little as a 4 per cent change in traffic volume can mean the difference between free-flowing traffic and gridlock.[56] Whether employees drive, take the bus or ride a bike, flexi-time can help them avoid the crush and reduce travel times.

Case study: Linfox

Changing driving techniques has changed Linfox's bottom line. Linfox drivers undertook the 'Eco Drive' course* as part of a multi-pronged push to successfully reduce the company's carbon emissions by 28 per cent between 2007 – 2009.

Being gentle on the brakes, using the appropriate gear, driving steadily and keeping tyres fully inflated were just some of the techniques that reduced pollution and saved Linfox money. Go to www.linfox.com/environment.aspx for more information.

* See www.ecodesk.com

56 *Greenhouse Gas Emissions from Australian Transport: Base Case Projections to 2020,* – Bureau of Infrastructure, Transport and Regional Economics. See www.bitre.gov.au

‘Using less paper not only saves money, it can also reduce poor practices and inefficiencies that excessive paper use may create in your business.’

6

Reduce, reuse, recycle: easy steps to cut out paper waste

Whatever amount of paper you use, reducing it is a great place to start for any business wishing to save money.

Using less paper not only saves money, it can also reduce poor practices and inefficiencies that excessive paper use may create in your business.

Shifting your business away from paper and into electronic document management can bring about significant improvements in efficiency and productivity. Greater use of electronic documentation for writing, storage and distribution can benefit business and the environment – but it needs to be smart.

Just like paper, electronic devices have environmental impacts. The devices you use and how you use them is just like your choice of paper and how you use it – it has to be right for your organisation. If you think smart and take into account the wider range of costs and benefits involved with your paper and electronic documents, you will find opportunities for significant environmental and cost improvements.

What are the real financial costs of paper?

The primary cost of paper is buying the paper itself but secondary costs include:

- printing and copying
- postage and packing
- storage and disposal
- employee administration and time
- wasted office space and infrastructure.

Better management of the paper use in your business will help to reduce these hidden costs.

Reduce, reuse, recycle

Making paper uses up vast amounts of water, trees and energy. The whole process uses tens of millions of trees[57] per year and generates millions of tonnes[58] of greenhouse gases. Disposing of paper in landfill also generates a greenhouse gas called methane – averaged over a hundred year period, the global warming potential of methane is 25 times more potent[59] than the carbon pollution from car exhausts. With these environmental impacts in mind, remember the waste-reduction mantra:

- reduce your consumption of paper
- reuse the paper you consume
- recycle the paper you dispose of.

Getting started on a paper reduction campaign

1. Get support

Speak with your colleagues and get support and approval to develop a campaign for paper reduction.

2. Plan your campaign

Ask for volunteers or set up a working group, involving people from different parts of your business. Without champions and encouragement, people can easily fall back into bad habits – it's important to keep reminding everyone that every single wasted piece of paper adds up.

57 See www.worldwatch.org/node/5326

58 See www.savepaper.com.au

59 IPCC, 2007: *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change – www.ipcc.ch/ipccreports/ar4-wg1.htm

To establish a baseline for measuring the success of your campaign, conduct an assessment of how much paper you're currently using. The Paper-Less Print Logger Software at www.savepaper.com.au/software[60] will help you to do this by tracking your printing and is free of charge for businesses with less than five employees. Also examine the 'non-office' papers, such as tissues, that are used in your workplace.

Once you understand how much of what type of paper you use, you can then identify actions to reduce it.

3. Launch your campaign

Make sure everyone knows what you're trying to achieve and how much paper you're currently using.

Starting out, you need to set targets for paper reduction and provide practical advice on how people can achieve those goals.

4. Monitor your progress

As soon as you have success, make sure you communicate it positively and enthusiastically to all employees. It's about using the right sort of paper efficiently, only when you have to and taking responsibility for reusing or recycling the paper when you're finished with it.

First basic steps to smart paper use

1. Share documents electronically:
   - avoid sending faxes and posting letters – mail the documents electronically instead; if this sounds obvious, it's worth noting that Australian businesses still post 4.2 billion items ever year[61]
   - instead of printing multiple sets of paper documents, keep electronic files that employees can access
   - review and edit your files on screen rather than on paper
   - encourage suppliers and clients to send you mail and bills electronically
   - scan paper documents that come into your business and convert them to searchable PDF format; do the same with key documents in your filing cabinets

60 SavePaper.com.au is a campaign by the action group, Do Something. Jon Dee is the Founder and Managing Director of this not-for-profit organisation.

61 'Paper cut could hurt Australia Post's bottom line', *Australian Financial Review,* July 29, 2009

- set up a computer as a fax machine so that faxes can be easily converted into a searchable PDF format
- change your printed forms to electronic format; this reduces the need for employees to convert handwritten forms into database accessible information and your clients or customers can type information straight into an electronic form.

2. Don't print emails:

- challenge yourself and your employees to minimise your printing of emails
- for efficient retrieval, organise and save emails in an electronic folder system and train your employees to use a standardised e-filing system
- if you have to print, to save paper you should only copy the essential content of an email and paste it into a word-processing document.

3. Think before you print or copy:

- think whether you really need to print it at all
- use the on-screen print-preview feature before printing
- when printing a document, don't print the pages you don't need.

4. Printing:

- as a first step, find out if your office equipment can do double-sided printing and copies and set it as the default option
- use the blank sides of already used paper for draft printing.

5. Reduce business 'junk mail':

- to save time and money, audit and update your mailing lists and remove 'not at this address' returns or companies that you no longer do business with
- stop mailing people who have registered themselves on the 'do not mail' list; the Australian Direct Marketing Association can provide more information on compliance[62]
- when companies send you unwanted mail, ask them to remove you from their lists
- make it easy for recipients of mail you send to sign up for electronic versions

62 See www.adma.com.au

- remind employees periodically that unsubscribing from mailing lists is easier and more productive than wading through a large pile of letters each day and throwing half of them in the bin.

6. Test before copying big jobs:
   - doing this can prevent costly mistakes on a multiple copy job
   - if the machine doesn't have a sample button, run a sample copy before you run off multiple copies.

7. Don't print websites unnecessarily:
   - if you want to have a high quality copy of a web page, download the free Evernote software;[63] this includes a web clipper that enables you to create PDFs of a web page that you'd like to keep
   - if you must print a web page, look for a 'printer-friendly' option that will minimise paper use.

8. Print more words on each page:
   - reduce page numbers by using smaller fonts in larger documents
   - use thinner page margins and less line spacing to maximise the amount of space for text
   - choose a space-efficient font that gets more text on screen and on paper.

9. Save and re-use paper around the office:
   - place labels over old addresses and envelopes
   - flatten and store large boxes until they're needed again
   - collect and reuse one-sided paper by turning them into notepads.

10. Back up
    - organise a 'set and forget' daily back up system for all your business files and emails so you don't lose them if a computer crashes
    - you can even set up a system so it automatically backs up files as you change or create them

63 See www.evernote.com

- save revisions of important files, have more than one back up, watch your storage space, test your backups and make sure you store a copy of your critical data off site
- if there's a robbery, fire or flood, your data can disappear for good, so store a back up drive at home, in a safety deposit box or at a secure online back up service.

Non-office paper

Office paper isn't the only paper consumed in the workplace. Tissues, serviettes, napkins, hand towels, toilet paper, brochures, direct mail, invoicing and record keeping all add to paper use and potential waste. Here are some simple tips to reduce that waste:

1. Replace paper towels in kitchen areas with tea towels and wash cloths.

2. Replace paper cups with ceramic mugs. Australians use more than 400 million single-use cups every year. Over a lifetime of about 1000–3000 uses, ceramic mugs will produce far less solid waste and less air pollution than single-use cups.[64]

3. Replace paper towels in the bathroom with reusable roll towels. A hand dryer is also a better option environmentally and it reduces the amount of paper waste ending up in landfill. Where possible, use hand dryers that dry your hands quickly as these use less energy.

64 Report of the Starbucks Coffee Company/Alliance for Environmental Innovation Joint Task Force, 2000

Share it online

When it comes to sharing documents internally or with other organisations, you can share files online at your website, through free services such as www.evernote.com, or through low-cost services such as www.me.com and www.basecamphq.com

Companies like Redmap[65] also have software for SMEs that can handle this task for you.

What paper should I buy?

When it comes to paper purchasing, consider recycled-content paper and independently certified paper, such as Forest Stewardship Council (FSC) certified paper stock. See page 44 for more information.

Why buy recycled paper?

The best paper to buy from an environmental perspective is recycled paper. Recycled paper can use up to 50 per cent less energy in manufacture than virgin paper[66] and keeping waste paper out of landfill reduces greenhouse emissions – as the paper breaks down it gives off methane, which even the best managed landfills cannot capture all of. Each tonne of paper recycled can also save approximately 24 trees and uses up to 60 per cent less water.[67]

Further information

Within Australia, there is an excellent free resource called *Know Your Paper: A guide to purchasing recycled content office paper.* Published by the NSW Department of Environment, Climate Change and Water, each copy comes complete with printed samples of the different stocks available.

65 See www.redmap.com.au/SME

66 *Amcor Submission to State Sustainability Strategy NSW,* NSW DECC, 2002

67 *Know Your Paper: A guide to purchasing recycled content office paper.* NSW Department of Environment, Climate Change and Water, January 2009

Also available from the same department, is the *Know Your Printing Paper: A guide to purchasing recycled content printing paper for corporate stationery and promotional materials*.[68] Again, this comes complete with printed samples of the different available paper stocks.

Go to www.environment.nsw.gov.au to order or download these guides.

Accredited paper

If you want to buy paper that's not made from recycled material but is environmentally superior, check if it has independent third-party certification. The dominant schemes for paper (and other timber products) are the Forest Stewardship Council (FSC) and the Programme for the Enforcement of Forest Certification (PEFC).

Established in 81 countries, FSC is an international not-for-profit organisation that was founded in 1993 by environmentalists, social interest groups, retailers and the timber industry. It is supported by major conservation groups like WWF, Greenpeace and the Australian Conservation Foundation.

Want to search your handwritten notes?

If you're in a meeting and you write notes on a piece of paper, wouldn't it be nice if you could put your notes on a computer and search for key words in what you've written? There are now software applications that help you do just that. One example is Evernote[69] and its basic version is free.

You can also use your phone camera to take pictures of notes on whiteboards and restaurant napkins. Some software packages, such as Evernote, then enable you to send the picture to your account or desktop so you can file it away and search it as needed.

68 *Know Your Printing Paper: A guide to purchasing recycled content printing paper for corporate stationery and promotional materials*. NSW Department of Environment, Climate Change and Water, March 2009

69 See www.evernote.com

Benefits of digital versus paper filing systems

How much more efficient would your business be if all your company information was in one place and as easy to find as using an internet search engine?

Electronic data management is becoming easier to use and less expensive so SMEs have a genuine option to explore the business benefits that can be achieved when every Word and PDF document, every spreadsheet, every piece of paper and every email is efficiently stored and easily searchable.

Such systems are often called Electronic Data Management Systems or Electronic Data Management Software (which is a registered trademark brand) but they are all designed to streamline document management and turn paper files into electronic ones.

Other reasons to manage your documents electronically

1. Greater security and confidentiality

The filing cabinets in many companies are unlocked and people come and go as they please with the files. With electronic filing you can determine who sees which documents and what they can do with those documents.

2. Reduction in the cost of searching

Electronic filing is as easy to access as doing an internet search and rarely do your documents go missing.

3. Easier, cheaper and faster to share

Paper-based information is very difficult to share with multiple people without copying the document many times. Electronic documents can be securely shared and viewed by a number of people at the same time.

4. Frees up valuable floor space to make money

Many offices use large areas of valuable floor space to store paper in filing cabinets. This is space that could be freed up to generate income for the business, or next time you move, you won't need to rent so much space. According to Redmap, a 500GB hard disk can store the same number of black and white documents as hundreds of four drawer filing cabinets.

Maintain compliance

Businesses in Australia are required to keep records. These may include:

- financial records such as invoices, receipts, cheques and working papers – these may help you to comply with the *Corporations Act 2001* (Commonwealth)
- employee relationship records that help you to comply with various workplace relations laws.

These records need to be kept in a state where they are readily available. Failure to comply with record-keeping obligations may have serious consequences for businesses and their directors and officers, including fines and other penalties. You'll find that storing them electronically can often be a lot cheaper.

Given some records have to be kept for substantial periods of time (for example, seven years for financial records under the Corporations Act), it's worth your while looking at the cost that's involved in printing, filing and storing paper-based documents over that period of time. You'll find that storing them electronically can often be a lot cheaper.

Going further – going digital to reduce paper use

Electronic filing of your business documents can streamline your document handling and reduce paper use. Taking additional steps to use digital communications can provide further improvements and efficiencies.

Paper-free expense reports

Putting together expense reports can take time and involve lots of paperwork, such as tracking down receipts and diary entries. There is now software such as Mobile Receipt[70] that lets the user take a photo with their phone and the receipt is then put into a simple to use database that's instantly backed up online.

This software enables the creation of reports that are then emailed into your normal inbox. These come in PDF format complete with scans of the receipts themselves.

70 See www.miteksystems.com/oomph_mobilereceipt.asp

Billing and invoicing

Sending invoices via the post means people have to be employed in the printing, packing and disseminating of those invoices. In turn, these bills then have to be posted at a cost to the business. The alternative is an automated electronic billing system that can email your invoices. This is a faster and far more cost-effective system. A Life Cycle Assessment commissioned by Telstra in 2008 looked at all aspects of paper versus electronic billing and found that for every 1 million customers using electronic billing more than 19 million sheets of A4 paper were saved.[71]

Bills payable

Setting in place electronic billing from your suppliers will also save your suppliers' time and money, and it makes doing business with you easier.

Handwriting directly into your computer

If you prefer handwriting to typing, there are now computers and software to help you do that. Tablet PCs are useful as they enable you to write directly on the computer screen. There are also inexpensive plug-in devices from companies like WACOM that enable writing and drawing directly into your computer.

Tablet PCs contain software like Journal, OneNote or Evernote that enable easier storage and searching of your handwritten notes or drawings – making them easier to find in the future.

Electronic payments

Paying bills and wages with cheques is a time consuming and inefficient way to make payments. Why not set up your payments systems so that you only pay electronically? Regular payments can also be set up to be paid automatically.

71 *Online Billing Life Cycle Analysis*, prepared for Telstra by URS, April 2008

Email marketing

An alternative to direct-mail marketing is to develop email marketing campaigns that comply with the Spam Act. If you can compile the email addresses of customers, suppliers and others, software packages are available that can personalise your emails and monitor the response to your mailings.

The benefits of email marketing include:

- it's cheaper; no stamps, envelopes, packing, paper or printing are required
- you don't have the environmental cost of transporting your mail by trucks and delivery vehicles
- potentially better return on investment – in many cases you can also find out who opens, clicks and acts on your email promotions
- email marketing campaigns can be turned around faster than conventional paper-based direct mail campaigns.

It's essential to factor in the Spam Act when preparing an email marketing campaign. It prohibits the sending of unsolicited commercial electronic messages, such as email, unless you have the recipients' consent and the message includes an unsubscribe functionality, identifies the sender and includes accurate sender contact information.

Australia's e-marketing and internet industries have codes of practice to supplement the Spam Act. The codes explain the requirements of the Spam Act and provide procedures to enable organisations to comply with the Act and handle spam complaints. Go to the Australian Communications and Media Authority (ACMA) website[72] for further information.

For more information

If you want to see how other companies are reducing their use of paper, go to www.savepaper.com.au for tips and tools that will help your business to save paper and money.

72 See www.acma.gov.au

Case study: Australian National Audit Office – saving money with electronic document storage

The Australian National Audit Office (ANAO) audits more than 300 government bodies. Until 2008 this audit process involved the collection of large numbers of paper documents from agencies. Its own paper bill was $70,000 and as its files had to be kept for ten years, its external file storage cost amounted to $120,000 per year.

In a move to electronically store documents and records, the ANAO introduced a Commonwealth-compliant Electronic Document and Records Management System (EDRMS) in 2008.

ANAO employees are now scanning paper files and gathering electronic documents from agencies and placing them as records in its EDRMS.

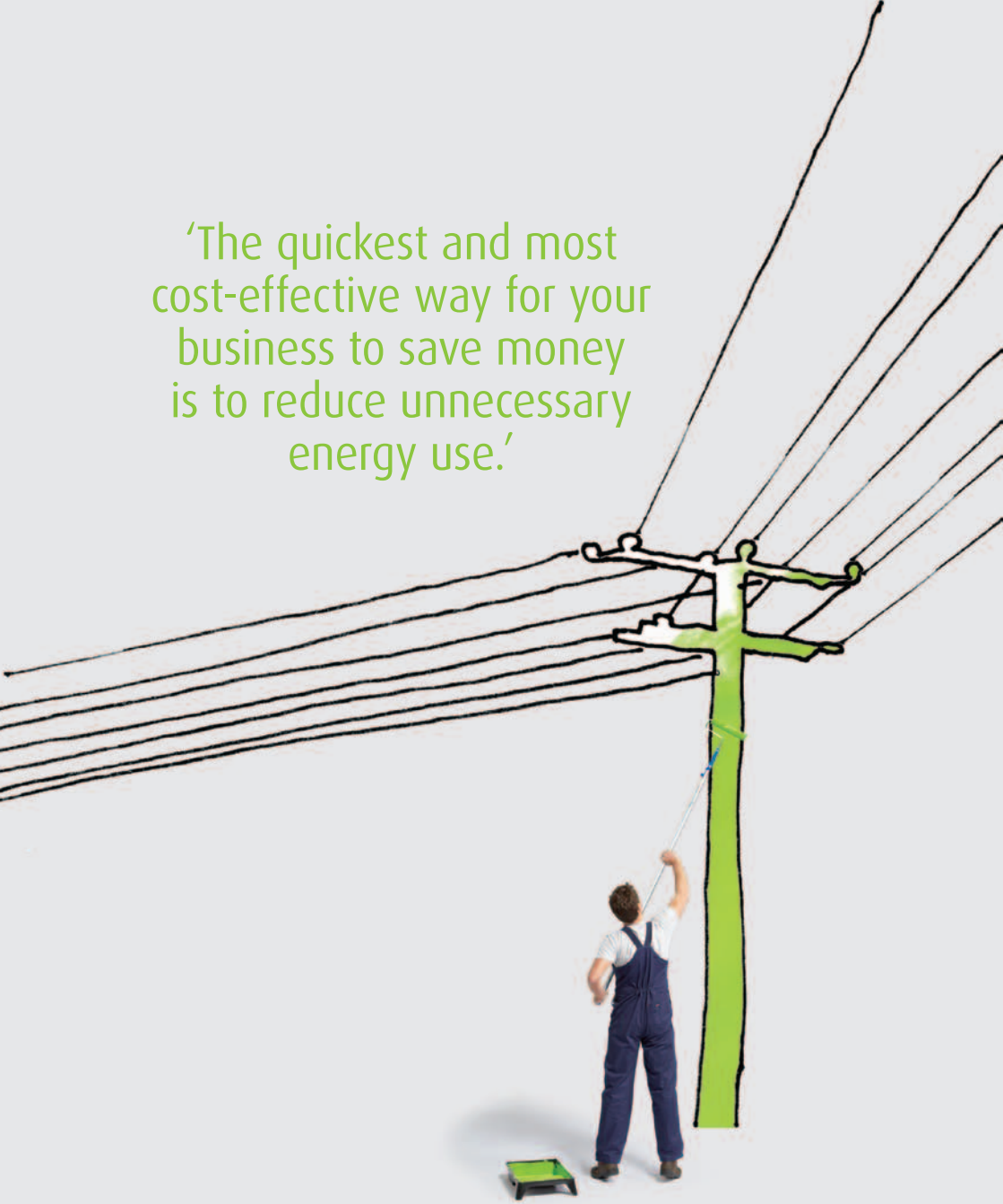
The key benefits include:

- employees no longer have to transport large suitcases of paper around during their audits – they now carry audit files electronically when they travel
- documents can now be shared easily between audit team members when they are on or offsite
- the number of records management employees has been reduced
- the ability to comprehensively search the EDRMS stored documents has provided positive assurances on the audit findings
- information and knowledge sharing has improved and there is now easier access to previous best practice examples of audit planning and work.

The current productivity benefit gained by this paper-reduction measure is estimated to be in the order of $1.3 million per year. The ANAO also estimates it will reduce its external file storage costs by 15 per cent per annum over the next six years.

The reduced paper use, manual handling and storage costs will also provide additional savings to the ANAO.

‘The quickest and most cost-effective way for your business to save money is to reduce unnecessary energy use.’



7

Seeing the light: energy choices that save money and the environment

If you were going to read only one chapter in this book, then this would be the one.

Whatever type of business you operate, the one thing you have in common with other SMEs is that you use energy. Every time you turn on a plug or switch on a light, it doesn't just cost you money, the power you use creates greenhouse gas emissions.

When it comes to saving money and reducing those emissions, the quickest and most cost-effective solution for your business is to reduce unnecessary energy use. Yet despite energy efficiency being 'low-hanging fruit' that's ripe for the picking, it often goes unnoticed until it drops and hits someone on the head.

Why is this?

Consider the humble incandescent light bulb. An invention of the 19th century, it was made commercially practical by Thomas Edison in 1879. Very little cutting-edge technology from that time is still with us: the only place you'll find a phonograph or telegraph machine is in a museum. Yet the incandescent bulb blazed on as the most widely used form of lighting despite it being incredibly inefficient – it wastes up to 90-95 per cent of the energy that it uses (they give out more energy in the form of heat rather than light). You might even still be using some in your business or home.

So why should SMEs care? Apart from environmental considerations, the bottom line is that electricity isn't going to get any cheaper in the foreseeable future...

So why did they last so long? Well, incandescent bulbs sold well because they were cheap – so long as you ignored how much energy they used and how short a life they had.

Until recently, many SMEs looked at energy-saving light globes and incandescent bulbs and did their sums as to which type they'd buy. The cheapest, at first glance, appeared to be the incandescent bulb, but they weren't. Compared with an incandescent, an energy-saving globe can save up to $30 or more in energy and avoided costs over its lifetime. Although the energy-saving globes used only one-fifth of the energy and lasted eight to ten times longer, they looked less attractive because the upfront cost to buy them was significantly more.

The Australian Government phased out the sale of traditional incandescent globes at the beginning of November 2009. It is also progressively phasing out specialist incandescent globes as other viable replacement options become available.[73] It is estimated this ban will save the nation an estimated 30 terawatt hours of electricity and 28 million tonnes of greenhouse gas emissions between now and 2020 – equivalent to decommissioning a small coal-fired power station or taking half a million cars off the road. More importantly for the SME bottom-line, it is expected to save Australian individuals and businesses around $380 million a year by 2020 in reduced energy costs.[74]

73 See www.energyrating.gov.au

74 See www.environment.gov.au

After the US and Canada, Australia has the third most energy-intensive industrial sectors in the developed world. One reason is our high level of energy-intensive raw material production and mineral processing. Another is our relatively low energy prices – which means people don't worry too much about wasting energy.

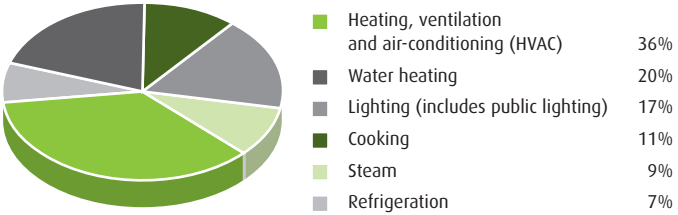
Yet another – and perhaps the most entrenched problem – is that, like bulb-buying consumers, appreciating the most cost-effective options in your business requires you to gather information, do your sums and be committed enough to sweat the small stuff now for longer-term gain.

The bottom line

So why should SMEs care? Apart from environmental considerations, the bottom line is that electricity isn't going to get any cheaper in the foreseeable future, and commercial energy consumption is growing rapidly – by about 3.7 per cent a year.[75]

Inefficient energy use is probably costing you far more than you realise. Lighting and office machines, for example, don't just add to your energy bills directly but also indirectly through higher air-conditioning costs (where there is light there is heat, as the saying goes). Saving energy in one area can therefore deliver savings in another.

Commercial sector energy services 2004–05



Source: Victorian Energy Efficiency Action Statement[76]

This chart shows the major areas of energy consumption (excluding transport) for the commercial sector. How things stack up for your workplace will, of course, depend entirely on the nature and location of your business: if you're running a café or restaurant, the kitchen will be your energy hot spot; if a deli, then probably refrigeration; if a design studio, computers and printers will feature more prominently.

75 See www.sustainability.vic.gov.au

76 Department of Sustainability and Environment, 2006. See www.sustainability.vic.gov.au

Tracking your use

Knowing where and how you're using and paying for energy within your business right now is your first step. You can then prioritise the actions you can take to cut energy use and save money. This may require research to find the best options for your business over the medium to longer term:

1. Review your energy bills (ideally over the past 24 months or so) to get an idea of how much you're using and paying. This will enable you to see how much your costs vary between summer and winter, and whether you are paying a high tariff for peak demand. If you're having difficulty working out how your bill is calculated, call your energy provider for assistance.
2. Record your energy use and cost in a spreadsheet. You can download a free software application developed by Sustainability Victoria called the Energy Smart Tracker.[77] This will assist you in monitoring your energy demand and associated greenhouse gases.
3. Buy a power meter to better understand the amount of electricity being used by your individual machines and appliances. These handy devices, usually costing around $100, plug in between the power point and the appliance and give a read-out of how much power is being drawn. By inputting the price of your electricity you can tell exactly how much an appliance is costing to run, in addition to the amount of greenhouse gases produced.
4. Calculate the carbon footprint of your business. A SME's carbon footprint is calculated when it measures the amount of greenhouse gas emissions emitted by its overall operations. You can input the different impacts of your business and get your carbon footprint by going to http://calculator.futureclimate.com.au and using the SME carbon calculator.

77 See www.sustainability.vic.gov.au

The key to energy efficiency is choosing options that you or others don't have to think too much about once they are implemented. The biggest difference you can make on this score is at the purchasing stage. As such, it pays to undertake a complete cost assessment of your appliances and fittings that accounts for their energy consumption and maintenance requirements.

Energy saving and your bottom line

Energy costs are one of the easiest things to reduce. With minimal expenditure and effort, many companies can reduce their energy bills by up to 20 per cent. This example from the UK Carbon Trust shows how a 20 per cent saving on your energy bill is equivalent to a five per cent increase in overall profits.

Turnover	$1,000,000
Profits before energy saving	$100,000
Cost of gas and electricity	$25,000
Potential energy saving (20 per cent of $25,000)	$5,000
Profit after energy saving	$105,000

Representing a 5 per cent increase in profits[78]

Keeping it simple

Creating a culture that promotes saving energy in your business is important, because employees tend to go with the flow of whatever is accepted practice. Signs, emails and leading by example can make a difference to keeping energy conservation 'in sight' and thus 'in mind'.

But human nature is hard to overcome. Any plan to reduce energy use that depends on constant vigilance, such as having people manually switch things off after use, is likely to fail – particularly if the onus is on people who don't see it as making all that much difference. This is also the case when the extra costs don't come out of their own pocket. This is one key reason why it makes sense to encourage your employees to also reduce their energy use at home. Habits undertaken to save money at home will, over time, be brought into the workplace in a way that can save your business money.

78 Adapted from the UK Carbon Trust. See www.carbontrust.co.uk

Energy performance contracts

Looking for a simple, low-risk way to maximise your energy-efficiency without the high up-front capital cost? Then an energy performance contract (EPC) might be the ideal solution for your business.

Energy performance contracting is well-established in the US, Canada and Europe and is increasingly being used in Australia. It involves contracting an energy service company (known as an ESCO) to provide a complete energy-efficiency service to your business.

The contractor starts by conducting an expert analysis of the potential energy-saving measures that can be made throughout your operations. They then make a proposal to your business to install, tune and maintain a range of cost-saving energy-efficiency measures.

The contractor guarantees you will achieve your energy and cost saving targets. This means the energy savings will pay back your initial investment, typically over a period of three to eight years, and improve the profitability of your business. The contractor is paid out of the energy savings, and if the project doesn't yield the promised energy or cost savings, the contractor pays the shortfall, not your business.

While your business may want to finance the energy-efficiency measures itself or through your bank, some energy service companies even arrange finance so that you don't have to outlay any capital. The savings from EPCs can be substantial.

All sounds too good to be true? Fortunately it isn't. The website of the Energy Efficiency Council has a free best practice guide on how to choose an ESCO, how to define the scope of the project and how to negotiate and implement an EPC. This guide is a must-read for any SME wishing to enter into an arrangement with an ESCO. The Energy Efficiency Council can also provide template EPC contract documents.

Go to the Energy Efficiency Council website at www.eec.org.au for more information about energy performance contracts, including whether or not an energy performance contract is suitable for your business.

Case study: Penrith City Council

Penrith City Council appointed Siemens for its energy performance contract. Siemens then delivered per year up to 167 per cent of guaranteed electricity savings and 171 per cent of guaranteed greenhouse gas reduction.

Over a three year period, Penrith City Council paid back its internal loan and saved more than $640,000 in electricity and water charges. In the process it also reduced its carbon emissions by more than 4000 tonnes – equivalent to supplying enough power for 850 energy-efficient houses.

Case study: State Library of NSW

With an energy performance contract that focused on lighting controls, heating, ventilation and air-conditioning upgrades and water savings, the State Library of NSW contracted with Energy Conservation Systems to achieve guaranteed savings of $104,000 per annum, total savings of $229,000 per annum and a reduction in CO_2 emissions of 988 tonnes per annum.

According to Jim Sinclair, Energy Manager for the State Library of NSW, "The Energy Performance Contract has allowed us to implement a range of improvements which will benefit the library and its users as well as save on energy bills. And the guaranteed savings mean there's no risk to Treasury, who provided the financing."[79]

79 See www.eec.org.au

Case study: De Bortoli Wines – smart use of resources

The NSW DECC's 'Sustainability Advantage' program has generated significant savings for hundreds of its corporate members, clubs and government bodies.

One member, De Bortoli Wines, managed to save money at its Bilbul winery in the Riverina by recycling all wastewater and significantly reducing energy use.

By removing sodium from all cleaning and production processes, the winery's wastewater is able to be used for irrigation. De Bortoli Wines now has a farm dedicated to the cropping of wastewater from which they generate grain and straw for sale.

By simplifying wastewater treatment through the introduction of a new low energy aeration system, the amount of energy used to treat wastewater was reduced by 90 per cent. This was equivalent to more than $180,000 in annual energy costs.

Taking advantage of the DECC Sustainability Advantage – Staff Engagement modules and the introduction of Lean and Visual Manufacturing Principles, De Bortoli Wines has also made major improvements to its manufacturing processes.

Examples of other savings include:

- production-line efficiency improvements varying between 15% and 37%
- reduction in non-conforming processes of 35%
- customer complaints reduced by 40%.

The business' Operations Manager says these initiatives have a net benefit of more than $500,000 per annum and the programs deferred capital spending of $350,000 for large power supplies.[80]

80 See www.debortoli.com.au

What you need to know about heating, ventilation and air-conditioning

Heating, ventilation and air-conditioning (HVAC) accounts for about 70 per cent of energy use in the average Australian commercial building. HVAC was found to be the most significant cause of greenhouse gas emissions at approximately 63 per cent of total emissions.[81] Every degree of heating and cooling can increase energy consumption by up to 10 per cent. As such, increasing HVAC efficiencies has great potential to bring about significant financial savings for your business.

How much you can reduce your heating, cooling and ventilation costs depends on your building, its location and, of course, whether you own or lease your premises. In our chapter on building performance (chapter 9) we'll look at the bigger structural issues to do with HVAC. In this section, we'll focus on the simpler actions that can improve the performance of your existing systems. Things your business can do today include:

1. Adjust the temperature according to the season. Many workplaces set systems to a constant 20–24 degrees regardless of the weather and what people are wearing. Set the temperature a little higher during summer (24–27° Celsius) and lower (18–20° Celsius) in winter.
2. Turn off systems overnight and on weekends when the building is not occupied. If a few people are working during those times, consider having efficient portable heaters or air coolers available to keep the temperature comfortable.
3. Install Energy Star compliant programmable thermostats. These can cost between $25 to $100 but can cut HVAC costs by as much as 30%[82] by running your heating and cooling according to both temperature and whether the building is occupied. Set them to turn on your system just before people arrive to work and off just before they leave.
4. Don't waste energy by heating and cooling little-used areas. Block vents in areas that are unoccupied, and consider doing the same in areas that are used only for a short time, such as toilets and storerooms.
5. Use fans to increase the efficiency of central air-conditioning. The evaporative effect of air movement can mean people feel just as cool with the thermostat set 3–5° Celsius higher.
6. Open doors and windows can easily double heating and cooling energy costs. Keep them closed where possible and consider installing hydraulic door closers or thermal strip curtains in high-traffic areas.

81 *Australian Commercial Building Greenhouse Gas Emissions 1990–2010*, Australian Greenhouse Office 1999

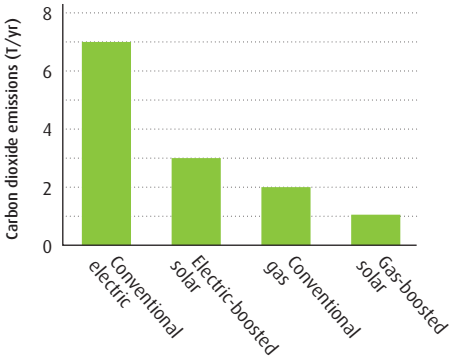
82 Origin Energy, Energy Efficiency Fact Sheet: Heating, Ventilation and Air Conditioning

7. Poorly maintained HVAC equipment can add up to 10% to your energy bill.[83] Ensure it is regularly serviced in line with the manufacturer's recommendations and have condenser coils, evaporators and filters cleaned; valves and refrigerant levels checked, and leaks fixed.
8. Avoid peak demand periods. By adjusting workplace schedules and reducing energy use during peak demand periods, savings can be made on air-conditioning, lighting and other electricity use.

Water heating

Water heating is an energy-intensive process, whether it's running a laundry or doing something simple like boiling water for cups of tea.

Relative carbon dioxide emissions from different water heater types



The graph shows the difference in greenhouse emissions produced by the main types of hot water systems. Although taken from a residential study, it's worth noting that higher emissions mean higher running costs. But your choice of hot water systems will often depend on whether you own your premises, so let's focus here on some more immediate strategies to improve water-heating efficiency:

1. According to UK magazine *Which?*,[84] on average it takes as much energy to boil a litre of water as it does to run a standard fridge for seven hours. Employees don't link the energy they use with the cost impact it has on your bottom line. The solution is to put up signs near your kettles that remind people to only boil

83 Origin Energy, Energy Efficiency Fact Sheet: Heating, Ventilation and Air Conditioning
84 See www.which.co.uk

the water they need. It's also worth reminding people to watch out for dripping hot water taps. Get input from employees on what other reminders could be put near your other hot water devices.

2. Hot water systems often overheat water and in doing so cost you money that you shouldn't be paying. If your system has an adjustable thermostat, set the temperature lower: while storage hot water systems should be set to at least 60° Celsius (to prevent the growth of micro-organisms that cause Legionnaires Disease) there is no need to go any higher than 65° Celsius; instantaneous hot water systems can be set at 50°Celsius.[85]

On average it takes as much energy to boil a litre of water as it does to run a standard fridge for seven hours.

3. Systems located a long distance from outlets waste energy through the transferral of heat to pipes. Even if you don't have any control over the location of your main hot water supply, you can insulate the hot water pipes to minimise heat loss. Insulating your storage tanks also helps to reduce heat loss.
4. Consider installing local instantaneous booster systems or urns in high-use areas like kitchens. These can be switched off when not in use, such as overnight.
5. If your business doesn't require hot water around the clock, turn off systems and pumps when they won't be used for an extended period, such as holiday seasons or even over long weekends.
6. Choose water-efficient fittings and appliances. Even an inexpensive device like a flow-stem valve can help to halve water use. Check the water-rating label that is mandatory on water fittings. When buying new appliances, like washing machines and dishwashers, you should also check the energy-rating label.
7. Choose units that meet the demand you place on them. A water heater with a high energy-efficiency rating that's too big for your needs could use more energy than a smaller unit with a lower rating.

85 Energy Efficiency Information Sheet: Hot Water, Australian Government Department of the Environment, Water, Heritage and the Arts

8. If you have shower facilities for employees, install water-efficient showerheads. The 3 star water-efficient showerheads can significantly reduce your use of water and save up to $100–$150 a year in water and heating costs. Given these showerheads cost anything from $30–$90, it's a sensible investment. Better still, a good 3 star rated showerhead can give your employees a shower that's just as good as the old water-guzzling type.
9. Ensure hot water heaters are properly maintained. Have them serviced according to the manufacturer's instructions to ensure they're running at optimum efficiency.

Combining energy-saving lighting with simple use-reduction strategies can potentially cut your lighting costs by half.

Lighting

Lighting accounts for just over 17 per cent of energy use and just over 20 per cent of greenhouse emissions from commercial buildings. The Australian Greenhouse Office estimated that simple measures could reduce those figures by 50–70 per cent.[86]

It is a common misconception that energy-efficient lights just aren't up to the job: "they're not as bright," "give off a 'cold' light," and "don't come in the same range of fittings and sizes as incandescent globes." While this was true a few years ago, it's no longer the case today. Energy-saving lights can now meet every purpose and every brightness level, lasting far longer and using a lot less electricity than old-fashioned globes.

For SMEs starting out on their eco-efficiency journey, combining energy-saving lighting with simple use-reduction strategies can potentially cut your lighting costs by half. Follow these tips to save money and the environment:

1. Make the most of natural light. Keep windows clean and clear of shading, and position workspaces to make the most of available light sources.
2. Choose light colours that reflect light for walls, ceilings and bench tops.
3. Replace inefficient incandescent and halogen lights with energy-efficient lighting. This can be a combination of fluorescent, compact fluorescent or LED. Beacon Lighting estimate that this could reduce lighting power use by up to 80 – 90 per cent. If your business already has fluorescent lighting, significant savings can also be made by utilising newer technologies. The common T8 linear fluorescent that's

86 *Australian Commercial Building Greenhouse Gas Emissions 1990–2010,* Australian Greenhouse Office 1999

used in huge quantities in offices and showrooms can now be swapped over to more efficient T5 models. This will save around 30 per cent in running costs. Improvements in reflector designs in fluorescent fittings mean that a one or two tube product could replace your current two or four tube product with no effect on lighting output.

4. Task lighting a small area such as a desk is far more efficient than lighting a whole area. Task lights can be combined with dimmable space lighting (dimmable, energy-saving CFLs are now available). This allows you to adjust the lighting in a room so that it meets everyone's needs, achieving the best outcome in terms of occupational health and safety, as well as maximising energy efficiency and cost savings.
5. Be green and clean. Keep fixtures clean and free of dust as that diminishes lighting effectiveness.
6. Turn lights off that aren't needed and place reminders near light switches.
7. Install movement activated sensors that will turn lights off automatically when no one is around. It makes sense to put these sensors in places like meeting rooms and toilets where the lights don't need to remain on all the time. The technology has now developed to the point where you can also use them throughout the whole office. In addition to this, there are daylight (photoelectric) sensors which can be connected to light fittings. If it's a bright day, the daylight sensor will dim the lighting to maintain a consistent light level. This light dimming results in power savings.
8. Businesses wanting to minimise their lighting bills should keep a close eye on developments surrounding LED lighting. This ultra-efficient lighting is a fast-moving sector where many new technologies and products are being brought to market.

Cooking

Cooking-related energy use obviously doesn't apply to every business. But even if you're not running a café or restaurant the general principles that apply to energy efficiency in the kitchen are really no different to any other work environment: it's all about using the right tools for the job, being smart about your work practices and keeping equipment well maintained so it operates at peak performance.

The benefit to your business is not just lower energy bills but also better performance. It's also about extending the lifespan of often very expensive equipment. Besides, you've got a kitchen at home, right? So these tips will help save energy there too:

1. Make the most of the energy you use. Limit the opening of oven doors. Keep lids on your pots and pans as much as you can. Use flat-bottom saucepans that match the size of hotplates to maximise heat transfer. Ensure energy isn't wasted by flames licking around the sides of pots.
2. Combine jobs. Use a saucepan with a stacking steamer to make the most of a single hotplate. Plan ahead to use a heated oven that can cook several dishes.
3. Use the most efficient implements. Smaller appliances can help to meet peak needs where large appliances, taking longer to heat up, would be underused. A microwave oven is far more efficient (and faster) than an oven, so use it to thaw frozen food.
4. Adopt energy-conscious cooking styles. Reducing heat after initial searing then cooking at moderate temperatures will preserve food quality and save energy. An oven can usually be turned off several minutes before food is fully cooked because the residual heat will complete the process.

Case study: La Porchetta – investing in new equipment and saving money

La Porchetta has more than 80 Italian restaurants around Australia. Each restaurant spends between $8000 and $15,000 per year on gas supplies. They have now identified a new gas powered oven that reduces this gas usage by a third. Better still, it cooks food faster.

Using this oven will save money, reduce gas-related emissions and get the food out quicker to hungry customers. This is the kind of win-win environmental development that all companies should be on the lookout for.

5. Clean, well-maintained equipment will work at peak efficiency. Ovens and other thermostat-controlled devices should be recalibrated about twice a year. Check that your oven and fridge seals are in good order, and hotplates and range hoods are free of grease and baked-in residue.
6. Move your fridge away from the wall and make sure there is at least an 80mm space on all sides of your fridge to allow air to circulate around the rear coils. Locate your fridge in a cool spot, ideally out of direct sunlight and away from the oven.
7. Always check the star rating labels and try to purchase the most efficient appliances with the highest ratings, to meet your needs.
8. Most important of all, understand the capabilities of your equipment and communicate energy-efficiency principles to your employees. Be patient, because ingrained habits take time to unlearn.

Office equipment

Energy-efficient machines and energy-saving practices can cut the cost and emissions associated with office equipment. Significant savings can be derived by switching these machines off outside of normal office hours.

Think about this: there are 168 hours in a week, but most offices are only used for 50 to 60 of those hours. That leaves 118 hours when the office is unoccupied. Anything left on at this time could consume up to twice the energy it would during occupied hours.

We'll consider the environmental impact of information technology later in the book (chapter 11) but for now here are some starting tips on how to save energy:

1. Leaving machines on, contrary to one strange urban myth, does not save more power than switching them off then on again. Apart from devices that need to be on, like fax machines, photocopiers and computer servers, most other machines likely to be unused within the half hour can be switched off.
2. In business hours, set computers to go into sleep mode when left idle for 10 minutes or more. A sleeping computer will use as little as 5% of full power. Sleep mode also saves screens from phosphor burn-in far more economically than screen savers, which save the screen but no energy.

3. Flat LED screens consume less energy than LCD screens, which in turn consume less power than bulky CRT monitors.
4. Laptop computers consume less electricity than desktop and tower CPUs. If your employees take work home or are often out of the office, think about equipping them with a laptop.
5. When buying new machines look for the Energy Star label, the international standard for energy-efficient electronic equipment. Energy Star-compliant machines can save significant amounts of energy when idle – which in the case of printers and fax machines is up to 95% of the time. When you purchase Energy Star-compliant equipment, make sure all the settings are turned on when you first set up the machine.

Placing posters around the office encouraging everyone to switch off unused equipment is a surprisingly easy way to save money.

6. A larger printer or photocopier shared by many people is generally more energy-efficient than several smaller machines used by a few. A larger machine is also more likely to have better features such as double-sided printing (the greatest source of carbon emissions from office machines is the embedded energy of consumables like paper and ink). But bigger isn't always better: ink-jet printers, for instance, can use up to 90% less energy than a small laser printer. Choose what meets your needs.
7. Many electronic devices are never truly off but in standby mode, drawing power 24 hours a day even though they might be used for a few hours, or even a few minutes (think of how long you might use a microwave oven, for instance). Install accessible power boards that can easily switch off such equipment at the power source. Placing posters around the office encouraging everyone to switch off unused equipment is a surprisingly easy way to save money.
8. Use computer system preferences, software or external timers on a power point to ensure that all designated machines will automatically be switched off at a set time. Be sure to provide instructions on overriding the software or timer when employees need to work out of normal hours.

9. Mobile phone rechargers and other transformers can be drawing electricity even when not connected to the devices they power. Encourage employees to plug them into a socket only when they need to. People can also save energy by recharging their mobile phones when driving.
10. Encourage employees to think about energy use and ways to do things more efficiently. It can be as simple as taking responsibility to turn off their computer and check other machines when they step out for lunch or go home. Or planning to do their printing job in one batch, since most energy in photocopiers and printers is used to heat the components that fuse the toner to paper. Getting team 'buy-in' to saving energy is crucial if you are to achieve optimum results.

Case study: Melbourne Airport – reducing environmental impact in the bathroom

If you've ever flown through Melbourne Airport, then you're one of the 25 million passengers who use the airport every year.[87]

Among the busiest places in the airport are the bathroom facilities. As part of its recent upgrade, a decision was made to install hand dryers.

The Dyson Airblade™ hand dryer was chosen because of the energy saving and environmental benefits offered by the unit. It dries your hands in 10 seconds instead of the 28 second average for normal dryers and it only uses 1 watt on standby instead of 3 watts. Over the lifetime of the dryers, the cost saving is estimated to be more than 85 per cent. In addition to saving trees and reducing the number of paper towels going to landfill, the dryers will potentially save 186,761 kg of CO_2 emissions and use 76.8 per cent less energy.[88]

87 See www.melbourneairport.com.au

88 *Green Purchasing in Australia*, by NetBalance Foundation for ecoBuy, 2009

Refrigeration

If you're in food processing, running a deli or managing a bar, refrigeration costs can be a big part of your energy bills. Even if you're an office-based business, simple low-cost practices can easily reduce refrigeration expenses by 15 per cent or more:

1. Check to make sure your cold-storage units aren't needlessly too cold. Refrigerators can optimally run at 3 to 4° Celsius and freezers at ⁻15 to ⁻18° Celsius. Use a thermometer to ensure your thermostats are working properly.[89]
2. Keep freezers frost-free because any ice build up greater than about 5mm in thickness will act an insulator, increasing energy consumption. Also periodically clean the condenser coils, as a build-up of dust will inhibit their operation.
3. Ensure equipment is properly maintained. Check that seals, hinges and catches are working to keep the units airtight. If motors are running continuously or making a strange noise, then call in a refrigeration mechanic.
4. While overfilling can decrease efficiency by inhibiting air circulation, so too can under-filling. A refrigerator works best when at least two-thirds full and a freezer when at least three-quarters full. The more empty space, the more energy goes into cooling air, which spills out when the door is opened. If you've got a half-empty fridge, fill it up with airtight containers of water. Distribute contents evenly for maximum cooling efficiency. You can fill the gaps in your freezers with scrunched up paper.
5. Position units out of direct sunlight and away from heat-producing equipment. Leave sufficient clearance space (generally at least 80mm) between the back and the wall, to allow good airflow around the condenser coils; insufficient ventilation reduces heat dispersal and can reduce energy efficiency by up to 15%.
6. If refrigeration is a big part of your business, it may make sense to replace old units with new energy-efficient models that can use up to half the energy and are therefore twice as cheap to run. Bear in mind the energy efficiency rating, size (smaller is cheaper) and whether the unit is self-defrosting; non-defrosting models will require a little more maintenance but will usually use less energy.

89 Energy Efficiency Fact Sheet: Refrigeration, Origin Energy

Steam systems

When we think of steam, many of us think of steam trains and a by-gone era. But steam systems are still prevalent, used for everything from driving turbines, heating, climate control, cooking and cleaning, and account for nine per cent of total energy use in the commercial sector.[90] Here are some tips for getting the best out of your steam system:

1. Have a qualified tradesperson regularly measure the temperature and pressure of your feed water and steam output, flow rate and fuel consumption to ensure your boiler is operating at maximum performance.
2. Boiler blowdown – to control solids in the boiler water, protecting surfaces from scaling or corrosion problems – is an important part of boiler maintenance. If done too infrequently you risk damage to the boiler but if done too frequently you waste energy. Get an expert assessment to determine what is optimum, based on the energy use and cost of blowdown compared with options to improve feed-in water quality.
3. Leaks in pipe sections, connections and steam traps that drain condensate can be a big cause of energy loss from steam systems. While big leaks may be easily seen and heard, ultrasonic leak detection by a trained technician will identify smaller leaks.
4. A key tip is to be resourceful with how you use your system. Questions to ask include:
    a) Could you use a smaller boiler?
    b) Could you lower the temperature of your steam supply?
    c) Is the efficiency of the system being maximised by locating the boiler as close as possible to where the steam is used?
    d) Is there any inappropriate use of the system, such as heating water?
    e) Could you use a more efficient fuel source such as natural gas or, better yet, waste heat from another piece of equipment?

90 Sustainability Victoria: *ResourceSmart Energy Efficiency Best Practice Guide: Steam, Hot Water and Process Heating*

Compressed air

Compressed air is often described as the fourth utility, after water, electricity and gas, powering everything from pneumatic hammers to drills and paint sprayers.

It is also the most expensive, accounting for about 10 per cent of all electrical energy consumed by business. With 73 per cent of the cost of a compressor due to energy use, significant cost savings can be made by improving energy efficiency.[91]

There are many easy and low-cost ways to improve energy efficiency: by fixing leaks, reducing intake air temperature, optimising pressure, optimising compressor operation and avoiding inappropriate use.

What is renewable energy and why should SMEs care?

Renewable energy is the term given to power that's generated from naturally renewing sources such as wind, sunlight, flowing water, 'hot rocks' and energy derived from plants and animal waste (generally called biomass).

When you sign up to use accredited renewable energy the electricity company looks at how much energy you use and then sources the equivalent amount from a renewable power generator. This renewable energy is not fed directly to your home or business, it is fed into the power grid, reducing overall greenhouse emissions.

After reducing your energy use (electricity, gas, petrol, diesel etc), one of the simplest things SMEs can do to be more sustainable is to use accredited renewable energy – called GreenPower.[92]

Case study: The ecoswitch®

Australian inventor Rod Sheppard came to the realisation that many computers and printers are left on because it's too difficult to turn them off at the plug. So he came up with the ecoswitch®. It's an extension switch that makes it far easier to turn off appliances at the plug. Leaving such devices in standby mode wastes electricity and money so the $20 device will pay for itself in a short period of time. Visit www.ecoswitch.com.au for more information.

91 See www.resourcesmart.vic.gov.au

92 The Australian Government has an official program called GreenPower that accredits genuine renewable energy providers. See www.greenpower.gov.au

Like to know more?

For more detailed advice about practical ways to improve energy-efficiency, check out these great online resources:

Energy and greenhouse management toolkit

Developed by Sustainability Victoria and EPA Victoria, this toolkit provides tools, case studies and very detailed guides on how to improve eco-efficiency and cut energy costs. Go to www.sustainability.vic.gov.au to find out more.

Energy ratings

A joint initiative of Commonwealth, State, and Territory government agencies, this site is a comprehensive guide to choosing energy-efficient appliances, including details on the standards that must be met by all products that carry an energy label or are regulated under the Minimum Energy Performance Standards protocol. Go to www.energyrating.gov.au to find out more.

The Energy Efficiency Council

The Energy Efficiency Council was formed in 2009 in order to bring energy-efficiency providers and clients together and to grow the market for energy-efficient products and services.

The EEC is well-known for its ability to provide advice and help on energy-efficiency services and products. Its members also provide a wide range of energy-efficiency products and services that include the identification and implementation of energy-efficiency projects at buildings and sites.

For more information, email info@eec.org.au, visit www.eec.org.au or call 03 8327 8422.

Like some other sustainability initiatives, purchasing GreenPower can cost more upfront than non-renewable energy but it delivers other benefits. For the nation and for the environment it reduces greenhouse emissions; for you it can assist in meeting environmental goals and gaining third-party accreditation; and for your customers and suppliers it shows you're serious about being more sustainable.

After reducing your energy use (electricity, gas, petrol, diesel etc), one of the simplest things SMEs can do to be more sustainable is to use accredited renewable energy – called GreenPower.

The Electricity Supply Association of Australia estimates that more than one-fifth of Australia's electricity is used by the commercial sector. More than 80 per cent of this energy comes from the burning of coal which contributes to global warming.

The benefits of using renewable energy are:

1. Positioning your business as one that is committed to environmentally sustainable practices with employees, customers, suppliers and the wider community.
2. Directly contributing to the reduction of Australia's carbon footprint. This could help to position your business to cope more easily with environmental performance requirements imposed now or in the future by regulators, lenders, insurers or investors.
3. Bringing greater focus to your energy-saving strategies, improving your potential to lower overall electricity costs.
4. Differentiating your company from competitors and potentially increasing your appeal to consumers and increasing sales – particularly among the 821,504 households currently purchasing GreenPower. You will also be among the 38,293 commercial customers who buy GreenPower.[93]

93 *National GreenPower Accreditation Program Status Report* Quarter 3: 1 July to 30 September 2009

GreenPower

The Australian Government runs a program called GreenPower which was launched in 1997 to provide independent accreditation of renewable energy production. The program undertakes publicly available independent auditing of energy retailers to make sure a company that sells accredited renewable energy products is investing in renewable energy.

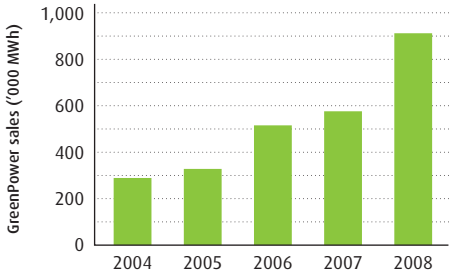
There are about 130 accredited renewable energy products for business and residential users under GreenPower. You can also use GreenPower to run events.

GreenPower is available from most licensed electricity retailers, so obtaining it for your business is as simple as picking up the phone to an electricity company.

Go to www.greenpower.gov.au to learn more about renewable energy providers and renewable energy generally.

While GreenPower represents less than one per cent of electricity sales to commercial customers, this graphic shows the high level of growth that GreenPower has experienced in the commercial sector.

GreenPower sales growth 2004–08



Source: Green Purchasing Australia Report 2008 – ECO-Buy and Net Balance Foundation[94]

Renewable energy fact sheets

What's the difference between solar photovoltaic power and solar thermal? Confused about hydro or geothermal power? If you want more information on renewable energy, go to www.cleanenergycouncil.org.au to check out the Clean Energy Council fact sheets.

94 See www.ecobuy.com.au

Renewable energy sources

Solar PV

Photovoltaic technology uses semi-conducting solar cells to transform solar photons into direct electric current. Although there is great potential for large-scale solar PV in Australia, its main current use is for decentralised power generation that utilises rooftop space to power individual buildings. Contact your local energy utility to see if any solar feed-in tariffs are available for your business.

Ocean power

Ocean energy can be tapped from a range of sources including marine currents, thermal layering and salt gradients, but the two sources being investigated for development in Australia are tides and waves. Compared to most other renewable energy sources, ocean power is relatively straightforward, easily scalable and has the advantage of being sited close to where most of the population is – in coastal areas.

Geothermal

Geothermal energy uses underground heat to power turbines. New Zealand generates electricity by tapping its abundant volcanic geysers and the International Energy Agency estimates geothermal energy could supply 5 per cent of global electricity by 2020. A number of companies are currently developing geothermal projects in Australia.

Biomass

Biomass power is primarily generated in two ways. Burning waste vegetative material (commonly done from sugar cane plantations and paper mills) is a renewable resource as is capturing and burning methane that's created by the breakdown of organic matter in rubbish tips or sewage treatment plants. Both are able to be used to generate energy onsite at production facilities or for power generation and feed-in to the electricity grid.

Solar thermal

Solar hot water systems are the main type of solar thermal technology currently being used in Australia. This technology has been in use since 1941 and is primarily used to heat household hot water. Other low-temperature solar thermal technologies are solar ponds and, for larger-scale electricity generation, solar chimneys. Solar thermal energy is emerging as a cost-competitive source of electrical power because it can be co-located with existing energy generation infrastructure. The International Energy Agency estimates that solar thermal generation costs will be on a par with coal-fired power stations by 2030.

Wind

Wind power is a tried and true technology. Small and medium farms have used hundreds of thousands of windmills over the years. With commercial power generation, bigger, taller and better-designed turbines have helped to significantly reduce the cost of wind generation over the past 15 years. Wind power has the potential to supply a significant percentage of Australia's electricity needs. It continues to play an important role in small-scale and local off-grid systems.

Hydro

Australia has about 100 hydro-electric power stations, which generate the bulk of Australia's current renewable energy. While some new projects are planned or being built, expansion is limited by a lack of waterways to dam. This is particularly so given the state of water flows in most of our river systems and the likelihood that climate change will reduce those flows even further. There is, however, scope for widespread use of mini-hydro power systems, like the South East Water Mini Hydro Project in Victoria. This is expected to generate enough electricity to power 165 homes.

‘There are steps everyone can take to be more efficient and use less water.’

8

Splash out with water savings

Water is an important issue for us all. Even if your business doesn't use a lot of water it's likely to be facing some restriction on use and increase in cost.

If your business relies on water and operates in drought-affected areas, you would be acutely affected already.

The water problems Australia faces are predicted to worsen over coming decades. However, there are steps everyone can take to be more efficient and use less water to lessen the problem, while also maintaining business operations.

Your water use

Before you can better manage your water use, you need to understand it. Doing so requires some life-cycle thinking to look at all your direct and indirect water using activities.

Direct water use

1. Calculate your baseline use – that is, the total amount of water your business consumes. If you're not clear on how to do this, call your water utility for assistance.
2. Track variables such as seasonal differences, downtime or holidays, changes in employee numbers, number of customers, or differences in work undertaken.
3. Identify equipment and activities that use water. If you have high-demand areas consider sub-metering to better measure where and how your business uses water.

Indirect water use

Every good or service contains what is called 'embodied water'. This is a measure of the total water used in producing that good or service. For example, it is estimated that a kilogram of potatoes takes about 500 litres to produce; a kilogram of rice about 1550 litres; and a kilogram of beef 50,000–100,000 litres.[95] A typical ream of paper, weighing 2.5 kilograms, takes about 60 litres of water to make; while a vehicle weighing 1.5 tonnes uses about 71,000 litres in its manufacture.[96]

Mining, growing, processing, manufacturing, packaging, transporting, storage and waste disposal all consume water. SMEs that minimise consumption by reducing, reusing and recycling resources can help to save very large amounts of water. Recycling one tonne of paper, for example, can save up to 31,780 litres of water.[97] This saving may be out of sight and out of mind but the savings are significant all the same.

Your water saving strategy

A water-efficiency strategy for SMEs involves four key elements:

- the use of water-efficient appliances and fittings
- the capturing and reuse of waste water
- maintaining equipment at maximum operational efficiency
- educating and raising awareness about the need to minimise water use.

95 See www.clw.csiro.au/issues/water

96 'The Future of Water' in *Future Dilemmas: Options to 2050 for Australia's population, technology, resource and environmental*, CSIRO Sustainable Ecosystems, October 2002

97 See www.csiro.au/helix/sciencemail/activities/hand-madepaper.html

Using water-efficient appliances and fittings

The Water Efficiency Labelling Scheme (WELS) can tell you which products are more water-efficient than others. Devices receive a rating to a maximum of six stars. More stars means less water is used and there is an associated saving on water and energy costs.

The WELS scheme covers tap equipment, urinals, toilet equipment, showers, flow controllers, washing machines and dishwashers. Go to www.waterrating.gov.au for more information about the scheme.

The savings from buying water-efficient equipment can be significant:

- toilet equipment accounts for 22% of the water saving from the WELS scheme; modern dual-flush toilets use only four litres of water – an old single flush toilet can use three times that amount
- according to the WELS site, the average urinal uses about 2.2 litres per flush, whereas a water-efficient urinal will use 1.5 litres
- a water-efficient dishwasher can use half the water of less efficient models.

Finding out more about water-efficient appliances

Check out www.waterrating.gov.au for the water-efficiency ratings of the 12,700 products that carry the WELS symbol.

The sister scheme to WELS for other water products and services is the Smart Approved WaterMark. More than 160 products now carry the Smart Approved WaterMark label. For more information, go to www.smartwatermark.org or call 02 9290 3322.

Visit www.greenplumbers.com.au to find a plumbing service that can advise on the most water-efficient products and appliances for your needs.

Capturing and reusing waste water

Your scope for doing this will depend on the nature of your business. It could be as simple as diverting water from bathroom basins to toilet cisterns in a small office. In larger companies, it could include a comprehensive wastewater management plan involving treatment and recycling where water is used an industrial input.

As these solutions, and the savings to be made, are very site-specific it is best to seek advice from a qualified plumber, your local water authority or a waste-management specialist.

Water systems that handle black and grey water can also be found at the www.smartwatermark.org website.

Maintain equipment

Improving the operational efficiency of equipment is one of the simplest ways to reduce water consumption. A study by Sydney Water found nearly a third (28 per cent) of water consumption in the average commercial building can be due to leaks.[98]

Solutions to the problem of leaks include:

- read water meters regularly to help detect leaks and to identify equipment that may be operating in error
- check the meter when no one is in the office or your plant is not running – if the meter is running ask your water authority to investigate
- conduct regular inspections of hot water systems, steam boilers and air-conditioning units, as well as pipes, hoses and connections
- put food dye in a toilet cistern overnight; if the water in the bowl is coloured in the morning, you have a cistern leak that needs to be fixed.

Educating and raising awareness

Effective training and communication is vital if you are to achieve your water-saving goals. Here are a few ideas to encourage water-conscious behaviour in your business:

1. Place signs on all water-using fixtures, explaining how much water they use and how to use them most efficiently, such as not running a dishwasher before it is full.

98 Sydney Water: *Best Practice Guidelines for water conservation in commercial office buildings and shopping centres*

Saving money on bottled water:

- Australians spend more than half a billion dollars a year on bottled water – SMEs can pay more for a litre of water than they do for a litre of petrol
- Westpac removed bottled water from its offices and branches and replaced it with filtered water – this is the better environmental option as it can save your business money and at the same time reduce the need to bottle and transport large drum bottled water and small single-use bottles; for more case studies on corporate bottled water reduction visit www.gotap.com.au
- in 2009, in a move that generated global headlines, all the small business retailers in the NSW town of Bundanoon banned single-use still bottled water; they now sell refillable bottles instead – their customers fill them up for free and the retailers make money on the refillable bottles
- according to DECC, it takes up to 200 millilitres of oil to produce, transport, refrigerate and dispose of one litre of bottled water.

2. Look out for leaks. Place posters around your business that give a phone number or email so people can report leaks in bathrooms, kitchens and other areas of your business. It makes sense to put these posters in the areas where water is being used.
3. Install shower timers to encourage shorter showers. Using a water-efficient shower and reducing shower durations from seven minutes to four minutes can save up to 30 litres or more per shower. As you're also reducing the amount of water you have to heat, the savings from this move can be significant.

4. Include water conservation in employee inductions and invite a representative from a municipal or state government water-efficiency program to address an employee seminar.
5. Use newsletters, email or pay-slip notifications to communicate water-saving tips, new measures and positive feedback on water saving reductions.
6. Promote your water-saving initiatives within the local community via media releases and the local newspaper. Such steps can enhance your business profile, raise your awareness with consumers and potential customers and generally raise awareness in the community. See chapter 13 for more information on communicating your committment to sustainability.
7. Provide opportunities for your employees and contractors to play a leadership role in water-saving initiatives. Make sure you provide a mechanism to acknowledge their contribution as well as incentives to encourage better outcomes.

Use newsletters, email or pay-slip notifications to communicate water-saving tips, new measures and positive feedback on water-saving reductions.

Getting assistance

Most water authorities and suppliers offer assistance to businesses to reduce their water usage and water bills.

They do this through a range of services such as site assessments to conduct a water efficiency appraisal and comprehensive reports providing your business with a water-saving plan.

Different authorities offer different options for these services – some provide initial advice for free and then either charge directly for more detailed work or offer pay-by-saving programs that charge a scheduled payment over time as your business reduces water use and costs.

Go to www.savewater.com.au/programs-and-events/savewater-efficiency-service for more information and to see if this service is available in your area.

Actions for your water strategy

Kitchens:

1. Install water-efficient dishwashers. A six-star rated model under the Water Efficiency Label Scheme (WELS) can use half the water of older models. Also avoid running dishwashers until they are fully loaded.
2. Use WELS-certified plumbing fixtures, such as low-flow and aerator devices on taps.
3. Replace wok stoves with waterless models. Traditional stoves use an average of 5500 litres of water a day in cooling and cleaning, costing thousands of dollars in water.[99] A waterless wok stove can pay for itself in about a year.
4. Turn off combi ovens when not in use.
5. Avoid the use of running water to wash or thaw produce.
6. Clean floors with brooms and mops, rather than hosing them down.
7. Use a water filter on taps instead of buying bottled water.
8. Put water aerators and flow restrictors on kitchen taps.

Bathroom areas

1. Use water-efficient plumbing fixtures. Flow control valves on taps reduce average flow from 12 litres to four litres or less a minute. Water-efficient showerheads can reduce flow from about 15 litres to nine litres or less a minute. The latest 4.5/3L dual-flush toilets use 30 to 60% less water than older models.
2. Install water-efficient urinals with infrared 'smart' flushing controls. One single inefficient urinal in a high-use location can use up to 700 litres of water a day. To cut water use to virtually nothing (besides cleaning) consider waterless urinals – though make sure you have piping that can cope with them as the undiluted ammonia in urine can corrode copper pipes.
3. Insulate hot water pipes and minimise the distance between hot water tanks and taps. This avoids running the tap to get hot water, thereby helping you to save money by reducing the energy needed to heat the water.

99 *The Waterless Wok Stove*, Sydney Water. See www.sydneywater.com.au

Waterless urinals

A bathroom with a waterless urinal system can save up to 150 kilolitres of water each year.[100]

Laundry areas:

1. Replace top-loading washing machines with water-efficient front-loading models. The best rated machines can use up to two-thirds less water than older models. Avoid running them until there is a full load.
2. Washing in cold water will also help to reduce the cost of heating the water – which in turn helps to reduce greenhouse emissions.
3. Ensure equipment such as boilers, pumps, chillers and water heaters are maintained to prevent water loss due to leaks, steam or condensation. Try to make sure that they are used according to actual loads and are shut down when not in use.
4. Install timers to turn off equipment when it's not in use.
5. Install a system to reuse water where the opportunity exists.

Plants and outdoor areas:

1. Choose water-efficient products, such as trigger nozzles on hoses, and service providers displaying the Smart Approved WaterMark. The label certifies products and services that help to reduce indoor and outdoor water use.[101]
2. Use native and drought-tolerant plants and replace ornamental or unused lawn areas with ground cover or a bush garden.

100 *Water Efficiency Guide: Office and Public Buildings*, Department of Environment and Heritage, October 2006

101 See www.smartwatermark.info

Case study: Caroma – saving water and money with the dual-flush toilet

How much water can efficiency measures save? Consider the case of the humble toilet. Prior to 1981 the standard toilet used about 12 litres of water per flush. Then Bruce Thompson, working for the Caroma company in Adelaide, developed a dual-flush design with a federal industry grant of $130,000.

A trial in South Australia found the dual-flush toilet, which used 11 litres for every full flush or 5.5 litres per half flush, saved 32,000 litres of water per household a year. Soon after, all states except NSW made the dual-flush toilet compulsory in new buildings.

In addition to stopping money from being flushed away, the dual-flush toilet is now exported to 30 countries around the world. It's another example of the business potential of environmental innovation.

About 75 per cent of toilets in Australian homes are now dual-flush and the water savings are an estimated 214 gigalitres a year. The Institute of Sustainable Futures at the University of Technology Sydney has estimated that replacing the remaining 3.1 million single-flush toilets with 4.5/3-litre dual-flush toilets would save a further 79 gigalitres of water a year.

Did you know?

We are sometimes not aware of the water our businesses waste. The Nursery and Garden Industry Australia's (NGIA) Best Practice Guidelines state that: "Water use efficiencies as low as 10 per cent are common in Australian nurseries."

3. Cover garden beds with mulch. This will reduce evaporative water loss from the soil by up to 70%.
4. Use timers and moisture sensors to avoid over-watering. Group plants with similar water requirements together (this is called hydro-zoning).
5. Minimise untreated run-off going straight down stormwater drains by routing drain pipes to ponds or bioswales (landscaped areas designed to remove silt and pollution from surface run-off water).
6. Use permeable pavers or paving designs that provide gaps for water to reach the Earth, where it can be filtered by the soil before entering the water table.

Be inspired

Want to see what other businesses are doing to reduce water use? Then visit www.savewater.com.au and check out the entries in the small business section of the Save Water! Awards.

The Dugine Native Plant Nursery won the 2009 awards by reducing its use of potable water by 100 per cent. They did this by switching to new rainwater tanks and bore water.

Go to www.savewater.com.au/how-to-save-water/in-business for tips on water saving in hospitality, food processing, nurseries, construction, textiles and manufacturing.

The Geelong Racing Club, a finalist in 2009, used 80 megalitres of water every year. From May 2008–9 it reduced its use of potable water by 69 per cent. This was achieved through rainwater tanks that were used for washing horses, a groundwater bore for maintenance of the sand track, the use of drought tolerant plants and mulch in its gardens. It also used a Siemens data logging system that alerted employees to water leaks.

How can your business reduce its water use?

Increased water costs for SMEs

According to the Water Services Association, which represents the companies who provide water to 15 million Australians, the cost of water is likely to rise by 50 to 100 per cent in the next few years.

There are no easy or cheap solutions. Except one – water efficiency.

As the price of water goes up, there will be good reasons to make your business water-efficient. That's because water efficiency:

- saves your business money – not just in direct supply charges but also through lower sewage and trade waste charges, as well as associated costs like water heating or pumping
- encourages better business practices – the discipline of measuring and managing water use contributes to overall business efficiencies
- demonstrates your commitment to being an environmentally and socially responsible business – both to customers and employees.

As with energy efficiency, water efficiency helps to protect the environment and your bottom line at the same time.

Did you know?

1. Just 3% of the world's water is fresh. Two-thirds of that is locked up in polar ice.
2. A slowly dripping tap or toilet can waste a couple of litres each hour – that's 15,000 to 20,000 litres a year.[102]

102 See www.savewater.com.au

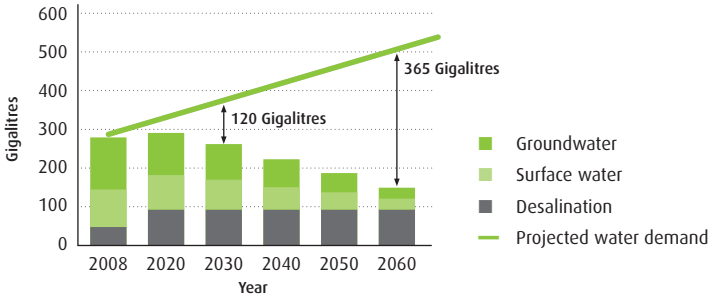
How bad is the problem?

Australia's 'food bowl', the Murray-Darling Basin, which produces two-fifths of the nation's fruit, vegetables and grain production, is facing an ecological and economic crisis after a decade of drought. This pressure has been magnified by many more decades of unsustainable farming practices that have taken too much water from local rivers. The CSIRO estimates that warming temperatures have lowered rainfalls and these lower rainfalls have reduced surface flows across the basin's nearly two dozen river valleys by 40 per cent since 1950.

The once mighty Murray-Darling system, on which thousands of SMEs and about three million Australians depend directly for their water needs, is in danger due to lack of sufficient water flow.

Over the next two decades, the CSIRO predicts a warming climate will reduce rainfall further – by an average of 15 per cent in the catchment areas providing water to Australia's 10 largest cities.[103] At the same time the nation's population could grow from about 22 million people to 35 million by 2049, with the Australian Bureau of Statistics tipping Brisbane, Perth, Melbourne and Sydney as the cities experiencing the most growth. These cities and the SMEs within them have already grappled with shortfalls in water supplies. Such changes will only serve to undermine our water security even further.

Projected shortfall in Perth's water supply by 2060



Source: CSIRO

This graph shows the scenario for Perth, where rainfall is predicted to drop 20 per cent in the next two decades. The underground aquifers which supply most of the city's water are facing increased stress. Australia's first large-scale desalination plant, costing $387 million, was opened in 2006, and now supplies about 17 per cent of the city's water. Although this plant

103 'Stormwater – helping to tackle Australia's water crisis' – *NOVA Science in the news* published by the Australian Academy of Science, June 2008

has already supplied more than 100 billion litres of water, the West Australian government has already announced the need for a second plant. This time, the total price tag for construction and integration with the water supply system is approaching $1 billion.

For more water information and tips, you can download a water efficiency guide from: www.environment.gov.au/settlements/publications/government/pubs/water-efficiency-guide.pdf

Case study: the 321 Water Bottle – water innovation

People who travel a lot often end up spending a small fortune on bottled water. However, a group of Australian designers from a small business in Victoria have come up with an innovative water purification system that provides clean water for long journeys.

Designed by Gretha Oost, Paul Charlwood and Andrew Howley, the 321 Water Bottle is an inexpensive purifier for the health-conscious traveller. Working like a French-press coffee maker, the portable water filter is very simple to use. All the user has to do is fill the bottle with water from the nearest tap, slot in the filter and push it down. The filter is good for 100 uses (approximately 50 litres).

The 321 Water Bottle doesn't just filter water on the go; it also helps to reduce the use of single use plastic water bottles. And that doesn't just save the environment. With bottled water costing more per litre than petrol, it could save you money too.

It's a good example of a small business coming up with a money-making solution to an environmental problem.[104]

104 See www.321-water.com

‘The business case for greener buildings is clear. While a sustainable building can cost more to refurbish or construct, it offers long-term operational savings…’

9

It's all around you: sustainable buildings and workspaces

Whether you work in an office, factory, café, news agency, pharmacy, florist or hairdresser, your workplace can be more sustainable and more productive.

The business case for greener buildings is clear. While a sustainable building can cost more to refurbish or construct, it offers long-term operational savings and evidence shows people who work in sustainable workplaces get sick less and are more productive.

The refurbishment of 500 Collins Street in Melbourne is a good example. The 30-year-old office tower was the first CBD commercial building to receive a Green Star rating for its refurbishment.[105] A study found that:

- greenhouse gas emissions were reduced by more than 1700 tonnes a year
- waste recycling rates increased from 13% to 42%
- average sick-leave days per employee fell by 39%

105 See www.greenerbuildings.com.au

- task productivity improved, with employees reporting better concentration and general well-being
- employees reported fewer cases of headaches, eye strain, colds and fatigue.

Green Star ratings system

Green Star is the Green Building Council of Australia's national, voluntary environmental rating system.

11 per cent of Australia's CBD commercial office buildings are now Green Star certified. This voluntary rating system evaluates and rates the environmental design and construction of commercial office buildings.

Its website provides a lot of useful tools, technical guides and calculators. Go to www.gbca.org.au/green-star to register your building project for Green Star certification.

Improving the environmental performance of your building or workspace therefore has multiple business benefits:

- it can significantly reduce the environmental impact of your business while also saving you money
- it can improve employee well-being and productivity, and can potentially reduce your occupational health and safety liabilities
- it can help to attract and retain talented employees
- it promotes your environmental credentials to customers and other stakeholders.

What makes a sustainable building?

It's a combination of factors. Rating schemes like the Green Building Council's Green Star system assess the following factors to determine a building's overall performance:

- management
- energy efficiency
- water efficiency
- indoor environment quality
- transport
- material selection
- land use and ecology
- innovation
- emissions.

As a SME, many of these factors can be considered when you're moving premises or looking at a refurbishment of your existing premises. But an effective environmental management plan can also improve the performance of your existing building.

From November 2010, owners of large commercial office buildings have been required to provide energy efficiency ratings when selling or leasing office space. According to the Department of Climate Change and Energy Efficiency, 'the aim of the scheme is to ensure that credible and meaningful energy efficiency information is given to prospective purchasers and lessees of large commercial office space.' The result is a scheme that makes it easier for companies to search out energy-efficient office space.[106]

106 See www.environment.gov.au/buildings

Building management for SMEs

You can conduct an environmental audit to better understand the performance of your workspace or building in the key areas of:

- lighting
- indoor air quality
- heating and air-conditioning
- water use
- waste generation.

NABERS

The National Australian Built Environment Rating System (NABERS) is the Federal Government's environmental rating system for existing buildings.

This scheme doesn't just help companies to save money by reducing their energy use and greenhouse gas emissions. It also enables them to see how well they're doing in managing the environmental performance of their building.

It does this by assessing a building's impact on a scale of one to five, with five being the best and one being the worst. This allows the building's environmental performance to be compared with others.

The NABERS website has an online calculator that helps SMEs to assess and compare their energy, water, waste and indoor environment performance. Go to www.nabers.com.au for further information.

If your business doesn't own its premises, then speaking with the facility manager, agent or owner is a good way to share the task. You could also look to negotiate a 'green lease'. Within such a lease the tenant and the building owner look at the ways in which they can reduce the environmental impact of the building. These initiatives are then included within the lease agreement. In some cases, the financial savings from efficiencies and reduced energy use can be shared between the tenant and the building owner.

The Green Lease Guide

The Investa Property Group has 17 buildings in the Sydney CBD that utilise green lease provisions. Together with a number of other organisations, it has drawn up a Green Lease Guide that sets out the ways in which a green lease can benefit businesses. It can be downloaded from the 'for business' sections of either www.resourcesmart.vic.gov.au or www.environment.nsw.gov.au

Ventilation and indoor air quality

We spend 90 per cent of our time indoors so air quality inside buildings is a major issue. However, many people are unaware that the quality of air inside buildings is often worse than the outside air. Indoor air doesn't just contain pollutants from outside, it also contains pollutants that are generated inside the building. These include emissions from photocopiers and printers, as well as the slow release of gas from carpets, paints and plastics.

There are a number of easy steps you can take to improve air quality in your building:

- ensure that all heating, ventilation and air-conditioning (HVAC) equipment is regularly cleaned and tested for contamination
- use low volatile organic compound (VOC) paints, sealants and adhesives
- have your indoor air quality tested and regularly monitor the level of carbon dioxide in areas where air is re-circulated
- open windows wherever possible and look for ventilation systems designed to maximise access to fresh air and that operate independently of your heating and air-conditioning systems.

Locating a green building professional

If you want to make your building more sustainable and you need help, the Green Star Accredited Professionals Directory at www.gbca.org.au is the best place to start. It contains a list of designers, architects, engineers, builders, project managers and other industry professionals who have shown a full understanding of the Green Star environmental rating system and the Green Star Office Design rating tool.

Material use

Studies show a clear link between health and the use of materials that contain synthetic chemicals. Wherever possible choose eco-friendly furniture, floor coverings and finishes made from natural, non-toxic materials. While such products may have a higher initial price, the overall cost can be lower as employees are healthier, have fewer sick days and can be more productive. Things to be aware of include:

1. Floor coverings, as these have the single greatest environmental impact of any fixed item, due to wear and tear. Look for durable flooring made from natural materials that can be reconditioned or recycled. Options include modular carpet, recycled tiling and timber and sustainably grown materials like bamboo.
2. Standard oil-based paints, adhesives and sealants that give off volatile organic compounds (VOCs). Choose natural or low-VOC paints and finishings.
3. Consult Good Environmental Choice's green procurement database at www.geca.org.au for the most environmentally preferable products.

www.yourbuilding.org

This Australian website contains useful advice and information on greener buildings. Run by the Property Council, the site also has a wide range of tips that are useful for SMEs wishing to make their building more sustainable.

Connection to nature

Proximity to nature aids health and wellbeing. Research by the University of Technology in Sydney indicate that plants improve indoor air quality and can remove volatile organic compounds (VOCs), that can cause sickness and lethargy. Its study found a mixture of plant species such as Peace Lily, Kentia Palm, Marginata and Devil's Ivy could achieve a complete removal of VOCs in 24 hours in a closed chamber with no ventilation, and a 10 to 20 per cent reduction in flow-through conditions.

Giving your employees a view of the outside world also makes a difference. Studies indicate that people who work near a window have lower levels of health complaints.

Green Building Fund

The Federal Government's Green Building Fund has been set up to reduce the energy used in the operation of existing commercial office buildings.

With $90 million of funding over five years, one of the two streams of funding targets owners of existing commercial office buildings. The fund will assist them to reduce energy consumption through the retro-fitting and retro-commissioning of these buildings. Grants of between $50,000 and $500,000 are available to cover up to 50 per cent of project costs.[107]

107 For further information contact the AusIndustry hotline on 13 28 46 or email hotline@ausindustry.gov.au

Case study: Australian Ethical Investment – green building renovations on Trevor Pearcey House

For many SMEs, creating a green building will take place when you come to renovate your existing building. This is the case with the new head office of Australian Ethical Investment in Canberra.

The original two-storey building was over 20 years old when it was renovated into a 'green building'. Instead of a hi-tech renovation, a focus was placed on low-technology design principles that utilised passive systems and the reuse of materials.

From an energy-saving standpoint, the renovation used double-glazing windows, passive cooling and external insulation. Water-efficiency measures included the installation of rainwater tanks for use in toilet flushing and moisture sensors for use in garden irrigation.

According to the Greener Buildings website,[108] the renovation has achieved the following savings:

- a 75% decrease in greenhouse gas emissions
- a 75% reduction in water use
- 80% reduction in waste materials
- savings of $17,000 each year – or 52% – on energy costs.

After 12 months of operation, the building operates at 47 per cent less than the standard amount for a 5 Star NABERS Energy rated building. Greenhouse gas emissions have also fallen by around two-thirds.

The building was awarded a 6 Star Green Star rating, in the process showing that a modest renovation budget can achieve significant environmental and financial savings.

Many buildings that were built in the 1970s are now coming up for renovation. Go to http://tinyurl.com/yjhsbss for more information and advice specific to retrofitting old buildings.

108 See www.greenerbuildings.com.au

Self-sufficiency and overall efficiency

In addition to maximising energy and water conservation and minimising waste, a green building should also introduce measures that bring about a degree of self-sufficiency:

1. In the case of energy, this can be achieved through the installation of solar panels or wind turbines.
2. In the case of water, this can be achieved by collecting rainwater off the roof. After use in kitchen and bathroom basins, this water can then be recycled for toilet flushing or for use in cooling towers. It could even be used to water plants.
3. Establishing a green roof (that is, putting in soil and plants on your roof) can help to insulate the roof of your property.

CitySwitch – helping SMEs to green their offices

Many SMEs are unaware of their climate impact or the cost saving benefits of energy efficiency. To change this, Australia's local governments have partnered with businesses to create the CitySwitch Green Office program.

CitySwitch works with tenants to improve the energy efficiency of their offices. In addition to saving energy, the initiative also helps companies to save money and reduce the greenhouse emissions that are generated by their operations.

The program was initiated by local government following estimates that tenants can influence up to 50 per cent of the energy use in office buildings. At the time of publication, hundreds of tenancies utilising more than 1,100,000 sqm of office space have joined the CitySwitch program.[109]

109 See www.cityswitch.net.au

Emissions

Emissions related to a workspace and building can include air, light, noise and water pollution. Environmental management plans (see chapter 12) should include processes to identify and manage any such emissions so your space is as sustainable as possible.

Further information

Operating buildings on a more sustainable basis is vital if we are to realise the cost savings and environmental potential of greener buildings. To facilitate this, the Federal Government has released a guide to help building owners, managers and tenants operate Australia's buildings in a more sustainable manner.

The ESD Operations Guide for Owners, Managers and Tenants is available as a free download from: www.environment.gov.au/sustainability/government/publications/esd-operations-guide.html

The 'Waste Reduction in Office Buildings' guides for tenants and building managers are also available for free download from www.environment.nsw.gov.au/sustainbus/wastereductioninofficebuildings.htm

Insulation

Many SMEs do not have insulation in their factories or offices. With 60 per cent of Australian homes now insulated, the savings from insulation are well-documented:

- ceiling/roof insulation – up to 45%
- floor insulation – up to 5%
- wall insulation – up to 20%.

The Victorian Government has an insulation brochure that gives excellent advice on the different types of insulation available. It also contains advice on how to install it.[110]

110 See www.sustainability.vic.gov.au

Case study: The Green Building Council of Australia – greener refurbishment[111]

The Green Building Council of Australia (GBCA) is the key organisation behind the uptake of green building practices in Australia's property industry. Supported by both industry and government, the organisation has been highly effective in promoting sustainable buildings.

In addition to encouraging others to 'green up' their buildings, this small not-for-profit undertook a GreenHouse refurbishment of an 800m² space in Sydney's central CBD. The location was chosen as it had maximum daylight access and was situated close to public transport.

The GBCA took into account the waste hierarchy when planning its refurbishment. It went with an open-plan office and exposed ceilings in order to reduce the use of plasterboard and ceiling tiles. It reused some items from its previous office and the previous tenant. Café chairs and other furniture were also recycled and reupholstered to give them a fresh new look.

In July 2009, the GBCA GreenHouse achieved a 5 Star Green Star – Office Interiors v1.1 certified rating. The $1.3 million fit-out took less than five months to complete and came in on budget, showing such fit-outs are within the capabilities of other SMEs.

111 This overview has been sourced and adapted with permission from the Green Building Council of Australia case study at www.gbca.org.au/about/the-greenhouse

While most SMEs won't have a spare $1.3 million lying around to invest in a Green Star office fit-out, the GBCA environmental innovations can be treated like a green office 'wish list', so to speak. You may not be able to do everything but there are a number of great, cost-effective things you can introduce in your workplace to reduce your environmental footprint and save money for your business.

The refurbishment was a showcase for sustainable SME building initiatives and included the following environmental innovations:

Water saving

1. Dual-flush water-efficient cisterns were installed in the bathroom.
2. The GBCA also used 6 star water-efficient urinals that were controlled by motion detectors and used only 0.8 litres per flush. Other fit-outs of this size have also used waterless urinals.
3. To maximise efficiencies further, the bathroom taps are water-saving, spring loaded taps.
4. To minimise the use of potable water, toilets are connected to a grey water system.
5. All water and other material that goes into the dishwasher or down the sink (such as soap and food scraps), is pumped along a grey waste pipe and into a grey water collection tank. After all solid material is filtered out, the water is then used for flushing the toilets and urinals. The grey water is only released into the system when the tank level is high enough. At other times regular tap water is used.

Lighting

1. Energy-efficient lighting was used in the fit-out. To minimise lighting costs, the meeting room and boardroom lighting runs on a sensor system and the workstation lighting provides both task and ambient lighting within one system. Eventually all lights will be linked to a Dali automated system, providing maximum energy efficiency.
2. Light shelves are located along the east façade in window bays. The translucent materials are multipurpose, projecting diffused natural daylight into the space and reducing radiant heat.
3. Blinds were installed on all the perimeter windows to control light penetration, glare and heat. All window blinds are fully automated and controlled by a touch screen panel. Eventually, these blinds will be set on a timer, with manual override.

Air quality

1. CO_2 monitors are located in the GBCA meeting rooms and general office areas. These devices monitor the amount of CO_2, while sensors deliver higher levels of fresh air for occupant comfort.
2. A highly energy-efficient mechanical air-conditioning system was installed, delivering air through vents at floor level in workstation areas, window bays and through plenum wall boxes along the perimeter of the west and south areas of the office. This air is then vented out through return air ducts above the light shelves. Floor vents can be rotated to direct the flow of air to maximise worker comfort.
3. Living plants are supplied and maintained by a supplier. These act as bio-filters to convert CO_2 into oxygen. A functional and decorative living plant wall is also featured behind the reception area. As the plants grow they will also provide visual privacy.
4. All printers, photocopiers and computer racks are located in the utilities room. As such, all pollutants are contained and the area can be properly ventilated.

Waste minimisation and recycling

1. Waste bins have been provided for recycled paper and card, recycled plastic and appropriate food scraps which go to a worm farm. Small bins are used in the kitchen areas and large paper and plastic, glass, steel and aluminium recycling bins are in the utilities room.
2. Two worm farms are fed using food scraps generated by the GBCA employees. A worm can eat its own weight in food every day and the worm castings can be used on office plants.
3. Where possible, the GBCA chose to limit the installation of ceilings throughout the tenancy in order to avoid unnecessary use of materials (this leaves building services and cables exposed). An articulated plasterboard ceiling has been installed above workstations on the east façade to conceal the insulation and to optimise acoustics.

Furniture

1. Around 40% of the desk chairs are reused from the old GBCA office with the remainder being bought new to match the old chairs. The new chairs are all certified by Good Environmental Choice Australia (GECA).
2. Additional chairs were leased to the GBCA for use in the boardroom. In the future, these chairs can be returned and reused by other companies.
3. The boardroom tables have lockable castors, allowing them to be reconfigured according to the GBCA's meeting needs. This flexibility maximises their potential use and longevity.
4. The café/lounge area furniture includes a classic pre-loved 1950s designer lounge and table. Café chairs have been reused, with some being reupholstered to match the vibrant colour scheme of the office. The Australian designed and manufactured plywood stools are made of FSC-certified plywood and can be 'flat packed' for easy transportation. The dining table was reused from the GBCA's old office.
5. The workstation pin boards are made from recycled PET bottles and workstation storage units are all GECA certified.

Low toxicity

1. Where possible, all upholstery and curtain fabric is natural and low toxic.
2. The carpet has low VOC content and can be recycled. To avoid the use of carpet glue, the carpet tiles are held in place with adhesive stickers on the corners of each tile. The concrete floor has also been polished and sealed with water-based sealant.
3. All joinery, workstations and meeting tables are made from low formaldehyde (E0) board.

Go to www.gbca.org.au for more information about the GreenHouse refurbishment and the Green Building Council of Australia.

Greener Buildings

This comprehensive website provides a rundown of the benefits of green buildings. It has a range of case studies, tips on how to rate and improve building performance, questions to ask building owners and managers, and advice on green leasing.

The site is a collaboration between Victoria's Building Industry Consultative Council, state and federal environment departments and the Green Building Council of Australia.

Green building case studies can be found on this site at www.greenerbuildings.com.au/case-studies

Case study: Szencorp Building – Australia's first retrofitted building to achieve a 6 star Green Star rating

The Szencorp building in Melbourne was Australia's first retrofitted building to achieve a 6 Star Green Star rating.[112] The changes implemented in the building show the money saving and environmental potential of green buildings:

1. The building achieved 88% water savings compared to the industry average (as measured by the NABERS water rating of 2.5 Stars). Rainwater is combined with the grey water from showers and hand basins to flush the toilets. The toilets are dual flush and waterless urinals are used. Water-efficient taps and showerheads are also used throughout the building.
2. There was a 65% energy saving compared to the amount of energy used before the retrofit.
3. Waste was reduced by 54% when compared to the amount of waste generated by the average office worker.
4. Resource use is highly regulated and monitored. There are 59 individual meters to monitor energy use and the building is broken down into 21 occupancy zones. These zones are designed so the lights and air-conditioning only come on when needed.
5. The innovative waste minimisation and recycling infrastructure led to 76% of their waste being recycled.
6. 120% of emissions were offset by purchasing carbon credits from Climate Friendly.
7. The building utilises a solar hot water system and three solar PV arrays that generate approximately 20% of the building's electricity requirements.
8. There is insulation in the walls and roof as well as a double-glazed façade.
9. When the weather conditions allow, natural air ventilation supplements the air-conditioning system.
10. Bicycle parking, showers and lockers are available for occupants and visitors. A hybrid Prius is also available for employees' travel use.

112 See www.theszencorpbuilding.com

‘The process of eco-design looks at the natural resources a product or process uses, the waste it creates and, equally as important, how the product or service is used and influences behaviour.’

10

Eco-design: the environmental impact at every stage of your product's life

Eco-design is about designing products and services in a way that minimises negative environmental impacts.

Eco-design does this by considering a product or a process from the point of view of its entire environmental impact – often described as 'from cradle to grave'. The process of eco-design looks at the natural resources a product or process uses, the waste it creates and, equally as important, how the product or service is used and influences behaviour.

When developing a product from scratch, ask yourself how it can be designed so that it uses fewer inputs and materials.

1. What materials will be used?

a) Can you use recycled materials or materials that are made from renewable resources?

b) Can they be sourced within Australia instead of from overseas?

c) Can less toxic or less environmentally harmful materials be used?

d) Can materials that use less energy to make be incorporated into the product?

e) Are you buying your raw materials from the most environmentally and socially responsible source?

Inform yourself about the chemicals used in your business' products and processes.

A useful place to start is www.safersolutions.org.au which is an initiative of the Total Environment Centre. It provides a glossary of the major chemicals found in consumer products.

Wherever possible, use natural-based, non-toxic substitutes and make it a procurement policy to favour products and companies with a similar commitment.

2. Light-weighting

a) How can the product be designed so it weighs less?

b) Can it be reduced in size so that more units can be transported?

3. Leaner production

a) How can the production process be tightened so it uses less energy, fewer raw materials, fewer processes and cleaner technology?

b) Can this be done in a way that generates less waste and pollution?

4. Product distribution

a) How can the product distribution process be streamlined?

b) Can the packaging be made of recycled content or, at the very least, be easily recycled?

c) How can the packaging itself be reduced?

d) Is your product designed to maximise transport efficiencies? Furniture for example, can be flat packed, allowing for more products to be shipped in the same sized container.

e) Is there a more environmentally efficient way of transporting your goods to your customers?

f) Does your delivery company have vehicles that use alternative fuels? Do they use smaller delivery vehicles that offer a more fuel-efficient way of delivering your products? Do they use rail? Do they back load and maximise their loads?

5. Product efficiency

a) Can the product be made to use less energy when it's switched on?

b) Can it achieve energy efficiency standards that make it 'best in class'?

c) Can the product be made so it uses no energy at all?

d) Can it be constructed so it uses fewer secondary materials – for example, if it's a coffee filter, can it use reusable filters instead of single-use filters?

While some water carbonating units use electricity, the Sodastream carbonator uses the energy from the carbonating gas cylinder. This means no electricity is needed when it makes sparkling water. When the gas cylinder is empty, customers have to return it to the retailer they got it from in order to buy a new cylinder. This ensures that the old cylinder can be reused and refilled. This more environmental approach is really working with the public. In the last year, sales of Sodastream products in Australia have tripled. Visit www.sodastream.com.au for more information.

6. Making it last

a) So many products these days don't seem to last as long as they used to. Can your product be made to last as long as possible?

b) Can it be made more reliable and easier to repair?

7. End-of-life

a) Can the product be made so that it's far easier to recycle? Can you reuse any of the components of your product?

b) If recycling facilities for your product are not easily available, can you extend your producer responsibility and take back your product for recycling?

c) Can you help to ensure recycling markets for the materials within your products?

d) Can you take back raw materials derived from the recycling of your products?

Testing from the German TÜV NORD agency indicates that 40 per cent of the mass of the new VW Golf is made from recycled materials. The majority of the car is also recyclable.

What is eco-efficiency and cleaner production?

Queensland Government agency ecoBiz defines 'eco-efficiency' and 'cleaner production' as being about saving money while improving environmental performance. This is also achieved through the use of fewer resources such as water, energy and raw materials and producing less waste overall.

For SMEs, it's about doing more with less. This involves coming up with production solutions that don't necessarily follow the 'business as usual' model. The World Business Council for Sustainable Development (WBCSD) and ecoBiz outline the seven elements of eco-efficiency as:[113]

- reducing material intensity (making more goods with fewer inputs)
- reducing energy consumption (making more goods with less energy)
- reducing the dispersion of toxic substances (making more goods but with less toxic waste)
- enhancing recyclability of materials (making the goods more recyclable)
- maximising sustainable use of renewables (using renewable energy or making goods out of materials that won't run out)
- extending product durability (making goods that last)
- increasing service intensity (meeting demand with a service and not with goods).

The 'What is Eco-design?' website is a complete online guide to sustainable design for industrial, fashion, graphic and textile designers.

Backed by the Victorian Government and Design Victoria, the project has been developed by the Centre for Design at RMIT University, WSP Environmental and leading industry experts. This highly recommended website has a range of tools and reference guides that provide SMEs with practical eco-design information that can be used in business operations.

For more information visit:

- What is Eco-design?: www.designvic.com/whatisecodesign
- RMIT Centre for Design: www.rmit.edu.au/cfd
- Society for Responsible Design: www.green.net.au

113 Adapted from: WBCSD, 2000, eco-efficiency, ecoBiz Queensland, 2008, Fact Sheet, Introduction to ecoBiz. See: www.derm.qld.gov.au/ecobiz

Case study: InterfaceFLOR – redesigning business

The story of how Ray Anderson 'redesigned' InterfaceFLOR is one that is told by many sustainability professionals.

Back in 1994, as the CEO of InterfaceFLOR, Anderson oversaw a carpet company that generated air and water pollution and many tonnes of waste. It's safe to say the company, like many others back then, did not enjoy a good environmental reputation.

What set Anderson apart is how he went about fundamentally changing the very basis of how InterfaceFLOR did business. He realised that businesses needed to use the Earth's natural resources in a more sustainable way. Under his leadership, the company generated new patents and invented innovative machines. It used new materials and created different manufacturing processes. The results showed the potential of making a business more sustainable in the way it did business.

Between 1994 and 2009, InterfaceFLOR claims to have:

- cut greenhouse gas emissions by 82%
- cut fossil fuel consumption by 60%
- cut waste by 66%
- cut water use by 75%
- increased sales by 66%, doubled earnings and raised profit margins.

To ensure even greater results, the company's Mission Zero™ is an initiative to eliminate InterfaceFLOR's negative environmental impacts by 2020.

The way in which Anderson achieved his results is set out in the book *Confessions of a Radical Industrialist*. It's a must-read for SMEs who want to see how practical ideas can be implemented in a way that boosts environmental performance and the bottom line.[114]

114 See www.interfaceflor.com.au

‘From the office desk to the shop counter, the factory floor to out on the road, digital technology has become indispensable in virtually every aspect of business.’

11

Get connected with sustainable IT and business devices

Business use of information technology (IT) and electronic devices has helped Australia's economic growth and delivered significant productivity improvements.

SMEs in particular have benefited from these technology improvements. They've made accounting and record keeping easier and helped us to run factories more efficiently. They've smoothed out payroll responsibilities and generally enabled better communication with customers and suppliers.

From the office desk to the shop counter, the factory floor to out on the road, digital technology has become indispensable in virtually every aspect of business.

The gains have of course come at a price – not just the price of the new devices but also the environmental impact of those products, the energy needed to run them and the end-of-life disposal.

But by giving some additional consideration to the use and implementation of their IT, SMEs can actually make environmental improvements and even get more bang for their buck.

Making a difference

Reducing the environmental impact of your IT simply requires a more detailed understanding of the big environmental footprint behind the equipment, followed by an ability to communicate those details to the people who count in your business.

There are four key things to think about:

1. When buying new equipment, consider the environmental impacts of how it is manufactured, its energy requirements and the estimated length of its functioning life.
2. When using equipment, pay attention to energy efficiency by activating power-saving features and turning off machines not in use.
3. Get the most out of your investment in IT by using hardware and software to its fullest potential. This can help to streamline other business processes and operations and help to lower your overall environmental footprint.
4. Dispose of unwanted equipment responsibly by seeking out opportunities for reuse and recycling.

The environmental savings that come from paying attention to these key principles include lower use of raw materials, fewer greenhouse gas emissions, fewer hazardous by-products and less toxic waste. The business savings include:

- lower energy costs including additional savings on air-conditioning and maintenance
- longer lifespan for your equipment, reducing the capital cost of replacements
- increased productivity.

How to save money with your computer[115]

A computer left on 24 hours a day, 365 days a year will cost your business approximately $135 per annum.[116]

By switching off your computers at the end of a working day, you can easily reduce that usage to 10 hours per day, five days a week. If you do that then you can reduce the running cost to $40 per year. That's a saving of $95 per computer.

The table below gives you an indication of the potential savings for your business:

NUMBER OF COMPUTERS	POTENTIAL SAVINGS PER ANNUM
1	$95
5	$475
10	$950
15	$1425
20	$1900

Switching off all your other machines such as photocopiers and printers will result in additional savings.

115 *Eco-efficiency for small business.* See www.derm.qld.gov.au

116 Based on an energy tariff of $0.155/kWh

Purchasing

Sometimes the most business-friendly and environmentally responsible purchase is not to purchase at all. Always ask yourself whether you really need a new device. It's nice to have the latest but don't be swayed by the flashy marketing; sometimes the advertised improvements in performance don't mean much in reality. Do your research.

Consider good-quality second-hand or just-superseded equipment. Last year's top-of-the-range model from a respected brand might have more life left in it and be more efficient than the latest budget-priced offering that looks better on paper. Cheap PCs, for instance, often scrimp on components like power supplies, whereas higher quality power supplies can be far more efficient in converting incoming electricity for use.

If you're thinking about buying new equipment, consider the following tips first:

1. Explore options for upgrading existing equipment before investing in a new model. For example, getting extra RAM is likely to be cheaper than buying a new computer, so check out that option first.
2. When you do buy new equipment, invest in models that are designed to be upgraded, from manufacturers who also offer extended warranties. You should aim to get five years of service rather than the corporate standard of two or three years.
3. Consider switching over to laptops. Using a laptop computer rather than a desktop PC and monitor can reduce energy consumption by up to 80%. They also have the additional benefit of being portable, so your employees can use them when on the road or working from home.
4. In a bigger office, a network of 'thin clients' (a stripped-down PC that has low power needs) connected to a central server doing most of the processing and storage can be the most economical and efficient option. However, you should always check that the total power consumption of the thin clients combined with the servers and disk drives required to support them is lower than standard PCs.
5. If you are looking at the prospect of multiple servers, blade servers (in which many components are removed, with services such as power provided by the enclosure) will take up less space and use less power than a stack of standalone servers.

6. What goes for purchasing equipment also goes for services. Take responsibility for your environmental impact along the supply chain by choosing service providers who are committed to environmental performance. There are various internet service providers and web hosting companies that now use green energy in their operations.

Energy Star compliance reduces the amount of energy used by a product by either automatically switching it into 'sleep' mode when it's not being used and/or reducing the amount of power used when in 'standby' mode.

Donating your old computers to charity

If you want to donate your old computers to charity or a local school, it's worth checking first whether they have a use for them. For example, if you drop off your computers at a charity drop off zone without checking first, the charity may end up having to pay for the disposal of your computers.

The Our Community organisation has a web page which lists charities that accept old computers for recycling or refurbishment.[117]

Infoxchange Australia's GreenPC initiative enables people on low incomes to access technology and seeks to reduce the environmental impact of outdated technology by prolonging its lifespan and usability. The organisation refurbishes used computers and provides them to low-income communities, individuals and community organisations.[118]

When donating your old computers to charities, make sure you delete sensitive company data or personal data first. Software is available that guarantees the secure deletion of such information.

117 See www.ourcommunity.com.au

118 See www.greenpc.com.au

For a comprehensive assessment of desktop computers and notebooks, check out the Electronic Product Environmental Assessment Tool (EPEAT), an international rating standard developed with funding from the US Environmental Protection Agency to help IT purchasers. EPEAT evaluates environmental performance against 23 required criteria and 28 optional criteria, including a category for energy conservation. Go to www.epeat.net for more information.

For electronics equipment other than computers, Greenpeace's Guide to Green Electronics offers an assessment of the overall environmental performance of well known brands. Go to www.greenpeace.org to read the guide.

Another useful resource is the Silicon Valley Toxics Coalition website at www.svtc.org. It has lots of interesting information on environmental impacts, the performance of computer companies in material use and responsibility for end-of-life management.

Download and save

Depending on the scope of your operations, it is probably worth buying software to measure and manage your computer's energy-saving functions. Ask your IT supplier or service consultant for advice. In the meantime, here are a few handy applications that you can try out.

Watch Over Energy

For Windows 95, 98, ME, 2000, XP and NT systems, this free program manages your computer monitor's stand-by mode and helps to track your energy savings. The developers suggest it can reduce your monitor's energy costs by at least 20 per cent. Go to www.watchoverenergy.com to download a copy.

Shutdown Vaccine

For PC networks, this shareware software can automate power-related tasks such as shutting down all workstations at a particular time. Go to http://shutdown-vaccine.smartcode.com/info.html to download a copy.

Saving power

1. Switch computers off whenever possible. Left on day and night, every day for a year, as happens in some offices – a big energy inefficient desktop computer can use up to 850 kilowatts of electricity and generate up to 900 kg of carbon emissions.[119] Switching off a computer at the end of the working day can cut its electricity use to less than 250 kilowatts with comparable carbon and cost savings. Another simple way to save money is to encourage your employees to turn off their computers even when they are going to a meeting or to lunch. You can also buy far more energy-efficient computers.
2. What goes for computers goes for screens. There is no need to worry that turning it off and on will shorten its life. Even doing so five times a day will only increase the frequency of faults after 20 years (and it probably won't last that long anyway).

Greentrac

For Windows and Mac computers, Greentrac enables businesses to automate the power management of all their computers. It can shutdown, hibernate or put computers into standby mode. It also gives real-time energy feedback to employees in a way that encourages them to take personal responsibility for reducing their computer's energy waste. The company behind Greentrac is an Australian SME and they state that users of its software typically reduce PC energy consumption by 50–65 per cent. Go to www.greentrac.com for more information.

EZ Wizard

For Windows 2000 and Windows XP systems, this free application provides a simple point and click interface for monitoring power management. Go to www.energystar.gov to download a copy.

Sleep Monitor for Mac

This one isn't free, but you can trial it for 30 days. It charts a Mac's power use, showing how long it has been in use, asleep and switched off. Go to www.dssw.co.uk/sleepmonitor to download a copy.

119 'Computers' energy costs', *Choice Magazine*, May 2008. Based on NSW energy emissions using Energy Australia's energy calculator

3. Disable all screen savers. Most systems now have the option under power settings to turn the display off automatically after a nominated period of time. Turning off the display delivers significantly greater power savings than a screen saver even though the screen may look the same.
4. Power-saving features, even on Energy Star qualified computers, are not automatically activated. Go into system preferences and set them to put the screen and hard drive to sleep after 10 minutes of inactivity. Sleep mode will reduce energy consumption to as little as 5% of full power and save some screens from phosphor burn-in.
5. Some systems still never go off completely but into standby mode. To ensure they are drawing zero power, turn them off at the power point. This will maximise your financial savings.
6. Place IT equipment in locations that facilitate cost-effective cooling. The electricity used by internal cooling fans can be a significant part of total power consumption, so avoid placing gear like servers in unventilated cupboards or next to other heat-producing machines.
7. Go to the Energy Star website www.energystar.gov.au for more information about standby power and detailed guides on how to enable energy-saving features on Windows, Unix and Mac systems.

Getting the most out of your IT systems

There are very few businesses these days that can afford to ignore the potential gains of information and communications technology – or the potential losses from getting left behind.

Can there be an environmental upside to having to keep up with rapid advances in technology? The answer is yes. Enabling a customer to order and pay online, for instance, avoids them having to travel to your premises. Other strategies your business can start capitalising on include:

1. Virtualise your IT system. Transferring application and storage needs from individual workstations to a centralised server enables the most efficient use of overall storage capacity and processing power.

2. 'Cloud computing' is the term for extending virtualisation beyond your office by using web-based applications and services. It can be as simple as web-based email or more comprehensive, like storing all your data on a remote server. These strategies not only reduce hardware and energy needs, they also make it easy to share information between teams.
3. Virtualise your office. Once you liberate information from individual computers, why not liberate employees from their desks? Telecommuting is seen by governments overseas as a key strategy for reducing traffic congestion and travel-related carbon emissions. It can also help you reduce your need for expensive office space.
4. Although many companies no longer use faxes, those who do can have them sent directly to a PC, saving on printing and making them easier to store and forward as well.
5. Many overseas companies see the uptake of teleconferencing, web-conferencing and video-conferencing as a key strategy for reducing business-related carbon emissions from travel. It also has the benefit of significantly reducing travel costs while improving day-to-day communications with customers and stakeholders.
6. For SMEs, the advantages of video meetings are significant. While it's good to get out of the office, all that time getting to meetings and waiting for others to show up is money down the drain. Check out the federal government's e-strategy guide at www.e-strategyguide.gov.au for tips on the lowest cost options. Though pitched at not-for-profit organisations, the information is equally useful for SMEs.

One Australian SME has devised software that helps you to measure and offset the carbon emission impact of your computer(s). The Little Green Genie software monitors when your computer is switched on and also takes into account the environmental impact of producing your computer.

Go to www.zerocarboncomputing.com for more information and to download a copy.

Why should you properly recycle your e-waste?

Making sure your equipment only goes to proper recycling companies is important. It's vital to ensure your equipment does not end up in developing countries where it can be recycled inappropriately. The Silicon Valley Toxics Coalition breaks down the ingredients of e-waste as follows:

Lead: used in older monitors as well as in soldering on circuit boards. Exposure can cause brain damage, nerve damage, blood disorders, kidney damage and developmental damage to unborn babies. Acute exposure can cause vomiting, diarrhoea, convulsions, coma or death.

Mercury: used in flat-panel displays, LCD screens, switches and printed wiring boards as well as in some batteries. High levels of exposure through ingestion or inhalation can cause central nervous system and kidney damage.

Polyvinyl chloride (PVC): used in printed circuit boards and components such as connectors, plastic covers and cables. When burnt it releases highly carcinogenic dioxins. Combinations of plastics that are difficult to separate and recycle are also used in printed circuit boards and in components such as connectors, plastic covers and cables.

Cadmium: used in chip resistors, infrared detectors, semiconductors, older cathode ray tubes and some plastics. It concentrates in the body and can cause kidney and bone damage. It's also a known carcinogenic.

Brominated flame retardants (BFRs): used in plastic casings and released when electronics are dumped or incinerated. BFRs bio-accumulate in organisms and along the food chain. Minute doses of BFRs can impair attention, learning, memory and behaviour. They are also probable endocrine disruptors.

Barium: used in the front panel of CRT monitors to protect users from radiation. Short-term exposure can cause brain swelling, muscle weakness and damage to the heart, liver and spleen.

Beryllium: used on motherboards and connectors. Is a known human carcinogen (can cause cancer).

Hexavalent chromium: used for corrosion protection of untreated and galvanised steel plates and hardener for steel housing. It can cause DNA damage and asthmatic bronchitis.

Disposal

Of the more than 3 million computers sold in Australia each year, business purchases account for half of these. The sad fact is that after a few years most of them are likely to end up being dumped in landfill or stockpiled. Use your purchasing power to buy the most environmentally sound option and ensure your business is not contributing to the problem.

1. Select brands from manufacturers that minimise use of toxic materials, enable component recycling and take back equipment at the end-of-life to ensure it is recycled rather than sent to landfill.
2. If you're leasing your equipment, make sure the leasing company will guarantee to take back the equipment for verifiable refurbishment or recycling.
3. If you have old machines not covered by take-back guarantees, check out www.recyclingnearyou.com.au to for other recycling options in your area. It's worth visiting this site on a regular basis as legislation to bring about national recycling schemes for e-waste is currently in the pipeline.
4. For mobile phones, contact MobileMuster[120] or the Mobile Phone Recycling Program[121] to organise a workplace collection.
5. Recycle printer cartridges through Cartridges 4 Planet Ark[122] or you can have them refilled at locations such as Cartridge World.

The real cost of IT

In 2008, IBM conducted a global survey of 1100 executives working in companies employing 50 to 500 people (in manufacturing, financial services, retail, health care, hospitality, IT and professional services). About one in three estimated that IT accounted for 10 to 50 per cent of their total energy costs and about one in every four – outside of professional and IT services – had no idea how much IT was adding to their energy costs.

The International Energy Agency warns that our love of electronic equipment is a major stumbling block to curbing greenhouse gas emissions and limiting the effect of global warming. Its research indicates global ICT-related energy consumption will double by about 2020 and triple by 2030 – to 1700 Terawatt hours, equivalent to the total amount of energy now used by the American and Japanese residential sector.

120 See www.mobilemuster.com.au

121 See www.mobilephonerecycling.com.au

122 See www.cartridges.planetark.org

Other environmental costs

But that's only one aspect of the environmental problem. Research by the United Nations University in Tokyo indicates that electronic devices are very resource-intensive to manufacture.

Then there is the problem of waste. Electronic equipment becomes obsolete faster than just about anything else you can buy. Processing power doubles about every two years, and software developers quickly work out how to use that power to create even more sophisticated applications, which then become the standard, leaving older machines looking like museum pieces.

To give you an idea of how far we've come, the first digital computer, completed in 1946, cost US$500,000, (about AU$638,000), weighed about 25 tonnes and took up 63 square metres. Today, the equivalent computing power can be delivered in a chip smaller than your fingernail.

What we do with superseded electronic equipment is one of the biggest environmental headaches we face, because electronic equipment can contain materials that pose a hazard if they're not recycled and recovered.

Green IT help

The Australian Information Industry Association has an excellent free Green IT eBook that helps businesses to develop environmentally responsible IT systems and practices. Go to www.aiia.com.au/greenit to download a copy.

Case study: Queensland Government Chief Procurement Office – smart IT decisions

The Queensland Government Chief Procurement Office manages purchasing arrangements for agencies, state hospitals, state schools, government-owned corporations and statutory authorities.

According to the 2009 Green Purchasing Australia Report, it implemented a whole-of-government arrangement for desktop PCs, portable computers and servers.

As a result, the Queensland Government's fleet of desktop PCs now has lower operating costs due to the improved energy-efficiency of the machines. This delivered significant financial savings and environmental benefits to the Queensland Government.

Compared with normal computers, these energy-efficient machines cost an extra $30–$50 each. However, the payback period to recover this cost was only 12 months. Over the estimated three-year life of each machine, the savings from reduced energy consumption will be about $60 per unit.

The scale of the computer order was such that the Queensland Government will save an estimated $6 million dollars in reduced energy costs.

Environmentally, this purchase will also result in savings of approximately 2.2 million tonnes of CO_2 emissions per year. In addition to reviewing the energy-efficiency of these computers, the government also took into account hazardous substances, packaging and product take back.

For more information, check out the 2009 Green Purchasing Australia Report. Go to www.ecobuy.com.au to download a copy.

‘An environmental management system provides an objective assessment of your environmental impact and what your business is doing to address it.’

12

Bringing it together with an environmental management system

Every business has an impact on the environment. As discussed in this book, managing that impact in a proactive way can have benefits for your bottom line.

An environmental management system (EMS) documents and systemises your business' approach to managing its environmental impact.

Such a system will provide an objective assessment of your environmental impact and what your business is doing to address it. This can be done in such a way that anyone who reads your EMS can clearly understand what you're doing to manage your environmental issues.

The amount of work required to do this depends on the level of environmental impact and environmental risk your business has – that is, the impact it has now and what could happen if something went wrong in the future. Obviously a high-impact and high-risk business may need a very formal and accredited EMS but a low-impact and low-risk business can easily implement its own EMS.

Stage one: how to start an EMS

Management commitment

Senior management needs to commit to understanding the environmental impact of your business and for someone to be given the time and authority to start the EMS.

Review your environmental impact

A baseline assessment looking at your operations, products and/or services will identify the energy, water, waste, discharges, materials, chemicals and other impacts associated with your business. This enables you to assess the level of overall environmental impact and risk and therefore determine the level of sophistication needed in your EMS, as well as priorities for environmental improvement.

Establish key performance indicators (KPIs)

A set of KPIs should be established so your business can measure and monitor its environmental impact. If you own a café, for example, an indicator may be energy, water and waste per 1000 meals served. If you are an office-based consultant, it may be the amount of energy, water and waste per employee or per square metre of office space.

Environmental policy

Write up a policy that documents your commitment to reducing the environmental impact of your business. This environmental policy can be communicated to employees, customers, suppliers and others.

Employee training

If you have employees, consider appropriate training to make them aware of your EMS and their role in it.

Action plan

The baseline assessment and indicators will provide ideas for where improvements can be made. Documenting the ideas and then assessing which are able to be done in the short, medium or long term will provide a checklist that can then be regularly reviewed, progress checked and, where necessary, have new ideas added.

Getting help

There is a range of assistance to help SMEs develop and implement an EMS.

Consultants, government and industry groups all have someone who will be able to help you with your EMS.

In each state and territory, your environment department or environment protection agency will have guides or people to help you (see 'Resources and tools', page 195).

Most industry groups also have guides and can offer assistance to help SMEs develop an EMS. While some require you to become a member to get the advice, some provide initial assistance for free. Grow Me The Money[123] and Business SA[124] can also provide very useful tools and help.

Your specific industry group may also have more tailored assistance – whether it's the Real Estate Institute of Australia, Australian Newsagents' Federation, Cabinet Makers Association, National Independent Retailers Association or the Pharmacy Guild of Australia, to name just a few, there is industry support for almost every type of business.

The Environmental Consultants Association in Western Australia has a guide to engaging environmental consultants. Go to www.eca.org.au for further information.

123 See www.growmethemoney.com.au

124 See www.business-sa.com

Writing an environment policy

This is a document that sets out your business' commitment to operate in a way that minimises your impact on the environment. When you have reduced your environmental footprint, your business can operate more efficiently which positively impacts your financial bottom line.

Environment policies don't have to be long-winded documents. If possible, you should write your policy up as a single A4 document that can be framed and put into your reception area.

The environmental policy needs to contain the following:

1. The clearly stated aims and objectives of your policy and that your business will operate within the boundaries of all applicable environmental legislation.
2. A commitment to regularly review and improve the environmental impact and performance of the business. You may want to state that you will also review the environmental impact of your contractors and suppliers.
3. Your business will seek to reduce its waste and emissions as well as its use of energy, resources and supplies. This could be linked to a statement about your business' commitment to running a more sustainable operation.
4. If there are specific environmental impacts associated with your business such as packaging or water usage, then include a reference to these in the policy.
5. It should state that your employees have accepted and will abide by the policy. Spell out how your business will educate and train its employees on environmental issues so they have increased awareness about how their actions at work affect the environment.
6. The policy should be endorsed by senior management and at the very least should be formally signed by the owner, managing director or environment manager.

If you have a major client that has an environmental policy, you may want to make sure that your policies are aligned.

Your environment policy should be a key part of your business strategy. As such, you should print your environmental policy on letterhead or design it so people see that it's a formal business document.

Business SA also recommends that you include your business' mission statement, so the policy explains what your organisation does and why your business is committed to being environmentally and socially sustainable.

Business SA is very proactive in dealing with SME-related environmental issues. Its website has a range of useful environmental information and it publishes a 'how to' guide to environmental management that SMEs will find particularly useful. Go to www.business-sa.com for more information.

Stage two – ensuring legal compliance

Companies need to understand the environmental legislation that they have to comply with.

The environmental protection authority or agency in each state and territory is a good place to start. Their websites or information lines will be able to quickly identify whether your business needs an environmental permit, as well as any general laws that you may need to be aware of (see 'Resources and tools', page 195).

Companies also need to identify other environmental requirements that relate to customer contracts, as well as industry standards, codes of practice, corporate environmental policies and any other agreement that they've entered that has environment-related clauses.

Ongoing compliance

If you identify legal compliance issues, your EMS should then include processes to ensure and demonstrate ongoing compliance. The simplest way to do this is to write a register of legal obligations into your EMS documentation and include a checkbox to track reviews and updates. Specific activities in your action plan can also ensure ongoing compliance – such as allocating responsibility to a person to review and update laws by a particular date each year.

Employee training

If it is relevant to your business, ongoing employee training should include legal compliance.

Stage three – developing the EMS and setting targets and objectives

To finalise your EMS simply bring together all the elements already discussed in this chapter. Your EMS will be complete when you document, review and communicate the EMS with key stakeholders. Issues to consider are:

1. Finalising targets and goals – are there any more goals and targets that can be included?
2. Allocating responsibility – who is responsible for managing the EMS?
3. Key impacts – have you developed a register of energy, water, waste and other impacts?
4. Avoiding pollution – if your business has the potential to cause environmental pollution, it should plan to minimise this risk. In the event of such pollution taking place, who in your company will implement and oversee an emergency response plan?
5. Monitoring the EMS – there are a number of issues to consider:
    a) How will the EMS be monitored and kept up to date?
    b) Who will oversee the record-keeping relevant to your EMS?
    c) Who will monitor your CO_2 emissions?
    d) Who will oversee and measure the financial expenditure involved in implementing your EMS and any financial savings that arise from that expenditure?
    e) What corrective action will your company take if the EMS fails to deliver environmental improvements and financial savings?
6. Public communication – should you communicate your environmental commitment and EMS to employees, customers, and suppliers?
7. Environmental report – think about when you want to start writing an annual environmental report to track your environmental performance.

8. Review and update – what is your plan for a regular review and update of your EMS? Have you considered whether independent verification and auditing may be of value?
9. Establish a baseline – your company also needs to establish a baseline from which you can measure your progress. For example, "Since 2008, Smith Resources has reduced its energy usage by 15%", allows others to evaluate you and it enables you to measure your progress.

KPIs to include in environmental reports and your EMS:

1. How much energy was used? You can get this information from your energy and fuel bills.
2. How much water was used? You can get this information from your water bills.
3. It needs to detail your transport impact – this includes air and ground transport related to your daily operations, as well as the impact of your employees getting to work.
4. How much packaging, cardboard and paper were used?
5. How much office equipment and consumables were used?
6. How much waste was generated? Your waste contractor can help you with this, or your company can monitor this on its own (this is particularly relevant if you manufacture products where waste is generated or raw materials are left unused by the production process).
7. How much waste was recycled? Your recycling company can help you with this or you may be able to monitor this on your own.
8. What solvents, refrigerants, VOCs and chemicals were used? All need to be included. How many greenhouse emissions – also called carbon emissions – were generated by your overall operations? This can be done by using a carbon calculator or by bringing in a consultant[125] who can do this for you.

125 The ECA has a guide to engaging environmental consultants. See www.eca.org.au

Independent accreditation and ISO 14001

With an increasing number of companies setting up sustainable procurement policies, a well-documented and implemented EMS will stand your business in good stead. Many companies have also gone one step further and had their EMS independently certified. The best known of these independent certifications is ISO 14001.

While for most SMEs just having an EMS will be satisfactory, if your business is supplying or working with major companies, it is worth examining ISO 14001 certification of your EMS. This may be even more important if you have competitors that are certified to ISO 14001 or if you have customers who have requested independent verification of your environmental processes and claims.

ISO 14001

ISO 14001 is a standard for environmental management systems that is published by the International Organization for Standardization. The ISO 14001 standard helps companies to improve their environmental performance and reduce their impact on the environment.

It's the most important environmental standard in the world and any sized business can seek ISO 14001 certification. To do so, however, you need an external auditor to verify that your EMS conforms to the requirements of the ISO 14001 standard.

This external audit and certification is one of the key benefits of ISO 14001, as it shows your customers and stakeholders that you operate to high standards of environmental management.

Go to www.iso.org for more information.

Engaging others

‘Any sustainability plan must involve communication. It’s a key part of your sustainability journey.’

13

Tell someone who cares: communicate your commitment to sustainability

It is critical for a business to communicate its commitment to sustainability.

Customers, employees, suppliers and partners need to know what you're doing so they can contribute to your goals and benefit from your improved performance.

According to the United Nations Environment Program (UNEP) and Futerra Sustainability (Futerra) consultants, for communication regarding sustainability to work, it needs to:

- be practical
- be targeted
- raise awareness
- change attitudes
- change behaviour.

UNEP and Futerra advise that you need to:

1. **Set objectives** – set out exactly what it is that you want to achieve. If you want to reduce energy use by 5%, then say so clearly and succinctly.
2. **Define your approach** – decide your approach, know your audience and then target it with messages that will resonate. You also need to decide how long the campaign will run.
3. **Develop your message** – decide your core messages and develop them to ensure they will emotionally engage and connect with your audience.
4. **Decide the channels of communication** – exactly how are you going to reach people? You need to decide the most appropriate methods to communicate to them. A water-saving campaign, for example, could best be served by water-saving posters near sinks and taps and on the backs of toilet doors.
5. **Provide a mechanism for feedback** – if you're putting up water-saving posters, tell people who to call if they spot a leaking tap.
6. **Decide who will manage and implement the campaign** – if someone calls to report a leaking tap, they need to be able to talk with someone who then organises to fix the tap.
7. **Measure the results** – think of what you need to measure. Is it awareness, behavioural change, reductions in energy usage? Whatever it is, prior to commencing any campaign, make sure you know the baseline by which you can measure the improvements that result from that initiative.
8. **Report and evaluate** – any communication campaign needs to report and evaluate the results. This allows for continuous improvement should you wish to run the campaign on an ongoing basis.

Use positive, targeted messages tailored to your audience and test it with people in your personal network. If it doesn't work with them, then it's highly unlikely to work on your employees.

When communication is carried out well and in an integrated manner, it can bring about significant change. Any sustainability plan your business has must therefore involve communication – it's a key part of your business' sustainability journey.

Talking to customers

Sensis has decades of experience helping SMEs to effectively communicate with their customers. Research has shown that the most effective Yellow Pages® ads focus on the needs of the customer and tell them:

- what your business does
- what benefits your business provides potential customers
- why potential customers should choose you.

Telling people about your environmentally sustainable business initiatives, no matter how big or small, is a great way to open your business up to customers who make their purchasing decisions based on the sustainability credentials of a business. So make sure you're telling your employees and customers alike about all the great stuff you're doing.

Appropriately and accurately tailored sustainability messages can give you an edge when talking to customers.

Businesses with a limited advertising and marketing budget should also consider where to invest their money in order to best communicate to customers and potential customers.

The best way to ensure your business and its environmental credentials have maximum exposure among potential customers is to spread your advertising and marketing budget across multiple active information sources.

Active information sources include:

- directories
- classifieds
- websites
- search engines
- mobiles
- newspapers.

For example, if your business' advertisement is featured in a print directory, on mobile and also online – you've got more chance of engaging a potential customer than if your advertisement is only featured in one of those sources.

Avoid 'greenwash'

'Greenwash' is the term used when a business makes environmental claims about a product which, on closer examination, don't stack up.

Many cases of 'greenwash' may be the result of ignorance or sloppiness rather than malicious intent.

SMEs making 'green' claims about their products need to keep up with developments in this area. The Australian Competition and Consumer Commission (ACCC) has released a guide titled *Green Marketing and the Trade Practices Act* to help businesses understand what claims are permissible.[126]

A study undertaken in 2007 by Terrachoice Environmental Marketing found that the major problems with 'greenwashing' were:

- no proof being available with regards to the claim
- vagueness about the benefit of the claim
- irrelevance of the claim
- fibbing about the benefit of the product.

Companies that deliberately mislead consumers can face criminal prosecution and significant fines. This, however, has not put companies off making green claims.

According to the consumer group Choice, there has been a significant increase in the use of green claims on product labels. Choice's view is that many claims are not supported by evidence, are irrelevant or are poorly explained.[127] This risk here, of course, is that such claims leave consumers confused.

Choice found 630 green claims in a stocktake of just 185 non-food supermarket items. These products included garbage bags, tissues, cleaners, detergents and toilet paper.

The issue is being closely monitored by the media and SMEs need to be aware that customers are becoming more educated about the issue of environmental claims. Given the heightened level of concern about 'greenwash' by the ACCC and a range of not-for-profit organisations, it pays to err on the side of caution when marketing your business' environmental initiatives.

126 *Green Marketing and the Trade Practices Act*, ACCC, 2008. See www.accc.gov.au

127 See www.choice.com.au/greenwatch

The Environmental Claims in Advertising and Marketing Code

In 2009, the advertising industry introduced a new code of practice to help ensure companies are able to back up their environmental claims.

The aim of the Environmental Claims in Advertising and Marketing Code is:

"To ensure advertisers and marketers develop and maintain rigorous standards when making Environmental Claims in Advertising and Marketing Communications and to increase consumer confidence to the benefit of the environment, consumers and industry."

The Australian Association of National Advertisers (AANA) noted consumer confidence can be undermined by generalised claims such as 'natural', 'biodegradable' and 'environmentally friendly'. Scott McClellan, chief executive of the AANA said, "Advertisers should be encouraged to develop and promote environmentally sustainable products." However, he stated that the claims must be "credible and legitimate."

Under the new code, if a consumer makes a complaint to the Advertising Standards Bureau, the advertiser should be able to substantiate its claims in a timely manner.

ACCC checklist for marketers

In a media release from 2007, the ACCC stated that "in light of the growing number of complaints, the ACCC is taking a closer look at a number of the green claims being made at the moment, and all businesses need to ensure they are not misleading their customers with such claims."

If you are going to make environmental claims on your products or in your advertising, you should note the following points from the ACCC:[128]

1. Avoid using terms like 'safe' and 'friendly' and unqualified pictures or graphics. At best they are unhelpful and encourage scepticism; at worst they are misleading.
2. Spell out exactly what is beneficial about a product in plain language that consumers can understand.
3. Link the environmental benefit to a specific part of the product or its production process, such as extraction, transportation, manufacture, use, packaging or disposal.
4. Make sure any claims you make about your product can be substantiated. Think about how you would answer a query regarding the environmental benefits you are claiming about your product. For example, which scientific authority could you use to justify the basis of your claim?

Entering awards

Entering your business in awards programs can be a very rewarding process and a great way to communicate your business' sustainability achievements.

While preparing award submissions can take some time, the end result is a thorough overview of your business' achievements. This will allow you to identify the areas you're doing really well in, and also where the opportunities for improvement are.

Awards programs can also provide excellent networking opportunities, positive exposure in the media and reputational benefits.

Some of the well known business awards with environmental sustainability categories in Australia include:

- Banksia Environmental Awards: www.banksiafdn.com

128 See www.accc.gov.au

- Telstra Business Awards, Sensis Social Responsibility award category: www.telstrabusinessawards.com
- United Nations Association of Australia (UNAA) World Environment Day Awards: www.unaavictoria.org.au/pages/awards-program/world-environment-day-awards.php
- Premier's Sustainability Awards (VIC): www.sustainabilityawards.vic.gov.au

The Green Cred Checklist[129]

The NSW based environment group Total Environment Centre has developed a Green Cred Checklist which contains the top ten questions marketers need to answer prior to making green claims about their products or services.

Motivation and knowledge

1. **Motive**
   Why are we making this green claim or taking a corporate position on environment or sustainability?

2. **Knowledge**
   Are we adequately informed or skilled up to understand relevant environmental issues before making claims?

Telling the whole story

3. **Truth**
   Telling the truth is obviously vital, as is clarity, but are you using the truth in the right way?

continued overleaf …

129 The checklist is reproduced courtesy of the Total Environment Centre. Its use cannot be taken to imply any endorsement of a product or its marketing by Total Environment Centre. A full breakdown of these questions is available. See www.tec.org.au

4. **Materiality**
   Building on truth, is what we're claiming material? That is, does it really matter, or is it inconsequential?

5. **Full disclosure**
   Material omissions are a problem too, so are you sure everything significant is on the table?

Executing well

6. **Life cycle**
   Are we looking at everything along the whole value chain and life cycle, or is something we should know invisible to us?

7. **Self control**
   Are we sure we're not getting carried away by over-enthusiasm or our aspiration, or even by commercial rivalry?

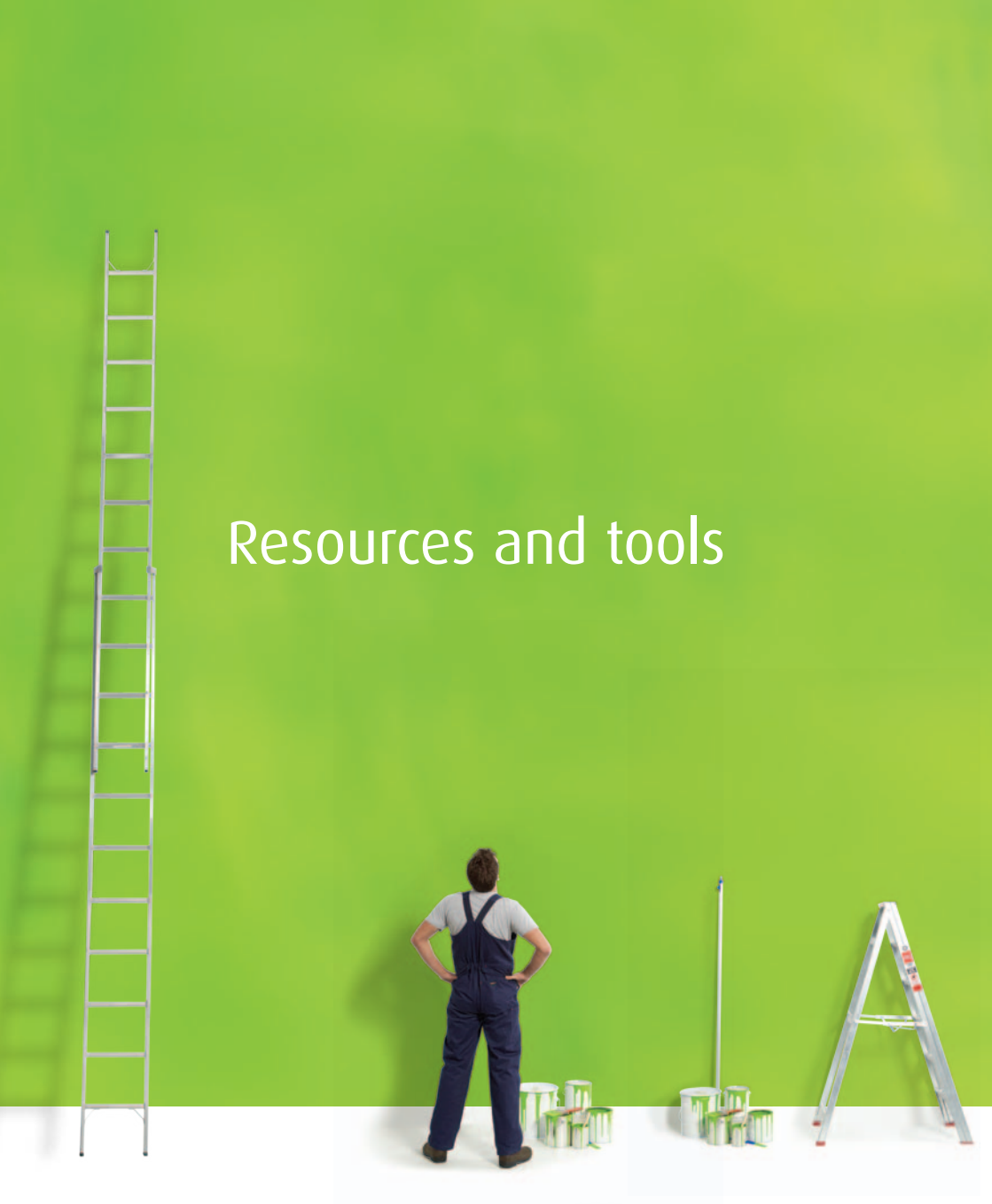
8. **Core words**
   Do we really understand the meaning of core words that are being used in our claims, and are we protecting their integrity?

9. **Proof points**
   Are we backing up our claims with specific proof points that are accessible to the target audience?

Don't be afraid to ask for assistance

10. **Help**
    If we can't answer all of the points in this checklist with confidence, who can help us to get it right?

Resources and tools



‘There are many government and business-led resources that can help SMEs on their sustainability journey.’

Further resources

There are many government and business-led resources that can help SMEs on their sustainability journey. Here are some of the best web resources in Australia.

Although this is a state-by-state list, many of these resources are not state-specific. Indeed, Grow Me The Money from Victoria and Business SA from South Australia offer direct help to SMEs in other states and are highly recommended.

National

Business.Gov.Au
www.business.gov.au

Department of Sustainability, Environment, Water, Population and Communities
www.environment.gov.au

The National SME Project
www.thehub.ethics.org.au

Green Capital
www.greencapital.org.au

Good Business Register
www.goodbusinessregister.com.au

New South Wales

Sustainable business
www.environment.nsw.gov.au/sustainbus

Business Treading Lightly
www.btl.net.au

Sustainability Toolkit
www.nswbusinesschamber.com.au

It's a Living Thing
www.livingthing.net.au

Energy Smart Toolbox
www.energysmart.com.au

West Australia

Being Green In Business
www.smallbusiness.wa.gov.au

Energy Smart Directory
www.energysmartdirectory.com

Northen Territory

Greening the Territory
www.greeningnt.nt.gov.au

ecoBiz NT
www.ecobiznt.nt.gov.au

Victoria

Grow Me The Money
www.growmethemoney.com.au

Carbon Down
www.carbondown.com.au

Carbon Compass
www.carboncompass.com.au

Resource Smart for Businesses
www.resourcesmart.vic.gov.au

Department of Sustainability and Environment
www.dse.vic.gov.au

Energy and Greenhouse Management Toolkit
www.sustainability.vic.gov.au

Life Cycle Management
www.epa.vic.gov.au/lifecycle

Tasmania

Earn Your Stars
www.earnyourstars.tas.gov.au

Sustainable Business and Industry
www.epa.tas.gov.au

South Australia

Business Sustainability Alliance
www.southaustralia.biz

Business SA – Sustainable Business Development Unit
www.business-sa.com

EPA/Business SA – Small Business Environmental Management Solutions guide
www.epa.sa.gov.au/business

Australian Capital Territory

ACTSmart for Your Business
www.environment.act.gov.au/actsmart/your_business

Queensland

ecoBiz Queensland and Business Sustainability
www.derm.qld.gov.au

‘Don’t know the difference between global warming and the greenhouse effect? Check out our definitions here.’

Glossary

At the end of this chapter are the sources of information for the following definitions.

ACF

Australian Conservation Foundation (environment group).

Alternative energy (also called renewable energy)

Energy derived from non-traditional sources such as solar, hydroelectric, wind, wave, geothermal and biomass (as opposed to traditional sources of coal, gas and oil).

Anaerobic digestion

A biological process that produces a gas composed of methane (CH_4) and carbon dioxide (CO_2), sometimes known as biogas. These gases are produced from organic wastes such as livestock manure, sewage, green waste and food waste and can be used to generate energy.

Anthropogenic

Literally meaning human-made. Often used when discussing climate change and global warming, it is usually used when referring to the increased emissions of greenhouse gases caused by human activity.

Biodegradable

Refers to materials that can be broken down by bacteria or other decomposers. Paper and organic wastes such as green waste, food waste and animal manure are biodegradable.

Bioenergy/bioenergy facility

Bioenergy is renewable energy that's created when biological material is converted into energy (see biomass and biofuels). This energy can take the form of electricity or heat. Bioenergy facilities include landfill gas capture (where the gas is burnt and either creates heat or is taken a step further and used to generate electricity) and sites that burn wood waste or agricultural waste (such as paper mills, sawmills and sugar plantations).

Biofuel

Gas or liquid fuels that are made from plant or animal material. Such material includes wood, wood waste, agricultural waste, sludge waste, waste alcohol, municipal solid waste, abattoir waste and other organic matters. Biofuel includes landfill gas, ethanol and biodiesel.

Biodiversity

Short for biological diversity, it refers to the vastness and variability of all living things across terrestrial, marine and other aquatic ecosystems as well as the ecological systems of which they are part. It also includes diversity within species, between species and in ecosystems.

Biomass

Materials that are biological in origin, including organic material (both living and dead) from above and below ground. This can include trees, crops, grasses, tree litter, roots, animals and animal waste.

Biomass energy

This is energy that's produced by combusting biomass materials such as wood – also called alternative energy and sometimes renewable energy. The carbon dioxide emitted from burning biomass does not increase total atmospheric carbon dioxide if this consumption is done on a sustainable basis – that is, where plantations and re-growth forests take up as much carbon dioxide as is released from the burning of the biomass.

Bioswales

Landscaped areas that are designed to remove pollution and silt from run-off surface water before the water is released into waterways or the stormwater system. Sometimes referred to as bio-filters, the areas are commonly filled with plants or gravel or any other medium that traps pollutants while allowing the water to slowly course through the system.

Black water

Waste water from toilets and urinals. Also called foul water or sewage, it refers to any water containing faecal matter or urine, but is distinct from grey water (see grey water).

Brundtland Commission

See the World Commission on Environment and Development.

Carbon dioxide (CO_2)

CO_2 is a small component of the Earth's atmosphere but it's also the planet's most important greenhouse gas. CO_2 is released through deforestation, the burning of vegetable matter and the combustion of fossil fuels such as oil (for transportation) and gas and coal (for energy generation). It is also a gas used in raw form in many production activities. It is a greenhouse gas that traps radiation and contributes to the potential for global warming.

Carbon dioxide equivalent (CO_2-e)

A measure used to compare the emissions of various different greenhouse gases based upon their global warming potential (see global warming potential).

Carbon neutral

Carbon neutrality occurs when the total amount of carbon emissions from any given activity is neutralised by other measures. For example, if a business or household purchases 100 per cent renewable energy GreenPower for electricity use, their electricity use is carbon neutral. All activities using transport, producing goods, offices, events, etc – can be managed in a carbon-neutral fashion.

Carbon offsets

After you generate greenhouse emissions, a carbon offset takes place when you reduce emissions elsewhere by the same amount. This can be achieved by funding projects that reduce emissions (by reducing energy use, generating renewable energy and capturing methane) or by sequestering carbon from the atmosphere (via tree planting or avoided deforestation).

Carbon sequestration

Refers to processes that store carbon. For example, trees and plants absorb carbon dioxide, release the oxygen and store the carbon.

Carbon sink

Carbon reservoirs and conditions that take in and store more carbon (for example, carbon sequestration) than they release. Carbon sinks can serve to partially offset greenhouse gas emissions. Forests and oceans are large carbon sinks.

Carcinogen

A carcinogen is a substance or radiation that can cause or exacerbate cancer. Common examples of carcinogens are asbestos, certain dioxins (see dioxin) and tobacco smoke.

CFLs (Compact fluorescent lamps)

Compact fluorescent lamps or CFLs are also called energy-saving lights. They are fluorescent lights that use less energy and last longer than the incandescent light globes they're designed to replace. Typically they last 6 to 10 times longer than incandescent bulbs and use up to 80 per cent less energy.

Cleaner production

Cleaner production is when you make the same amount of products or services in a way that minimises waste, prevents pollution, and reduces the use of energy, water and material resources (see also eco-efficiency).

Climate

The average weather taken over a period of 20 to 30 years for a particular region. Climate is not the same as weather but it is the average pattern of weather for a particular region. Weather describes the short-term state of the atmosphere.

Climate change

Climate change is a natural occurrence, however human-caused pollution of greenhouse gases has accelerated the scale and pace of change well beyond natural changes.

The Climate Institute

An independent think tank focused on climate research, education and communication.

Cloud computing

Cloud computing is the general term for computing services and/or software that is delivered and hosted over the internet so that the need for on-site infrastructure (such as computers, software or servers) is reduced.

Coal

Coal is a non-renewable resource because it cannot be replenished in a human time frame. It is formed from plant and animal matter that has been transformed over millions of years. Australia has abundant amounts of brown and black coal and in 2009 coal was used to produce 80 per cent of Australia's electricity. Coal generally causes more greenhouse pollution per unit of electricity than any other fuel.

Cogeneration

Cogeneration is when you generate two forms of energy from the one fuel source. For example, paper mills and sugar cane operations in Australia commonly burn biomass to boil water and generate electricity on-site but have leftover steam that can be captured and used in their industrial processes. Cogeneration is often referred to as heat and power systems.

Commingled materials

Commingled materials is what you get when people put all of their different recyclables such as glass, plastic and metal into the one bin. Commingled recyclable materials require sorting and separating after collection before they can be recycled. This sorting and separating takes place at a Material Recovery Facility (MRF).

Deforestation

Deforestation refers to logging practices where trees are removed and not replaced. This is often the result of forested lands being transformed to non-forest uses. Deforestation is one of the major causes of the enhanced greenhouse effect for two reasons. Firstly, the burning or decomposition of the wood releases carbon dioxide into the atmosphere. Secondly, once they're logged, the trees are no longer removing carbon dioxide from the atmosphere.

Dioxin

Highly toxic chemical compounds that can cause human health problems and which are highly persistent in the environment. They are emitted to the air through fuel and waste emissions, including motor vehicle exhaust fumes, burning fuels (like wood, coal or oil), chlorine bleaching, some manufacturing processes and garbage incineration. It is a general term used to cover a wide family of chemicals.

Eco-efficiency

Producing the same number of goods and services while reducing environmental and ecological impacts. This includes reducing materials and resource use, energy, water and waste through the whole lifecycle of a product or service (see also cleaner production).

Eco label

This term refers to any labelling or logo system that conveys to consumers that the product or service benefits the environment or minimises negative environmental effects. Examples of eco labels include Good Environmental Choice Australia, Fairtrade and the Forest Stewardship Council (FSC). Eco label systems operate in a number of ways – independently by not-for-profit groups, by Government, by industry associations and by individual companies.

Ecological footprint

The size and environmental impact of the energy, water, waste and resources associated with an individual, business, community or other entity. This is often expressed as the area of land required to produce the resources consumed by a person, entity or activity.

Ecosystem

The system of plant, animal, fungal, and microorganism communities and their associated non-living environment interacting as an ecological unit. Ecosystems have no fixed boundaries; instead their parameters are set by the scientific, management or policy question being examined. Depending on the purpose of analysis, a single lake, a watershed, or an entire region could be considered an ecosystem.

Electronic waste/e-waste

Electronic or e-waste generally refers to any sort of electrical equipment that is no longer wanted – computers, televisions, DVD and VHS players, printers, mobile phones, kitchen appliances etc. It is an environmental concern because many of these products contain contaminants as well as valuable materials that can be recovered.

Emission inventory

A record of air pollutants emitted into or from a particular area over a period of time. It can refer to emissions associated with a business, community, State, country or the Earth.

Emissions

The release of a substance (usually a gas when referring to the subject of climate change) into the atmosphere.

Energy efficiency

Is about using less energy to perform the same action. For example, energy-saving light globes use 80 per cent less electricity than incandescent light globes.

Enhanced greenhouse effect

The concept that the natural greenhouse effect has been enhanced by increased emissions of greenhouse gases caused by human activity. This increased concentration of greenhouse gases traps more infrared radiation, thereby exerting a warming influence on the climate.

Environmental management systems (EMS)

A systemised approach to identifying and managing a company's environmental impacts.

Environmental stewardship

The responsibility for preserving environmental quality shared by all those whose actions affect the environment.

Fossil fuels

Fossil fuels come in three major forms – coal, oil, and natural gas. Because fossil fuels are a finite resource and cannot be replenished once they are extracted and burned, they are not considered renewable.

Geothermal energy

Heat transferred from the Earth's core to underground deposits of dry steam, wet steam, hot water, or rocks lying under the Earth's surface. This energy can be used to generate renewable power.

Global Reporting Initiative (GRI)

The most widely used framework around the world for companies and other organisations that want to assess and report on sustainability performance and commitments.

Global warming

The progressive gradual rise in average temperatures of the Earth's near-surface air and oceans. Global warming has occurred in the distant past as the result of natural influences, however the term is used today to refer to the warming predicted to occur as a result of increased emissions of greenhouse gases caused by human activity.

Global Warming Potential (GWP)

The index used to translate the impacts of different greenhouse gas emissions into a common measure. Global Warming Potential (GWP) is calculated as the ratio of the impact that would result from 1 kilogram of a particular greenhouse gas to that from 1 kilogram of carbon dioxide over a period of time (usually 100 years). For example, the GWP of methane is 25 times more potent a greenhouse gas over 100 years than carbon dioxide.

Greenhouse effect

The Earth's ability to sustain a temperature conducive to life depends on the natural 'greenhouse effect'. This is where the Sun's heat is trapped by heat-trapping greenhouse gases in our atmosphere. These greenhouse gases act like a blanket around the Earth. Without this 'greenhouse effect', the planet's average surface temperature would be about minus 18 degrees Celsius. The global warming attributed to the increased level of greenhouse gases is called the 'enhanced greenhouse effect'.

Greenhouse gas

Any atmospheric gas that contributes to the greenhouse effect. The main greenhouse gases are water vapour, carbon dioxide, methane, nitrous oxide, ozone and chlorofluorocarbons.

Green roof

Green roofs reduce rooftop and building temperatures. Also known as rooftop gardens, green roofs are planted over existing roof structures and consist of a waterproof, root-safe membrane that is covered by a drainage system, lightweight growing medium, and plants.

GreenPower

Electricity generated from renewable energy sources such as wind, solar, mini hydro and biomass. GreenPower is a government-certified scheme to promote the expansion of these types of renewable energy. When you pay extra for GreenPower, the Government ensures that this money is invested in renewable energy. 100 per cent GreenPower is the best option, but lower-cost 10 per cent GreenPower is also available. Regardless of the amount of GreenPower that you buy, it all helps to boost the renewable energy sector.

Greenwashing

The process by which a company publicly and misleadingly exaggerates or embellishes the environmental attributes of its operations or its products.

Green building

A process of design and construction that employs techniques to minimise adverse environmental impacts and reduce the energy consumption of a building, while contributing to the health and productivity of its occupants.

Grey water

Wastewater from washing processes such as dishwashing, laundry, showers, baths and hand basins. It is also called sullage. Grey water can often be treated on-site (in both houses or businesses) for re-use on gardens or for flushing toilets. It is not fit for human consumption, but can be if it is treated.

Hybrid car

A hybrid car is a vehicle that uses two or more sources of power – the most common being a combination of petrol and electric power. Petrol/electric cars use a traditional combustion engine as the main engine and an electric motor that helps to reduce emissions or provide extra power. Most hybrids do not need to be plugged in – the energy generated during deceleration or braking is captured and stored in a battery. Some hybrid cars can use half the fuel of a equivalent-sized vehicle.

Hydro electricity

Electrical energy produced by falling or flowing water.

Hydrofluorocarbons (HFCs)

HFCs are used in fridges and the manufacturing of semiconductors. Depending on the type of HFC used, these can be 140–11,700 times more potent a greenhouse gas than CO_2.

HVAC

Stands for Heating Ventilation and Air Conditioning.

Intergovernmental Panel on Climate Change (IPCC)

When it comes to the science of climate change, the IPCC is looked to as the main international advisory body to the world's governments. The IPCC organised the development of internationally accepted methods for conducting national greenhouse gas emission accounting and inventories. The IPCC is a United Nations entity and draws upon thousands of the world's scientists as expert reviewers and authors and assesses information in the scientific and technical literature related to the issue of climate change.

ISO 14001

The international standard for companies seeking to certify their environmental management system.

Joule

The international unit for the measurement of energy is the joule (J). As the joule is a rather small unit, a prefix is usually added to form a unit of a more convenient magnitude. For example, kilo (1000 times) is combined to joule to form kilojoule (kJ). Natural gas consumption is usually measured in megajoules (MJ), where 1 MJ = 1,000,000 J. On large accounts it may be measured in gigajoules (GJ), where 1 GJ = 1,000,000,000 J.

Kyoto protocol

An international agreement adopted at the United Nations Framework Convention on Climate Change (UNFCCC) in Kyoto, Japan in December 1997. It sets legally binding targets and timetables for cutting the greenhouse gas emissions of industrialised countries which have accepted it.

LEDs

Stands for light emitting diode – they are small and compact light sources that are very bright and energy-efficient. They are used in a range of applications such as indicators on cars and traffic signals and increasingly for text and video displays and light bulbs.

Life cycle assessment (LCA)

A technique to assess the total environmental impacts associated with a product, process or service. This is achieved by completing and analysing a detailed inventory of energy and material inputs and environmental releases.

The term 'life cycle' refers to the notion that a fair, holistic assessment requires the assessment of raw material production, manufacture, distribution, use and disposal including all intervening transportation steps necessary or caused by the product's existence. The sum of all those steps – or phases – is the life cycle of the product. The concept also can be used to optimise the environmental performance of a single product (eco-design) or to optimise the environmental performance of a company.

Methane (CH_4)

Methane is a very significant greenhouse gas. Averaged over a hundred year period, the global warming potential of methane is 25 times more potent than CO_2.[130] CH_4 is usually caused by the decomposition of landfill waste; exhalation from cows, sheep and other ruminant animals; rice growing, wetlands and fossil fuel production. As the world warms, there is also great potential for significant amounts of methane to be emitted by melting tundra.

Natural gas

Underground gas consisting of 50 to 90 per cent methane (CH_4) and small amounts of heavier gaseous hydrocarbon compounds such as propane (C_3H_8) and butane (C_4H_{10}).

130 IPCC, 2007: *Climate Change 2007: The Physical Science Basis*. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change – www.ipcc-wg1.unibe.ce

Natural resource

Raw materials or energy supplied by nature and its processes (for example: water, minerals, plants). Trees are a natural resource used to make paper, and sunlight is a natural resource that can be used to heat homes.

Nitrous oxide (N_2O)

N_2O is the result of commercial and organic fertilisers, the combustion of fossil fuel, the production of nitric acid and the burning of biomass. As a greenhouse gas, it's 310 times more potent than CO_2.

NGO

Non-governmental organisation (environment groups and community groups are NGOs).

Organic food

Organic food is produced without using most conventional pesticides; fertilisers made with synthetic ingredients or sewage sludge; bioengineering; or ionising radiation. Organic meat, poultry, eggs, and dairy products come from animals that are given no antibiotics or growth hormones.

Perfluorocarbons (PFCs)

PFCs are by-products of uranium enrichment and the aluminium smelting process and are used in refrigerating units. Depending on the type of PFC used, as a greenhouse gas these can be 6500 to 9200 times more potent than CO_2.

PET

Polyethylene terephthalate. A clear and tough polymer that's used to make plastic products – it is commonly used for drinks bottles, food packaging and fabrics.

Phosphor burn-in

Also called screen burn, it is where a computer or television screen is damaged and disfigured by an image being permanently visible on the screen due to the fact that is was left static and visible for too long. Putting a computer into sleep mode or turning it off, is a way to stop burn-in.

Photovoltaic (PV)

A system that converts sunlight directly into electricity using cells made of silicon or other conductive materials.

Pollution

A change in the physical, chemical, or biological characteristics of the air, water, or soil that can affect the health, survival, or activities of humans in an unwanted way. The term can also be expanded to include harmful effects on all forms of life.

Post-consumer

Materials recovered and recycled after use by consumers. For example, many newspapers contain some post-consumer recycled content. Office paper that is turned into toilet paper is a post-consumer raw material.

Pre-consumer

Materials recovered, salvaged and recycled for reuse from an industrial or manufacturing process. Paper manufacturers sometimes use offcuts from the paper making process and add this pre-consumer 'waste' into new paper.

Radiation

Energy that is transmitted or radiated in the form of electromagnetic waves or particles that release energy when they're absorbed by an object.

Radiation has differing characteristics depending upon the wavelength. Because the radiation from the Sun is relatively energetic, it has a short wavelength (ultra-violet, visible, and near infrared) while energy radiated from the Earth's surface and the atmosphere has a longer wavelength (for example, infrared radiation) because the Earth is cooler than the Sun.

Recycling

Collecting, reprocessing and re-using a resource to make a new product.

Renewable energy

Energy obtained from sources that are essentially inexhaustible, unlike, for example, fossil fuels, of which there is a finite supply. Renewable sources of energy include waste, geothermal, wind, wave and solar energy.

Renewable Energy Certificate (REC)

Renewable Energy Certificates are credits for electricity generated from renewable sources. They are able to be bought, sold and generally used in processes for proving the validity of renewable energy production and for compliance with state or national laws.

Renewable resource

Naturally occurring raw material that comes from a limitless source such as the Sun and wind or a renewable resource like trees.

Resource recovery

The process of obtaining matter or energy from discarded materials. Recycling is resource recovery, as is waste to energy.

Retrofitting

The application of conservation, efficiency, or renewable-energy technologies to existing structures.

Solar energy

Direct radiant energy from the Sun.

Stormwater

Stormwater discharges are generated by rain and runoff from land, pavements, building rooftops and other surfaces. Stormwater runoff accumulates pollutants such as oil and grease, chemicals, nutrients, metals and bacteria as it travels across land.

Sulfur hexafluoride (SF_6)

SF_6 is mainly used to insulate high-voltage equipment. It is also used in cable-cooling systems. As a greenhouse gas, it is 22,800 times more potent than CO_2. It is the most potent greenhouse gas.

Sulfur oxides (SOx)

Sulfur oxides are significant air pollutants generated by the combustion of fossil fuels but also from natural sources such as volcanoes. Power plants burning high-sulfur coal or heating oil are generally the main sources of anthropogenic sulfur dioxide emissions worldwide, followed by industrial boilers and nonferrous metal smelters.

Sustainability

Any process or condition that can be maintained indefinitely without interruption, weakening, or loss of valued qualities.

Sustainable agriculture

Farming systems that are capable of maintaining their productivity and usefulness indefinitely. Such systems satisfy human food and fibre needs while maintaining the natural resource base and making efficient use of non-renewable resources.

Sustainable development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable procurement

Also called green procurement, this is a concept whereby a spending or investment decision doesn't just consider price and quality. It also takes into consideration the environmental and social impact of a product or service.

Volatile organic compound (VOC)

Organic compounds that evaporate readily into the atmosphere at normal temperatures. Volatile organic compounds (VOCs) contribute significantly to photochemical smog production and certain health problems.

Waste hierarchy (also called waste management hierarchy)

Sometimes referred to as 'reduce, reuse, recycle'. The waste hierarchy promotes the management of waste in the following order: firstly avoidance, then reuse, recycling, recovery of energy, treatment, containment, and finally disposal.

Watt

In the International System of Units, the Watt is a derived unit of power. It is the number of joules used per second. That is 1 W = 1 J/s. This unit is also used in greater magnitudes such as kilowatts (kW), where 1 kW = 1 kJ/s = 1000 J/s; and megawatts (MW).

Electricity consumption is measured in units of watt-hours (Wh), or more typically, kilowatt-hours (kWh) and megawatt-hours (MWh), where 1 MWh = 1000 kWh. 1 kWh means 1 kW of power being used for 1 hour.

WELS

Stands for the Water Efficiency Labelling and Standards Scheme. It is an Australian Government run scheme that requires a range of water-using devices (such as dishwashers, clothes washers and shower nozzles) to be assessed and labelled for their water efficiency. The label is star rating based – the more stars means more water efficiency.

World Commission on Environment and Development (WCED)

The World Commission on Environment and Development is also known as the Brundtland Commission, from its chairperson Gro Harlem Brundtland. The WCED was commissioned by the United Nations General Assembly in 1983 to report on the global environment to the year 2000 and beyond and to propose strategies for sustainable development. The Commission published a report in 1987 entitled *Our Common Future* that addressed the issue and provided the most cited definition of the term sustainable development: 'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.' An Australian edition titled *A Sustainable Future for Australia* was published in 1990.

The information in this glossary is from a wide range of sources including:

- Australian Bureau of Meteorology: www.bom.gov.au
- Australian Government Department of Sustainability, Environment, Water, Population and Communities: www.environment.gov.au
- Australian Government Department of Climate Change and Energy Efficiency: www.climatechange.gov.au
- *Cannibals With Forks: The Triple Bottom Line of 21st Century Business,* John Elkington, Capstone, 1997
- *Environmental Decision-making,* Ronnie Harding, Federation Press, 1998
- GreenFacts: www.greenfacts.org
- *Leading Change Toward Sustainability,* Bob Doppelt, Greenleaf, 2003
- Sustainability Victoria: www.sustainability.vic.gov.au

"Doing more with less makes your business operate more efficiently and helps your bottom line."

– Jon Dee

About the author

Jon Dee is the Founder and Managing Director of Do Something. He was also the NSW Australian of the Year for 2010. Since 1992, he has been one of Australia's most influential figures on environmental issues, inspiring millions of Australians to make positive environmental change.

He founded National Tree Day with Olivia Newton-John, an event for which 2 million Australian volunteers have planted 15 million native trees and shrubs. In 1991, he founded Planet Ark together with his close friend Pat Cash. Through his role with Planet Ark, Jon was a driving force behind a number of groundbreaking environmental campaigns. He instigated National Recycling Week, the National Recycling Hotline and www.recyclingnearyou.com.au which is used by more than one million Australians every year.

He has spearheaded the media campaign to phase out plastic bags and co-founded the 'plastic bag-free towns' push in Coles Bay, Tasmania. Jon was also the official spokesperson for the Australian DVD release of *An Inconvenient Truth*.

Jon also initiated the successful lobbying campaign for Australia's three-year phase-out of incandescent light globes, a move that will save Australians hundreds of millions of dollars. Other countries are now following Australia's lead in phasing out the use of such globes.

In addition to producing and directing more than 350 environmental TV and radio ads, Jon was the founder of *World Environment News*, one of the world's leading environmental news services. He also co-organised the bottled water ban in Bundanoon, NSW that created headlines around the world.

Jon is in strong demand here and overseas as a corporate speaker. Companies who have hired Jon to speak to them include Hewlett-Packard, Commonwealth Bank, McDonald's, ANZ, Toyota, NAB, BMW, Foster's Group and many others.

Through his work with the Do Something organisation, Jon is currently running a number of campaigns to bring about positive social and environmental change. To find out more, visit www.dosomething.net.au, www.jondee.com. You can also follow Jon on Twitter via www.twitter.com/JonDeeOz

Acknowledgements

Jon would like to acknowledge and thank Tim Wallace, Leanne Dee, Liz Durnan, Jessica Langmead, Jill Riseley and Sensis for their help and assistance with this book. He would also like to thank OMG! Creative and Equilibrium OMG for their work.

About Sensis

To obtain another copy of this book, visit www.about.sensis.com.au

Sensis is Telstra's advertising business and Australia's leading directories information resource. Sensis delivers innovative and integrated local search and digital marketing solutions via print, online, voice, mobile, landline and new devices including the iPhone, iPad, Android phone and Telstra's T-Hub®. Our content can be found via search engines including Google™, Bing and Yahoo!, and information can be shared from online to mobile and social networking sites. This network connects Australians with information anywhere, anytime and in any way people choose. Sensis' powerful, multi-channel portfolio provides an unparalleled local information source, helping Australians find, buy and sell.

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131 Google is a trademark of Google Inc.

132 Roy Morgan Single Source Australia, 14 years and over, monthly average. January 2008 – December 2008. White Pages® Network includes White Pages® directory, whitepages.com.au, sensis.com.au, Telstra Directory Assistance, Call Connect (12456) and 1234. Call Connect (12456) is available to most Telstra customers. 1234 is available to most Telstra customers except where preselected to another carrier for long distance calls.

133 Independent research of 18-64 year olds by TNS in metropolitan directory markets in Melbourne, Sydney, Brisbane, Adelaide and Perth, January 2006 – December 2007.

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134 Omniture Site Catalyst – average site visits: December 2009 – February 2010

The www.whereismaps.com website provides rich information to consumers interested in GPS and navigation. It promotes maps as a key element in these products while also giving consumers the opportunity to buy map updates for their in-car, portable and mobile GPS devices.

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Sensis® Data Solutions delivers data quality, directory search and verification, and location intelligence solutions to businesses and government. Our solutions are based on Sensis' range of information sources including the White Pages® and Yellow Pages® directories and Whereis® mapping data. Our solutions are designed to enhance a business' sales and marketing activities and improve operational efficiencies.

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We believe how we do business is just as important as what we do. At Sensis, our Sustainability Strategy is about supporting the needs of current and future generations, today and tomorrow. It's being ethical, sustainable and accountable with all our stakeholders in everything we do. We look to achieve this goal by minimising the environmental impacts of our products and making a positive contribution to the communities in which we operate.

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www.about.sensis.com.au/sustainability
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About this book

Design

This book has been designed by OMG! Creative, which has developed extensive skills in creating and executing communications strategies for brands that incorporate sustainability as part of their brand DNA.

OMG! Creative was the first advertising agency to gain the Greenhouse Challenge Plus accreditation. In addition to undertaking sustainable practices in its business, OMG! Creative offset all remaining greenhouse emissions through government-approved certificates.

The agency ensured all aspects of the creation and production of the book from design concept through to the manuscript approval process, printing and the selection of business partners had minimal impact on the environment.

Technical Editing

The content and facts in this book have been reviewed and edited by Equilibrium OMG, a specialist sustainability management and consulting company. Equilibrium OMG offers

strategies, management and tools to improve your sustainability and help you grow your business. The personnel of Equilibrium OMG have more than 30 years collective experience in environmental management and sustainability and bring together practical services and products that support improved performance, profitability and reputation.

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This publication has been printed on ecoStar, which is manufactured from 100% post consumer recycled paper in a process chlorine free environment under the ISO 14001 environmental management system. The fibre source has been independently certified by the Forest Stewardship Council (FSC) and greenhouse gas emissions have been reduced to net zero through carbon offsetting certified by the CarbonNeutral Company. The carbon emissions of the manufacturing process for ecoStar have been measured and offset through the CarbonNeutral Company. The assessment/audit of the greenhouse gas emissions has been undertaken by the Edinburgh Centre for Carbon Management (ECCM), an independent third party in accordance with the WBCSD-WRI GHG Protocol and the emissions have been reduced to net zero through internal change and/or externally through carbon offsetting by the CarbonNeutral Company in accordance with the requirements of the CarbonNeutral Protocol for the stated activity. www.raleighpaper.com.au www.eccm.uk.com www.carbonneutral.com

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This book has been printed by Vega Press using soy and vegetable based inks on a printing press that operates alcohol free with closed loop water recycling systems. Vega Press is committed to continual environmental improvement through its ISO 14001:2004 Environmental Management Systems certification and has implemented water, energy and waste minimisation systems across its production processes. Vega Press has taken action to reduce and report on its carbon emissions in accordance with ISO 14064-1:2006 and was the first Australian Business certified to this Standard. Emissions that are not able to be avoided are offset by purchasing carbon offsets from the Carbon Reduction Institute®. All offsets purchased meet or exceed the criteria set by the Kyoto Protocol and are independently audited by a third party. Vega Press has Forest Stewardship Council Chain of Custody Certification and works with paper suppliers and others in the supply chain to ensure the best possible environmental outcome when choosing materials and recycling waste. In 2010 Vega Press won the Victorian Premier's Sustainability Award, multiple environmental awards in the local community and was a finalist in the national Banksia Environmental Awards. www.vega.com.au

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