

Strategic audit

Addressing our future

Environmental Management Systems January 2010

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Photograph of Dr Auty on page 9 courtesy of
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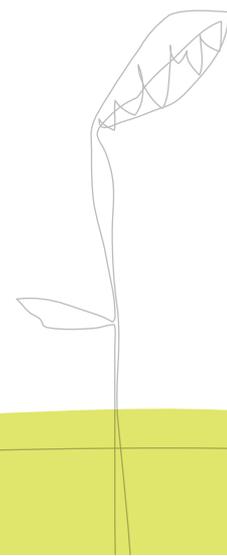
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From the Commissioner

My role as the Commissioner for Environmental Sustainability is to be both frank and persuasive ... to encourage as well as expose.

This is the sixth annual strategic audit report of the Commissioner for Environmental Sustainability – and my first in the role.

I am presenting this report to the Victorian Government and to the people of Victoria at a time when nationally and internationally the policy frameworks and agreements needed to reduce greenhouse gas emissions and address the impacts of climate change are being debated. However, as communities, and indeed governments, throughout the world await the outcome of these negotiations they are changing their habits and implementing programs to deal with the challenges of living sustainably. In Victoria we fully recognise that the less we do to reduce our own greenhouse gas emissions the more we will need to do to adapt to the impacts of climate change.

The *Commissioner for Environmental Sustainability Act 2003* (the CES Act) requires me to conduct annual strategic audits of, and prepare reports on, the implementation of Environmental Management Systems by Victorian Government departments and agencies.¹

My role as the Commissioner for Environmental Sustainability is to be both frank and persuasive about methods of achieving environmentally sustainable practices across departments and agencies – to encourage as well as expose.

The report is the only public evaluation of the way the departments and agencies are systematically attending to the urgent needs of addressing climate change and other environmental concerns.

The report tells the public how well the departments and agencies are taking up more sustainable practices. Its transparency encourages the departments and agencies under scrutiny to get more involved, knowing that their best efforts will be recognised while at the same time cavalier non-compliance, should there be any, will attract criticism.

An Environmental Management System is defined in the CES Act as:

*...the organisational structure, policies, practices, processes and procedures for implementing environmental management, including systems for designating responsibility for and allocating resources to, environmental management.*²

As a means of improving regulatory compliance and reducing the use of resources, Environmental Management Systems are a quiet achievement that deserve to be more widely known. When working well, this relatively unobtrusive program demonstrates the ease with which ecological sustainable decision-making can be made commonplace.

The use of resources across our community is high and given the climate change realities, it will need to significantly reduce for Victoria to be sustainable.

The government sector is no different: it needs to green itself by tracking resource use and emissions. Studies have shown that when institutions report on resource use, reductions as well as changes in behaviour are likely to follow. This is known as 'evaluation influence'. The increased understanding and awareness of environmental impacts leads to the voluntary development of programs and practices which deliver lasting benefits, beyond compliance.

The work of my office and the scrutiny it brings to bear through seemingly routine audit work and data analysis serves to inform us all and encourage innovative practices in government departments and agencies. Knowing what we produce and reducing our emissions will place Victoria in a better position to deal with the impacts of climate change.

¹ CES Act 2003 section 8 (b).

² CES Act 2003 section 3.

Some history

Since 2003, all government departments, as well as the Environment Protection Authority and Sustainability Victoria, have been required to implement Environmental Management Systems to reduce their office-based environmental impacts. Environmental Management Systems are audited by independent environmental auditors as well as by my office. Environmental performance data has also been included in annual reports as per the Department of Treasury and Finance's Financial Reporting Direction 24C.³

In 2005, the government released its *Environmental Sustainability Framework* which provided strategic directions for departments and agencies. The *Environmental Sustainability Framework* requires the Commissioner for Environmental Sustainability to annually review the adoption of the framework's directions by government departments and agencies.

In its 2006 *Environmental Sustainability Action Statement*, the government undertook to expand its Environmental Management Systems program to statutory authorities. In line with this undertaking it launched the *ResourceSmart Government* program in 2008. This program provides targeted workshops, tools and guidance to statutory agencies to assist them in integrating environmental management with their strategic and operational management.

The *Environmental Sustainability Action Statement* also requires departments and agencies to include the directions of the Environmental Sustainability Framework in all of their business and operational planning, including their Environmental Management Systems.

All departments, together with the Environment Protection Authority and Sustainability Victoria, are expected to meet these requirements. They may choose to do so by expanding their Environmental Management Systems to cover all operations, not just office activities.

An example of this expansion is the *ResourceSmart AuSSI Vic* framework. It provides a holistic approach to sustainability by linking the wide range of sustainability programs available to Victorian schools. It integrates educational, environmental, social and economic outcomes so that schools do not see each area in isolation but as components of the broader challenge of sustainability.

The Environmental Sustainability Action Statement also requires departments and agencies to include the directions of the Environmental Sustainability Framework in all of their business and operational planning, including their Environmental Management Systems.

³The Financial Reporting Direction 24C requires entities' Annual Reports to state energy use, waste production, paper use, water consumption, transportation fuel consumption, greenhouse gas emissions and sustainable procurement processes see http://www.epa.vic.gov.au/projects/government_ems.asp.

From the Commissioner continued

Students who pass the rows of water tanks on their sports oval or who study their solar energy systems to see how much power their school is feeding into the grid are gaining a real understanding of their role in caring for the environment and adapting to the impacts of climate change.

The audit scope

The 2008-09 strategic audit has three parts: an examination of government departments' and agencies' environmental performance, an assessment of procurement practices across government and a study of environmental sustainability in the education sector, focusing on the *ResourceSmart AuSSI Vic framework*.⁴

The audit includes:

- > an assessment of departments' and agencies' environmental performance as published in annual reports and a review of independent audits
- > a status report on progress of specific recommendations made in the previous strategic audit reports
- > a review of progress in implementing previous recommendations with respect to motor vehicles and goods and services relating to government offices⁵
- > a status report on the expansion of Environmental Management Systems to statutory authorities through ResourceSmart Government
- > a consideration of the *ResourceSmart AuSSI Vic* framework management, governance arrangements, promotion and participation levels
- > the showcasing of Victorian school initiatives aimed at reducing environmental impacts.

The CES Act makes provision for me to include advice or recommendations in relation to the implementation of international best practice in Environmental Management Systems.⁶ In this report I have included international case studies from both the government and the education sectors which illustrate innovative approaches to the challenges of environmental sustainability in a time of climate change.

Along with evaluating departments and agencies, as the new Commissioner I have taken the opportunity to examine and understand what is happening in environmental education and the impact of the roll-out of the *ResourceSmart AuSSI Vic* framework in schools. This program is showing young people how to take the hard work out of reducing their impact on the environment.

I made education a priority sector because if we are going to change the way we do things to be more sustainable then schools are the place to start. I made a number of visits to public and private schools to talk to people about their roles, victories and struggles. These visits provided many insights and were inspirational. The Sustainability in Schools section of this report highlights a number of these cases.

Each one of the children involved is showing leadership from the 'bottom up' - underlining the point that everything we do, everything we use and everything we waste has an impact on the environment and that even the smallest steps in remedying these practices are important.

Students who pass the rows of water tanks on their sports oval or who study their solar energy systems to see how much power their school is feeding into the grid are gaining a real understanding of their role in caring for the environment and adapting to the impacts of climate change. They are also preparing themselves for the possibility of jobs and professions in the green economy we are all striving to create.

⁴ Department of Education and Early Childhood Development, Department of Human Services, Department of Justice, Department of Innovation, Industry and Regional Development, Department of Premier and Cabinet, Department of Planning and Community Development, Department of Primary Industries, Department of Sustainability and Environment, Department of Treasury and Finance, Department of Transport, Environment Protection Authority Victoria and Sustainability Victoria. In August 2009, the Department of Human Services was split into two departments, the Department of Health and the Department of Human Services, all references to the Department of Human Services in this report related to the 'pre-split' department.

⁵ The Victorian Government's request for the Commissioner to review its procurement policies and practices with respect to environmental sustainability led to the report *Government Procurement and Environmental Sustainability*, Commissioner for Environmental Sustainability, 2006.

⁶ CES Act 2003 section 18 2 (b).

Methodology

Each year the strategic audit begins with a review of the policy framework and whether there have been any significant policy shifts. Important issues are then identified – for example this year’s audit includes a focus on green procurement and sustainability in schools. Next year the Victorian Government’s White Paper on Climate Change and proposed Climate Change Bill will be key in my consideration of the policy framework.

Comments are sought from those whose work and workplaces are being evaluated. In this process they also raise areas of interest and prospects for improvement on their previous year’s work.

Meetings are held across portfolios and staff members are interviewed and formally and informally drawn into the audit. Data is collected and examined to clarify what it means and whether it fully captures operational activity. Some findings might be contradictory, requiring further evaluation. The audit also takes account of where the government activities are located, what the departments’ work entails, and whether departments own or lease their buildings.

This year consultation has been extended to include fieldwork in the education sector to help me understand the roll-out of the important *ResourceSmart AuSSI Vic* framework.

The conduct of the strategic audit is not a conventional auditing function. It is increasingly becoming an evaluation which generates a culture of evaluation influence.

Instead of being seen as an imposition and a process that is focused on finding fault, I intend to undertake audits in a manner which represents an opportunity for departments and agencies to improve environmental performance.

My process will be rigorous, transparent and serve to inform the government and empower the community to make changes. This work will help to reduce Victoria’s greenhouse gas emissions and assist our community to adapt to the impacts of climate change.

I am required to submit this report to the Minister for Environment and Climate Change by January 31, 2010 for tabling in both Houses of Parliament within 10 sitting days.⁷

Important issues are then identified – for example this year’s audit includes a focus on green procurement and sustainability in schools.

⁷ CES Act 2003 section 18 (4).

I examined the take-up of environmentally sustainable fleet management practices to find that great progress has been made in expanding the number of hybrid vehicles in the government's passenger fleet.

Green highlights: 2008-09

This year's highlights in environmental performance include a two per cent reduction in energy consumption in offices and a decrease of five per cent in greenhouse gas emissions from the government's car fleet.

I examined the take-up of environmentally sustainable fleet management practices to find that great progress has been made in expanding the number of hybrid vehicles in the government's passenger fleet. This is categorically reducing environmental impacts.

However, the executive fleet remains heavily weighted towards large petrol vehicles.

I understand this issue is still the subject of consideration and that greater efforts are being made to encourage leadership and provide incentives to bring this part of the fleet inline with the rest.

We are all becoming increasingly aware of the possibilities of green purchasing – and that it doesn't necessarily have to be difficult or expensive. Unfortunately actions to date have not been sufficient to transform green purchasing into the business as usual approach for departments and agencies.

However, a number of departments and agencies are to be commended for leadership in green procurement. For example, several have joined the important ECO-Buy⁸ program that provides tools, training and resources to support environmentally friendly procurement by departments and agencies. My own office took out an associate membership in July 2009. I would encourage all departments and agencies to make green purchasing part of their 'standard operating procedure'. The public also has access to this innovative program with many large public companies joining ECO-Buy.

The Department of Treasury and Finance has taken a lead role in ensuring green procurement becomes mainstream practice across government. I welcome its recent initiatives, such as requiring increased energy efficiency from information and communications technology and government buildings. This work heralds the start of a much needed, strengthened commitment to green procurement more broadly.

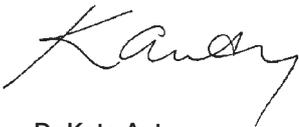
This year's audit also carries details of an exciting voluntary initiative operating in Environment Protection Authority offices around the state. Staff members have introduced and police their own carbon cap-and-trade system. This innovative program has been found to produce immediate and quite remarkable reductions in energy and transport emissions. It also illustrates that innovative programs will thrive in an organisational culture that encourages thoughtful enthusiasm for change.

Key messages for 2008-09

- > Leadership is imperative if sustainable practices are to be embedded across the operations of each Victorian Government department
- > Green procurement should become the usual business approach for Victorian Government departments and agencies
- > All Victorian schools should be supported to adopt the *ResourceSmart AuSSI Vic* framework.

Overall, I am encouraged by the achievements this year and the targets that will drive even more improvements in many areas. We still have work to do to attain our goal of environmental sustainability and this work is becoming increasingly urgent to both mitigate greenhouse gas emissions and adapt to the impacts of climate change.

My goal is for these annual strategic audit reports to help us in that process. They are not just documents for the Victorian Parliament, but an important reference for the public. In this way we can expand the opportunities for changing cultures in organisations well beyond those in the direct sphere of government influence.



Dr Kate Auty

PhD, MEnvSc, BA (Hons) LLB

Commissioner
for Environmental Sustainability



Key message:

Leadership is imperative if sustainable practices are to be embedded across the operations of each Victorian Government department.

Actions:

All Victorian Government departments should establish environmental management committees which involve the senior executive and are responsible to the departmental secretary. These committees should:

- > use leadership opportunities to shift organisational cultures eg choice of vehicle
- > encourage attainment of 'beyond compliance' outcomes
- > support small scale, local, in-house environmental management experiments which have potential to become agents for change, impacting cultures of waste and reducing the carbon footprint
- > champion on-the-ground practitioners who work to enshrine environmental best practice in operational activities.

All Victorian Government departments should develop and publish environmental management plans for the entire scope of their operations. These plans should address:

- > timeframes for the expansion of environmental management systems to all departmental operations and associated agencies
- > sustainable resource use, green procurement including fleet vehicles
- > strategies to deal with the impacts of climate change, including adaptation planning and risk management.

The Department of Sustainability and Environment should lead a whole of government process to develop and implement an Electronic Data Management System for environmental reporting.

An examination of the environmental performance of Victorian Government departments and the Environment Protection Authority and Sustainability Victoria forms Part 1 of the 2008-09 strategic audit report.

The strategic audit has analysed the environmental performance of the departments and the Environment Protection Authority and Sustainability Victoria in the following areas:

- > Greenhouse gas emissions
- > Energy use
- > Transport
- > Water use
- > Waste production and disposal
- > Paper use
- > Procurement.

The report also highlights the importance of leadership and commitment across all levels of government and the complexity of environmental monitoring, data analysis and reporting.

Environmental sustainability and adaptation to the impacts of climate change can only be achieved through continued efforts and ever increasing innovation and ingenuity.

Environmental leadership

The Victorian Government took an important step in 2003 when it mandated implementation of an environmental management system program and reporting on environmental management performance. It demonstrated a commitment to better understand and manage its own environmental performance and to be accountable to the Victorian community with the publication of the annual strategic audit report.  See page 70 Appendix One

In line with a number of progressive jurisdictions throughout the world the government's continued efforts in this area recognise that better environmental management is a key component of any strategy to reduce greenhouse gas emissions and adapt to the impacts of climate change.

Environmental sustainability and adaptation to the impacts of climate change can only be achieved through continued efforts and ever increasing innovation and ingenuity. Government leadership is integral to fostering a culture of continuous improvement and 'beyond compliance' results within Victorian departments and agencies.

International environmental management leadership

Many national and state governments throughout the world have environmental management systems in place and are reporting environmental performance, including what is being done to reduce greenhouse gas emissions. The United Kingdom, the United States of America, Canada, Japan and Korea, along with the Australian Government, are just a few of these.

An Environmental Management System is a tool to help organisations achieve their environmental goals and comply with regulatory requirements. The adoption of an environmental management system signifies management commitment to improved performance. Improved environmental performance is dependent on this commitment.⁹ A good system, tailored to the workplace and with strong employee support will cut across all the functions of an organisation and integrate environmental considerations with other corporate functions. It will also identify where improvements can be made.

An example of leadership in environmental management in a state or sub-national government is the province of British Columbia, Canada where it was recently legislated that core areas of government are to be carbon neutral in 2010, and each year thereafter – a first for North America.¹⁰

⁹ Fiorino, DJ 2006, The new environmental regulation, The MIT Press, Cambridge.

¹⁰ http://www.gov.bc.ca/copenhagen/attachments/bcstories_creating_north_americas_first_carbon_neutral_government.pdf.

Environmental Management continued

CASE STUDY Government Leadership: British Columbia, Canada

The province of British Columbia aims to reach zero net greenhouse gas emissions from its public sector emissions that come from buildings, fleet, procurement and travel (core government only). By providing public sector employees with information about the tangible changes they can make, the province aims to significantly reduce the greenhouse gas emissions produced by the public sector, conserve energy, decrease costs and demonstrate a successful approach to addressing climate change.

Everyone who works for the province will be required to:

- > measure their greenhouse gas emissions
- > reduce these emissions as much as possible
- > offset the remaining emissions by investing in projects that reduce greenhouse gas emissions, so the net effect of government activities is carbon neutral
- > report publicly on plans and actions to reduce emissions.

“We’ve enshrined in legislation our commitment to make all government operations carbon-neutral in 2010,” said British Columbia Premier Gordon Campbell. “This applies to every facet of the day-to-day operations of our province’s government: from schools and hospitals to conservation officers and the forest service. In total, this drive to become carbon neutral encompasses close to 300,000 people working in every corner of British Columbia.”

More than 150 public sector organisations have planned and implemented a wide range of programs and initiatives to conserve energy and reduce costs.

Victorian departments and agencies leadership

Victorian Government departments and agencies all recognise the importance of commitment and leadership in the environmental management process. Leadership is particularly important as it authorises the change process for work practices and cultures. Changes then provide an example for other organisations and the community, encouraging them to work toward managing their environmental impact. In this reporting period a number of initiatives have been identified with the potential to change practices and cultures.

A personnel intensive department, involved in community outreach as a core activity such as the Department of Justice, has a significant opportunity to lead the community in managing its environmental impact by encouraging sustainable practices. The establishment of its Justice Environment Committee is commendable. What is particularly noteworthy is the level of senior executive involvement and their reporting obligation to the Secretary of the Department of Justice. The involvement of senior executives, including the head of an organisation, in environment management committees is an initiative which can, and should, be replicated in government and other sectors.

Leadership is particularly important as it authorises the change process for work practices and cultures.

CASE STUDY Departmental Leadership: Department of Justice Environment Committee

The Department of Justice has affirmed its commitment to managing its environmental impacts with the establishment in 2009 of its executive led Justice Environment Committee.

The committee's primary role is to provide assurance to the Secretary of the Department of Justice that the department is:

- > identifying and responding to issues and developments relating to the environment and climate change
- > meeting its environmental compliance and reporting obligations
- > achieving its core business goals and objectives within appropriate internal controls and environmental management framework.

Through the committee, the department's environmental impact and performance can be managed cohesively, providing an efficient forum through which to address environmental issues.

The committee has authority to ensure that environmental initiatives are implemented and reported, keeping it fully informed of the department's environmental achievements and challenges.

Championing environmental management

Alongside management leadership, it is important to acknowledge the role of individuals engaged in implementing and communicating environmental management programs. These individuals include Environment Management Coordinators in each department and agency and those who support the environmental management programs often in a voluntary capacity such as *Eco-Office Champions* (Department of Sustainability and Environment and Department of Primary Industries), *Green Defenders* (Department of Premier and Cabinet), *Green Champions* (Department of Human Services) and *Environment Champions* (Department of Innovation, Industry and Regional Development).

Supporting the work of these individuals through training and capacity building will ensure changes in organisational cultures and the behaviour of staff.

Data complexity

Environmental performance reporting in Australia is constantly evolving and this means that data collection, management and analysis is characterised by many complexities. The Victorian situation is no different.

The measuring and management of environmental performance by departments and agencies has developed largely using an array of independent databases relying extensively on manual data entry. The data collection processes are often very time consuming and in some cases knowledge resides with one individual. This situation is typical of many performance reporting regimes where the first few years of reporting are often weighted toward deadlines and 'tick-box' compliance. However as systems mature and the reporting framework expands, the intricacies of developing comparable data sets adds to the complexities of analysis.

Environmental Management continued

Victorian departments and agencies are expanding the operations they report on and this is highly commendable as it will enable an improved understanding of the environmental impact of government operations. While this expansion continues, the reporting framework will continue to undergo changes to data collection and changes to trend analyses. These data 'challenges' have been accommodated in this report.

Defining the requirements for measuring and reporting on progress at departmental and whole of government levels allows progress to be compared over time and between departments and agencies. It provides accountability and can motivate staff to improve their organisations' performance.

Victoria and the Global Reporting Initiative

To achieve greater consistency in environmental reporting at a state level, in addition to the mandated environmental reporting, consideration is being given to merging the Department of Treasury and Finance's Financial Reporting Direction 24C with the international reporting framework, known as the Global Reporting Initiative. The Global Reporting Initiative is an international reporting framework for agencies assisting them to disclose issues to their stakeholders, including greenhouse gas emissions and water use.

Merging Victoria's reporting with the Global Reporting Initiative would allow the alignment of environmental performance reporting with international standards. This would also help meet the demand for more consistency in reporting. As outlined in the Public Accounts and Estimates Committee's Inquiry, "the Parliament and the community would benefit from greater consistency in the reporting of performance information across the public sector".¹¹

In 2009, the Public Accounts and Estimates Committee recommended that the Department of Treasury and Finance review current sustainability and environment related reporting guidelines and performance indicators. The Public Accounts and Estimates Committee noted the Victorian Government's commitment to 'triple bottom line' reporting and stated that there is scope for such reporting to be more systematic and that it could be extended. Reporting on sustainability measures and environmental performance, as an integral part of annual reporting, is supported by the Commissioner for Environmental Sustainability.¹²

Electronic Data Management

The Department of Sustainability and Environment, along with other departments and agencies, recognises that the current management of environmental data in government is an issue, and is exploring methods of improvement. For example, the Department of Primary Industries developed, and for the last two years has used, its Environmental Management Tool. The Environmental Management Tool includes a robust and comprehensive data collection system, which covers energy, water and paper data for all the Department of Primary Industries' sites of environmental significance.

To assist with a more dynamic approach to environmental data management in Victoria the Department of Sustainability and Environment is currently investigating an Environmental Data Management System for application across government.

The key objective of establishing an electronic Environmental Data Management System is to facilitate a standardised and a more comprehensive reporting method for environmental data that relates to resource usage across Victorian departments and agencies.

The key objective of establishing an electronic Environmental Data Management System is to facilitate a standardised and a more comprehensive reporting method...

¹¹ Public Accounts and Estimates Committee's Inquiry into Victoria's Public Finance Practices and Legislation, June 2009, p59.

¹² Victorian Public Account and Estimates Committee 88th report (2009-10 budget Estimates Part 2), October 2009.

An electronic Environmental Data Management System would address:

- > the consistency and quality of reporting against, but not limited to, Financial Reporting Direction 24C
- > data collection and analysis for the agencies that are participating in *ResourceSmart Government* programs
- > the accuracy and understanding of whole of government performance to allow departments to confidently report progress to the relevant Minister and the community.

The successful implementation of an electronic Environmental Data Management System would also provide:

- > the ability to link to the Commonwealth reporting system for greenhouse gas emissions
- > additional agencies to report on their environmental impacts
- > more comprehensive whole of Victorian Government greenhouse gas baseline and trend reporting in relation to water, energy, waste, transportation, procurement usage and emissions
- > further opportunities to reduce environmental impacts
- > lower operating costs through the automation of data transfer.

Work is also underway to develop data management standards for the exchange of environmental data. Currently, data quality and consistency is problematic and a whole of government view of the data is often difficult to achieve. There is an opportunity for the Victorian Government to lead in the development of standards for environmental data exchange.

The development of an electronic Environmental Management System is supported by the Commissioner for Environmental Sustainability. Continued departmental collaboration through the Department of Sustainability and Environment's Environmental Data Management Reference Group is necessary for the development of an effective, whole of government approach.

Continued departmental collaboration through the Department of Sustainability and Environment's Environmental Data Management Reference Group is necessary for the development of an effective, whole of government approach.

Environmental Management continued

'Beyond the office'

In its 2006 *Our Environment Our Future, Sustainability Action Statement*, the Victorian Government committed to considering the environment in all government operations and to expanding the implementation of environmental management systems to statutory agencies.

Fifty-eight per cent of departments and agencies have begun reporting beyond the office. To drive this further, a set of indicators could be applied right across government to more fully reflect greenhouse gas emissions associated with energy use, vehicle use, air travel, waste disposal and water use.

While performance varies between departments and agencies, significant efforts have been made throughout all departments and agencies to improve their performance. However, while reporting remains confined to office-based activities the value of this process remains constrained. As flagged in last year's strategic audit report, a better reporting scheme is needed to take into account the full gamut of government operations, not just office-based activities.

Independent audits of the departments and agencies are being designed to assist them with progressing beyond office-based functions. This work is urgent in the face of the environmental challenges associated with climate change realities.

Multi-site departments

Continuing to expand environmental management beyond office-based activities is particularly important for multi-site, service delivery departments responsible for large operations such as schools, parks, sporting complexes, hospitals, youth justice custodial centres and prisons. The activities of these departments have inherently large environmental impacts. The efforts being made to reduce resource use and greenhouse gas emissions are laudable.

The Department of Justice has expanded its environmental management system to take in correctional centres, courts and Justice Service Centres which have a large environmental impact - they account for 92 per cent of total energy use by the department.

The Department of Primary Industries has a large ongoing research component at many of its sites, which accounts for a significant component of overall energy and water consumption. The Department of Primary Industries has therefore progressively included research-based sites in its environmental reporting and its environmental reporting now includes all of its research sites of environmental significance.

The Department of Education and Early Childhood Development signalled in its annual report that it will be moving to collect more comprehensive data from across the largest part of its operations – schools. The Department of Education and Early Childhood Development has also published a strategy *Looking Ahead: DEECD's Environmental Sustainability Strategy* which publicly commits to improvements in office-based environmental performance and the active integration of environmental sustainability into schools and early childhood development facilities.

In 2008-09 the Department of Human Services also reported on environmental impacts in youth justice custodial services, disability services, placement and support and child protection facilities. Through *ResourceSmart Healthcare* and *ResourceSmart Government*, environmental management programs are expanding to statutory agencies, hospitals and various health services, including ambulances, by 2011.

All departments and agencies with 'beyond office' sites are encouraged to expand their Environmental Management Systems to these sites and report on their resource use.

ResourceSmart

The 2006 Victorian Government's *Our Environment Our Future: Environmental Sustainability Action Statement* undertook to expand the implementation of Environmental Management Systems into statutory agencies and to implement the directions of the Victorian Environmental Sustainability Framework into daily operations.

To do this the Department of Sustainability and Environment and Sustainability Victoria developed a series of programs to help expand Environmental Management Systems to agencies and statutory authorities. These programs include *ResourceSmart Government*, *ResourceSmart Healthcare* and the *ResourceSmart AuSSI Vic* framework (discussed in Part 3 of this report), with *ResourceSmart Tertiary Education* currently under development.

The *ResourceSmart Healthcare* roll-out has been designed on a regional delivery model to encourage regional networks to reduce the need for travel to Melbourne, embedding a smaller carbon footprint in the program. Wherever practical, locally based organisations are being used to deliver the program to help develop regional expertise. Over the period 2009-10 to 2010-11 *ResourceSmart Healthcare* will be offered to over 140 agencies, including public healthcare agencies, larger cemetery trusts, community healthcare centres and large state-run aged care homes. A pilot program with six healthcare agencies was successfully run in 2009. The list of agencies that have already participated in *ResourceSmart Healthcare* is attached in Appendix Two.

The *ResourceSmart* programs provide tailored direction and support for agencies to identify and tackle their priority environmental impacts and to keep improving and deliver 'beyond compliance' results. The *ResourceSmart Government* program was piloted in July 2007 and gained momentum through a phase-in of the program across agencies. Currently 96 agencies are participating in *ResourceSmart Government*. Of these, 46 have prepared environmental strategies and established baselines for measuring and reporting environmental performance.¹³ ➡ See page 71 Appendix Two

Museum Victoria has developed a comprehensive strategy incorporating environmental sustainability into all relevant aspects of its operations, including collections, research, exhibitions, public programs, physical development and administrative support. An example of how the agency has incorporated sustainability into core business is the engagement of RMIT University to develop Life Cycle Assessment protocols for exhibition design and construction. The strategy applies to the built and natural environments occupied by Museum Victoria and involves staff, contractors and visitors.

The Melbourne and Olympic Parks Trust provides for the management and operation of the National Tennis Centre and Olympic Park. As custodian of significant Victorian assets, the Melbourne and Olympic Parks Trust recognises the need to lead by example in environmental management. Significant progress has already been achieved in the key areas of water use and waste management, including the implementation of environmental considerations into the new Melbourne Rectangular Stadium, installation of 550,000 litres of rain water harvesting capacity, installation of 'Light-Emitting Diode' lamps producing a 75 per cent energy saving and the achievement of approximately 70 per cent waste recycling. The trust aims to integrate environmental assessment into all trust decision-making processes and operations by June 2010.

In addition to the *ResourceSmart* programs, Sustainability Victoria is piloting a 5-star sustainability tool that enables agencies to measure their progress. It is designed for organisations that are seeking to be leading practitioners in their field and is intended to be available for self-assessment/certification.

The *ResourceSmart* programs provide tailored direction and support for agencies to identify and tackle their priority environmental impacts and to keep improving and deliver 'beyond compliance' results.



Ambulance Victoria staff from head office undertaking a waste audit.

¹³ Refer to appendix two for list of agencies that prepared environmental strategies as part of the *ResourceSmart Government* program. Agencies with less than 10 staff are not included in this roll-out.

Environmental Management continued

Environmental performance 2008-09 results

The Financial Reporting Direction 24C requires Victorian Government departments, the Environment Protection Authority and Sustainability Victoria to report annually on the consumption of resources and greenhouse gas emissions covering their office-based operations.

The Financial Reporting Direction 24C sets minimum reporting requirements and allows for departments and agencies to report on a broader set of criteria and for adoption by other public sector agencies.

Compliance reporting requires the departments and agencies to present comparative data for at least one year. All departments and agencies have reported comparative year information or baseline data. The Financial Reporting Direction 24C also requires departments and agencies to report targets against each indicator. The majority of departments and agencies have outlined targets for energy, waste, water and paper. However, only half the departments are reporting targets for procurement.

The environmental performance data that follows has been collated from the departments' and agencies' 2008-09 annual reports. The graphs are provided to illustrate departments' and agencies' environmental performance for 2008-09.

GLOSSARY	
FTE	full time equivalent employees
t CO ₂ -e	tonnes of carbon dioxide emissions equivalent
g CO ₂ /km	grams of carbon dioxide emissions per kilometre
km	kilometres
kL	kilolitres
kg	kilograms
L	litres
MJ	mega joules 1 kilowatt electricity = 3.6 megajoules 1 gigajoule = 1000 megajoules
m ²	metres squared/ per office space
LPG	liquid petroleum gas
1 ream A4	500 sheets of A4 white and coloured office paper (1 ream A3 = 2 reams of A4)
GPP	Green Public Procurement

Greenhouse gas emissions

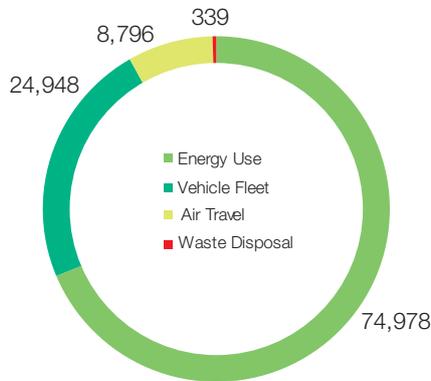
Victorian Government departments, the Environment Protection Authority and Sustainability Victoria are required to report on office-based energy consumption, vehicle fleet, air travel and waste disposal as sources of greenhouse gas emissions.

For 2008-09, greenhouse gas emissions decreased by one per cent from 2007-08 to 109,100 tonnes of CO₂-equivalent.

The largest source of office greenhouse gas emissions comes from energy use and vehicle fleets.  See page 19 Figure 1

For 2008-09,
greenhouse gas
emissions for office-
based activities
decreased by one per
cent from 2007-08
to 109,100 tonnes of
CO₂-equivalent.

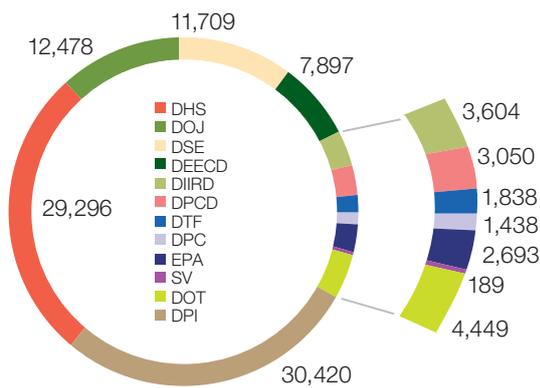
Figure 1. Departments, EPA and SV greenhouse gas distribution by emission source 2008-09 (Tonnes CO₂-e)



Explanatory comments

- Figure 1 represents the reported greenhouse gas emissions associated with office accommodation, vehicle fleet energy, air travel and waste disposal.

Figure 2. Departments, EPA and SV greenhouse gas emission distribution 2008-09 (Tonnes CO₂-e)

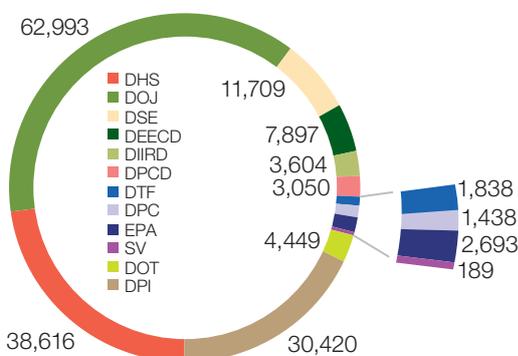


Explanatory comments¹⁴

Figure 2 represents the departments' and agencies' total greenhouse gas emissions by energy source. This reports total greenhouse gas emissions associated with office accommodation energy, air travel, vehicle fleet and waste disposal.

- The relative size of the organisation needs to be taken into account when considering this graph.
- The Department of Primary Industries includes significant non office-based data such as laboratories and research facilities that cannot be readily separated from its other data. To enable such separation and improved energy use monitoring, sub-metering projects have been initiated at several of DPI's major research sites in 2009-10.
- The data excludes reported emissions offsets purchased.
- Greenhouse gas emissions associated with executive and judiciary vehicles are included where reported.

Figure 3. Department, EPA and SV greenhouse gas emission distribution including office and reported non-office 2008-09 (Tonnes CO₂-e)



Explanatory comments

Figure 3 incorporates both office-based (mandated) and beyond-office (discretionary) greenhouse gas emissions data sets. The emissions figure for the Department of Primary Industry in both Figure 3 and the previous Figure 2 remain the same because this department has gone beyond compliance in the collection of its emissions data. The two charts are juxtaposed to illustrate both the extent of the department's beyond office footprint and its readiness to disclose this data for transparency and monitoring purposes. Although it makes for further complexity in analysing comparative data the department, and others, is to be commended for its readiness to include non-mandated emissions data in primary data sets.

- Figure 3 represents the departments', Sustainability Victoria and the Environment Protection Authority's total greenhouse gas emissions by energy source. This covers reported total greenhouse gas emissions associated with energy use in office accommodation, and a range of other facilities such as the Environment Protection Authority's and the Department of Primary Industry's research facilities, the Department of Human Service's disability services and child protection centres and the Department of Justice's operations including correctional centres and courts. The graph also includes the greenhouse gas emissions associated with, air travel, vehicle fleets and office-based waste disposal.
- The relative size of the organisation needs to be taken into account when considering this graph including number of staff, number and type of facilities and the operating hours of facilities.

¹⁴ DEECD-Department of Education and Early Childhood Development, DHS-Department of Human Services, DOJ-Department of Justice, DIIRD-Department of Innovation, Industry and Regional Development, DPC-Department of Premier and Cabinet, DPCD-Department of Planning and Community Development, DPI-Department of Primary Industries, DSE-Department of Sustainability and Environment, DTF-Department of Treasury and Finance, DOT-Department of Transport, EPA-Environment Protection Authority Victoria, SV-Sustainability Victoria. In August 2009, the Department of Human Services was split into two departments, the Department of Health and the Department of Human Services, all references to the Department of Human Services in this report relate to the 'pre-split' department.

Environmental Management continued

...there was a two per cent reduction in reported greenhouse gas emissions derived from office-based energy usage...

Energy

Within the scope of office-based reporting, energy used in office buildings is the largest single source of greenhouse gas emissions across departments and agencies.

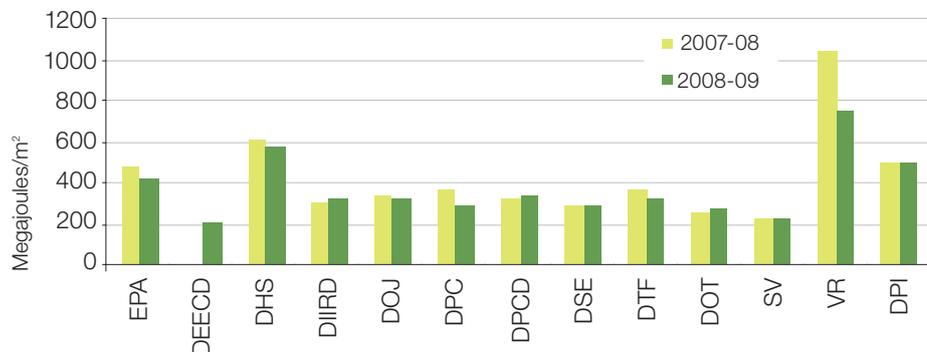
The results for 2008-09 show a two per cent reduction in average energy consumption per m² to 431 megajoules per m² for 2008-09. Total office-based energy use was also reduced by two per cent from 2007-08 and there was a two per cent reduction in reported greenhouse gas emissions derived from office-based energy usage from 76,700 tonnes of CO₂-equivalent in 2007-08 to 75,000 tonnes of CO₂-equivalent in 2008-09.

The government's sustainable energy target program was extended in 2006 requiring department and agencies to cut energy use by a further 5 per cent to 20 per cent of 2000 levels by 2010.

Department and agencies are also required to purchase 25 per cent GreenPower by 2010-2011. To date, the Department of Sustainability and Environment (28 per cent) and Sustainability Victoria (100 per cent) have met the target for office buildings.

Progress against these whole of government targets is being overseen by the Department of Sustainability and Environment and Sustainability Victoria using the Commonwealth Government's Online System for Comprehensive Activity Reporting. A report on achievement of the targets is expected early 2012.

Figure 4. Office energy used per unit of office space



Explanatory comments

- The collection and reporting of energy data can vary between departments and agencies making direct comparisons difficult. These include whether:
 - only building tenant light and power is reported (ie the component of electricity organisations control and pay for directly)
 - the organisation's share of base building electricity load is included
 - new sites have been picked up as part of improving data representation and expanding environmental management across the organisation.
- Department of Human Services energy data includes electricity and gas consumption for both tenancy and base building, where the data is available. It is noted that as more facilities have been included in 2008-09, the 2007-08 data has been adjusted to represent the same facilities as the 2008-09 data for comparison purposes. The data represents 100 per cent of office sites. In a large department this effort is commendable as it can be time consuming and resource intensive to undertake.
- Environment Protection Authority's annual report discloses energy use for all its offices, laboratories and air monitoring stations. For comparative purposes the above graph only represents the authority's office-based energy consumption.
- Department of Primary Industries data includes non office-based energy consumption such as laboratories and research facilities which are high energy users. These cannot be easily separated from the office data.

- The Department of Education and Early Childhood Development 2007-08 data has been excluded due to variability when compared to 2008-09 (2007-08 is 688 MJ/m²). This is the first year that office-based environmental impacts of The Office of Children and Early Childhood Development have been reported as part of the Department of Education and Early Childhood Development.
- VicRoads' significant decrease in energy use is partially explained by a change in reporting methodology. VicRoads energy use is still higher than that of other departments, This is attributable mainly to the age and design of VicRoads metropolitan offices as compared with the newer, environmentally sustainable buildings of other departments and agencies.¹⁵

Energy saving initiatives

Significant energy savings can be made with the introduction of innovative programs and the raising of awareness.

The Environment Protection Authority recognises the significant impact the scheme has had on its emissions and is currently considering how the key tenets of the scheme could apply to other organisations.

The Environment Protection Authority decided to implement the cap and trade scheme in January 2009 to:

- > increase staff knowledge about emissions trading
- > build capacity to service clients impacted by the increased cost of carbon
- > develop an understanding and practical experience of the challenges some clients will face in a carbon-constrained economy.

More information about the cap and trade scheme can found on the Environment Protection Authority Victoria web site at www.epa.vic.gov.au.

CASE STUDY Energy initiative: Environment Protection Authority

The Environment Protection Authority is leading the way in reducing greenhouse gas emissions at low cost after implementing its own carbon cap and trade scheme across its seven sites. Schemes such as this have been trialed in corporate organisations also to great effect.

Over the first six months of 2009, the carbon trading scheme delivered an average 11 per cent reduction in greenhouse gas emissions.

The scheme works like a localised emissions trading scheme, with a centralised group coordinating and distributing budgets, caps and quarterly greenhouse gas inventories to each site. Site trading teams are responsible for ensuring each site meets its target by reducing emissions and/or trading permits. The scheme includes emissions from energy and transportation sources which make up more than 80 per cent of its total emissions.

“Innovation is a core EPA value. We set up our own internal cap and trade scheme to drive substantial carbon reductions. We set the cap at three per cent and thought that would be a stretch, but our staff worked hard and managed to reduce carbon emissions by 11 per cent.”

Cheryl Batagol,
Chairman EPA Victoria

¹⁵The environmental performance graphs by department and agency include VicRoads. VicRoads for the third year has reported against the Financial Reporting Direction 24C on a voluntary basis. References in the report to whole of government comparisons relate to departments and Environment Protection Agency and Sustainability Victoria. These comparisons exclude VicRoads.

Environmental Management continued

CASE STUDY Energy initiative: Department of Planning and Community Development

The Department of Planning and Community Development participated in the *City Switch* energy program at its 55 Collins Street premises in partnership with the City of Melbourne and Sustainability Victoria. More than half of the city of Melbourne's emissions are produced by commercial office buildings.

As a result of the program, the department achieved, on average, energy savings of 14 per cent across three levels at 55 Collins Street. This is equivalent to an estimated annual saving of 51 tonnes of greenhouse gas emissions.

CitySwitch is a national program which signs up tenants of commercial buildings to achieving at least a 4-star rating under the National Australian Built Environment Rating System. The department also achieved a 5-star energy rating under the system for its 1 Spring Street site.

These positive outcomes from both tenancies were achieved through the implementation of energy saving measures, efficiency programs across all floors and ongoing staff awareness campaigns. The success of the program demonstrates the importance of collaborations and inclusiveness in operational activities and design of programs.

Automatic control and improved efficiency lighting and improved air conditioning control have returned energy savings of between 15 per cent and 30 per cent for twenty-four hour police stations.

CASE STUDY Energy initiative: Victoria Police

Victoria Police is participating in the *ResourceSmart* program and Government Sustainable Energy Target commitment.

Through the implementation of a comprehensive energy management program, Victoria Police have achieved large energy emissions and cost reductions in both owned and leased buildings.

Energy surveys identifying energy and cost saving opportunities and implementation of the most cost effective of these opportunities have been carried out at over 80 major facilities. Automatic control and improved efficiency lighting and improved air conditioning control have returned energy savings of between 15 and 30 per cent for 24-hour police stations. A program to assist the identification of energy saving opportunities is being developed for 250 smaller facilities.

New police stations are being designed to comply with tight energy saving briefs and stations built today are on average 25 per cent more energy efficient than stations designed and built before 2000.

During the challenge 50 Lonsdale Street used six per cent less electricity than the previous month.

CASE STUDY Energy initiative: Department of Human Services *Switch off and save energy*

In June, the Department of Human Services held an *Energy Challenge* at its Melbourne 50 Lonsdale Street office. During the month staff were encouraged to switch off and save energy. Floors competed against each other to see who could achieve the greatest reduction in electricity and greenhouse gas emissions.

The *Energy Challenge* helped to demonstrate the important role individual staff members can have in reducing energy consumption through behavioural change. During the challenge 50 Lonsdale Street used six per cent less electricity than the previous month. The winning floor achieved an impressive 19 per cent reduction in electricity use for June compared with May.

Transport

In the reporting period there was a downward trend in transport emissions across the board. Departments and agencies reduced overall vehicle greenhouse gas emissions by five per cent from 2007-08 levels.

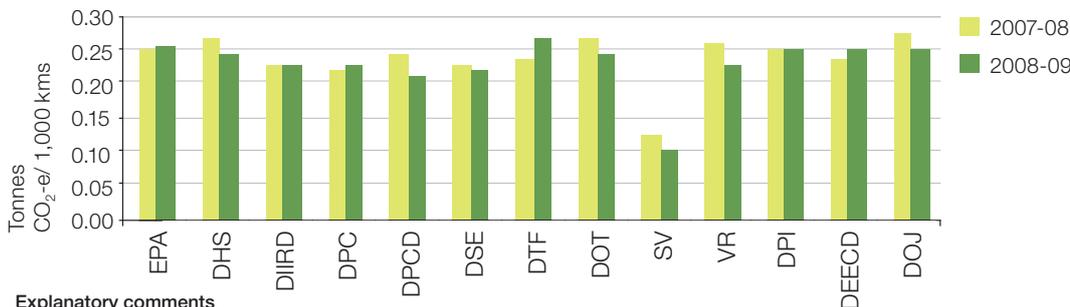
Greenhouse gas emissions (tonnes CO₂-equivalent) per 1,000 km is considered a useful measure to determine the environmental efficiency of the vehicle fleet. Reported tonnes of CO₂-equivalent per 1,000 km also reduced by five per cent from 2007-08 levels.

In relation to transport emissions per 1,000 km reported reductions ranged from 17 per cent at Sustainability Victoria down to one per cent at Department of Industry Innovation and Regional Development. Reported vehicle emission increases ranged from two to 14 per cent.

The Department of Sustainability and Environment continues to manage the offsetting of whole of government fleet emissions from both its passenger and executive fleet. The offsets are based on emissions reported in annual reports based on data collected retrospectively. Offsets for 2007-08 and 2008-09 vehicle fleets emissions will be purchased by the Department of Sustainability and Environment in 2010. The government fleet profile is discussed in Part 2 of this report, Green Procurement.

...transport emissions per 1,000 km reported reductions ranged from 17 per cent at Sustainability Victoria down to one per cent at Department of Industry Innovation and Regional Development.

Figure 5. Greenhouse gas emissions from vehicle fleet per 1,000 km (tonnes CO₂-e)



Explanatory comments

- Transport energy use data and associated greenhouse gas emissions relates to departments and agencies operational vehicles. These are passenger vehicles which also include ‘all wheel drive vehicles’, people movers, vans and buses. Departments and agencies are also encouraged to report on executive vehicles. For 2008-09, the Department of Human Services and the Department of Planning and Community Development reported inclusion of executive vehicles in their transport data. The Commissioner commends the inclusion of this data as it provides a full picture of vehicle use.
- Department of Justice variance relates to significant increase in low emission hybrid vehicles in its fleet.
- Department of Human Services data represents all transportation data including leased and owned disability buses, tractors, mowers, motorbikes, amphibious, emergency vehicles and executive vehicles. The year 2008-09 saw the continued implementation of the department’s Low Carbon Vehicle Re-profiling Strategy. As a result only five per cent of the passenger vehicle fleet are six cylinder unleaded vehicles.
- Total greenhouse gas emissions from Environment Protection Agency’s fleet decreased from 2007-08 levels; however emissions per 1,000 km slightly increased. To allow comparison with 2008-09, greenhouse gas emissions for 2007-08 have been amended to reflect a conversion factor using full fuel cycle emissions, as used in 2008-09. In 2007-08, data was originally calculated using only a Scope 1 emissions factor.¹⁶
- The Department of Primary Industries’ total fleet size has reduced by 40 vehicles and a decrease in total kilometres and total greenhouse gas emissions has been reported. The reported increase in emissions per 1,000 kms relates to the use of larger operational vehicles required for agriculture, fisheries and emergency response activities.
- Sustainability Victoria 2008-09 data relates to five hybrid vehicles.

¹⁶Scope 1 emissions are those directly occurring from sources that are owned or controlled by the organisation.

Environmental Management continued

Air travel

Air travel information has been obtained from the whole of government travel services contract. For 2008-09 there was a reported 26 per cent increase in greenhouse gas emissions derived from air travel compared with 2007-08. The increase can partly be attributed to a change in the emissions calculation method, but it also reflects an increase in kilometres travelled in 2008-09.

Alternatives to transportation

It would be helpful to the audit process to have departments and agencies report on the use of alternatives to air travel. Such reports could detail the measures taken to use information and communications technology in place of non-essential business air travel.

Departments and agencies have already invested in information and communications technologies such as tele-conferencing facilities and video conferencing. It would be encouraging to see the use of these resources promoted as a means of generating and supporting sustainable outcomes. There are many benefits from the use of information and communications technology in place of non-essential business air travel including:

- > mitigation of the production of greenhouse gas emissions
- > cost savings through reducing flights and accommodation expenses
- > travel time savings
- > productivity gains
- > better work life balance
- > staff retention.

In the Canadian province of British Columbia, the government has promoted and developed policy to consider alternatives to travel wherever practical. This supports government's commitment to carbon neutral business travel by encouraging choices that mitigate the production of greenhouse gas emissions. Video conferencing and tele-conferencing and other methods are used where feasible to achieve cost savings and to mitigate the production of greenhouse gas emissions. Remote technology can be very effective tools to bring employees and others together across the province or country (e.g. business/project team meetings, interviews, hearings and trials, distance learning, training and workshops).

Interesting work is being undertaken to study the use of remote technology in justice in Victoria and in Western Australia. The Australian Research Council funded linkage project *Gateways to Justice* seeks to improve the social, technological and built environment of remote access facilities for courts. This work explores the utility and viability of remote technology in court settings. Its findings should be of interest to all government agencies and departments concerned with reducing their environmental impact.

In Victoria, the Department of Human Services has developed a 'Minimising Non Essential Travel' strategy through its Doing Business Better program. This project focused on reducing the cost and environmental impacts of regional travel through increased use of video conferencing. By providing an extensive network of free video conferencing facilities and addressing any barriers to their use, the department has been able to reduce costs, improve safety, increase productivity and reduce greenhouse gas emissions.

Water

Departments and agencies have continued to implement actions to reduce water consumption in offices and facilities.

It is difficult to draw reliable comparative conclusions about water consumption for 2008-09 when comparing results from 2007-08 for whole of government. This is due to improved metering and therefore different data sets between the years. The expansion of coverage also presents data complexities.

Until now, due to lack of individual departments' metering, separate water consumption data has not been available for the departments of Premier and Cabinet, Treasury and Finance, and the head office of Education and Early Childhood Development.

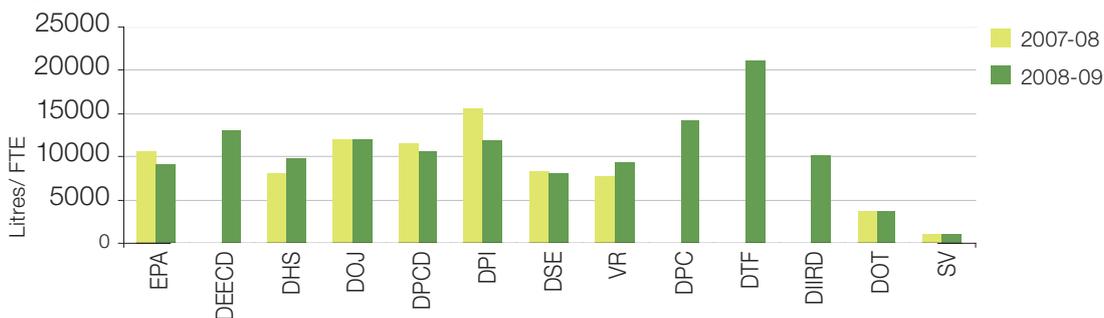
The benefits of installing separate improved water metering systems are clear. The departments, the Environmental Protection Agency and Sustainability Victoria can better monitor water use, detect leaks and control water consumption.

For example, regular water monitoring identified anomalies in water data for the Department of Human Services and Sustainability Victoria in 2008-09. Data monitoring enabled the Department of Human Services to alert its building management of a major water fault at its Shepparton office. Following detection of the leak, regular water meter readings enabled the Environmental Management Unit to confirm the fault had been rectified.

Regular monitoring of water use also led Sustainability Victoria to implement further water saving initiatives. This action also benefited other tenancies in its building complex. The recent water saving initiatives have helped Sustainability Victoria halve its recycled water throughput from 2007-08 to 2008-09.

Regular monitoring of water use also led Sustainability Victoria to implement further water saving initiatives.

Figure 6. Metered water consumed in office per full time equivalent employee



Explanatory comments

- Issues that can impact on the quality and comparability of the reported water use data include:
 - adequacy of metering water usage and lack of clarity on whether organisations include their share of base building (central services) water usage
 - reporting tenancy only water use
 - reporting of recycled water use.
- The Department of Human Services data includes both tenancy and base building consumption (where data is available). The Department of Human Services includes base building water use at its Melbourne 50 Lonsdale Street site which includes cooling towers, blackwater treatment top-up, fire sprinkler testing and basement showers. The Department of Human Services 2008-09 water data included an irrigation leakage at the Shepparton state government office. This has since been rectified.
- The percentage of full time equivalent staff covered by departments and agencies that reported water consumption in 2008-09 ranged from 30 per cent to 100 per cent. The percentage of sites reported for water in 2008-09 ranged from 16 per cent to 100 per cent, an improvement on 2007-08.

Environmental Management continued

- Sustainability Victoria consumption data refers to only on-floor tenancy potable water consumption and excludes base building apportioned values for cooling tower and black water treatment top-up.
- The Department of Education and Early Childhood Development 2007-08 data has been excluded due to variability when compared to 2008-09 (2007-08 is 33,000 litres). This is the first year that office-based environmental impacts of Office of Children and Early Childhood Development have been reported as part of the Department of Education and Early Childhood Development. The departments' water consumption per full time employee is now more accurately measured through improved metering including at the Treasury Reserve.
- This is the first year that building level water consumption data for Department of Treasury and Finance and Department of Premier and Cabinet has been available, and as such there is no comparative data shown for previous years.
- VicRoads is in consultation with its water retailer about rectifying metering problems which have been identified as impacting on its 2008-09 water use data.

Waste

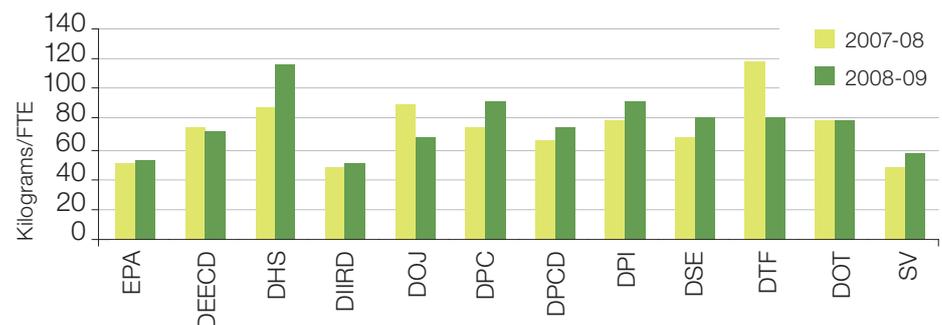
The majority of Victorian government departments and agencies required to report on waste, calculate office-based waste production by extrapolating the results of a number of internal audits taken. Waste data includes waste to landfill, recycling and organic waste. Waste data can easily be skewed by the waste samples taken and this should be considered when looking at data results.

Office-based environmental waste management systems have been operating in departments for around five years and coverage has expanded over that time.

From 2007-08 to 2008-09 average office-based waste generated per full time equivalent staff increased by 15 per cent to 95 kilograms. The percentage increase is mainly attributed to new baseline data.

Kilograms of waste recycled per full time equivalent staff member was 87 per cent in 2008-09.

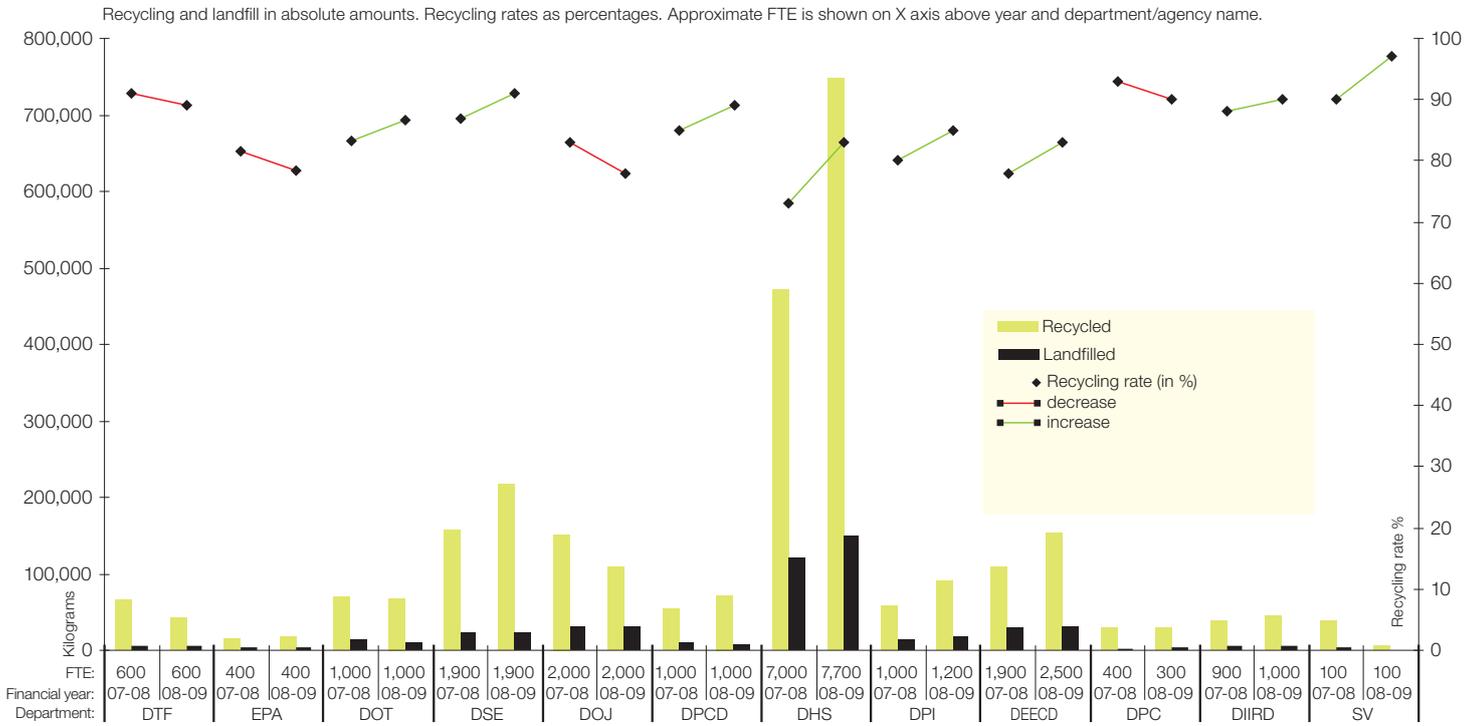
Figure 7. Waste produced per full time equivalent employee by departments



Explanatory comments

- Department of Human Services waste audits in 2008-09 were carried out using a more extensive methodology and at different sites than those in 2007-08.
- For 2008-09 the waste audits at Department of Primary Industries began including secure waste bins and waste per full time equivalent employee reported has therefore increased.

Figure 8. Change in waste produced, 2007-08 to 2008-09



Explanatory comments

- The relative size of the organisation needs to be taken into account when considering this graph.
- The number of full time equivalent staff figures are provided to indicate relative size of the organisations (figures are rounded).
- The Department of Human Services waste management system was made available to a greater proportion of staff. The data represent 100% of office-based staff.

Environmental Management continued

Put simply, there are environmental limits to consumption, and paper is no exception.

Paper

Due to the willingness of suppliers to provide data to departments and agencies, paper consumption data continues to be regarded as reliable.¹⁷ Paper consumption per full time equivalent employee continued to reduce in line with a four-year trend. In 2008-09, it reduced from 2007-08 levels to 14.7 reams per person. This represents a three per cent increase in efficiency.

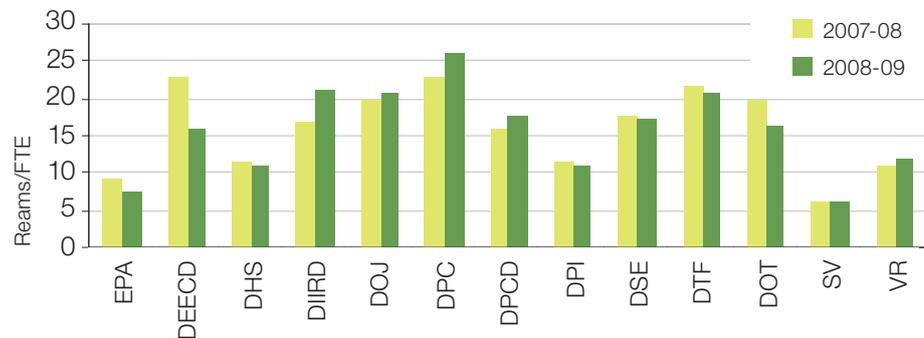
However, total office-based paper consumption increased by three per cent from 2007-08.

While the increase in efficiency is an encouraging result, the absolute increase does not represent an overall reduction in paper use. The reason that the total (or absolute) amount of paper is important is because, all other things being equal, it represents a specific and increasing amount of environmental pressure.

An increase in the efficiency of paper use is an important step if environmental pressure is to be reduced, but alone, it is not sufficient. Put simply, there are environmental limits to consumption, and paper is no exception. The environment doesn't care how efficiently we use paper and other natural resources, only how much we use in total.

Increasing the efficiency of paper use is a useful way to attain a total reduction in paper use, but as the data shows, it is unlikely to be sufficient, unless demand management of some kind is also used.

Figure 9. Reams of A4 equivalent paper used per full time equivalent employee

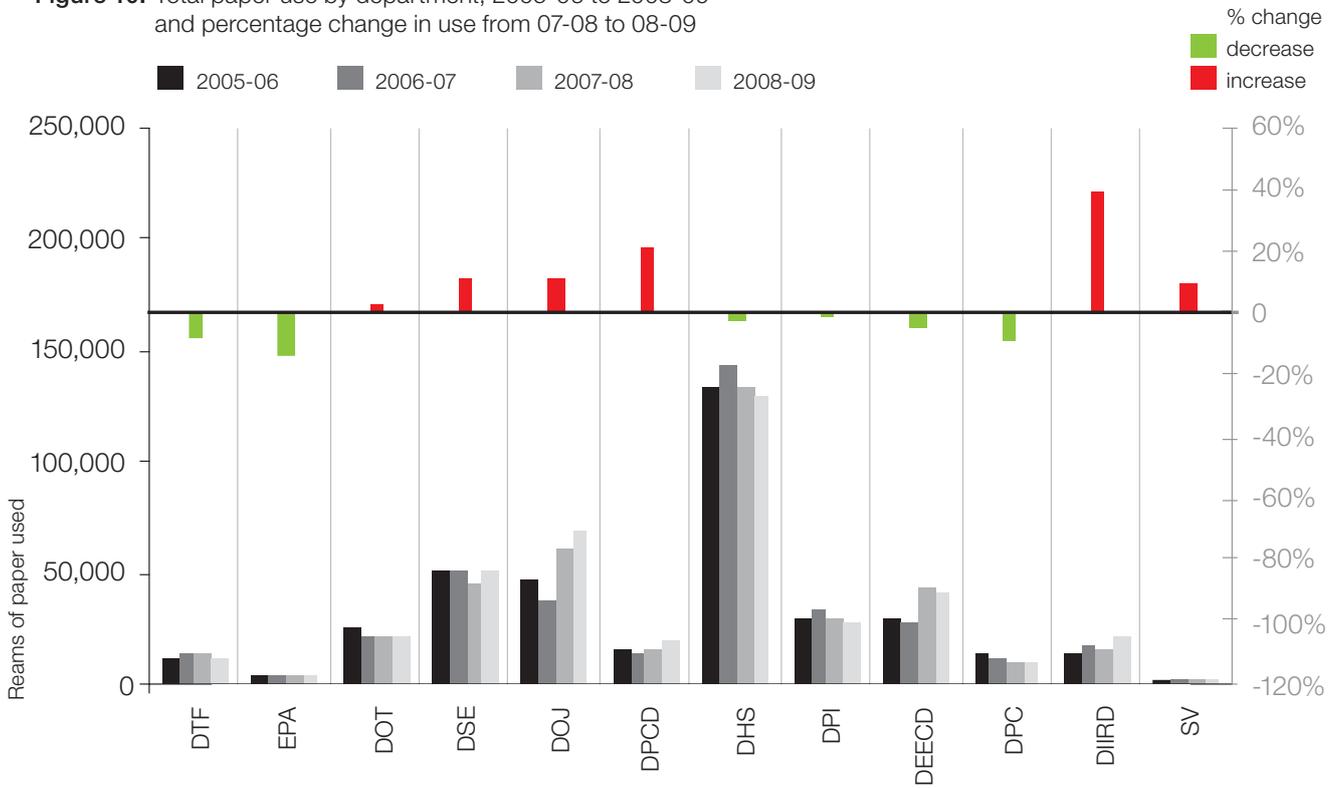


Explanatory comments

- VicRoads has identified a discrepancy in reported 2007-08 data which results in actual reduction in paper use per full time employee for 2008-09.

¹⁷ Office-based paper consumption excludes envelopes and external printing and publications.

Figure 10. Total paper use by department, 2005-06 to 2008-09 and percentage change in use from 07-08 to 08-09



Part 2 Green Procurement

Key message:

Green procurement should become the usual business approach for Victorian Government departments and agencies.

Actions:

The regulatory framework of the *Public Finance and Accountability Bill 2009* should be used to embed green procurement in Victorian Government contracts and tenders.

The Victorian Government should establish green benchmarks via the regulation process outlined in clause 53 of the *Public Finance and Accountability Bill 2009* as introduced in December 2009.

The Public Finance and Accountability Bill 2009 should receive multi-party support for its capacity to embed, not just incorporate, green procurement in government purchasing.

The Victorian Government should continue, and reinforce, its 2006 undertaking to use its significant purchasing power to send strong market signals for sustainable goods and services.

The Department of Sustainability and Environment should explore the application of life cycle assessments as a consideration in green procurement.

The Department of Treasury and Finance and the Department of Sustainability and Environment, should coordinate multi-sectoral, government, business and community discussions on environmental sustainability. The discussions should focus on:

- > the supply and purchase of sustainable goods and services
- > the management of climate change risks to resources, the natural environment and built infrastructure.

In 2005 the Victorian Government requested the Commissioner for Environmental Sustainability review its procurement policies and practices with respect to environmental sustainability. In 2006 the Commissioner for Environmental Sustainability released the report *Government Procurement and Environmental Sustainability*, in which a number of actions were recommended to assist Victoria to develop as a leader in green government procurement. Areas of goods and services and vehicle fleet were examined as was office accommodation.

The Department of Treasury and Finance, as the lead agency for government procurement, was charged with the responsibility for implementing the majority of recommendations made by the Commissioner for Environmental Sustainability. The Department of Sustainability and Environment also had a significant role to play in the implementation of the recommendations.

Green procurement is the inclusion of environmental factors in decisions on the purchase of goods and/or services. It is sometimes called environmental purchasing, sustainable or environmentally preferable purchasing. The aim of considering environmental factors is to buy goods and/or services that have less impact on the environment, resources and human health than otherwise comparable goods or services. Triple-bottom-line reporting frameworks factor in the considerations of value for money purchasing while minimising undesirable environmental and social impacts. A further development in reporting frameworks is quadruple-bottom-line reporting which accounts for cultural factors including governance.

Although there is often a perception that green procurement will cost more, in reality it can in fact deliver cost savings. The savings are generated through purchasing less, the sponsorship of more efficient production methods and more efficient operating and disposal practices. Across the Victorian Government, there is the potential to provide significant savings in resources such as water and reduced greenhouse gas emissions. This is particularly important at a time of prolonged drought and climate change.

In this second part of the 2008-09 strategic audit report the greening of government procurement is considered and examples of good practices from other jurisdictions are presented.

The variable, and sometimes slow, progress in implementing procurement recommendations indicates both the complexity of the issues and also that Victoria could work harder to turn green procurement from a collection of initiatives into mainstream practice.

Concerns over environmental problems such as water scarcity and carbon emissions are real and growing given climate change prognoses. There is an enormous opportunity for government departments and agencies to show leadership by continuing to reduce their procurement carbon footprints now.

International perspective

The United Nations has identified cost-effectiveness as the primary reason for green procurement,¹⁸ and work in the European Union has quantified some of the financial impacts of green public procurement.

A study of green procurement in the seven European Union members for 2006-07 considered to have the most advanced practices – dubbed the Green 7 – identified cost savings in addition to the environmental benefits of green procurement, such as reduced carbon emissions. Best estimates indicated carbon emission reductions were greatest for the construction, gardening, paper and textiles product groups, with an average of 25 per cent across all product groups and all countries. Two of the 10 product groups examined through life cycle costing produced the most cost savings: construction and transport.¹⁹

Although there is often a perception that green procurement will cost more, in reality it can in fact deliver cost savings.

¹⁸ United Nations (2008) *Public procurement as a tool for promoting more sustainable consumption and production patterns*. Sustainable Development Innovation Briefs, Issue 5, August 2008, United Nations Department of Economic and Social Affairs, Division for Sustainable Development.

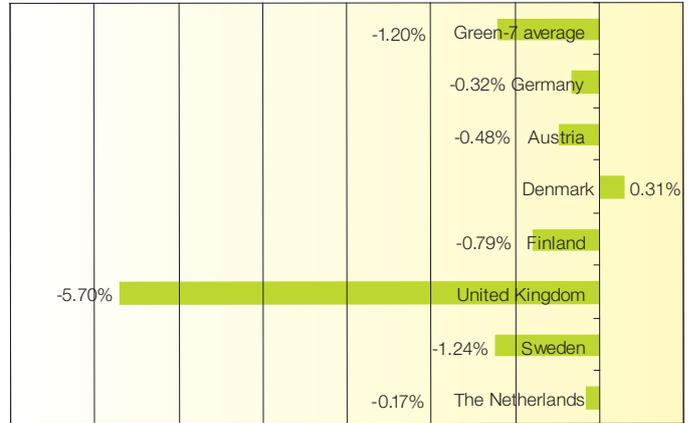
¹⁹ Pricewaterhouse Coopers, Significant and Ecofys (2008) Collection of statistical information on Green Public Procurement in the EU Report on data collection results. See http://ec.europa.eu/environment/gpp/pdf/statistical_information.pdf.

Green Procurement continued

Figure 11. CO₂ Impact on Green Public Procurement (GPP) per country. Negative numbers imply reductions in CO₂ emissions.



Figure 12. Financial impact of GPP. Negative numbers imply cost reductions and positive numbers imply increases in costs.



Source: PricewaterhouseCoopers, Significant and Ecofys (2009) Collection of statistical information on Green Public Procurement in the EU, Report on data collection results. For more information, see http://ec.europa.eu/environment/gpp/pdf/statistical_information.pdf.

National context

The 2009 national audit concluded that while there had been progress, there was still a large variance in performance...

In 2007 the Australian and New Zealand Governments jointly agreed on a *Framework for Sustainable Procurement*²⁰ to guide the national and state governments in incorporating sustainability principles into procurement decision-making.

The principles are:

- > avoiding unnecessary consumption and managing demand
- > whole of life value for money – selecting goods and services that have lower environmental impacts across their life cycle
- > fostering viable markets for sustainable goods and services in Australia and New Zealand
- > supporting government suppliers who demonstrate socially responsible and ethical practices.

However, the *Commonwealth Procurement Guidelines*, updated in 2008, place value for money at the heart of procurement decision-making and do not include any sustainability principles. Guidance on including environmental considerations in value for money decisions is provided in an Environmental Purchasing Guide published in 2003.

The importance of green procurement in Australia is highlighted by the attention the Australian National Audit Office has paid to green office procurement by Commonwealth departments and agencies, auditing procurement practices in 2005 and again in 2009.

The 2009 national audit concluded that while there had been progress, there was still a large variance in performance across departments and agencies, from very poor to better practice. A number of problems persisted. It was recommended that organisations adopt a more strategic approach to investing in green procurement as well as taking advantage of the “quick wins” readily available through actions such as double-sided printing and the automatic shut down of computers not in use.²¹

²⁰ Australian Procurement and Construction Council (2007). *Australian and New Zealand Government Framework for Sustainable Procurement*.

²¹ ANAO, 2009 Green Office Procurement and Sustainable Office Management.

Among the states, the strongest policy approach to green procurement has come from the Queensland Government. Its 2007 State Procurement Policy includes sustainability principles largely similar to those of the Australian and New Zealand Framework. It requires reporting against sustainable procurement targets and requires regular assessments of sustainable procurement capability and performance.²²

In contrast, while the Western Australian Government's five-year procurement reform program, based on a set of "smarter buying principles", delivered an estimated \$446 million in savings between 2003 and 2008, it did not have a sustainability or green procurement focus.²³ In planning its next program of procurement reforms, however, the Western Australian Government has identified green procurement as an important opportunity to contribute to government sustainability goals.²⁴

Victoria's approach to green procurement

In 2001, the Victorian Government released *Growing Victoria Together* and in 2005 it released an update, *A Vision for Victoria to 2010 and Beyond*, which sets out five key visions for Victoria; Thriving Economy, Quality Health and Education, Healthy Environment, Caring Communities and Vibrant Democracy.

In 2005, the Victorian Government released Victoria's *Environmental Sustainability Framework*. The *Environmental Sustainability Framework* supports the Healthy Environment vision of *Growing Victoria Together*. In July 2006, the government released the *Our Environment, Our Future – Sustainability Action Statement* which lists 150 priority initiatives and includes the release of an Environmental Procurement Framework comprising procurement policy and procurement guidelines.

The Victorian Government's purchasing power is significant, with approximately \$5 billion spent each year on goods and services.²⁵ In *Our Environment Our Future* the Victorian Government undertook to use its significant purchasing power to send strong market signals supporting sustainable goods and services.

Through all of these initiatives, the Victorian Government is committed to protecting and conserving the environment and building environmental sustainability into government policies, programs, regulations, investments and budgets. Government purchasing policies provide an entry point for aligning government purchasing with the objectives of environmental sustainability.

Since 2006 the Department of Treasury and Finance and the Department of Sustainability and Environment, along with other departments and agencies have made progress in greening their procurement activities for goods and services and vehicle fleet.

The Department of Treasury and Finance took the lead in developing a purchasing catalogue of environmentally friendly office stationery and it has introduced environmental criteria into standard request-for-tender and quote templates and some state purchasing contracts.

The Department of Sustainability and Environment, along with Sustainability Victoria, worked with ECO-Buy to develop a sustainable procurement program for the Victorian Government.

Further, hybrid vehicles have been embraced across departments and agencies. Victoria is now showing leadership in this area and is even entering an era of greener automotive manufacturing, with support from the Commonwealth Government. The 'greening' of the operational fleet is therefore likely to accelerate as more Australian-made, lower emissions vehicles come onto the market.

The 'greening' of the operational fleet is therefore likely to accelerate as more Australian-made, lower emissions vehicles come onto the market.

²² Government of Queensland (2007). *State Procurement Policy*.

²³ Government of Western Australia (2008). *Procurement reforms 2003-2008: Program Review*.

²⁴ Government of Western Australia (2008). *Procurement Beyond the Reforms: Future Directions 2008-2012 Discussions Paper*.

²⁵ Commissioner for Environmental Sustainability (2008). *Strategic Audit of Victorian Government Agencies' Environmental Management Systems*. Victoria.

Green Procurement continued

Dealing with the impacts of climate change is central to the management of risk to Victoria's natural assets and built infrastructure.

Procurement of vehicles by government departments and agencies is governed by a Whole of Government Standard Motor Vehicle Policy, which seeks environmental sustainability through the procurement of environmentally friendly vehicles. VicFleet, which is part of the Department of Treasury and Finance, is responsible for the policy and for supporting departments and agencies in procuring, maintaining and disposing of vehicles. It manages whole of government contracts, vehicle leasing and the State Government vehicle pool.

The government's Climate Change Green Paper identified travel and goods and services as two of the three areas of government operations with the greatest potential for reducing greenhouse gas emissions.

Despite these and other noteworthy initiatives across government, green procurement has not yet become the usual business approach.

Legislative reform

The Department of Treasury and Finance has reviewed the *Financial Management Act* 1994 and as a result the *Public Finance and Accountability Bill* 2009 was introduced into the Victorian Parliament for consideration in 2010. The accountability and procurement principles, set out in clauses eight and nine of the Bill do not refer to green procurement.

However, the principles do address prudent risk management and the need for policy decisions to have regard for their financial and other effects on present and future generations. The Bill at clause 53 sets out the matters for which the Governor in Council may make regulations and these include registers of assets and risk management and strategies relating to the management of assets and policies, systems, procedures and practices for the purchase and supply of goods and services for or on behalf of the state or public bodies in accordance with the procurement principles.

Dealing with the impacts of climate change is central to the management of risk to Victoria's natural assets and built infrastructure. The Victorian Government has identified managing the risks to Victoria's infrastructure, built environment and communities as a long term goal in its Climate Change Green Paper. This goal, along with the others set out in the Climate Change Green Paper, will not be met without concerted, multifaceted responses including green procurement and the reduction of resource use.

In the interests of environmental sustainability and having regard to the impacts of climate change the Commissioner for Environmental Sustainability would urge the responsible Minister/s to adopt green procurement principles by way of regulation or policy direction as provided for in the Bill.

The Bill also continues the current Victorian Government Purchasing Board as the State Procurement Board. The functions of the State Procurement Board include advising the Minister in relation to the application of the procurement principles and procurement policies by reviewing procurement processes, and where appropriate, making recommendations in relation to procurement processes.

The Commissioner for Environmental Sustainability encourages the State Procurement Board to adopt and promote the Environmental Procurement Policy developed by the Victorian Government Purchasing Board and consider ways in which the application of the policy might be strengthened including by means of regulation or Ministerial policy direction.

Progress in green procurement

Goods and services

An important way to improve the way goods and services are purchased in the Victorian Government is to better support purchasing officers through more guidance, tools and training in green procurement. There has been marked progress on this front, for example the Department of Treasury and Finance improved the guidelines for environmental procurement by including green procurement considerations and training.

But perhaps the biggest achievement in this area is the work of the Department of Sustainability and Environment, Sustainability Victoria and ECO-Buy in establishing the ECO-Buy State Government Sustainable Purchasing Program to assist departments and agencies in adopting green procurement practices.

In 2008, the Department of Sustainability and Environment and Sustainability Victoria funded ECO-Buy to develop a specialised, fee-for-service program of advice, tools, resources and training to help government departments and agencies adopt environmentally friendly procurement practices. Following a successful six-month pilot in nine departments and agencies, the State Government Sustainable Purchasing Program was launched for all government departments and agencies in mid-2009 and 15 subsidised memberships were offered. By December 2009 the program had 17 members.²⁶

Another notable achievement relates to the successful implementation of the Commissioner for Environmental Sustainability's 2006 recommendation for the mandating of a minimum recycled content for paper. Within three years, a wider assault on the environmental impacts of stationery has been launched by the Department of Treasury and Finance with the introduction of the *EcoMax* range of office stationery. There would be considerable additional environmental benefits in mandating the *EcoMax* catalogue as the default catalogue for government stationery purchases, arguably driving down the price of these products at the same time.

Other recommendations implemented successfully through the support of the Department of Treasury and Finance and the Department of Sustainability and Environment include inserting environmental requirements into some state purchasing contracts and standard tender documents, the development of the Victorian Government E-tender box, the meeting of targets for sustainable toner procurement and introducing a style guide to minimise toner use.

Environmental requirements in contracts and tender documents

Contracts and tenders provide a good opportunity for government departments and agencies to influence the businesses that supply them with goods and services to develop more environmentally friendly products.

The Department of Treasury and Finance has begun incorporating environmental sustainability criteria into state purchasing contracts, so far covering four of the 35 established contracts. The four contracts that have been re-tendered addressed the provision of photocopiers and other digital imaging devices, desktop and notebook computers, office furniture and office stationery.

The Department of Treasury and Finance now needs to roll-out this approach to cover all state purchasing contracts, making sure that the processes for renewing contracts or developing new contracts trigger an assessment of the potential to purchase a product or service with less environmental impact over its lifecycle.

Contracts and tenders provide a good opportunity for government departments and agencies to influence the businesses that supply them with goods and services to develop more environmentally friendly products.

²⁶ For more information, see <http://www.ecobuy.org.au/director/statelgovernment.cfm>.

Green Procurement continued

The standard tender documents now request information on the environmental specifications of the product and the sustainability and environmental performance of the supplier. They also ask tenderers:

- > whether they have an environmental policy
- > whether they have an Environmental Management System
- > what other approaches to environmental issues they have
- > whether they have taken any other environmental initiatives
- > whether they have sustained any enforcement action relating to environmental issues in the last two years and the details of any remedial action implemented.²⁷

Environmental criteria have been included in the United Kingdom's tendering for a number of years. Reviews of progress in the United Kingdom in 2008 by the National Audit Office²⁸ and the Mayor of London²⁹ both found that including environmental criteria in tenders alone was not enough to deliver a substantial procurement spend on green goods and services. It has been concluded that further guidance for practitioners in how to weight criteria against other factors was required and overall environmental criteria needed a higher weighting.

The Victorian Government Purchasing Board's *Environmental Procurement Guidelines* currently state that "the weighting given to the environmental selection criteria is at the discretion of the purchasing department". For Victoria's new green criteria in tenders to take effect, these guidelines will need to be shaped to provide leadership and guidance on how to weight environmental criteria in tender assessments. As an example, the European Commission considers a weighting of 15 per cent or more to be significant, depending on the importance of other, non-environmental criteria.³⁰

The experience in the United Kingdom has been that the value for money outcome was most frequently the lowest cost option, reflecting the overriding influence of short-term cost priorities.³¹ To counter this happening in Victoria, the government will need to strengthen the message that environmental and other considerations are just as important. It will need to provide additional guidance on life cycle costing to support more realistic estimates of the true cost.

Additional efforts

A range of other ways in which departments and agencies are working to promote the supply of environmentally friendly products include:

- > Sustainability Victoria's *ResourceSmart Government*, *ResourceSmart Healthcare* and *ResourceSmart Tertiary Education* encourage agencies to report and set procurement targets. Regular information on procurement is provided through information seminars and newsletters.
- > Sustainability Victoria's *Grow Your Business program* – promoting cleaner production and supporting organisations to develop environment management programs. In 2008-09, six projects resulted in greenhouse gas reductions of 29,942 tonnes of equivalents, producing 4,100 tonnes less waste and savings of \$720,000.
- > The Department of Innovation, Industry and Regional Development's Market Validation Program – providing \$28 million in competitive grants to support small to medium-sized enterprises to develop innovative products, processes and services that meet identified future technology needs of Victorian public sector entities. These needs include integrated emergency detection and warning systems and smart sensors for the *Smart Energy Meter* network.

²⁷ For further information, see *Request for Tender (Parts A-E) – Standing Offer Agreements Version 3.2* (October 2009) at <http://www.vgpb.vic.gov.au>.

²⁸ National Audit Office UK (2009). *Addressing the environmental impacts of government procurement*. Report by the Comptroller and Auditor General.

²⁹ Greater London Authority (2009). *Delivering value for London. Using procurement to make a positive difference. A progress report from the GLA group*.

³⁰ European Commission (2008). *Public procurement for a better environment*. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of Regions.

³¹ Westminster Sustainable Business Forum (2008). *Costing the Future: Securing Value for Money through Sustainable Procurement*. Final report of the Inquiry into Sustainability in Public Procurement.

- > EPA Victoria has developed a sustainable purchasing decision-making framework and tool which incorporates sustainable purchasing principles, objectives and environmental, economic and social decision making criteria. The framework is intended to guide all EPA purchasing decisions, driving a consistent approach to sustainable purchasing with particular regard to environmental sustainability, but incorporating social and economic considerations where appropriate.
- > The Department of Justice has developed Environmentally Sustainable Design (ESD) Guidelines. These guidelines are to be used with the construction and fitting out of all new buildings and the fitting out and re-furbishing of existing buildings. The guidelines are currently being considered for adoption by other government departments.

The vehicle fleet

Building on Part 1 of this report, where fleet is discussed extensively, there also needs to be a greater strategic approach that considers vehicle choice and use along with travel demand management strategies. The Victorian Auditor-General recognised this in recent recommendations for departments and agencies with substantial fleets to review fleet size and mix against operational needs periodically or in response to operational changes and implement fleet performance management systems.³²

Government fleet purchases make up 19 per cent of total vehicle sales in Australia.³³ In Victoria, the government fleet consists of the fleets of the departments plus the state government vehicle pool. The annual costs of owning and operating the government fleet is around \$100 million.³⁴

The *Victorian Government Standard Motor Vehicle Policy* states that: “Government policy is to ensure the safe, effective and efficient operation of the Government fleet. The fleet should be restricted to a minimum required number of motor vehicles to maximise utilisation, environmental performance and financial management.” Achieving this outcome requires balancing travel needs and vehicle use against acceptable fuel consumption and emissions levels and vehicle acquisition and maintenance costs.

The policy has a long-standing requirement that all passenger vehicles purchased must have a minimum 60 per cent Australian-manufactured content. The only exception to the Australian content rule is for the Toyota Prius. They are desirable for the government fleet given their considerably lower greenhouse gas emissions. Prior to July 2009, the Prius produced emissions of 89 g CO₂/km compared with an average for liquid petroleum gas vehicles of 239 g CO₂/km and for unleaded petrol vehicles of 247 g CO₂/km.³⁵

The Victorian Government has sanctioned the purchase of the Toyota Prius hybrid vehicle, giving preference to Toyota as the only hybrid manufacturer with a manufacturing base in Australia. In 2006, there were 92 Toyota Prius hybrid vehicles in the government fleet (excluding Sustainability Victoria and the Environment Protection Authority) and there were no signs that Australian vehicle manufacturers would commit to producing hybrid or four-cylinder vehicles.

Since then the fleet profile has changed dramatically, and so has the future for hybrid and electric cars in Australia. There are now around 700 hybrid vehicles in the Victorian Government fleet³⁶ – 19 per cent of the passenger fleet.

Government fleet purchases make up 19 per cent of total vehicle sales in Australia.³³

³²Victorian Auditor-General (2009). *Vehicle fleet management*. Report No. 2009-10:9.

³³Commonwealth of Australia (2008) *Review of Australia's automotive industry*.

³⁴Victorian Auditor-General (2009). *Vehicle fleet management*. Report No. 2009-10:9.

³⁵Averages are across all vehicles available to the government fleet (executive and operational).

³⁶As at 1 July 2009, based on VicFleet data and including Sustainability Victoria and the Environment Protection Authority.

Green Procurement continued

The expansion of hybrid vehicles in the operational passenger fleet

Toyota's hybrid Prius passenger car (powered by a combination of an unleaded petrol engine and electric motor) was first available in Australia in 2001. In 2004 the Victorian Government announced that the government fleet would take-up 100 Prius hybrids over a two-year period and in 2006 set a target for 150 hybrids in the fleet, before removing the cap on the number in the fleet altogether.

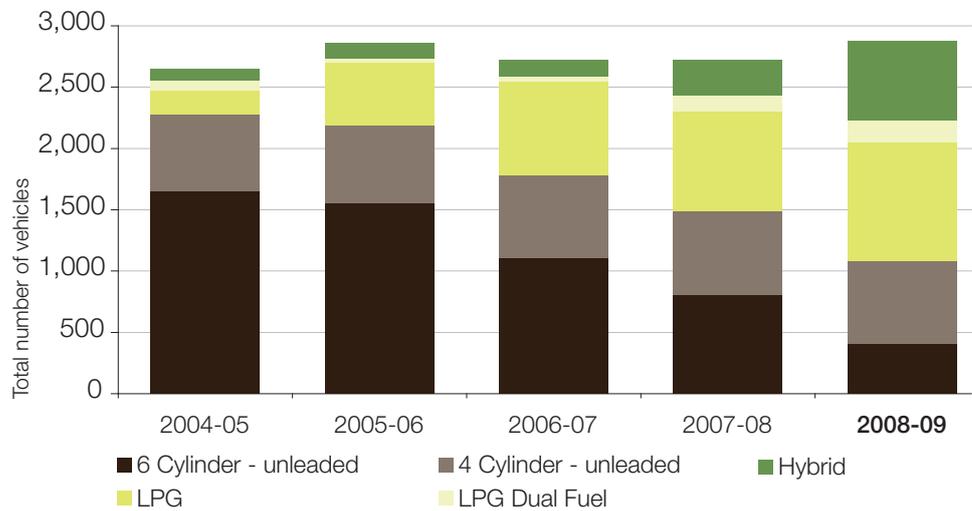
As a result, from 2007 there was an unprecedented escalation in hybrid purchases, with the number in the government fleet more than doubling each year to reach almost 700 by July 2009. **This is the single biggest Prius fleet in Australia.** Many departments have chosen to pay the greater price for the Prius to achieve a much more substantial reduction in carbon emissions than could have been achieved through purchasing the lowest emission Australian-manufactured vehicles.

Liquid petroleum gas vehicles now make up 26 per cent of the passenger vehicle fleet and four-cylinder vehicles form a further 19 per cent.

Top hybrid vehicle fleet achievers included:

- > Sustainability Victoria, with 100 per cent (five vehicles)
- > Department of Human Services, with 24 per cent (274 vehicles)
- > Department of Justice, with 20 per cent (167 vehicles)

Figure 13. Size and composition of the operational passenger vehicle fleet, 2004-05 to 2008-09



Source: Commissioner for Environmental Sustainability, from VicFleet data.

This is the result of deliberate strategies by these organisations: for example the Department of Human Services requires that all operational vehicles be replaced with low emission hybrid or LPG vehicles.

There is now great potential to green the vehicle fleet further as the face of the local automotive industry is poised for change. Toyota's hybrid Camrys – with anticipated emissions of 166 g CO₂/km or less and 30 per cent greater fuel efficiency – are set to roll off the production line in early 2010. The Victorian Government has signed up to buy 2,000 hybrid Camrys for its passenger fleet.

Other activities promoting the market for environmentally friendly vehicles include:

- > a Memorandum of Understanding with the Nissan Motor Company to explore electric vehicle technology
- > two new hybrid-electric buses being trialled in Melbourne, a first in Australia
- > the Department of Innovation Industry and Regional Development investing in a range of activities supporting the development of alternative fuels, battery electric vehicles and technologies to reduce emissions and increase fuel economy.

Overall fleet progress

There is a clear need for all Australian governments to not only encourage these technologies but to adopt them in their own fleets. In 2008, government fleet buyers had the highest average vehicle emissions (238 g CO₂/km) whereas private buyers had the lowest (210 g CO₂/km), followed by business fleet buyers (233 g CO₂/km).³⁷

The move to “greener” vehicles in the Victorian government fleet helped reduce the average emissions to 242 g CO₂/km in 2008-09, from the 2006-07 average of 280 g CO₂/km. This is still well above the national average carbon emissions target for new light vehicles of 222 g CO₂/km, but understandable given that none of the approved Australian-made vehicles met this emissions target until June 2009.³⁸

The total distance travelled by the Victorian government fleet has decreased since 2006-07, as have greenhouse gas emissions. Emissions per 1,000 km travelled have also dropped, indicating that the reduction in emissions is due not just to the fleet travelling fewer kilometres but also through the change in fleet mix.

In 2006 the Commissioner for Environmental Sustainability recommended managing the government fleet to align vehicle procurement with travel and vehicle use needs, fuel consumption and emissions goals at whole of Victorian Government and individual department and agency levels. This has occurred in some departments.

A further recommendation was the use of fleet mix modelling to identify the desirable mix of vehicles for the whole of Victorian Government fleet and for individual department or agency fleets. VicFleet developed green vehicle and vehicle safety ratings for departments and agencies to consider, alongside cost, when selecting vehicles.

Although total vehicle numbers have increased, distance travelled, fuel consumption and emissions generated have actually decreased. This indicates progress in two of the three priorities for environmentally sustainable fleet management: procure only as many vehicles as needed to satisfy operational uses; procure vehicles with the lowest emissions possible; and minimise distance travelled and fuel consumption as well.

In noting these achievements, it is still possible to observe that progress could have been even more marked. In the absence of a government-wide fleet management strategy and fleet mix modelling, the greening of the fleet has proceeded unevenly across government. Some departments and agencies have reduced their fleet emissions at the same time that others have made no inroads.

There is now great potential to green the vehicle fleet further as the face of the local automotive industry is poised for change.

³⁷ National Transport Commission (2009). *Carbon Emissions from New Australian Vehicles – Information Paper*.

³⁸ Data provided by VicFleet, 2009.

Green Procurement continued

Future directions

Opportunities for improvement

Some Victorian departments and agencies are showing real leadership. Some are starting to develop green or sustainable procurement policies, such as Sustainability Victoria which gives priority to products and services that enable it to perform its duties while having minimal impact on the environment. The Department of Human Services has introduced indicators indirectly related to greenhouse gas emissions into its executive performance review process. The Department of Justice's initiatives include developing its own in-house training on green procurement, as well as ecologically sustainable guidelines for the construction and fit-out of new facilities and for externally printed material.

However, there's still more urgent work to be done in the area of green procurement – particularly in reducing water and energy consumption, emissions of harmful substances and protecting biodiversity. Many previous recommendations of the Commissioner for Environmental Sustainability remain crucial to achieving environmental goals.

The 2009 evaluation of the ECO-Buy State Government pilot identified that one of the top three barriers to implementing green procurement was lack of organisational commitment.³⁹ Organisations that demonstrate commitment do so through their actions, by developing green procurement policies, training staff, setting targets to increase green purchasing and reducing the environmental impacts arising from goods and services purchased.

There are many examples internationally of strong commitments to sustainable procurement, through policy frameworks and designating clear responsibilities. They illustrate the importance of organisational commitment through leadership.

 [See page 72 Appendix Three](#)

Need for a step-change

...and the very real challenges that climate change is presenting, it's timely for Victoria to strengthen its broader green procurement policy commitments...

In Victoria, a further commitment is needed to bring about a step-change in green procurement activity. Clear opportunities for this are to use the statutory framework established by the *Public Finance and Accountability Bill 2009*, the policy framework of the Climate Change White Paper and the proposed Climate Change Bill to address procurement and mandate critical green procurement actions such as the need to strategically prioritise green procurement investment, influence supply chains and train procurement staff.

To reap the full environmental benefits, including maximising the reduction of greenhouse gas emissions and water use, that a whole of Victorian Government approach to green procurement could generate — all departments and agencies will need to embed green procurement in their operations.

Given the uneven green procurement across the Victorian Government, and the very real challenges that climate change is presenting, it's timely for Victoria to strengthen its broader green procurement policy commitments in a similar way at both whole of government and department and agency levels. There is also a great opportunity to demonstrate strong leadership and guide a step-change through the actions outlined below.

³⁹ECO-Buy (2009). *Pilot green purchasing program for Victorian Government. Evaluation report. An evaluation of green purchasing by Victorian State Government under the ECO-Buy Pilot (Phase 1) Program.*

Signing up to the ECO-Buy state government program

The July 2009 addition of the Sustainable Purchasing Program for State Government to ECO-Buy's suite of successful green procurement programs gives departments and agencies easy access to information, resources and training in green procurement tailored to the stage they are at in developing a green procurement capability.

The environmental and financial value of the initiatives delivered by pilot participants, including the Department of Treasury and Finance and Melbourne Health demonstrates the potential benefits of the program.

Of the 17 government organisations that had joined the program by December 2009, three have been central government departments –the Department of Primary Industries, the Department of Justice and the Department of Treasury and Finance. Encouraging all departments to join the ECO-Buy program or a similar green procurement promotion program by June 2010 would send a clear and compelling message about the importance of green procurement and position departments to make the environmental and cost savings that their substantial buying power can generate.

Energy efficient information and communications technology

From December 2009, all departments and the four inner budget agencies (Victoria Police, VicRoads, State Revenue Office and the Environment Protection Authority) are required to achieve energy efficiencies through their procurement, operation and disposal of information and communications technology.

At a minimum, the departments and agencies are required to have targets for information and communications technology energy efficiency and an annual action plan for achieving the targets, and appoint a sponsor with overall responsibility. They must monitor and report annually on their progress in meeting the targets. The Department of Treasury and Finance will collate and report the results across the whole of government.

The Department of Treasury and Finance has provided guidance to assist implementation, including an action plan template and examples of possible actions, ways of implementing them and in some cases, the carbon reductions and financial savings that could be expected.

“The ECO-Buy State Government Sustainable Purchasing Program was designed to align with objectives of the Victorian Government Purchasing Board and to assist departments meet Government commitments resulting from recommendations made by the Commissioner for Environmental Sustainability.

There is also no doubt that green procurement can help departments and agencies generate environmental benefits and cost savings - not to mention the positive influence it will have in encouraging greater supply of environmentally friendly goods and services.”

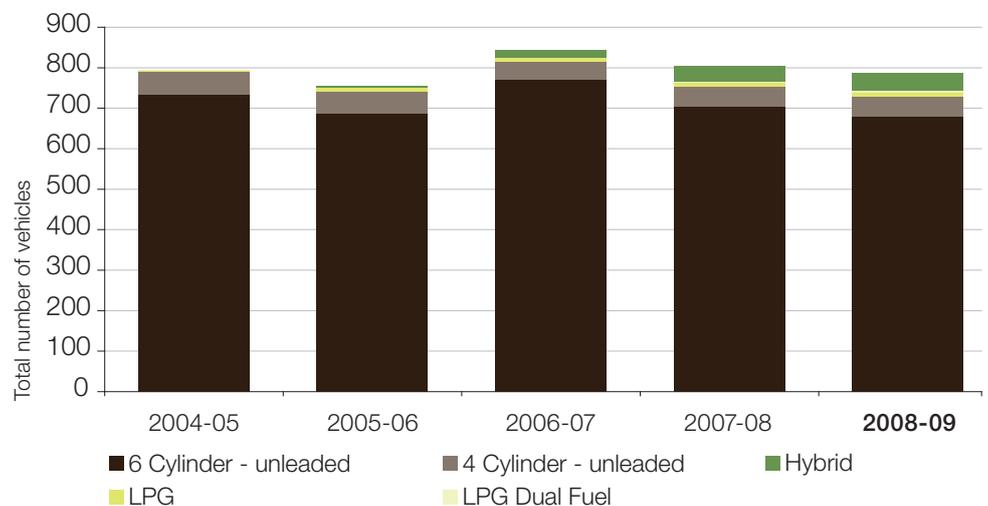
Hugh Wareham
CEO ECO-Buy

Green Procurement continued

Executives' greener fleet

Encouraging executives to drive greener vehicles would make the most of the opportunity they have to lead by example and influence their neighbours as well as their colleagues. Executive vehicles make up 20 per cent of the government passenger vehicle fleet and therefore make a significant contribution to vehicle emissions and fuel use. The composition of the executive fleet has remained heavily weighted towards large petrol vehicles in contrast to the operational passenger vehicle fleet which has shifted radically towards lower emissions vehicles. Around 56 per cent of operational passenger vehicles are now hybrid or liquid petroleum gas vehicles, compared to only seven per cent of executive vehicles.

Figure 14. Size and composition of the executive vehicle fleet, 2004-05 to 2008-09



Source: Commissioner for Environmental Sustainability, from VicFleet data.

In response to the Commissioner for Environmental Sustainability's 2006 recommendation, the Department of Sustainability and Environment is currently leading an investigation into potential strategies for driving change in the executive fleet.

This will be important in both reducing the total fleet emissions but also in demonstrating that senior public servants are committed to the Victorian Government's environmental sustainability goals. This has been easier to achieve in places like the United Kingdom, where the executive vehicles are not part of the salary package. In the United Kingdom, the Government Car and Despatch Agency provides the car pool for civil servants and public sector employees. The fleet's emissions intensity has reduced by 58 per cent since 2004-05, reaching 135 g CO₂/km in 2008-09.⁴⁰ Forty-seven per cent of the 196 cars in the 2008-09 fleet were Prius vehicles, this take-up rate being aided by incentives offered to departmental officers to switch to hybrid vehicles. The fleet won the United Kingdom's "Public Sector Fleet of the Year" GreenFleet award in 2008.

The UK agency is rolling-out a strategy to replace the cars in the 'official fleet' (the cars used by ministers and permanent secretaries) with lower emissions vehicles by 2010-11. The emissions efficiency of the official fleet already sits at 110 g CO₂/km following a move in 2006 to limit the choice of ministerial cars to a Toyota hybrid or a Jaguar biodiesel.

⁴⁰ Government Car and Despatch Agency (2009). *Annual report and accounts 2008-09*.

Mechanisms to get there

Victoria is yet to identify any clear priorities or targets to drive the uptake of green procurement by departments and agencies. Doing so would underscore the importance of engaging in green procurement and signal the Victorian government's future demand for green goods and services to the market place.

International use of targets

Many jurisdictions use targets to describe their intentions. Thailand sets progressive targets for departmental purchasing in each key product and service area, from 25 per cent in 2008 to 60 per cent in 2011. Japan's policy requires all departments and agencies to set annual targets for green procurement and report publicly against them. Korea is aiming for \$US2 billion in green public procurement by 2012 and \$US3 billion by 2015. The European Commission set a target of 50 per cent green public procurement across the European Union by 2010, where "green" means they comply with the commission's core procurement criteria.⁴¹ The Canadian Government set a target by charging all agencies with training all procurement staff in green procurement by 2011.⁴² Federal agencies in the United States of America are required to reduce fleet petrol consumption by two per cent annually.⁴³

The types of targets used tend to revolve around the proportion of goods and services procured that are considered environmentally friendly, and the environmental outcome achieved, for example reducing water use, carbon emissions and/or waste.

Australian use of targets

Procurement targets can find a place in Australian organisational cultures. The Queensland Government has asked its budget sector agencies to set targets for sustainable procurement and report on them. Other jurisdictions have adopted this practice and/or set whole of government targets.

Victoria's fleet targets

Work is underway to develop a target for average emissions for the Victorian Government fleet. This follows the Commissioner for Environmental Sustainability's 2006 recommendation that the Victorian Government adopt a whole of government target for carbon emissions for the vehicle fleet designed to match or better the national target, provided enough locally manufactured lower consumption vehicles were manufactured.

In 2005, the national automotive industry set a target for average carbon emissions from new passenger and light commercial vehicles to achieve 222 g CO₂/km by 2010, this was achieved in 2008.⁴⁴ The Department of Transport is currently developing the state target in consultation with the local vehicle industry. The target will come into effect from July 2010. The Department of Transport advises that the target will be relevant to fleet safety standards and the requirement for locally manufactured cars.

Procurement targets can find a place in Australian organisational cultures.

⁴¹ For further information, see: International Green Purchasing Network (2009), *Proceedings of the Public Authority Session, Third International Conference on Green Purchasing*, Suwon, South Korea October 2009.

⁴² Office of the Auditor-General of Canada (2008), *Greening Government Operations*, Chapter 10, Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons: Management Tools and Government Commitments.

⁴³ For further information, see: United Nations (2008) *Public procurement as a tool for promoting more sustainable consumption and production patterns*, Sustainable Development Innovation Briefs Issue 5, August 2008, United Nations Department of Economic and Social Affairs, Division for Sustainable Development.

⁴⁴ Available at [http://www.fcail.com.au/news/2008/3/156/national-average-carbon-emissions-\(nace\)](http://www.fcail.com.au/news/2008/3/156/national-average-carbon-emissions-(nace)), National Transport Commission (2009), *Carbon Emissions from New Australian Vehicles – Information Paper*, Australia.

Green Procurement continued

Based on VicFleet's data the average for the fleet currently is 242 g CO₂/km, but a large and organisationally complex department like the Department of Human Services can already achieve 233 g CO₂/km and a smaller but geographically dispersed agency like the Environment Protection Authority can achieve 217 g CO₂/km. The proliferation of locally-made lower emission vehicles will help drive emissions down further and places Victoria in a good position to set a challenging target for fleet emissions.

To implement new targets, individual departments and agencies will also need to set targets for reducing the emissions of their fleets. The Victorian Auditor-General's 2009 report on fleet management recommended that all agencies set targets for reducing the number of high carbon-emitting 6-cylinder and petrol vehicles in their fleets and monitoring achievement of them.⁴⁵

Victoria's general targets

The Department of Transport has set three targets for green procurement in the areas of: the recycled content of paper; green furniture procurement and embedding environmental considerations into contracting and procurement practices.

The Department of Innovation, Industry and Regional Development has set a target of 50 per cent of its spending on stationery will be environmentally friendly or have recycled content by 2009-10.

In the Department of Sustainability and Environment 72 per cent of its 131 purchases over \$100,000 (with a total value of \$252 million) involved consideration of the environmental impact of the supplier and or the product. The department has not however set procurement targets.

The Department of Treasury and Finance has included green procurement in government training programs and is reviewing the environmental considerations of all state purchasing contracts. It won the ECO-Buy's 2009 *Excellence in Green Purchasing* award by including environmental considerations into the desktop and notebook purchasing contract, developing the EcoMax office stationery range and for putting green criteria into tender templates. It has not set procurement targets.

⁴⁵Victorian Auditor-General (2009). *Vehicle fleet management*. Report No. 2009-10:9.

Demonstrating progress

Defining the requirements for measuring and reporting on progress at departmental and whole of government levels allows progress to be compared over time and between agencies, provides accountability and can motivate staff to improve their department's or agency's environmental performance. There are a number of approaches which promote these possibilities.

The Mayor of London's Green Procurement Code is one example. The code's assessment process measures two aspects of progress: the progress made by the organisation in embedding green procurement into its operations and the outcomes achieved through this, for example in the areas of waste, water, energy and emissions savings and biodiversity protection. Since October 2007 members of the Green Procurement Code have spent £306 million on green products and diverted 72,490 tonnes of waste from landfill – the equivalent of 187 Olympic sized swimming pools – representing a saving of 22,643 tonnes of CO₂ emissions.⁴⁶

In the United Kingdom, the *Westminster Sustainable Business Forum's 2008* inquiry into sustainable procurement identified that clear lines of reporting help establish the link between corporate objectives and procurement outcomes, especially if combined with electronic procurement systems that enable procurement practices to be monitored.

Victoria's Financial Reporting Direction 24C for procurement requires departments and agencies to report annually on how their procurement activities are environmentally responsible and support the objectives of the Victorian Government Purchasing Board's *Environmental Procurement Policy*.

The direction does not define any common elements for this, so it is not possible to easily identify progress across government or compare performance between agencies. Although required by the direction, only half of the departments have set internal targets for green procurement and of those, none reported progress against them in their 2008-09 annual reports. The reporting against the direction has been discussed in Part 1 of this report.

Victoria has long been seen as a leader in environmental reporting through the framework it established with the Financial Reporting Direction 24C. But from a procurement perspective, the direction is arguably narrow. It could be re-drafted to strengthen the requirements for measuring and reporting on procurement, including green procurement, and ensure better compliance in reporting. The recalibration of the Financial Reporting Direction 24C could continue positioning Victoria as a progressive leader in this field.

The analysis in this report again illustrates that measuring compliance impacts compliance – data is our friend in attaining a reduction of the carbon footprint across government. There is a clear need to formalise methods of persistently achieving 'beyond compliance' goals. The evaluations, such as that requested by the Victorian Government and conducted by the Commissioner for Environmental Sustainability in 2006, promote best practice by, among other things, engendering an 'evaluation influence' for better and best practice.

The recalibration of the Financial Reporting Direction 24C could continue positioning Victoria as a progressive leader in this field.

⁴⁶For further information, see <http://www.greenprocurementcode.co.uk/?q=node/75>.

Part 3 Sustainability in Schools

Key message:

All Victorian schools should be supported to adopt the *ResourceSmart AuSSI Vic* framework.

Actions:

The Department of Education and Early Childhood Development should work toward ensuring it meets the performance measures set out in its Environmental Sustainability Strategy, Looking Ahead:-

- > *ResourceSmart AuSSI Vic* framework to be adopted by 25 per cent of all government schools by end of 2010
- > *ResourceSmart AuSSI Vic* framework to be adopted within 100 per cent of all government schools by end of 2015
- > a *ResourceSmart AuSSI Vic* framework equivalent for the childhood education and care sector to be developed by the end of 2011
- > *ResourceSmart AuSSI Vic* framework to be adopted within 25 per cent of all childhood education and care sectors by the end of 2014
- > 25 per cent of all pre-service teachers to have received environmental sustainability training by the end of 2012
- > 50 per cent of all government teachers to have received environmental sustainability focused professional development training by the end of 2012.

The Department of Sustainability and Environment, Sustainability Victoria and the Department of Education and Early Childhood Development should continue to develop the *ResourceSmart AuSSI Vic* framework, including the professional development of teachers and facilitators.

The *ResourceSmart* School Awards should be expanded by Sustainability Victoria and the Department of Education and Early Childhood Development.

This third part of the report examines the expansion of environmental management systems into the Victorian education sector. The main vehicle for this expansion is the *ResourceSmart AuSSI Vic* framework⁴⁷ which provides a holistic approach to sustainability by linking the wide range of sustainability programs available to Victorian schools. A number of other initiatives supported by the Victorian Government are also examined.

Education for sustainability is a key consideration in the implementation of the *ResourceSmart AuSSI Vic* framework and this part of the report begins with a review of the importance attached to the integration of sustainability education and environmental management from an international, national and state perspective. The scope of the 2008-09 Strategic audit does not include a consideration of national or state sustainability curricula.

Education for sustainability is a matter of universal concern.

Sustainability education

International context

Education for sustainability is a matter of universal concern. This is reflected in the United Nations declaring 2005-2014, the Decade of Education for Sustainable Development.⁴⁸ The declaration marks a fundamental shift in environmental education from one concerned primarily with conserving nature to one with a broader focus on the interdependency of human welfare and a healthy environment.

Countries are encouraged to strengthen their contribution to sustainable development through education by the integration of the principles, values and practices of sustainable development into all aspects of education and learning.  See page 74 Appendix Four

Increasingly, among educators and policy officers, education for sustainability is understood as a community development and capacity building process, not just an exercise in developing and delivering a curriculum.

In December 2009, the International Alliance of Leading Educational Institutions published a report *Climate change and sustainable development, the response from education*, which highlights the role of schools in climate change mitigation and adaptation strategies. Education for sustainability is seen as having a key role in community capacity building by expanding competencies beyond the climate change experts.

Integral to the successful implementation of any government's mitigation and adaptation strategies is an informed and engaged community. Education for sustainability has the capacity to provide meaningful and obvious possibilities for embedding the consideration of climate change impacts in whole communities - through the school community.  See page 76 Appendix Five

Australian sustainability in education initiatives

Australia, like other countries throughout the world, has accepted the United Nations challenge.⁴⁹ In 2005, the first year of the United Nations Decade of Education for Sustainable Development, the Australian Government released its National Environmental Education Statement for Australian Schools to initiate sustainability education in schools.

The national commitment was renewed in April 2009, with the release of *Living Sustainably: the Australian Government's National Action Plan for Education for Sustainability*. This plan is intended to guide the expansion of education for sustainability. A partnership agreement, *Australian Sustainable Schools Initiative – A Partnership Statement for the Australian Government and States and Territories, 2008*, between the federal and state education and environment departments reflects the necessity of inter-jurisdiction cooperation.

⁴⁷ *ResourceSmart* Australian Sustainable Schools Initiative, Victorian implementation.

⁴⁸ Declaration made by the United Nations General Assembly, December 2002.

⁴⁹ See Appendix Five for some examples of whole of school sustainability initiatives across the globe.

Sustainability in Schools continued

The national policy framework has seen the development of the Australian Sustainable Schools Initiative – a program that focuses on quadruple bottom line outcomes in educational, environmental, social and economic terms.

The Australian Sustainable Schools Initiative provides practical support to schools and their communities to learn to live more sustainably. Support is provided through access to best practice education for sustainability resources, a co-ordinating structure for the use of existing environmental education, education for sustainability resources, and mentoring and facilitation of educators and school staff.⁵⁰ It integrates programs such as *Energy Smart Schools*, *Waste Wise*, *Waterwatch* and *Landcare*, thereby holistically dealing with the impacts of climate change and addressing the challenge of environmental sustainability. State and territory jurisdictions support the implementation and expansion of the Australian Sustainable Schools Initiative to augment state and local programs.⁵¹

 [See page 78 Appendix Six](#)

Education and sustainability in Victoria

Learning to manage the school environment

The *ResourceSmart AuSSI Vic* framework is the Victorian application of the Australian Sustainable Schools Initiative and is the way in which environmental management systems are actioned in Victorian schools. It integrates educational, environmental, social and economic outcomes so that schools do not see each area in isolation but rather as components of responding to the challenge of sustainability in a time of climate change. The *ResourceSmart AuSSI Vic* framework generates enthusiasm for innovation and inclusiveness in educational settings by, for example, the development of Indigenous gardens.⁵² All of the initiatives implemented by schools represent environmental management strategies even if they are less formal in their application than the systems adopted in government departments and agencies as outlined in Parts 1 and 2 of this report.

At a local level, the *ResourceSmart AuSSI Vic* framework seeks to meet the challenges presented to educationalists by the United Nations Decade of Education for Sustainable Development. The education sector is building on the dedicated work done over the last 30 years by community groups such as the Gould League and the Centre for Education and Research in Environmental Strategies, commonly known as CERES. For many years, individual schools and teachers have championed school gardens and waste and energy reduction and water conservation efforts. Early ‘champions’ include, for example, the Antonio Park Primary school, the Cobden Technical School, the Rutherglen Primary School, the Altona North Primary School and the Southmoor Primary School. All of these efforts are finding a place in an increasingly co-ordinated and structured schools program.

 [See page 80 Appendix Seven](#)

⁵⁰ *Australian Sustainable Schools Initiative – A Partnership Statement for the Australian Government and States and Territories, 2008.*

⁵¹ See Appendix Six for a summary of other states’ school initiatives.

⁵² The inclusion of Indigenous people in this process is a core international aspiration and this is reflected in the Victorian Sustainability in Schools Strategic Action Plan.

Delivery and coordination of the *ResourceSmart AuSSI Vic* framework

Sustainability Victoria, supported by the Department of Sustainability and Environment and the Department of Education and Early Childhood Development manages the *ResourceSmart AuSSI Vic* framework. This is done in partnership with earlier champions and recent adherents of education for sustainability.

Coordination and Governance

Established by Sustainability Victoria in 2007 the Sustainability in Schools State Steering Committee is the primary governance mechanism for Education for Sustainability initiatives in Victoria. Its goal is to improve the effectiveness of program development and delivery to all Victorian schools.

The Sustainability in Schools State Steering Committee involves key government and non-government organisations working together in a genuine partnership approach to address issues such as:

- > coordination, integration and collaboration among key government and non-government organisations
- > a common understanding of what *Education for Sustainability* looks like
- > an easy access point to *Education for Sustainability* programs for school.

Chaired by Sustainability Victoria, the Sustainability in Schools State Steering Committee members are:

- > Sustainability Victoria
- > Department of Education and Early Childhood Development
- > Department of Sustainability and Environment
- > Victorian Association for Environmental Education
- > an *Education for Sustainability* service provider representative.

The Sustainability in Schools State Steering Committee is supported by a flexible arrangement of working parties, for example the *ResourceSmart AuSSI Vic* Advisory Group, reference groups and consultation forums, as well as an endorsed strategic action plan.

“Everyone has a role to play in creating an effective response to the challenge of climate change.

ResourceSmart AuSSI Vic’s expansion into all Victorian schools has many benefits for the community by embedding sustainable actions into everyday life.

There is no better place to start meeting the climate change challenge than with the leaders of tomorrow – our young people. Through *ResourceSmart Schools*, Sustainability Victoria is teaching young people to use precious resources more wisely and to adopt more sustainable behaviours at home.”

Anita Roper
CEO of Sustainability Victoria

Sustainability in Schools continued

The Sustainability in Schools Strategic Action Plan

Endorsed by the Minister for Environment and Climate Change and the Minister for Education the Sustainability in Schools Strategic Action Plan has the following goals:

- > to engage with stakeholders to ensure coordination and collaboration in the ongoing development and delivery of *Education for Sustainability* programs to Victorian schools
- > to increase the uptake and effectiveness of *Education for Sustainability* programs in Victorian schools by building the capacity of schools through innovation, excellence and infrastructure
- > to communicate with stakeholders and Victorian schools
- > to promote active involvement with Indigenous Victorians, the original stewards of our environment
- > to promote youth leadership in *Education for Sustainability*
- > to provide systematic, valid and reliable data on *ResourceSmart AuSSI Vic* framework and *Education for Sustainability* achievements for reporting at school, state and national levels.

The Commissioner for Environmental Sustainability commends Sustainability Victoria on the establishment of the Sustainability in Schools State Steering Committee and the other departments and bodies for their participation. The development of the Sustainability in Schools Strategic Action Plan is welcomed for the leadership and direction it provides.

Monitoring and reporting of environmental data

A number of different organisations have responsibility for monitoring and reporting on environmental management programs in the education sector and their environmental and educational outcomes.

For example, in relation to the *ResourceSmart AuSSI Vic*, Sustainability Victoria aims to produce an annual report on progress as part of the Sustainability in Schools Strategic Action Plan.

The Department of Education and Early Childhood Development has primary responsibility for collecting and analysing electricity and gas use in government schools.

Monitoring is not just an opportunity to critique processes and progress. The collection and analysis of environmental data has the potential to generate an evaluation culture which has the capacity to moderate and where possible, self correct. It also provides an atmosphere where extra funding to drive new environmental projects becomes more readily accessible. For example, the Department of Education and Early Childhood Development uses energy consumption data to identify schools for energy efficiency grants, such as the Energy Upgrade Program. This program provides additional funding for schools and supports more widespread efforts to understand environmental sustainability. The data is also used to report against the Government Sustainable Energy Targets.

Modules

The *ResourceSmart AuSSI Vic* framework guides schools through modules that go beyond simple awareness raising to action-based strategic planning and implementation. Schools can complete the modules over time, in whichever sequence suits them. The process aims to build on existing achievements and generate high participation of students, staff, the wider school community, environment agencies, community groups and other organisations.⁵³

There are five modules – a core module which deals with the collection of baseline data and the development of a School Environmental Management Plan for the school and then four specific modules dealing with biodiversity, energy, waste and water.⁵⁴  See page 81 Appendix Eight

Schools are afforded considerable flexibility in their selection of the various modules. This is a great attribute of the *ResourceSmart AusSSI Vic* framework – it allows for implementation to reflect local conditions and needs rather than imposing a rigid sequence. This flexibility is valued by many participants in the program.

Funding for 60 schools to operate the core module and for 30 schools to undertake the waste module is provided by Sustainability Victoria. Additionally, in 2010 the Department of Education and Early Childhood Development will fund a further 25 teachers to implement the core module in schools and 25 schools will be funded for the biodiversity module, along with another 29 schools for the energy module.

The *ResourceSmart AuSSI Vic* framework guides schools through modules that go beyond simple awareness raising to action-based strategic planning and implementation.

ResourceSmart 5Star Sustainability Certification

Each *ResourceSmart AuSSI Vic* framework module has a certification tool which allows schools to be certified in the ResourceSmart 5Star Sustainability Certification process. It also allows schools to gain recognition for the completion of a *ResourceSmart AuSSI Vic* framework module.

Depending on the *ResourceSmart AuSSI Vic* framework modules completed, schools will focus on the aspirational reduction targets and reaching the best practice benchmarks (per student per year, primary/secondary) as listed in each of the certification tools.⁵⁵

ResourceSmart 5Star Sustainability Certification places schools in the same system as government departments and agencies, local governments, venues and businesses across Victoria in their sustainability achievements, raising the status of schools working on sustainability. *ResourceSmart 5Star Sustainability Certification* provides schools with the opportunity to strive for sustainability and recognition, and exemplify leadership through their efforts.

The *ResourceSmart 5Star Sustainability Certification* process requires schools to record and monitor their resource use on the Schools Environment Tracking System, an online tool that enables a school to log its resource consumption data. This systematic compilation of data becomes a powerful resource management tool, as well as an education tool.

A *ResourceSmart 5Star Sustainability Certification* is obtained when a school demonstrates that it has met a range of criteria including:

- > a whole-school approach
- > a student leadership team
- > using the Schools Environment Tracking System to measure savings and encourage further changes
- > a supportive principal (and school management team).

⁵³ ResourceSmart website, www.resourcesmart.vic.gov.au

⁵⁴ Refer to Appendix Eight for further information on the *ResourceSmart AuSSI Vic* framework modules.

⁵⁵ ResourceSmart website, www.resourcesmart.vic.gov.au

Sustainability in Schools continued

The *ResourceSmart* 5Star Sustainability Certification process requires a trained facilitator to verify a school's achievements. Tool kits list the actions that schools need to complete if they wish to become certified or achieve a Certificate of Achievement for completing a module.

In 2009, 544 government, Catholic and independent schools across Victoria participated in the *ResourceSmart AuSSI Vic* framework modules.⁵⁶ *ResourceSmart* Schools 5Star Sustainability Certification replaces the Sustainable Schools Initiative and the previous Waste Wise programs recognition processes. Schools that had been recognised under the Sustainable Schools Initiative and Waste Wise program will continue to be recognised by *ResourceSmart* 5Star Sustainability Certification until the expiry of their current certification. These schools, numbering 422, are invited to transition to *ResourceSmart* 5Star Sustainability Certification.⁵⁷

Almost a quarter of Victoria's 1,600 government schools have participated in some or all of the modules delivered as part of the *ResourceSmart AuSSI Vic* framework. The schools that participated often reported that the benefits extended well beyond the school gates to the broader community. Partnerships between schools and other organisations are encouraged by the Department of Education and Early Childhood through its Strategic Partnerships Program.⁵⁸

ResourceSmart Schools Awards

Implementation of the *ResourceSmart AuSSI Vic* framework is supported by a suite of programs such as certification and grants, but also awards which showcase and benchmark initiatives.⁵⁹ The role of Sustainability Victoria and the Department of Education and Early Childhood Development in the *ResourceSmart* Schools Awards demonstrates how engaging and empowering the recognition of outcomes can be. Recognition sparks community pride, encourages students to understand that their achievements are meaningful and publicly demonstrates commitment to environmental management.

These responses are not just symbolic. The awards recognise and reward Victorian schools, students and teachers for their initiatives and achievements in reducing greenhouse gas emissions, resource management; biodiversity, energy, waste and water. 72 Victorian primary and secondary schools entered the awards in 2009. Last year cash and prizes to the value of \$35,000 were awarded to assist in sustainability projects.

2009 ResourceSmart Schools Award Categories

Schools are recognised in the following categories each year:

- > School of the Year Award - \$2000 Winner, \$1000 Finalists
- > Primary schools and secondary schools:
 - Category 1: Biodiversity Smart School of the Year - \$1000 Winner, \$500 Finalists
 - Category 2: Energy Smart School of the Year - \$1000 Winner, \$500 Finalists
 - Category 3: Waste Smart School of the Year - \$1000 Winner, \$500 Finalists
 - Category 4: Water Smart School of the Year - \$1000 Winner, \$500 Finalists.

The Commissioner for Environmental Sustainability supports the continuation of awards ceremonies as school participation increases. An expanded awards program would support the goal of having every Victorian school participating by 2015. This 100 per cent participation rate is an aim of the Department of Education and Early Childhood Development and is discussed further in the Supporting School Participation section.

⁵⁶ Data provided by Sustainability Victoria, 2009.

⁵⁷ Data provided by Sustainability Victoria, 2009.

⁵⁸ The Strategic Partnerships Program participants include: Geography Teachers Association of Victoria, Victorian Association for Environmental Education, Victorian Outdoor Education Association, Gould League, Zoos Victoria, Phillip Island Nature Parks, Swan Hill Pioneer Settlement Museum, Coal Creek Village, Greening Australia, CERES Community Environment Park, Iramoo Sustainable Community Centre, Underwater Zoo Education Service, Kyabram Fauna Park, Royal Botanic Gardens Melbourne, Port Phillip Ecocentre Inc, Carrum Indigenous Nursery, Marine Discovery Centre at Queenscliff, Stephanie Alexander Kitchen Garden Foundation, Brambuk National Park and Cultural Centre.

⁵⁹ These include: Australian Sustainable Schools Initiative Victoria, ResourceSmart Schools Certification, ResourceSmart Schools Awards, Rubbish Free Lunch Challenge, Victorian Solar in Schools Initiative, Professional Learning for *ResourceSmart AuSSI Vic*.

From the coalface: practitioners' viewpoints

In November 2009, as part of the examination of environmental management in Victorian schools the Commissioner for Environmental Sustainability invited representatives from a number of organisations involved in the delivery of sustainability programs in Victorian schools to participate in a facilitated group discussion. 21 participants from a diverse range of organisations attended and shared their views on the *ResourceSmart AuSSI Vic* framework and sustainability education programs more broadly.

The following thoughtful perspectives were provided by participants:

- > Schools can be time, personnel and resource poor and this adversely impacts education for sustainability programs
- > The *ResourceSmart AuSSI Vic* framework is a robust framework for implementing sustainability programs in schools
- > Sustainability education and the *ResourceSmart AuSSI Vic* framework is well supported by a range of government and community organisations working with schools
- > Trained facilitators provide good support for the implementation of the *ResourceSmart AuSSI Vic* framework
- > It would be useful if a 'Community of Practice' met regularly to workshop ideas and identify best practice
- > Government agencies need to more readily recognise the value of support for schools to engage in sustainability education and give it priority in their strategies
- > There is no clear focus on making sustainability programs a priority in schools
- > Not enough places are funded to support school participation in *ResourceSmart AuSSI Vic* framework to reach the aim of including all schools by 2015.

The practitioners considered that the *ResourceSmart AuSSI Vic* framework has clearly demonstrated its ability to generate sustainable, practical environmental management outcomes in educational settings, both individually and organisationally. This is also reflected in earlier independent evaluations during the pilot programs⁶⁰ and by staff in schools that participated in a recent study undertaken by RMIT University.⁶¹

At its best the *ResourceSmart AuSSI Vic* framework engenders opportunities for students and school communities to take ownership of and responsibility for environmental outcomes, action learning and localised change. Formal support through continued funding, the provision of guidance materials and enhanced communication will ensure the emergence of mature, organised and carefully considered actions with the capacity to respond to the impacts of climate change at the community level.

It would be useful if a 'Community of Practice' met regularly to workshop ideas and identify best practice.

⁶⁰ Renshaw, Hitchen and Associates, Sustainable Schools Program Pilot, Victorian Evaluation, 2004 and A comparison of the Pilot Programs of AuSSI in New South Wales and Victoria, 2005.

⁶¹ Weaving Significant Stories and New Threads for improvement: Evaluation of the Implementation of the *ResourceSmart AuSSI Vic* 2008 Program by Jose Roberto Guevara and Jeffrey Brian King, RMIT University, 22 April 2009. This study contributes to the overall evaluation of the implementation of the 2008 *ResourceSmart AuSSI vic* Program (core and waste modules). This research by RMIT identifies the key success factors through significant change stories and identifying the areas for improvement in the delivery of the program through using case story writing and most significant change principles in the documentation and analysis of the program.

Sustainability in Schools continued

Communication of the *ResourceSmart AuSSI Vic* framework

The communication of the *ResourceSmart AuSSI Vic* framework, its goals and operational attributes, is vital for its expansion and continued success. The Commissioner for Environmental Sustainability has observed that in areas where *ResourceSmart AuSSI Vic* is absent, it is often due to communication problems. Interestingly, some school communities appear to be delivering on environmental management aims but remain outside the formal program.

Web portal

A partnership between the Australian and Victorian Governments, environmental educators and the *ResourceSmart* service providers is developing a web portal to support education for sustainability in schools. This web portal has the potential to become internationally recognised as a way to encourage environmental management systems in schools and promote climate change mitigation and adaptation initiatives. Funding in the order of \$150,000 is available for this project with support from the Commonwealth Department of Environment, Water, Heritage and the Arts (via the Australian Sustainable Schools Initiative) and the Department of Sustainability and Environment.

The Commissioner for Environmental Sustainability commends this initiative as an immediate and effective way to generate interest and knowledge about the major achievements in sustainability that schools are making. It will also enable schools to more readily access the *ResourceSmart AuSSI Vic* framework resources and support.

E-news

Sustainability Victoria recently launched a quarterly *ResourceSmart* Schools electronic newsletter which is available to all schools as a free subscription. CERES also produces a newsletter for schools where it has provided services. Further information may be found at the following websites:

> <http://sustainability.ceres.org.au>

> http://www.resourcesmart.vic.gov.au/for_educators_2439.html

Other organisations such as regional waste management groups, local governments and water authorities communicate information to their local schools, as does the Catholic Education Office and the Victorian Independent Schools Association.

Communication challenges

Based on the consultation undertaken for this report, the Commissioner for Environmental Sustainability has found the following challenges in reaching schools about sustainability and environmental management:

- > a sense of overload associated with the plethora of electronic messages
- > difficulty in identifying the responsible 'go-to' person in a school for sustainability issues and establishing effective communication links
- > unfocussed and inconsistent information delivery
- > the need to develop a targeted and effective communication strategy.

The communication challenges outlined above need to be addressed. The Commissioner for Environmental Sustainability notes that much is being done and encourages those organisations involved in the delivery of the *ResourceSmart AuSSI Vic* framework modules to continue the co-ordination of their respective efforts.

Other environmental management programs

Through the *ResourceSmart AuSSI Vic* framework and other tailored environmental management programs that support it, school communities are reducing their carbon footprint, saving energy and water and conserving biodiversity. They are reducing waste and lowering their greenhouse gas emissions. These outcomes are important features of any climate change adaptation strategy and are to be encouraged. Additionally, and importantly, schools that involve themselves in these national and state programs are changing the behaviour and broader environmental culture of whole school populations. The School Water Efficiency Program and Solar in Schools are examples of programs which, supported by the Victorian Government, have changed school and community behaviour.

School Water Efficiency Program

Victoria's 830,000 students and 249,000 staff use more than eight billion litres of water each year. As a direct consequence of the roll-out of the Victorian Government's *School Water Efficiency Program* more than 276,000 kilolitres of water is now being saved annually. This program is coordinated through the Department of Sustainability and Environment and the Department of Education and Early Childhood Development. *Water and Energy Savers (VIC) Pty Ltd* delivers the program to schools.

Commencing as a voluntary program in 2006 the program attracted 532 of 1600 schools. It showed immediate consumption and cost savings. Reflecting its enormous potential, in 2008 the program was mandated for all Victorian schools by the Minister for Education. Since then most Victorian Government schools have participated and achieved combined cost savings of \$460,000 and 221,000 kilolitres. Independent and Catholic schools have also participated and have reported achieved savings of \$117,729 and reduced water consumption by 55,000 kilolitres.

One of the appealing elements of this program is that it requires no initial outlay of funds by schools, yet it immediately returns benefits in water savings from five to 30 per cent. The program involves an onsite assessment of all indoor water usage facilities. This identifies and quantifies water wastage, consumption and determines potential savings. Water consumption data is supplied by the local water authorities.

Costs for the water efficiency service fee, audit and installation range from \$4,452 (for primary schools with 250 to 500 students) to \$12,498 (secondary schools with more than 1,200 students). The Department of Education and Early Childhood Development covered the cost of the audits. Schools can pay for the water saving retrofits from savings made in their water and energy bills.

Sustainability in Schools continued

Solar in schools

Solar in schools programs are supported by both the Australian and Victorian governments. The Australian Government's National Solar Schools Program began in July 2008 and provides grants of up to \$50,000 for a range of water and energy efficiency measures, including the installation of grid-connected photovoltaic (solar) panels.

The Victorian Solar in Schools Initiative (2007-2011) is providing rebates for new solar power systems, plus learning resources for students and an interactive online community for sharing knowledge and ideas. The rebates up until August, 2009 ranged from \$6,000 to \$15,000. As at August, 2009, 328 schools and community groups had either installed or been pre-approved to install solar photovoltaic power systems and interactive energy monitoring systems through the Victorian Solar in Schools Initiative. The Victorian Solar in Schools Initiative explicitly links to the *ResourceSmart AuSSI Vic* framework. From November, 2009 all new Victorian Solar in Schools Initiative rebate applicants will receive \$5,000.

Under both federal and state programs educational facilities are required or encouraged to collect and record energy data and incorporate it into education activities. Sustainability Victoria has begun collating and publishing the renewable energy generation data as well as other teaching and learning information on its recently developed Solar in Schools website www.solarinschools.vic.gov.au. This information serves to inform the broader Victorian community of significant school-based achievements in environmental management and sustainability.

There are real benefits to schools and the whole community from the combined federal and state program. Such programs should be seen as building blocks for the green skills/jobs/professions initiatives being pursued at both the federal and state level.⁶² It is currently proposed that the Victorian Solar in Schools initiative will cease at the end of the 2010-11 financial year.

The Commissioner for Environmental Sustainability urges the continuation of all solar in school programs. The success of the program in generating student interest in their energy use and their commitment to renewable energy cannot be underestimated in fulfilling aspirations to shrink our carbon footprint.

Supporting school participation

Looking Ahead

In June 2009, the Department of Education and Early Childhood Development published *Looking Ahead*, its Environmental Sustainability Strategy⁶³ to actively promote and support the integration of environmental sustainability into learning and teaching by resourcing teachers, schools, students and early childhood service providers.

In order to achieve its undertakings the Department of Education and Early Childhood Development intends to expand the *ResourceSmart AuSSI Vic* framework throughout the education and childhood development and care sectors, increase the amount of environmental sustainability training and resources provided to education and childhood development and care professionals, and continue the development of partnerships with community, business and environmental organisations.

⁶² Refer to the Environment Victoria report "Victoria – The Green Jobs State: Seizing the Opportunities", for an illustration of the breadth of the opportunities in Victoria for green job skills development, 2009.

⁶³ Department of Education and Early Childhood Development *Looking Ahead* its Environmental Sustainability Strategy June 2009 <http://www.education.vic.gov.au/about/deptpolicies/environment/default.htm>, accessed 7 Jan 2010.

The Commissioner for Environmental Sustainability commends the Department of Education and Early Childhood Development for the performance measures it has set. These are:

- > *ResourceSmart AuSSI Vic* framework to be adopted by 25 per cent of all government schools by end of 2010
- > *ResourceSmart AuSSI Vic* framework to be adopted within 100 per cent of all government schools by end of 2015
- > a *ResourceSmart AuSSI Vic* framework equivalent for the childhood education and care sector to be developed by the end of 2011
- > *ResourceSmart AuSSI Vic* framework to be adopted within 25 per cent of all childhood education and care sectors by the end of 2014
- > 25 per cent of all pre-service teachers to have received environmental sustainability training by the end of 2012
- > 50 per cent of all government teachers to have received environmental sustainability focused professional development training by the end of 2012.

Meeting the *Looking Ahead* targets will take departmental integration, significant stakeholder engagement and more support. This includes:

- > building on programs already offered by local government to support sustainable environmental strategies in local schools
- > recognising the work of teachers, students and the school community through awards ceremonies or incentives such as access to professional development or teacher advancement
- > providing release time for teachers to implement programs in a more focused way
- > supporting schools to manage an already 'crowded' curriculum by consulting locally to identify ways to achieve this
- > providing greater access to 'face to face' events and site visits
- > increasing the funding available for more schools to participate in the core module of the *ResourceSmart AuSSI Vic* framework
- > encouraging more modules to be included in the school curriculum.

A memorandum of understanding between the Department of Education and Early Childhood Development and Sustainability Victoria, co-ordinates management and delivery of the *ResourceSmart AuSSI Vic* framework between the two organisations for the period 2009-2011. Consideration should be given to an extension of this working arrangement.

Meeting the *Looking Ahead* targets will take departmental integration, significant stakeholder engagement and more support.

Sustainability in Schools continued

The importance of Professional Development

Teachers with *ResourceSmart AuSSI Vic* framework skills will be integral to the achievement of 100 per cent participation by Victorian schools by 2015. A number of organisations provide funding and training opportunities.

The Department of Education and Early Childhood Development provides professional development for the core module through its Strategic Partnerships Program for school teachers.

The Commissioner for Sustainability and the Environment considers that teachers would be assisted by:

- > specific time allocations for professional development including conference attendances
- > specific regional sessions, seminars or conferences which might include the use of remote technology
- > an expansion of the Victorian Institute of Teachers registration program for education for sustainability
- > specific advisory sessions for school principals
- > incentives to encourage enrolment in environmental sustainability teacher training courses
- > appointment of specialist environmental teachers
- > specific careers advisers (possibly supported by the Career Education Association of Victoria) for students seeking clarity about green professions and jobs.

Sustainability Victoria funds professional development programs to support service providers and teachers *ResourceSmart AuSSI Vic* facilitation. This work is necessary and should continue to be supported. To date, a four-day professional development program conducted by the Victorian Association for Environmental Education on behalf of Sustainability Victoria is offered twice a year to 20 service providers and teachers. In 2009, 36 trainees successfully completed the course.

Participants include teachers and Education for Sustainability service providers from a range of agencies including local government and non government organisations. Feedback from participants suggests a growing recognition of the value of a 'whole school' approach to sustainability issues. The Victorian Association for Environmental Education provides practical, engaged support, professional development opportunities and evaluation opportunities. It should continue to receive support.

Two new courses were submitted to the Victorian Registration and Qualifications Authority in November 2009, to be accredited under the Australian Quality Training Framework. The courses: *ResourceSmart AuSSI Vic* Facilitation and *ResourceSmart AuSSI Vic* Assessment will start in 2010 in Victoria and be made available nationally.

...a four-day professional development program conducted by the Victorian Association for Environmental Education on behalf of Sustainability Victoria is offered twice a year to 20 service providers and teachers.

In 2009, 36 trainees successfully completed the course.

Practical outcomes

In implementing the *ResourceSmart AuSSI Vic* framework and other complementary programs students engage in active learning. Students undertake energy and water audits and they learn to record their findings. They are a part of school sustainability projects which introduce energy efficiency and renewable energy programs. They seek out ways to use less water, and they improve and actively engage in recycling programs. Students are engaged with these programs by rosters and personal actions. Teachers oversee the operations of the processes and school councils and parents are drawn into the work of the school. Students are empowered and educated to take active steps to shrink their carbon footprint.

As part of the examination of sustainability in the education sector the Commissioner for Environmental Sustainability visited a number of schools throughout the state. The school visits showcased a range of initiatives, not all of which were part of the *ResourceSmart AuSSI Vic* framework, but all clearly demonstrated the extent of interest and community participation in education for sustainability. Programs such as the *School Water Efficiency Program*, *Solar in Schools* and the *Stephanie Alexander Kitchen Garden* were clearly understood as sustainability initiatives even if they were not understood by schools to be formally enveloped in the *ResourceSmart AuSSI Vic* framework. The power of delivering these sustainability messages through all of these initiatives and programs cannot be underestimated.

Indigenous gardens have become a feature of some school plans, building on earlier reconciliation initiatives. Importantly such initiatives encourage an understanding of diversity and complexity, and engender an understanding of the breadth of sustainability possibilities and opportunities. In a school setting Indigenous gardens also serve to celebrate culture and identity for all students, an aim of the Victorian Government's Education Strategy for Koorie students.⁶⁴

Practical and theoretical environmental education demonstrates how to use fewer resources and guides students as to how they can lighten their environmental impact at school and then at home. But, this sort of education does more than that. Young people gain hands-on knowledge and are equipped to become the next generation of environmental stewards. They acquire green skills which will position them well to take up green professions and jobs. They are imbued with an understanding of the need to adopt environmental management systems in their own environments, easily and obviously. They are learning that data can be their friend and that its collection and analysis may provide them with career paths as well as a sustainable environment.

The *ResourceSmart AuSSI Vic* framework has delivered clear benefits to the environment and the community. It has inspired school communities to seek out environmental funding opportunities (eg *National Solar in Schools Program* and the *Victorian Solar in Schools Initiative* funding). Networks for change have been generated. The picture may appear complex but the outcomes, are simple, useful and of enormous use in providing practical environmental management responses to climate change realities.

Indigenous gardens have become a feature of some school plans, building on earlier reconciliation initiatives.

⁶⁴Wannik Learning together –Journey to Our Future, Education Strategy for Koorie Students, Department for Education and Early Childhood Development, 2008.

Sustainability in Schools continued

Case Studies

The efforts of Victorian schools clearly demonstrate the capacity of a school to change a community and champion sustainable development as envisaged by the United Nations General Assembly when it declared 2005-2014, the Decade of Education for Sustainable Development. The Commissioner for Environmental Sustainability found the enthusiasm of the students infectious and the commitment of teachers and principals inspirational.

The Victorian Government and the broader community, including the business sector, are encouraged to support and learn from the efforts of school communities. The following case studies are presented as exemplars and for the purposes of inspiration – they provide lessons, from the 'bottom-up', for dealing with the challenges of sustainable development and the impacts of climate change.

CASE STUDY

Biodiversity school: St Francis of the Fields Primary School



Students show Dr Auty their propagation work with indigenous plants.

“My visit to St Francis of the Fields found a school community engaged at all year levels with the environment. Congratulations to the school on winning the *ResourceSmart* school award.”

Dr Kate Auty
Commissioner for Environmental Sustainability

Reflections on a Catholic Education school community driving environmental sustainability through a culture of learning, action and behaviour change

St Francis of the Fields located in Strathfieldsaye just outside Bendigo, is one of 53 schools in the Sandhurst Diocese which covers areas from Kerang in the north west to Corryong in the far north east, down to Heathcote and Bendigo in the centre of the state. Forty-eight of these schools are now actively engaged with the *Resource Smart AuSSI Vic* framework to reduce waste, conserve water and energy and improve biodiversity.

St Francis of the Fields is a relatively new school in the Diocese and has grown to over 300 children in just 13 years. The unique site of St Francis spans 28 acres and is flanked by two creeks – a rural aspect which enhances the sustainable building design features and environmental program the school offers.

St Francis of the Fields teaches Environmental Education across the whole of the school. Lessons are conducted two days a week by the Environmental Education Co-ordinator and are supported through the Sandhurst Sustainable Schools Program run by Paul Dullard. The lessons are focused around the environmental happenings on the school property and the agricultural activities on the school farm.

The Commissioner for Environmental Sustainability visited the school in October 2009.

Enthusiasm for creatures and plants great and small

In the 1940s, pioneering Italian teacher and psychologist Loris Malaguzzi founded the Reggio Emilia approach to learning on the premise that children develop through interactions, first with the adults in their lives – parents and teachers - then with their peers, and ultimately with the environment around them. Environment, said Malaguzzi, is the third teacher.

This ‘third teacher’ is no better exemplified than at St Francis of the Fields Primary School where environmental education programs are focused around the school’s own natural environment and school farm.

The school’s biodiversity project includes protection of the endangered Brush-tailed Phascogale, which lives in the hollows of old trees along the creek line at the school, and the discovery of an endangered plant species, the Late Flowering Flax Lily. The whole school is active in habitat restoration, indigenous plant propagation and planting. It is through this applied learning that students are able to gain an understanding of holistic and best practice environmental management.

The school realises their efforts won’t count for much if the neighbouring environment isn’t also protected. The school includes the extended community in information sessions and the sale of indigenous plants propagated by students to parents and friends. Through these activities, students across all year levels are developing team skills and communication skills.

Other sustainability activities include:

- > animal husbandry
- > raising calves to sell
- > breeding of saddleback pigs, a rare and threatened breed
- > vegetable garden
- > water tanks
- > waste wise ethics
- > solar energy and energy conservation ethics
- > an active environmental and sustainability policy.

St Francis of the Fields Primary School was acknowledged at the 2008 *ResourceSmart* School Awards as winner ‘Biodiversity Smart School of the Year’.

“We are very proud of the fact that St Francis of the Fields was the very first five-star school in Victoria and still attracts visitors from other schools looking to develop their own environmental action plans and policies.

Our connection to the state framework of *ResourceSmart Schools AuSSI Vic* has been the key to success”.

What schools are doing through environmental programs inside the school fence is influencing communities outside the school fence.”

Paul Dullard
Education Officer for Sustainable Schools
Sandhurst Catholic Education

Sustainability in Schools continued

CASE STUDY

Water school: Frankston High School



Members of Frankston High School environment committee.

“Studies have shown young males to be less engaged with the whole concept of climate change once they reach mid to late teens. It does not rank highly as an issue in their lives.

Therefore it was extremely encouraging to see so many male students particularly in middle to senior year levels taking an active interest in the school's environmental program.

These boys will become role models for younger upcoming male students.

I congratulate the school community on their recent Water Smart School 2009 award.”

Dr Kate Auty
Commissioner for Environmental Sustainability

Reflections on a school community driving environmental sustainability through a culture of learning, action and behaviour change

Located in the bayside suburb of Frankston, south east of Melbourne, Frankston High School has a student population of 1270 from years seven-12.

Frankston High began its sustainability journey in 2008 through the *ResourceSmart AuSSI Vic* framework and has since initiated a series of sustainable behaviours and actions to reduce energy and water consumption and waste. An Environment Committee made up of a team of approximately 20 students from years eight to 12 is integral to environmental education at the school. Over the past 12 months this student-led committee has organised informative signage for use around the school.

During late 2008 the committee planned and ran environmental workshops themed around water, waste and energy to year eight students. In November 2009 Frankston High School won the ResourceSmart Schools Award for Water.

A+ for being Water Smart

As a recipient of a community water grant through the Australian Government Water Fund, Frankston High School was able to install a 200,000L water tank. This tank was connected to all of the bathrooms within the school to flush the toilets. With a population of staff and students in excess of 1300, that is quite a saving for the local water supply.

With a target of a 50-80 per cent reduction in water use, the school has implemented a range of initiatives that include:

- > signage in 80 per cent of the toilets to remind people to only use the half flush button
- > only using the staff room dishwasher when completely full, using signage to communicate this message
- > undertaking a large amount of planting and only purchasing indigenous plants that are drought tolerant
- > installing a pool cover over the school's swimming pool to reduce evaporation and installing water timers in change room showers
- > educating members of the school community to try and change attitudes
- > strongly embedding water in the curriculum. Issues relating to water are now investigated in years seven, nine and 10. Year nine students complete a comprehensive study on water using the Home Water investigator. The students also visit both the Mt Martha Treatment plant and the Gunamatta Outfall
- > holding water related workshops for year eight students and primary school students at Derinya Primary School
- > environment committee members acting as ambassadors for water related issues
- > the Sustainability Coordinator taking an active role in helping teachers from other schools to develop water related curriculum by presenting at the Melbourne Water conference in 2008.

During late 2008 the committee planned and ran environmental workshops themed around water, waste and energy to year 8 students. In November 2009 Frankston High School won the *ResourceSmart Schools Award for Water*.

Sustainability in Schools continued

CASE STUDY

Solar in Schools: Christmas Hills Primary School



Christmas Hills Primary School teacher, Kurt Shean in front of solar panels.

“The solar panels are a very obvious part of the school’s built environment. The children were, on the day I arrived, looking at the computer which is linked to the panels and working out what they were feeding back into the grid. They were able, interested, engaging with other students in the room who were not on the computer and informally educating each other about renewable technology.”

Dr Kate Auty
Commissioner for Environmental Sustainability

Reflections on a school community driving environmental sustainability through a culture of learning, action and behaviour change

Christmas Hills Primary School is a very small country school with an enrolment of 16 students, set in remnant bushland 35 km north east of Melbourne. The school is very much a part of the close knit Christmas Hills community which suffered devastating loss during the 2009 bushfires and because of its location is acutely aware of the natural environmental. This awareness is reflected in the school's commitment to environmental sustainable curriculum content and programs.

The school joined *ResourceSmart* in 2009 and has already completed all modules and is progressing towards a five-star rating. This is an amazing achievement that has been made possible by a supportive principal, committed teaching staff and the resources and support of volunteer community members and the parent body.

The Commissioner for Environmental Sustainability visited this school in October 2009.

Enthusiasm powered by the sun

For students at Christmas Hills Primary School, monitoring how much power is being generated by the school's solar panels is just part of their daily classroom activities.

Integrating the mechanics of harnessing solar energy from the school roof with real time monitoring of energy production via classroom computers has brought to life for these students an understanding of a complex sustainability concept.

In the classroom, students access information on solar panel activity and relate it to the weather outside. Monitoring energy production and grid feed-in has been incorporated into the curriculum and is complemented by the school's energy reduction and conservation activities and policies. This hands-on participation fosters an understanding of the relationships between climate and energy production and the relationship between energy use and production. Since this time last year, there has been an estimated 40 per cent reduction in energy consumption at the school.

Through their involvement, students not only learn about energy, climate and weather, they are also developing and exercising reasoning, math, information technology and communication skills, and by extension students take this eco-knowledge into the family home and the community.

Solar panels were installed through the *National Solar in Schools* Program and the Environment Shop at the instigation of the new principal in January 2009. Although not without some challenges meeting application deadlines, the principal is delighted with the outcome.

Other programs contributing towards a five-star rating are:

- > student Planet Savers
- > organic gardening
- > keeping free range chickens
- > using rainwater tanks for all water supplies.

The school is very much a part of the close knit Christmas Hills community which suffered devastating loss during the 2009 bushfires and because of its location is acutely aware of the natural environmental.

Sustainability in Schools continued

CASE STUDY

Environmental Education: Benalla Primary School



Benalla Primary School vegetable garden.

“Benalla Primary School is an outstanding example of how a school can be resourceful and initiate whole-of-school programs that support the development of lifelong skills and self improvement.

It is encouraging to see strong sustainability messages embedded in activities around the *Stephanie Alexander Kitchen Garden Program*.

Whilst the fundamental messages may relate to healthy eating, it is clear that this program also promotes understanding of ‘food miles’ and the need to shrink our carbon footprints.

The principal and staff are to be congratulated on the success of this program.”

Driving environmental sustainability through a culture of learning, action and behaviour change

Benalla Primary School is located in the northeast of Victoria close to major waterways and the snowfields and has 225 students. Although not a member of any formal ResourceSmart Schools program, Benalla Primary has developed an impressive environmental education program that clearly aligns with it. One of the most successful programs is the school's Stephanie Alexander Kitchen Garden.

The Commissioner for Environmental sustainability visited the school in August 2009.

What is a Stephanie Alexander Kitchen Garden?

The Stephanie Alexander Kitchen Garden Foundation exists to develop happy and healthy life-long eating habits in a new generation of Australians by engaging them in growing, harvesting, preparing and sharing delicious and healthy food at primary school.

This Kitchen Garden Program has been developed by world renowned chef and writer, Stephanie Alexander. They learn that new experiences can be rewarding, and their self esteem, confidence and sense of achievement is enhanced as they learn to work cooperatively, share resources, respect each other, see teachers in a different learning environment, gain enjoyment and have fun working in the garden and kitchen.

The students:

- > are physically active by working in the garden
- > learn new language to describe foods, plants, textures and flavours
- > use maths to measure and weigh
- > discover the pleasure of the shared table
- > learn to work as part of a team
- > develop greater self confidence
- > gain awareness of cultural differences
- > develop awareness of the environment and plant diversity
- > develop the skills to prepare a three course meal
- > learn time management and organisational skills.

So good are these experiences that the students are motivated by the pleasures of good food, and develop an appreciation for rituals and tastes that will last a lifetime. There are two unique factors about the Kitchen Garden program. The first is the intrinsic link between the garden, the kitchen and the table. The emphasis is on learning about food and about eating it. No part of the program can exist without the other. The second factor is that the program is embedded in the curriculum.

So good are these experiences that the students are motivated by the pleasures of good food, and develop an appreciation for rituals and tastes that will last a lifetime.

Sustainability in Schools continued

CASE STUDY

Sustainable Relationships: St Georges Road Primary School



St Georges Road Primary School vegetable planters.

“The success of the environmental programs at St Georges Rd Primary School is largely due to the dedication and skills of the teaching staff who have by necessity developed teaching methods to enable them to relate to the culturally diverse student base.

The school’s environmental programs and gardens are a wonderful example of how sustainable messages and behaviour learned at the school can extend beyond the school fence to reach communities that may not be reached through mainstream communication strategies.”

Dr Kate Auty
Commissioner for Environmental Sustainability

Driving environmental sustainability through a culture of learning, action and behaviour change

St Georges Road Primary School is in the City of Greater Shepparton in north-central Victoria, about 180 kilometres north of Melbourne. The region's predominate agriculture based industries of dairy and horticulture attract a large culturally and linguistically diverse population.

Twenty-two per cent of the school's students are Indigenous, 25 per cent are Iraqi, and 22 per cent of students have a language background other than English, students of Afghani, Sudanese and Albanian backgrounds. There is an evolving trend of new-arrival students, beginning their education for the first time in an Australian school, at the St. Georges Road Primary School. Some of these families have refugee status.

The St Georges Rd Primary School has, in addition to the implementation of water and waste programs, established an extensive multicultural kitchen garden and started a chicken raising initiative. Through the kitchen garden program and waste and water programs, students across all levels are exposed to and involved in sustainable activities at the school.

The Commissioner for Environmental Sustainability visited the school in September 2009.

Growing sustainable relationships

For students at the St Georges Road Primary School, being involved in the garden is a pleasurable way of learning lifelong skills. Their work in developing and maintaining a vegetable garden incorporates the principles of sustainability, learning to relate to each other, working in groups, cooperating and embracing difference through the growing, harvesting, preparing and sharing of food.

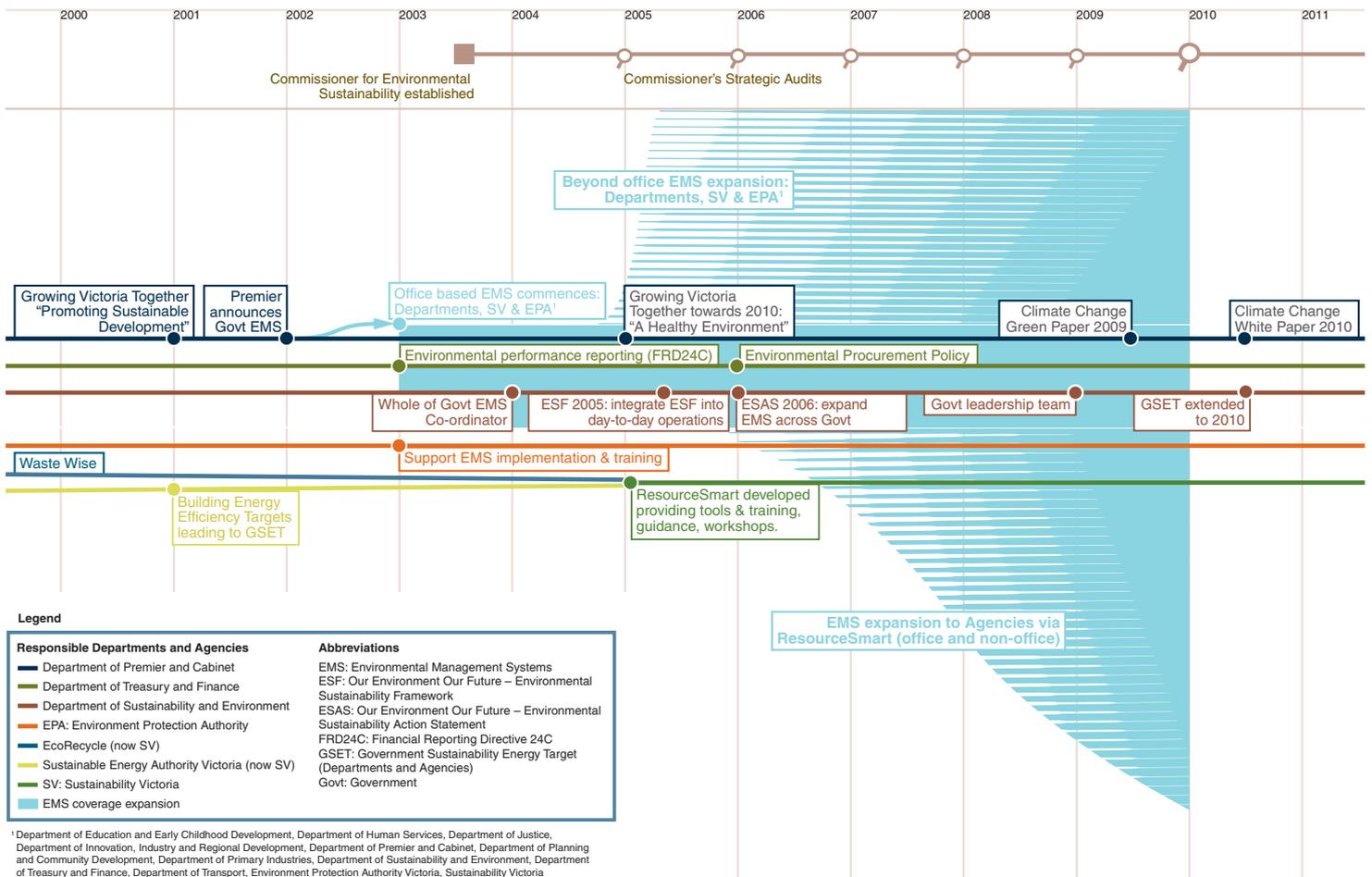
Many of the programs, in particular the gardening, involve student families and other members of the local community. Their participation provides opportunity and means for sustainability messages to be communicated to the non-English speaking culturally diverse sector of the Shepparton community.

Many of the programs, in particular the gardening, involve student families and other members of the local community.

Appendices

Appendix One

**Diagram 1:
Environmental Management Systems expansion into
Departments and Agencies**



Appendix Two

ResourceSmart participants

ResourceSmart Government

*The following agencies have participated in *ResourceSmart* Government and have prepared one and two year environment strategies.

Essential Services Commission
 Victoria Police
 National Gallery of Victoria
 Parks Victoria
 Victorian Electoral Commission
 Ambulance Victoria
 Country Fire Authority
 Emergency Services Superannuation Board
 Emergency Services Telecommunications Authority
 Greyhound Racing Victoria
 Harness Racing Victoria
 Metropolitan Fire and Emergency Services Board
 Office of the Ombudsman Victoria
 Public Records Office Victoria
 Rural Finance Corporation of Victoria
 State Revenue Office
 State Services Authority
 Transport Accident Commission
 Treasury Corporation of Victoria
 Victoria Legal Aid
 Victoria State Emergency Service
 Victorian Auditor-General
 Victorian Managed Insurance Authority
 Victorian WorkCover Authority
 Australian Centre for the Moving Image
 Building Commission
 Dairy Food Safety Victoria
 Film Victoria
 Geelong Performing Arts Centre Trust
 Growth Areas Authority
 Melbourne Convention & Exhibition Trust
 Melbourne Market Authority
 Melbourne Olympic Parks Trust
 Melbourne Recital Centre
 Museum Victoria
 Plumbing Industry Commission
 Royal Botanic Gardens Board
 State Library of Victoria
 State Sports Centre Trust
 V/Line Passenger Corporation Pty Ltd
 Victorian Arts Centre Trust
 Victorian Energy Networks Corporation (VENCorp)
 Victorian Institute of Sport
 Victrack
 VicUrban
 Zoos Victoria

ResourceSmart Healthcare (Pilot and Phase 1 Agencies)

Pilot Agencies

Austin Health
 Goulburn Valley Health Services
 Hepburn Health Service
 Moreland Hall Uniting Care
 Southern Health
 Victorian Institute of Forensic Mental Health (Forensicare)

Phase 1a (Metropolitan Melbourne)

Alfred Health
 Calvary Health Care Bethlehem Ltd.
 Dental Health Services Victoria
 Eastern Health
 Melbourne Health
 Mildura Base Hospital*
 Northern Health
 Peninsula Health
 Peter MacCallum Cancer Centre
 Royal Children's Hospital
 Royal Victorian Eye and Ear Hospital
 Royal Women's Hospital
 St Vincent's Health
 Tweddle Child and Family Health Service
 Western Health

* Opted to participate in Phase 1 as easier to travel to Melbourne than other regional phases.

Phase 1b (Gippsland)

Bairnsdale Regional Health Service
 Bass Coast Community Health Services**
 Bass Coast Regional Health
 Central Gippsland Health Service
 Gippsland Southern Health Service
 Kooweerup Regional Health Service
 Latrobe Community Health Service**
 Latrobe Regional Hospital
 South Gippsland Hospital
 West Gippsland Healthcare Group

** Community health centres participating on a voluntary basis, with participation funded by the Department of Health.

ResourceSmart Tertiary Education (Pilot Agencies)

Central Gippsland Institute of TAFE
 Kangan Batman Institute of TAFE
 Centre for Adult Education
 Victoria University
 Deakin University

Appendix Three

Review of procurement leadership

The **Queensland** government's State Procurement Policy (2007) requires each budget sector agency to "set, measure and report [annually] on sustainable procurement targets" and assess its procurement capability and performance at least once every three years. All agencies were expected to be at the minimum or "foundation" level of its *Sustainable Procurement Roadmap* by 1 June 2009. Indicative measures for assessing performance against this level include:

- > senior level champions engaged to drive sustainable procurement in agency
- > assessment of risks, impacts and opportunities related to the procurement spend
- > an annual review and report to cabinet. Improvements are to be incorporated into procurement plan for the following year.

For further information, see http://www.qgm.qld.gov.au/10_sus_procure/index.htm.

Canada set up its Office for Greening Government Operations in 2005. Its Policy on Green Procurement (2006) places responsibility for achieving green procurement objectives in the hands of deputy heads of departments. Their accountabilities include: establishing procurement processes that identify environmental risks; setting and meeting green procurement targets; and including support for green procurement objectives in the performance evaluations of managers and functional heads of procurement and material. For further information see <http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/index-eng.html>.

Japan's green purchasing legislation came into effect in May 2001, making it compulsory for all government agencies to purchase green goods and services. It also encourages the broader community to do the same. For further information, see: United Nations (2008) *Public procurement as a tool for promoting more sustainable consumption and production patterns*. Sustainable Development Innovation Briefs Issue 5, August 2008, United Nations Department of Economic and Social Affairs, Division for Sustainable Development.

The government in the **United Kingdom** has included sustainability as one of the corporate objectives against which the performance of its permanent secretaries is judged. The Westminster Sustainable Business Forum's 2008 inquiry into sustainable procurement identified this as potentially providing great incentive for mainstreaming sustainable and green procurement in government procurement practices. For further information see: Westminster Sustainable Business Forum (2008). *Costing the Future: Securing Value for Money through Sustainable Procurement*. Final report of Inquiry into Sustainability in Public Procurement.

South Korea is in the process of strengthening its green procurement policy, in ways such as applying the mandatory green purchase system to more organisations, expanding life cycle costing information and requiring systematic management of green procurement performance. Some of the latest figures indicate that in 2008, total green procurement was valued at \$US2.67 billion and increasing by around 30 per cent each year. Green public procurement amounted to \$1.58 billion of this, with growth closer to 20 per cent each year.⁶⁵

The **London Fire and Emergency Planning Authority** designated a Director to champion sustainability to raise the profile of green procurement. Heads of Service with significant procurement spend now have responsible procurement included in their work objectives. For further information see: Greater London Authority (2009). *Delivering value for London. Using procurement to make a positive difference. A progress report from the GLA group.*

In 2009 the **Chinese State Council** directed all government agencies to implement a national Green Procurement policy, centred on the compulsory procurement of energy-saving products, giving priority to eco-friendly products in public purchases and tenders and upgrading the status of China's Green Procurement List of nine environmentally friendly products, established in 2007, from preferred to compulsory. For further information see <http://www.futuregov.net/articles/2009/apr/28/chinas-local-govts-required-make-green-procurement/>.

In the **Philippines**, since 2004 all departments and agencies of the executive branch of the government have been required to establish a green procurement program. They must also publish an annual green procurement policy targeting at least 30 per cent of the procurement budget for green products and services. These policies are subject to compliance review and monitoring. For further information, see Virtucio, FK (2005). *Sustainable Public Procurement in the Philippines*. Presentation to the Third Expert Meeting on Sustainable Public Procurement, New York, June 2005, at <http://www.un.org/esa/sustdev/sdissues/consumption/procurement/virtuciof.pdf>.

Many countries and international organisations have signalled the importance of green procurement and sustainable procurement more broadly by signing up to the United Nations-sponsored Marrakech Task Force on Sustainable Public Procurement, including Argentina, China, Indonesia, the United States of America, the United Kingdom and the European Commission.

For further information, see <http://esa.un.org/marrakechprocess/tfsuspubproc.shtml>.

⁶⁵ Moon, Sung-Sik, Korea Environmental Industry and Technology Institute. Pers. comm., November 2009.

Appendix Four

Diagram 2: International environmental education initiatives

Canada:

Mix of Government, NGO and non-profit organisation supported ESD school programs run within provinces addressing social environmental and economic needs in ways that are culturally sensitive and forward looking.

USA:

Environmental education resources and support comes from a wide range of government, NGO and non-profit organisations and programs in schools varies considerably state to state.

UK:

Learning through Landscapes

Developed by the UK Government, the program focuses on topics of food and drink; energy and water; travel and traffic; purchasing and waste; buildings and grounds; inclusion and participation; local well-being; and, global dimension. Learning through Landscapes is a UK based organisation looking at creating outdoor learning areas in schools. 1,000s of schools across the UK are taking part in Ltl's various activities which are supported by the government, industry and community.

International frameworks have been established and are constantly evolving to address education for sustainability in schools. Additionally, countries have developed local programs. Diagram 2 provides examples of some.

Denmark:

ESD and climate change education is embedded into the curriculum at primary and secondary levels.

China:**Green School Project**

Using social and political resources to benefit the environment.

Green Schools China has created tens of thousands of schools participating in ESD. Green Schools is an initiative of the ministry of Education of China and is funded by the State Environmental Protection Administration. China's Green Schools Program, which started in 1996, is based on the international concept of ISO 14000 and has been informed by the European FEE 'Eco-schools'. By the end of 2006 China had more than 35,000 green schools. At national level 705 Green Schools received awards. This number is continuously growing.

Australia:**Sustainable Schools Initiative (AuSSI)**

The Australian Government works in partnership with the states and territories to consolidate and expand the whole of school, system-wide approach to education for sustainability through the highly successful Australian Sustainable Schools Initiative.

AuSSI programs such as *ResourceSmart* Schools in Victoria, are improving systems support for sustainability in schools, coordinating school-based programs, providing professional development for teachers, embedding sustainability in curricula and integrating early childhood education.

New Zealand:**Enviroschools – New Zealand**

Sustainability, environmental education, cultural diversity, student participation and knowledge enriching the learning process Enviroschools New Zealand has 600 schools involved in their program which is strongly supported by the New Zealand Ministry of Education.

Appendix Five

School initiatives internationally

Education for Sustainability programs have been designed and rolled-out all over the world pushing educational boundaries to address issues of governance, participation, consumption and curriculum.⁶⁶ The whole of school sustainability initiatives operating across the globe highlight the possibilities for schools to innovate and showcase changes in practice for a better future. There are many examples of these types of initiatives across the globe, here are six.

Environment and schools initiative – Europe

Eco school development

Environment and schools initiative – Europe (ENSI) is an international research and development group with members throughout the world who share their experiences and focus on developing quality criteria for sustainable schools. A focus of ENSI is Eco-school development.⁶⁷ Since 1986 the aim of the Eco schools development is to 'develop, test and publish methods of teaching and learning which define good practices of education for sustainability by setting up international school partnerships and conducting comparative studies in such areas as Quality criteria for Eco School development.

Environmental education, management and certification

The Eco-schools Foundation for Environmental Education has over 40 member nations. Originally founded as a European program, it has since expanded to countries within Africa, Asia and South America. The Foundation for Environmental Education is a not-for-profit umbrella organisation which brings together national non-government organisations implementing programs for 'environmental education, management and certification'. Underpinning the Foundation for Environmental Education international framework are the principles of the United Nations Agenda 21, including the need for environmental awareness and improved students' skills for active participation and decision-making. The three main themes for schools are 'waste, water and energy'. Schools are encouraged to continuously improve their environmental performance, namely through the adoption of environmental working themes. In some countries, the Green Flag is the culmination of a multi-level system such as the one that includes bronze, silver and the Green Flag.

Green Schools Award – Sweden

All aspects of school life

Green Schools Sweden is a program wholly driven and supported by the government which requires schools to meet certain standards in order to be awarded a Green Flag.

Sweden's Green School Award was established in 1998 and is based on Local Agenda 21 goals and has more recently been informed by Agenda 21 for Education sector in the Baltic Sea Region, known as the Haga Declaration.⁶⁸ The Green School Award criteria aims to incorporate all aspects of school life, including management, activities and teaching, occupational health and safety, physical welfare and the physical environment. The criteria were developed through a multi-disciplinary and participatory process based on the national curricula and syllabi.⁶⁹

Eco-School Program (FEE):

Europe

Belgium-Flanders, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Iceland, Italy, Kazakhstan, Latvia, Lithuania, Macedonia FYR, Malta, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Turkey.

UK

England, Ireland, Northern Ireland, Scotland, Wales.

Americas

Bahamas, Brazil, Chile, Dominican Republic, Puerto Rico, United States of America.

Middle East & Africa

Jordan, Kenya, Morocco, South Africa, Tunisia, Uganda.

Other

Japan, China.

⁶⁶ Tilbury, D, Wortman, D, (2006), 'Whole School' Approaches to Sustainability, in Chi-Kin Lee, J & Williams, M (eds.), (2006), 'Environmental and Geographical Education For Sustainability: Cultural Contexts', Nova Science Publishers, Inc., UK, p 95.

⁶⁷ Henderson, K and Tilbury, D. (2004) 'Whole-School Approaches to Sustainability: An International Review of Sustainable School Programs'. p 12.

⁶⁸ Henderson, K and Tilbury, D. (2004), p 25.

⁶⁹ Ibid, p 14.

Learning through Landscapes – UK

‘Sustainable development doorways’

Learning through Landscapes is a UK-based organisation looking at creating outdoor learning areas in schools. Thousands of schools across the UK are taking part in Learning through Landscapes various activities which are supported by the government, industry and community.

Learning through Landscapes was developed in 1990. It was developed because many children in the UK have limited opportunities to learn and play outdoors in safety. Without good school grounds, they will miss out on essential opportunities to be healthy and happy in their formative years, and to gather the experiences they need to be healthy and happy as adults.⁷⁰

The UK government would like every school to be a sustainable school by 2020. The National Framework introduces eight doorways through which schools may choose to initiate or extend their sustainable school activity. It focuses on ways in which sustainable development can be embedded into whole school management practices and provides practical guidance to help schools operate in a more sustainable way'. These eight doorways include:

- > food and drink
- > energy and water
- > travel and traffic
- > purchasing and waste
- > buildings and grounds
- > inclusion and participation
- > local well-being
- > global dimension.⁷¹

Enviroschools – New Zealand

Enviroschools provides a whole school approach to sustainability. This program seeks to foster a generation of innovative and motivated young people who instinctively think and act sustainably. Approximately 600 schools are involved. The initiative includes options for school involvement such as a three year facilitated program, and/or an award scheme for schools.⁷²

Enviroschools supports schools through resource materials, professional development, and school awards program.⁷³ The focus of Enviroschools has been sustainability, environmental education, cultural diversity, student participation and knowledge enriching the learning process.⁷⁴

Green School Project – China

Green Schools China has involved tens of thousands of schools participating in Education for Sustainability. Green Schools is an initiative of the ministry of Education of China (MOE) and is funded by the State Environmental Protection Administration (SEPA). China's Green Schools Program, which started in 1996, is based on the international concept of ISO 14000 and has been informed by the European Foundation for Environmental Education 'Eco-schools'.

By the end of 2006 China had more than 35,000 green schools. At national level 705 Green Schools received awards. This number is continuously growing.⁷⁵

Being a Green school means the school incorporates management measures in daily tasks that utilises resources and opportunities inside and outside the school for enhancing the environmental literacy of teachers and students.⁷⁶

The program's key focus areas include whole school environmental management and protection, environmental education curriculum and professional development, and greening of school grounds. Schools must undertake a series of steps before applying for Green School awards. Awards are categorised through a staged development process, starting at municipal, provincial and then national level. To date, upwards of 15,000 schools have received one level of award as part of this program.⁷⁷

⁷⁰ Learning through Landscapes, accessed 09/10/09, <http://www.ltl.org.uk/about-us.htm>.

⁷¹ Teachernet, (2009), 'UK National Framework for Sustainability in Schools' accessed 13/10/09, http://www.teachernet.gov.uk/sustainableschools/framework/framework_detail.cfm.

⁷² Ibid, p 14.

⁷³ New Zealand Ministry of Education, 'About Education for Sustainability', accessed 10/10/09, <http://efs.tki.org.nz/About-Efs>.

⁷⁴ Tibury, D & Wortman, D, (2006) p 99.

⁷⁵ Ibid, p 139.

⁷⁶ Zeng, H, Yang, G, and Chi-Kin Lee, J, (2009), Green Schools in China, in Chi-Kin Lee, J, Williams, M (ed.), (2009), 'Schooling for Sustainable Development in Chinese Communities: Experience with Younger Children', Springer, UK, p 138.

⁷⁷ <http://www.sustainablecitiesnet.com/2009/06/01/green-schools-in-china/> accessed 24.12.09.

Appendices continued

Appendix Six

Review of school initiatives nationally

As part of the strategic audit program for 2009, a review was undertaken of education for sustainability developments in schools at the national level.

The review found that efforts by states and territories vary due to their human and other resources and funding. Like the international examples, there is no one-size-fits-all model for implementing and managing education for sustainability initiatives. Each state and territory has adopted its own approach to adapting the Australian Sustainability Schools Initiative to local conditions.

Victoria is the only state to have a certification system. This is due to its management by Sustainability Victoria which manages similar projects for government departments and is able to dedicate time and resources to the accreditation process in a coordinated manner. The role of Sustainability Victoria is seen as a positive incentive to schools participating in the program, providing opportunities to be recognised and celebrated for their work in shrinking their carbon footprint.

Other states and territories do not have a sustainability statutory authority and have adopted different approaches.

New South Wales

NSW is the only state that has mandated education for sustainability in all schools from kindergarten to Year 12. As a result, all schools must develop a Strategic Environmental Management Plan. AuSSI-NSW help develop these plans and helps to encourage regular reporting and evaluation of their progress. This regulatory framework runs in tandem with the Department of Environment and Conservation's mandate for waste education which includes all schools.

At the same time, *Learning for Sustainability* the NSW Environmental Education Plan 2002-2005, has required all state and local government agencies to cooperate in the development and delivery of education for sustainability in NSW. This plan is currently under review.

In NSW, the *Protection of the Environment Administration Act* 1991 specifies the purposes of environmental education. The *Learning for Sustainability* NSW Environmental Education Plan 2007-10 was developed by the NSW Council on Environmental Education, established under this Act to advise the state government on strategic directions for environmental education.⁷⁸

Queensland

Queensland has developed a strong emphasis on using existing infrastructure in the area of education for sustainability. The initiative is run through Outdoor Environmental Education Centres which have a long-standing history of Education for Sustainability in the community dating back to the 1960s. Some of these centres have become Queensland Environmentally Sustainable Schools. The QESSI alliance is a loose alliance of stakeholders whose role is to support schools, build relationships and improve the capacity of all involved.⁷⁹ QESSI realise that their access to resources creates difficulties in developing an accreditation system like that of Victoria. Other organisations like Keep Australia Beautiful have been running the Green and Healthy School Awards since 1999. This cuts across the more formal schools program but supports its aims.

⁷⁸ NSW Council on Environmental Education, (2006), 'Learning for Sustainability NSW Environmental Education Plan 2007-10', accessed 25/11/09, www.environment.nsw.gov.au/cee.

⁷⁹ Australian Government Department of Environment, Water, Heritage and the Arts, (2009), *How do I become an AuSSI schools?*, accessed 21/10/09, <http://www.environment.gov.au/education/aussi/how.html>.

South Australia

South Australia has implemented *AuSSI-SA* and developed the *Guide to Becoming a Sustainable School*. This was developed as a result of the recognition that 'each school is unique and will approach its journey towards sustainability in ways that best meet its particular context and needs'.⁸⁰

AuSSI-SA has moved away from an accreditation process to a recognition process. Rather than having a few winners, there is recognition that there is no single way of addressing sustainability. The Guide uses a rubric approach so that schools can measure what stage they have reached on the rubric in as areas like culture, understanding, learning, community and managing. Each of these act as entry points for schools into education for sustainability.

Tasmania

Tasmania has taken a curriculum-focused approach to *AuSSI-Tas* which aims to integrate education for sustainability across the whole curriculum.

Two project officers spend three days a week travelling around to different schools in order to help them develop their Environmental Management Plan. As is the case in NSW, these plans act as a template, creating a timeline and establishing priorities for the schools attempting to implement education for sustainability. Each school is asked to review its progress every six months, via a workshop or consultation with a project officer.

Western Australia

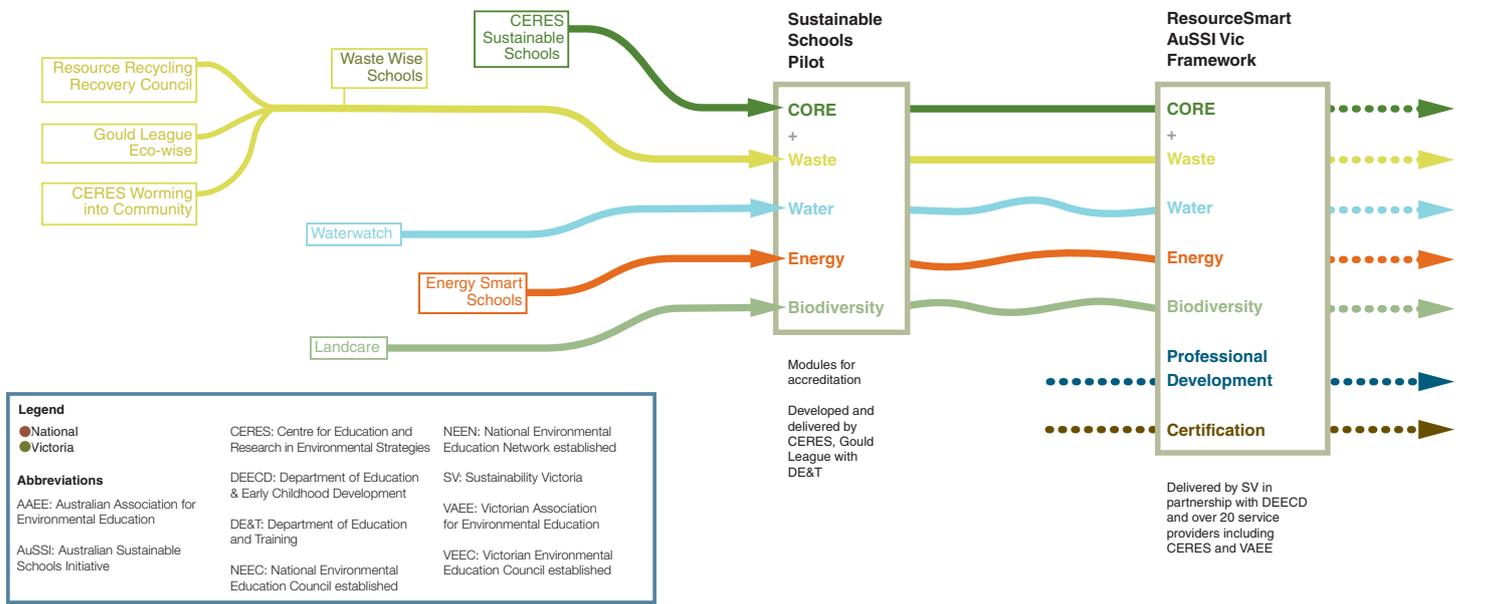
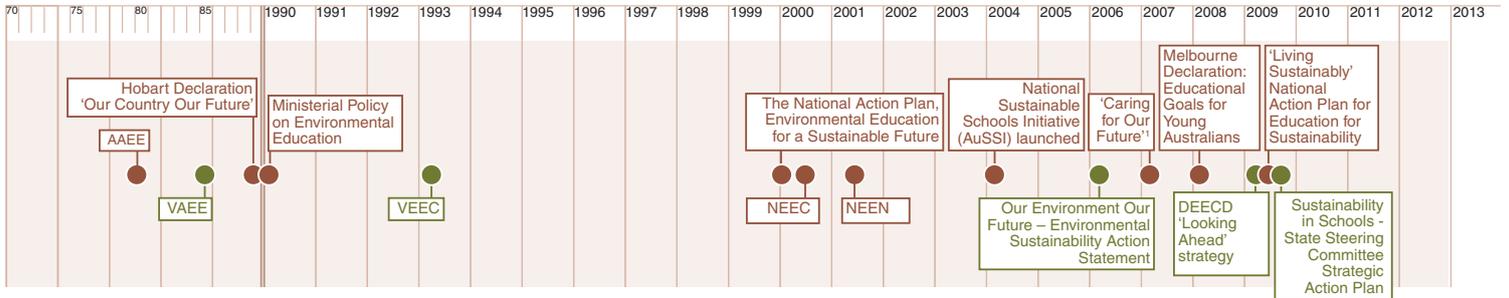
Western Australia is in at the early stages of developing the *AuSSI-WA*.

AuSSI-WA has developed a social handprint as well and an ecological footprint model. Together these tools address 12 action areas to move towards a more sustainable future. Like South Australia, WA accepts that there is no single, uniform pathway to addressing sustainability concerns. Instead of an accreditation process, a collaborative approach has been adopted. At this stage, *AuSSI-WA* is focusing on the social aspects of sustainability such as professional development and behaviour change in order to engage the whole of school community.

⁸⁰The State Government of South Australian, Department of Environment and Heritage and the Department of Education and Children's Services, (2007), 'Education for Sustainability: A Guide to Becoming a Sustainable School', accessed 30/10/09, http://www.decs.sa.gov.au/efs/files/pages/EfS_guide_Interactive.pdf, p 6.

Appendix Seven

Diagram 3:
Development of sustainable schools



Appendix Eight:

ResourceSmart AuSSI Vic framework modules

In Victoria, the *ResourceSmart AuSSI Vic* framework integrates environmental education in both practice and curriculum. Students and their school communities both ‘do’ and ‘learn’ from the one exercise.

Core Module

The core module includes the development of a school environmental management plan for the school. This involves setting goals and targets for the whole school. This module is subject to the greatest take-up by schools and it most closely resembles a formal, but non-certified, environmental management system.

The core module advances government policy processes by promoting *Education for Sustainability*. This module is often referred to as the planning and strategic process for the whole school approach to sustainability. Typically this module includes:

- > the collection of baseline data about resource use, using the Schools Environment Tracking System
- > the development of a School Environmental Management Plan
- > the setting of goals and targets for each of the other resource modules
- > the development of an action plan covering school organisation and operations, curriculum and wider school community engagement
- > establishment of a sustainability team
- > preparing a sustainability policy
- > professional learning for teachers
- > a visioning process for school staff, students and active school community participants.

Resource Modules

Four other modules may be adopted in resource management.

These modules consider and address:

Waste: waste or litter minimisation and recycling.

Energy: energy conservation, adoption of renewable energy, air quality monitoring and the reduction in greenhouse gas emissions.

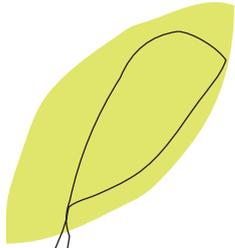
Biodiversity: developing Indigenous gardens that attract native butterflies and birds, developing theme and curriculum based gardens and habitats and developing conservation conscious watering systems.

Water: water conservation and storm water management.



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