

**Improving Environmental  
Performance,  
Preventing Environmental Crime**

# **Improving Environmental Performance, Preventing Environmental Crime**

**Peter Grabosky and Frances Gant**



**Australian Institute of Criminology  
Research and Public Policy Series  
No. 27**

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ISSN 1326–6004

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**National Library of Australia Cataloguing-in-Publication entry**

Grabosky, Peter N. (Peter Nils), 1945– .

Improving environmental performance, preventing environmental crime.

Bibliography.

ISBN 0 642 24164 3.

1. Environmental responsibility—Australia. 2. Offenses against the environment—Australia. 3. Environmental policy—Australia. 4. Environmental law—Australia. 5. Environmental protection—Awards—Australia. I. Gant, Frances. II. Australian Institute of Criminology. III. Title. (Series: Research and public policy series; no. 27).

344.94046

Published by the Australian Institute of Criminology  
GPO Box 2944  
Canberra ACT 2601  
Tel: (02) 6260 9221  
Fax: (02) 6260 9201  
Email: [aicpress@aic.gov.au](mailto:aicpress@aic.gov.au)  
<http://www.aic.gov.au>

Reports in the Research and Public Policy series are refereed.

Artwork by Brown & Co, Canberra

Printed by Elect Printing, Canberra

# Foreword

It has long been recognised that the control of conventional “street crime” requires a great deal more than police, courts, and prisons. Similarly, the effective control of environmental crime requires much more than the detection, prosecution, and punishment of polluters. *Improving Environmental Performance, Preventing Environmental Crime* calls for a more expansive conception of environmental crime control which would harness a wide variety of institutions and influences in furtherance of improved environmental performance. When functioning properly, these institutions can significantly reduce the necessity for environmental enforcement.

This volume will be devoted to introducing four basic strategies for the prevention of environmental harm and provide illustrations for each. The chapters deal with information, self-regulation, commercial influences, and rewards, respectively. Each chapter contains brief summaries of specific products, programs, or initiatives which illustrate the strategies in question. It is recognised that not all of the strategies and programs will be universally appropriate and that their utility might be limited to a given political or environmental context. Environmental policy is a controversial domain and not all of the programs or organisations discussed below have been free of criticism. But it is hoped that the pages which follow will stimulate some creative thinking about the prevention of environmental crime.

This report concludes with a call for a broader view of environmental regulation, and observes that the changing strategic environment of business in Australia and throughout the world now provides unprecedented opportunities for profitable activity in furtherance of environmental crime control.

If one point has become abundantly clear from this research, it is that government alone can not achieve sustainable outcomes. The constraints which confront the contemporary state are very real. In democratic political systems no less than authoritarian ones, the capacity of governments to make everything right is limited.

**Adam Graycar**

**Director, Australian Institute of Criminology**

**June 2000**

# Acknowledgments

Portions of this work are based on the following publications by Peter Grabosky, 1994, "Green Markets: Environmental Regulation by the Private Sector", *Law and Policy*, vol. 16, no. 4, pp. 420–48; 1995, "Using Non-governmental Resources to Foster Regulatory Compliance", *Governance: An International Journal of Policy and Administration*, vol. 8, no. 4, pp. 527–50; 1995, "Regulation by Reward: On the Use of Incentives as Regulatory Instruments", *Law and Policy*, vol. 17, no. 3, pp. 256–81. Both journals are published by Blackwell Publishers.

The authors would like to thank Erik Mather, Portfolio Manager, Australian Eco Share Fund, Westpac Investment Management, for his contribution to the HESTA Eco Pool example, and the National Crime Prevention, Commonwealth Attorney-General's Department, for the financial contribution.

## Disclaimer

Opinions expressed in this work are those of the authors and not necessarily those of any Australian government, company, or non-profit organisation. Examples cited are for illustrative purposes only, and do not imply political or commercial endorsement. The authors may have an interest in some of the companies mentioned in this document, either directly or through membership in superannuation funds.

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# Abbreviations

AEI	Australian Ethical Investment Ltd
AECI	African Explosives and Chemical Industries
AMEEF	Australian Minerals and Energy Environment Foundation
ANZECC	The Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ATON	Australian Tourism Operators Network
ATCV	Australian Trust for Conservation Volunteers
AWWA	Australian Water and Wastewater Association
BBC	British Broadcasting Corporation
BHP	Broken Hill Pty Ltd
BMP	Best Management Practice
CASE	International Centre for Application of Solar Energy
CCF	Civil Contractors Federation
CDS	Continuous Deflection Separation
CRDC	Cotton Research and Development Corporation
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEPS	Defence Environmental Policy Statement
EAA	Ecotourism Association of Australia
EEEE	European Eco-Efficiency Initiative
EDF	Environmental Defense Fund
EIP	Environmental Improvement Plan
EPE	European Partners for the Environment
FSC	Forest Stewardship Council
HEC	Hydro Electric Corporation
HESTA	Health Employee Superannuation Trust of Australia
HSI	Humane Society International
INPO	Institute of Nuclear Power Operations
IPA	Indigenous Protected Area
IPPIC	International Paint and Printing Ink Council
LBL	Load Based Licensing
LPG	Liquid Petroleum Gas
MPC	Mineral Process Control
NEAP	National Ecotourism Accreditation Program
OECD	Organisation for Economic Co-operation and Development

PACIA	Plastic And Chemicals Industries Association
QFVG	Queensland Fruit and Vegetable Growers
RMIT	Royal Melbourne Institute of Technology
SEDA	Sustainable Energy Development Authority
SEIA	Sustainable Energy Industry Association
TVE	Television Trust for the Environment
UNEP	United Nations Environment Program
UNIDO	United Nations Industrial Development Organisation
UPS	United Parcel Service
WBCSD	World Business Council for Sustainable Development
WIM	Westpac Investment Management
WRAP	Waste Reduction Action Plan
WRAPR	Waste Reduction Accreditation Program for Retailers
WMC	Western Mining Corporation Ltd
WWF	World Wide Fund for Nature

# Executive Summary

It has long been recognised that the control of conventional “street crime” requires a great deal more than police, courts, and prisons. Effective crime prevention depends on a wide array of additional institutions, including the family, the school, the church, and the neighbourhood, as well as other strategies such as situational crime prevention and crime prevention through environmental design.

Similarly, the effective control of environmental crime requires much more than the detection, prosecution, and punishment of polluters. *Improving Environmental Performance, Preventing Environmental Crime* calls for a more expansive conception of environmental crime control which would harness a wide variety of institutions and influences in furtherance of improved environmental performance. When functioning properly, these institutions can significantly reduce the necessity for environmental enforcement.

Following an introductory chapter which presents a wider conception of environmental crime prevention, subsequent chapters introduce specific strategies for the improvement of environmental performance. These include:

- The provision of information about environmental risks, responsibilities, and opportunities.
- Self-regulatory systems for environmental compliance.
- Commercial influences and products which are environmentally preferable.
- Incentives for exemplary environmental performance.
- Hybrid solutions combining two or more of the above.

Subsequent chapters contain brief summaries of specific products, programs, or initiatives which illustrate the strategies in question. The volume concludes with a call for a broader view of environmental regulation, and observes that the changing strategic environment of business in Australia and throughout the world now provides unprecedented opportunities for profitable activity in furtherance of environmental crime control.



# Introduction

Criminologists for quite some time have recognised that the criminal justice system is a very imperfect instrument of social control. They remind us that there are other more effective institutions of social control within society, such as the family, the educational system, and the community, which constitute the first line of defence against crime. Indeed, the problem of crime, and the role of the criminal justice system, is likely to intensify when the influence of these other, more fundamental, social institutions weaken. As Donald Black (1976) so elegantly put it, law varies inversely with other forms of social control.

Environmental crime deserves similar analysis. Much contemporary discourse about environmental illegality tends to dwell upon the magnitude of harm which it imposes and the official response (or lack thereof) to its perpetrators. While not dismissing the importance, indeed the necessity, of the state responding to environmental crime as *crime*, this volume calls for a more expansive conception of environmental crime control, which would harness a variety of institutions and influences. Just as the effective control of conventional street crime requires something more than increased risk of arrest, conviction, and imprisonment, so too does the control of environmental crime require a more comprehensive approach, based on a wider array of institutions.

The significance of this more expansive view of environmental crime control is reinforced by the fundamental changes which began to occur in Western democracies about two decades ago with the Thatcher/Reagan ascendancies. Since that time, pressures on governments to reduce public expenditures and to foster a climate favourable to business have become dominant facts of political life. They are destined to remain so, well into the twenty-first century, as global markets and competitive pressures militate against direct governmental intervention in business activities. In this sense, the high water mark of command and control regulation by government agencies would appear to have passed. Somewhat ironically, in parallel to

these trends, one sees increasing demands upon and expectations of government to provide a cleaner environment.

Although governments today may be less inclined to intervene directly in the affairs of business, they appear quite willing to co-opt non-governmental actors in furtherance of regulatory objectives. Alternatively, they may create circumstances in which market forces, or the natural inclinations of non-governmental institutions, perform quasi-regulatory functions. This volume will deal with some of these alternative or complementary means of preventing harm to the environment.

This line of argument has been popularised in the very influential North American book *Reinventing Government* (Osborne and Gaebler 1992). Recognising that government as traditionally configured has its constraints and limitations, the authors advocate that governments adopt the role of facilitator and broker, rather than that of commander. They suggest that governments “steer” rather than “row”, and that they structure the marketplace so that naturally occurring private activity may assist in furthering public policy objectives. Osborne and Gaebler use the term “leverage” to refer to this approach (1992, p. 280).

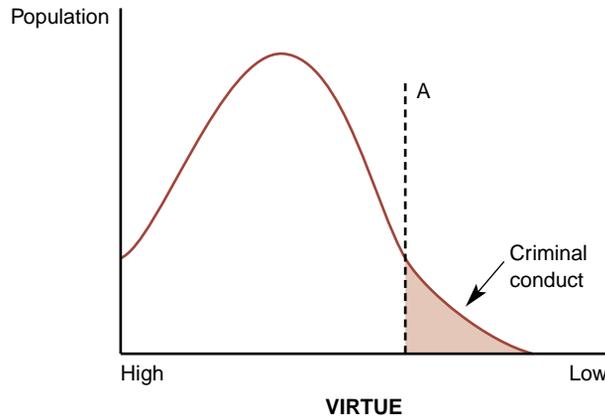
What we may be witnessing is not so much an abdication of government responsibility for the control of environmental crime, but rather a transformation of social control. Ironically, what we are experiencing could well entail less government regulation, resulting in the improved environmental performance of business and of individual citizens.

The chapters which follow will discuss some of the basic elements of a wider conception of environmental crime control. To continue the analogy with street crime, we seek to identify non-governmental institutions which are in a position to contribute to the prevention of offences against the environment. In so doing, we must bear in mind that no one institution, governmental or private, will provide an ironclad bulwark against environmental illegality. Rather, it is a combination of complementary institutions and instruments which will provide the best solution.

To illustrate graphically what we are seeking to achieve, consider Figure 1, which represents the environmental performance of society’s members. The horizontal axis represents a continuum from environmental stewardship to the point of saintliness at one end, to wanton destructiveness at the other. The vertical dimension indicates the number of individuals and institutions situated at any given point on our “continuum of virtue”. There are a few

saints amongst us, many who do the right thing most of the time, and a few sinners. Precisely what constitutes an environmental crime is a political and social construct, which can vary over time and space. In Figure 1, the threshold of criminality is depicted by Line “A”. More permissive environmental laws would see Line “A” shift to the right; more restrictive laws would see it shift to the left.

**Figure 1: Environmental Performance**



The authors are indebted to Professor James Hackler as the source of this conceptual diagram.

The goal of the activities described in this volume is to move the overall distribution of society’s environmental performance toward the more virtuous end of the continuum. If the strategies we propose operate effectively, the overall environmental performance of individuals and institutions in society will improve. There may still be a recalcitrant few who will persist in remaining on the wrong side of the law, but quite a few individuals and corporate citizens will be “saved from sin” so to speak.

This does not imply that the future holds no role for traditional enforcement. There will always be those who, because of malice or ignorance, will persist in doing the wrong thing. The state owes it to the law-abiding to control the lawless. But because it is costly and its legal outcomes are often uncertain, regulatory enforcement is best reserved for those circumstances where all else fails.

The complexity of public policy, of organisational behaviour, and of human nature are such that the prevention of environmental crime will usually require not a “magic bullet”, but rather a combination of policy tools.

We shall deal with only some of them here. We acknowledge that, for the time being at least, a degree of state presence will usually be necessary to ensure positive environmental outcomes. In the event that preventive measures fail, wanton and wilful environmental damage may still necessitate enforcement actions by government. And a spectre of coercive governmental action may be required in some settings to activate or energise private initiatives. But among the most productive investments which governments can make are those of a non-coercive nature, which help foster a climate conducive to the effective functioning of non-governmental institutions. Our primary emphasis here will be on the activity of non-state actors, specifically private enterprise and non-government organisations.

The bulk of this volume will be devoted to introducing four basic strategies for the prevention of environmental harm and provide illustrations for each.

The four basic institutions discussed below include *information, self-regulatory activity* by individual companies and industry associations, *commercial influences* and market forces, and the use of *incentives and inducements* for environmentally beneficial conduct.

Our work will be descriptive, rather than critical or analytical. The goal is to raise awareness of the promise of environmental crime prevention and to identify some of the more noteworthy examples which have been put into practice in Australia and around the world. We do not intend to provide an encyclopedic overview of environmental programs or an exhaustive directory of agencies or institutions, but rather a selective overview of initiatives in these four areas. Nor is this a comprehensive overview of regulatory strategies. We recognise that not all of the strategies and programs that we discuss will be universally appropriate and that their utility might be limited to a given political or environmental context. Environmental policy is a controversial domain and not all of the programs or organisations discussed below have been free of criticism. But we do hope that the pages which follow will stimulate some creative thinking about the prevention of environmental crime.

A wide cross-section of Australian industry associations, environmental interest groups, and government agencies were contacted and invited to nominate outstanding examples of any of the four basic strategies. We have endeavoured to incorporate at least one of the examples called to our attention by each respondent. In addition, we engaged in complementary

research of a unilateral nature, seeking to identify additional exemplary programs from Australia and overseas.

The four basic strategies are not always mutually exclusive. Awards may serve not only as inducements to exemplary environmental conduct, but as a means of informing a wider audience that improved environmental performance is within their capacity to achieve. Incentives can be proffered for the development of self-regulatory systems. Information is the foundation for markets, and thus the lubricant of environmentally preferable commerce. Conversely, the marketing of environmental products can also serve to inform a wider public. Self-regulatory initiatives can entail the exercise of environmentally preferable purchasing power “upstream” or “downstream” in a supply chain.

The following four chapters deal with information, self-regulation, commercial influences, and rewards, respectively. The chapter on “Hybrid Strategies” deals with programs which combine elements of two or more strategies, or involve collaboration of two or more sectors—public, private, or non-profit. The concluding chapter makes a few observations about the changing strategic context of business in the new millennium, and how government and non-profit institutions can combine with entrepreneurialism to minimise environmental harm.

# Information

Much environmental harm arises not from malice, but rather from ignorance of the environmental impact of one's actions or of one's obligations under the law. Knowledge is an essential ingredient of attitudes toward the environment. It is also fundamental to an individual's understanding of legal requirements and their rationale. Ultimately, it is essential to the legitimacy of those requirements and to compliance with them.

Information can contribute to a basic understanding of scientific facts about the environment and the environmental impact of human activity. It may be sufficient simply to inform an individual of the injurious consequences of a course of action for that person to desist. This is particularly apposite in the case of smaller businesses that may lack information and resources. In some multicultural societies, simple communication in plain English or in the more commonly spoken foreign languages may be most appropriate. For example, the Massachusetts Department of Environmental Protection was able to improve regulatory compliance among dry cleaners by developing a single reader-friendly document and translating it into Korean, Spanish, and Portuguese, three of the most common languages of the proprietors of dry cleaning shops (Hausker 1999).

In some cases, information may alert the recipient to an environmentally beneficial course of action which is in his or her self-interest. A farmer who applies superfluous amounts of agricultural chemicals with consequent adverse impact on a nearby waterway will benefit from knowing that reduced chemical input would reduce environmental harm with no sacrifice to crop yield.

Non-compliance with environmental laws often flows from the belief that the laws in question are unnecessary or unreasonable. Basic information about legal requirements and the reasons why they exist can lower resistance to regulation and make it easier for an individual or a company to do the right thing.

Information will also usually be required for the effective implementation of self-regulatory regimes. Without adequate preparation, members of an organisation may be forgiven for asking “Why are we doing this?”. But information which effectively communicates the logic of a program, its scientific and economic justification, and the commitment of top management, may well be essential for the proper functioning of a self-regulatory regime.

Information is also the basis for markets. Basic knowledge about environmental processes and risks can help foster demand for environmentally preferable products. Information about the risks arising from the excessive use of agricultural chemicals will make low input alternatives that much more attractive.

The literature on social psychology suggests that we more readily accept the views of those whom we like and respect (French and Raven 1959; Kelman 1958, 1961). Thus, recognition of the importance of environmental stewardship, and acceptance of means to achieve it, will be more likely when the recipient of the “message” can identify with the source. This could be when the source and the target are similar, as from one’s peer group. Alternatively, a respected or revered person, or simply a source regarded by the target as likeable, will have more persuasive influence.

Notwithstanding the amount of wisdom which may reside within an organisation such as Greenpeace, a farmer is more likely to appreciate the virtues of preserving remnant vegetation, and to act accordingly, when these virtues are extolled by other farmers or by an institution with which the farmer can identify. Similarly, business executives are more likely to attend to messages encouraging the exercise of corporate social responsibility and improved environmental performance that come from fellow executives than from government sources.

It follows, therefore, that information about the environment, and about individuals’ responsibilities to the environment, should be tailored to the intended recipient. Overall, environmental information will originate from diverse sources, reflecting the pluralism of the community. The following examples describe information programs implemented by industry, non-governmental organisations, and by government agencies.

## Western Mining Corporation (WMC) Environmental Progress Report

### Source

WMC Ltd

### Aim

The WMC environmental progress report documents the company's environmental performance.

### Key Stakeholders

The report is distributed to WMC employees, shareholders, and the wider community.

### Overview

WMC Ltd was established in 1933 as an Australian gold exploration and mining company. The company is now an international minerals producer with interests in Australia, North and South America, Europe, and Asia. As part of WMC's commitment to responsible environmental management and public accountability, the company produces annual environmental progress reports.

The WMC environmental progress reports are published in 11 different languages and aim to facilitate a number of objectives, which include to:

- Explain the successes and failures of corporate environmental performance.
- Increase the involvement of business units and sites in the public reporting process.
- Encourage change in management and workforce behaviour to improve environmental performance.
- Develop community confidence in the company's ability to protect the environment.
- Demonstrate the company's merit in access to land and resources.

Incorporated in the WMC environmental progress reports are site reports, which outline the environmental impacts of respective company operations. The reports also detail progress in implementing environmental management systems, reaching environmental targets and developing environmental standards.

WMC prepares their reports in consultation with an external advisory group. The data and content of the report is also externally verified and has been done so by PricewaterhouseCoopers for the last 3 years. In 1998, WMC Ltd won the Environment Excellence Award for Company Environmental Reporting from the Australian Minerals and Energy Environment Foundation (AMEEF).

### Environmental Benefits

- Environmental reporting.
- Increases corporate and community awareness of environmental impact.

### Application to Other Industries

All.

### Further Information

Western Mining Corporation Ltd

Level 16, IBM Centre

60 City Road

Southbank VIC 3006

Telephone: (03) 9685 6101

Internet: [www.wmc.com.au/envrep98/](http://www.wmc.com.au/envrep98/)

## Broken Hill Pty Ltd (BHP) Environment and Community Report

### Source

BHP

### Aim

The report outlines the successes and failures of BHP's environmental and social performance.

### Key Stakeholders

The report is intended for shareholders, employees, customers, and the wider community.

### Overview

The BHP environment and community report is part of the company's commitment to improve environmental and social responsibility. The 1999 report is the third annual report produced by BHP and the first to incorporate environmental and community reporting. Three core sections make up the report—BHP in the community, environmental management, and environmental performance—and case studies are used to highlight significant events including the closure of Newcastle steelworks (Australia) and BHP's involvement in the Sydney 2000 Olympics.

BHP's report also acts as a forum to introduce future directions in the company's operations. Over the next 12 months, BHP will implement environmental management standards, develop environmental goals and targets, undertake advanced implementation of their community relations policy, and introduce company awards for environmental and community excellence. Financial information, environmental data, and company awards and recognition are some of the appendices that also feature in the report. All data used in the environmental and community report were verified by an external auditor.

### Environmental Benefits

Greater corporate and community awareness of environmental impact.

### Application to Other Industries

All.

### Further Information

BHP Pty Ltd Head Office

GPO Box 86A

Melbourne VIC 3001

Telephone: (03) 9609 2354

Internet: [www.bhp.com.au/eac/env99/default.htm](http://www.bhp.com.au/eac/env99/default.htm)

## **Sustainable Energy Industry Association (SEIA) Energy Smart Expo**

### **Source**

SEIA (Australia) Ltd

### **Aim**

The SEIA Energy Smart Expo promotes innovation in sustainable energy technology, products, and services.

### **Key Stakeholders**

The Energy Smart Expo is open to government, business, industry, and the general public.

### **Overview**

As the peak body for Australia's sustainable energy industry, SEIA aims to promote this country's involvement in research, manufacture, and use of energy efficient and renewable energy products and services. The Energy Smart Expo represents part of this commitment as a forum for government, business, and industry to discuss latest technologies.

Held annually, the Energy Smart Expo is a national conference and exhibition that showcases developments in the sustainable energy industry. The expo is promoted as an opportunity for participants to see exhibits of environmental technology, hear case studies of sustainable energy at work, and meet providers and consumers of energy efficient and renewable products and services. The general public is also invited to visit the exhibit hall.

### **Environmental Benefits**

- Energy efficiency.
- Renewable energies.

### **Application to Other Industries**

All.

### **Further Information**

Sustainable Energy Industry Association (Australia) Ltd

PO Box 411

Dickson ACT 2602

Telephone: (02) 6230 0271

Internet: [www.seia.com.au](http://www.seia.com.au)

## Sustainable Energy Development Authority (SEDA) Energy Smart Allies Directory

### Source

SEDA

### Aim

The Energy Smart Allies Directory aims to link consumers and suppliers of energy efficient products and services.

### Key Stakeholders

The Energy Smart Allies Directory is available to energy efficient consumers, suppliers, and businesses.

### Overview

The Energy Smart Allies Directory is a useful tool for consumers wanting to find suppliers of sustainable energy technologies and services. Currently, over 270 suppliers have joined the program including air conditioning, lighting, and renewable energy specialists, engineering consultants, and architects. Suppliers who wish to be included in the reference guide must complete an application kit. Once listed, SEDA provides suppliers with regular information on current events and issues within the industry. The Allies directory is available on line ([www.energysmartallies.com/index.html](http://www.energysmartallies.com/index.html)) and is also distributed by SEDA.

Other directories of environmentally responsible products and services include Earthlink ([www.earthlink.com.au](http://www.earthlink.com.au)) and Green Pages ([www.eco-web.com/](http://www.eco-web.com/)). Earthlink is an Australian directory of goods and services, and Green Pages is a global directory of environmental products and services from over 90 countries.

### Environmental Benefits

- Reduction in greenhouse gases.
- Increased community awareness.

### Application to Other Industries

All.

### Further Information

Sustainable Energy Development Authority  
PO Box N442  
Grosvenor Place  
NSW 1220  
Telephone: (02) 9291 5260  
Internet: [www.seda.nsw.gov.au](http://www.seda.nsw.gov.au)

## World Wide Fund for Nature (WWF) Living Planet Campaign

### Source

WWF

### Aim

The WWF Living Planet Campaign aims to encourage responsible use of the planet and promote conservation of the natural environment.

### Key Stakeholders

The WWF Living Planet Campaign targets government, business, industry, and the public.

### Overview

The Living Planet Campaign is an initiative of the WWF and encourages conservation of our natural resources. Four initiatives support the program, two of which rely on shared information to advance environmental protection and action.

The WWF Earth Report series was introduced to television audiences in 1998. The half-hour documentary reports seek to communicate the “state of the planet” to viewers. Television Trust for the Environment (TVE) produced the series, which was broadcasted by the British Broadcasting Corporation (BBC) to over 150 million homes worldwide. Issues covered in the first Earth Report series included human rights, health, wildlife, and the environment. A second Earth Report series is scheduled for January 2000. The series format will not only include documentaries and global reports but also sustainable development solutions.

A second feature of the Living Planet Campaign is the Living Planet report. First produced in 1998 by WWF, this report also seeks to communicate the “state of the planet” by quantifying an answer to the question, “how fast is nature disappearing from earth”. A key inclusion in the report is the Living Planet index, which attempts to measure the impact of human activity on our natural ecosystems, specifically the world’s forests, fresh water, and marine environments (the first Living Planet report recorded a 30 per cent reduction in the world’s natural wealth from 1970–1995). Also included in the Living Planet report is a review of the six causes of global environmental change, data on respective national and global uses of resources, and recommendations for government, business and the public on how to contribute to environmental conservation and protection.

### Environmental Benefits

- Increased community awareness.
- Pressure on countries to enhance environmental management systems.

### Application to Other Industries

All.

### Further Information

World Wide Fund for Nature

Internet: [www.panda.org/livingplanet/](http://www.panda.org/livingplanet/)

## The National Recycling Report

### Source

Planet Ark

### Aim

The National Recycling report provides an overview of recycling services, facilities, and programs across Australia.

### Key Stakeholders

The report is available to government, business, and the wider community.

### Overview

Tennis player Pat Cash and charity campaigner, John Dee founded Planet Ark in 1991. Essentially, Planet Ark attempts to educate the public about reducing the impact of their activities on the environment. The organisation recruits Australian and international celebrities to help promote many of its environmental campaigns and over 95 per cent of Planet Ark's funding is donated through corporate sponsorship.

Planet Ark's 1999 National Recycling report is a resource guide detailing the recycling activities and achievements of the Australian community. Launched during Planet Ark's National Recycling Week, the report provides a review of government, business, industry and community recycling activities, facts and information about recycling in Australia, guides to recycling, and case studies highlighting exemplary recycling initiatives. Aside from the extensive information provided in the report, Planet Ark hopes it will inspire the wider community to implement recycling initiatives in their daily activities and help protect the environment.

### Environmental Benefits

Increases community awareness.

### Application to Other Industries

All.

### Further Information

Planet Ark

Internet: [www.planetark.org/recycling/](http://www.planetark.org/recycling/)

## National Water Week

### Source

Australian state and territory governments

### Aim

National Water Week encourages the community to take care of water resources.

### Key Stakeholders

National Water Week is designed for everyone—business, industry, and the community. It is an initiative of all Australian state, territory, and federal government agencies who have responsibility for water resource management under the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ).

### Overview

National Water Week is an education and community awareness campaign designed to encourage the community to protect and conserve our water resources. Held annually in the third week of October, Water Week is driven by three objectives:

- Protect water quality by minimising the impact of pollutants.
- Conserve water by efficient use.
- Get involved in water and catchment issues.

In 1999, the theme for Water Week was “Water for Life”.

Respective state and territory government agencies coordinate a range of activities to promote and encourage participation in Water Week. The activities generally focus on educating the public about water efficiency, especially in the household and garden. Types of activities organised include seminars and conferences, school activities, product displays, media announcements, participation in government and community initiatives, and outdoor environmental activities.

In New South Wales, the Department of Land and Water Conservation also prepares a resource kit for primary and secondary school teachers. The kits are designed to assist teachers prepare and structure classroom sessions for students based on water conservation and protection.

### Environmental Benefits

Increased community awareness.

### Application to Other Industries

All.

### Further Information

Department of Agriculture, Forestry and Fisheries—Australia

Competitiveness and Sustainability Group

GPO Box 858

Canberra ACT 2601

Telephone: (02) 6272 4892 (Water Week Contact Officer)

Internet: [www.daffa.gov.au/csg/nrmp/water.html](http://www.daffa.gov.au/csg/nrmp/water.html) and [www.dpie.gov.au/nww99](http://www.dpie.gov.au/nww99)

## Taking Care of Business: Environment Management Handbook for Small Business

### Source

Northern Territory Department of Lands, Planning and the Environment

### Aim

Taking Care of Business was developed to assist business implement improved environmental management in the workplace.

### Key Stakeholders

The handbook targets small to medium business. It was produced by the Department of Lands, Planning and the Environment in partnership with the Australian Chamber of Manufactures and the Northern Territory Chamber of Commerce and Industry.

### Overview

Taking Care of Business is a resource for Northern Territory businesses that addresses improving environmental performance to bring about environmental and economic change. It focuses on the development of cleaner production in the workplace and the adoption of environmentally responsible practices and processes.

The manual uses a series of work sheets to introduce users to environmental management plans. Businesses are encouraged to conduct self-assessments—identify problems, set self-improvement targets, and monitor progress—in the following six areas:

- Waste management.
- Energy management.
- Water management.
- Storage and handling.
- Responding to environmental incidents.
- Responding to community concerns.

Taking Care of Business also includes contacts for business, waste management case studies, and an overview of relevant Northern Territory legislation and government responsibilities.

Since the handbook was prepared, the Northern Territory Government has funded the Northern Territory Chamber of Commerce and Industry to employ an environmental liaison officer. The liaison officer will support business to use the handbook, conduct free environmental audits, provide confidential advice, and document success stories.

### Environmental Benefits

Greater industry awareness of environmental impact.

### Application to Other Industries

All.

### Further Information

Department of Lands, Planning and the Environment  
Environment and Heritage Division

GPO Box 1680

Darwin NT 0801

Telephone: (08) 8924 4020

Internet: [www.lpe.nt.gov.au/home.htm](http://www.lpe.nt.gov.au/home.htm)

## Small Business Pollution Prevention Workshops

### Source

Environmental Protection Agency—South Australia

### Aim

The Small Business Pollution Prevention Workshops aim to increase the business community's awareness of the impact of their activity on the environment.

### Key Stakeholders

The workshops are open to invited small to medium businesses. The Environmental Protection Agency, a division of the Department of Environment, Heritage and Aboriginal Affairs, manages the program.

### Overview

The Small Business Pollution Prevention Workshops aim to educate small business about the impact of their activity on the environment. The workshops also highlight the environmental and economic benefits that can arise from implementing environmentally responsible practices in the workplace. A number of topics are covered in the sessions, which are run by the Environmental Protection Agency in partnership with local councils and Catchment Management Water Boards. These include: understanding pollutants and their impacts, identification of work practices that affect the environment, identification of cost effective ways of reducing environmental impacts, and benefits to business from pollution prevention.

Businesses in designated suburbs are invited to participate in the workshops which are held weekly over 3 weeks. By inviting businesses on a "suburb-to-suburb" basis, the Environmental Protection Agency encourages a neighbourhood approach to pollution prevention.

Since the full-time program began in 1998, 117 businesses from various industries including the motor, chemical, steel, and food industries, have attended the workshops. Preliminary results indicate that of the 67 businesses that have been followed up, 50 business have reported environmental and financial benefits as a result of implementing environmentally preferred practices.

### Environmental Benefits

- Cleaner production in small business.
- Increased community awareness.

### Application to Other Industries

All.

### Further Information

Environmental Protection Agency—South Australia  
Department for Environment, Heritage and Aboriginal Affairs  
GPO Box 2607  
Adelaide SA 5001  
Telephone: (08) 8204 2004  
Internet: [www.dehaa.sa.gov.au/epa/epa.html](http://www.dehaa.sa.gov.au/epa/epa.html)

## Profiting from Environmental Improvement in Business

### Source

Environment Australia

### Aim

*Profiting from Environmental Improvement in Business* is an information booklet which aims to assist business implement cleaner production and eco-efficiency initiatives in their workplace.

### Key Stakeholders

The booklet predominantly targets medium to large businesses but can be adapted to suit other businesses.

### Overview

*Profiting from Environmental Improvement in Business* is an eco-efficiency information kit for Australian industry. The booklet aims to assist business implement environmental initiatives that will not only minimise the impact of their activity on the environment but also improve their economic performance.

Produced by the Commonwealth Government, this publication introduces business to eco-efficiency and cleaner production as tools of environmental management. Eco-efficiency is about green business—improving economic performance through enhanced environmental management and resource efficiency. Cleaner production, on the other hand, includes the processes used to improve environmental performance. Environmental auditing, life cycle assessment, environmental reporting, and design for the environment are some of the strategies outlined in this information kit. Also included are exemplary case studies and useful contacts for Australian businesses.

### Environmental Benefits

- Improved resource efficiency.
- Minimises impact on the environment.

### Application to Other Industries

All.

### Further Information

Community Information Unit

Environment Australia

GPO Box 787

Canberra ACT 2601

Telephone: (02) 6274 1221

Internet: [www.environment.gov.au/epg/environet/eecp/pubs/profitng.pdf](http://www.environment.gov.au/epg/environet/eecp/pubs/profitng.pdf)

## EnviroNET Australia

### Source

Environment Australia

### Aim

EnviroNET is a network of environmental databases on the Internet.

### Key Stakeholders

EnviroNET can be accessed by everyone via the Internet. For those who do not have access to the Internet, an Australia-wide phone service has been set up by the Commonwealth Government.

### Overview

The Commonwealth Government launched EnviroNET in 1995 as a means to maximise access to environmental information. EnviroNET is essentially a network of six databases, which provide information on environmental education, research and development, technology, and industry expertise. It includes the following databases:

- Environmental industry expertise database: provides information on over 1000 private and public organisations that supply environmental products, services, and technologies.
- Pollution prevention research and development database: lists research and development being undertaken in waste management and pollution control. The database includes over 240 Australian organisations and over 500 research and development projects.
- Environmental education database: lists environmental education and training courses available at Australian educational institutions.
- Technology case studies directory: highlights case studies that demonstrate best practice in providing technological solutions to environmental problems.
- Cleaner production case studies directory: highlights case studies from over 50 small to large businesses that have implemented cleaner production to minimise the impact of their activity on the environment.
- Hazardous waste treatment technologies directory: provides information on technology used to treat hazardous scheduled wastes in Australia.

EnviroNET has been visited over 20,000 times a month. The Environment Protection Group of Environment Australia maintains the site and information is collected in partnership with industry groups and organisations. Also included on the site is a directory of links to other environmental sites. For interested consumers, businesses, and industries who do not have access to the Internet, a freecall number has been set up in Australia.

### Environmental Benefits

- Access to information.
- Increased community awareness.

### Application to Other Industries

All.

### Further Information

EnviroNET Australia Project Officer  
Environment Protection Group  
Environment Australia  
GPO Box 787

Canberra ACT 2601

Telephone: (02) 6274 1781

Internet: [www.environment.gov.au/epg/environet/environet.html](http://www.environment.gov.au/epg/environet/environet.html)

Telephone: In Brisbane: (07) 3229 8522 or 1800 500 299 (free call, Australia)

## Earth Carers

### Source

Department of Environment Protection—Western Australia

### Aim

Earth Carers is a community awareness program that seeks to educate the public about waste management issues and bring about behavioural change.

### Key Stakeholders

The volunteer program is open to everyone.

### Overview

Earth Carers is an initiative of the Department of Environment, Western Australia, which encourages people to “live with less waste”. The program, currently being trialed by two Perth metropolitan councils, aims to equip volunteer participants with the necessary knowledge and skills that will allow them to share their knowledge with the wider community and encourage behavioural change. The program predominantly focuses on minimisation of domestic waste. Issues covered in the program include composting, worm farming, recycling, purchasing decisions, and minimising waste production.

A core thrust of the program is moving beyond raising community awareness to facilitating changes in people’s attitudes, motivations and, ultimately, behaviour. To that end, there are two parts to the program—developing Earth Carer’s skills and knowledge, and supporting Earth Carers in their respective communities. Local councils support each Earth Carer so they in turn can assist the wider community in minimising waste and protecting the environment. Examples of supported Earth Carer initiatives include community doorknocking, an environment hotline, demonstrations at local fairs and shows, talking to neighbours and community groups, and visiting schools.

Currently about 20 Earth Carers are involved in the trial program. The Department of Environment plans to follow up these participants and monitor waste minimisation behaviours of respective communities.

### Environmental Benefits

- Increased community awareness.
- Waste minimisation.

### Application to Other Industries

Government, industry, and community groups.

### Further Information

Department of Environmental Protection—Western Australia  
 PO Box K822  
 Perth WA 6842  
 Telephone: (08) 9222 7022  
 Internet: [www.environ.wa.gov.au/support/earthcarers/](http://www.environ.wa.gov.au/support/earthcarers/)

## State of Environment Report Queensland 1999

### Source

Queensland Department of Environment

### Aim

The *State of the Environment Report Queensland 1999* provides an assessment of Queensland's natural environment.

### Key Stakeholders

The report provides valuable information to government, business, industry, community groups, and the general public.

### Overview

The *State of the Environment Report Queensland 1999* provides an overview of the condition of Queensland's environment. It is the first comprehensive assessment of the state's natural resources and has been established to facilitate enhanced environmental management.

The report summarises the condition of eight environmental boundaries— atmosphere, land, inland waters, coastal zones, energy resources, biodiversity, human settlements, and cultural heritage—using a reporting framework developed by the Organisation for Economic Co-operation and Development (OECD). Respective environmental zones are examined by detailing:

- The pressures acting on the environment.
- The state of the environment.
- The responses developed to reduce these pressures and improve the environment.

Queensland's state of the environment report is a response to regulatory requirements under the Environmental Protection Act 1994 and the Coastal Management and Protection Act 1995, and is required at least every 4 years. As an information resource, it is considered an important mechanism for improved environmental management and ecological sustainable development.

Other Australian states and territories, as well as most OECD member countries also produce state of the environment reports.

### Environmental Benefits

Increased community awareness.

### Application to Other Industries

All.

### Further Information

Naturally Queensland Information Centre

Environmental Protection Agency

PO Box 155

Brisbane QLD 4002

Telephone: (07) 3227 8186

Internet: [www.env.qld.gov.au/environment/science/environment/welcome.html](http://www.env.qld.gov.au/environment/science/environment/welcome.html)

# Self-Regulation

Some years ago, one of the authors was told by a worldly regulatory inspector “If self-regulation worked, Moses would have come down from Mt Sinai with the ‘Ten Guidelines’” (Grabosky and Braithwaite 1986, p. 184). Whilst it may not be the solution to all environmental problems, self-regulatory initiatives by individual companies and by industry associations have made significant contributions to the prevention of environmental harm. Effective programs of self-regulation can reduce a company’s compliance costs and relieve a good deal of pressure which might otherwise be borne by government regulatory authorities. This chapter will discuss the rationale of self-regulation and present a few illustrative examples from Australia and overseas.

Perhaps the mildest form of self-regulation involves the development and promulgation of company policy or of industry codes of practice. More rigorous self-regulatory regimes involve policing of these codes, with sanctions attached. At the extreme, they could involve expulsion of the violator, either from the company in question or from the industry.

Self-regulation has the potential to be the most efficient and effective avenue to improved environmental performance. A company, after all, usually commands the most extensive knowledge of its own operations. In many cases, it is ideally suited to developing its own solutions and to observing its own performance. “Bottom-up” policy development can be preferable to top-down, because it enables those at the coal-face to develop a sense of ownership of and commitment to the policy in question. When the regime of self-regulation is developed from within the company or the company’s industry association, it is likely to be accorded greater respect. Moreover, it enables the mobilisation of peer group pressure in furtherance of the policy.

Braithwaite and Fisse (1987) identify the essential requirements of a successful company self-regulatory system. These include:

- Top management commitment to the system and backing for compliance personnel.

- Clearly defined lines of accountability within the organisation.
- Careful monitoring of the organisation's performance.
- Prompt communication of compliance problems to those responsible for rectification.
- Appropriate training and supervision by front-line supervisors.

Increasingly, resource-strapped governments are offering industry the alternative of self-certification: the responsibility of attesting that one is in compliance, with the responsibility for voluntary disclosure in the event of a violation. For more information, refer to:

<http://es.epa.gov/program/exec/environ.html#blocks>.

Certification can be done in-house or by professional private inspectors.

Industry-wide self-regulatory regimes are much easier to design and implement when the industry itself is well organised and is comprised of large, highly professional companies. Compare market gardeners with the Institute of Nuclear Power Operators in the United States, for example. The Three Mile Island disaster in 1979 intensified public concerns in the United States about the viability of the nuclear power industry. Already subject to the strict regulatory regime of the Nuclear Regulatory Commission, the industry realised that it would have to go one step further in order to maintain its legitimacy. Realising that one more lapse by any of its members could severely jeopardise the entire industry, the Institute of Nuclear Power Operations (INPO) was established.

The Institute, whose members are drawn from all United States utilities with nuclear power plants in operation or under construction, conducts a regular program of evaluation inspection and peer review. Mishaps involving nuclear facilities are subject to analysis and lessons learned are disseminated throughout the industry. Under-performers are confronted by their peers at annual meetings. By promoting the exchange of information and good practices among all its members, and benchmarking against international best practice, the Institute has developed and monitors a set of ten performance indicators (<http://www.uic.com.au/nip12.htm>, visited 7 November 1999; Rees 1994).

In recent years, considerable effort has been expended in Australia and overseas in the design and implementation of self-regulation systems. Among these is the Standard on Compliance Programs (AS 3906) published

by Standards Australia in 1998, as well as the ISO 14000 series of international standards for environmental management.

Another virtue of self-regulatory initiatives is their capacity to facilitate the development of internal commitment within an organisation. Commitment by members of an association will be that much greater when they are all in the same boat, so to speak. Rees (1994) shows how cohesion in the nuclear power industry is that much greater because a serious mistake by one operator reflects adversely on the entire industry. He refers to them as “Hostages of Each Other”.

Australian producers may also find themselves in what Rees describes as a community of shared fate. The Australian beef industry faces an increasingly competitive export market. Under these circumstances, one mishap by just one producer can jeopardise an entire market and the viability of an entire industry. During the 1970s, agriculture authorities in the United States detected kangaroo and horsemeat in a consignment of Australian beef and suspended further imports until they were confident that integrity of Australian export meat had been restored (Grabosky 1989). More recently, the detection of traces of an agricultural chemical in Australian export beef triggered the development of a quality control program.

Cattlecare, an initiative of the Cattle Council of Australia with the support of the Meat Research Corporation, and the Australian Department of Primary Industries and Energy, is a comprehensive quality assurance scheme linked with international standards (ISO 9002). Accreditation is based on a program of effective management through better record keeping; the safe, responsible use of chemicals, and an auditing process.

Rarely does self-regulation arise spontaneously. Rather, self-regulation tends usually to emerge in response to a threat or to exhortation from a respected peer. The Australian Greenhouse Challenge Program was developed as an alternative to a carbon tax. The World Business Council for Sustainable Development (WBCSD) holds out the model of “The Responsible Company”. Amongst the features of such a business are:

“It devises management systems that help it measure, monitor, and continually improve its performance in contributing to the goal of sustainable development. It conforms to best practice in its sector and reports regularly on its social and environmental performance.”

<http://194.209.71.99/Speech/s25.htm>

In addition to governments and industry peers, there are other commercial actors who may encourage and, indeed, require self-regulation. These will be discussed in the following chapter.

## Coatings Care®

### Source

The National Paint and Coatings Association (United States)

### Aim

Coatings Care® assists the coatings industry to integrate health, safety, and environment management activities into their daily business processes.

### Key Stakeholders

The National Paint and Coatings Association (United States) developed Coatings Care® in 1996. Since then, the International Paint and Printing Ink Council (IPPIC) has assisted in implementing the program in IPPIC member countries, which includes Australia, Canada, Europe, Japan, and the United States.

### Overview

Coatings Care® is a voluntary program that involves participant adherence to the program's policy statement and the implementation of four codes of management. Each company that participates in Coatings Care® agrees to commit to the following policy principles:

- Promote efforts to protect employees, customers, the public, and the environment.
- Provide relevant information on the safe use and disposal of industry products to customers and make such information available to the public upon request.
- Make protection of health, safety, and the environment an early and integral part of the organisational planning process.
- Comply with all legal requirements that affect operations and products.
- Be responsive to community concerns.
- Assist governments in the development of equitable and attainable standards.

Coatings Care® defines specific management practices under four codes of conduct—manufacturing, transportation and distribution, product stewardship, and community responsibility—each addressing health, safety, and environmental considerations for coatings manufacturers. Coatings Care® also provides support materials to assist companies in the development of self-evaluation and improvement processes.

### Environmental Benefits

- Waste reduction/pollution prevention.
- Environmental reporting.
- Best practice in environmental management.
- Community awareness.

### Application to Other Industries

Coatings Care® supports and complements the chemical industry's Responsible Care Program. Those companies that fulfil a commitment to Responsible Care are acknowledged as having met all the requirements of Coatings Care®.

### Further Information

Australian Paint Manufacturers' Federation Inc

Suite 1201 Level 12

275 Alfred Street

North Sydney NSW 2060

Telephone: (02) 9922 3955 or 1800 807 568 (free call, Australia)

Internet: [www.hartingdale.com.au/~apmf/html/coatings\\_care.html](http://www.hartingdale.com.au/~apmf/html/coatings_care.html)

## **Best Management Practice (BMP) Program and the Good Neighbours Program**

### **Source**

Australian Cotton Industry Council

### **Aim**

The BMP Program encourages cotton farmers to take individual responsibility for environmental protection and to “grow better all the time”. The Good Neighbours Program is the industry’s plan to encourage cotton farmers to adopt BMP and improve community relationships.

### **Key Stakeholders**

The Australian Cotton Industry Council’s BMP Working Group is responsible for administering the BMP and Good Neighbours programs. The working group includes representatives from the Cotton Research and Development Corporation (CRDC), the Australian Cotton Growers Research Association, and the Cooperative Research Centre for Sustainable Cotton Production and Cotton Australia. All Australian cotton farmers are encouraged to adopt the program.

### **Overview**

Launched in 1997, the BMP Program was the result of a research and development program aimed at assisting the cotton industry to minimise the impact of cotton production on the environment. The BMP Program incorporates a number of features including:

- Guidelines on farm design and management, integrated pest management and application of pesticides.
- Practical manuals, best practice booklets, and training workshops for cotton farmers.
- A BMP co-ordinator to oversee the adoption of BMP at the grass-roots level.

The Good Neighbours Program was launched in 1998 and is the cotton industry’s vehicle to encourage all cotton growers to adopt BMP. Essentially, the program seeks to inform the community that each grower is applying best farming practices and is aiming for continuous improvement in cotton production and environmental protection.

The Australian Cotton Industry Council aims to have 60 per cent of Australian cotton farms capable of being audited for adherence to the BMP Program within 3 years and every farm operating according to the principles by 2001. Preliminary research conducted by the CRDC found that of 50 farmers who were surveyed, 64 per cent have made changes to their farming operations, particularly in the areas of chemical storage and handling, water management, and neighbourhood consultation. The majority of respondents (96 per cent) also acknowledged the importance of the BMP Program for the cotton industry.

### **Environmental Benefits**

Enhanced environmental management of cotton industry practices.

### **Application to Other Industries**

Farming and agriculture.

### **Further Information**

Cotton Australia

Head Office, Sydney

Level 2, 490 Crown Street

Surry Hills NSW 2010

Telephone: (02) 9360 8500 or 1800 616 000 (free call, Australia)

Internet: [www.cottonaustralia.com.au/growers/grower\\_frame\\_bmp.html](http://www.cottonaustralia.com.au/growers/grower_frame_bmp.html)

## Code for Environmental Management

### Source

Australian Minerals Industry

### Aim

The Code for Environmental Management provides a framework for the mining industry to achieve excellence in environmental management.

### Key Stakeholders

The code is open to all mining and minerals processing companies.

### Overview

The Australian Minerals Industry Code was launched in 1996. As a self-regulatory initiative, the code provides a framework for participating companies to improve their environmental performance and strengthen relationships with the community. A key requirement of the code is public reporting, which is considered essential for the credibility of the code and for the industry's commitment to community consultation.

The code applies to each phase of mining companies' operations from initial exploration to closure and final rehabilitation. It is supported by nine principles—sustainable development, environmentally responsible culture, community partnerships, risk management, integrated environmental management, performance targets, continual improvement, rehabilitation and decommissioning, and reporting—each with respective systems and practices that facilitate excellence in environmental management. The principles are not prescriptive and act as a guide for companies to implement their own environmental management systems.

Adoption of the industry code is voluntary. Those who wish to participate are required to sign a commitment to continual improvement in environmental performance and produce annual public reports that detail the company's performance and progress in implementing the code. Signatory companies are expected to produce their first public report within 2 years of committing to the code and all companies are to be externally audited for adherence to the code at least every 3 years.

The code for environmental management is a "living document" that will be reviewed and developed in consultation with stakeholders.

### Environmental Benefits

- Enhanced environmental management.
- Reduced impact of activity on environment.
- Increased community awareness.

### Application to Other Industries

All industries can develop and implement codes of environmental management.

### Further Information

Minerals Council of Australia

PO Box 363

Dickson ACT 2602

Telephone: (02) 6279 3600

Internet: [www.minerals.org.au/pages/page6\\_106.asp](http://www.minerals.org.au/pages/page6_106.asp)

## **Farmcare Code of Practice (for sustainable fruit and vegetable production in Queensland)**

### **Source**

Queensland Fruit and Vegetable Growers (QFVG)

### **Aim**

The Farmcare code of practice provides information about minimising the impact of industry activity on the environment.

### **Key Stakeholders**

The Farmcare code applies to fruit and vegetable growers in Queensland.

### **Overview**

The Farmcare code of practice for sustainable fruit and vegetable production in Queensland is a voluntary initiative of QFVG aimed at improving the environmental performance of growers. The code was developed in consultation with the growers and promotes six expected environmental outcomes to encourage farmers to introduce better environmental management practices.

Farmers are urged to take “all reasonable and practical measures” to:

- Conserve the sustainable productive characteristics and quality of the land and its soils.
- Conserve the character and quality of waterways and water.
- Conserve representative native species and ecosystems.
- Minimise the release of contaminants impacting on the air quality of environmentally sensitive places.
- Minimise noise impacting on environmentally sensitive places and sensitive times.
- Manage waste from on-farm activities.

The Farmcare code outlines a range of strategies to assist farmers meet these expected environmental outcomes. Potential environmental harms as well as management options for minimising respective harms are also identified. In addition, the Farmcare code includes a section on integrated crop management, which addresses pest management and chemical use.

### **Environmental Benefits**

Best practice in environmental management.

### **Application to Other Industries**

Farming and agriculture.

### **Further Information**

Queensland Fruit and Vegetable Growers  
PO Box 19  
Brisbane Market QLD 4106

## National Ecotourism Accreditation Program (NEAP)

### Source

NEAP is a joint initiative of Ecotourism Association of Australia (EAA) and the Australian Tourism Operators Network (ATON).

### Aim

The NEAP identifies ecotourism and nature tourism operators in Australia who have demonstrated a commitment to best practice in environmental management and quality experiences.

### Key Stakeholders

The accreditation program is open to tours, attractions, and accommodation.

### Overview

The NEAP is a voluntary program that recognises standards of environmental management in nature tourism and ecotourism. The EAA defines nature tourism as any tourism that occurs in a natural area and meets the standards of environmental sustainability. Ecotourism, on the other hand, is defined as ecologically sustainable tourism that fosters environmental and cultural understanding, appreciation, and conservation.

Under the NEAP, eight core principles determine eligibility for basic accreditation. These include:

- A focus on personal, first-hand experience and appreciation of natural areas.
- Integration of opportunities to understand natural areas into each experience.
- Best practice for ecologically sustainable tourism.
- Proactive contribution to the conservation of natural areas.
- Ongoing constructive contributions to local communities.
- Sensitivity to different cultures, particularly indigenous, seeking to involve and integrate.
- Consistent client satisfaction.
- Accurate marketing that leads to realistic expectations.

Three levels of accreditation are available to applicants—nature tourism, ecotourism, and advanced tourism—with each level incorporating a more stringent set of assessment criteria. NEAP has accredited over 200 nature tourism and ecotourism operators in Australia. All accredited operators are eligible to display respective accreditation logos.

### Environmental Benefits

- Minimal impact to the environment.
- Fosters environmental appreciation and awareness.

### Application to Other Industries

Hospitality and tourism.

### Further Information

Ecotourism Association of Australia  
 GPO Box 268  
 Brisbane QLD 4001  
 Telephone: (07) 3229 5550  
 Internet: [www.ecotourism.org.au](http://www.ecotourism.org.au)

## Clean Up Australia Day

### Source

Clean Up Australia

### Aim

Clean Up Australia Day encourages the community to remove rubbish from nominated sites across the country including beaches, parks, roadsides, rivers, bushlands, and mountains.

### Key Stakeholders

Everyone can participate in Clean Up Australia Day. Clean Up Australia is sponsored by a number of companies who also support the day including NRMA, Collex, McDonald's, Ford Australia, TNT, Qantas, Telstra, Compaq, Renaissance Sydney Hotel, and Sydney Water.

### Overview

Clean Up Australia Day is an annual event that was launched in 1989 by Ian Kiernan, Chairman and Founder of Clean Up Australia. It has become the largest community participation event in the country, attracting over half a million volunteers every year.

Clean Up Australia Day occurs on the first Sunday of March. Participants form into local committees and nominate a site to clean. A volunteer supervisor oversees each committee's activities and all committees receive support materials from Clean Up Australia's National Office.

Clean Up Australia Day has number of objectives:

- To rid our waterways, parklands, and roadsides of unsightly and potentially damaging pollutants.
- To help raise community awareness of the need for positive and practical action to save our environment.
- To assist in the education of the community at large about sound environmental practices—for example, reducing consumption, reusing, and recycling materials.
- To create a community-driven activity in which all Australians can participate.
- To demonstrate to the rest of the world Australia's commitment to positive action and the preservation of the environment.

In 1999, more than 750,000 people participated in the Clean Up Australia Day. Volunteers collected 12,500 tonnes of rubbish and attended to over 8,700 sites across the country. The success of Clean Up Australia and its annual Clean Up Australia Day led to the launch of Clean Up the World in 1993. Over 100 countries currently support the initiative.

### Environmental Benefits

- Waste reduction and removal.
- Community awareness.

### Application to Other Industries

All. The concept can be adapted and applied in people's homes, communities, schools, and businesses as needed.

### Further Information

Clean Up Australia

18 Bridge Road

Glebe NSW 2037

Telephone: (02) 9552 6177

Internet: [www.cleanup.com.au](http://www.cleanup.com.au) and [www.cleanuptheworld.com.au](http://www.cleanuptheworld.com.au)

## Waste Reduction Accreditation Program for Retailers (WRAPR)

### Source

Clean Up Australia

### Aim

WRAPR encourages retailers to reduce the amount of waste going to landfill.

### Key Stakeholders

WRAPR is an initiative of Clean Up Australia. The Federal Government and Coles supermarkets provided funding to start the program which is open to all retailers across Australia.

### Overview

Launched in 1998, WRAPR is a voluntary program designed to encourage retailers to adopt environmentally friendly practices in their daily business operations. To be accredited as a WRAPR partner, retailers sign a letter of agreement and commit to:

- Reduce the amount of plastic bags used by their store.
- Reduce the amount of waste produced by their store.
- Increase recycling, and promote plastic bag recycling by customers.
- Develop initiatives to improve environmental performance.
- Promote awareness amongst staff and customers about sound environmental practices.

Coles supermarket is the first retailer in Australia to implement WRAPR in all of its stores across the country. Building on the company's already established recycling initiatives, Coles supermarkets supports and promotes a number of store initiatives. These include recycling of plastic shopping bags via recycling boxes in all stores, offering alternatives to plastic bags (Envirocare paper bags and cloth/string bags), office and store recycling, and the sale of environmentally friendly products.

### Environmental Benefits

- Reduction in waste going to landfill.
- Promotion of recycling.
- Increased community awareness.

### Application to Other Industries

Retail.

### Further Information

Waste Reduction Accreditation Program for Retailers

Clean Up Australia

18 Bridge Road

Glebe NSW 2037

Telephone: (02) 9552 6177

Internet: [www.cleanup.com.au/wrap.html](http://www.cleanup.com.au/wrap.html)

## Forest Stewardship Council (FSC) Certification Program

### Source

FSC

### Aim

The FSC Certification Program identifies and labels (forest) products that have originated from “environmentally friendly” forests; that is, forests which have been evaluated and certified as being managed to agreed social and environmental principles.

### Key Stakeholders

The FSC evaluates and accredits third party organisations to inspect, certify, and monitor compliant forests. A host of stakeholders benefit from forest certification including consumers, buyers, suppliers, and manufacturers.

### Overview

The FSC was established in 1993 as a response to improving forest conservation and reducing deforestation. Its head office is located in Oaxaca, Mexico and members of the council include various environmental and social groups, forestry groups, organisations, and industries from around the world. The FSC acts as an umbrella organisation for qualified independent certifiers to operate according to FSC forest management guidelines and standards. The FSC does not certify forests themselves; rather, the FSC accredits, manages, and monitors the certifiers.

The FSC Certification Program involves a labelling scheme that seeks to provide consumer information on the history of forest products. It does this via the “chain of custody” process. Through the “chain of custody”, timber products are tracked from the originating forest through all the steps of the production process. Once each step has been confirmed as adhering to FSC environmental and social management standards, the products are eligible to display the FSC Trademark.

### Environmental Benefits

- Forest conservation.
- Reduction in forest degradation.
- Increased community awareness.
- Enhanced environment management practices.
- Environment Incentives.

### Application to Other Industries

Manufacturing and production industries.

### Further Information

Forest Stewardship Council

Internet: <http://www.fscoax.org/index.html>

## European Eco-Efficiency Initiative (EEEI)

### Source

World Business Council for Sustainable Development (WBCSD) and the European Partners for the Environment (EPE)

### Aim

The EEEI aims to introduce eco-efficiency as a leading business concept throughout Europe and integrate it into European Union industrial and economic policies.

### Key Stakeholders

The EEEI applies to the European community—government, business, industry, and non-government organisations.

### Overview

The EEEI is a 2-year project designed to promote eco-efficiency to private and public organisations throughout Europe. In short, eco-efficiency is about green business—incorporating environmental management into daily business operations. It promotes a shift from products to services, encourages green purchasing, and enables sustainable consumption patterns.

The WBCSD highlights the following objectives for companies wanting to become eco-efficient:

- Reduce the material intensity of goods and services.
- Reduce the energy intensity of goods and services.
- Reduce the dispersion of any toxic materials.
- Enhance the recyclability of materials.
- Maximise the sustainable use of renewable resources.
- Extend the durability of products.
- Increase the service intensity of goods and services.

The EEEI supports a multi-stakeholder agenda involving business and government. The initiative will promote and reward best practice, develop monitoring and reporting guidelines, enhance cooperation and dialogue between stakeholders, and implement environmental requirements in policy. The initiative is a move toward sustainable industry development.

### Environmental Benefits

Enhanced environmental management in industry and government.

### Application to Other Industries

All.

### Further Information

European Eco-Efficiency Initiative

Internet: <http://www.wbcscd.ch/eurint/eeei.htm>

## WasteWise Construction Program

### Source

The Australian and New Zealand Environment and Conservation Council (ANZECC)

### Aim

The WasteWise Construction Program aims to reduce the amount of construction waste going to landfill.

### Key Stakeholders

ANZECC developed the WasteWise Construction Program in partnership with phase one participants—Barclay Mowlem, Civil and Civic/Lend Lease Interiors, Fletcher Construction Australia, John Holland, and Multiplex. Phase two of the program is open to all individuals and organisations in the construction industry.

### Overview

The WasteWise Construction Program involves the development of waste reduction and waste management strategies for the construction industry. The program has progressed in two phases. In phase one, five construction companies sought to develop and implement best practice in environmental management. Their aim was to essentially save resources, avoid waste, and increase the reuse and recycling of materials in an effort to protect the environment.

Phase one of the program resulted in a significant reduction of waste going to landfill. The participants achieved this by sending excess materials to recycling facilities and other development/production sites, recycling materials on-site, and working closely with suppliers regarding material arrangements.

The results of phase one led to the development of a waste management framework for others in the industry to follow. This framework has been documented in a handbook ([www.environment.gov.au/epg/wastewise/handbook](http://www.environment.gov.au/epg/wastewise/handbook)).

In phase two of the program, individuals and other organisations in the construction industry are invited to become WasteWise construction partners. Participants sign a voluntary agreement with the Government and commit to the following:

- Conduct waste reduction trials in their operations.
- Develop and adopt best practice waste reduction techniques.
- Share techniques with other operators in the industry.
- Identify legal barriers to carrying out best practice waste reduction.
- Become involved in the development of industry and nation wide waste reduction arrangements.

### Environmental Benefits

- Reduction in waste going to landfill.
- Enhanced environmental management.
- Reuse and recycling of materials.

### Application to Other Industries

Building and construction.

### Further Information

Waste Minimisation Section

Environment Australia

John Gorton Building

GPO Box 787

Canberra ACT 2601

Telephone: (02) 6274 1700

Internet: [www.environment.gov.au/epg/wastewise/](http://www.environment.gov.au/epg/wastewise/)

## Defence Environment Policy Statement (DEPS)

### Source

Commonwealth Department of Defence

### Aim

The DEPS provides a framework for the Department to develop and implement improved environmental management and minimise the impact of their activity on the environment.

### Key Stakeholders

The Defence Estate Organisation developed the DEPS, which guides the activity of Australian defence personnel.

### Overview

The DEPS was developed as a coordinated and consistent approach to environmental management. As the largest holder of Commonwealth owned land (approximately 3 million hectares), the Department sought to develop a strategy that facilitates environmental protection as well as environmentally and socially responsible behaviour on the part of Defence personnel.

The DEPS outlines 14 environmental goals to guide improved environmental management. These include waste minimisation, resource conservation, environmental impact assessments, community consultation, and appropriate environmental training and education. To achieve these goals, a number of core strategies have been identified:

- Development of an environmental management system.
- Development and implementation of environmental management plans.
- Development of instructions on environmental management.
- Development of environmental management guides for major defence exercises.
- Establishment of a defence environmental management committee.
- Establishment of a defence environmental panel.
- Management of acquisition and procurement processes.

The Department of Defence has yet to implement all of the identified strategies but progress is underway. It is expected that with advanced implementation of the policy, the Department will not only minimise the impact of its activity on the environment but also strengthen community relations and lift its corporate image as an environmentally responsible organisation.

### Environmental Benefits

Enhanced environmental management.

### Application to Other Industries

Government and industry.

### Further Information

Department of Defence

Russell Offices

Canberra ACT 2600

Telephone: (02) 6265 9111

Internet: [www.dod.gov.au](http://www.dod.gov.au)

Source: Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies (Draft Report).

Internet: [www.pc.gov.au/inquiry/esd/draftrep/index.html](http://www.pc.gov.au/inquiry/esd/draftrep/index.html)

# Commercial Influences

Environmental harm is traditionally invoked as an example of market failure. While this may still be the case in some settings, market forces have begun to contribute significantly to positive environmental outcomes. This chapter explores the positive environmental impact of commercial activity. Some commercial actors, and the environmentally beneficial influence which they exert upon and through markets, have already demonstrated a positive effect on environmental quality, as well as on their own “bottom line”. Their potential future contributions and profits are even greater.

In some settings, the influence of market forces in furtherance of environmental protection can exceed that wielded by government regulators. The following pages describe and explain some of the considerable opportunities which now exist for those of entrepreneurial inclination to prevent environmental harm and to profit as a result.

In the words of a former British Environment Secretary “Those businesses that recognise these realities and respond to them will survive and prosper in the cleaner and greener markets of the future. Those that do not will find themselves lagging behind in the battle for global markets” (Howard 1992).

Market opportunities for environmental protection reside in six categories:

- “Environmentally benign” products which appeal to consumer preferences.
- “End-of-pipe” pollution abatement technology.
- Process modification approaches, which achieve greater efficiencies in production by conserving raw materials and energy and by minimising waste.
- Buyer/supplier influences.
- Institutional investors.
- Environmental services.

## Environmentally Benign Products Which Appeal to Consumer Preferences

Market opportunities can be created by emerging consumer preferences. Growing public sensitivity to environmental issues is reflected in consumer behaviour. Consumers who are environmentally aware are inclined to purchase products which they perceive to be environmentally appropriate and favour products of manufacturers who have otherwise demonstrated concern for the environment. Companies which are in a position to demonstrate their credibility as environmentally responsible corporate citizens, and thereby to benefit from consumer preferences, will thus enjoy a competitive advantage (Stewart 1992). Indeed, consumer preferences may be more exacting than regulatory requirements. In the words of one Swedish pulp and paper operator, "It would be easy if we only had to cope with the regulators: It is the consumer's pressure that challenges us most" (Beaucamp and Girgensohn 1992, p. 24). Substantial public relations and marketing advantages can flow from a legitimately earned reputation as an environmentally responsible company. Companies like The Body Shop and Sainsbury's trade on a green image.

## "End-of-pipe" Pollution Abatement Technology

Environmental concerns have given rise to entire new industries, each with significant market opportunities. The main types of pollution abatement product are water and effluent treatment, waste management, air quality control, land reclamation, and noise reduction.

Growing public sensitivity to the environment, and the regulatory responses which they have inspired, can trigger innovation, and thereby produce a competitive advantage to the innovator (Porter 1990, pp. 585–88; Braithwaite 1993). It is by no means coincidental that the world's leading exporters of pollution control products are those OECD countries with the most stringent environmental regulations; Japan leads in air pollution control, Germany in water pollution abatement technology, The Netherlands in soil remediation, and the United States in the management of toxic waste (OECD 1992, p. 19).

## Process Modification Technologies Which Conserve Raw Materials and Energy and Minimise Waste

Market opportunities are shifting from “end-of-pipe” abatement technologies to manufacturing process technologies. The design of production systems which are both environmentally friendly and more efficient will generate even greater competitive advantage. Integrated technologies for feedstock and process modifications, which combine low energy consumption with low emissions, are the most desirable. The emphasis of such an approach is on pollution prevention through production efficiency, rather than abatement. This industry will develop and exploit opportunities in energy conservation and in environmentally appropriate materials, and production processes. The company which can claim to be first with the greenest manufacturing technology will be ahead of the market. The term “eco-efficiency” is used to describe this strategy.

### *Renewable Energy Systems*

A number of energy technologies exist as alternatives to fossil fuels. Some are already commercially viable, albeit on a small scale. Others have considerable potential which could be realised when technological developments permit.

The most common technology is solar power. Solar collectors for water heaters have become a common feature on the roofs of Australian houses. Telstra Australia has been using solar photovoltaic technology to power remote area telephone systems for nearly two decades. Prototype motor vehicles powered by solar energy have crossed the Australian continent; further refinements in the technology of collection and storage will extend the potential for solar energy considerably.

Whilst hydro-electric power generation on a massive scale tends to require a degree of environmental devastation, less intrusive technologies of micro-hydroelectric power generation entail no such cost. Small generators may be constructed on the banks of rapidly flowing streams and the resulting power may be sufficient to support a small village. Such technology already exists, with considerable potential application in developing nations.

The windmill is a common feature of Australian rural landscapes. But the potential for wind energy extends well beyond pumping water. Wind energy

technology has developed to the extent that it complements conventional electric power generation in some locations.

In addition to the above, new technologies are being developed such as biomass and wave energy systems for power generation.

## Supply Chain Scrutiny of Suppliers and Buyers

Large retailers are in a position to register their product and process preferences with suppliers, and the awesome purchasing power which large retailers command often carries considerable influence. The influence of the retail sector in driving innovation is widely recognised (Porter 1990, pp. 502, 523). Suppliers' practices can bear upon a retailer's public image, and buyers are increasingly sensitive to the risk of being tainted by a supplier's questionable environmental performance. To this end, buyers are increasingly scrutinising products from a "cradle to grave" perspective, noting such considerations as energy efficiency in manufacture, minimisation, and responsible disposal of waste, economical use of materials in packaging, and recyclability of product (Stuart 1992).

In 1990, McDonald's Restaurants began a program to purchase \$100 million worth of products made from recycled materials each year. As one environmental consultant remarked "When McDonald's says "jump", five hundred suppliers ask "how high?" (Earle 1996). Another firm in the United Kingdom requires every supplier to have a company environmental policy, affirmed by an audit (Stuart 1992). In addition, it has developed a comprehensive questionnaire to obtain information from prospective suppliers. Successful suppliers are required to sign codes of conduct and to manage their activity in accordance with specified principles. Non-compliance may lead to the buyer obtaining a new source of supply.

### *Institutional Investors*

A company's environmental performance is increasingly regarded as an indicator of business health. It is now generally recognised that good environmental management reflects good management in general. To the extent that this perception is shared by financial markets, pressure on companies to improve corporate environmental citizenship will be that much greater.

Recent years have seen the emergence of specialised environmentally conscious investment funds (Smith 1990, pp. 175–76). Such green institutional investors avoid companies and industries with poor environmental reputations and specialise in environmentally reputable companies. Beyond the influence of specialised “green funds”, the potential influence of large institutional investors in this regard can be substantial.

### ***Banking and Insurance Companies as Co-producers of Regulation***

In addition to their activities as institutional investors, banks and insurance companies are in a position to exercise considerable influence over their clients. Lenders and insurers now recognise the risk to their own commercial well being posed by questionable environmental practices on the part of a borrower or policyholder. Beyond the lender’s obvious interest in the commercial viability of the borrower, banks must now be concerned about the environmental risks posed by any assets which they might hold as security for a loan. In the event of foreclosure, banks could end up owning a liability rather than an asset. The pressures which the banking and insurance industries can exert in furtherance of environmental citizenship can be considerable. Schmidheiny (1992, pp. 64–65) predicts that an environmental audit report is likely to become an integral part of a loan application, and that companies with an unfavourable record of environmental compliance “will find it increasingly difficult and expensive to get insured”.

## **The Environmental Services Industry**

The OECD predicts that the market for environmental services will exceed that for equipment in the years ahead, and that the environmental services industry, which delivers such auxiliary products as environmental monitoring, auditing, risk management and product testing, will become one of the growth industries of the future (OECD 1992, p. 14). One of the more dynamic new industries is the provision of engineering services to assist in the selection and implementation of the improved process technologies referred to above.

As governments withdraw from a direct regulatory role, they have begun to rely increasingly on the independent certification of regulatory compliance by third parties. The classic model for this strategy is the requirement that the financial accounts of public companies be audited on a regular basis by formally accredited professionals. Other forms of certification, which if they

existed at all had been the exclusive province of public agencies, have now become candidates for private provision. Environmental audits by accredited auditing firms may be required by law in some jurisdictions. Shapiro (1987, p. 205) refers to “private social control entrepreneurs for hire”.

Members of certain professions, in the course of delivering service to their clients, are in a position to significantly improve the client’s environmental performance. At the very least, because of their strategic situation and unique knowledge, some professionals are often ideally situated to prevent, detect, and disclose non-compliance on the part of their clients. Not incidentally, the services provided often result in significant cost reductions and an improved bottom line for their clients.

## *Environmentally Benign Products*

### **Controlled Lighting System (ECS)**

#### **Source**

Energy Conservation Systems

#### **Aim**

The controlled lighting system is an energy efficient system that uses dual-function sensors to detect and activate appropriate levels of light.

#### **Key Stakeholders**

The lighting system was developed by ECS. Energetics Pty Ltd and Energy Efficiency Victoria have both installed the system.

#### **Overview**

The ECS lighting system is the first of its kind in Australia, it replaces the use of old fluorescent lights with dual-function light level and movement sensor luminaires. The intelligent system is made up of luminaires fitted with mirror reflectors and comprising twin new generation T5 fluorescent lamps driven by high frequency, dimmable electronic ballasts. The light level sensors ensure that light output decreases when ambient light levels increase. The movement sensor, on the other hand, ensures that only those lights that are required by occupancy are activated. Each luminaire can be controlled individually or as a group.

Energetics has recorded an 85 per cent reduction in lighting costs since installing the transportable energy efficient system. Other benefits arising from the system include: reduced air-conditioning load, promotion of modern technologies and energy efficiency, improved lighting quality, improved colour rendition, improved working environment, improved productivity, and maintenance savings.

#### **Environmental Benefits**

Energy efficiency.

#### **Application to Other Industries**

The lighting system is transferable to other industries, organisations, and businesses.

#### **Further Information**

Energy Conservation Systems Pty Ltd

Suite 10, Level 1, 19–23 Bridge Street

Pymble NSW 2073

Telephone: (03) 9983 1144

Energetics Pty Ltd

Level 6 144 Pacific Highway

North Sydney NSW 2060

Telephone: (02) 9929 3911

Internet: [http://www.caddet-ee.org/nl\\_html/991\\_07.htm](http://www.caddet-ee.org/nl_html/991_07.htm)

## Omnipol

### Source

Omnipol—Advanced Plastic Recycling

### Aim

Omnipol recycles all post industrial and post domestic plastic waste in a range of useful products.

### Key Stakeholders

Local governments, industry, and waste management facilities can benefit from Omnipol recycling plants.

### Overview

Omnipol products are manufactured from domestic and industrial waste. The first Omnipol recycling plant was developed in 1996 as an initiative of David Horne, and is able to recycle all plastic types using a simple continuous process.

The recycling process involves three steps: granulation/shedding of plastic waste, processing of plastic into a plyable material, and extruding plastic into product moulds. This process is able to produce up to 500 kilograms of plastic per hour. It is a relatively low capital investment, offering a clean and efficient system that can be incorporated into recycling facilities or plastic manufacturing plants.

Products produced by Omnipol include railway sleepers, manhole covers, board walk decking, agriculture fence posts, aquaculture posts, pipeline supports, and vineyard fence posts. The products are characterised by flexible strength, minimal UV weathering, no toxic leaching, and are not subject to degradation from pests, water, or salt.

The Omnipol recycling plant is located at Gillman, Adelaide. Two other Omnipol recycling plants (Elizabeth and Port Augusta) are expected to be operational in South Australia soon.

### Environmental Benefits

- Reduction in waste going to landfill.
- Recycle of waste products.

### Application to Other Industries

All.

### Further Information

Omnipol  
102 Tynte Street  
North Adelaide SA 5006  
Telephone: (08) 8267 4990  
Internet: [www.omnipol.hm/](http://www.omnipol.hm/)

## *“End-of-Pipe” Pollution Abatement Technology*

### **DTOX™**

#### **Source**

Mineral Process Control (MPC)

#### **Aim**

DTOX™ removes cyanide and heavy metals from water and soils.

#### **Key Stakeholders**

MPC supplies DTOX™.

#### **Overview**

MPC is a Western Australian company that sells new technologies for the mining and environmental/waste management industries. As a strategy to neutralise cyanide and remove heavy metals from water, MPC markets DTOX™.

DTOX™ is a solution used to treat industrial wastewater and in-situ ground water and soils. For heavy metals, DTOX™ works by transforming metal ions in the water into a solid compound. For cyanide, DTOX™ works by converting it into a non-hazardous product—thiocyanate. DTOX™ does not produce any poisonous gases. It precipitates heavy metals as insoluble sulphide minerals that can either be recovered or safely discharged into the environment. DTOX™ is successful at removing numerous heavy metals from water including chromium, copper, silver, lead, cadmium, mercury, nickel, zinc, arsenic, and mercury.

DTOX™ is used nationally and internationally. It has been used extensively in commercial assay laboratories, at timber mills, waste management companies, and mine sites. DTOX™ can be incorporated into existing treatment facilities with minimal costs.

#### **Environmental Benefits**

Enhanced waste and water management.

#### **Application to Other Industries**

Mining, manufacture, production, and processing industries.

#### **Further Information**

Minerals Process Control

33 Bishop Street

Jolimont WA 6014

Telephone: (08) 9284 9331

Internet: [www.ca.com.au/mpc](http://www.ca.com.au/mpc)

## Continuous Deflection Separation (CDS) Units

### Source

CDS Technologies Ltd

### Aim

Continuous deflection separation units separate gross solids from stormwater.

### Key Stakeholders

The systems can be installed into stormwater and sewage systems as well as food manufacturing industries.

### Overview

Continuous deflection separation units are an initiative of CDS Technologies, which design, manufacture, and install the systems. The units are designed to prevent pollution and maximise environmental protection by removing gross solids from stormwater before the water enters natural waterways. The technology, which is the world's first non-mechanical, non-blocking screening system, has also been applied to gross sewage solids and food manufacturing plants.

CDS units work by controlling the flow of water to facilitate natural separation of solids. The technology prevents waste from building on the screen and blocking water flow and also directs solid pollutants to a lower catchment chamber. The system is an effective means of trapping industrial, commercial, and domestic waste and has proven to be 95 per cent effective.

CDS units can be installed in existing underground stormwater draining systems. The pollution prevention systems have been used by a number of local governments around Australia and have also been installed at the Sydney 2000 Olympic site. It is estimated that by 2005, the current CDS unit installations will have collectively prevented 130,000 tonnes of waste from entering natural waterways.

CDS Technologies markets the systems in Australia, America, and New Zealand under respective subsidiary companies. In 1999, the company was awarded the Victorian Engineering Excellence Award for its sewer overflow product, the Gross Solids Separator.

### Environmental Benefits

Pollution prevention.

### Application to Other Industries

Government, waste and water management industries.

### Further Information

Continuous Deflection Separation Pty Ltd

Corporate Headquarters

1140 Nepean Highway

Mornington VIC 3931

Telephone: (03) 5977 0305

Internet: [www.cdstech.com.au/](http://www.cdstech.com.au/)

## Taronga Zoo Wastewater Treatment and Reuse Plant

### Source

Taronga Zoo and Clean Up Australia

### Aim

The Wastewater and Treatment Reuse Plant enables Taronga Zoo to recycle its own generated wastewater.

### Key Stakeholders

Taronga Zoo's Wastewater Treatment and Reuse Plant is part of the Clean Up Australia 2001 program which aims to identify and develop long-term solutions to environmental programs. The project was a coordinated project that involved partnerships between numerous government and corporate bodies, some of which included the New South Wales Government, Environmental Protection Agency (New South Wales), ANI-Kruger, Sydney Water, Memtec, James Hardie Pipelines and Walker Constructions.

### Overview

The Taronga Zoo Wastewater Treatment and Reuse Plant biologically treats, disinfects, and recycles all of the zoo's wastewater and first flush stormwater. The recycled water is then used to hose down animal enclosures, fill exhibit and animal moats, flush toilets, and irrigate gardens. A recycled water supply pipe has also been installed around the zoo to separate recycled water from the fresh water. Excess water is either stored at Taronga Zoo or discharged after being biologically treated.

The treatment facility removes Taronga Zoo as a source of pollution to Sydney Harbour. The project, which is a world first for zoos, took 3 years to complete and will save Taronga Zoo \$70,000 per year.

### Environmental Benefits

- Recycling wastewater.
- Reduction in water pollution.

### Application to Other Industries

Tourism.

### Further Information

Taronga Zoo

Telephone: (02) 9969 2777

Internet: [www.zoo.nsw.gov.au/taronga/water-treatment-tzoo.htm](http://www.zoo.nsw.gov.au/taronga/water-treatment-tzoo.htm)

Clean Up Australia

18 Bridge Road

Glebe NSW 2037

Telephone: (02) 9552 6177

Internet: [www.cleanup.com.au](http://www.cleanup.com.au)

## Process Modification Technologies

### Natural Gas Cogeneration System

#### Source

The Gas Company and Adelaide Malting Pty Ltd

#### Aim

Adelaide Malting use natural-gas cogeneration as an alternative to electricity powered malt drying technology.

#### Key Stakeholders

The Gas Company, based in Adelaide, developed the cogeneration system and Adelaide Malting installed the system.

#### Overview

Adelaide Malting produces barley malt for the brewing industry. As part of the Coopers Brewery Group, it has an annual turnover of \$20–25 million.

Adelaide Malting sought to replace electricity as its power source in the malting process. There are three stages in this process—steeping, germination, and kilning. During the kilning stage, fans blow 70–80°C air to remove water from the wet grain. Before the installation of the cogeneration system, the air is heated by a natural gas burner system and blown using three 70kW electric fans. Adelaide Malting moved to using cogeneration to drive the fans and partly heat the air.

The cogeneration system uses a gas-powered engine fitted with heat recovery to directly drive a single large fan, replacing the three electric fans. It reduces the maximum electrical demand of the site by 210kW and increases the processing capacity by 20 per cent. The system recovers almost all of the energy input to the system, and the overall efficiency of the plant is 90 per cent.

The new cogeneration system is expected to save Adelaide Malting \$100,000 per year.

#### Environmental Benefits

Energy efficiency.

#### Application to Other Industries

Processing and manufacture industries.

#### Further Information

Managing Director  
Adelaide Malting Pty Ltd  
30 Cardiff Court  
Cavan SA 5094  
Telephone: (08) 8349 6155  
Internet: [www.environment.gov.au/epg/environet/eecp/case\\_studies/adelaide.htm](http://www.environment.gov.au/epg/environet/eecp/case_studies/adelaide.htm)

## Couran Cove Eco-resort

### Source

Integrated Energy Services

### Aim

Couran Cove Eco-resort is one of Australia's most successful eco-tourism resorts. It boasts innovation in construction and development, education and environmental management to minimise the impact of their activity on the environment.

### Key Stakeholders

Couran Cove Eco-resort was developed by Integrated Energy Services.

### Overview

Couran Cove is an off-the-grid 5-star eco-tourism resort that demonstrates excellence in environmental management and sustainability. The resort comprises 567 units, including 300 cabins, heated pools, restaurants, conference and sporting facilities, and an environment research centre.

The development and construction of the site is based on green architecture. Louvred windows, skylights, high ceilings, and screened doors are all features of the resort's "off the ground" buildings which are made of timber. The buildings and surrounding areas are also fitted with energy efficient fixtures including sensed lighting, gas powered or energy efficient appliances, and water efficient fittings (toilets, taps, and showerheads). The resort's hotel rooms use 75 per cent less energy than the average Queensland home and 85 per cent less energy than other island resort accommodation.

The resort uses gas, wind generators, and solar power in its advanced energy system. Liquid Petroleum Gas (LPG) is the predominant source of the resort's energy, which is used throughout the restaurants (ovens, dishwashers, warming trays, and hot water urns) and cabins. As part of the resort's energy management system, guests can track and monitor their energy use via in-house television. Incentives are offered to those who can maintain their energy usage under their daily quota while donations are asked of those who exceed. Couran Cove's advanced energy system is expected to reduce greenhouse gas emissions by 3, 649,000 kilograms of carbon dioxide every year.

Other environmental features of Couran Cove resort include innovative sewage and waste treatment systems, worm farming, recycling initiatives, and environmental education programs.

Couran Cove received an advanced accreditation from the National Eco-tourism Accreditation Program.

### Environmental Benefits

- Excellence in environmental management.
- Increased community awareness.
- Energy efficiency.
- Waste management.

### Application to Other Industries

Tourism.

### Further Information

Couran Cove Resort

P.O Box 224

Runaway Bay QLD 4216

Telephone: (07) 5597 9000

Internet: <http://www.couran-cove.com.au/home.htm>

## Lenthall Street Project

### Source

Randwick City Council

### Aim

The Lenthall Street Project involved the reconstruction of an urban street using recycling materials.

### Key Stakeholders

The project was an initiative of the Randwick City Council. The street is now open to the public.

### Overview

The Lenthall Street Project resulted in the construction of new footpaths, kerb and guttering, parking bays, and pavement using 85 per cent recycled materials. The project was part of the Randwick City Council's 9-year recycling strategy which aims to reduce the amount of waste going to landfill. The project used excavated sand and soil for grass planting and backfilling of draining pipes, crushed excavated concrete for road base material, aggregate and blended recycled sand for the kerb and gutter, and non-structural recycled concrete mix for the footpaths and parking bays.

Randwick City Council's recycling program reuses concrete, sand, and soil to produce material for road construction. The program involves recycling concrete aggregate for roads, excavating sand from storm water retention basins and construction sites, crushing and reusing old concrete, and reusing soil from construction sites for road works, nature strips, and council gardens. It is estimated that 8000 tonnes of aggregate is recycled by Randwick City Council's concrete plant each year, producing an estimated saving of \$1.5m and a 50 per cent reduction in the use of raw materials, depending on the slag used for the aggregate.

### Environmental Benefits

Reduction of waste going to landfill.

### Application to Other Industries

- Federal, state, and local government.
- Building and construction.

### Further Information

Randwick City Council

30 Frances Street, Randwick

Randwick NSW 2031

Telephone: (02) 9399 0999

Internet: [www.dbce.csiro.au/inno-web/0299/recyclestreet.htm](http://www.dbce.csiro.au/inno-web/0299/recyclestreet.htm)

## Rocky Point Sugar Mill

### Source

The Heck Group

### Aim

Rocky Point Sugar Mill aims to produce green electricity by March 2000 by using bagasse as the primary source of energy.

### Key Stakeholders

The owners of the sugar mill, the Heck Group, developed the cogeneration system in partnership with GreenEco (a joint venture company of AUSTA Energy and Energy Equity Corporation Ltd).

### Overview

The Rocky Point Sugar Mill began operation in 1879 and is now the only privately owned sugar mill in Australia. It will also become the only sugar mill in Australia to produce energy all year round with the introduction of a new cogeneration plant.

The cogeneration plant will use bagasse (a by-product of sugar milling) and other biomass material to generate electricity and steam at the mill. Bagasse and other biomass resources are renewable energy sources. By using these resources to generate heat and power, the waste is destroyed and removed, extracting useful energy and displacing the burning of greenhouse gas forming fuels such as coal.

The plant will produce 33MW of electricity, which is enough to power 33,000 households. The mill will consume 5MW of power during the cane crushing season and the remaining energy will be sold to Energex—a Queensland electricity retailer who will make the energy available to consumers via their Earth Choice Program (a green power accredited scheme).

### Environmental Benefits

Energy efficiency.

### Application to Other Industries

Manufacturing, processing, and production.

### Further Information

Rocky Point Sugar Mill  
Mill Road  
Woongoolba QLD 4207  
Telephone: (07) 5546 2422

## Tyre Surface Treatment Technology

### Source

Commonwealth Scientific and Industrial Research Organisation (CSIRO) Building, Construction and Engineering

### Aim

Tyre surface treatment technology enables tyres to be recycled into plastic composites and reduces the amount of rubber going to landfill.

### Key Stakeholders

CSIRO Building, Construction and Engineering developed the modification technology.

### Overview

The CSIRO has developed a patented surface treatment technology for rubber that facilitates the recycling of tyres into a range of useful plastic composites for various industrial applications. The technology works by modifying the outer surface of the crumb rubber. It transforms the material into a reactive ingredient that can then be combined with virgin rubber or polymer materials.

The primary advantage of this technology is the compatibility and capacity of surface treated rubber to bond with continuous phase rubber or polymers. This increases the performance of crumb rubber composites and allows for properties of new composites to be custom-tailored for specific applications.

Tyre surface treatment technology offers new opportunities for recycling rubber. Potential applications for recycled rubber include shoe soles, tyres, automotive components, building and industrial products, and containers for hazardous waste.

### Environmental Benefits

- Recycling material.
- Reduction in waste going to landfill.
- Potential reduction of energy used in manufacturing process.

### Application to Other Industries

Plastic and rubber industries and consumers.

### Further Information

CSIRO Building, Construction and Engineering

Telephone: (03) 9252 6000

Internet: [www.dbce.csiro.au/inno-web/1099/cartyres.htm](http://www.dbce.csiro.au/inno-web/1099/cartyres.htm)

## Waste Reduction Action Plan (WRAP)

### Source

McDonald's

### Aim

The WRAP aims to reduce the amount of waste generated by McDonald's business activities.

### Key Stakeholders

WRAP was developed by the McDonald's and Environmental Defence Fund (EDF) Waste Reduction Taskforce.

### Overview

The McDonald's WRAP was announced in 1991. It provides a framework for the corporation to implement and develop waste management strategies based on the three environmental Rs—reuse, recycle, and reduce. Today, WRAP includes over 100 in-store, distribution and trade waste management initiatives.

Alternatives to McDonald's product packaging is perhaps one of the most visible changes introduced by the corporation since the introduction of WRAP. The company no longer uses polystyrene "clamshell" containers and has progressed to environmentally-preferable paper-based wraps. Other packaging initiatives include reducing the weight and volume of packaging, introducing reusable materials (cups and containers), and using recycled paper (carry bags, trays, napkins, and meal boxes).

In 1990, McDonald's USA made a corporate commitment through its McRecycle Program to spend \$100 million a year on recycled products. In 1997, the company surpassed the \$2 billion mark for purchasing products made from recycled materials.

### Environmental Benefits

Reuse, recycle, and reduction of waste.

### Application to Other Industries

All.

### Further Information

McDonald's USA

Internet: [www.mcdonalds.com/community/environ/info/waste/index.html](http://www.mcdonalds.com/community/environ/info/waste/index.html)

Environmental Defence Fund

McDonald's Waste Reduction Taskforce

Internet: [www.edf.org/pubs/Reports/MCDfinreport.html](http://www.edf.org/pubs/Reports/MCDfinreport.html)

## Berrybank Farm Piggery—Total Waste Management System

### Source

Charles I.F.E. Pty Ltd

### Aim

The total waste management system aims to improve the overall efficiency of the piggery and reduce the impact of its activity on the environment.

### Key Stakeholders

Charles I.F.E. runs Berrybank piggery. Staff, renewable energy consumers, buyers, and suppliers will all benefit from the total waste management system.

### Overview

Berrybank farm houses 15,000 pigs and produces 275,000 litres (average) of sewage per day. As an initiative to improve the overall efficiency of the farm and conserve resources, the company sought to develop a total waste management system. The system was introduced to specifically improve the efficiency of pig feed (50 per cent of which is passed as waste), to reduce pollution, and to conserve water.

The Berrybank total waste management system recovers all waste from pigs and produces electricity from biogas, fertiliser, and flush water. It does this through a seven-stage process that involves continuous waste collection, grit removal, slurry thickening, primary digestion, secondary digestion, biogas purification, and a cogeneration thermic plant. The system currently produces 180kW/hr of electricity for 16 hours per day. The farm uses 60 per cent of this electricity and the remainder is sold to private energy suppliers. All processed water is recycled either as flush water, stored on the site or used to fertilise the land.

Berrybank farm has yielded a total annual saving of \$475,000. The plant collects on a daily basis: 7 tonnes of waste solids at 35 per cent dry matter, 100,000 litres of recyclable water, 100,000 litres of mineralised water, and 1,700 cubic metres of biogas, able to produce 2,900 kilowatts of electricity per day. Benefits arising from the waste management system include a 70 per cent reduction in water usage, improved stock conditions and working conditions for staff, and the elimination of odour.

### Environmental Benefits

- Energy efficiency.
- Reduction in waste and conservation of resources.

### Application to Other Industries

Farming and Agriculture.

### Further Information

Charles I.F.E. Pty Ltd

Berrybank Farm

Windermere

Ballarat VIC 3352

Telephone: (03) 5343 2344

Internet:

[www.environment.gov.au/epg/environet/eecp/case\\_studies/berrybank.html](http://www.environment.gov.au/epg/environet/eecp/case_studies/berrybank.html)

## Huxley Hill Wind Farm

### Source

Hydro Electric Corporation (HEC)

### Aim

The Huxley Hill wind farm produces electricity from renewable energy.

### Key Stakeholders

The wind farm produces electricity for the King Island community.

### Overview

Electricity on King Island, Tasmania, is generated from two sources, a diesel power station and the Huxley Hill wind farm. The wind farm began operating in 1998 and is the second commercial wind farm in Australia. It comprises 3 stall-regulated 250 kilowatts Nordex wind turbine generators, which produces about 20 per cent of the King Island's power needs.

The wind farm is connected to the diesel power station by surface transformers and underground cables. Advanced control systems manage both sites to meet the demand for quality electricity as well as maximise environmental protection and conservation. Huxley Hill wind farm is expected to produce about 25 per cent to 40 per cent of the grid load at respective high and low demands and reduce greenhouse gas emissions by 2,000 tonnes. The site has also been designed to accommodate two more wind turbines as the need arises.

Huxley Hill wind farm is an environmentally preferable source of energy and will save the HEC approximately \$500,000 in diesel generator operating costs.

### Environmental Benefits

Renewable Energy.

### Application to Other Industries

Power producers.

### Further Information

Hydro Electric Corporation

4 Elizabeth Street

Hobart TAS 7001

Telephone: (03) 6237 3400

Internet: [www.hydro.com.au](http://www.hydro.com.au)

or: [www.caddet-ee.org/register/datare/CCR02058.HTM](http://www.caddet-ee.org/register/datare/CCR02058.HTM)

## Supply Chain Scrutiny of Suppliers and Buyers

### The Body Shop

#### Source

The Body Shop

#### Aim

The Body Shop's business practices reflect a corporate commitment to the protection of the environment, human rights, and animal welfare.

#### Key Stakeholders

Anita Roddick opened the first Body Shop in England in 1976. Since then the company has grown to include 1663 stores around the world.

#### Overview

The Body Shop is a cosmetics manufacturer and retailer that attempts to minimise the impact of their activity on the environment. To this end, The Body Shop employs stringent guidelines for company suppliers, including an ingredient purchasing rule and an environment purchasing policy.

The ingredient-purchasing rule attempts to exclude those prospective suppliers who test their products on animals. Each year, The Body Shop sends existing and potential suppliers an ingredient purchasing declaration that must be completed by suppliers to verify their practices and compliance with the policy. Those suppliers who do not return the declaration or demonstrate compliance are excluded as company suppliers until compliance is assured.

The environmental purchasing policy is The Body Shop's product stewardship program. It concerns itself with the sources of raw materials, the ecological credentials of suppliers and the life cycle impact of products and packaging. Included in this policy is an environmental accreditation scheme. This scheme rates potential and existing suppliers against environmental management and auditing, waste management, compliance, and emissions criteria. In addition to this scheme, The Body Shop has also developed guidance notes for The Body Shop operators around the world. These guidelines assist operators to establish and maintain supplier relationships by outlining substances and processes that should be avoided in business practices.

The Body Shop has developed trade links with a number of countries as part of their Community Trade Program. The program assists communities in need by directly sourcing products and materials from these areas. In 1999, The Body Shop purchased £3.6 million worth of raw materials (114 tonnes) and products from 37 community trade suppliers in 21 countries. Trade links have been established in India, Nepal, Bangladesh, Mexico, and Zambia, among other countries, and involve family businesses, small communities, and tribal councils. The Community Trade Program facilitates a number of economic and social benefits for trade communities including health, education and skill development.

#### Environmental Benefits

- Minimise impact of business activity of the environment.
- Enhanced community awareness.
- Influence supplier behaviour.

#### Application to Other Industries

All business can develop purchasing guidelines for potential suppliers.

#### Further Information

The Body Shop

Internet: <http://www.the-body-shop.com/>

Biz/ed: [www.bized.ac.uk/compfact/bodyshop/bsindex.htm](http://www.bized.ac.uk/compfact/bodyshop/bsindex.htm)

## New South Wales Green Power Program

### Source

Sustainable Energy Development Authority (SEDA)

### Aim

The Green Power Program aims to reduce greenhouse emissions by offering electricity consumers power from environmentally-friendly sources.

### Key Stakeholders

The SEDA administers the New South Wales Green Power Program and also accredits private electricity suppliers.

### Overview

The Green Power Program provides electricity consumers with the opportunity to purchase power from renewable energy sources such as wind, solar, and water power. Renewable energy can be purchased from accredited electricity providers and customers are generally required to pay additional costs on their electricity bill to cover the expense. Customers determine the amount of green energy they wish to buy from the national electricity grid. Private suppliers may also sell their energy to the grid from their own renewable sources such as wind from their property.

SEDA is responsible for accrediting suppliers of renewable energy. The Green Power logo is used to promote electricity companies that have agreed to (the “Green Guarantee”):

- Use energy sources that are based primarily on a renewable energy resource, result in greenhouse gas emission reduction and net environmental benefit.
- Source 60 per cent of Green Power from “new” renewable generators (generators commissioned after 1 January 1997).
- Place money earned from selling Green Power into a separate account which is independently audited.
- Use Green Power account funds for the purchase of energy from renewable sources.
- Lead by example by becoming Green Power customers themselves.
- Make publicly available a yearly financial statement on their Green Power Program which clearly identifies how important support is in the fight against greenhouse gas emissions.

Electricity providers across the country have been accredited under the Green Power Program. Energy from renewable sources is offered to consumers under respective state and territory schemes. Internationally, green marketing (selling green power) is popular in many countries including United States, Canada, Germany, Ireland, The Netherlands, Norway, Sweden, and United Kingdom.

### Environmental Benefits

Reduction in greenhouse emissions.

### Application to Other Industries

All.

### Further Information

Sustainable Energy Development Authority

PO Box N442

Grosvenor Place NSW 1220

Telephone: (02) 9291 5260

Internet: [www.seda.nsw.gov.au/greenpower.asp](http://www.seda.nsw.gov.au/greenpower.asp)

## Revolve

### Source

Revolve

### Aim

Revolve aims to reduce the amount of waste going to landfill by recycling material that has been discarded by the public.

### Key Stakeholders

Revolve is a community based organisation that operates at both landfill sites in the Australian Capital Territory (Mugga Lane and Belconnen). It is open to all members of the public.

### Overview

Revolve retrieves and salvages material that has been discarded by the public and sells it back to the public. It was started in 1988 by three people who were concerned about the amount of waste going to landfill. Revolve employees manually retrieve waste material from either the landfill's face or drop-off points outside the site.

Revolve seeks to change community attitudes about waste—"from waste to resources"—supporting the notion that one person's trash is another person's treasure. Revolve usually clean and/or repair the retrieved material before selling it to the public. Money collected from the scheme is used to support and maintain the program.

Also located at the territory's landfill sites are garden waste recyclers. These companies (CorkHill Brothers and Canberra Sand and Gravel) convert uncontaminated garden waste into a range of compost and mulch products, which are also sold back to the public. The public can deliver garden waste including prunings, leaves and grass clippings to designated sites "free of charge".

### Environmental Benefits

- Reduction waste going to landfill.
- Enhanced waste management program.
- Community awareness and education.

### Application to Other Industries

All.

### Further Information

Revolve

Head Office

49 Wentworth Avenue

Kingston ACT 2604

Telephone: (02) 6239 3691

Internet: [www.act.gov.au/nowaste/waste.html](http://www.act.gov.au/nowaste/waste.html)

## *Institutional Investors*

### **Australian Ethical Investment (AEI) Ltd**

#### **Source**

AEI

#### **Aim**

AEI exclusively manages ethical investments. Ethical investment is about investing in companies that not only return competitive financial rewards but also contribute to a sustainable environment and society.

#### **Key Stakeholders**

AEI is located in Canberra and is owned by over 100 shareholders.

#### **Overview**

AEI was established in 1986 and is the largest public ethical investment company in Australia. The company manages four unit trusts, a newly accredited superannuation fund, and has also developed an Australian Ethical Charter. The charter guides the operations of AEI and reinforces their commitment to invest in environmentally and socially responsible companies and avoid unethical investments.

Over \$40 million is managed by AEI in over 75 companies across Australia. Investments are made in small and large organisations including renewable energy, recycling, eco-tourism, waste management, health care, and non-profit organisations.

The four unit trusts managed by AEI have yielded the following financial returns:

- The Australian Ethical Balanced Trust has returned 7.6 per cent per year (compound) over 3 years to 31 December 1998.
- The Australian Ethical Equities Trust has returned 8.3 per cent per year (compound) over 3 years to 31 December 1998.
- The Australian Ethical Income Trust returned 2.4 per cent per year (compound) over the past year to 31 December 1998.
- The Australian Ethical Large Company Share Trust returned 4.3 per cent per year (compound) over the past year to 31 December 1998.

#### **Environmental Benefits**

Supports organisations who demonstrate environmental responsibility.

#### **Application to Other Industries**

Finance.

#### **Further Information**

Australian Ethical Investment Ltd

Canberra Business Centre

Bradfield Street

Downer ACT 2602

Telephone: (02) 6242 1988

Internet: [www.austethical.com.au/](http://www.austethical.com.au/)

## Health Employee Superannuation Trust of Australia (HESTA) Eco Pool

### Source

HESTA Superfund

### Aim

Eco Pool provides members with the opportunity to invest their superannuation in listed Australian companies that demonstrate superior environmental management.

### Key Stakeholders

Eco Pool is available to all HESTA members. HESTA is also a public offer superannuation fund.

### Overview

HESTA is one of Australia's largest industry superannuation funds. In early 2000, HESTA announced its new ethical investment fund, Eco Pool. The fund, which will commence on 1 February 2000, allows HESTA members to invest all or part of their superannuation into companies that have been assessed as demonstrating superior environmental management.

The Monash Centre for Environmental Management has been engaged by Westpac Investment Management (WIM) to conduct an ongoing environmental performance assessment (eco-rating) of Australian companies listed on the Australian Stock Exchange. WIM will then adopt a "best of sector" approach to construct investment portfolios that prefer those companies that are environmentally responsible and also competitive in delivering financial returns. Best of sector assessment is a relatively new approach to investment management. It is increasingly favoured as it allows for the screening of all listed companies but gives preference to those that demonstrate better environmental performance. The system eliminates the problems associated with traditional screening methods and also encourages companies to improve their environmental performance.

Criteria used to evaluate the environmental performance of companies are based on shareholder models developed by the WBCSD and the ISO 14000 standards, as well as Monash's proprietary assessment tools. Each company is assessed on environmental management, strategies, and operations/products. Environmental reports, corporate surveys, site visits and interviews are also used to assess environmental performance.

### Application to Other Industries

Finance.

### Further Information

Health Employee Superannuation Trust of Australia  
PO Box 600  
Carlton South VIC 3053  
Telephone: 1800 813 327 (free call, Australia)  
Internet: [www.hesta.com.au/ecopool/](http://www.hesta.com.au/ecopool/)

## *Environmental Services Industry*

### **EcoReDesign™ Program**

#### **Source**

Centre for Design, Royal Melbourne Institute of Technology (RMIT)

#### **Aim**

EcoReDesign™ aims to increase the environmental performance and competitiveness of manufactured products.

#### **Key Stakeholders**

EcoReDesign™ is an initiative of the Centre for Design at the RMIT. The Commonwealth Environmental Protection Agency and the Australian Research Council funded the first phase of program. Phase one of the program involved seven companies including MEC-Kambrook, Schiavello Commercial Interiors, Southcorp Appliances, Blackmores, Imaging Technologies, NIDA Group, Email Major Appliances, and Caroma Industries.

#### **Overview**

EcoReDesign™ was a 3-year Commonwealth funded program that ended in 1996. The program worked with businesses to research, develop, and design products that improved on environment design and performance. The program emphasised life cycle assessment of products and its main objectives included improving energy efficiency, minimising waste and conserving resources, using recycled material, designing for recyclability, educating consumers, and reducing greenhouse gases.

As a participant of the EcoReDesign™ Program, Blackmores, who manufactures natural health products, sought to develop a new wave of environmentally-friendly product packaging. The project resulted in the development of alternatives to Blackmore's tubes and tubs—lightweight disposable packaging (such as single use sachets) combined with long-life reusable frames and containers—emphasising a “refill” rather than “replace” system of product purchasing. Southcorp also participated in the EcoReDesign™ Program and was introduced to the concept of lifecycle assessment as a tool for developing one of the world's most ecologically advanced dishwashers. The Southcorp Dishlex Global range of dishwashers boasts a number of water and energy efficient features. These include a 6-star energy rating (256 kilowatts), AAA water rating (using less than 18 litres per load), and efficient product design.

Phase one of EcoReDesign™ resulted in the production of an EcoReDesign™ information kit. Targeting manufacturers, designers, and engineers, the kit seeks to promote the principles and benefits of eco-design. The second stage of EcoReDesign™ was launched in 1997. RMIT now offers commercial consultancy services to small to medium sized businesses that want to enhance the environmental performance and competitiveness of their products.

#### **Environmental Benefits**

- Minimising the life cycle impact of products on the environment.
- Waste management.
- Energy efficiency.

#### **Application to Other Industries**

Business, industry, and government.

#### **Further Information**

Royal Melbourne Institute of Technology, Centre for Design  
GPO Box 2476V  
Melbourne Vic 3001  
Telephone: (03) 9925 2362  
Internet: [www.cfd.rmit.edu.au](http://www.cfd.rmit.edu.au)

## International Centre for Application of Solar Energy (CASE)

### Source

United Nations Industrial Development Organisation (UNIDO)

### Aim

CASE promotes the application of renewable energy technology in developing countries.

### Key Stakeholders

CASE was established by the UNIDO. It is based in Perth, Australia and is supported by the Commonwealth and Western Australian Governments.

### Overview

CASE markets renewable energy technologies in developing countries. Projects are predominantly based in isolated or rural communities that have limited or no access to electric power and/or their nation's electricity grid. CASE offers a range of specialist renewable energy services, which include the identification, development, and management of renewable energy products, education and training, and social and economic impact assessments.

Village electrification, solar water pumping systems, and reverse osmosis technology are all examples of renewable energy developments. Projects such as these facilitate a number of benefits for not only developing countries, but also the global community and the environment. Developing countries benefit from improved living standards and the promotion of industrial development. The global community benefits from improved international cooperation, a reduced need for foreign sourced fuels, and longer term trade opportunities, while the environment is protected from degradation.

Recently, CASE facilitated the introduction of stand-alone solar systems to forest ranger outposts on three small islands in Sarawak, Malaysia. The solar powered systems replaced a petrol generator on each island that only provided 3 hours of power a day with a continuous energy supply. Aside from the environmental benefits, the introduction of renewable energy provides a constant source for lighting, refrigeration and cooling, meeting the needs of families living in these areas, and powering local facilities.

### Environmental Benefits

Maximises use of renewable energy.

### Application to Other Industries

Developing and remote communities.

### Further Information

Centre for Application of Solar Energy  
Level 8, 220 St Georges Terrace  
Perth WA 6000  
Telephone: (08) 9321 7600  
Internet: [www.case.gov.au/main.htm](http://www.case.gov.au/main.htm)

## **Ecos Corporation**

### **Source**

Ecos Corporation

### **Aim**

Ecos Corporation provides strategic advice and support to companies who want to incorporate sustainability into their business practices.

### **Key Stakeholders**

Paul Gilding, the former Executive Director of Greenpeace International, established Ecos Corporation in 1995. The company's main clients are large corporations in the finance, energy, chemical, and resource industries. Ecos Corporation is active in Australia, Asia, the United States, and Europe.

### **Overview**

Ecos Corporation are environmental consultants who specialise in issues of sustainability—more specifically, climate change and its commercial applications. Essentially, Ecos Corporation assists clients to develop and implement business strategies that deliver superior economic, social, and environmental performance. Through their sustainability strategy, Ecos provides strategic advice which extends beyond improving the environmental and social outcomes of a corporation's activities. It also seeks to improve shareholder value by exploring links between a company's environmental and financial performance.

Ecos Corporation has many clients throughout Australia, Asia, the United States, and Europe. The organisation has worked with organisations to produce environmental reports, develop and implement business strategies, conduct information workshops, and enhance stakeholder engagement. For the Sustainable Energy Development Authority, Ecos Corporation developed and conducted senior-level management workshops on the issue and business implications of climate change. They assisted Placer Dome Asia Pacific to produce the world's first mining company sustainability report, and, in 1999, worked with Cotton Australia to develop a strategic business approach to address sustainability, environmental issues, and stakeholder engagement. Other Ecos Corporation clients include DuPont, Pacific Power, and BHP.

### **Environmental Benefits**

Sustainability.

### **Application to Other Industries**

Large corporations.

### **Further Information**

Ecos Corporation

Level 14

309 Kent Street

Sydney NSW 2000

Telephone: (02) 9290 8533

Internet: [www.ecoscorp.com/](http://www.ecoscorp.com/)

## Regeneration Technology Pty Ltd

### Source

Regeneration Technology Pty Ltd

### Aim

Regeneration Technology Pty Ltd is an environmental consultancy firm specialising in rehabilitation and restoration ecology.

### Key Stakeholders

Regeneration Technology provides consultancy services to local, national, and international clients including local and state governments, universities, private companies, and industry organisations.

### Overview

Regeneration Technology, located in Perth, specialise in the management and rehabilitation of natural wetlands. They have extensive knowledge in the biological design of artificial wetlands and fauna habitats for nutrient stripping and stormwater management, remediation of freshwater and estuarine habitats, polishing of treated sewage, and mine drainage.

Regeneration Technology also has a micropropagation facility that produces a range of difficult to grow species for use in wetland rehabilitation, landscaping, mining rehabilitation, and commercial horticultural production.

### Environmental Benefits

Environmental restoration and rehabilitation.

### Application to Other Industries

All.

### Further Information

Regeneration Technology Pty Ltd

Suite 11/1 Sarich Way

Technology Park

Bentley WA 6102

Telephone: (08) 9451 0830

Internet: [www.iinet.net.au/~regentec/](http://www.iinet.net.au/~regentec/)

# Incentives for Exemplary Environmental Performance

Schelling (1983) in his discussion of instruments for environmental protection reminds us that the range of incentives (both positive and negative) is quite diverse. Among the positive incentives which may be employed as regulatory mechanisms, in this and other regulatory domains, are:

- Direct grants and subsidies.
- Bounties.
- Fees and commissions.
- Tax credits.
- Loan guarantees.
- Prizes and awards.
- Favourable administrative consideration.
- Praise.

Incentives may be proffered directly to the entity which is the subject of regulation as an inducement to a desired course of action. Alternatively, they can be offered to third parties for assistance in the detection and reporting of offences. Our focus here is limited to the former.

Incentives may differ in terms of their material nature. Some may entail a transfer payment or alternative financial device, while others may be limited to symbolic recognition or some other non-material consideration. The distinction is imperfect, as many incentives are explicitly or implicitly hybrid in nature, combining elements of the material and the symbolic.

## *Financial Incentives*

Grants or subsidies may be awarded to industry for research and development related to some regulatory objective. In the domain of

environmental protection, incentives may take the form of transfer payments, made conditional upon the installation of pollution control equipment. For example, the Victorian Government's Clean Technology Incentive Scheme provides grants to businesses for the introduction of innovative technologies to reduce waste (OECD 1992, p. 28; Robinson 1991). The Australian Government has made 10-year interest free "cleaner production" loans to eligible companies. In Norway, subsidies to the pulp and paper industry have encouraged the introduction of new, cleaner production processes (Cramer et al. 1990, p. 49).

Price preferences may also be given by government purchasing authorities to products deemed environmentally friendly. The state of Oregon has paid up to 5 per cent more for recycled paper, and British Columbia Hydro has offered to pay a 15 per cent price preference to independent power companies engaged in environmentally-preferable practices (Rankin 1991, p. 257).

Another example of a direct incentive as an instrument of regulation is the mirror image of the effluent tax. The basic model of an effluent tax entails payment per unit of effluent emitted in excess of a specified baseline; the greater the pollution in excess of the baseline, the greater the payment from polluter to regulator. Effluent incentive payments, on the other hand, are payments per unit of pollution reduction achieved below a specified baseline; the lower the effluent, the greater the payment from regulator to polluter (Stone 1980, p. 261; Schelling 1983, p. 33; Pezzey 1992).

Financial incentives for environmental protection may also extend across jurisdictional boundaries. Special purpose grants or other conditional transfer payments are a common feature of intergovernmental relations. An Australian illustration of an intergovernmental inducement for environmental protection may be taken from the Tasmanian Dams dispute of the early 1980s. In response to the Tasmanian Government's intention to allow the construction of a dam in a wilderness area, the Federal Government offered \$500 million if the project were not to proceed (Downer 1990). The offer was rejected; following the 1983 federal elections, the incoming government invoked its constitutional powers to prevent construction.

Inducements may also be offered by one nation to another. The Governments of Sweden and Costa Rica have entered a "debt for nature" exchange agreement, whereby the former cancelled the latter's debt in return

for an undertaking to preserve a 210,000 acre forest (Berle 1991, p. 185; Sher 1993). Bilateral and multilateral assistance may be made available in order to comply with environmental treaty obligations. Subsidised technology transfer may facilitate cleaner production processes or assist in achieving pollution abatement.

Incentives may also be used to encourage certain interests to bear extraordinary regulatory burdens. The Norwegian Government has recently paid members of its local whaling industry a daily fee to refrain from whaling (Vidal 1993).

Material incentives for exemplary compliance may also be built into government procurement practices. Systems of weighted bidding for government contracts have been devised, in which the bids of suppliers with outstanding performance records may be given preference over their competitors (Sigler and Murphy 1988, p. 141).

Incentives may be employed to encourage transactions which would otherwise not occur in the normal course of citizenship, or which would not result from the spontaneous operation of market forces (Marcus 1984, p. 52). For example, it may be economically disadvantageous for a farmer or grazier to preserve native vegetation. Effective habitat preservation may impose inordinate costs on private landholders, and thus require incentives (Hodge 1991; Young et al. 1996). With a view towards reducing the use of potentially harmful fertilisers and pesticides, the British Government has offered subsidies to encourage organic farming (Bedlow 1993). Scottish Natural Heritage, in an effort to preserve the habitat of the corncrake, an endangered bird species, offers crofters a bounty for the use of special grassland management methods. In return for keeping livestock out of enclosed grasslands between the months of April and July, crofters may receive a bounty of £20 per acre per year for the first 12 acres, £10 per acre per year for the next 12 acres, and £4 per acre per year for the remainder of habitat preserved (Cramb 1993).

Young and his colleagues (Young et al. 1996) have identified a variety of incentive instruments for biodiversity conservation. For example, within the European Community, landholders receive compensation if they agree to maintain features of the landscape. Grants and tax concessions are available in Australia to encourage sustainable land use and revegetation (Australia, Department of the Environment, Sport and Territories 1996, pp. 26–27).

***Non-Monetary Incentives: Facilitative***

In addition to formal financial transfers, other non-monetary resources may serve as incentive currency (Stone 1989). We exclude from our analysis such matters as pardons, immunity from prosecution, and other proffered concessions which might form the basis of a plea bargain, all of which are incentives for cooperation in the aftermath of non-compliance. Rather, we refer to what might be termed facilitative incentives (Gardiner and Balch 1980; Smith and Stalans 1991). Companies which are the objects of regulation and which have exemplary records of compliance may be the beneficiaries of certain variations in administrative arrangements, such as procedural shortcuts or waivers, and quick responses to requests for information (Murphy 1991, p. 6). In addition to a possible reduction in harbour fees offered by the port authority in Rotterdam, ships with an exemplary compliance record can benefit from a faster turnaround time while in port. The United States Clean Air Act of 1990 contains an early reductions provision which offers incentives for prompt compliance: firms achieving a specified reduction in emissions by a prescribed deadline may be granted a period of grace in having to comply with future regulations (Lewis 1991). More recently, the United States Environmental Protection Agency has suggested a number of administrative incentives which might be extended to companies with exemplary compliance records. These include accelerated review of applications and expedited handling of registration materials, and reduced reporting requirements. The Environmental Protection Agency envisages that they would complement formal recognition as participants in the Agency's Environmental Leadership Program (United States Environmental Protection Agency 1993, p. 4811) <http://es.epa.gov/elp/frmwk.html> (visited 9 November 1999).

***Non-monetary Incentives: Symbolic***

In contrast to material incentives, symbolic rewards are limited to formal recognition, often accompanied by some kind of token, such as a medal or trophy. The European Better Environment Awards for Industry, which are administered by the European Commission and supported by the United Nations Environment Program (UNEP), provide a trophy and recognition to the winning candidate. The Better Environment Awards for Industry, administered by the Royal Society for the Arts with sponsorship from the Department for the Environment, *The Financial Times* newspaper and Shell UK, is regarded as Britain's most prestigious environmental award program for industry (Elkington et al. 1992, pp. 217–18). The Oregon Governor's

Awards for Toxics Use Reduction are another example of programs which celebrate environmental achievement (Jones and Baldwin 1994).

Even in the absence of a monetary component, symbolic rewards may still have material implications. Symbolic rewards can have substantial instrumental value (Goodin 1980, p. 126). The reputational capital which can be generated by an award may be worth a considerable amount (Stone 1989, p. 213). Given the increasing public sensitivity to the environment in most western nations, the objective identification of a product as “environmentally friendly” may provide a competitive edge. Successful participation in award schemes can serve as the basis of marketing strategies which herald a company’s environmental achievements and contribute to its green image (Elkington et al. 1992, pp. 217–18).

Informal recognition of exemplary performance may be regarded as another form of incentive. Simple acknowledgment of a job well done has been used with some success in other regulatory settings, such as the regulation of nursing homes (Makkai and Braithwaite 1993) and in enhancing taxpayer compliance (Smith and Stalans 1991).

Award schemes have considerable publicity potential and, as such, can contribute to the education and information strategies of a regulatory regime (Gardiner and Balch 1980). The publicity which may accompany an award can serve an educative function, raising public awareness about surrounding circumstances and focussing attention on critical issues.

Through a system of awards, virtuous conduct that might otherwise pass unnoticed can be publicised. The public enunciation of virtuous conduct may have greater impact than the public denunciation of harmful behaviour. Recipients of awards may be presented as role models, with the exemplary act or pattern of conduct celebrated by the award held out as worthy of emulation by others.

Incentives may also help strengthen self-regulatory initiatives. In the case of organisations as targets of regulatory control, non-material incentives in particular may have a beneficial effect upon the organisational dynamics of the recipient. Makkai and Braithwaite (1993) see particular merit in the use of praise. They observe that praise bestowed upon an organisation is shared by its members. Conversely, when individual members of an organisation are rewarded, their achievement reflects upon the organisation as a whole. Reward serves to enhance collective pride and to foster integration, thus

contributing to enhanced organisational performance and to improved compliance.

Incentives conferred by an outside source can also affect inter-group dynamics within the organisation. The recognition of achievement can also help empower an organisation's compliance constituencies. In the group setting, where positive behaviour brings rewards to a group, rewards can enhance both group cohesiveness and strengthen the commitment to doing the right thing through peer pressure and reinforcement.

Incentives can also be used within organisations to enhance internal compliance programs designed to prevent and detect corporate misconduct. This can be done in part by promoting the role of compliance constituencies within organisations (Murphy 1991, p. 7), for example, by conferring status on an "auditor of the year" or "safety officer of the month".

Regulatory instruments do not exist in a vacuum. Rather, they are to be regarded as individual components of a larger regulatory policy. This policy in turn operates in a regulatory space which is shared not only by the regulator and the regulated, but by a variety of actors and institutions. In addition to markets, these include a variety of third parties, such as public interest groups, and commercial actors such as financial institutions, the insurance industry, and professional advisers. One criterion of instrument choice is how the instrument in question complements these other institutions of regulation (Grabosky 1994, pp. 423–26).

## Load Based Licensing (LBL)

### Source

New South Wales Environmental Protection Agency

### Aim

Load based licensing aims to provide rewards and incentives to licensees who reduce the amount of pollution being discharged into air and waterways.

### Key Stakeholders

Load based licensing applies to Environmental Protection Agency licensees that use assessable pollutants.

### Overview

In July 1999, the New South Wales Government introduced load based licensing as a scheme to regulate the amount of waste being discharged to the air and water. Load based licensing operates under the Protection of the Environment Operations Act 1997. The system involves charging fees to licensees based on the amount of pollution discharged and offering incentives to those who reduce pollution beyond the minimum requirements.

Load based licensing will only apply to some industry sectors initially and will be phased in over 4 years. The system involves two parts: an annual emissions limit on licenses and pollution load fees based on the quantity and type of waste being discharged as well as the receiving environment.

The system encourages industry to develop ways to minimise waste and maximise environmental protection. A number of features have been designed into the framework to encourage pollution reduction. These include fees based on pollutant weighting (the type of pollutant), critical zones (receiving environment), fee thresholds (limits on pollution loads), and load weighting (harmfulness and amount of pollutant).

The New South Wales Government is offering major incentives for industry to reduce waste. This includes a rebate of up to 100 per cent for those who commit to a 3-year load reduction agreement.

### Environmental Benefits

- Reduction in the amount of waste being discharged to air and water-ways.
- Encourages industry to adopt cleaner production and waste management practices and processes.

### Application to Other Industries

Licensing authorities.

### Further Information

New South Wales Environmental Protection Agency

PO Box A290

Sydney South NSW 1232

Telephone: (02) 9995 5000

Internet: [www.epa.nsw.gov.au/legal/lbl\\_update.htm](http://www.epa.nsw.gov.au/legal/lbl_update.htm)

## The Prime Minister's Environmental Awards

### Source

Environment Australia

### Aim

The Prime Minister's Environmental Awards recognise those people who demonstrate excellence, innovation, and enterprise in the pursuit of a sustainable Australia.

### Key Stakeholders

Environment Australia administers the Prime Minister's Environmental Awards with the assistance of the Banksia Environmental Foundation, Landcare Australia, the Keep Australia Beautiful National Association, the Australian Local Government Association, the Australian Greenhouse Office, and the Natural Heritage Trust. The awards are open to all Australian citizens, community organisations, and those within private and public sectors.

### Overview

The Prime Minister's Environmental Awards were announced in June 2000 and seek to encourage Australians to become more environmentally responsible and committed to the development of a sustainable society. The awards recognise those people and organisations that have demonstrated commitment to the protection of the environment, particularly efforts that have a community focus.

Successful applicants must fulfil two or more of the following criteria:

- Set an outstanding example for others in the protection of and/or restoration of the environment.
- Advance Australia's quest for a sustainable future by emphasising good environmental, social and economic outcomes.
- Help to promote Australian environmental commitment and/or commercial expertise to national and international markets.
- Be highly relevant to one or more of the major global environmental issues including climate change, ozone depletion, air and water pollution, loss of biodiversity, resource conservation, and land degradation.
- Be especially original and/or innovative in their approach to solutions for environment-related problems.

The Prime Minister presented nine awards at the inaugural ceremony to mark Australia's hosting of the United Nations World Environment Day. Awards acknowledged respective achievements by individuals, the private sector, local governments, education providers, and non-government organisations in environmental best practice, leadership, and innovation. Professor Ian Lowe at Griffith University, Queensland was bestowed the Australia 2000 Environment Award for Outstanding Individual Achievement for his contribution to sustainability.

### Application to Other Industries

All.

### Further Information

The Prime Minister's Awards Secretariat,

Level 14, 309 Kent Street,

Sydney NSW 2000

Telephone: (02) 9248 0154

Internet: [www.environment.gov.au/wed/awards.html](http://www.environment.gov.au/wed/awards.html)

## Australian Water and Wastewater Association (AWWA) Awards

### Source

AWWA

### Aim

The AWWA awards recognise contributions to the water industry, the environment, and service to the association.

### Key Stakeholders

The AWWA presents awards to members and non-members of the association.

### Overview

The AWWA bestows several awards to individuals, groups, and organisations for their commitment to the water industry and the environment. The Peter Hughes Water Award and the Water Environment Merit Award are two accolades of environmental excellence.

The Peter Hughes Water Award acknowledges an outstanding contribution to water conservation. The award is open to all activities of a technical, institutional, or educational nature but primarily supports those contributions that have had a significant national or international impact. In 1999, Dr John Langford won the award for his work on urban water issues.

The Water Environment Merit Award is a biennial award that recognises the achievements of AWWA corporate members for the development of environmentally significant projects, products, services, or initiatives. The award aims to encourage innovation in the association and raise public awareness of the industry's contribution to society and the environment. The South Australian Department of Primary Industries and Resources was honoured with the Water Environment Merit Award in 1999 for their aquifer storage and recovery projects at respective sites in South Australia.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

All industries can introduce environmental awards.

### Further Information

Australian Water and Wastewater Association

Level 2

44 Hampden Road

Artarmon NSW 2064

Telephone: (02) 9413 1288

Internet: [www.wateraus.net.au/about/awards/index.asp](http://www.wateraus.net.au/about/awards/index.asp)

## Case Earth Awards

### Source

Civil Contractors Federation (CCF)

### Aim

The Case Earth Awards are presented to those organisations that demonstrate innovation and best practice in environmental management of civil construction and related projects.

### Key Stakeholders

The Case Earth Awards are an initiative of the CCF and are sponsored by Case Corporation.

### Overview

The Case Earth awards promote environmental achievement, responsibility and innovation by members of the Australian civil contracting industry. The awards are open to all Australian civil construction (or related) projects that exemplify the alleviation of an existing environmental problem and/or excellence in environmental management of a construction project.

The awards are made in three national categories based on the value of nominated construction projects (less than \$1 million, between \$1 million and \$10 million, and greater than \$10 million). The overall winner is awarded the Case Earth Award.

In 1998, the South Australian Maralinga Rehabilitation Project was awarded the Case Earth Award for its overhaul of the former nuclear site. The Maralinga remediation required the careful removal of 400,000 cubic metres of contaminated soil from an arid area covering 2.7 million square metres, excavation of 80 debris pits and the “cleaning” of some 200,000 square metres of rock surfaces.

### Environmental Benefits

- Encourages and recognises achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

All industries can introduce environmental awards.

### Further Information

The Earthmover & Civil Contractor  
EPS Press Pty Ltd  
PO Box 65  
Newtown NSW 2042  
Telephone: (02) 9565 1666  
Internet: [www.earthawards.com.au](http://www.earthawards.com.au)

## IBM Corporate Environmental Affairs Excellence Awards

### Source

IBM Corporation

### Aim

The IBM Corporate Environmental Affairs Excellence Awards recognise employee achievement in product design for the environment and environmental protection.

### Key Stakeholders

IBM bestows the awards upon individuals and teams of employees.

### Overview

The IBM Corporate Environmental Affairs Excellence Awards reward employees who demonstrate innovative achievements that contribute to the company's environmental, safety, and energy objectives. Recipients of the award receive up to \$50,000.

In 1999, IBM presented 6 awards to 55 employees across the globe. Among the winners was a team of employees who created a more environmentally-friendly computer. The team successfully converted all the major plastic parts in the central processing unit of a high-volume desktop computer to 100 per cent recycled plastic. The achievement led to IBM becoming the first information technology company to offer a computer boasting a system unit which has all of its major plastic parts made from 100 percent recycled material.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

Small, medium, and large business can introduce environmental awards onto their corporate agendas.

### Further Information

IBM Internet: [www.ibm.com](http://www.ibm.com)

Awards: [www.ibm.com/ibm/environment/news/winners.phtml](http://www.ibm.com/ibm/environment/news/winners.phtml)

## Goldman Environmental Prize

### Source

The Goldman Foundation

### Aim

The Goldman Environmental Prize rewards grassroots environmentalists for their sustained environmental achievements in preserving the natural environment.

### Key Stakeholders

The Goldman Environmental Foundation awards the Goldman Environmental Prize to individuals who have been nominated by a network of internationally known environmental organisations or a confidential panel of environmental experts.

### Overview

Richard and Rhoda Goldman established the Goldman Environmental Prize in 1990. The prestigious annual prize of \$125,000 is awarded to recipients from each of the six inhabited continents for their work in environmental preservation. This may include protecting endangered ecosystems and species, combating destructive development projects, promoting sustainability, influencing environmental policies, and striving for environmental justice.

The Goldman Prize serves a number of environmental and social purposes. It demonstrates the international nature of environmental problems, draws public attention to global issues of critical importance, rewards individuals for outstanding grassroots environmental initiatives, and inspires others to emulate the examples set by the Prize recipients.

Throughout the history of the Goldman Environmental Prize, a number of Australians have received the award. In 1990, the now Senator Robert Brown was awarded the prize for his work in protecting Tasmania's western wilderness which included the Franklin River. In 1993, John Sinclair was bestowed the prize for his work towards preventing logging and sand mining on Fraser Island. And, most recently in 1999, Jacqui Katona and Yvonne Margarula received the award for their commitment to oppose uranium mining at Jabiluka.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

Government, non-government, and industry.

### Further Information

Internet: [www.goldmanprize.org](http://www.goldmanprize.org)

## **World Wide Fund for Nature (WWF) Annual Environment Report Award**

### **Source**

WWF—South Africa

### **Aim**

The WWF Annual Environment Report Award acknowledges the best environment report produced by a South African business.

### **Key Stakeholders**

The WWF South Africa administers the annual environment report award. Sponsors of the awards include PricewaterhouseCoopers, Finance Week, Finansies and Tegniek, the University of Pretoria, and the Institute of Directors of Southern Africa.

### **Overview**

The WWF South Africa introduced the Annual Environment Report Awards in 1994. The awards encourage the business sector of South Africa to report voluntarily and transparently on their environmental performance, and thus set a standard of excellence for others to follow. Selection criteria used to determine the top three environmental reports include completeness, credibility and clarity, commitment, continual improvement, accountability to the community, employee awareness and involvement, and external input and feedback.

In 1999, African Explosives and Chemical Industries (AECI) Ltd won first prize for their 1997 annual report. The judges felt the report demonstrated evidence of top-level commitment, clear demonstrative objectives and targets, and commendable management systems. The report included site-based reports, which were externally verified and outlined stakeholder consultation that facilitated the development of safety, health, and environmental reports as well as a system of indicators to implement continuous improvement.

### **Environmental Benefits**

Raises community awareness of the impact of business activity on the environment.

### **Application to Other Industries**

All government and non-government organisations can encourage and reward environmental reporting.

### **Further Information**

World Wide Fund for Nature—South Africa

PO Box 456

Stellenbosh 7599

Telephone: +27 21 887 2801

Internet: [www.saep.org/subject/business/aeci.html](http://www.saep.org/subject/business/aeci.html)

## Eureka Prizes

### Source

Australian Museum

### Aim

The Eureka Prizes recognise outstanding achievements in Australian scientific and environmental research, science communication and journalism, and the promotion of science.

### Key Stakeholders

The Eureka Prizes are administered by the Australian Museum and are open to individuals, industry groups, and organisations. Federal and state (New South Wales) governments, educational institutions, and private sector organisations all sponsor respective prizes.

### Overview

The Eureka Prizes are Australia's pre-eminent national science and environment awards. The awards celebrate, and in most cases, financially reward, the contribution of individuals and organisations to scientific and environmental research, education, and journalism. Several prizes acknowledge environmental excellence including the \$10,000 POL Eureka Prize for Environmental Research, the \$10,000 Allen Strom Eureka Prize for Environmental Education Programs and the \$10,000 Environment Australia Peter Hunt Eureka Prize for Environmental Journalism.

The POL Eureka Prize for Environmental Research is awarded for scientific research which leads to the resolution of an environmental problem or the improvement of our natural environment. In 1999, the prize was awarded to Dr David Lindenmayer from the Australian National University and Professor Hugh Possingham from the University of Adelaide for their work on "population modelling for the conservation of Australia's forest fauna, as characterised in the development of a conservation plan for Leadbeater's possum."

The Allen Strom Eureka Prize for Environmental Education Programs acknowledges an outstanding environmental education program that has contributed to improved educational and/or environmental outcomes. In 1999, the prize was awarded to Ms Jennie Anderton from the Western Australian Department of Environmental Protection for developing a school-based air monitoring quality program, Airwatch.

The Environment Australia Peter Hunt Eureka Prize for Environmental Journalism is awarded for work that informs and influences public opinion and attitudes, and recognises and promotes the principles of ecologically sustainable development. In 1999, the prize was awarded to Mr Michael Troy, Environment Reporter for Australian Broadcasting Corporation (ABC) TV News, for developing a series of television reports on environmental issues.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

Science, journalism, and education.

### Further Information

Australian Museum  
6 College Street  
Sydney NSW 2000  
Telephone: (02) 9320 6000  
Internet: [www.austmus.gov.au/eureka/](http://www.austmus.gov.au/eureka/)

## Cycle 100 Program

### Source

Department of Environment Protection—Western Australia

### Aim

Cycle 100 encourages the use of bicycles as transportation to work.

### Key Stakeholders

Cycle 100 is a joint initiative of the Department of Environmental Protection (Western Australia), Bikewest and the Department of Transport (Western Australia). Sponsorship (bikes) for the program has included government and non-government agencies.

### Overview

The Cycle 100 Program promotes bicycles, as opposed to motor vehicles, as an alternative mode of transport to work. Under this trial program, participants are given the use of a free bicycle if they agree to ride to, or from, work at least four times per week for 12 months. Participants are monitored during the course of the program for fitness, work satisfaction, and participation rates.

Cycle 100 primarily targets solo commuters. It boasts a number of potential environmental benefits including a reduction in the number of cars on the road, reduced traffic congestion, and improved air quality. Preliminary results have found that the program now has 100 participants who are riding at 25 per cent over their expected targets. Aside from the environmental benefits, many participants have acknowledged the personal benefits of the program—weight loss, increase in fitness levels, reduction in stress levels, and overall feelings of good-health.

### Environmental Benefits

Reduction in greenhouse gases.

### Application to Other Industries

The program is transferable to all government, business, industry and community organisations.

### Further Information

Department of Environmental Protection—Western Australia

PO Box K822

Perth WA 6842

Telephone: (08) 9222 7001

Internet: [www.environment.wa.gov.au](http://www.environment.wa.gov.au)

## Energy Smart Trades Program

### Source

Sustainable Energy Development Authority (SEDA)

### Aim

The Energy Smart Trades Program facilitated the training of first year apprentices in energy efficiency.

### Key Stakeholders

The Energy Smart Trades Program was an initiative of the SEDA—a New South Wales government agency. It was open to all companies in the sustainable energy industry.

### Overview

The SEDA offered a total of \$100,000 to companies in the sustainable energy industry to employ and train first year apprentices. The Energy Smart Trades Program sought to equip apprentices with specialist skills in the use of sustainable energy products and services. The philosophy underpinning the program advanced that the use of greenhouse-friendly products and services can increase if tradespeople have the necessary skills and knowledge to install and promote the products.

The program recruited 18 apprentices from 13 organisations through the Department of Education, Training and Youth Affairs. Through the program, tradespeople learned about the environmental and economic benefits of products such as solar power systems, efficient lighting and heating systems, and building management systems. The program was discontinued in 1999 due to a lack of funding but provided the basis for the development of training packages through vocational education and training institutions.

### Environmental Benefits

Energy efficiency.

### Application to Other Industries

Sustainable energy industry.

### Further Information

Sustainable Energy Development Authority  
GPO Box N442  
Grosvenor Place NSW 1220  
Telephone: (02) 9291 5260

## Golden Gecko Awards for Environmental Excellence

### Source

Department of Minerals and Energy—Western Australia

### Aim

The Golden Gecko Awards are presented to those who demonstrate excellence and leadership in environmental management, protection, and rehabilitation.

### Key Stakeholders

The awards are open to all sectors of the Western Australian mining and petroleum industry, individuals, and organisations.

### Overview

The Golden Gecko Awards are presented annually in recognition of excellence in environmental management and rehabilitation in the Western Australian mining and petroleum industries. There are two award categories—minerals (any type of mining) and petroleum—and two types of awards—an award for environmental excellence and a certificate of merit.

The Golden Gecko Award for Environmental Excellence acknowledges the outstanding contribution a recipient has made to balance environmental responsibility with the successful development of Western Australian resources. Placer (Granny Smith) Pty Ltd was one of three award recipients in 1999. The company was bestowed the award for implementing their International Sustainability Policy at the Granny Smith gold mine site. The Policy promotes corporate commitment, public responsibility, environmental stewardship, and economic benefits as part of its environmental management plan.

The Golden Gecko Certificate of Merit rewards recipients who have made encouraging efforts toward achieving excellence and leadership in environmental management. The Princess Margaret Hospital Foundation was awarded a certificate of merit in 1999 for the Ruggies Mineral Industry Recycling Project. The project was introduced to the Granny Smith gold mine site in 1996 and aims to reuse and minimise waste that would otherwise go to landfill. Since its inception, the project has expanded to include other mining sites across Western Australia and has facilitated a number of community benefits including reduced waste, increased revenue for research and community education.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

All industries and organisations can introduce environmental awards.

### Further Information

Department of Minerals and Energy—Western Australia

Mining Operations Division

Mineral House

100 Plain Street

East Perth WA 6004

Telephone: (08) 9222 3132 (Environment Officer)

Internet: [www.dme.wa.gov.au/goldengecko/](http://www.dme.wa.gov.au/goldengecko/)

## State Recycling and Waste Reduction Awards

### Source

Department of Environmental Protection—Western Australia

### Aim

The State Recycling and Waste Reduction Awards recognise commitment to waste management—the reduction, reuse, recycling, and recovery of wastes.

### Key Stakeholders

The State Recycling and Waste Reduction Awards are open to all individuals, business, local governments, and organisations in Western Australia. Private companies and organisations sponsor respective awards.

### Overview

The State Recycling and Waste Reduction Awards acknowledge those who have reduced their wastes and recycled. The awards are open to all residents, organisations, businesses, and local governments of Western Australia who deal with solid or liquid wastes that are normally disposed to landfill or liquid treatment plants. Selection criteria for each award includes leadership, innovation, cost saving, benefit to the community, reduction in waste and pollution, and benefit to the environment.

In 1999, awards were presented in nine categories: overall winner, industry, community, small business, schools, non-metropolitan, cleaner production, and local government. Cleanaway won the overall State Recycling and Waste Reduction Award for their all-in-one recycling system which uses mobile garbage bins, and Capel Concrete won the Small Business award for their concrete waste initiative which recycles 100 per cent of concrete waste.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

Federal, state, and local governments.

### Further Information

Department of Environmental Protection—Western Australia

Waste Management Division

PO Box K822

Perth WA 6842

Telephone: (08) 9222 7000

Internet: [www.environ.wa.gov.au](http://www.environ.wa.gov.au)

## RiverCare 2000 Accreditation and Awards Program

### Source

New South Wales Department of Land and Water Conservation

### Aim

RiverCare 2000 accredits and awards projects that improve water quality and river restoration.

### Key Stakeholders

The program is administered by the New South Wales Department of Land and Water Conservation and is open to individuals, community groups, and public and private sectors.

### Overview

The New South Wales Government introduced the RiverCare 2000 accreditation and awards program in 1995 to recognise and encourage community-minded individuals and groups who are “working together for clean, healthy and productive rivers by the year 2000”. The awards are open to all accredited projects. For projects to be accredited, they must demonstrate at least three of seven criteria: community involvement, planning, education, innovation, promotion, improved practices, and/or water efficiency management.

Each year gold, silver, and bronze awards acknowledge accredited projects across a number of sectors: community groups, education, industry, local and state government, and science and research. Examples of project activity may include river restoration and regeneration, zone rehabilitation, and wastewater management. Lismore City Council was awarded a Gold Award in 1998 for their Commercial tea tree project. In partnership with the Australian Tea Tree Oil Research Institute, Lismore City Council re-used treated effluent waste from the local sewage works to irrigate commercial tea tree plants.

As an incentive, winners of respective silver and bronze awards may re-enter for a gold award in the following year. In 2000, all gold award recipients will be eligible for an Award of Excellence that will recognise the most outstanding projects in river management and protection.

RiverCare 2000 also presents a Diamond Award to an individual for outstanding commitment and contribution to the RiverCare 2000 program. In 1998, Marcus Blackmore of Blackmores, a manufacturer of health care products, was one of two recipients of this award. He was commended for his leadership in steering his company toward more environmentally-friendly practices which included implementing product management guidelines, re-designing product packaging, and supporting community environmental initiatives.

The New South Wales Government promotes all accredited and awarded projects as models of good practice. Projects may receive statewide media publicity, advertising, or be published in the annual Rivercare 2000 yearbook.

### Environmental Benefits

- Encourages and recognises achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

Federal, state, and local governments.

### Further Information

Community Education Unit  
Department of Land and Water Conservation  
GPO Box 39  
Sydney NSW 2001  
RiverCare 2000 Information Line: 1800 671 093

## Global 500 Roll of Honour for Environmental Achievement

### Source

United Nations Environment Program (UNEP)

### Aim

The UNEP Global 500 Roll of Honour for Environment Achievement recognises outstanding achievements in the protection and improvement of the environment.

### Key Stakeholders

The awards are open to individuals and organisations worldwide.

### Overview

The UNEP Global 500 Roll of Honour for Environmental Achievement is announced annually on World Environment Day. The awards are presented to individuals or organisations whose achievements in environmental protection have:

- Solved an environmental problem.
- Advanced the cause of the environment.
- Succeeded in bringing environmental issues to public notice.
- Mobilised local or national action towards their solution.
- Contributed significantly to intellectual, scientific or theoretical approaches to environmental concerns.
- The potential to serve as a model to others.

UNEP also presents a Global 500 Youth Environment Award Roll of Honour for Environmental Achievement. This award is open to young people between 10 and 21, or to young peoples' groups.

In 2000, 14 laureates were honoured on the Global 500 Roll of Honour, including 3 Australian recipients. The Andyamathanha Nepabunna Community was honoured for being the first Indigenous community to voluntarily declare 58,000 hectares of their traditional land an Indigenous Protected Area (IPA). Fuji Xerox Australia were recognised for developing a recycled copy paper to precise specifications for use in digital equipment. The paper is made from recycled waste from the Australian cotton industry and wood pulp content from sustainably managed forests. And the Australian Trust for Conservation Volunteers (ATCV) were acknowledged for their commitment to the protection and betterment of the Australian environment. Since their establishment in 1982, the ATCV has mobilised thousands of volunteers, completed more than 4000 week-long projects each year, and has also planted more than 7.3 million trees in the past 10 years.

### Environmental Benefits

- Encourages and recognises personal achievement in the pursuit of environmental protection.
- Raises community awareness.

### Application to Other Industries

All industries, government organisations, and business can recognise and award environmental achievement.

### Further Information

Global 500 Forum

Internet: [www.global500.org/](http://www.global500.org/)

# Hybrid Strategies

The classification of strategies which provided the basis for the four previous chapters is not impermeable. As we noted in the introductory chapter, a given innovation may serve multiple functions. Many programs combine elements of two or more strategies. Awards, for example, may induce improved environmental performance as well as inform a wider audience. Markets for environmentally-friendly products and processes can be stimulated by the creative application of symbolic and material incentives.

Similarly, the distinction between public, private, and non-profit may obscure the true nature of organisational life. Today, as never before, alliances and partnerships have produced hybrid organisational forms involving various combinations of public-private, public-non-profit, and non-profit-private activity. The interaction of public interest organisations with both public and private sectors can have a more cooperative and less adversarial dimension. One thinks, for example, of the involvement of Greenpeace in the planning of the year 2000 Olympic Games and its collaboration with German appliance manufacturers in the development of a CFC-free refrigerator. One also notes the assistance provided to the McDonald's Corporation by the Environmental Defense Fund in the purchasing of supplies made from recycled materials. As public-private distinctions continue to blur, one may expect to see ongoing diversification of organisational form.

## Responsible Care

### Source

Plastic And Chemicals Industries Association (PACIA)

### Aim

Responsible Care aims to improve the environmental, health, and safety performance of the chemicals industry.

### Key Stakeholders

Responsible care is an obligation of PACIA membership for companies manufacturing, importing, and distributing chemicals.

### Overview

Responsible Care is a global initiative that aims to ensure the activities of the chemical industry meet community expectations for the protection of the environment, people, and for a sustainable industry. Responsible Care was introduced in Australia in 1989 and has now been adopted by over 40 national chemical industries. As a program of continual improvement, Responsible Care comprises three core components:

- Codes of practice: eight codes of practice address best practice for the management of hazards associated with chemical operations and products.
- National community advisory panel: an independent panel monitors the progress of Responsible Care to ensure that public concerns are reflected in the program.
- Credibility of results: involves a system of company and external auditing for compliance with the codes. It also includes public reporting of environmental, health and safety performance.

Responsible Care is a mandatory requirement for membership companies of PACIA that manufacture, import, and distribute chemicals. Under the program, companies are expected to implement relevant codes of practice, conduct compliance self-assessments, strive for continuous improvement, interact with the community, and provide an annual report on the company's progress. PACIA has also developed a suite of support material including courses, manuals, and guidelines to assist companies implement Responsible Care.

### Environmental Benefits

- Minimise impact of activity on environment.
- Enhance community relations.

### Application to Other Industries

Industry and government.

### Further Information

Plastics and Chemicals Industry Association

PO Box 1610M

Melbourne VIC 3001

Telephone: (03) 9699 6299

Internet: [www.pacia.org.au/index\\_frames.html](http://www.pacia.org.au/index_frames.html)

## Victorian Accredited Licensee Scheme

### Source

Victorian Environmental Protection Authority

### Aim

The Victorian Environmental Protection Authority Accredited Licensee Scheme aims to reward businesses that perform well in reducing industrial pollution with an accredited license.

### Key Stakeholders

The accredited licensee scheme is available to all Victorian businesses which are scheduled premises.

### Overview

The accredited licensee scheme was established in 1994 and allows for the accreditation of licensees who demonstrate commitment to effective environmental management. Accreditation allows good environmental performers greater flexibility to manage their own environmental performance within the guidelines of the Environmental Protection Act 1970.

Advantages of accreditation for licensees include a simplified license, no additional approval requirements for most new works, a licence fee reduction, and the flexibility to handle their own environmental management. To qualify for accreditation, business must have a system of management that includes the following:

- Third party accreditation of an environmental management system by independent accrediting bodies.
- An Environmental Protection Authority approved environmental audit program, with the participation of an independently appointed environmental auditor.
- Annual environmental reporting.
- An Environmental Improvement Plan (EIP) involving the local community.

Given the requirement of licensees to implement environmental improvement plans, management systems, auditing, as well as prepare environmental reports, the Accredited Licensee Scheme encourages excellence in environmental performance. It also facilitates a number of benefits for accredited licensees, the community and the government. For accredited licensees, good environmental performance results in economic incentives and reduced regulation. For the community, access to information is improved and avenues of communication open through local forums and public reporting. While for government, efficiency in business means that resources can be redirected to address other environmental issues.

### Environmental Benefits

- Reduction of industrial pollution.
- Enhanced environmental management.

### Application to Other Industries

Regulatory agencies.

### Further Information

Victorian Environmental Protection Authority

GPO Box 4395QQ

Melbourne VIC 3001

Environmental Protection Authority Information Centre

Telephone: (03) 9695 2722

Internet: [www.epa.vic.gov.au/industry/](http://www.epa.vic.gov.au/industry/)

and [www.environment.gov.au/epcg/eeu/publications/contents.html](http://www.environment.gov.au/epcg/eeu/publications/contents.html)

## Alliance for Environmental Innovation

### Source

Environmental Defense Fund (EDF) and The Pew Charitable Trusts

### Aim

The Alliance for Environmental Innovation (the Alliance) assists private sector companies to improve their environmental and economic performance.

### Key Stakeholders

The Alliance predominantly works with market-leading American companies responsible for the production, distribution, or retail of consumer products and services.

### Overview

The Alliance for Environmental Innovation, based in Boston, was established in 1994 as a joint initiative of the EDF and the Pew Charitable Trusts. The organisation works with large private sector companies to minimise the impact of corporate activity on the environment. This includes assisting organisations to implement waste reduction strategies, prevent pollution, conserve resources, improve business performance, and set examples for other businesses to follow.

The Alliance has worked with a number of American companies to improve environmental and economic performance. In 1996, the Alliance entered into an agreement with Starbucks Coffee Company to reduce the environmental impact of Starbucks' coffee cups. This partnership led to the development of an action plan to increase the use of reusable cups and introduce environmentally preferable single-use cups. United Parcel Service (UPS) also joined forces with the Alliance to create alternatives to overnight shipping packaging. The project resulted in the development of a reusable express envelope and packaging improvements that reduces air pollution by 50 per cent, cuts wastewater discharge by more than 15 per cent, and reduces energy use by 12 per cent. Aside from the environmental benefits of the project, UPS is expected to net an annual saving of \$1 million.

The Alliance for Environmental Innovation receives no financial support from its corporate partners. Apart from the environmental and economic benefits that arise for corporate partners, through their work, the Alliance is in a prime position to influence the behaviour of suppliers, competitors, and consumers.

### Environmental Benefits

Reduction of the impact of corporate activity on the environment.

### Application to Other Industries

Small to large business.

### Further Information

The Alliance for Environmental Innovation

6 North Market Building

Faneuil Hall Marketplace

Boston, MA 02109

Telephone: +617 723 2996

Internet: [www.edfpewalliance.org/index.html](http://www.edfpewalliance.org/index.html)

## World Wide Fund for Nature (WWF) Mining Environmental Report Scorecard

### Source

WWF

### Aim

The WWF Mining Environmental Report Scorecard provides an assessment of environmental reports produced by mining companies as a requirement of the mining industry's code for environmental management.

### Key Stakeholders

The scorecards assess the reports of mining and minerals processing companies who are signatories to the environmental management code.

### Overview

The WWF works with industry and government to assist organisations to minimise the impact of their activity on the environment and to improve social performance. As part of this commitment, the WWF has prepared an inaugural mining environmental report scorecard for the Australian Minerals Council. The scorecard assesses the quality of environmental reports produced by mining companies as a requirement of the industry's code for environmental management. The aim of the scorecard is to facilitate improvements in public reporting and to bring about an overall improvement in the company's environmental performance.

Weighted performance criteria, defined by the WWF, are used to assess the company reports. The WWF considers the following essential components of environmental reporting—external verification (15 per cent), environmental and social issues (15 per cent), environmental policy (10 per cent), environmental management processes (10 per cent), data (15 per cent), compliance (10 per cent), stakeholder participants (10 per cent), targets (10 per cent), and format dissemination and feedback (5 per cent). Each report is given a score out of the respective weightings for each category, followed by an overall score.

WWF's examination of the 11 reports found that none addressed all of the principles set out in the industry's code for management. External verification, information on environmental management systems and community participation were considered poorly addressed while environmental and social issues were adequately addressed. Overall, WMC produced the best environmental report followed by Rennison Goldfields Consolidated Ltd (RGC) and BHP.

### Environmental Benefits

- Improved environmental reporting.
- Improved environmental management.
- Increase in community awareness.

### Application to Other Industries

All.

### Further Information

World Wide Fund for Nature Australia  
Level 1, 9 Church Street  
Hawthorn VIC 3122  
Telephone: (03) 9853 7244

## Greenhouse Challenge Program

### Source

Commonwealth Government

### Aim

Greenhouse Challenge aims to reduce greenhouse emissions through fostering voluntary industry action.

### Key Stakeholders

Greenhouse Challenge is a cooperative effort of Australian Industry and the Commonwealth Government. The Australian Greenhouse Office administers the program.

### Overview

Announced in 1995, Greenhouse Challenge encourages industry to take a voluntary and self-regulatory approach to improve its efficiency in energy use and processing. Participants of the program enter “cooperative agreements” with the Government to reduce their greenhouse emissions. Currently, over 200 organisations and companies are participating in the program including Australia Post, BHP, and Ford Australia.

The 1998 progress report produced by the National Australia Bank demonstrates successful participation in the Greenhouse Challenge Program. The bank reduced its greenhouse gas emissions from 162,001 tonnes of carbon dioxide equivalent (for 750 million transactions) in 1995–1996 financial year to 158,791 tonnes of carbon dioxide equivalent (for 804.9 million transactions) in 1997–1998 financial year. This represents a decrease of 3,210 tonnes of carbon dioxide equivalent even though the bank’s business increased by 7.33 per cent. The bank achieved a reduction in greenhouse gas emissions by implementing energy efficient practices and systems in the workplace (lighting, air conditioning, and building management systems) and encouraging staff, landlords, and consultants to adopt energy-efficient practices.

The Commonwealth Government has set up a “one stop shop” to support the development and implementation of the Greenhouse Challenge Program. Industry Liaison Officers assist participants through the process and technical materials and workshops are also available for organisations. All participants of the program receive publicity and are eligible to use the Greenhouse Challenge logo to advertise their involvement.

### Environmental Benefits

Reduction in greenhouse emissions.

### Application to Other Industries

The program is applicable to all Australian industries.

### Further Information

The Greenhouse Challenge  
Australian Greenhouse Challenge Office  
GPO Box 621  
Canberra ACT 2601  
Telephone: (02) 6274 1744  
Internet: [www.greenhouse.gov.au/challenge.gco.html](http://www.greenhouse.gov.au/challenge.gco.html)

## Greenhouse Allies Program

### Source

Commonwealth Government

### Aim

The Greenhouse Allies Program aims to help small business reduce their greenhouse gas emissions.

### Key Stakeholders

The Greenhouse Allies Program is open to small businesses and members of the Greenhouse Challenge Program.

### Overview

Greenhouse Allies is an extension of the Greenhouse Challenge Program. The voluntary program assists small businesses to improve energy efficiency and waste management with the aim of increasing profits, improving competitiveness and reducing energy and waste consumption. The program boasts three main objectives:

- Improve energy management in small enterprises.
- Enhance the environmental awareness of these enterprises.
- Encourage sound greenhouse practices.

Greenhouse Allies relies on the support of Greenhouse Challenge members. Larger companies who are members of Greenhouse Challenge volunteer to become “challenge partners” and assist small companies (allies) to develop greenhouse reduction and energy management action plans. Examples of initiatives that can be undertaken by small business include:

- Lighting—use timers and sensors to control lighting and/or upgrade lighting systems.
- Air-conditioning—adjust air-conditioning during the day to compliment needs.
- Heating—use time switches and thermostats to activate heat, and install water efficient fittings.
- Office equipment—use energy efficient products.
- Waste management—adopt cleaner production in the workplace and introduce recycling initiatives.

Both challenge partners and potential allies must apply to participate in the program. Potential allies are considered to be businesses that spend up to \$200,000 a year on energy costs and can be described as small or small-to-medium businesses.

Assistance from the government is available to participants who usually enter into a 12-month agreement.

### Environmental Benefits

Reduction in greenhouse emissions.

### Application to Other Industries

The program is applicable to all Australian industries.

### Further Information

The Greenhouse Challenge  
Australian Greenhouse Challenge Office

GPO Box 621

Canberra ACT 2601

Telephone: (02) 6274 1744

Email: [www.greenhouse.gov.au/challenge/allies.html](http://www.greenhouse.gov.au/challenge/allies.html)

## National Landcare Program

### Source

Commonwealth Government

### Aim

Landcare aims to foster improved management of Australia's natural resources.

### Key Stakeholders

Landcare is a partnership program involving federal, state, and local governments, community groups, and industry.

### Overview

The National Landcare Program supports community based projects which contribute to the protection and conservation of our natural resources. Essentially, Landcare is about communities taking responsibility for natural resource management and finding solutions to local environmental problems. The program was established to facilitate a number of objectives, which include:

- Enhance the long-term productivity of natural resources in Australia.
- Promote community, industry and governmental partnership in the management of natural resources in Australia.
- Establish institutional arrangements to develop and implement policies programs and practices that will encourage the sustainable use of natural resources in Australia.
- Develop approaches to help resolve conflicts over access to natural resources in Australia.
- Raise the natural resource and business management skills of landholders.

Examples of Landcare activity include land and water restoration activities, tree planting, revegetation, conservation of biodiversity, and other sustainable development activities. There are over 4,200 Landcare groups across Australia. The Federal Government has committed \$280 million to the program through the National Heritage Trust, which also supports similar projects including Bushcare and Rivercare. To receive Landcare funding, communities and local councils must apply to the Natural Heritage Trust.

### Environmental Benefits

Protection and conservation of our natural environment.

### Application to Other Industries

All.

### Further Information

The National Landcare Program Contact Officer  
Natural Heritage Trust Administration Section  
Natural Resource Management Division  
Agriculture, Fisheries and Forestry—Australia  
GPO Box 858  
Canberra ACT 2601  
Telephone: (02) 6271 5474  
Internet: [www.landcare.gov.au](http://www.landcare.gov.au)

# Conclusion

The prevention of environmental harm requires far more than governmental action. Many non-government institutions, sometimes in partnership with governments and sometimes entirely independently, can operate to improve the environmental performance of individuals and businesses. The end result of these various endeavours is to shift society's overall environmental performance in a positive direction. While environmental crime may not be eliminated completely, its overall incidence and impact will be that much less.

This is not to suggest that governments should “roll over and play dead”. On the contrary, they have an important role to play in identifying and encouraging non-state institutions of environmental crime prevention. Through the provision of information, the careful design of incentives, and the establishment of a legal framework within which environmentally favourable commerce might flourish, governments can make a significant contribution to environmental protection from a position other than at centre stage.

Ayres and Braithwaite (1992) used a simple, but elegant graphical depiction—The Pyramid—which can serve to illustrate the general setting of the kinds of activities noted in the above chapters and their relationship to traditional regulatory enforcement.

Used to represent the circumstances of interaction between government and industry, the pyramid represents the range of sanctions available to a regulatory agency to encourage compliance and to respond to non-compliance when this occurs.

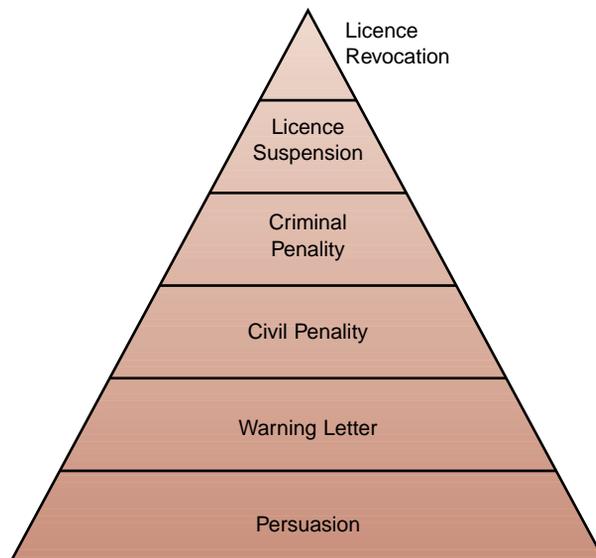
The two-dimensional space depicted in Figure 2 represents the range of responses available. The location of government action in vertical space on the pyramid represents coerciveness—the severity of response to non-compliance. The activities described in this monograph all take place at the base of the pyramid. In the ideal regulatory context, an individual or a company does the right thing without any threat or inducement from government. Compliance flows naturally from self-regulatory systems which

are already in place. To the extent that departures from compliance come to the attention of regulatory authorities, however, they are met with state response which has the capacity to escalate or de-escalate depending on the subsequent comportment of the individual or company in question. The responsiveness of the state to compliance or non-compliance is the essence of Ayres and Braithwaite's title *Responsive Regulation: Transcending the Deregulation Debate*.

According to Ayres and Braithwaite, government response should be commensurate with the offender's transgression. Simple persuasion and the provision of information are mobilised in the face of initial minor transgressions. Persistent non-compliance is met with escalating severity of response, through warning letters, civil penalties, criminal penalties and, ultimately, license suspension and revocation, the latter represents what might be described as corporate capital punishment.

The triangular shape of the pyramid, that is the relative width of its base and sharpness of its apex, implies that most regulatory interventions are relatively benign and coercive instruments are mobilised only when lesser interventions prove insufficient to secure compliance. The various activities described in the chapters above are intended to exercise a kind of "gravitational pull" on potential environmental harmdoers to improve their performance, and to reduce the necessity for more coercive state action.

**Figure 2: Enforcement Pyramid**



Source: Ayres and Braithwaite (1992).

In any event, state regulation may be useful in signalling opportunities to industry. We noted above how the world's leaders in the development of pollution abatement technology were those very nations with the most stringent regulatory requirements. By prohibiting or discouraging certain practices, state regulation has inspired a quest for more environmentally friendly alternatives. Impending restrictions on the use of CFC aerosol propellants stimulated a search for substitutes; limits on permissible levels of lead in petrol encouraged the development of unleaded petrol and alternative automotive fuels. Constraint will continue to inspire adaptation.

Sometimes, however, the message doesn't get across. As legend has it, when the United States Government responded to the first oil crisis in 1973 with the announcement that automobile fuel efficiency standards would be significantly strengthened, major domestic automobile manufacturers began to engage legal talent to help delay or defeat the impending regulations. By contrast, Japanese automobile manufacturers began to recruit additional engineering talent in order to achieve compliance and to realise a competitive advantage.

Herein lies a significant irony: regulation, often regarded as an economic burden, may actually create commercial opportunities. Businesspeople with anything more than a very shortsighted view towards next quarter's profit figures will see significant opportunities in environmental stewardship. The framework of environmental regulation entails as many if not more opportunities than it does obstacles. Pressure from government, the public, and other commercial actors can be converted to commercial advantage.

Following on his important earlier work on the competitive advantage of nations, Michael Porter sees properly designed environmental regulation as a catalyst for innovation on the part of industry. The emphasis must rest on the term *properly*, as poorly designed regulation may produce counterproductive outcomes (Porter and van der Linde 1995).

The most important requisite of regulation in furtherance of sustainability is that it be designed and implemented so that it fosters innovation. Outcome-oriented regulation, which specifies what is to be achieved, is always preferable to process-oriented regulation, which specifies how to do it. Regulatory strategies which focus on prevention are superior to those which address cleanup.

The kind of regulation which discourages innovation is that based on the immediate application of unreasonably high standards. Conversely, a degree

of lead time and the gradual tightening of standards provide businesses with latitude for the exercise of innovation.

The virtue of most of the strategies identified in previous chapters is that they tend not to involve government coercion. Approaches which on balance are coercive, are inferior to those which serve overall to enhance individual liberty. Liberty-enhancing strategies are likely to be regarded as more legitimate, and likely to prove more effective. In the absence of careful management, coercive control through negative sanctions may produce feelings of resentment, alienation, and may lead to resistance on the part of its recipient (Arnold 1989, p. 142; Tyler 1990; Sherman 1993). Just as it is said that few people upon leaving prison are better citizens that they were upon arrival, so too has it been suggested that an unreasonably harsh regulatory regime can produce an organised culture of resistance on the part of its corporate subjects (Bardach and Kagan 1982). In their analysis of taxpayer compliance, Smith and Stalans (1991, p. 46) suggest that verbal rewards may enhance support for regulatory authority.

Even though markets themselves may operate coercively, pricing mechanisms in furtherance of environmental protection tend to be perceived as preferable to commands by agencies of the state (Kelman 1983). That is, there exists among some individuals a philosophical predisposition for market-style orderings and against government command and control regulation. Incentives, which involve the carrot rather than the stick, often allow flexibility of response and are thus more likely to be regarded as legitimate by regulated interests than are more coercive regulatory instruments.

The strategic environment of business is changing. While business in the 1960s regarded the environmental movement as a transient annoyance, and in the 1980s a determined adversary, it is becoming increasingly apparent to business that sustainability is high on the public agenda and is destined to remain there. No longer can it be dismissed or ignored; no longer can environmentalists be marginalised. The most astute businesspeople are recognising this and have begun to exploit it for competitive advantage. The marketplace “increasingly selects products and services that support sustainability” (Magretta 1997, p. 86).

The emergence of prestigious groups such as the Business Council for Sustainable Development (Schmidheiny 1992), the proliferation of firms in the environmental services industry and the growing movement to go

“beyond compliance” are all illustrative. No less indicative is the increasing attention accorded to the commercial implications of sustainability in prestigious publications such as the *Harvard Business Review* (Porter and van der Linde 1995; Hart 1997; Magretta 1997). The term eco-competitiveness is becoming part of the business vocabulary (Gilding and Mawer 1996).

If one point has become abundantly clear from our research, it is that government alone can not achieve sustainable outcomes. The constraints which confront the contemporary state are very real. In democratic political systems no less than authoritarian ones, the capacity of governments to make everything right is limited.

By contrast, one important path to sustainability may involve private sector adaptability, which has become an imperative of commercial life. Gilding and Mawrer (1996, p. 8) argue that “business is probably the only mechanism capable of creating change fast enough to address the ecological and economic problems we face”.

Although multinational enterprise is in a position to drive change in furtherance of sustainability, small players are not necessarily excluded from playing a leading role in improving industry best practice. While they may lack the capacity for large scale research and development activity, and for the design of state of the art compliance systems, they do have the capacity for innovation. Smaller organisations often have the inherent flexibility to adapt quickly to a changing environment.

As Hart (1997) argues, the recognition that significant savings can be realised through pollution prevention is no longer novel. Environmental opportunities carry tremendous potential for the development of new markets and revenue growth. So it is that every new environmental challenge which arises presents business with new opportunities. For those companies willing and able to look beyond the next quarter’s profit statement, the possibility of even greater rewards may beckon.

Business culture reflects the wider culture within which it resides. In those societies where environmental awareness is relatively high, such as The Netherlands, businesses tend to integrate environmental considerations into all aspects of their operations. The Australian business community has been encouraged to emulate the Dutch, who have succeeded admirably at capitalism for most of the past 500 years and incorporate environmental issues into their overall strategy development (Beaucamp and Girgensohn 1992).

Not all of the strategies and programs identified above are universally applicable. Rigorous regimes of industry self-regulation, for example, are more easily achieved in the face of external threat, whether at the hands of market forces, environmental interest groups, or government regulators.

Our objective here has not been a balanced assessment of the strengths and limitations of these four strategies for the prevention of environmental crime. Rather, it has been to provide a basic introduction and to identify some useful examples of each.

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