

A Sustainable Future for Victoria:

Getting Environmental Regulation Right

A draft report for further consultation and input

March 2009



© State of Victoria 2009

This draft report is copyright. No part may be reproduced by any process except in accordance with the provisions of the *Copyright Act 1968* (Cwlth), without prior written permission from the Victorian Competition and Efficiency Commission.

Cover images reproduced with the permission of the Department of Treasury and Finance, Minerals Council of Australia and Melbourne Water.

ISBN 978-1-921337-48-2

Disclaimer

The views expressed herein are those of the Victorian Competition and Efficiency Commission and do not purport to represent the position of the Victorian Government. The content of this draft report is provided for information purposes only. Neither the Victorian Competition and Efficiency Commission nor the Victorian Government accepts any liability to any person for the information (or the use of such information) which is provided in this draft report or incorporated into it by reference. The information in this draft report is provided on the basis that all persons having access to this draft report undertake responsibility for assessing the relevance and accuracy of its content.

Victorian Competition and Efficiency Commission
GPO Box 4379
MELBOURNE VICTORIA 3001
AUSTRALIA

Telephone: (03) 9092 5800

Facsimile: (03) 9092 5845

Website: www.vcec.vic.gov.au

An appropriate citation for this publication is:

Victorian Competition and Efficiency Commission 2009, *A Sustainable Future for Victoria: Getting Environmental Regulation Right*, draft report, March.

About the Victorian Competition and Efficiency Commission

The Victorian Competition and Efficiency Commission, which is supported by a secretariat, provides the Victorian Government with independent advice on business regulation reform and opportunities for improving Victoria's competitive position.

VCEC has three core functions:

- reviewing regulatory impact statements, measurements of the administrative burden of regulation and business impact assessments of significant new legislation
- undertaking inquiries referred to it by the Treasurer, and
- operating Victoria's Competitive Neutrality Unit.

For more information on the Victorian Competition and Efficiency Commission, visit our website at: www.vcec.vic.gov.au

Opportunity for further comment

You are invited to examine this draft report and provide comment on it within the Commission's public inquiry process. The Commission will be accepting submissions commenting on this report and will be undertaking further consultation before delivering a final report to the Government.

The Commission should receive all submissions by **15 May 2009**.

Submissions may be sent by mail, fax, audio cassette or email.

By mail: Environment Inquiry
Victorian Competition and Efficiency Commission
GPO Box 4379
MELBOURNE VICTORIA 3001
AUSTRALIA

By facsimile: (03) 9092 5845

By email: environment@vcec.vic.gov.au

Terms of reference

Review of Environmental Regulation

I, John Lenders MP, Treasurer, pursuant to section 4 of the *State Owned Enterprises (State Body — Victorian Competition and Efficiency Commission) Order* (“the Order”), hereby direct the Victorian Competition and Efficiency Commission (“the Commission”) to conduct an inquiry into environmental regulation in Victoria.

Background

The Victorian Government remains committed to the development of best practice regulation regimes. Through its *Reducing the Regulatory Burden* initiative, the Government is finding ways of reducing administrative burdens (“red tape”) for businesses and the not-for-profit sectors, and developing new approaches to lower regulatory compliance costs. In addition, an important feature of best practice regulation is that it is reviewed regularly to ensure that it continues to represent the most appropriate means of achieving specified objectives, particularly in areas that are subject to evolution and change.

Efficient arrangements for the regulation of economic activity that has an impact on Victoria’s physical environment is essential to the sustainability of Victoria’s land and air resources. While markets ensure the matching of private wants with supply to meet those wants, conventionally, we have seen this economic activity involving resource depletion and environmental by-products. Environmental regulation exists in part to ensure that the net benefits exist after accounting not only for private benefit, but also for the immediate and long term costs of environmental impacts and that these costs can be mitigated wherever possible. One element of the costs incurred by society is the cost of compliance by economic agents with environmental regulation.

Over time, the challenges for environmental policy and regulation evolve. For example, climate change, including its implications for security of the State’s water supply, has received greater attention in recent years, while the focus on air pollution so prominent 20 or 30 years ago has abated. The framework and institutional arrangements for environmental regulation need to be able to respond to emerging challenges and the new business and economic opportunities they present.

The ratification of the Kyoto Protocol, the introduction of a national emissions trading scheme by 2010, and other environmental sustainability challenges facing Victoria carry with them a variety of consequences, changes, impacts, and risks for Victoria. However, they also provide an opportunity to position Victoria for the enormous opportunities that responses to these challenges will provide. The structural shifts required are significant, but Victoria has an exceptional skills base to realise the opportunities that come from developing cleaner industries and sustainable lifestyles.

Reforms to Victoria's regulatory framework to meet these challenges could open new prospects for innovators and entrepreneurs. There are many sectors where positive contributions towards reducing our global impacts can be made by harnessing entrepreneurial talent and developing technological solutions. However, in order to ensure that an innovative and resilient Victoria is able to adapt to the future environmental sustainability challenges and a low-carbon economy, and take advantage of the new jobs, technologies and markets that will flow from it, it is important that the regulatory framework in the State supports these endeavours.

It is therefore timely that the Commission investigate both the regulation of Victoria's natural environment and the broader frameworks, strategies and incentives in the current arrangements for regulation in Victoria and make recommendations to Government on ways in which best practice regulation can be enhanced to ensure environmental protection in a way that supports least-cost smooth operation of markets and the economy, and to meet the future challenges of environmental sustainability and a carbon constrained economy.

Scope of the inquiry

The Commission is to inquire and report upon:

- the nature and scope of benefits from environmental regulation in the modern Victorian economy;
- the nature and magnitude of the administrative and compliance burdens of Victorian environmental regulation on business, and opportunities to ensure that Victoria is a leader in regulatory approaches that benefit business and the environment;
- opportunities for improving environmental regulation – for example by:
 - reducing administrative and compliance burdens;
 - reducing any overlap and duplication of Federal, state and local government regulation;

- reducing regulatory barriers to growth in areas of the economy that are responding to the emerging environmental sustainability challenges, to help businesses to respond to the challenges of a carbon-constrained economy;
- improving institutional arrangements;
- applying alternative regulatory models (including market-based approaches)

whilst still meeting or strengthening the objectives of the current regulation; and

- the capacity and flexibility of Victorian regulation to respond to the economic opportunities arising from the environmental sustainability challenges facing Victoria, including a carbon constrained economy. This may include consideration of principles to guide the development and implementation of future Victorian regulation to respond to emerging environmental sustainability challenges.

Recognising that the scope of environmental regulation is broad, the Commission is invited to focus the inquiry by developing an appropriate methodology to identify:

- the types of environmental regulation with the highest regulatory burden; and
- where there are the greatest regulatory opportunities and barriers to Victoria maximising the economic benefits in the transition to a low carbon economy that responds to Victoria's emerging environmental sustainability challenges.

In addition, it should also be guided by public submissions in response to its issues paper to identify a small number of industries or areas of environmental regulation that might be explored as case studies within the inquiry to underpin the Commission's recommendations.

The Commission is to take as given government policy objectives in relation to environmental sustainability as set out in major policy statements in relation to water, forests and the environment more generally. In exploring issues brought before it by stakeholders, the Commission is not required to investigate any complaints or concerns expressed about current operational performance of regulators against their current regulatory objectives.

The Commission should also be cognisant of reviews planned into the *Planning and Environment Act 1987* and the Environmental Protection (Prescribed Industrial Waste) Regulations 1998 as part of the Government's *Reducing the Regulatory Burden* initiative. In addition, it should take into account the work being done on Victoria's Green Paper and Bill on climate change.

The Commission should take into account any substantive studies or developments undertaken in Victoria and elsewhere — including by the Commonwealth and other states, and international best practice — that may help it provide advice on this reference.

Inquiry process

In undertaking this inquiry, the Commission is to have regard to the objectives and operating principles of the Commission, as set out in section 3 of the Order. The Commission must also conduct the inquiry in accordance with section 4 of the Order.

The Commission is to consult with key interest groups and affected parties, and may hold public hearings. The Commission should also draw on the knowledge and expertise of relevant Victorian Government departments and agencies.

The Commission is to release an issue paper at the beginning of the inquiry process, and produce a draft report by the end of March 2009, outlining recommendations for consultative purposes. A final report is to be provided to me within 12 months of receipt of this reference.

JOHN LENDERS MP

Treasurer

Preface

The release of this draft report gives interested participants the opportunity to comment on the Commission's analysis in relation to its inquiry into environmental regulation. The Commission will consider comments received prior to developing and presenting the final report to government. The Commission regards the draft report and commentary stage as particularly important to this inquiry.

In preparing this draft report, the Commission has invited public submissions and consulted widely with a large number of organisations, government departments, local governments and individuals. Stakeholder input has greatly assisted the Commission in reporting on the many facets of environmental regulation and in presenting a draft response to the Victorian Government on ways to improve environmental regulation.

The Commission invites written submissions on the draft report **by 15 May 2009**. These submissions may address any of the issues covered by this draft report and the Terms of Reference. In light of the submissions received, the Commission will hold further consultations as necessary.

At the conclusion of consultation on the draft report, the Commission will prepare a final report to be presented to the Victorian Government by 23 July 2009. The Order in Council establishing the Commission states that the Treasurer should publicly release the final report and a response to the final report within six months of the Treasurer receiving the report.

The Commission looks forward to receiving feedback on the draft report.

The Commissioners have declared to the Victorian Government all personal interests that could have a bearing on current and future work. Moreover, while the Commissioners confirm their belief that they have no personal conflicts of interest in regard to this inquiry, Matthew Butlin wishes to disclose that he has shares in a number of resources companies, none of which operate in Victoria.

Dr Matthew Butlin
Chairman

Graham Evans AO
Commissioner

Contents

Opportunity for further comment	III
Terms of reference	IV
Preface	IX
Contents	XI
Abbreviations	XIX
Glossary	XXIII
Key messages	XXVII
Overview	XXIX
Recommendations and information requests	LXVI
1 Introduction	1
1.1 Background to the inquiry	2
1.2 The Commission's approach	3
1.2.1 Purpose of the inquiry	3
1.2.2 Scope of environmental regulation	3
1.2.3 Improvements without undermining objectives	4
1.2.4 Other reviews of environmental regulation	5
1.3 Conduct of the inquiry	6
1.4 Structure and focus of the report	7
2 Methodology	11
2.1 Introduction	11
2.2 Selecting the appropriate intervention	12
2.2.1 Public goods	14
2.2.2 Common property resources	14
2.2.3 Externalities	15
2.2.4 Imperfect information	15
2.2.5 Market incentives	15
2.2.6 Assessment	20
2.3 The Commission's approach	20
2.3.1 Question 1: is there a case for government intervention?	20
2.3.2 Question 2: are best practice principles for regulation being applied?	21
2.3.3 Question 3: Are best practice principles for institutional arrangements being applied?	22
2.3.4 Question 4: Is the unnecessary burden of regulation minimised?	24
2.3.5 Question 5: Do approval processes involve unnecessary burdens?	25
2.3.6 Question 6: has the best instrument been chosen?	25

2.3.7	Question 7: are responsibilities allocated to the right level of government?	26
2.3.8	Question 8: how are risks being addressed?	27
2.3.9	Question 9: Do regulations enable businesses to respond to the challenges of a carbon-constrained economy?	28
2.4	Conclusion	28
3	Regulatory and institutional framework	29
3.1	Introduction	29
3.2	The regulatory framework	29
3.2.1	Commonwealth, state and local responsibilities	29
3.2.2	Victorian environment policy framework	32
3.2.3	Victorian environmental legislation and regulations	34
3.2.4	Regulatory instruments	38
3.2.5	Key Victorian regulators and advisory bodies	38
3.3	Features of the regulatory arrangements	41
3.3.1	Simplicity	42
3.3.2	Clear and consistent objectives	43
3.3.3	Roles and responsibilities	44
3.3.4	Integration with other legislation	46
3.3.5	Prescriptive or outcome based approach	49
3.3.6	Market based instruments	49
3.3.7	Focus on risk	51
3.3.8	Avoiding unnecessary costs	51
3.3.9	Removing regulatory barriers	55
3.3.10	Performance reporting	56
3.3.11	Transparency and accountability	57
3.3.12	Consistency	57
3.3.13	Flexibility	58
3.3.14	Consultation	58
3.3.15	Compliance and enforceability	59
3.3.16	Information and education	60
3.3.17	Evaluation	61
3.4	Conclusion	61
4	Benefits of Victorian environmental regulation	63
4.1	Introduction	63
4.2	Intended benefits of environmental regulation	63
4.2.1	Victoria’s environmental regulation	64
4.3	Current environmental outcomes for Victoria	66
4.4	The contribution of Victoria’s regulations to environmental outcomes	69
4.4.1	The regulatory benefits—an overview	69
4.4.2	Improving the evaluation of environmental regulation	74
5	Costs of environmental regulation	77

5.1	Framework for estimating costs of regulation	77
5.1.1	Types of costs	78
5.2	Approach to estimating the regulatory cost of environmental regulation	82
5.3	Overview of the methodology	83
5.4	Survey results	85
5.4.1	Summary of findings	86
5.4.2	Costs by area of regulation	87
5.4.3	Limitations and qualifications	99
5.5	Conclusion	101
6	Streamlining environmental assessment of major projects	103
6.1	Introduction	103
6.2	Benefits and costs of environmental assessment	104
6.3	The process in Victoria	105
6.4	Coordination with other statutory processes	110
6.5	Number of projects requiring an EES	113
6.6	Possible problems with the EES process	115
6.6.1	General problems	116
6.6.2	Possible problems with particular stages of the EES process	121
6.7	Possible measures to address the identified problems	124
6.7.1	Improving coordination with other statutory approvals	125
6.7.2	Timelines	128
6.7.3	Improving scoping	130
6.7.4	Minister releases EES for public comment	131
6.8	Pathways for streamlining environmental assessment	132
6.8.1	Overview of the proposed approach	132
6.8.2	The pathways in detail	133
6.8.3	Implementation issues	134
6.9	Costs and benefits	136
6.10	Assessment against best practice regulatory and institutional criteria	140
6.11	Conclusion	143
7	Native vegetation regulations	145
7.1	Introduction	145
7.2	Issues raised by participants	145
7.3	Guidance on scoring native vegetation	148
7.4	Applying the three step approach	149
7.5	Rules for determining offsets	155
7.6	Compliance and enforcement	162
7.7	Strategic planning instruments	164

7.8	Role of BushBroker	167
7.9	Clarity of objectives for native vegetation	169
7.10	Monitoring and evaluation	171
7.11	Role clarity and accountability	173
7.12	Duplication and overlap	177
7.13	Potential cost savings	179
8	Streamlining the Environment Protection Act and related regulations	181
8.1	Introduction	181
8.2	Recent changes to the Act and regulations	182
8.3	Scope for cost savings and other improvements	184
8.4	Scheduled premises regulation: works approvals and licensing	185
	8.4.1 Participants' concerns	185
	8.4.2 Broad approaches	186
8.5	Works approval process	186
	8.5.2 Refining the triggers for works approvals	189
	8.5.3 Exempting pre-approved standard technologies	190
	8.5.4 Reducing statutory time limits	191
	8.5.5 Public reporting of performance against time limits	195
	8.5.6 A more strategic approach with improved guidance	196
	8.5.7 Integration with other processes	199
8.6	Licensing	199
	8.6.2 Accredited licences	200
	8.6.3 Corporate licences	203
	8.6.4 Standard licences	205
8.7	Prescribed industrial waste regulation	209
	8.7.1 Waste transport certificates	210
	8.7.2 Waste producer annual returns	211
	8.7.3 Waste hierarchy and targets	212
	8.7.4 Hazard classification system	215
8.8	Other issues	216
	8.8.1 Process for developing policies, protocols and guidelines	216
	8.8.2 Best practice guidance	218
	8.8.3 Consistency of advice	219
	8.8.4 Environmental audit system	221
8.9	Estimated cost savings from proposed options	221
9	Overlap and duplication of environmental reporting	225
9.1	Introduction	225
9.2	Current reporting requirements	226
9.3	Costs of environmental reporting	231
	9.3.1 Participants' views on the costs of environmental reporting	

requirements	231
9.3.2 Estimated costs of environmental reporting requirements	233
9.3.3 Mutual recognition and exemptions	236
9.3.4 Current and prospective improvements	237
9.4 Opportunities for improvement	238
9.4.1 Better aligning current reporting requirements	238
9.4.2 Developing a centralised reporting system	238
9.4.3 The Commission’s assessment	239
10 Regulation of the mining and extractive industries	249
10.1 Introduction	249
10.2 Issues raised by participants	249
10.3 Delays in approval processes	252
10.3.1 Concerns of participants	252
10.3.2 Review of approval timeframes	256
10.3.3 Options for streamlining approvals	258
10.4 Definition of low impact exploration	264
10.5 Performance reporting and evaluation	264
10.6 Estimated cost savings of proposed reforms	265
11 Improved institutional and interface arrangements	267
11.1 Introduction	267
11.2 Clarity of objectives	269
11.2.1 Broad scope of objectives	269
11.2.2 Conflicting objectives	271
11.3 The scope of Victorian initiatives to reduce regulatory burdens	274
11.4 Monitoring, reporting and evaluation	275
11.5 Roles and responsibilities of regulators	282
11.6 Future legislative and organisational arrangements	284
11.6.1 Towards the better integration of Victoria’s legislative and organisational framework	287
12 Opportunities for using market-based approaches	293
12.1 Introduction	293
12.2 A new approach to policy design	293
12.3 New policy mechanisms relevant to the environment	295
12.3.1 Tradeable pollution schemes	296
12.3.2 Auction conservation contracts	296
12.3.3 Smart markets	297
12.3.4 Taxes and subsidies	299
12.3.5 Information provision	299
12.3.6 Regulation/legislation	299
12.4 Experience with market-based institutions	300
12.4.1 Tradeable pollution schemes	300

12.4.2	Auctioned conservation contracts	303
12.4.3	Smart markets	305
12.5	Potential applications of market-based instruments in Victoria	308
12.5.1	Example 1: A tradeable permit scheme to reduce nitrogen loads in Port Phillip Bay	308
12.5.2	Example 2: Auctions to manage stormwater run-off	308
12.5.3	Example 3: Environmental offsets	309
12.6	Constraints on the use of market based instruments	310
12.7	Implications for environmental policy in Victoria	311
12.7.1	Victoria's skill base in mechanism design is developing	311
12.7.2	Increased use of market-based approaches should generate savings	312
12.7.3	Recommendations for building on the use of market-based approaches	313
13	A system for future environmental regulation	319
13.1	Introduction	319
13.2	Current regulatory principles	319
13.3	Integrating economic, environmental and social considerations – ESD principles	322
13.3.1	Adoption of ESD principles in Victoria	324
13.3.2	Economic, environmental and social considerations and the role of ESD principles	325
13.3.3	Practical guidance on ESD principles	327
13.3.4	Victorian Guide to Regulation and the integration of economic, environmental and social impacts	329
13.3.5	Opportunity for improvement – integrating ESD into best practice regulation	330
13.4	Uncertainty and the precautionary principle	335
13.4.1	What is the precautionary principle?	335
13.4.2	The precautionary principle in Victorian regulation	337
13.4.3	Problems in the application of the precautionary principle	339
13.4.4	Opportunities for improvement	341
14	Implications for adjustment to a low carbon Victorian economy	353
14.1	Introduction	353
14.2	Sectors that may be most affected by adjustment to a carbon constrained economy	353
14.2.1	Predictions from modelling	353
14.2.2	The impacts of technology on adjustment costs	356
14.2.3	Implications for regulation	357
14.3	Regulatory barriers in particular industries	359
14.3.1	Electricity pricing	359
14.3.2	Wind power	366

14.3.3	Carbon capture and storage	370
14.3.4	Geothermal energy	373
14.3.5	Solar energy	374
14.3.6	Building efficiency	375
14.3.7	Biosequestration through forestry	378
14.3.8	Water	384
14.4	Regulatory and adjustment barriers extending beyond particular sectors	386
14.4.1	Approvals processes	386
14.5	Conclusion	387
Appendices		
A	Consultation	389
A.1	Introduction	389
A.2	Submissions	389
A.3	Roundtable and Consultations	392
References		399

Abbreviations

ABS	Australian Bureau of Statistics
ACG	Allen Consulting Group
AEMC	Australian Energy Market Commission
AGV	Auditor General of Victoria
AQM	Air Quality Management
BCC	Business Cost Calculator
BIA	Business Impact Assessment
CCS	Carbon Capture and Storage
CES	Commissioner for Environmental Sustainability
CMA	Catchment Management Authority
CO ₂	Carbon Dioxide
COAG	Council of Australian Governments
CPRS	Carbon Pollution Reduction Scheme
CUTEP	Clean Up to Extent Practicable
DPC	Department of Premier and Cabinet
DPCD	Department of Planning and Community Development
DPI	Department of Primary Industries
DSE	Department of Sustainability and Environment
DTF	Department of Treasury and Finance
eBX	BushBroker Exchange
EEO	Energy Efficiency Opportunities
EES	Environment Effects Statement

EIA	Environmental Impact Assessment
EID Act	Extractive Industries Development Act 1995
EIP	Environment Improvement Plan
EMS	Environmental Management System
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPHC	Environmental Protection and Heritage Council of Australia and New Zealand
EREP	Environment and Resource Efficiency Plan
ESD	Ecologically Sustainable Development
FFG Act	Flora and Fauna Guarantee Act 1988
GAA	Growth Areas Authority
GDP	Gross Domestic Product
GEM	Guidelines for Environmental Management
GHG	Greenhouse Gas
GSP	Gross State Product
GVT	Growing Victoria Together
IGAE	Intergovernmental Agreement on the Environment
IWMP	Industrial Waste Management Policies
MAV	Municipal Association of Victoria
MoU	Memorandum of Understanding
MRET	Mandatory Renewable Energy Target
MRSD Act	Mineral Resources (Sustainable Development) Act 1990
NEPC	National Environment Protection Council

NEPM	National Environment Protection Measure
NETS	National Emissions Trading Scheme
NGERS	National Greenhouse and Energy Reporting System
NGO	Non-Government Organisation
NPI	National Pollutant Inventory
NSESD	National Strategy for Ecologically Sustainable Development
NVeX	Native Vegetation Exchange
NVPP	Native Vegetation Precinct Plan
OECD	Organisation for Economic Cooperation and Development
PC	Productivity Commission
PEM	Protocol for Environmental Management
PIA	Policy Impact Assessment
PIW	Prescribed Industrial Waste
RIS	Regulatory Impact Statement
RRB	Reducing the Regulatory Burden
SARC	Scrutiny of Acts and Regulations Committee
SEPP	State Environment Protection Policy
SME	Small and Medium Enterprises
SOE	State of the Environment
TFP	Total Factor Productivity
VAGO	Victorian Auditor-General's Office
VCAT	Victorian Civil and Administrative Tribunal
VCEC	Victorian Competition and Efficiency Commission
VEET	Victorian Energy Efficiency Target

VRET	Victorian Renewable Energy Target
VWMA	Victorian Waste Management Association
WaterMAP	Water Management Action Plan
WMP	Waste Management Policy

Glossary

accredited licence	A licence administered by the EPA Victoria that enables businesses with sound environmental management systems, community involvement and a commitment to good environmental performance, to be subject to a less prescriptive approach to works approvals and licensing
Act	A Bill that has been passed by Parliament, received Royal Assent and become law
administrative costs	Costs incurred by business to demonstrate compliance with regulation or allow government to administer regulation
BushBroker	A system to register and trade native vegetation credits in Victoria, allowing native vegetation clearing to be offset on a different property
BushTender	An auction-based approach to improving the management of native vegetation on private land. Under this system, landholders competitively tender for contracts to better protect and improve their native vegetation. Successful bidders receive periodic payments for their management actions under agreements signed with DSE
corporate licence	A licence administered by the EPA Victoria that enables businesses with two or more licences to consolidate their licences into a single document, with streamlined reporting structures
delay costs	Includes standby costs (capital and labour down time) and holding costs (interest on loans, rent, material procurement, builder contract costs, additional consultancies, lost business opportunities). May also include costs from not being unable to deliver on time and being perceived as an unreliable supplier
EcoTender	A system that allows rural landholders to earn income for work on their property that improves the environment. Landholders bid for funds based on a five-year management plan developed with an

EcoTender Field Officer

externalities

Situations in which one person's or firm's activities affect others who are not direct parties to the transaction. Consequently, they do not take the impact on others into account when making production or consumption decisions. Emissions of greenhouse gases are an example of a negative externality

green paper

A green paper is a document detailing draft policy intentions designed for consultation with stakeholders. The objective is to arrive at a general consensus before the official policy document (white paper) is released

Growing Victoria Together

Growing Victoria Together is a ten-year vision that articulates what is important to Victorians and the priorities the Government has set to build a better society

legislation

Laws passed by Parliament, or subordinate legislation being statutory rules made under powers delegated by Parliament

Meeting Our Transport Challenges (MOTC)

The Victorian Government's 25-year transport plan (released in 2006) that includes infrastructure projects but also seeks to provide a framework for addressing future needs and challenges

Melbourne 2030

Melbourne 2030 — Planning for Sustainable Growth (released in 2002) is the Victorian Government's 30-year plan to manage growth and change across metropolitan Melbourne and surrounding regions

Our Environment, Our Future

Victoria's Environmental Sustainability Action Statement which sets out how the Government proposes to secure a sustainable future. The statement contains more than \$200 million of new investment and 150 initiatives in the areas of responding to climate change and maintaining and restoring our natural assets

point source

A single identifiable localised source, for example, of air, water, thermal or noise pollution

precautionary principle

States that where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for

postponing measures to prevent environmental degradation

public goods

Goods that are non-excludable, in the sense that it is not possible to exclude people from consuming them, and non-rivalrous, in the sense that one person's consumption of the good does not affect another person's capacity to enjoy it. Because individuals can typically access public goods without payment, commercial incentives to provide public goods are weak, and may warrant public funding

policy development

The process of formulating the direction of new primary and subordinate legislation, codes of practice, preparation of regulatory impact statements and business impact assessments, as well as policies on funding programs, community information or other activities. It includes consultation on these matters

planning scheme

A statutory document that sets out objectives, policies and provisions relating to the use, development, protection and conservation of land in the area to which it applies. Each municipality in Victoria has its own planning scheme

prescribed industrial waste

Waste that arises from an industrial, commercial or trade activity or from a laboratory; or that arises from a hospital and is potentially harmful to human beings or equipment; and any mixture containing an industrial waste; that is listed in Part B of Schedule 1 of the Environment Protection (Prescribed Waste) Regulations 1998

regulation

The imposition of some rules, supported by government authority, intended to influence behaviour and outcomes. The Organisation for Economic Co-operation and Development defines the term as 'the instruments by which governments place requirements on enterprises, citizens and government itself, including laws, orders and other rules issued by all levels of government and by bodies to which governments have delegated regulatory powers'

risk

The probability that existing hazards will cause harm,

that is, that an undesirable event will occur

scheduled premises	Any premises which fall into a class prescribed in the regulations to the Environmental Protection Act 1970, or discharge waste to the environment
standard cost model	A framework for measuring the administrative costs of regulation
standard licence	A licence administered by the EPA Victoria that is required for waste discharges and related operations from all scheduled premises (s 20), unless the premises are exempted in the regulations or hold an accredited or corporate licence. Standard licences cover the actual operation of the site and set operating, waste discharge limits, and waste acceptance conditions as appropriate
subsidiarity	The subsidiarity principle suggests governance functions should be assigned to the level of government that is best placed to deliver functions in pursuit of joint policy goals and requires that decisions should be taken by an entity as close as practicable to the people affected by those decisions
substantive compliance costs	Costs incurred to achieve compliance with regulation. Within this category, the Commission has attempted to distinguish between monetary costs directly incurred and costs arising from delays
sustainability covenant	Voluntary agreements through which the EPA Victoria and a company, a group of companies or an industry sector can explore new creative ways of reducing the environmental impacts and increasing the resource efficiency of their products and services
uncertainty	The fact or condition of not knowing or being fully confident about something, such as an outcome
white paper	A white paper is a document which details government policy intentions and commitments, usually prepared after consideration of responses to a green paper

Key messages

The current economic and environmental context, both local and international, gives particular relevance to the Victorian Competition and Efficiency Commission's consideration of opportunities to reduce the costs to the community of Victoria's environmental regulations while maintaining the Victorian Government's environmental objectives.

Victoria's 43 environmental Acts provide a range of benefits, including reducing or ameliorating damage to the natural environment as a result of pollution, facilitating economic and social development where impacts on the environment are present, protecting biodiversity, and stimulating more efficient uses of water and energy. Given the limited evaluation of environmental regulation in Victoria, however, it is not possible to assess confidently the benefits that may be attributed to most regulations.

The Commission estimates that the cost to business of the five major pieces of environmental regulation is between \$130 million and \$395 million per year. It considers these costs are likely to be the bulk of the costs arising from Victoria's 43 environmental Acts, and that the estimated cost range is broadly consistent with that found by other overseas and Australian studies. Around 40 per cent of the costs to business are attributable to paperwork burdens and the costs of delayed environmental approvals.

Environmental regulation can be improved to reduce costs and timeframes, while achieving the same or improved environmental outcomes, by:

- improving regulatory processes for major project start-ups, which could reduce costs, especially those arising from delays. This is important in the years ahead, because the Victorian Government wishes to bring on new infrastructure projects.
- reducing the costs and duplication of regulations covering environmental protection, reporting, and mining and extractives. Some regulators (such as EPA Victoria) have already been taking innovative approaches to reduce regulatory burdens.

The total cost savings to business from the recommendations in this report are substantial, and the Commission considers a reasonable estimate of annual savings to be in the range of \$32 million to \$50 million per year.

In addition, native vegetation regulation remains unnecessarily complex and costly to administer and comply with, and many inquiry participants expressed doubts about its effectiveness. The community could receive a better environmental return from the government reducing the regulation's complexity, clarifying administrative accountabilities and investing in incentives as well as regulation to improve native vegetation outcomes.

The following proposed changes to regulation, regulatory principles and institutional arrangements could better position Victoria to respond to future environmental challenges, including those of a low carbon economy:

(continued next page)

- Better evidence (based on regular evaluation) of the performance of environmental regulations against their objectives would improve understanding of what works best and guide the design of future environmental interventions.
- The adoption by relevant departments and agencies of performance reporting frameworks for environmental regulation would encourage continuous improvement and improve accountability.
- Clear separation of the roles of policy maker and regulator would improve the clarity of roles and the administration of environmental regulation, especially in the areas of native vegetation, environmental protection policies and forestry harvesting.
- Testing and adoption of innovative market-based instruments to address environmental problems efficiently should be encouraged and should lead to improvements in the effectiveness and efficiency of environmental interventions.
- A more transparent and consistent approach to considering 'ecologically sustainable development' (ESD) would encourage more effective and efficient environmental regulation. In particular, better guidance and tools for developing environmental regulations in situations of risk and uncertainty are needed.
- Despite some important regulatory changes to facilitate the introduction of new technology, particularly in the area of electricity generation and distribution, Victoria faces regulatory barriers to innovation and to approval processes for major projects, including renewable energy and modifications to existing coal-fired generation.
- Adjusting to a carbon-constrained economy will require innovative solutions, and the Commission invites further input on regulatory barriers to such innovation.

Some process shortcomings of environmental regulation that result in delays and uncertainty appear related to a view that economic, environmental and social factors need to be 'balanced'. The Commission suggests that different language is needed to describe better the process of integrating these factors to achieve ESD-based outcomes.

Overview

This draft report starts a further round of public input and consultations on a set of recommendations intended to improve Victoria's environmental regulations and to position the state better for a low carbon future—in both cases without compromising environmental objectives being sought by the Victorian Government.

In response to environmental challenges, Victoria has developed over several decades an extensive and complex body of environmental regulations. At least 43 Acts regulate uses of the natural environment. A number of State Government departments and agencies administer this legislation, and Victoria's 79 local councils also play an important role.

The volume of environmental regulation reflects the importance of environmental considerations to the living standards of current and future generations of Victorians. In any modern society, sustainable improvements in the wellbeing of its citizens depend on simultaneous improvement in economic, environmental and social performance. Well framed environmental regulation contributes to wellbeing by reducing human health risks due to air and water pollution, by limiting overuse of natural resources such as water, forests and fisheries to prevent the breakdown of vital ecosystems, and by tackling risks to the long-term productivity of land posed by weeds, animal pests, erosion and salinity.

The environmental challenges faced by Victoria—namely, responding to adverse climate change, water scarcity and threats to biodiversity—are part of a wider canvas of challenges that includes the economic consequences of the global financial crisis and the ongoing need to address social and economic disadvantage. The tough economic conditions facing Victoria make it vital to ensure that the costs to business of environmental regulation are the minimum necessary to achieve the government's environmental objectives. These costs include, for example, the direct costs of filling out paperwork and modifying plant and equipment to comply with regulatory requirements intended to prevent or reduce potential environmental harms. Where regulations require new projects to be assessed for their potential environmental effects, costs may arise from uncertainty about the outcomes and from lengthy delays.

The Victorian Government, recognising the importance of efficient and effective regulation to the environment and the economy, directed the Victorian Competition and Efficiency Commission to inquire into and report on Victorian environmental regulation. The terms of reference direct the Commission to identify opportunities for improving the efficiency of these regulations without compromising the Victorian Government's environmental objectives. For the purposes of the inquiry, the Commission has taken the term 'environment' to cover the natural environment, such as air, water, biodiversity and other natural resources.

The Commission's approach

The terms of reference instruct the Commission to report on the nature and scope of benefits from environmental regulation, the nature and magnitude of the administrative and compliance burdens of Victorian environmental regulation on business, and opportunities for improving environmental regulation, including opportunities to apply alternative regulatory models. Given the broad reach of environmental regulation, the government also asked the Commission to focus its inquiry by developing an appropriate method to identify:

- the types of environmental regulation with the highest regulatory burden
- Victoria's largest regulatory opportunities for, and barriers to, maximising the economic benefits in the transition to a low carbon economy that responds to the state's emerging environmental sustainability challenges.

In addressing these terms of reference, the Commission has given considerable thought to the question of how to achieve improvements in regulation and decision-making without compromising environmental objectives. The Commission has generally focused on improving the efficiency of environmental regulation—that is, to look for opportunities to reduce costs by improving process efficiencies, targeting more accurately the incidence of regulation and simplifying requirements—without compromising environmental objectives. This approach has also had the indirect consequence in several instances of improving the effectiveness of the regulation—that is, improving environmental outcomes—by improving incentives for compliance or reducing perverse incentives.

In some cases, most notably native vegetation, the Commission has concluded that although cost savings are possible, they are not the main issue. The Commission has focused on simplifying the regulation, reducing complexity and clarifying responsibilities. These changes are likely to improve the situation in an area of regulation that was the most commonly mentioned by a very wide range of participants. This theme is amplified later in the overview.

The Commission was also asked to consider future regulation and related arrangements including an appropriate set of principles to guide environmental regulation. The purpose is to ensure Victoria is well positioned to respond to the challenges of a carbon constrained future in a way that meets environmental outcomes, encourages innovation and achieves an efficient adjustment path. The Commission's reflections identified a range of major sectors where large scale adjustment was required and where regulation would play some role. In addition, in these and other areas, efficient planning and project processes would make an important contribution to Victoria's adjustment.

These future oriented reflections also identified some important shortcomings in how the principles of ecologically sustainable development (ESD) are embodied in legislation and, perhaps most importantly, in the very limited guidance provided to policy makers and regulators in relation to key ESD principles, particularly risk and uncertainty.

Focusing the inquiry

The terms of reference asked the Commission to develop a methodology to focus the inquiry. This methodology mostly drew on four main sources of information and analysis:

- (1) The rationales underpinning Victoria's current environmental legislation, an assessment of the economic activities regulated by the legislation, and an understanding of both the regulatory approaches used and the nonregulatory alternatives that may be available.
- (2) The views of inquiry participants, as expressed through submissions, direct meetings and roundtable discussions. The Commission greatly appreciates the extensive contributions from a wide range of participants, including external stakeholders, regulators and policy makers.
- (3) Estimates of the regulatory burdens imposed by selected environmental regulations, drawing on a survey of Victorian businesses and a literature review.
- (4) Modelling work undertaken for Australian governments on the likely effects of a carbon pollution reduction scheme. The Commission used this information to identify sectors of the Victorian economy likely to be most affected by such a scheme and also susceptible to regulatory barriers to innovation and adjustment.

The Commission's analysis and feedback from inquiry participants indicate that Victoria's environmental regulations provide a wide range of benefits and served purposes that generally speaking, were widely supported, although the specific benefits of particular regulations could not be established with confidence (often because of the generally very limited attention to evaluation). Most businesses and organisations accepted the need for, and value of, environmental regulations, with the principal concerns being to make improvements to them in a range of areas. Moreover, many participants who had operations in several Australian States regarded Victoria's environmental regulations as being, overall, quite competitive, whilst having some important opportunities to make significant improvements. Similar perspectives also applied to a number of environmental regulators, notably the innovative approaches the EPA Victoria has been pursuing to reduce the cost burden by pursuing a more outcomes based approach in several areas of the regulations it administers.

The very nature of a process that relies on public submission and participation is, however, that it draws out concerns and issues from participants, and as a result has a natural tendency to focus on the negative. The Commission has been conscious of this tendency and has sought to acknowledge and encourage the good practice and ongoing improvements to policies and regulations that it has encountered during this inquiry.

That said, the major concerns are legislation establishing environmental assessment and approval processes (which apply to the pre-feasibility and start-up phases of projects), and pollution control legislation (which applies to the operational and closure phases of business). Inefficiencies in environmental assessment and approval processes can impose unnecessary administrative and compliance costs on business, increasing the overall cost of projects. Moreover, the potential for delays during these processes means the timing and magnitude of a proposed project's costs and revenues can be uncertain for businesses.

Inquiry participants also raised the following issues with environmental regulation in Victoria:

- multiple, duplicative and cumbersome processes for assessing environmental approval applications
- overly complex and onerous regulatory requirements, as exemplified by the native vegetation framework
- a lack of coordination among regulatory bodies involved in environmental approval processes
- the limited availability of the necessary technical skills within regulatory agencies to assess environmental approval applications
- multiple and duplicative environmental reporting requirements under Victorian and Commonwealth regulation.

The subject matter of this inquiry is complex and extensive. The Commission's views have evolved over the course of the inquiry to this point, and the Commission has at all times aimed to meet the obligation under its charter to 'operate in a framework consistent with Victorian Government's social, economic and environmental policies and priorities'.

Benefits of Victorian environmental regulation

Environmental regulations are intended to deliver benefits to society, such as protecting and conserving aspects of the natural environment and facilitating economic and social development where potential environmental impacts are present. The nature of these benefits varies greatly, from reducing harm (or the risk of harm) to the environment from overuse, through to improving aspects of the environment.

The first state of the environment (SOE) report (box 1) provided a wide ranging review of the physical condition of Victoria's natural environment, based on an information base that is very uneven in quality and coverage (CES 2008). The report presents a mixed scorecard on the state of the environment, despite the extensive environmental regulation in Victoria. For many aspects of the environment, the trends of the past decade are unfavourable:

- an ongoing net loss in the quantity and quality of native vegetation
- an increase in the number of threatened species
- a large proportion of Victoria's rivers that are considered to be in poor condition.

On the positive side, the area of land affected by salinity has declined (possibly as a result of prolonged drought), the hole in the ozone layer has stabilised with the phasing out of ozone depleting substances, and air quality has also been stable.

BOX 1 State of the environment report

The Commissioner for Environmental Sustainability examined environmental conditions and trends in a number of key areas:

Greenhouse gas (GHG) emissions

GHG emissions grew by 12 per cent, accompanied by higher temperatures and markedly below average rainfall and inflows to inland water storages.

Ozone formation

Monitoring in metropolitan Melbourne shows the level of ozone in the stratosphere reached a low point in 1998 and has since fluctuated around that level. Emissions of ozone depleting matter in the metropolitan area halved during the second half of the 1990s.

Air quality

The quality of Melbourne's air has been stable in recent years, other than during bush fires and dust storms.

Native vegetation

Victoria lost native vegetation at the estimated rate of 4000 hectares per year between the end of the 1980s and 2005. These losses occurred almost wholly on privately owned land.

Agricultural soil

One third of all agricultural land in Victoria was classified as seriously degraded in the last stocktake, undertaken in 1991. The amount of land affected by salinity has declined, however, due to the prolonged drought.

Marine and coastal assets

Information is limited, but several marine species are considered to be exploited to the fullest sustainable extent. The natural features of most coastal estuaries have been substantially degraded.

(continued next page)

Rivers and inland water reserves

No trend data are yet available. Data for 2004 show river conditions to be no more than moderate overall, with only one fifth of Victorian rivers assessed to have good characteristics in the key attributes of water quality and breeding habitats, and one third assessed as being in poor to very poor condition.

Threatened species

Currently 160 vertebrate and 780 plant species are considered to be either rare or under threat of extinction. The number in these categories increased between 2002 and 2007.

Source: CES 2008.

These trends raise questions about the contribution to these outcomes from Victoria's environmental regulations. While there is a presumption that the environmental regulations have, at the very least, meant that the present environmental outcomes are generally better than they might otherwise have been, there is little direct evidence on, and evaluation of, the effectiveness of Victorian environmental regulation. There are some good examples of monitoring and reporting on trends in the quality of forests and air quality. There have also been significant reviews of major processes under major legislation, such as the review of the *Environment Effects Act 1978*. However, few attempts have been made to examine how specific environmental regulations have contributed to changes in the physical environment. The Commission could find only two evaluations of the effectiveness of regulation, and information on regulatory effectiveness is very limited in key areas with extensive regulation, such as the environmental assessment process, native vegetation and land, air and water quality. Notwithstanding the limited analytical evidence, there is pressure to strengthen or extend regulation in areas such as biodiversity maintenance and climate change.

The lack of monitoring, reporting and evaluation in key areas of environmental regulation reflects inherent challenges:

- problems in isolating the contribution of regulation, given that nonregulatory factors such as drought and climate variability can influence environmental outcomes
- unclear allocation of roles and accountability in the implementation and enforcement of regulation
- a lack of clarity about the objective of regulations
- measurement difficulties, such as limited mapping of native vegetation (often reflecting limited resourcing for such activities).

Costs of Victorian environmental regulation

While environmental regulations are intended to provide a range of benefits, they also impose costs on businesses. The terms of reference thus require the

Commission to report on the nature and magnitude of the administration and compliance costs of Victorian regulation.

To address this requirement, the Commission started by reviewing the literature on the costs of environmental regulation. Attempts have been made to measure environmental expenditure by businesses in developed economies, including Australia. But these studies measured total environmental expenditure, including the costs to business of meeting regulatory requirements. Despite this limitation, they provide an upper bound estimate of the costs of environmental regulation. They suggest the total environmental expenditure by businesses in Australia may be 0.2–0.4 per cent of the total value of production (gross domestic product). Applying this range locally suggests environmental expenditure by Victorian businesses, for regulatory and non-regulatory purposes, may be \$0.5–1.0 billion per year.

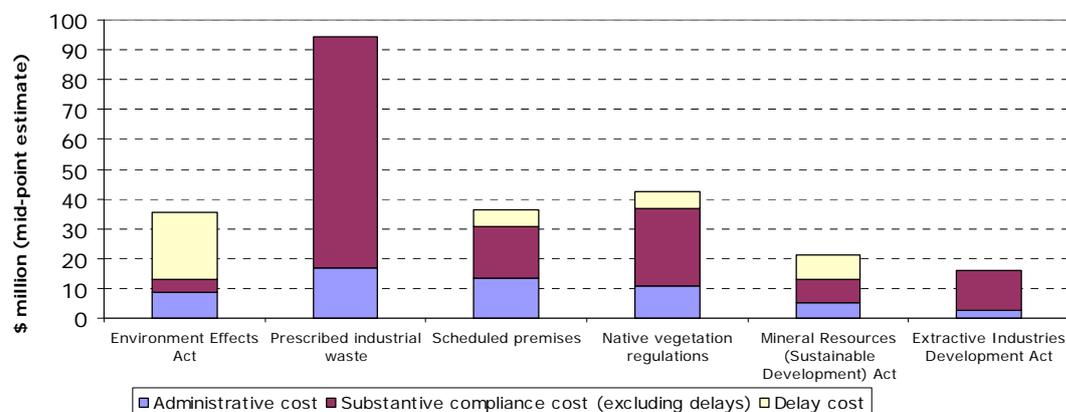
To estimate some of the business costs imposed by Victorian environmental regulations, the Commission engaged The Allen Consulting Group to undertake detailed business surveys on key areas of Victorian environmental regulation (table 1) that had been identified as imposing the most costs on business activities. The Commission separately measured the *financial costs* (that is, licence fees and other charges imposed by environmental regulation). Together with financial cost data, the survey results suggest the costs to business of key Victorian environmental regulations are in the range of \$130 million to \$395 million with a mid-point of \$262 million. These costs represent around 0.1 per cent of Victoria’s gross state product, so may be conservative.

Table 1 Estimated costs to business of key Victorian environmental regulations

	Administrative and substantive compliance cost (point estimate) \$ million per year	Administrative and substantive compliance cost (range) \$ million per year
Environment Effects Act 1978	35	14–57
Native vegetation regulations	42	22–62
Environment Protection Act 1970	131	55–206
Mineral Resources (Sustainable Development) Act 1990	21	11–32
Extractive Industries Development Act 1995	16	12–20
Total (excluding financial costs)	246	114–378
Total (including financial costs)	262	130–395

The total costs estimated from the business surveys can be broken into components (figure 1).

Figure 1 **Costs of key environmental regulations^a**



^a Excludes financial costs to business.

Source: ACG 2009.

Administrative costs, often referred to as red tape, are those costs that businesses incur to demonstrate compliance with the regulation or to allow government to administer the regulation. They are easier to estimate than other components, and reducing them is likely to have less impact on outcomes than is reducing compliance costs.

The largest component of the total costs of key environmental regulations is *substantive compliance costs (excluding delay costs)*—that is, a business’s operating and capital costs that lead to the environmental outcomes being sought. These costs are incurred to deliver the benefits of environmental regulation, but measuring them is challenging because businesses need to identify the ‘additional’ costs incurred as a direct result of the regulations.

Delay costs include the interest lost on delayed profits, and standby and other holding costs resulting from unnecessary delays in regulatory processes. Many of the businesses surveyed could not estimate the costs of delays, even though they reported experiencing significant delays. The scope to reduce delay costs, without undermining the objectives of regulation, may be greater than for reducing compliance costs.

These results are based on several technical assumptions, so have very broad subjectively-based confidence intervals attached to them:

- Businesses had very different experiences with approval processes. Some businesses reported encountering lengthy and costly delays; others reported

that the costs of delays were small or unknown. The large confidence intervals attached to delay cost estimates reflect this variation.

- The cost estimates are sensitive to the assumptions used to ‘scale up’ the results from the necessarily limited number of interviews to determine the total cost to Victorian business.
- Many businesses found it difficult to identify some costs of environmental regulation, increasing the margin of error. Generally, businesses that had recently undertaken a new investment or experienced a change in environmental standards could better identify regulatory costs.

Notwithstanding broad confidence intervals, there are several reasons for assuming Victorian environmental regulation imposes costs additional to those captured by The Allen Consulting Group:

- The estimates cover only the major five of at least 43 Acts, and also, do not cover costs to Victorian businesses of Commonwealth legislation, such as the *Environment Protection and Biodiversity Conservation Act 1999*.
- The Commission separately estimated the costs to Victorian businesses of mandatory environmental reporting obligations. A large number of Victorian businesses are required to report on their environmental performance under overlapping Victorian and Commonwealth programs. The Commission estimated that mandatory environmental reporting programs impose administrative and compliance costs on business of around \$23 million per year.
- Some potential costs of environmental regulation were not measured. Overly costly or prescriptive regulation can, for example, discourage business start-ups and innovation. These costs are harder to measure, but examples were provided to the Commission in areas such as land use planning and environmental protection regulations.

The Commission seeks feedback on these cost estimates.

Opportunities for improving environmental regulation

Environmental approval and regulatory processes have an important role to play in addressing the economic and environmental challenges facing Victoria. But to do so efficiently and effectively, they need to effectively integrate economic, environmental, social and other considerations into Victoria’s environmental regulations.

The Commission considers that a number of process shortcomings in environmental regulation that result in delays and uncertainty are related to a view that economic, environmental and social factors need to be ‘balanced’. Decision-makers and stakeholders will have different views about how to balance these considerations. The Commission believes that it may be useful to adopt a

different description of sound regulatory processes and outcomes—for example, effective and efficient regulatory processes should seek to achieve outcomes that are a ‘synthesis’ of economic, environmental and social objectives. This approach intrinsically focuses on outcomes.

The Commission recommends that the Victorian Government undertake two groups of actions to achieve a better synthesis of economic, environmental and social considerations in regulatory decisions:

- The first group of recommendations aims to make *short-term* change, materially improving the efficiency of major environmental approval processes by reducing the burden on businesses without undermining the Victorian Government’s environmental objectives.
- The second group of recommendations aims to address some *future challenges* as well as improve the effectiveness of Victoria’s environmental regulations.

Short-term actions

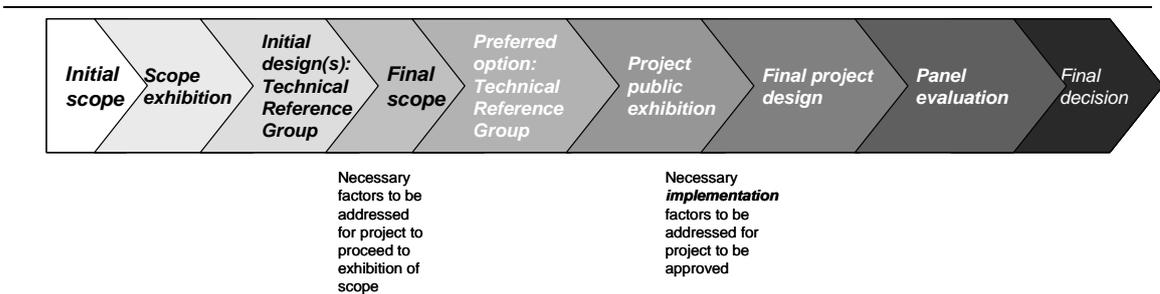
The first group of recommendations proposes changes to deliver significant savings in time and resources for businesses. Implementing these measures would assist Victoria in meeting its economic challenges, but without compromising Victoria’s environmental objectives. The Commission’s recommendations relate to the following key areas of regulation:

- environmental impact assessment processes
- native vegetation regulations
- environmental protection regulations
- environmental reporting obligations
- mining and extractive industry regulations.

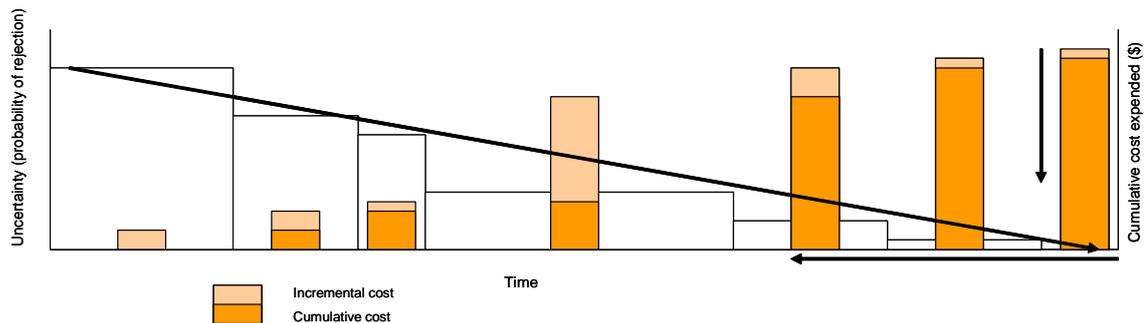
Improving environmental impact assessment processes

The Environment Effects Act establishes a process to identify the potential environmental effects of a major project. An efficient environment effects statement (EES) process can deliver several benefits, including early withdrawal of unsound proposals and improvements to sound proposals (such as relocation to a more suitable site and redesign to reduce, mitigate or avoid environmental impacts). An efficient process will also enable a progressively sharper focus on the key issues and collection of data on them. As illustrated in figure 2, this will permit a progressive reduction in the number and scope of issues about which there is genuine uncertainty. The proponent would normally prefer to delay outlays on the project until such uncertainty is reduced, to avoid the risk of wasting outlays if, for example, the assessment indicates the project needs redesigning or cannot proceed.

Figure 2 Framing the environmental effects process from a business perspective



The process should progressively reduce uncertainty and cut unnecessary costs and time.



The following factors indicate significant potential to improve environmental assessment processes in Victoria to reduce timeframes and costs, while ensuring environmental impacts are effectively identified and addressed:

- The large range in the duration of the EES process, combined with the absence of prescribed timelines for some process stages, suggests some cases have taken longer than necessary (although reforms introduced in 2006 might have shortened the process).
- Assuming five EESs are in process in any year, the annual administrative costs are about \$8.8 million, of which businesses incur almost \$6 million (to prepare the EESs). Substantive compliance costs (excluding delay costs) are estimated to be \$4 million per year, while delay costs are about \$22.6 million per year, although these estimates have a wide confidence interval.
- The EES process informs a broader project approval process, with many Acts involved, but the extent of coordination across these Acts differs considerably.
- The process does not appear to have 'check points' to provide opportunities for ensuring the analysis focuses on the key environmental issues.
- Feedback from stakeholders indicates scope for further substantial improvements.
- The Victorian Government's decision to develop a major transport project approvals process is intended to facilitate faster assessments of, and

decisions on, major public sector transport projects. Its pursuit of opportunities to improve the approval process for transport projects suggests opportunities to improve assessment processes for other projects may also be available.

The Commission proposes a new approach involving two complementary assessment pathways: one involves changes within the current framework, while the other combines these changes with a major change in process and in decision-making responsibilities. The first pathway improves the current process by:

- applying time limits to all stages of the environmental assessment process, some of which would be statutory while others would be negotiated at the start of the process. As now, protocols would exist for giving advance notice of delays and revisions to the agreed schedule
- reporting publicly the time taken for each stage of the process, to encourage compliance with the timelines. Reasons for any delays would be provided, and an independent agency such as the Auditor-General would periodically (for example, every five years) assess performance against these timelines
- substantially shortening the period for determining the scope of the EES, either by making the current 'indicative' 50 business days enforceable or by imposing a shorter period
- assigning responsibility to the proponent for developing the scope, but subject to guidelines and government approval
- permitting out-of-scope issues to be included within the EES only with the approval of the relevant departmental Secretary
- improving the functioning of technical reference groups, by requiring that group members have the authority to express the views of their department or agency. Meetings of a technical reference group would coincide with key check points in the EES process. The purpose and timing of the check points would be negotiated at the start of the process, but would include checking whether the EES scope could be narrowed and identifying key decisions to be made to avoid delays
- negotiating memoranda of understanding between the key departments involved in approvals, to provide a template for how the technical reference group would handle issues
- making the proponent, instead of the Minister for Planning, responsible for releasing the EES for public review.

Notwithstanding these streamlining improvements, an unreasonable delay could occur. To address such situations, the Environment Effects Act could be amended to give the minister a call-in power that he or she could exercise (as in the *Planning and Environment Act 1987*) when:

- the matter raises a major issue of policy

- an unreasonable delay in the decision on the application disadvantages the applicant.

The second pathway includes the streamlining improvements outlined above. However, rather than providing the minister with a call-in power, it makes a significant change by consolidating the approval processes of all or most relevant Acts into the EES process. A large project could require approvals under 15 or more Acts. In this situation, a shortcoming of the first pathway is that many decision-makers continue to be involved (often with the power of veto), creating scope for disagreement and delay. While the call-in power helps to address this issue, it can be exercised only after an unreasonable delay. The second pathway makes an unreasonable delay less likely to develop because the assessment process is integrated with project approval, with the minister as sole decision-maker.

To reduce the potential for duplication between Victorian and Commonwealth environmental assessment processes, the Victorian Government would need to seek accreditation of the reformed process, avoiding the need for case-by-case accreditation of EES processes.

The Commission estimates that these changes could reduce the costs of the EES process by between \$5.4 million and \$22.6 million per year, principally through lower delay costs. The costs of implementing the changes would be small, most likely less than \$1 million per year.

Streamlining native vegetation regulations

Regulation to limit clearing of native vegetation is designed to ensure landholders consider a range of public and private benefits when deciding how to manage their native vegetation. Private benefits include amenity, soil protection, and shade and feed for livestock. Some benefits from vegetation also accrue to the local community, such as the reduced risk of land degradation (erosion, salinity and poor water quality in catchments) and the amenity resulting from preserving features of the landscape (such as the ‘tree change’ character of regional towns). Vegetation also provides important public benefits, such as habitat for threatened species, carbon retention and amenity benefits to the broader community.

The Victorian planning provisions require landholders to obtain a permit from councils to ‘remove, destroy or lop native vegetation’ except in defined circumstances. Councils assess most applications (around three quarters) using a policy framework developed by the Victorian Government. They refer about one quarter of cases to the Department of Sustainability and Environment (DSE), which undertakes the assessment. The assessments aim to achieve an outcome tailored to the particular features of the application. Where some clearing is approved, landholders may be required to provide offsets, which can be a mix of

replanting, protecting on-site vegetation or purchasing and protecting vegetation on another property.

This case-by-case approach can achieve a tailored outcome. However, in each case of proposed clearing, the best outcome for landholders and the broader community may depend on a detailed assessment of private and public benefits. This approach is complex and involves high administration and compliance costs for councils, the DSE and landholders. In addition, councils have applied the regulations inconsistently, which has led to concerns about the effectiveness of the regulatory arrangements.

The inherent challenges in implementing native vegetation regulations have been recognised for some time. When the Commission last examined native vegetation regulations during its inquiry into *Regulation and regional Victoria* (VCEC 2005), it found the complexity of the regulations and their implementation had imposed unnecessary uncertainty and costs on landholders. The Victorian Government subsequently developed a more strategic approach to implementing the regulations, involving, for example:

- strategic planning tools to identify valuable native vegetation well in advance of proposed developments, to help reduce uncertainty about whether clearing would be permitted
- a streamlined permit application process for councils to use for simple applications, and more information and training for councils
- a revised set of exemptions that attempt to broaden and clarify the circumstances in which a permit to clear native vegetation is not required
- a broadly consistent set of local policies (overlays) that are intended to allow councils to protect landscape features that are important to local communities.

Although some of these initiatives have been in place for a relatively short period, they are still unlikely to address some of the underlying problems with the regulatory and institutional arrangements. Feedback from inquiry participants also suggests the changes have not addressed the problems of regulation complexity and inconsistent application by councils.

To address these issues, the Commission considered what the regulations are designed to achieve. The stated objective for native vegetation policy is to achieve a ‘reversal, across the entire landscape, of the long term decline in the extent and quality of native vegetation, leading to a net gain’. Inquiry participants were unclear about how this objective is to be achieved through the administration of the regulations. This view is given some substance by the evidence of an ongoing net loss of vegetation extent and quality. Some inquiry participants argued that attaining a net increase in native vegetation is not achievable under current policy settings.

The Commission recommends, therefore, that the Victorian Government clarify its goal for administration of the regulations. An option is to specify that the objective for private land is to ensure no net loss in the public environmental benefits provided by native vegetation. This approach is consistent with the Victorian Government's view that landholders should be required to make reparations for any loss of public benefits as a result of clearing, but that the broader community is responsible for achieving the net gain objective.

The following additional improvements would simplify the controls to reduce uncertainty, costs and timeframes for business, and ensure the resources invested in offsets deliver the intended environmental benefits:

- Improve the information to businesses about the location and types of native vegetation that the government wishes to protect. This could be achieved by expanding the use of strategic planning tools such as precinct plans. Such strategic planning instruments should be developed using an integrated approach having regard to the intended synthesis of economic, environmental and social impacts.
- Improve and simplify the guidance on factors to be considered in applying the three-step approach (avoid, minimise, offset) to ensure applicants and regulators apply the three-step process more consistently (and stop them proceeding straight to the offsets).
- Develop and implement an audit strategy to monitor and evaluate compliance with offset agreements. The overall rate of compliance with offset agreements is not known, and some inquiry participants considered there is a high level of noncompliance.
- Simplify the guidance for 'scoring' native vegetation. The current system is unnecessarily complex, and it overvalues relatively low quality vegetation and undervalues higher quality vegetation.
- Simplify the rules for calculating offsets by increasing flexibility in the types and locations of offsets that can be provided, and by clarifying the offset rules relating to the rehabilitation of mines and quarries.
- Strengthen accountability for developing a robust and active offset market, by having the DSE seek expressions of interest from the business and not-for-profit sectors to provide BushBroker in its current form. The expression of interest process would need to clarify accountability for ensuring compliance with offset agreements.
- Develop and publish a performance monitoring framework and a process for evaluating the efficiency and effectiveness of the regulations and any changes implemented.

A further important gap in the current regulatory approach is the lack of clear accountability for the operation and evaluation of the clearing controls. The

involvement of multiple bodies—the DSE, the Department of Planning and Community Development (DPCD), the Department of Primary Industries (DPI), catchment management authorities (CMAs) and councils—clouds accountability and increases problems with coordination. The DSE sets and implements the policy, but also has a regulatory function, giving rise to a conflict of interest. Further, it sets the state framework that councils play a key role in implementing, but there is little or no oversight of implementation by councils—for example, councils provide basic information on permit applications to the DPCD but not to the DSE.

To improve accountability and clarify roles and responsibilities, the Commission has examined two options, both of which remove from councils the responsibility for administering the regulations. It supports the second option, although the first option could be implemented more quickly or as a transitional approach. The Commission is seeking feedback before deciding which of the following is the preferred approach:

- Make the DSE the decision-maker for all permit applications. This would mean applying one consistent statewide policy. In addition, the DSE units undertaking the functions of making and advising on policy and implementing the regulations would be clearly separated, with each unit having clear accountabilities.
- Take native vegetation out of the planning system and establish a separate legislative framework whereby accountability rests with a designated minister. An existing independent regulator (such as EPA Victoria) would administer the new Native Vegetation Act. The DSE would remain responsible for developing and advising the responsible minister on policy and would monitor implementation of the regulations.

The Commission was unable to estimate cost savings to business from these changes, partly because some of the likely benefits include reduced uncertainty from greater consistency in the application of the controls. There would, however, also be some costs to businesses from implementing the Commission's recommendations. The costs include more refusals of applications to clear native vegetation (for example, where vegetation has previously been identified as a priority for protection), and also costs to business from better monitoring and enforcement of offset agreements.

Reducing red tape in environmental protection

Each year EPA Victoria assesses the environmental impact of a large number of new works or upgrades; in 2007-08, it assessed work approvals valued at \$350 million in total. Under Victoria's *Environment Protection Act 1970*, premises that have the potential for significant environmental impact are subject to (1)

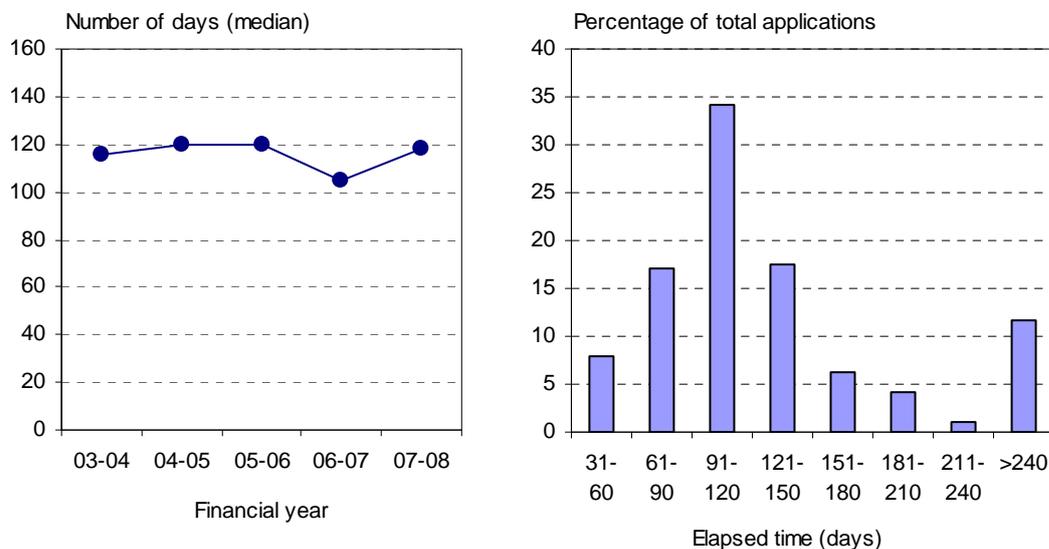
works approvals for the construction and modification of facilities or processes and/or (2) licensing for operating conditions, discharge limits, monitoring and reporting.

Most businesses and other government entities generally regard EPA Victoria as an effective environmental regulator. A notable achievement has been the organisation's increasing adoption of a risk-based approach, which better targets the works approval and licensing system. EPA Victoria has also developed innovative approaches such as corporate licensing and electronic systems that reduce the 'red tape' burden on business. While recognising these achievements, the Commission found in its review of key instruments under the Environment Protection Act that improving the efficiency of the works approval process, accelerating licensing reform and streamlining prescribed waste regulations would lead to significant cost savings.

Having examined the works approval process, the Commission considers there is potential to refine a number of EPA Victoria processes to further reduce administration costs and delays:

- Current triggers for a works approval are quite broad. One may be required even when a facility upgrade would reduce the volume of waste discharged to the environment. There is scope to redraft triggers in the Environment Protection Act so works approvals are not required for facility upgrades that would result in the same or lower level of environmental harm. To further reduce the costs to EPA Victoria and businesses in undertaking works approvals, 'off-the-shelf' or standard technologies could be pre-approved.
- Reflecting concerns about timeframes for works approvals, and feedback from EPA Victoria about the extent of possible improvements, the statutory time limit for EPA Victoria to assess an application should be reduced, from four months (figure 3) to two months (60 days).
- EPA Victoria is not required to report on its performance in meeting the statutory time limits in the Environment Protection Act. Public reporting would provide an important means of acknowledging improved performance while also ensuring accountability for the efficiency of the approval process.
- More definitive guidance could be provided on the information required for works approval applications. EPA Victoria's requests for detailed information impose additional costs on both that organisation and applicants, and prolong the assessment process.

Figure 3 Elapsed times, works approval applications, 2003-04 to 2007-08^a



^a The elapsed time is measured as the number of calendar days from the date an application is received to the date a decision is made.

The Commission supports EPA Victoria's recent and planned licensing reforms—such as corporate licensing—which have the potential to deliver substantial cost savings to business. But it perceives scope to accelerate the reform rollout to bring forward the benefits:

- To date, only eight—of a potential 100—corporate licences have been issued. Given the expected benefits of corporate licensing, EPA Victoria should (if licensees agree) convert multiple single site licences into corporate licences as soon as is practicable. Further, it should aim to incorporate performance-based conditions wherever appropriate. To drive this reform, EPA Victoria should establish rollout targets in its annual plan of key deliverables.
- Some businesses reported that EPA Victoria's approach to licensing is overly prescriptive. The Commission considers that a more outcome based approach is warranted. EPA Victoria should review the standard licences on issue (which are not amenable to corporate or accredited licensing), with the aim of replacing prescriptive conditions with outcome-based conditions where appropriate. This review should also simplify licence conditions and reporting requirements. EPA Victoria should establish targets for this review in its annual plan of key deliverables.

While few inquiry submissions commented on prescribed waste regulations, the survey on the cost of Victorian environmental regulation revealed the administrative

costs of waste transport certificates and related record keeping are significant, although the compliance costs of the regulations overshadow these costs:

- Despite the introduction of the electronic WasteCert system in 2001, a large number of waste transport certificates continue to be lodged in paper form each year. Given the cost savings and other advantages associated with the WasteCert system, EPA Victoria should establish targets in its annual plan of key deliverables for increased use of electronic waste transport certificates. Because similar data can be obtained from waste transport certificates, this removes the need to require waste producers to submit annual returns, delivering further administrative cost savings.
- The waste hierarchy—which is embedded in the Environment Protection Act and various policies—reflects a technical goal of waste minimisation rather than economic efficiency. It is also potentially at odds with another principle in the Environment Protection Act, which states that environmental goals should be pursued in the most cost effective way. Moreover, because it is generalised, the guidance provided by the hierarchy is not appropriate for every business. The hierarchy should be replaced with a ‘waste management’ principle that waste should be managed according to the net benefit criterion; that is, waste management strategies should be based on actions that will deliver the largest net benefits to business and society.

In addition, there is scope to improve the process for developing protocols and guidelines for environmental management. Some guidelines, for example, have been in draft form for extended periods, causing confusion over the status of these documents. When developing protocols and guidelines, EPA Victoria should publish timeframes for the key steps in the process, including the expected date of finalisation.

The Commission has estimated its proposed options for the Environment Protection Act and regulations would save at least \$16.6 million a year in administrative and compliance costs.

Reducing duplication and overlap in environmental reporting

Many of the businesses consulted during the inquiry considered they incur unnecessary costs due to overlapping environmental reporting requirements imposed by the Victorian and Commonwealth governments. While businesses acknowledge the importance of reporting, especially in relation to compliance, they argued there is scope to reduce reporting requirements without undermining the benefits.

A large number of Victorian businesses must report on resource use and other aspects of their environmental performance under six largely overlapping Victorian and Commonwealth programs (table 2). These programs may require reporting on the use of electricity, gas and water; waste generation (including

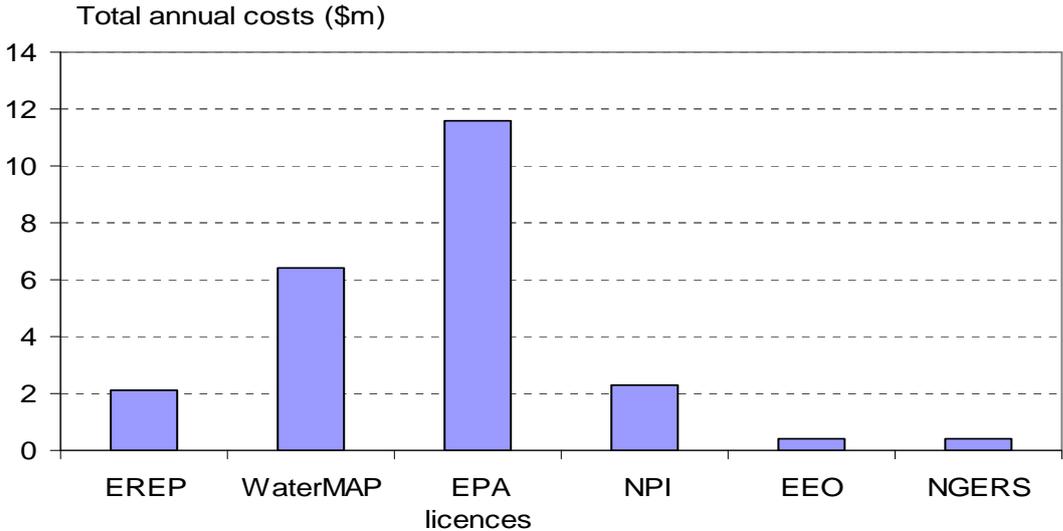
greenhouse gas emissions); and businesses’ plans to reduce their resource use and waste production.

Table 2 Mandatory reporting programs

	<i>Water</i>	<i>Electricity</i>	<i>Gas</i>	<i>LPG</i>	<i>Fuels</i>	<i>GHG</i>	<i>Waste</i>	<i>Other</i>	<i>Actions</i>
EREP	✓	✓	✓	✓	✓		✓		✓
WaterMAP	✓								✓
EPA Victoria licence		✓	✓	✓	✓	✓	✓	✓	
EEO		✓	✓	✓	✓				✓
NPI		✓	✓	✓	✓		✓	✓	
NGERS		✓	✓	✓	✓	✓			

The Commission has estimated that the administration costs to Victorian businesses of meeting the requirements of Victorian and Commonwealth environmental reporting programs are about \$23.2 million per year (figure 4). There is significant overlap across the objectives, information requirements and coverage of the major mandatory environmental reporting programs. The programs differ, however, in reporting formats and periods, and participation thresholds. There is thus scope to reduce the administrative costs to business, without undermining the benefits of environmental reporting, by better aligning current reporting requirements and developing a centralised reporting system.

Figure 4 The costs of mandatory environmental reporting



Source: Commission estimates.

There is significant overlap between the Victorian Environment and Resource Efficiency Plans (EREPs) and other mandatory environmental reporting programs. In addition, 50 per cent of respondents to a survey of EREP sites reported no benefits from participating in the EREP program. Yet only 27 of a total population of 250 sites have received any exemption from the program. There should be greater scope for obtaining exemptions based on criteria such as a demonstrated track record in resource efficiency savings, an obligation to report under other mandatory and voluntary programs, and an environmental management system with ISO certification.

Another mandatory Victorian environmental reporting program, WaterMAP, requires certain Victorian businesses to report on water use and efforts to conserve water. The costs of the WaterMAP program could be reduced by automatically exempting EREP participants from the program, and by cutting the 90 or so information obligations under WaterMAP to a core of about 15 one-off obligations and 20 annual obligations that are essential to achieving the program's purpose.

To reduce the time and costs to businesses of preparing multiple reports, governments should modify and adopt an existing on-line reporting system for all remaining mandatory programs and licences, with standard formats and timing for all required reporting.

The Commission has estimated that implementing these recommendations would save Victorian businesses \$5.9–7.2 million per year.

Streamlining mining and extractive industries regulations

Legislation regulates the mining and extractive sectors by requiring parties that wish to undertake exploration, mining or extractive activities to hold the requisite licences and obtain work approvals and work authorities before commencing work. The Victorian Government, recognising some weaknesses exist in the regulatory frameworks, has committed to review key provisions of the legislation.

The Commission examined mining regulation in its inquiry into *Regulation and regional Victoria* (VCEC 2005). The major issues examined were the unnecessary costs and delays associated with administering the work approval processes, and the rule requiring approval of low impact exploration work plans. The Victorian Government accepted the Commission's recommendations, but has not yet fully implemented some agreed changes.

Businesses in the mining and extractive sectors submitted to the present inquiry that environmental assessment processes and regulation of native vegetation (both discussed above) are the major sources of uncertainty, cost and time delays. However, the feedback to this inquiry suggests the work plan approval

processes for the mining and extractive industries are still imposing unnecessary cost and delays. The Commission thus considers there is scope to improve the regulation of the mining and extractive sectors:

- On behalf of work approval applicants, the DPI should coordinate with other relevant agencies regarding mining and extractive industry approvals, when requested to do so by proponents.
- The DPI should enter into memoranda of understanding with the referral agencies (other than with the DSE, where a memorandum already exists)—such as the Crown Land Minister and the Victorian WorkCover Authority—to better coordinate and integrate their approval processes.
- The DPI should implement a comprehensive performance reporting framework for the mining and extractive industries. The framework would specify target timeframes for processing approvals, including those for referral agencies, and should measure performance against these targets. Once developed, the DPI's reporting framework should be independently assessed, possibly by Victoria's Auditor-General.
- The definition of low impact exploration should be clarified, as the Commission previously recommended and the Victorian Government accepted.

The Commission has estimated that implementing these recommendations would save Victorian businesses \$3.8-3.9 million per year.

Cost savings from the Commission's recommendations

Estimating the costs savings from the Commission's proposed reforms is necessarily imprecise, reflecting the challenges in estimating the existing cost base, and the assumptions underpinning the impact of proposed improvements. The cost savings to Victorian businesses are likely to be \$32-50 million per year (table 3)—potentially \$320–500 million over 10 years (the life of most regulations). The basis for these savings is fully documented in the body of the report, and the Commission invites feedback on the reasonableness of the estimates and the extent to which these cost savings would materially improve Victoria's competitive position as a place to invest.

Table 3 Cost savings from changes to Victorian environmental regulation

	<i>Annual administrative and compliance cost savings (\$ million)</i>
Environmental assessment	5.4–22.6
Native vegetation regulations	nq
Environment protection	16.6
Environmental reporting	5.9–7.2
Mineral and extractive regulation	3.8–3.9
Total	31.7–50.3

nq Denotes not quantified.

Future regulatory challenges

The draft recommendations proposed above are intended to deliver significant savings in time and resources for businesses in the short term, without undermining the Victorian Government’s environmental objectives (and even strengthening them where possible). Beyond ways of better dealing with environmental challenges, however, it is important to examine the factors that led to the extensive and complex framework of environmental regulation in Victoria.

The broad reach and complexity of Victoria’s framework of environmental regulation raises questions about why there are so many Acts (at least 43) and so many pages of legislation and regulation (over 9000). Possible reasons include:

- the emergence of new environmental challenges such as climate change (examples include the *Victorian Renewable Energy Target Act 2006* and the *Victorian Energy Efficiency Target Act 2007*)
- gaps in performance monitoring, reporting and evaluation that result in redundant or ineffective legislation being retained
- a strong preference for regulation over nonregulatory approaches, given the perception that regulation will achieve the desired outcome
- governments and regulators adopting a risk-averse approach. Given that governments are seldom praised for not taking pre-emptive or unnecessary action, they have an incentive to err on the side of caution.
- the development of new technologies requiring the definition or clarification of property rights (such as carbon capture and storage, and geothermal energy generation).

Aspects of Victoria's regulatory framework could be improved to address the scope and complexity of environmental regulation and to ensure Victoria can better meet its pressing economic and environmental challenges. The Commission has identified scope to improve the three main elements of Victoria's regulatory framework:

- (1) the *institutional and interface arrangements*, including the allocation of responsibility within government (and to the different levels of government), the coordination mechanisms to ensure decisions reflect environmental, economic and social considerations, and the processes for monitoring and evaluating regulation
- (2) the *instruments* used to achieve environmental objectives, especially given growing experience with new approaches for environmental protection based on creating markets for environmental services
- (3) the *principles* that environmental agencies apply in developing and implementing regulation, including the relevance of best practice and ecologically sustainable development (ESD) principles to decision-making.

Institutional and interface arrangements

Many of the Commission's draft recommendations are designed to simplify and improve implementation in areas such as environmental assessment, native vegetation, environmental protection, environmental reporting, and mining and extractives. Recurring themes in these areas are the need to clarify objectives, improve accountability and implement performance monitoring and evaluation frameworks. There are also opportunities to implement similar improvements in other areas of environmental regulation:

- The Victorian Government should clarify the objectives of environmental regulation by ensuring all environmental legislation and supporting guidance contain clearly stated and specific objectives. This should be done for the *Flora and Fauna Guarantee Act 1988*, the *Wildlife Act 1975*, the *Sustainable Forests (Timber) Act 2004*, the Environment Protection Act, the Environment Effects Act and the native vegetation regulations, for example.
- The Victorian Government should enhance incentives for improvement and accountability in environmental regulation by developing performance reporting frameworks for the relevant department or agency to implement. The reporting framework should cover specification of objectives, the monitoring of environmental, economic and social outcomes, types of indicator (outcome, output and input), and the use of the reporting (for example, the frequency of reporting, the form of public reporting, and its use to review and improve regulation).

- Given the costs and benefits of environmental regulations are difficult to assess at the outset, thorough and ongoing evaluation should also be required. The Victorian Government should commit to the principle (to be incorporated in the 2007 *Victorian guide to regulation*) that all new environmental regulations should have an evaluation strategy.

The Victorian Government's Reducing the Regulatory Burden initiative is part of the architecture for ensuring all regulation, including environmental regulation, is efficient. The Commission's estimates of administrative and compliance costs in this report highlight the importance of ensuring initiatives to reduce aggregate regulatory burdens cover compliance burdens (including delay costs) as well as administrative burdens. The Commission recommends, therefore, that the Victorian Government consider extending the scope of the Reducing the Regulatory Burden initiative to include compliance burdens (including delay costs) at the end of the initiative's first phase.

Aspects of the organisational architecture for environmental regulation also need improvement. The Commission has argued, for example, that regulatory bodies should not be responsible for policy (a general principle supported by the Victorian Government). Regulators should provide input to the policy development process, such as input on the nature of policy problems and the technical feasibility of policy options. Combining regulatory and policy functions, however, clouds accountability for regulatory outcomes and contributes to the risk of regulatory creep and excessively complex regulation.

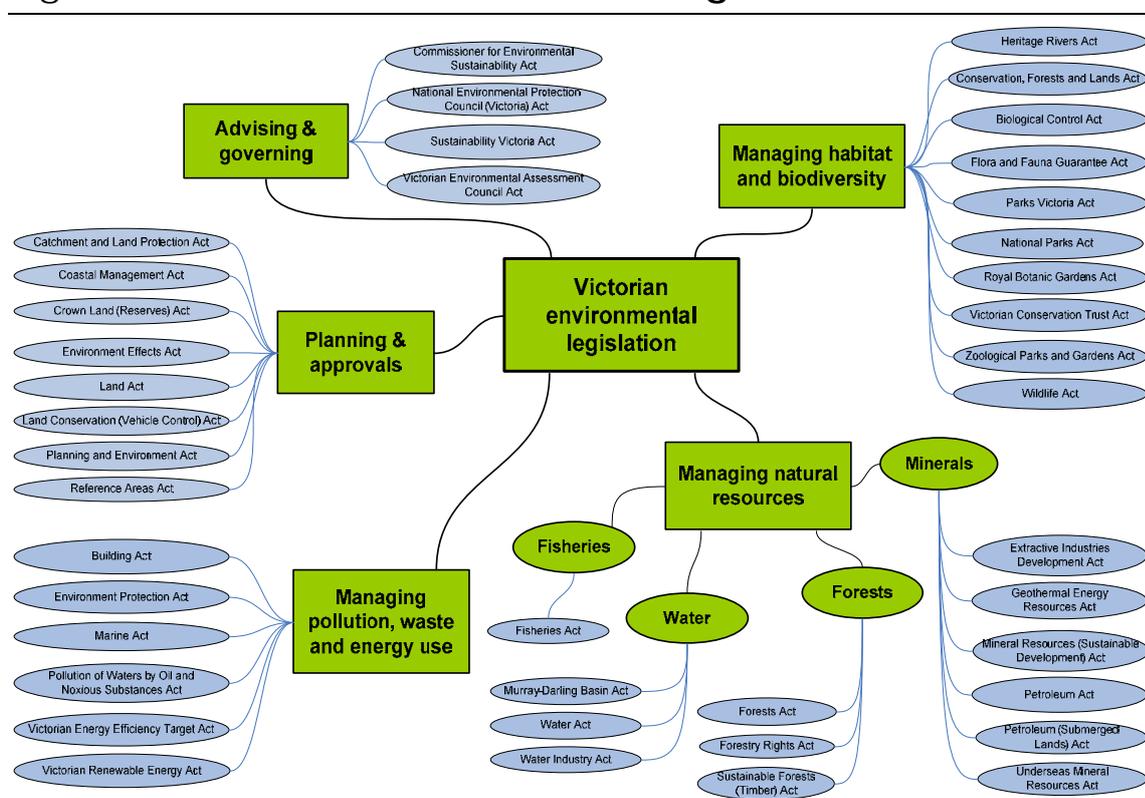
The Commission has identified areas in which policy development and implementation are insufficiently separated:

- The DSE develops the policy relating to native vegetation regulations but also has a regulatory function, giving rise to a conflict of interest—for example, it develops and implements the regulations but also reports on the outcomes for native vegetation across Victoria
- EPA Victoria is responsible for developing state environmental protection policies and waste management policies that set the environmental standards that businesses must meet, and it is also responsible for implementing these policies through licensing, works approval and other regulatory activities.
- The DSE has management responsibility for commercial harvesting in the west of the state, as well as policy and regulatory roles for all state forests. It sets and monitors the level of harvesting in each Forest Management Area. The department is also responsible for the Timber Harvesting Operator licensing system specified by the Sustainable Forests (Timber) Act, it monitors the level of sawlog harvesting and it enforces penalty provisions for breaches of environmental requirements.

The Commission invites further comment on the issues raised by the existing role allocations in native vegetation, environmental protection and forestry regulations.

Longer term, there is scope to consolidate the regulatory frameworks (figure 5). The Victorian Government has already acknowledged this scope through the land and biodiversity green paper process. Clearly, implementing a major restructuring of Victoria’s legislative and organisational arrangements would have potential benefits but also costs, especially in the period before and after any change. Little evidence was presented about these benefits and costs, so the Commission seeks feedback from inquiry participants on the need for such changes, the alternative options available, and the benefits and costs of these alternatives.

Figure 5 Victorian environmental legislation



Market-based instruments

Advances in economic theory open up the prospect of developing new solutions to previously intractable policy problems. These new mechanisms are often referred to as market-based instruments, because they are designed to mimic the way in which markets efficiently allocate resources and create wealth. Examples are tradeable pollution permits, auction conservation contracts and ‘smart markets’ for offsets in areas such as native vegetation.

Studies of the use of such instruments overseas and in Victoria suggest significant cost savings have resulted from using these approaches to achieve environmental outcomes. The BushTender program, which uses auctioned conservation contracts to conserve native vegetation, is an example of the successful use of this approach in Victoria. The DSE has also completed the design and laboratory testing of a program (called BushBroker Exchange) to develop a smart market for native vegetation offsets.

Victoria is developing skills in the public sector and universities to develop further applications of market-based instruments. Possible applications include allocating and pricing solid waste, managing stormwater run-off into waterways, and devising and allocating nitrogen pollution rights in Port Phillip Bay. The application of market-based instruments, however, is still at a formative stage and will raise new issues that could create hesitancy in using this approach. To encourage policy innovation in this area, the *Victorian guide to regulation* (Government of Victoria 2007) could be amended to require that regulatory impact statements and business impact assessments for new environmental regulations and legislation include a market-based instrument such as tradeable pollution permits, auction conservation contracts and smart markets, unless the proponent can demonstrate such approaches are not practicable.

The design and creation of policy instruments requires input from economists and scientists, who will usually work outside government. A policy design reference group, consisting of an independent expert group that includes a small group of academic economists and senior policy makers, would secure access to these skills. (The cost of running a small part-time group should not be large.)

The ongoing role of the reference group would be to support interested departments and agencies in developing market-based instruments as options for responding to environmental regulatory challenges. It would provide advice on the adequacy and efficacy of evidence from experimental and pilot work. This group would have elements of a practice community and should also focus on the governance and risk management issues relevant to the use of new institutions to achieve policy outcomes. The way that market based approaches interact with supporting legislation and processes will be one important aspect of good policy design.

Principles for future regulation

The principles of good regulation that the Commission has set out in previous inquiry reports apply to environmental regulation. A number of the issues highlighted in this report represent departures from such best practice principles. Future environmental regulation, as with all regulation, should have proper regard to, and fuller disclosure of, the objectives of a proposed measure, the identification and targeting of problems, the consideration of all options and the evaluation of all cost and benefits.

While best practice principles should apply to all environmental regulations, these regulations are also guided by:

- ESD objectives and principles, such as those enunciated under the Intergovernmental Agreement on the Environment and the National Strategy on Ecologically Sustainable Development, and incorporated into many pieces of Victorian environmental legislation
- the precautionary principle (incorporated into the principles of ESD, Victorian environmental legislation and common law) (box 2).

Box 2 Objectives and principles of ecologically sustainable development

The goal is:

Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The core objectives are:

- to enhance individual and community wellbeing and welfare by following a path of economic development that safeguards the welfare of future generations
- to provide for equity within and between generations
- to protect biological diversity and maintain essential ecological processes and life-support systems.

The guiding principles are:

- decision-making processes should effectively integrate both long- and short-term economic, environmental, social and equity considerations
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation [that is, the precautionary principle]
- the global dimension of environmental impacts of actions and policies should be recognised and considered
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised
- cost-effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms
- decisions and actions should provide for broad community involvement on issues which affect them.

These guiding principles and core objectives need to be considered as a package. No objective or principle should predominate over the others. A balanced approach is required that takes into account all these objectives and principles to pursue the goal of ESD.

Source: Commonwealth Government 1992.

Almost half of the 43 Victorian environmental Acts identified by the Commission incorporate ESD principles or refer to the concept of ‘sustainability’. Further, many of these Acts seek to give some effect to these principles or concepts by specifying that they should guide the ‘administration of the Act’ and/or should be ‘considered’ or implemented in decisions and other instruments made under the Act. The issue is how future environmental regulation can best incorporate these principles and concepts.

Submissions to the inquiry indicate concerns from businesses and environmental groups alike about how decision-makers ‘strike the balance’ between the economic, environmental and social factors—the synthesis of which lies at the core of the ESD principles. The threats of climate change and biodiversity loss have also highlighted the difficult challenge of making decisions and developing and implementing environmental regulations in a context of scientific uncertainty—a situation that the application of the precautionary principle may guide. These issues raise questions as to whether ESD objectives and principles are clear enough across Victorian legislation and whether their consideration, in the design and implementation of government measures relating to the environment, is consistent with best practice regulatory principles.

Although the ESD objectives and principles are widely ‘institutionalised’, their interpretation and application continue to be grey areas for all stakeholders. Government decision-makers also have substantial discretion in how they integrate ESD. Future Victorian environmental regulation may continue to have issues of inconsistency, limited transparency, diffuse accountability, imprecision and disproportionality if it is not developed and implemented within the context of best practice regulation.

Part of the challenge, is the need to provide clearer guidance on what the synthesis—the desired outcome—is intended to be. In its absence, there is a natural default in approval processes (for example) that effectively explore a ‘balance’, by providing opportunities for a range of stakeholders to object to decisions that should have been made on an informed, evidence-based basis. It is from this perspective, in significant part, that the Commission takes the view that the language of ‘balance’ is imprecise and misleading compared with a purposeful, outcome-based approach.

To address these issues, all environmental legislation should apply ESD consistently, and the government should provide closer guidance on how to implement ESD within best practice regulatory principles.

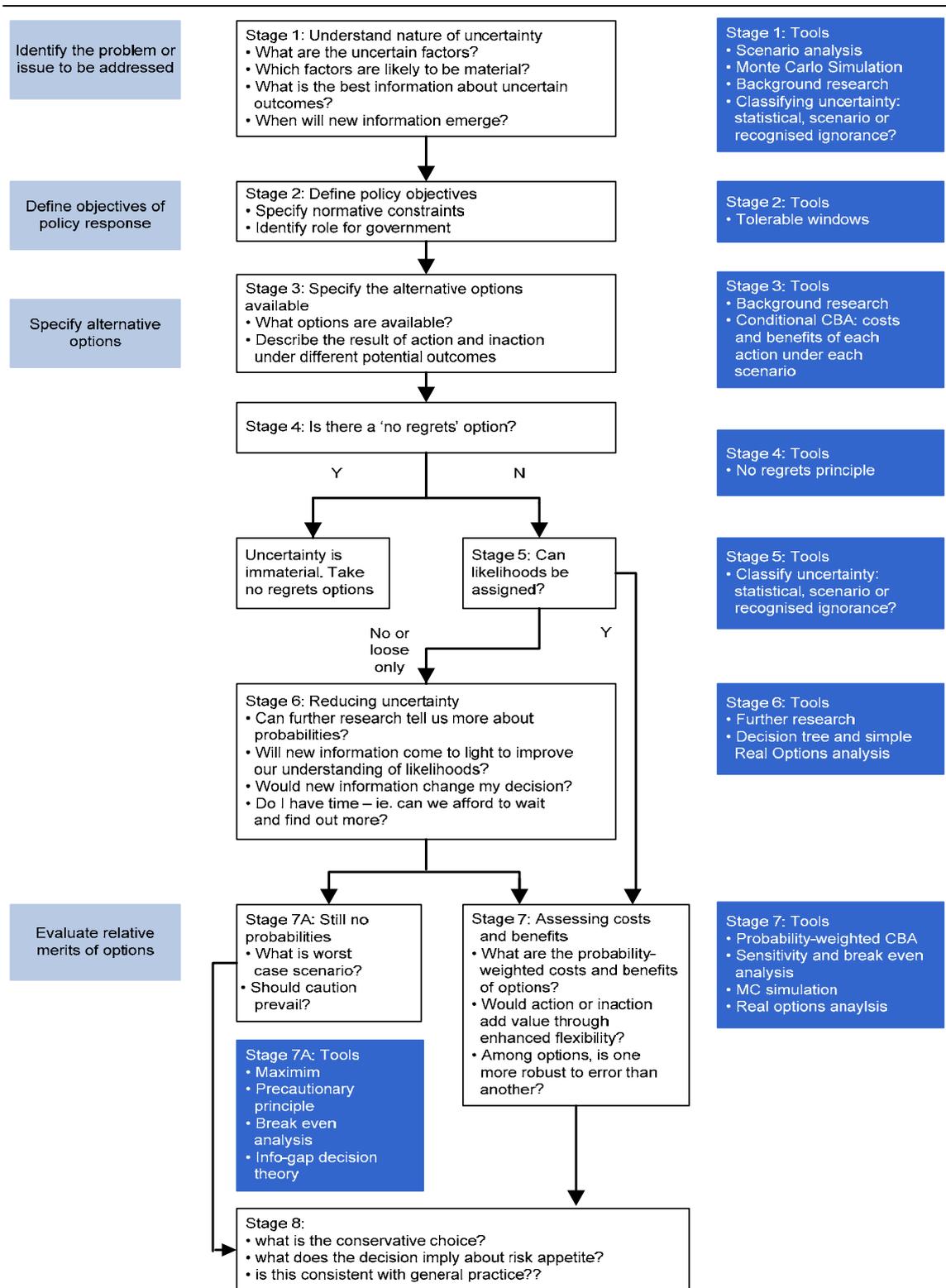
The Victorian Government should amend the *Victorian guide to regulation* to acknowledge ESD and place it within the context of best practice regulatory principles and processes. It should consider opportunities for adapting and adopting the Commonwealth Government’s approach to incorporating ESD

within a regulatory impact statement process. The Victorian Government and its agencies should also ensure they provide guidance on what ESD means in the context of specific environmental policy areas, at the level of implementation.

Given the uncertainties involved in tackling complex environmental threats, the risks and costs to the community are particularly high when the application of the precautionary principle deviates from good regulatory practice. There is significant scope for, and potential benefits from, providing (1) better guidance and tools for agents dealing with uncertainty and (2) incentives to adopt a more systematic approach to precautionary decision-making. Uncertainty should not necessarily translate into less transparent, accountable or consistent processes in the development and implementation of future environmental policy.

To improve the design of precautionary measures, the Victorian Government should provide further guidance and develop a framework for decision-making under uncertainty—a framework that elicits more information on the nature of the risks and uncertainties, scopes the problem, identifies options and evaluates alternative measures. Such a framework would be more consistent with best practice regulatory principles. Frameworks, such as the one being developed by the Department of Treasury and Finance for decision-making under climate change uncertainty (figure 6), could provide a starting point. The *Victorian guide to regulation* (and elsewhere as appropriate) should incorporate this guidance, which the Victorian Government needs to support by building the capacity of relevant decision-makers to employ the framework.

Figure 6 Draft framework for decision-making under uncertainty



Source: PWC 2009.

Adjusting to a carbon-constrained economy

The defining characteristic of adjustment to a carbon-constrained economy is an increase in the relative price of carbon. As this works its way through the economy, it can be expected to substantially change the structure of the Victorian economy. Existing industries such as electricity, forestry, transport, agriculture and parts of manufacturing are likely to be particularly affected. But, additionally, new industries are likely to emerge. Some, such as wind power, are already performing an important role. Others, such as carbon capture and storage and geothermal energy, are in their infancy but may have a significant impact.

Regulation's impact on innovation

Regulation can affect technological change and choice in a number of related ways. First, it can affect the incentive to innovate, as illustrated by the debate over which form of economic regulation of electricity businesses provides stronger incentives to innovate. Also, this report provides examples of where new regulatory frameworks are being developed so investors have sufficient confidence about their rights and responsibilities to make the large investments required (geosequestration and geothermal energy), and other cases (stormwater and wastewater) in which inquiry participants consider the absence of a regulatory framework is holding back investment. Regulation may also affect incentives to innovate if it alters the relative competitive position of different firms or if it is unduly prescriptive.

Second, regulation can affect the choice of technology and, consequently, the costs of adjustment. Table 4 reports a recent estimate of the investment that would be required to replace coal-fired electricity generation, and illustrates that the investment costs vary substantially across types of technology. While there is uncertainty about future investment costs, the table illustrates that the cost of adjusting to a less carbon-intensive economy will depend on whether technologies with the greatest net benefit are implemented.

Table 4 Investment costs to replace 10 per cent of Australia's total current carbon dioxide emissions using different new technologies in 2020

<i>Technology</i>	<i>Estimated capital cost (\$/W)</i>	<i>Cost to replace 60 Mt/a coal fired CO₂ (10% of total Australian greenhouse gases) (\$ billion)</i>
Carbon capture and storage (CCS)—coal	3.5	49
Biomass	2.5	25
Solar photovoltaic (PV) systems	5.0	174
Solar thermal	3.0	104
Wind	2.0	46
Wave	1.5	42
Geothermal	6.0	60

Source: ATSE 2009, p. 22.

Third, the adjustment process will involve new projects, some of them large. This means land use planning and regulation will be centre stage. The Commission's proposed improvements to environmental assessment and related approval processes should facilitate adjustment to a carbon-constrained economy by ensuring timely and efficient assessment without undermining environmental values.

The Commission reviewed possible regulatory barriers to adjusting to a carbon-constrained economy in industries that are projected to be among the most affected by this adjustment:

- electricity
- wind power
- other renewable energy sources
- carbon capture and storage
- building efficiency
- forestry
- transport
- water.

Electricity

Maintaining system reliability with a growing proportion of supply generated from intermittent sources such as wind power and solar energy will be technically challenging. Equally important, however, is the challenge of delivering these changes at least cost, which will require that regulation does not impede commercial incentives for existing firms and new entrants to implement innovative responses to higher carbon prices. Inquiry submissions suggested, for example, that some regulations impede the sector's transformation into a smaller emitter of greenhouse gases and discourage the development of small scale generation from 'green' sources. Expert reviews of the national electricity rules are considering these impediments.

The Victorian Government should promote in these reviews and in the Ministerial Council of Energy the removal of regulatory impediments to power generation via renewable energy sources. In addition, the government has indicated its support for a total factor productivity approach to economic regulation, partly because that approach provides stronger incentives to innovate than the current building block approach to regulation. The Commission agrees with this approach and considers that the government should promote it in relevant national forums.

Wind power

The Commission was told that lengthy approval processes for new wind power projects were encouraging proponents to develop projects in states other than Victoria. Timelines are not specified for all stages in project approval processes, and there do not appear to be mechanisms for enforcing timelines. More specification of timelines and public reporting against them could reduce the length of approval processes.

Wind power, like other renewable energy sources, has to be located where the resource is found. Some of the most prospective sites may be in national parks, but developing them and securing their environmental benefits for climate change would lead to a loss of environmental amenity in the parks. The Commission invites comments on the costs and benefits of the Victorian Government supporting the possible development of renewable energy projects in national parks when the projects are favourably assessed under the existing environmental assessment and approval processes.

Other renewable energy sources

The Victorian Government considers that geothermal energy is another emerging technology that has an important role in meeting Victoria's renewable energy target. While the Commission is not aware of any regulatory barriers to

geothermal energy, it invites advice on issues that should be addressed for this power source.

In relation to solar energy, there is a tension between the high cost of solar power and the role of the proposed carbon pollution reduction scheme (CPRS) in driving least cost abatement. Recognising this tension, the Commissioner for Environmental Sustainability recently recommended that the Victorian Government review the purpose and design of the feed-in tariff in the context of the CPRS, accounting for the full range of potential costs and benefits. The Commission endorses this recommendation.

Carbon capture and storage

The Cooperative Research Centre for Greenhouse Gas Technologies has identified seven potential sites for carbon capture and storage (CCS) in Victoria. The Australian and Victorian governments recently introduced legislation to provide a framework within which such projects may be developed. Managing the potentially competing interests of CCS and petroleum producing businesses, and determining an appropriate liability regime for the health, safety and environmental risks associated with CCS are likely to be challenging regulatory issues.

Building efficiency

Several participants stressed the costs associated with building regulations that were intended to achieve a structural reduction in energy and water usage. While the regulatory benefits also need to be considered, careful analysis of the costs should precede any strengthening of the regulations, as should assessment of energy and water pricing as an alternative way to encourage building efficiency. If regulation is adopted, then a performance-based approach (which avoids prescription) has the benefits of permitting builders and homeowners more flexibility in choosing how they improve building efficiency, and of being less likely to stifle the development of innovative ways to enhance energy efficiency. In turn, this approach would encourage lower cost adjustment to a carbon-constrained economy.

Biosequestration through forestry

In its response to a previous Commission report, the Victorian Government agreed there was scope to improve the regulatory framework for plantation forests. It directed the DPI, in cooperation with the DSE, to review the framework within the broader context of planning approval processes for land use change. The government has not yet implemented the Commission's recommendation but is developing a new Timber Industry Strategy for Victoria, which provides an opportunity for regulation reform. Less onerous regulatory arrangements would enhance the potential for the plantation sector to contribute

to sequestration of carbon dioxide. While the expanded use of plantations could have both positive and adverse side effects, specifically directed instruments could address the latter.

In the case of native forests, the Commission has not undertaken a sufficiently comprehensive review to be able to recommend specific changes to regulation. In preparing the Timber Industry Strategy, however, the government would find it useful to consider options for improving regulation—for example, separating land management, regulation and policy development, for delivery by separate agencies.

Transport

The links across transport, land use planning and a carbon-constrained economy are multi-faceted. In a previous report, the Commission suggested ways to improve coordination between land use and transport planning by state agencies. The Victorian Government's Transport Plan (released in December 2008) is consistent with this suggestion, because it was based on population and settlement projections. The Commission welcomes comments on the relationships among transport, land use planning and a carbon-constrained economy.

Regulatory issues could also emerge from the transition to different fuels with the introduction of, for example, hydrogen fuelled and electric cars. The Victorian Government will need to consider whether separate regulatory frameworks are needed for these fuels.

Water

Climate change is projected to affect the quantity, predictability and location of rainfall. If Victoria has moved to permanently lower rainfall, and water becomes scarcer, then still more benefit will arise from institutions that allocate water to its highest valued uses. A recent review by the Productivity Commission concluded that governments should reduce constraints on water trade, with structural adjustment issues being better addressed through safety net and rural adjustment programs. The Commission broadly agrees with this view.

Inquiry participants are concerned that regulation impedes potentially beneficial water recycling. It does so via, for example, uncertainty about which agency's guidelines should be applied to recycled water projects in Victoria; the complexity and costs of obtaining certification for wastewater systems; restrictions on multi-dwelling buildings to treat and re-use grey or black water; and restrictions on disposing of treated wastewater onto the ground during wet weather and winter conditions. There are also concerns that legislation does not give councils the right to capture, store and trade stormwater for re-use.

The Commission understands that the DSE is preparing a report that will clarify the rights to alternative water sources and identify areas in which the rights framework could be improved.

Conclusion

This is a draft report on a very large and complex subject. The draft report is the outcome of extensive consultation with, and submissions from regulators, policy makers, and external stakeholders for which the Commission again expresses its appreciation. The process will lead in July 2009 to a final set of recommendations to the Victorian Government.

At this point, in addition to comment and advice on the draft recommendations, the Commission in this draft report seeks information on several matters. In particular, the Commission invites comment and input through further submissions and roundtable discussions on key issues.

Recommendations and information requests

The 50 recommendations and 20 information requests are listed in the order they appear in the report, and they need to be understood in the context of the discussion in respective chapters. Recommendations and information requests are separated because they apply to the particular areas of regulation (environmental assessment, native vegetation regulation, environment protection, environmental reporting and mining regulation) or to aspects of Victoria's regulatory framework (institutional and interface arrangements, market-based instruments, principles for future regulation and regulatory barriers to adjustment).

Environmental assessment

Draft recommendation 6.1

That the Victorian Government streamline the environment assessment process by introducing two complementary assessment pathways. The first pathway would build on the current assessment process by:

- applying time limits to each stage, of which some would be statutory and others negotiated at the start of the process. Opportunities for parallel processing of approvals would be identified. As now, protocols could exist to give advance notice of delays and revisions to the agreed schedule.
- encouraging compliance with the timelines by reporting publicly the time taken for each stage of the process and also reasons for any delays, and by requiring an independent agency (such as the Victorian Auditor-General) to regularly assess performance against these timelines
- improving the scoping process by making the current 'indicative' 50 business days enforceable, assigning responsibility to the proponent for developing the scope (but subject to guidelines and government approval), and permitting the Environmental Effects Statement to include issues outside the scope only with the approval of the relevant department Secretary
- improving the functioning of technical reference groups, by requiring that group members have the authority to express the views of their department or agency. Meetings of a technical reference group would coincide with key check points in the Environmental Effects Statement process. The purpose and timing of the check points would be negotiated at the start of the process, but would include checking whether the Environmental Effects Statement scope could be narrowed and identifying key decisions to be made to avoid delays. Members of the technical reference group would not be allowed to raise issues outside the agreed scope of the Environmental Effects Statement, except with the permission of the responsible departmental Secretary.

- negotiating memoranda of understanding among the key departments involved in approvals, to provide a template for how the technical reference group would handle issues
- re-assigning responsibility for releasing the Environmental Effects Statement for public review from the Minister for Planning to the proponent
- providing the Minister for Planning with the power to call in decisions when the matter raises a major issue of policy and the decision has been unreasonably delayed.

The second pathway includes all elements of the first pathway except the call-in power. Instead of this power, it integrates environmental assessment and project approvals, with a single minister responsible for both. This process would be available to projects that the minister determines are strategically significant to Victoria and for which unreasonable delays could seriously reduce the project's benefits for Victorians. The minister would be required to publish the reasons for this determination.

Draft recommendation 6.2

That the Victorian Government assesses the potential to use strategic assessments for regions with common environmental issues.

Native vegetation

Draft recommendation 7.1

That the Victorian Government simplify the guidance for assessing the quantity and quality of native vegetation. The process of simplification should involve extensive consultation with a wide range of stakeholders.

Draft recommendation 7.2

That the Victorian Government provide improved guidance on the factors to consider in applying the three-step approach. The aim should be to require regulators to assess the economic, environmental and social impacts of clearing, so they do not proceed straight to the offset step in the three-step process. When formulating the guidance, the government should have regard for the principles of ecologically sustainable development.

Draft recommendation 7.3

That the Department of Sustainability and Environment (DSE), to improve consistency and address the impact of skill shortages, should develop a system for peer review of decisions on permit applications. Such a system should complement training, information and other support that the DSE provides to councils.

Draft recommendation 7.4

That the Victorian Government, to increase flexibility in the rules for determining offsets, simplify the rules by:

- enabling offsets to be provided in any bio-region
- limiting the capacity for councils to impose additional conditions on offsets when the Department of Sustainability and Environment has already specified the offsets to be provided
- increasing flexibility for landholders by permitting offsets on public land, subject to appropriate transparency arrangements
- clarifying the offset rules relating to the rehabilitation of mines and quarries.

Draft recommendation 7.5

That the Department of Sustainability and Environment (DSE) develop a strategy to monitor and enforce compliance with the native vegetation regulations and offset agreements. If councils retain responsibility for implementing the regulations, the Victorian Government should require councils to develop and implement enforcement strategies, with the DSE providing oversight.

Draft recommendation 7.6

That the Victorian Government make greater use of strategic planning tools to improve information for businesses about the locations and types of native vegetation to be protected, and particularly areas of private land containing high value native vegetation where clearing would not be permitted. These areas should become priorities for support under incentive schemes such as BushTender. Detailed mapping of native vegetation of all areas of Victoria should occur as rapidly as resources permit.

Draft recommendation 7.7

That the Victorian Government seek expressions of interest from the business and not-for-profit sectors to provide BushBroker in its current form.

Draft recommendation 7.8

That the Victorian Government clarify the outcome that native vegetation regulations are intended to achieve, by specifying that the objective is to ensure no net loss of environmental benefits as a result of clearing.

Draft recommendation 7.9

That the Victorian Government develop and publish performance monitoring and evaluation strategies to assess the impact of the current regulations and any changes implemented.

Draft recommendation 7.10

That the Victorian Government address the potential for additional overlap between Victorian native vegetation regulations and the Commonwealth's Environment Protection and Biodiversity Conservation Act by consulting the Commonwealth Government on any changes to the native vegetation regulations resulting from this inquiry.

Environmental protection

Draft recommendation 8.1

That the Victorian Government redraft the triggers for works approvals in the *Environment Protection Act 1970* so works approvals are not required for premises upgrades that will result in the same or less environmental harm (to be defined as either the same or lower level of waste discharged, or the same level of discharge, but less toxic). Where appropriate, licences should be amended to reflect the new operating conditions.

Draft recommendation 8.2

That the *Environment Protection Act 1970* be amended to enable EPA Victoria to develop and maintain a list of pre-approved technologies that are exempt from the works approval process. For a technology to be included on the list, EPA Victoria must assess it to have demonstrated and predictable environmental impacts. The lists should be posted on the EPA Victoria website.

Draft recommendation 8.3

That the *Environment Protection Act 1970* be amended to:

- establish a two-month maximum limit on the time taken by EPA Victoria to assess works approval applications (excluding the time it waits for further information from the applicant beyond the specified due date)
- allow time extensions beyond the two-month statutory time limit in exceptional circumstances only
- establish a 30-day maximum time limit for responsible authorities to support or object to applications or to request specified conditions be included in works approvals.

Draft recommendation 8.4

That the Victorian Government amend the *Environment Protection Act 1970* to require EPA Victoria to report on its performance against the statutory and target time limits in its annual report, including:

- the elapsed time to assess works approval applications

- the time taken by EPA Victoria to assess applications (excluding the time it waits for further information from the applicant beyond the specified due date) compared with the statutory and target time limits
- the percentage of applications assessed within the statutory and target time limits
- the number of information requests made under s22 of the Act and the length of any time extensions
- the number of time extensions made under s67A of the Act, and the length of these extensions.

EPA Victoria should incorporate statutory and target time limits in its annual plan of key deliverables. An independent entity such as the Victorian Auditor-General should periodically audit the organisation's performance reporting on approval times (for example, once every five years).

Draft recommendation 8.5

That EPA Victoria adopt a more strategic approach to works approval applications. It should:

- apply a risk-based approach to assessing works approval applications
- wherever appropriate, develop outcome-based conditions for works approvals
- prepare templates for works approval applications
- offer the option of holding pre-application meetings for complex works.

Draft recommendation 8.6

That EPA Victoria, in addition to simplifying compliance and reporting requirements in corporate licences, should aim to incorporate performance-based conditions wherever appropriate. To deliver the benefits of corporate licensing as soon as is practicable, EPA Victoria should establish targets in its annual plan of key deliverables to achieve 25 per cent of the total potential rollout of corporate licences by June 2010, 50 per cent by June 2011 and 75 per cent by June 2012.

Draft recommendation 8.7

That EPA Victoria conduct a rolling review of standard licences on issue. The review should:

- examine the conditions of standard licences and, where appropriate, replace prescriptive conditions with performance-based conditions
- simplify licence conditions and reporting requirements.

EPA Victoria should establish targets in its annual plan of key deliverables to review 25 per cent of standard licences by June 2010, 50 per cent by June 2011 and 75 per cent by June 2012.

Draft recommendation 8.8

That EPA Victoria encourage waste producers, transporters and receivers to use the WasteCert system. It should establish targets in its annual plan of key deliverables to have at least 50 per cent of all waste transport certificates lodged in electronic form by June 2011 and at least 75 per cent by June 2012.

Draft recommendation 8.9

That the requirement for annual producer returns not be included in the proposed Environment Protection (Industrial Waste Resource) Regulations.

Draft recommendation 8.10

That the Victorian Government redraft principle 1I of the *Environment Protection Act 1970* to state that waste should be managed according to the net benefit criterion—that is, waste management strategies should be based on actions which deliver the largest net benefits. This may involve considering the costs and benefits of actions such as avoidance, reuse, recycling, recovery of energy, treatment, containment, disposal and any other relevant options. Relevant state environment protection policies, waste management policies and industrial waste management policies should reflect this change.

Draft recommendation 8.11

That EPA Victoria, in developing protocols and guidelines for environmental management, publish the key steps in the process as well as timeframes.

Draft recommendation 8.12

That EPA Victoria clarify the definitions of ‘best practice’, ‘best practicable outcome’, ‘best practicable measure or approach’ and ‘best available technology’ in its policies and guidance to ensure they do not constrain businesses from meeting the required performance or outcome standards in a least cost manner.

Draft recommendation 8.13

That EPA Victoria, to promote the consistency of its advice to business, should review its training procedures, internal guidance material, information systems and other methods of internal communication.

Environmental reporting

Draft recommendation 9.1

That EPA Victoria reduce the unnecessary costs of the Environment and Resource Efficiency Plans (EREPs) by exempting sites that do not derive benefits from participating in the EREP program. These sites could include those that:

- have a track record of sustained resource efficiency improvements
- already report under other mandatory programs such as EPA Victoria licences, Energy Efficiency Opportunities and the National Greenhouse and Energy Reporting System
- participate in voluntary reporting and programs such as corporate sustainability reporting, the National Packaging Covenant, the ABARE fuel and electricity survey and Greenhouse Challenge Plus
- have an environmental management system with ISO certification
- depend on water and energy use and waste generation for their core business, and have proportionally high water, energy and waste costs.

Draft recommendation 9.2

That the Department of Sustainability and Environment reduce the unnecessary costs of the WaterMAP program by:

- automatically exempting Environment and Resource Efficiency Plan participants from the WaterMAP program
- reducing the 90 or so information obligations under WaterMAP to a core of about 15 one-off information obligations and 20 annual reporting obligations.

Draft recommendation 9.3

That the Victorian Government reduce the costs to business of meeting environmental reporting requirements by:

- developing one on-line reporting point for all Victorian programs and licences, with standard formats and timing
- promoting a broader review of reporting at the Council of Australian Governments, which would include assessing ways in which to develop a national on-line reporting point for all programs and licences, with standard formats and timing, using OSCAR.

Mining regulation

Draft recommendation 10.1

That the Department of Primary Industries (DPI), on behalf of work approval applicants, should coordinate with other departments and agencies whose approvals are required in respect of mining and extractive approvals, when requested to do so by proponents.

In appropriate cases, the DPI should exercise the coordination powers granted to it by s2(2) of the *Mineral Resources (Sustainable Development) Act 1990*. It should identify whether these powers are insufficient in any way, and propose a remedy.

Draft recommendation 10.2

That the Department of Primary Industries should enter into memoranda of understanding with referral agencies, other than the Department of Sustainability and Environment with which one already exists, to ensure better coordination and shorter timeframes for their approval processes.

Draft recommendation 10.3

That the Department of Primary Industries (DPI) commit to:

- establish and publish target timeframes for approvals under mining and extractives legislation
- measure and publish information on the time taken by the DPI and referral authorities to process approvals required under mining and extractives legislation
- provide an explanation on its website of the reasons for any substantial delays in granting approvals by the DPI or any referral agencies
- regularly review and report on timeframes for approval with a view to finding areas for future improvements.

Reporting by the DPI on the timeliness of approval process should be reviewed periodically by an independent agency such as the Victorian Auditor-General.

Draft recommendation 10.4

That the Department of Primary Industries (DPI) expand its website to list all the approvals that a mining or extractive industries proponent may need, and to provide guidelines, policy notes and advice on the requirements of each approval.

The DPI should regularly update the website, to ensure proponents are informed of any proposed changes to the legislation or the approvals process.

Draft recommendation 10.5

That the Department of Primary Industries, with input from the Department of Sustainability and Environment, review the definition of ‘low impact exploration’ in the *Mineral Resources (Sustainable Development) Act 1990* and propose a legislative amendment to the definition based on environmental impact rather than on the use of mechanical equipment.

Draft recommendation 10.6

That the Department of Primary Industries (DPI) website report at least annually on the DPI’s administration of the *Mineral Resources (Sustainable Development) Act 1990*, detailing matters such as monitoring and enforcement, the implementation of ecologically sustainable development principles, and the contribution its administration makes to achieving the objectives of the Act.

Institutional and interface arrangements

Draft recommendation 11.1

That the Victorian Government review the objectives of environmental regulation to ensure that all environmental legislation and supporting guidance contain clearly stated and specific objectives. Priority areas for attention are:

- *Environment Effects Act 1978*
- native vegetation regulations (under the *Planning and Environment Act 1987*)
- *Environment Protection Act 1970*
- *Flora and Fauna Guarantee Act 1988*
- *Wildlife Act 1975*
- *Sustainable Forests (Timber) Act 2004*.

Draft recommendation 11.2

That the Victorian Government consider extending the scope of the Reducing the Regulatory Burden Initiative to include substantive compliance costs (including delay costs) at the end of the first phase of the Initiative.

Draft recommendation 11.3

That the Victorian Government develop performance reporting frameworks for environmental regulations to be implemented by the relevant department or agency. The frameworks should:

- specify regulatory objectives, including the outcomes that regulation is intended to achieve
- specify the types of indicators (outcome, output and input) and the frequency of reporting

- specify how the results are to be used (for example, the frequency of public reporting and the use of the information to review the regulations).

The development and implementation of performance reporting frameworks should be subject to oversight by an independent body such as Victoria's Office of the Commissioner for Environmental Sustainability or the Victorian Auditor-General's Office, which would report periodically on implementation.

Draft recommendation 11.4

That the Victorian Government commit to the principle that all new environmental regulations with a potentially significant impact on business should have an evaluation strategy and associated data collection plan.

Market-based instruments

Draft recommendation 12.1

That the Victorian Government amend the *Victorian guide to regulation* to require that regulatory impact statements and business impact assessments for new environmental regulations and legislation include a market-based approach such as tradeable pollution permits, auction conservation contracts and smart markets, unless the proponent can demonstrate that such approaches are not practicable.

Draft recommendation 12.2

That the Victorian Government establish a policy design reference group, consisting of an independent expert group that includes academic economists and senior policy makers. The group's functions would include advising interested departments and agencies about:

- the likely efficiency and effectiveness of new policy solutions
- the adequacy and efficacy of evidence from experiments and/or pilots
- governance and risk management issues relevant to the use of market-based instruments to achieve policy outcomes.

Draft recommendation 12.3

That EPA Victoria finalise by June 2010 its framework and process for assessing applications for environmental offsets, taking into account that offsets can be used to minimise the costs of achieving environmental objectives.

Draft recommendation 12.4

That EPA Victoria implement offset arrangements where it can demonstrate their cost effectiveness relative to other approaches.

Principles for future regulation

Draft recommendation 13.1

That because there will be variations in how ecologically sustainable development (ESD) principles are applied generally to environmental regulation:

- departments and agencies involved in the development and implementation of environmental regulation publish how they apply or intend to apply ESD principles to particular sectors and regulations, and that this be supported by practical examples of good decision-making
- the Commissioner for Environmental Sustainability oversight the development of a community of practice to exchange ESD implementation skill and best practice.

Draft recommendation 13.2

That the Victorian Government amend the *Victorian guide to regulation* to ensure that policy makers and regulators have proper regard to the principles of ecologically sustainable development (ESD) by:

- referring to the objectives and principles of ESD
- requiring, where a proposed measure has significant ESD impacts, the consideration of the objectives and principles of ESD in the development and implementation of regulation as part of the regulatory impact statement (RIS) process
- providing guidance on how to comply with the RIS adequacy requirements given the above changes.

Draft recommendation 13.3

That the Victorian Government amend the *Victorian guide to regulation* to provide further guidance and tools for dealing with uncertainty in the development and implementation of environmental regulation, including measures that might invoke the precautionary principle. The government should also build the capacity of agents to apply these techniques in developing and implementing environmental regulation.

Regulatory barriers to adjustment

Draft recommendation 14.1

That the Victorian Government promote in relevant national forums removal of regulatory impediments to the introduction of renewable energy sources of power generation, such as barriers to distributed energy generation.

Draft recommendation 14.2

That the Victorian Government:

- apply time limits to each stage of the environmental assessment and planning permit processes for wind projects, some of which would be statutory and others negotiated at the start of the process. There could be protocols for giving advance notice of delays and revisions to the agreed schedule.
- report publicly the time taken for each stage of the process and reasons for any delays
- ensure that performance against these timelines is assessed regularly by an independent agency, such as the Victorian Auditor-General.

Draft recommendation 14.3

That in any revision of building efficiency regulations, the Victorian Government seek opportunities to make these regulations performance based rather than prescriptive.

Draft recommendation 14.4

That the Victorian Government include in the Timber Industry Strategy a new approvals process for the establishment of plantations, in which accredited operators would be deemed to comply with planning provisions. The process should be based on accreditation and ongoing compliance with an enhanced Code of Forest Practice and consistent with best practice principles of regulation.

Draft recommendation 14.5

That in preparing the Timber Industry Strategy the Victorian Government considers options for improving the regulation of native forests, such as separating land management, regulation and policy mechanisms, for delivery by separate agencies.

Information requests

Chapter 6

The Commission would welcome submissions about the reasons for differences [in the coordination mechanisms between the assessment process under the Environment Effects Act and other Acts requiring approvals], any issues arising from these differences and whether there is scope for improved alignment.

The Commission invites comments on the size of potential cost savings from more streamlined assessment processes.

Chapter 7

The Commission invites input from interested parties on the best way of improving accountability and administrative arrangements for implementing native vegetation regulations.

The Commission seeks feedback from participants on the potential savings and additional costs to business arising from the Commission's recommendations.

Chapter 8

The Commission seeks further information and comment on the advantages and disadvantages of the following options for improving the accredited licensee system (1) increasing the discount on annual licence fees to 50 per cent (2) removing the requirement for an environmental audit program where applicants already have an environmental management system in place and (3) removing the requirement for an environment improvement plan.

The Commission seeks further information and comment on the advantages and disadvantages of generic licensing and its applicability to industries or sectors in Victoria.

The Commission seeks further information and comment regarding the costs imposed on business from sample testing that is required to classify prescribed industrial waste and whether these requirements should be streamlined.

The Commission seeks further information and comment on the operation of the environmental audit system in Victoria, including, but not limited to the application of the 'clean up to the extent practicable' approach, the supply of accredited auditors and the frequency of audit reports.

Chapter 9

In the course of surveying sites that participate in the EREP program, the Commission was advised that trade waste agreements may add to businesses' reporting costs. While trade waste agreements are not a focus of this chapter, the Commission invites comments on the extent to which reporting under trade waste agreements impose unnecessary costs on businesses.

Chapter 10

Comments are invited on the potential savings to business from the Commission's proposals.

Chapter 11

The Commission invites views on the adequacy of existing language and guidance to define and resolve conflicts between economic, environmental and social objectives.

The Commission invites comment on the reasons for combining policy and regulatory functions in relation to native vegetation, environmental protection and forestry, and the advantages and disadvantages of options for achieving a clearer separation of the functions.

The Commission seeks comment on options for simplifying and improving Victoria's environmental legislation and the corresponding organisational framework.

Chapter 14

The Commission invites views as to whether there are any gaps or impediments in regulatory arrangements that would not be addressed by this approach.

The Commission invites comments on the costs and benefits of the Government supporting the development of renewable energy projects in national parks, when they have received a favourable assessment under the existing environmental assessment processes.

The Commission is presently unaware of other regulatory barriers to the introduction of [carbon capture and storage] and invites advice on this matter.

While the Commission is not aware of any regulatory barriers to geothermal energy, it would welcome advice on issues that should be addressed.

The Commission invites comments on regulations that are reducing the uptake of energy efficient technologies in housing developments.

The Commission invites comments on the form of carbon rights that would facilitate forestry carbon trading, and the benefits of a nationally uniform approach.

The Commission welcomes further comments on the relation between transport, planning and a carbon-constrained economy.

1 Introduction

In any modern society sustainable improvements in the well-being of its citizens depend on simultaneous improvement in the three areas of social, economic and environmental performance. The environmental challenges currently faced by Victoria—responding to adverse climate change, water scarcity and threats to biodiversity—are part of a wider canvas of challenges that includes the outworking of the global financial crisis and the ongoing need to address social and economic disadvantage. The recent report on the state of Victoria's environment by the Commissioner for Environmental Sustainability (2008) documents the environmental challenges in some detail.

The connections between the health of the environment and economic performance are complex. The health of Victoria's land and waters directly supports significant Victorian industries including agriculture, food manufacturing, timber production and tourism. The health, well-being and productivity of Victorians depend directly on the quality of the air they breathe, the water they drink and the quality of the recreational and tourism opportunities available to them in Victoria's waterways, beaches, parks and so on. At the same time, the sustainability of the environment depends on the health of the economy; for example, as communities become wealthier their willingness and capacity to improve environmental outcomes tends to rise.

Accordingly, addressing the environmental challenges in a context that acknowledges the interdependence of social, environmental and economic outcomes is essential. Whilst future generations of Victorians want to experience clean air, healthy native forests and wildlife, they also are entitled to expect rising standards of living built on the foundation of a strong, sustainable and competitive economy. A key obligation for governments is to design and implement policies and regulations that integrate social, environmental and economic outcomes as essential components of a synthesis, and not as part of a zero sum game in which progress in one dimension is at the expense of another. The design and implementation of regulation therefore needs to shape, and in turn be shaped by, the economy.

The Victorian Government, recognising the importance of regulation to the environment and the economy, directed the Victorian Competition and Efficiency Commission to inquire into and report on Victorian environmental regulation. In doing so, the Commission is looking for improvements that do not compromise the Victorian Government's environmental objectives.

1.1 Background to the inquiry

Successive Victorian Governments have put in place a large volume of environmental regulation, whose reach has grown in response to community concerns about relatively new environmental challenges such as climate change (chapter 3). The Commonwealth Government also has a growing role in areas such as environmental assessment, environmental protection (national environment protection standards), sustainability reporting, addressing climate change and improving the efficiency of use of natural resources (such as water and energy). Local Government too plays a key role through administering regulations relating to land use planning and native vegetation, but also through its responsibilities for waste collection, recycling and disposal.

The nature of the environmental and economic challenges facing Victoria indicates that a broad review of environmental regulation is timely. As noted in the terms of reference, the challenges for environmental policy and regulation have evolved. The challenge of climate change, including its implications for security of the state's water supply, was not envisaged when much of Victoria's environmental regulation was designed. In those earlier years, much of the focus of environmental regulation was on controlling the discharge of pollutants by businesses, organisations and individuals.

Whilst environmental regulation exists, in part, to ensure that people and businesses account for any immediate and long term costs of environmental impacts, it also imposes administrative and compliance costs on them. If regulation imposes unnecessary costs, incentives for investment and employment creation will be undermined. In a period of subdued economic activity, the adverse impact on the economy of unnecessary regulatory costs can be particularly acute.

Recognising the links between regulation and productivity, the Victorian Government has recently committed to a set of ambitious targets for reducing administrative burdens (or 'red tape') on businesses. Through its Reducing the Regulatory Burden initiative, the Victorian Government is attempting to reduce aggregate administrative burdens by 15 per cent by 2010 and by 25 per cent by 2012 (Government of Victoria 2007).

As part of its strategy for tackling unnecessary regulatory burdens, the Victorian Government has commissioned a number of reviews of specific areas of regulation. The current inquiry into environmental regulations was commissioned as part of the strategy for reducing regulatory burdens. It is the second such inquiry undertaken by the Commission—with the previous inquiry covering Victorian food safety regulations (VCEC 2007).

1.2 The Commission's approach

The Commission has undertaken the inquiry into Victorian environmental regulation in accordance with several key features of the terms of reference. Key aspects of the terms of reference include:

- the purpose of the inquiry
- the scope of environmental regulation
- the requirement to take the objectives of environmental regulation as given
- the requirement to take account of other reviews of environmental regulation.

1.2.1 Purpose of the inquiry

The Victorian Treasurer's letter of transmittal of the inquiry explained that the purpose of the inquiry into environmental regulations is to:

... examine the burdens of environmental regulation on businesses, and to identify opportunities for improvement so as to maintain Victoria's leadership in best practice regulatory regimes.

The scope of the inquiry is not limited, however, to current regulations. The letter of transmittal stated, for example, that:

The terms of reference also ask the Commission to consider ways in which regulatory frameworks can be enhanced to meet the future challenges of environmental sustainability and a carbon constrained economy.

The terms of reference emphasise the importance of examining the frameworks and principles for developing, administering and reviewing environmental regulation to ensure that future regulation and its implementation can help Victoria to meet current and future environmental challenges. They direct the Commission to examine:

... the capacity and flexibility of Victorian regulation to respond to the economic opportunities arising from the environmental sustainability challenges facing Victoria, including a carbon constrained economy. This may include consideration of principles to guide the development and implementation of future Victorian regulation to respond to emerging environmental sustainability challenges.

1.2.2 Scope of environmental regulation

The terms of reference require the Commission to review environmental regulation but do not limit the Commission in the scope of its review.

‘Environmental regulation’ is understood to cover primary legislation, subordinate legislation and other types of regulatory instrument such as Ministerial orders and codes of practice (‘grey letter law’). The Commission has focused on regulations affecting use of the natural environment and not those regulations focusing on the heritage and amenity values of the built environment.¹

Reflecting the broad scope of environmental regulation, the terms of reference invite the Commission to focus the inquiry by developing an appropriate methodology to identify:

- the types of environmental regulation with the highest regulatory burden
- where there are the greatest regulatory opportunities and barriers to Victoria maximising the economic benefits in the transition to a low carbon economy that responds to Victoria’s emerging environmental sustainability challenges.

1.2.3 Improvements without undermining objectives

The terms of reference for the review of environmental regulation require the Commission to examine opportunities to reduce:

- administrative and compliance burdens
- any overlap and duplication of Commonwealth, Victorian Government and local government regulation
- regulatory barriers to growth in areas of the economy that are responding to the emerging environmental sustainability challenges, to help businesses to respond to the challenges of a carbon-constrained economy.

Importantly, the terms of reference state that the Commission is to take as given government policy objectives in relation to environmental sustainability as set out in major policy statements in relation to water, forests and the environment more generally. The key thrust of the terms of reference is, therefore, to identify opportunities to reduce the cost that regulation imposes, as well as any barriers to adjustment in response to the introduction of emissions trading, without undermining the Government’s environmental objectives.

Other key elements of the terms of reference include the requirement to examine opportunities for:

- improving institutional arrangements
- applying alternative regulatory models (including market-based approaches).

¹ A number of participants submitted that Aboriginal heritage regulations have imposed significant regulatory burdens on Victorian businesses. In the issues paper released at the beginning of this inquiry, the Commission stated the view that these regulations are outside the scope of the inquiry (VCEC 2008, p. 9)

In addition, the terms of reference state that the Commission is to examine the capacity and flexibility of Victorian regulation to respond to the economic opportunities arising from the environmental sustainability challenges facing Victoria, including a carbon constrained economy. This may include consideration of principles to guide the development and implementation of future Victorian regulation to respond to emerging environmental sustainability challenges.

1.2.4 Other reviews of environmental regulation

The terms of reference state that the Commission is to be cognisant of several other reviews of environmental regulations. A number of reviews are identified in the terms of reference. These include reviews of the *Planning and Environment Act 1987* and the Environmental Protection (Prescribed Waste) Regulations 1998. At the time this draft report was being prepared there was also work underway within Government to develop white papers on land and biodiversity, and climate change:

- a green paper on land and biodiversity was released in April 2008 for consultation purposes and a white paper is due to be released in the middle of 2009
- a green paper on climate change is planned to be released in early 2009 and a white paper later in 2009.

In addition to these areas, reviews have recently been completed or have been initiated covering a number of areas of environmental regulation in Victoria and at the national level (table 1.1).

The Commission has avoided duplicating reviews addressing the scope for reducing regulatory burdens on Victorian businesses. Where a current review is covering some aspect(s) of the Commission's inquiry, the Commission generally has contacted these reviews and, where appropriate, developed its own conclusions and recommendations. Where the Victorian Government has rejected the recommendations of a recent review, the Commission has not revisited the relevant issues unless circumstances were judged to have changed or new information has come to light. For instance, although the Victorian Government rejected some recommendations of an earlier review of the Environment Effects Act, new information has come to light about the costs to business resulting from the Act that was unavailable to the Government or the earlier review (chapter 6).

Given the focus on Victorian regulations, the Commission has avoided commenting on the design and implementation of a national emissions trading regime. Understanding its impacts on Victorian businesses is, however, relevant in the context of the terms of reference requirement to examine regulatory

barriers to growth in areas of the economy that are responding to challenges such as the introduction of a price on carbon through emissions trading (chapter 14).

Table 1.1 Relevant reviews of environmental regulations, Victoria and national, 2008–2009

<i>Review</i>	<i>Timing</i>
<i>Victoria</i>	
Audit of Victoria’s planning framework for land use and development	Completed in May 2008
Review of Planning and Environment Act	To commence in 2009
Review of Environment Protection (Prescribed Waste) Regulations	To be completed by July 2009
Review of Extractive Industries Development Act	Completed in March 2008
Review of Mineral Resources (Sustainable Development) Act	To commence in 2009
<i>National</i>	
Garnaut climate change review	Completed in September 2008
Carbon pollution reduction scheme white paper	Completed in December 2008
Parliamentary inquiry into the Environment Protection and Biodiversity Conservation Act	To be completed in April 2009
Reviews of energy market rules by the Australian Energy Market Commission	Various completion dates

1.3 Conduct of the inquiry

Shortly after receipt of the terms of reference on 23 July 2008, the Commission publicised the inquiry and requested submissions through advertisements published in the major Victorian daily newspapers.

In late August 2008, the Commission released a circular about the inquiry together with an issues paper. These were published on the Commission's website and copies were sent to a large number of potential participants in the government, business and not-for-profit sectors. Reflecting the broad scope of the terms of reference and to assist those with a potential interest in the inquiry, the issues paper identified areas of environmental regulation with the potential to impose the largest regulatory burden on business and asked for responses. The issues paper also contained background information on the inquiry and posed a series of questions to help those preparing submissions.

At the time this draft report was released, the Commission had received 68 submissions from businesses, environmental and community groups, government departments and a number of individuals. A full list of those who made a submission is contained in appendix A.

Between August and December 2008 the Commission consulted with a large number of representatives from the business, environmental and government sectors. The Commission held meetings with around 90 organisations (listed in appendix A).

The Commission also engaged the Allen Consulting Group to undertake a series of interviews with 29 Victorian businesses. These interviews sought to elicit information on the costs incurred by businesses as a direct result of Victorian environmental regulations. The interviews proved useful for developing indicative estimates of the total administrative and compliance costs to business as well as the costs arising from unnecessary delays in approval processes (chapter 5).

The Commission sought and received a great deal of information on environmental regulation from Victorian Government departments and agencies. The Commissioners would like to acknowledge the assistance provided by officers of the Department of Sustainability and Environment, the Department of Primary Industries, the Department of Planning and Community Development, the Environment Protection Authority, the Department of Treasury and Finance and the Department of Premier and Cabinet.

1.4 Structure and focus of the report

The draft report comprises two main parts. Part A provides background information on the regulatory framework, describes the costs and benefits of environmental regulations and examines opportunities for improving the existing stock of regulation to lower regulatory burdens. Part B adopts a forward looking perspective to identify opportunities for improving the frameworks guiding the development and implementation of environmental regulation, to help position Victoria to meet the future environmental challenges.

Within part A, chapter 2 outlines the methodology developed by the Commission to identify the types of environmental regulation with the highest regulatory burden and the greatest regulatory opportunities and barriers to moving to a low carbon economy that responds to emerging environmental sustainability challenges. It discusses the types of market failure that may give rise to the need for regulation. Because regulation can impose significant costs, it should only be used when it will provide a net community benefit. The chapter, therefore, outlines nine questions that the Commission has applied to assess whether Victoria's environmental regulations are delivering net benefits.

Chapter 3 provides an overview of environmental regulation and identifies the key regulators. It also summarises the issues and concerns raised by inquiry participants, but without evaluating the issues raised (this is done in subsequent chapters).

Chapters 4 and 5 report on the benefits and costs of Victorian environmental regulations. The objectives of specific environmental regulations are identified in chapter 4 and, where possible, the achievement of these objectives is assessed. Estimates of the administrative and compliance costs of key areas of Victorian environmental regulation are presented in chapter 5.

Chapters 6 to 10 explore opportunities for improvements to key areas of environmental regulation. With 43 separate Acts and 49 Regulations governing the use of Victoria's natural environment, which together amount to some 9000 pages, the Commission has needed to focus on those Acts and Regulations which impose the heaviest regulatory burdens. To do this, it has focused on areas where:

- (1) the regulatory burden is potentially large
- (2) there is scope for cost savings without compromising environmental objectives
- (3) there is scope for greater clarity around objectives, roles, monitoring and evaluation
- (4) inquiry participants have expressed concerns.

To avoid unnecessary duplication, the Commission has not focused on areas that will be subject to other reviews of regulatory burdens, as described earlier.

In the light of these considerations, the Commission has focused in Part A of the report on the:

- Environment Effects Act (chapter 6)
- Native vegetation regulations (chapter 7)
- Environment Protection Act (chapter 8)
- Environmental reporting obligations (chapter 9)
- Earth resources legislation (chapter 10).

Part B of the report commences with chapter 11, which examines opportunities for improving the organisational framework for developing and administering environmental regulations.

Chapter 12 looks at whether there is scope to increase usage of market-based approaches to achieve environmental outcomes, as well as some of the institutional barriers to adoption of market-based approaches.

Chapter 13 examines whether existing best practice regulatory principles are adequate for guiding the design and implementation of future environmental regulation.

Finally, chapter 14 examines potential regulatory barriers to Victorian industries adjusting to the introduction of emissions trading. While many of the Commission's draft recommendations are likely to smooth adjustment, there are several specific regulatory barriers that also need to be addressed.

Several supporting papers were prepared on the regulatory and institutional arrangements, and the costs of environmental regulation. These papers are published separately on the Commission's website (www.vcec.vic.gov.au).

2 Methodology

2.1 Introduction

Environmental challenges, especially climate change, managing water resources and biodiversity, are becoming increasingly significant. Policies to respond to these challenges often overlap with other policy areas, such as transport and land use planning. This implies that it is important to understand the economic consequences of environmental policy, how this policy interacts with other areas and how to take advantage of any economic opportunities associated with policies to improve environmental outcomes.

The terms of reference direct the Commission to report on the nature and scope of benefits from environmental regulation, the nature and magnitude of the administrative and compliance burdens of Victorian environmental regulation on business, and opportunities for improving environmental regulation, including through applying alternative regulatory models.

In particular, the Commission was asked to focus its inquiry by developing an appropriate methodology to identify:

- the types of environmental regulation with the highest regulatory burden
- the largest regulatory opportunities and barriers to Victoria maximising the economic benefits in the transition to a low carbon economy that responds to Victoria's emerging environmental sustainability challenges.

Broadly speaking, the Commission's approach to focusing the inquiry integrated four main sources of information and analysis:

- (1) The rationales underpinning Victoria's current environmental legislation, an assessment of the economic activities that are regulated by the legislation, and an understanding of the alternative non-regulatory approaches that may be available (chapters 3 and 12).
- (2) The views of participants in the inquiry, as expressed through submissions, direct meetings and roundtable discussions, which tended to focus on particular regulations (chapters 6 to 10).
- (3) Estimates of the regulatory burdens imposed by selected environmental regulations, drawing on surveys of Victorian businesses and a review of the literature (chapters 5 and 9).
- (4) Modelling work undertaken for Australian governments on the likely effects of a Carbon Pollution Reduction Scheme. This information was used to identify sectors of the Victorian economy that are likely to be most affected, and therefore, that are most susceptible to regulatory barriers to innovation and adjustment (chapter 14).

The Commission developed nine questions to assess the major environmental regulations in Victoria and their appropriateness for a carbon constrained economy. These questions are set out in section 2.3 and, together with the information and analysis outlined above, constitute the Commission's methodology to meet the requirements of the terms of reference.

Over the course of the inquiry, the Commission needed to consider the challenges facing governments in designing and implementing policies and regulations that are perceived to be consistent with the principles of 'ecologically sustainable development' (ESD) and with 'development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends'.¹ There continue to be significant difficulties in making decisions that adequately and transparently integrate all the pertinent economic, environmental, and social considerations. These difficulties are at the core of many of the issues revealed in the course of the inquiry. The Commission found that substantive differences in the views of stakeholders are also reflected in the language and interpretations of the Government's objectives and its regulatory processes. For example, phrases such as 'balancing economic, environmental and social considerations' can have substantially different connotations for both decision-makers and stakeholders (box 2.1).

The Commission believes that it may be useful, in advancing the debate, to avoid the use of the word 'balance', and rather to adopt a different way of describing sound regulatory processes. The Commission considers that good regulatory processes lead to a 'synthesis' of economic, environmental and social considerations to produce decisions that deliver the best outcome for the community as a whole, instead of one that attempts to satisfy the interests of each stakeholder in regulatory decisions. This is particularly relevant to the timeframe for decision making.

2.2 Selecting the appropriate intervention

A threshold issue is determining when an intervention is appropriate to achieve environmental objectives and, if so, what the appropriate intervention should be. The natural environment provides multiple services. Consider biodiversity:

Biodiversity safeguards the ecosystem processes that make life possible. Healthy ecosystems are necessary for maintaining and regulating atmospheric quality, climate, fresh water, marine productivity, soil formation, cycling of nutrients and waste disposal. Biodiversity provides ecosystems with resilience — the ability to recover from drought, fire, flood and climate change (Productivity Commission 2001, p. 2).

¹ This is the primary goal of ESD. The guiding ESD objectives and principles, and the key challenges for the development and implementation of Victorian environmental regulation are discussed in chapter 13.

Box 2.1 **Achieving a 'synthesis'**

The views of inquiry participants about the basis for regulatory decision-making often diverged, with some arguing that excessive weight is given to environmental considerations and others arguing the opposite. These views reflect the interests of the particular stakeholders in regulatory decision making, such as businesses, consumers, environmental groups and governments. Given that regulatory decisions impose costs and benefits on stakeholders, divergent views about the effectiveness and consistency of environmental regulation are not surprising.

The National Strategy for Ecologically Sustainable Development, to which Victoria is a signatory, tries to encourage decision making that considers a range of economic, environmental and social considerations. One ESD principle states that: '... decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations' (chapter 13). The Commission understands that this principle requires decision makers to consider these factors in seeking the best outcome for the community, subject to any constraints imposed by government policy. In deciding whether to approve a proposal to clear high quality native vegetation, regulators should consider various factors such as the environmental harms resulting from clearing, the economic benefits to landholders and the community resulting from the clearing, and any equity dimensions.

As the circumstances surrounding each case vary, regulatory decisions should follow a consistent process. Often this process is referred to as one of 'balancing economic, environmental and social considerations'. This description of the regulatory decision-making process is, however, confusing because it can imply that each consideration must be given an equal weight, giving rise to perceptions that regulators should find an outcome that satisfies the interests of all relevant stakeholders. Such outcomes are extremely difficult to achieve in practice and the process of negotiating with each stakeholder can increase timeframes because regulators can become reluctant to make decisions that they know will upset some stakeholders. Moreover, such descriptions under-emphasise the importance of focusing on the best outcome, rather than the best 'balance' of issues.

To better reflect a focus on achieving outcomes that deliver a net community benefit, the Commission has avoided phrases like 'balancing economic, environmental and social considerations' to describe good regulatory processes. Effective and efficient regulatory processes should seek to achieve outcomes that are a 'synthesis' of economic, environmental and social objectives. Because the outcome is a synthesis that is qualitatively different from a simple 'balance' of considerations, this approach is intrinsically outcomes-focussed. A good regulatory process should also ensure that value judgments or weights attached to particular factors are transparent. The regulatory impact statement process, for example, is designed to transparently lay out the net benefits and costs of new regulatory proposals, but it is the prerogative of government to apply its own weightings in its decision making. It is important that this process is transparent, and in cases where environmental considerations do not have the greatest weighting, that the resulting environmental impacts are minimised.

Markets work best when:

- property rights are comprehensive, secure and well defined, which enables buyers and sellers to exchange assets freely
- there is competition
- consumers and firms are well-informed
- transaction costs are low.

Some of these conditions may not be satisfied in the case of environmental assets, which can lead to a 'market failure'. This means that market transactions may not result in sufficient resources being allocated to maintain the environment because firms and individuals do not take into account the costs of environmental resources they are using. Where there is market failure, the environment may deteriorate. It is important to understand the possible sources of market failure, because they are the primary reason for policy intervention and because effective policy instruments need to be designed so as to respond to the specific characteristics of the market failure they are intended to address.

2.2.1 Public goods

Some environmental assets are public goods, which are:

- *non-excludable*, in the sense that it is not possible to exclude people from consuming them.
- *non-rivalrous*, in the sense that one person's consumption of the good does not affect another person's capacity to enjoy it.

Some environmental issues addressed in this report have public good characteristics. For example, the value that individuals derive from knowing that a species exists can be seen as a public good, in so far as it does not reduce the value to others and no-one can be excluded from sharing in that value. Because individuals can typically access public goods without payment, commercial incentives to provide public goods are weak. Public funding may be warranted, up to the point at which the marginal cost of supplying the public good is equal to the sum of the marginal willingness to pay of all of those who wish to consume it.

2.2.2 Common property resources

Some services provided by the environment are common property resources, for which exclusion is costly and consumption is rivalrous. Examples include some beaches, public parks and natural resources such as fisheries. In the case of common property resources such as fisheries, people have an incentive to exploit the resource beyond its sustainable level because they do not take into account the impact of their use of the resource on other users.

2.2.3 Externalities

Externalities are situations in which one person's or firm's activities affect others who are not direct parties to the transaction. Consequently, they do not take the impact on others into account when making production or consumption decisions. The Department of Primary Industries (sub. 61, p. 5) notes that the 'use of environmental resources often generates externalities'. Emissions of greenhouse gases are a well known example. But externalities can be localised. For example, effluent from properties that are not connected to the sewerage system, but rely instead on septic tanks, may pollute groundwater and reduce amenity for other people if the tanks are not serviced regularly. Because property owners do not bear all of the costs of effluent run-off, their incentives to prevent run-off are dampened.

2.2.4 Imperfect information

Markets work best when firms and individuals are well informed about the available choices. Generating information, however, involves costs and sometimes there may be little private incentive to provide it. For example, producers will provide limited information about the greenhouse gas emissions of household appliances, if doing so is not expected to increase sales. There may also be situations of asymmetric information, where producers are better informed than consumers, who have difficulty verifying producers' claims. The implications of imperfect information are discussed in more detail in chapter 12.

2.2.5 Market incentives

The impact of market failures is tempered by private commercial incentives to maintain the environment. These incentives include:

- maintaining corporate reputation
- pursuing business opportunities
- avoiding exposure to litigation
- reducing insurance premiums.

Maintaining reputation and access to resources

Maintaining a businesses' reputation for good environmental performance can help it to secure access to resources, differentiate its products and gain business, attract and retain staff, reduce its costs and manage risks (box 2.2).

Box 2.2 **BHP Billiton's business case for sustainable development**

BHP Billiton believes that its bottom line performance depends on access to resources and maintaining its licence to operate and grow. This can be achieved through enhanced sustainability performance, through:

- identifying and managing risk in a consistent and holistic manner
- addressing heightened political and societal expectations related to the environmental and social aspects of the business, in order to achieve access to resources
- improving operational performance and efficiency; for example, improving energy efficiency to reduce both costs and greenhouse gases and increasing plant life to reduce costs and wastes. For example, in 2007-08 BHP Billiton used 8 petajoules of fuel oil, suggesting that improvements in fuel efficiency would lead to very large cost savings
- improved attraction and retention of the workforce
- maintaining the security of operations
- enhancing the company's reputation
- enhancing the ability to plan strategically for the longer term.

Source: BHP Billiton 2008, pp. 12–15.

Maintaining a reputation for good environmental performance may enable a business to differentiate its products (box 2.3).

Box 2.3 **Paperlinx**

Paperlinx has adopted a range of sustainable practices in order to differentiate its products and workplace in an increasingly competitive global paper market. For example, it has 'committed considerable resources to ensure that the Australian consumer is capable of purchasing a comprehensive range of Australian Made recycled brands that is office papers, stationery, envelopes and magazine papers' (Australian Paper 2006, p. 2). In 2005, the market response to Paperlinx's recycled brands enabled it to divert approximately 75 000 tonnes of waste fibres (from Australian landfill) directly into recycled paper grades. Paperlinx's recycled content products represented 25 per cent of total product sales in 2007-08, up from 12 per cent in 2005-06. More recently, Paperlinx has developed Australia's first carbon-neutral papers and obtained certification from the World Wildlife Fund, Forest Stewardship Council and Programme for the Endorsement of Forest Certification, citing 'growing demand for recycled and environmentally certified paper stocks' (Paperlinx 2008, p. 16).

Source: Paperlinx 2008.

Growth in sustainability reporting is further evidence of businesses improving their environmental performance for commercial reasons (box 2.4).

Box 2.4 Sustainability reporting

'KPMG and the Group of 100, representing the senior finance officers of Australia's leading enterprises, have developed a comprehensive good practice guide for companies and organisations engaged in the preparation of sustainability reports...'

Concerns about global warming, atypical weather patterns and the proposed introduction of a national carbon trading scheme and community expectations have combined to make sustainability reporting a mainstream issue.

The trend towards ESG (environmental, social, governance) reporting is driven by two key factors:

- An increasing recognition of the potential for sustainability related factors to materially affect a company's long term economic performance.
- The need for the business community and individual companies to appropriately respond to issues of sustainable development to meet community expectations.

Source: KPMG 2009.

Pursuing market opportunities

Market incentives to provide sustainable products strengthen as incomes and environmental awareness increase. Rain water tanks, water efficient shower heads, wind turbines, solar power, re-usable shopping bags and hybrid cars are examples of these products. A recent study undertaken by ICN Victoria with support from the Department of Innovation, Industry and Regional Development estimated total Victorian revenues in the environmental goods and services industry² of between \$3.2 and \$3.6 billion per annum (ICN & I&J Management Services 2008, p. 11) A study commissioned by the Shell Group suggests that, if there is international action to reduce carbon dioxide emissions, world-wide expenditure on emissions reduction would be about US\$1 trillion in the first five years. Small and medium sized enterprises (SMEs) can play an important role:

In fact, there are virtually no areas of the market that are not open to them. ... Examples of areas where SMEs might be successful include the germination of new technologies or the application of pivotal combinations of existing technologies in novel ways, to fresh markets. They also include new methods of manufacturing, financing capital, trading commodities, sharing information and managing resources (Vivid Economics 2006, pp. 1–2).

Some opportunities will be driven by voluntary responses; others in response to government action. For example, Vivid Economics (2006, p. 1) estimates that by

² This industry includes sustainability goods and services, wastewater and sewerage management, environmental management services, environmental monitoring and analytical services, waste management (non-water) and renewable energy generation (ICN and I&J Management Services 2008, p. 6).

2010, 90 per cent of the market opportunities to reduce greenhouse emissions will be due to government action.

Aquaculture is an example of a rapidly growing activity which can make an important environmental contribution if soundly managed. While aquaculture production is small in Victoria, worldwide production is now running at about 50 million tonnes per annum, which is around half the worldwide ocean catch and a 'crucial way to protect endangered fisheries and other marine species' (Sachs 2008, pp. 152–153).

There is also scope for private sector provision of environmental services often seen as the domain of government, such as biodiversity conservation. Some conservation values are not pure public goods, and in these cases private conservation initiatives can develop, where the costs of measures to enforce exclusion (such as fencing, monitoring and collecting fees) are not prohibitive. Australian examples include:

- Bush Heritage Australia, a private non-profit conservation organisation which acquires and protects areas of habitat that are likely to be developed, and owns 31 reserves covering almost one million hectares (Bush Heritage Australia 2009)
- Australian Wildlife Conservancy (AWC), is a private non-profit conservation group that is seeking to enhance and protect biodiversity through buying and managing properties of high conservation value. AWC has 18 sanctuaries covering more than 2 million hectares, which it intends to manage as wildlife sanctuaries (Australian Wildlife Conservancy)
- the Trust for Nature, an independent, not-for-profit organisation, has protected more than 80 000 hectares of native vegetation in Victoria (Trust for Nature 2007).

Sometimes, government interventions impede market initiatives. For example, the Productivity Commission argues that aspects of the frameworks for land tenure, competitive neutrality, native wildlife and taxation have constrained private sector conservation activities. By clarifying rights and responsibilities and cost sharing frameworks, the government could create incentives for individuals to use resources more efficiently (Productivity Commission 2001b, p. 38).

Looking to the future, the introduction of important new technology may require regulation to define property rights (and possibly market-based processes) more precisely. This matter is addressed in chapter 14.

Legal liability

Those who pollute or otherwise harm the environment may be subject to legal liability and compensation orders for the damage that they create, providing an incentive not to harm the environment. This incentive may, however, be

diminished if it is difficult to trace an effect back to the initial hazard, if the costs of litigation are high, if the penalties imposed are small, or if the firm being sued becomes bankrupt.³

Overall, the common law (and specifically negligence and nuisance claims) may not adequately protect the environment because it is predominantly concerned with protecting harm to others (personal and property interests):

A duty of care may exist in common law and statute law. It is only harm to personal interests that are actionable at common law: common law does not recognise that a duty of care might be owed to the environment per se. Hence the common law can only protect the environment indirectly through legal liability for impacts on persons and property arising out of activities that harm it. (Bates 2001, p. vii).

Further, common law ‘does not restrain the degradation of one’s own land and natural resource base unless harm accrues to another person or to property in which the landholder owes an environmental duty of care’ (Young et al., 2003, p. 7).

Insurance

Insurance is another way in which the private sector manages environmental risks. Insurance protects those who may be affected by a hazard, while encouraging those who may create hazards to manage them more effectively in order to reduce the cost of insurance. Gibson and Watson (2008), suggest that the global market for environmental premiums is now about \$1 billion and that environmental insurance is essential to the efficient operation of any major business organisation.⁴

Some environmental risks are, however, uninsurable. For a risk to be insurable, the loss must be amenable to risk pooling, it must be clear when a loss has occurred, there needs to be sufficient frequency of loss to enable a premium to be calculated, and moral hazard and adverse selection must be limited (Kolstad

³ One partial solution to the last problem is proportionate liability, under which action can be brought against any one of several parties who may have contributed to damage. For example, Premier Building & Consulting Pty Ltd sued the Spotless Group Ltd and other parties in 2007 under common law and statutory law for chemical contamination from adjoining land. The applicant claimed, amongst other things, that some respondents breached their duty of care by failing to prevent the contamination. The application for common law compensation did not succeed (although statutory law compensation was awarded), but highlights that businesses may be subject to legal liability at common law for damaging the environment (Premier Building & Consulting Pty. Ltd. V Spotless group Ltd 2007).

⁴ According to Gibson and Watson (2008), products include: general pollution liability insurance (to protect the insured against unanticipated losses associated with unknown pollution risks), property transfer pollution liability (used in real estate transactions to insure against any contractual liability derived from providing warranties or indemnities), and pollution liability insurance (to protect construction contractors working on potentially or historically contaminated sites).

2000, p. 240). Hence it is unlikely that a market will emerge for insuring against risks such as climate change.⁵

2.2.6 Assessment

While there are commercial incentives for firms to preserve the environment, there are also potential grounds for serious market failure that may justify intervention. As will be described in later chapters, this intervention may take many forms, including:

- direct regulation of behaviour (for example, controls on noise)
- taxes, charges and other price signals (for example, levies on plastic bags and charges on landfill)
- definition of property rights and market-based interventions (for example, chapter 12 discusses tradeable pollution permit schemes such as the carbon pollution reduction scheme, auctioned conservation contracts such as the BushTender and EcoTender programs, and smart markets, such as the proposed electronic Bushbroker Exchange).

2.3 The Commission's approach

Against this background, this section outlines nine questions that the Commission has used to enable it to assess the major environmental regulations in Victoria.

2.3.1 Question 1: is there a case for government intervention?

Market failures such as those outlined in section 2.2 are a necessary, but not sufficient, condition for government intervention. A market failure that exists in theory may not have much practical impact in a particular situation, and government intervention has its own costs. These costs include the costs to the government of administering and enforcing the regulation, and the costs to businesses of complying with it. Regulation can discourage innovation and may distort competition if it is imposed differentially on different firms. Regulatory processes often cause delays—sometimes unpredictable—and these can create costs for project proponents by delaying the receipt of revenues, closing off market opportunities and requiring precautionary expenditures. Regulation is not always effective in achieving the intended outcomes, and sometimes has

⁵ In addition to taking out insurance, individuals can also take their own steps to manage risks, in line with their attitudes towards risk. For example, individuals will make different decisions on whether, when and where to invest in vineyards or ski resorts, according to their willingness to take on risks relating to climate change.

unintended consequences: for example, pre-emptive clearing of native vegetation in Queensland in anticipation of restrictions on clearing (Productivity Commission 2004, p. xxvi).

An evidence-based approach to policy formulation—as endorsed by the Victorian Government in its *Guide to regulation* (Government of Victoria 2007b) – helps to ensure that intervention occurs only when it is the best option. This report does not assume that every apparent market failure warrants intervention. Rather, the Commission applies an evidence-based approach to assess possible improvements to regulatory arrangements in Victoria.

2.3.2 Question 2: are best practice principles for regulation being applied?

The intent of decision makers is more likely to be achieved, without imposing unnecessary costs, if regulations are designed using best practice principles that encourage:

- the development of appropriately designed regulations
- effective administration and enforcement of these regulations
- processes that encourage continual improvement of the regulations and their administration.

The benefits of applying such principles are that they:

- provide a regulatory process that reveals the trade-offs between competing objectives by making transparent the costs and benefits of alternative choices. Decisions can thus be based on an awareness of the trade-offs
- lessen the unnecessary administrative and compliance costs of regulation
- prevent regulation from having unintended consequences. Poorly designed regulation can distort competition, unnecessarily impede entrepreneurial activities and undermine the achievement of social and economic objectives.

The Victorian Government's *Guide to regulation* outlines principles for good regulatory design (box 2.5). These principles inform the discussion of specific regulations in later chapters and have been used to develop recommendations.

The principles outlined in box 2.5 are similar to lists of 'best practice regulation' developed elsewhere (for example, see Argy and Johnson (2003), Better Regulation Task Force (2003), OECD (1995) and ORR (1996)). They are generic, and can be applied to all regulations, but are often supplemented by specific principles applying to the areas being regulated. For example, the design and implementation of many environmental regulations in Victoria is required to have regard to the principles of ecologically sustainable development. Chapter 13 considers whether the principles used to guide environmental regulation are

sufficient to assist Victoria to respond to emerging environmental sustainability challenges.

Box 2.5 What is best practice regulation?

Government should not resort to regulation unless it has clear continuing evidence that:

- a problem exists
- government action is justified
- regulation is the best option.

Regulation should have the following characteristics:

- *effectiveness*: focused on the problem and with minimal side-effects
- *proportionality*: proportional to the problem the regulation seeks to address
- *flexibility*: government departments and agencies should pursue a culture of continuous improvement, and regularly review legislative and regulatory restrictions
- *transparency*: to promote learning and information-sharing, and build public trust in the quality of regulation and integrity of the process
- *consistency and predictability*: to avoid confusion, create a stable regulatory environment and foster business confidence
- *accountability*: systematic public scrutiny of the regulatory decisions of Government and of enforcement agencies
- *subject to appeal*.

Source: Government of Victoria 2007b, pp. 3-1, 3-2.

2.3.3 Question 3: Are best practice principles for institutional arrangements being applied?

The terms of reference direct the Commission to report on ways to improve institutional arrangements. Principles of good regulatory design, outlined above, are one element of the institutional framework. But there are many other elements, including laws, rules, guidelines, agencies and the allocations of roles between them, and norms of behaviour. To both analyse and describe the current institutional arrangements (chapter 3) and describe ways to improve them (chapter 11), the Commission builds on a set of principles for institutional arrangements which it developed in a previous inquiry report (VCEC 2006a, pp. 384-386). Applying these principles reduces the risk that unnecessary costs of regulation will be incurred (see box 2.6).

Box 2.6 Best practice principles for environmental institutional arrangements

Principle 1: High level strategic goals should be clearly defined

Goals should be based on the outcomes that the government wants to achieve.

Principle 2: Objectives for individual agencies should be clearly defined

The extent to which agencies focus on the government's strategic goals will depend on whether they have clearly defined and non-conflicting objectives that support the higher level goals. Legislation, supporting regulation, guidelines and codes of practice should embody these objectives. Clearly defined objectives provide focus and permit the development of performance indicators. Transparent reporting of performance against such indicators enhances accountability.

Principle 3: Appropriate instruments should be assigned to objectives

As noted in section 2.3.6, there are normally a number of instruments that could be used to achieve a particular objective. A process is needed to ensure that the most efficient and effective instrument is chosen.

Principle 4: Roles and responsibilities should be allocated appropriately

Role allocation should avoid:

- overlap and shared responsibilities between different agencies
- conflicts between the roles performed by different agencies
- conflicts of interest in the roles performed by an agency.

Principle 5: Transparency

Transparency is a prerequisite for accountability. Transparent airing of options enables those affected to express their views, encourages more informed decisions, and it fosters community acceptance of decisions. Providing more information about options makes it harder for narrow interest groups to have a disproportionate impact.

Principle 6: A coordinated approach

Institutional and organisational arrangements lead to better outcomes when they effectively recognise interdependencies and enable them to be addressed effectively.

Evidence that this is happening could be:

- the extent to which agency objectives encourage coordination where appropriate
- coordinating rules relating to, for example, budget and regulatory impacts
- memoranda of understanding specifying, for example, the lead agency, processes for coordinating information flows and decision making
- codes of practice outlining how agencies will coordinate their roles
- removal of impediments to appropriate integration.

(continued next page)

Box 2.6 Best practice principles for environmental institutional arrangements (continued)

Principle 7: Consultation

Consultation can improve decision making by drawing on external sources of information, improving governments' understanding of practical and implementation issues and increasing voluntary compliance.

Principle 8: Evidence-based policy

Policies will be more efficient and effective if based on evidence and adjusted as circumstances change. Ex-post evaluation of policy encourages evidence-based policy making.

Principle 9: Assessment and approval processes should be timely

The time taken to complete assessment and approval processes should be the minimum needed for well-informed decisions, with appropriate allowance for consultation.

Principle 10: Maximise the scope for market decisions

The attractiveness of market-oriented approaches may increase as technology reduces their costs, while growing scarcity of environmental resources increases the benefits that markets can create. If the institutional framework erects barriers to the emergence of markets, it can impede the search for more efficient ways of resolving environmental issues.

Principle 11: Capacity to implement

With many different agencies typically involved in environmental decisions, and many interests affected, decisions can be delayed by failure to reach agreement. The challenge is to have a process that encourages timely decisions while those affected are satisfied that their views have been taken into account. Achieving this will be helped by a structured consultation process with well defined and realistic timelines, a clear framework for decision making and an adequate dispute resolution process. In addition, capacity to implement depends on the skills and resources available to an agency, and this can be an issue for local governments in particular.

2.3.4 Question 4: Is the unnecessary burden of regulation minimised?

The terms of reference require the Commission to report on opportunities for improving environmental regulation, including by reducing administrative and compliance burdens. Chapter 5 describes and quantifies these regulatory burdens. While some are unavoidable, some may be unnecessary, in the sense that they 'could be reduced without sacrificing achievement of the policy intent of the regulation' (Productivity Commission 2008, p. xxi). Hence, the rest of the

report considers whether there are opportunities to make improvements by removing regulation that is unnecessary in this sense.

Chapter 3 reports participants' views that there are numerous examples of overlap, duplication and inconsistencies in environmental regulation and its implementation which can result in additional time and cost burdens on business in Victoria. These examples do not, however, prove that environmental regulation is indeed *unnecessary*, in the sense identified above. It is more likely that unnecessary regulatory burdens will persist if there are deficiencies in the framework within which regulation is designed, implemented and enforced. Hence this report focuses on this framework, by asking whether best practice principles for regulation (question 2) and for institutional design (question 3) are being applied.

2.3.5 Question 5: Do approval processes involve unnecessary burdens?

Many environmental regulations considered in this report are linked with project approval processes. Examples include the environmental effects statement process and approval processes under the *Planning and Environment Act 1987*, the *Environment Protection Act 1970* and the *Mineral Resources (Sustainable Development) Act 1990*. Chapters 6, 7, 8 and 10 outline opportunities for removing unnecessary burdens relating to these Acts, focusing on whether the processes:

- progressively reduce uncertainty facing the project proponent about the likelihood that the project will be permitted to proceed, before requiring the proponent to commit significant expenditure
- keep the time involved in making regulatory decisions to the minimum required to permit well-informed decisions
- avoid imposing any other unnecessary costs on project proponents.

2.3.6 Question 6: has the best instrument been chosen?

When a case has been made for government action to address an environmental problem or risk, an instrument has to be chosen. The many available instruments can broadly be divided into command and control mechanisms and economic instruments. Command and control approaches include:

- banning particular activities (for example, Sachs (2008, p. 154) suggests that trawling the ocean bottom in the open seas should be banned)
- controlling access to or constraining the timing of use of a resource
- prescribing design or process standards that specify how activities will be carried out.

Economic instruments attempt to harness market incentives and can include taxes, charges, tradeable permit schemes, offset schemes, and subsidies or tax credits. Compared with command and control instruments, economic instruments can achieve regulatory outcomes at lower cost, create dynamic incentives to improve technology and be less prone to regulatory capture. They may not, however, be appropriate in situations where, for example, property rights are difficult to define or where there is a risk of serious irreversible damage.

Chapter 12 discusses opportunities for using market-based instruments in Victoria. It argues that increased use of these instruments could reduce significantly the costs of achieving environmental outcomes.

2.3.7 Question 7: are responsibilities allocated to the right level of government?

Responsibility for developing and administering environmental policy should be allocated to the level of government most able to acquit these responsibilities. The Productivity Commission suggests that the subsidiarity principle provides guidance about the allocation of responsibility between levels of government. Under this principle, responsibility should, where practicable, be allocated to the lowest level of government, which is:

- likely to be better informed about the needs of their citizens and businesses affected by their policies
- less able to pursue their own agendas to the disadvantage of those they represent
- more exposed to competition from other intra-national governments.

Allocating responsibility to the highest level of government would be favoured, on the other hand, when there are:

- interjurisdictional spillovers associated with a function, such as inter-state transport
- economies of scale or scope from central provision
- high transaction costs without offsetting benefits from a diversity of rules and regulations
- risks that mobility of labour and capital across jurisdictions could undermine the fiscal strength of sub-national government (Productivity Commission 2005a, pp. 3–4).

Climate change policy indicates how these principles could come into play. National development and implementation of the carbon pollution reduction scheme is preferred to separate state-based regimes because of the economies of scale in applying the scheme and the benefits of consistency. If states developed

their own schemes, the issues in handling the trade-exposed sector would be multiplied by the need to consider how to handle firms exposed to inter-state trade, as well as those exposed to international trade.

Other environmental policy issues may more efficiently be addressed by state and local governments. Planning and native vegetation regulations are examples of cases where the state government has developed a state-wide framework, but delegated administration of significant parts of the framework to local governments, which can draw on their knowledge of local conditions.

2.3.8 Question 8: how are risks being addressed?

Many activities involve environmental risk or uncertainty. For example, those cleaning up a contaminated site for residential development should assess the incremental cost of clean-up against the risk that less than complete clean-up could create a health hazard for future residents. There may be insufficient scientific knowledge to enable probabilities of health hazards associated with different levels of contamination to be developed.⁶ Often the linkages between the introduction of a hazard and its ultimate impact on health or wellbeing are long and difficult to define. (Think of the linkages between emissions of greenhouse gases from a power station in India and a vineyard in Victoria which may need to decide whether to relocate because of a possible change in climate.)

Regulation can help to manage risk, but objectives such as 'minimising risk' or 'zero risk' are unlikely to be economically efficient. This is because such objectives do not have regard for the marginal costs and benefits to society of different levels of a pollutant. Achieving such objectives is likely to reduce risks to a level where the costs of so doing exceed the benefits. The reason why this matters is that the extra resources required to eliminate the pollutant could have been used elsewhere, perhaps to improve health or education services.

While regulation has a role to play in addressing risks, it will encourage efficiency if it supplements rather than crowds out legal liability, insurance and other activities that the private sector can undertake to manage its own risks. For example, government may be able to facilitate the functioning of markets in which individuals can manage their own risks. But government intervention can also crowd out private initiatives. For example, if the community perceives that the government will support people who do not insure or protect themselves against potential impacts of climate change, it can reduce incentives for individuals to manage their own risks.

⁶ Knowledge typically increases over time, and sometimes products previously considered safe emerge as health or environmental risks.

2.3.9 Question 9: Do regulations enable businesses to respond to the challenges of a carbon-constrained economy?

The structure of Victoria's economy will change substantially as it adjusts to an increased price of carbon and the implementation of the carbon pollution reduction scheme. The size of different industries may change considerably, and new firms and industries may emerge. The terms of reference direct the Commission to identify opportunities to reduce regulatory barriers to growth in areas of the economy that are responding to the emerging environmental sustainability challenges, to help businesses to respond to the challenges of a carbon-constrained economy. The Commission is required to identify areas where there are the greatest opportunities and barriers to Victoria maximising the economic benefits in the transition to a low carbon economy that responds to Victoria's emerging environmental sustainability challenges.

Regulatory barriers can reduce businesses' capacity to respond to sustainability challenges by:

- unnecessarily constraining a business's capacity to reduce its environmental impact effectively and with the least cost possible
- inhibiting the development of new products, services or industries.

Chapter 14 describes the most likely changes in the structure of the Victorian economy, identifies the most significant regulatory barriers to this adjustment, and discusses ways to reduce these barriers.

2.4 Conclusion

The framework outlined in this chapter will be used to develop recommendations about how the burden of unnecessary regulation could be reduced to enable desired environmental outcomes to be achieved at less cost to the community. The report will argue that the cost of environmental regulation is higher than it needs to be. Moreover, some measures that reduce unnecessary costs of regulation have the additional advantage of improving the outcomes from regulation, by enabling regulation to focus on areas where it can be most effective in achieving environmental benefits.

3 Regulatory and institutional framework

3.1 Introduction

The regulatory and institutional framework around environmental protection and management in Victoria is both extensive and complex — involving numerous Acts and regulatory agencies. This chapter provides an overview of Victorian environmental regulation¹ and a brief account of relevant Commonwealth and local government regulation (section 3.2). The chapter also identifies important features of current regulatory arrangements, drawing on inquiry participants' comments and relevant reports (section 3.3). The key issues will be examined further in chapters 6–14.

3.2 The regulatory framework

The regulatory framework relating to the environment in Victoria is shaped by a number of elements, including:

- the responsibilities of Commonwealth, state and local governments (section 3.2.1)
- environmental policy in Victoria (section 3.2.2)
- Victorian environmental legislation and regulations (section 3.2.3)
- the regulatory instruments available under this legislation (section 3.2.4)
- Victorian regulators and advisory bodies in the environmental domain (section 3.2.5).

3.2.1 Commonwealth, state and local responsibilities

While all levels of Australian government have some involvement in environmental regulation, the primary responsibility for environmental, planning and natural resources regulation rests with the states and territories, which have plenary legislative power.

The Australian Constitution does not give any express power to the Commonwealth to legislate on the environment. Nonetheless, other heads of powers enable the Commonwealth to enact environmental legislation. The Commonwealth has enacted more than 40 major pieces of environmental

¹ Environmental regulation covers primary legislation, subordinate legislation and other types of regulatory instruments such as ministerial orders and codes of practice. Victorian environmental legislation that the Commission has focused on in this inquiry is described in detail in a supporting paper available on the Commission's website (www.vcec.vic.gov.au).

legislation principally related to environmental matters of national significance which cover a wide range of matters including endangered species, heritage and national parks management, as well as giving effect to various international environmental obligations (McGeoch 2007, p. 6). The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Commonwealth Government's central piece of environmental legislation, administered by the Department of the Environment, Water, Heritage and the Arts (DEWHA) (sub. 54, p. 1).

Local government has responsibility for the development and implementation of locally relevant and applicable environmental policies within its jurisdiction. For example, councils in Victoria have various responsibilities and obligations under the *Planning and Environment Act 1987* (Vic.) and *Environment Protection Act 1970* (Vic.).

The architecture for the respective responsibilities of Commonwealth, state and local government is found in the Intergovernmental Agreement on the Environment (DEWHA 2007). The agreement also provided for a government entity with the power to establish measures to protect the environment.

Intergovernmental Agreement on the Environment

The Commonwealth, states and territories and local government signed the Intergovernmental Agreement on the Environment in May 1992. The agreement defines the roles, responsibilities and interests of respective levels of government and aims to facilitate a cooperative national approach to the environment.

The agreement sets out key principles to guide the development and implementation of environmental policy including the precautionary principle, intergenerational equity, conservation of biological diversity and ecological integrity, and improved valuation, pricing and incentive mechanisms. The agreement also includes a requirement that measures should be cost effective and not disproportionate to the significance of the environmental problem being addressed (DEWHA 2008a).

National Strategy for Ecologically Sustainable Development

The National Strategy for Ecologically Sustainable Development (ESD) was endorsed by the Council of Australian Governments (COAG) in December 1992. The strategy evolved around the recognition that sustainable development means adopting lifestyles within the planet's ecological means. The goal of the strategy is to undertake development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. The core objectives of the strategy are:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations
- to provide for equity within and between generations
- to protect biological diversity and maintain essential ecological processes and life-support systems (ESDSC 1992).

There are seven guiding principles which provide approaches to giving effect to ESD (box 13.1). The guiding principles and core objectives are to be balanced and considered as a package; no objective or principle should predominate over the others.

The principles of ESD are incorporated into the state framework through state legislation. However, there is great variation in the extent of the incorporation (chapter 13). Some Acts have the principles of ESD as objective clauses, such as the Environment Protection Act. Other Acts also require decision makers, such as ministers, departments and agencies to take the principles of ESD into consideration when exercising their powers under the relevant Act.

National Environment Protection Council

The Commonwealth's *National Environment Protection Council Act 1994* (NEPC Act) established the National Environment Protection Council (NEPC) and aims to protect air, water and soil from pollution through the creation of national environment protection measures (NEPMs). The Victorian Government introduced mirror legislation — the *National Environment Protection Council (Victoria) Act 1995* (Vic.) — to enable provisions in the Commonwealth legislation to be enforced in Victoria.

The objectives of this national legislative scheme are to provide equivalent protection from pollution throughout Australia and to ensure business decisions are not distorted and markets are not fragmented due to variations in major environment protection measures.

NEPC makes NEPMs which outline agreed national objectives for protecting or measuring particular aspects of the environment. They may be a combination of goals, guidelines, standards or protocols. To date, NEPMs have been developed for air toxics, ambient air quality, assessment of site contamination, diesel vehicle emissions, movement of controlled waste between jurisdictions, the national pollutant inventory, and used packaging materials. NEPC also assesses and reports on the implementation of NEPMs in participating jurisdictions (DEWHA 2008a).

3.2.2 Victorian environment policy framework

Victorian environmental policy sets the long term vision for environmental protection in Victoria. While there are numerous state policies and strategies, the major statements which set the overarching policy framework include:

- *Growing Victoria Together* (GVT)
- *Our Environment, Our Future*.

Other major policies, such as *Meeting our Transport Challenges*, also have environmental dimensions (Government of Victoria 2006a). In addition, there are nearly 30 different strategies relating to environmental management (CES 2008b, p. ii). Some examples of these strategies include the *Towards Zero Waste Strategy*, the *Victorian Coastal Strategy*, the *Victorian Greenhouse Strategy* and *Victoria's Biodiversity Strategy*² (DSE 2008a; Government of Victoria 2005d). Policy development processes are currently underway in the areas of land and biodiversity and climate change.

Growing Victoria Together

GVT was released in 2001 and updated in 2005. In the 2005 statement, the Government set out a blueprint for integrating Victoria's social, economic and environmental goals. A 'healthy environment' is one of its core themes. The blueprint includes two very broad goals relating to the environment, namely:

- protecting the environment for future generations
- efficient use of natural resources (Government of Victoria 2005a, p. 2).

The blueprint also emphasises the need to measure progress against these goals. Since 2001, the Government has released six reports on the progress made in achieving the GVT vision and goals (DPC 2008).

Our Environment, Our Future statements

The Government's *Our Environment, Our Future: Victoria's Environment Sustainability Framework* (2005) aims to drive the delivery of the GVT 'healthy environment' vision. The framework aims to make environmental sustainability a consideration in government, business and individual decision-making. It aims to make Victoria a sustainable state within one generation by:

- maintaining and restoring our natural assets
- using our resources more efficiently

² The current biodiversity strategy was published in 1997. The strategy has undergone an evaluation to inform the renewal of the biodiversity strategy and the preparation of the white paper on land and biodiversity (DSE 2008b).

- reducing our everyday environmental impacts (Government of Victoria 2005c, pp. 8–9).

The framework sets out 13 broad objectives under these three strategic directions (table 3.1).

Table 3.1 Objectives of Victoria’s environmental sustainability framework

<i>Direction</i>	<i>Objective</i>
Maintaining & restoring our natural assets	Healthy & productive land
	Healthy & productive water systems
	Healthy marine & coastal areas
	Flourishing biodiversity in healthy ecosystems
	Clean air
	Comprehensive network of parks
Using our resources more efficiently	Less waste & increased resource efficiency
	Sustainable forests
	Increased water, energy & materials efficiency
Reducing our everyday environmental impacts	Reduced climate impact
	Communities with a water, energy & materials saving ethic
	Liveable cities & towns
	Efficient transport systems

Source: Government of Victoria 2005c.

The *Our Environment, Our Future: Victoria’s Environmental Sustainability Action Statement* (2006) sets out how the Government proposes to secure a sustainable future. The statement contains more than \$200 million of new investment and 150 initiatives in the areas of responding to climate change and maintaining and restoring our natural assets (Government of Victoria 2006c, p. 4). The Government committed to preparing progress updates to show how the state is tracking against the environmental objectives outlined in the framework; the first progress report was released in August 2008 (Government of Victoria 2008g).

Current white paper processes

In addition to existing policies, the Government has initiated white paper processes on land and biodiversity, and climate change. The white paper on land and biodiversity, planned for release in mid 2009, is intended to help set the Government’s agenda and guide government investment decisions in land and

biodiversity management over the next 20–50 years (Government of Victoria 2008e, p. iii; DSE, sub. 57, p. 27).

The Government is also preparing a green paper on climate change which is due for release in early 2009. The development of the green paper stems from the Climate Change Summit held in April 2008. Following the release of the green paper, a public consultation program will be conducted before the Government finalises the white paper later in 2009 (Government of Victoria 2008f).

3.2.3 Victorian environmental legislation and regulations

There is a substantial body of Victorian environmental legislation; most of which was enacted in the past 40 years. A significant milestone in the 1970s was the enactment of the Environment Protection Act, which focused on pollution control. Subsequent legislation has focused on issues such as biodiversity, land and resource management, energy efficiency and climate change.

Following the endorsement of the National Strategy for ESD by COAG in the early 1990s, the broad purpose of much subsequent environmental legislation in Victoria has been to protect the environment in accordance with principles of ecological sustainability. Moreover, the purpose and means of regulations have changed as notions of the ‘environment’ and ‘environmental effects’ have broadened.

Victorian environmental legislation cannot be easily classified because many statutes apply to several aspects of environmental protection and each aspect is not necessarily mutually exclusive. While some of this legislation (such as the Environment Protection Act) seeks to regulate the amount of pollution that is permissible by business and other groups in the community, other legislation is primarily intended to protect or improve the quality and quantity of the natural environment (for example, legislation relating to native vegetation). Additionally, there is no single statutory definition of ‘environment’ of general application and hence the scope of various Acts which refer to the ‘environment’ is often difficult to delineate.

Nonetheless, for the purposes of discussion, Victorian environmental legislation has been classified by broad area of application; namely:

- general environmental legislation
- land use planning legislation
- habitat and biodiversity legislation
- natural resource legislation
- pollution, waste and energy management legislation.

These categories are largely based on those used by Bates (2006) in discussing environmental law in Australia. Table 3.2 groups Victorian environmental legislation and regulations using this classification. There are 43 separate Acts and 49 regulations governing the use of Victoria’s natural environment, which together amount to some 9000 pages.

Table 3.2 Victorian environmental regulation, basic statistics

<i>Category</i>	<i>Legislation</i>		<i>Regulations</i>	
	(no.)	(pages)	(no.)	(pages)
General	5	166	0	0
Land use planning	8	971	7	120
Habitat & biodiversity	10	788	10	416
Natural resources	14	2704	19	1361
Pollution, waste & energy	6	1800	13	779
Total	43	6429	49	2676

Source: VCEC.

Figure 3.1 shows the numerous cross-references between the various environmental Acts in Victoria. This illustrates not only the many interdependencies in the environmental domain, but also the extensive and complex nature of the legislative framework.

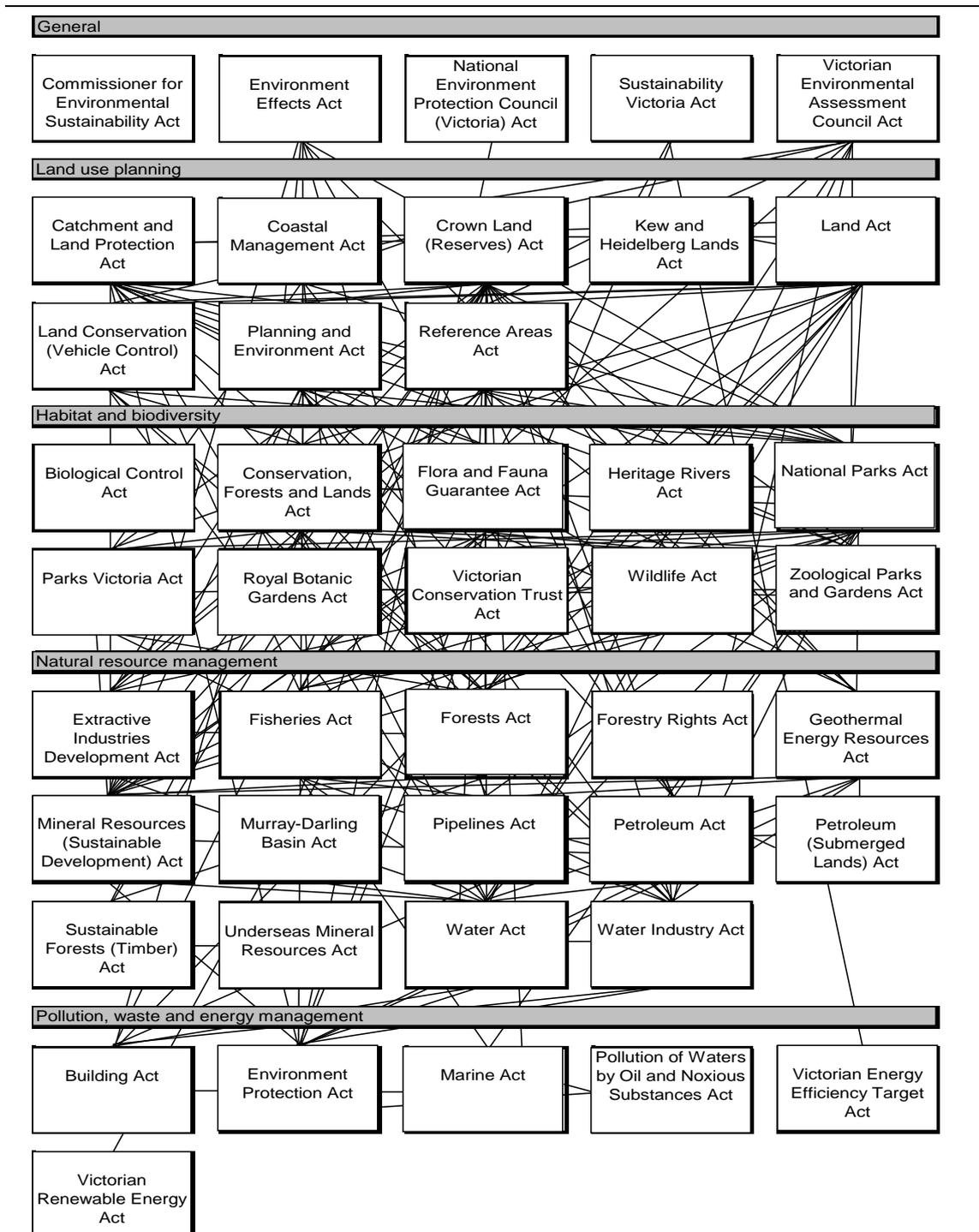
General environmental legislation

General environmental protection is provided for by legislation such as the *Environment Effects Act 1978* (Vic.) which sets out the process for assessing proposed projects that are capable of having a significant effect on the environment (Government of Victoria 2006b, p. 2). The Act is intended to enable ministers, local government and statutory authorities to make informed decisions about whether a project with potentially significant environmental effects should proceed (DPCD 2008a).

Land use planning legislation

Land use planning is an integral part of environmental regulation. A key example of this type of legislation is the *Planning and Environment Act*, which establishes a framework for planning the use, development and protection of land in Victoria (AGV 2008, pp. 13–14). Under this Act, one of the key objectives of planning in Victoria is to provide for the protection of natural resources and the maintenance of ecological processes and genetic diversity (s. 4(1)(b)).

Figure 3.1 Victorian environmental legislation, classified by broad area of application^a



^a Connecting lines represent cross-references between different environmental Acts.

Source: VCEC.

Planning provisions established pursuant to the Act, provide that a permit is required to lop, clear or remove native vegetation. In this report these provisions are referred to as native vegetation regulations.

Habitat and biodiversity legislation

Another area of environmental legislation relates to protecting habitat and biodiversity. For example, the purpose of the *National Parks Act 1975* (Vic.) is to preserve and protect national parks, state parks, marine national parks and marine sanctuaries (s. 4). Other legislation focuses on directly protecting flora and fauna. The *Wildlife Act 1975* (Vic.) provides for the protection, conservation and management of wildlife. The *Flora and Fauna Guarantee Act 1988* (Vic.) provides for the conservation of threatened species and ecological communities and for the management of potentially threatening processes.

Natural resources legislation

Some legislation covering natural resources such as water, fisheries, minerals and energy sources has environmental objectives. For example, the *Mineral Resources (Sustainable Development) Act 1990* (Vic.) has an objective to encourage mining exploration and operations within a legal framework aimed at ensuring mineral resources are developed in ways that minimise impacts on the environment (s. 2(1)(b)(i)). An objective of the *Petroleum Act 1998* (Vic.) is to encourage exploration and production of petroleum so that the impact on individuals, public amenity and the environment is minimised as far as is practicable (s. 3(2)(b)). One of the purposes of the *Water Act 1989* (Vic.) is to provide formal means for the protection and enhancement of the environmental qualities of waterways (s. (1)(j)).

Pollution, waste and energy management legislation

The Environment Protection Act creates a legislative framework for the protection of the environment in Victoria covering air, water and land quality as well as the control of noise, waste and litter. According to the EPA (2007), the Act has a basic philosophy of preventing pollution and environmental damage by setting environmental quality objectives and establishing programs to meet them. Other legislation in this category is the *Pollution of Waters by Oil and Noxious Substances Act 1986* (Vic.); the purpose of which is to protect the sea and other waters from pollution by oil and noxious substances and to implement the International Convention for the Prevention of Pollution from Ships 1973 (EPA 2007).

Recent amendments to the Environment Protection Act introduced provisions relating to resource efficiency. In addition, some other legislation — such as the *Building Act 1993* (Vic.), the *Victorian Renewable Energy Act 2006* (Vic.) and the *Victorian Energy Efficiency Target Act 2007* (Vic.) — has targeted energy efficiency

and climate change. For instance, one of the objectives of the Building Act is to facilitate the construction of environmentally and energy efficient buildings. The Building Regulations 2006 — which adopt the Building Code of Australia — enabled Victoria to introduce the 5 star energy efficiency standard for new homes and to home renovations and extensions (BC 2008).

Focus of this inquiry

For the reasons outlined in chapter 1, the Commission has focused much of its attention in this inquiry on the Environment Effects Act, native vegetation regulations, the Environment Protection Act, and earth resources legislation.

3.2.4 Regulatory instruments

Many different types of regulatory tools and instruments are used to achieve the objects of environmental legislation. The instruments largely fall into the following categories:

- licences, works approvals, planning permits and other environmental authorisations
- environmental protection or management policies, strategies, standards and guidelines
- environmental accreditation, audits and inspections
- infringement notices, enforceable undertakings, fines and other penalties in relation to environmental offences
- environment protection orders and other orders served in relation to contraventions of environmental authorisations or the environment protection legislation
- market based or economic measures.

3.2.5 Key Victorian regulators and advisory bodies

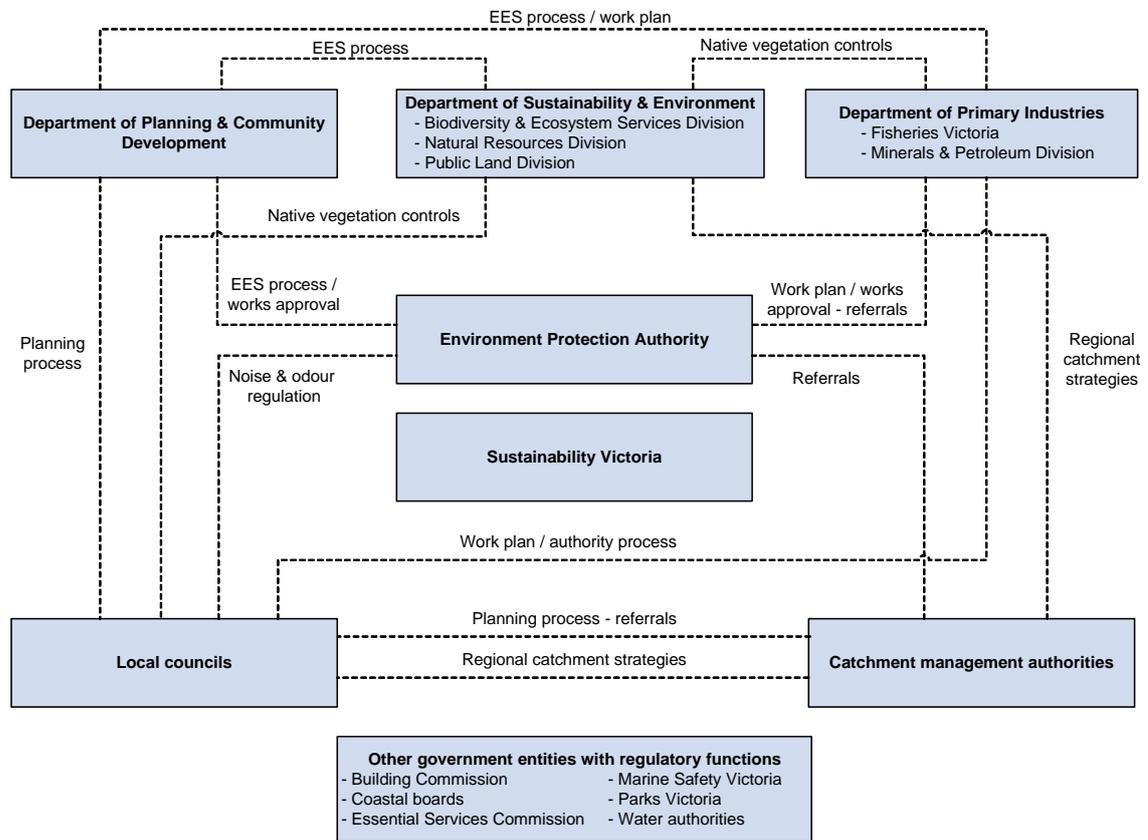
A large number of departments and agencies have regulatory, advisory and reporting responsibilities under environmental legislation in Victoria.

Regulatory entities

For the purposes of this report, a regulatory agency in the environmental domain has been defined as a state or local government entity that derives from primary or subordinate environmental legislation one or more of the following powers: licensing, assessment/approval, development and implementation of strategies, inspection, accreditation, provision of regulatory advice to a third party, and

enforcement.³ Based on this definition, there are 13 government entities (and groups of government entities)⁴ that have regulatory functions under environmental legislation in Victoria (figure 3.2).

Figure 3.2 Regulatory entities



Source: VCEC.

The Department of Planning and Community Development (DPCD), the Department of Primary Industries (DPI) and the Department of Sustainability and Environment (DSE) have major responsibilities in administering environmental regulation.

³ This definition is derived from that in *The Victorian Regulatory System* (VCEC 2008b) but differs in several respects: (1) the domain of environmental legislation is determined by the 43 Acts (shown in figure 3.1) and related regulations (2) the definition includes local government where it has a regulatory function under those Acts or regulations and (3) it includes additional instruments (namely, assessment/approval processes and the development and implementation of strategies).

⁴ Catchment management authorities, coastal boards, local councils and water authorities are counted as (four) groups of government entities.

- DPCD has regulatory responsibilities under the Planning and Environment Act and Environment Effects Act.
- DPI has two regulatory arms to administer environmental legislation. The Minerals and Petroleum Regulation Branch oversees the regulatory regime for the mineral, petroleum, extractive and geothermal industries. Fisheries Victoria has a range of responsibilities in the management of Victoria's fisheries, aquaculture industries and related aquatic biological resources.
- DSE seeks to improve the management and use of public and private land to enhance, protect and restore biodiversity assets and ecosystem services. Regulatory functions are located within the Biodiversity and Ecosystem Services Division, the Natural Resources Division and Public Land Division (DSE, sub. 57, p. 8).

Key government agencies with regulatory responsibilities under Victorian environmental legislation include the Environment Protection Authority (EPA), catchment management authorities (CMAs) and Sustainability Victoria.

- The EPA aims to protect, care for and improve Victoria's environment largely through administering the Environment Protection Act and related regulations.
- CMAs are responsible for ensuring the sustainable use and management of land and water resources. There are ten CMAs in Victoria.
- Sustainability Victoria seeks to encourage and support government, business and the community to promote environmental sustainability in resource use.

Local councils also have a regulatory role with planning responsibilities under state legislation and the ability to promote environmental management through local laws. There are 79 councils in Victoria.

Policy, advisory and reporting bodies

In addition to regulators, there are governmental entities (including departments and statutory bodies) with policy, advisory and reporting functions in the environmental area. A number of state agencies provide advice and/or report to the Minister for Environment and Climate Change:

- The Commissioner for Environmental Sustainability advocates, audits and reports on environmental sustainability. The Commissioner also prepares the state of the environment report.
- The Victorian Catchment Management Council advises the Minister on matters relating to catchment management which apply throughout the state. The Council also reports every five years on the environmental condition and management of Victoria's land and water resources.
- The Victorian Coastal Council and the coastal boards advise the Minister on coastal planning, coastal development and management.

- The Victorian Environmental Assessment Council makes recommendations to the Minister regarding the protection and sustainable management of Victoria’s environment and natural resources.
- The Trust for Nature (established as a body corporate under statute) aims to encourage and assist in the preservation of ecologically significant areas and in the conservation of wildlife and native plants.

Besides DSE and DPI, other state government departments have input into particular areas of environmental policy. The Department of Premier and Cabinet (DPC) and the Department of Treasury and Finance have climate change units that influence government policy and strategy in this area. DPCD can influence environmental quality through land use planning and administering the Environment Effects Act, while the Department of Transport can affect environmental quality through its planning and management of the transport system.

3.3 Features of the regulatory arrangements

This section describes key features of current regulatory arrangements, using a checklist for assessing regulatory quality that draws on the principles and methodology outlined in chapter 2. Features examined in the following sections include:

- simplicity
- clarity and consistency of objectives
- roles and responsibilities
- integration with other legislation
- whether the approach is prescriptive or outcome oriented
- whether market based instruments are used
- whether the approach is risk based
- whether unnecessary costs are avoided
- whether regulatory barriers exist
- performance reporting
- transparency and accountability
- consistency
- flexibility
- consultation
- compliance and enforcement
- information and education
- evaluation.

These sections report inquiry participants' concerns about current regulatory and institutional arrangements. In submissions and consultations, participants have tended to focus on perceived weaknesses of the current system (rather than its strengths) because they would like the inquiry to deliver improvements. Therefore, the following sections focus on opportunities for improvement rather than providing an assessment of strengths and weaknesses. Also, the views expressed by participants sometimes reflect their individual experiences. In examining the issues the Commission has used participants' input, with other evidence throughout the report, to gain a system-wide perspective.

3.3.1 Simplicity

Overly complex regulation adds unnecessary costs and reduces compliance, thereby achieving poorer outcomes at higher cost. Numerous submissions commented on the complexity of current regulatory and institutional arrangements. For example, Colac Otway Shire stated that:

It is very complicated having local, state and federal agencies regulating air quality, water quality, native vegetation, biodiversity protection and waterway protection. (sub. 11, p. 2)

Regarding environmental approval processes, Nexus Energy Limited stated that:

The complexity of the various approvals required for the range of possible projects is highly variable. (sub. 9, p. 3)

Many inquiry participants commented on the complexity of the planning system and native vegetation controls. For instance, Colac Otway Shire stated that:

... the way that the Planning system is structured at present (i.e. numerous overlays with different schedules, permit triggers and exemptions) is extremely complex for the user (whether this be council officers or the public). (sub. 11, p. 1)

The Master Builders Association of Victoria (MBAV) argued that Victoria's planning system has become increasingly complicated, with native vegetation regulations and complex zoning and planning overlays contributing to increased planning delays and a reduction in land supply (sub. 56, p. 9).

According to the Housing Industry Association (HIA), HIA members have described Victorian native vegetation policy as confusing, complex, time consuming, costly and inconsistently applied (sub. 51, p. 6). Indigo Shire Council argued that the 'net gain' approach inherent in the native vegetation framework is quite complex for many landholders and, in some cases, this complexity results in landholders removing native vegetation without approval (sub. 15, p. 2).

3.3.2 Clear and consistent objectives

Objectives that are clear and consistent are a fundamental element of a good regulatory framework.

Clarity of objectives

Clear objectives help ensure that regulation is used only when necessary. They also guide regulators in administering regulations and provide the foundation for assessing performance. Commenting on the objectives of environmental regulation, the Victorian Abalone Industry stated that:

While the *intent* of environmental regulation is generally clear, objectives are often poorly stated and generally non-explicit. This allows for subjective interpretation and non-targeted measures of implementation and performance assessment. (sub. 12, p. 4)

In some environmental legislation, objectives are either missing or poorly defined. For instance, the Environment Effects Act does not have expressed overarching objectives or a statement of ESD; nor does it define the term ‘environment’. That said, the *Ministerial guidelines for assessment of environmental effects* seek to define these terms (Government of Victoria 2006b, pp. 2–3).

Best practice regulatory principles indicate that objectives should be tightly defined. Some inquiry participants reported that many environmental regulations (including their objectives) are too broadly expressed. For example, Colac Otway Shire stated that ‘many of the environmental regulations are very broad and vague making them hard to understand, adhere to and enforce’ (sub. 11, p. 2).

Consistency of objectives

Key terms used in statutory objectives have not been defined consistently across Victorian environmental legislation. For example, the term ‘environment’ has different definitions in a number of Acts.

Some terms or objectives are not consistent across legislation. The objective of ESD is incorporated into some Victorian environmental legislation such as the *Fisheries Act 1995* (Vic.), *Commissioner for Environmental Sustainability Act 2003* (Vic.) and *Sustainable Forests (Timber) Act 2004* (Vic.). However, the term ‘sustainable development’ is used in the objectives or principles of other Victorian legislation; for example, the *Mineral Resources (Sustainable Development) Act 1990* (Vic.) and the *Pipelines Act 2005* (Vic.). Although there are common elements to both forms of development, there are nonetheless differences, for example, ESD — but not sustainable development — acknowledges ‘the need to consider the global dimension of environmental impacts of actions and policies’ (Sustainable Forests (Timber) Act, s. 5(4)(c)).

Moreover, some Acts do not refer to the principles of ESD or sustainable development at all, for example, the *Extractive Industries Development Act 1995* (Vic.) and the *Petroleum Act 1998* (Vic.). The objectives of Victorian environmental legislation are discussed in chapter 11.

3.3.3 Roles and responsibilities

Best practice principles for institutional design suggest that roles and responsibilities should be allocated between different agencies in order to avoid overlap and duplication between different agencies, conflicts between the roles performed by different agencies, and conflicts of interest in the roles performed by an agency (VCEC 2006a, p. 385).

Given the large number of departments and agencies operating in the environmental domain in Victoria, clear delineation of roles and responsibilities is essential for the regulatory framework to work effectively.

Clarity of responsibilities

Unclear responsibilities can result in overlaps duplication and gaps in regulatory coverage. Many inquiry participants expressed concern about institutional overlaps. The Victorian Farmers Federation (VFF) stated that:

There is considerable overlap in institutions and bodies that are responsible for Victoria's environment and the associated regulations, some of whom have differing priorities. These institutions include local, State and Federal governments, DSE, DPI, DPC and CMAs. (sub. 43, p. 10)

Submissions pointed to overlap or duplication of responsibilities in a number of areas, including in the management of native vegetation, water, waterways, catchments, roadside weeds, regional weeds, the marine environment, resource efficiency, climate change and pollution.

Observing that a diverse range of government departments and agencies — that develop or coordinate environmental regulation — has a bearing on the residential construction industry, the HIA argued that a single department should lead on all environmental regulations which have the potential to affect the industry (sub. 51, pp. 9–10).

The VFF considered that the overlap between local government, CMAs and DSE is the most important to address. It suggested that private land native vegetation and water issues be dealt with through DPI and public land and water issues through DSE (sub. 43, pp. 10–11).

Similarly, Indigo Shire Council reported duplication between councils and CMAs:

... the Catchment Management Authority in the North East is a statutory referral body for any planning applications that may affect drainage in the northern part of Indigo Shire. This function is also undertaken by the Shire, essentially duplicating this task and extending the approval process. (sub. 15, p. 2)

It also argued that DSE should undertake the assessment and approval for the lopping, removal or destruction of native vegetation because at present applications are received by local councils, typically referred to DSE then sent back to councils who prepare the permit and issue it to the proponent (sub. 15, p. 2).

Some submissions noted a lack of clarity over regulatory roles relating to weeds and waterways. According to Colac Otway Shire, conflicting interpretations of the Catchment and Land Protection Act has raised questions over the responsibility for managing regionally controlled weeds (sub. 11, p. 1). The Municipal Association of Victoria (MAV) argued that the management of roadside weeds and waterways are areas where responsibilities are not sufficiently clear (sub. 17, p. 8). The City of Greater Bendigo also pointed to potential duplication and inconsistency between the water authority and the catchment authority (sub. 49, p. 2).

The Victorian Abalone Industry argued that poorly designed spheres of agency responsibility have partly contributed to:

... a lack of integration and coordination between different agencies that have responsibilities in relation [to] the marine environment regulation which pertain to our industry. (sub. 12, p. 5)

Both Victoria and the Commonwealth have developed regulations which have similar objectives in the area of resource efficiency and climate change, creating potential for duplication of instruments and reporting (section 3.3.8).

Numerous inquiry participants identified scope to clarify roles and responsibilities in the implementation of environmental regulation. Nillumbik Shire Council, for example, identified potential for clearer identification of responsibility between the EPA and local government regarding the enforcement of pollution events (sub. 40, p. 1).

Subsidiarity

According to the principle of subsidiarity, responsibilities should be allocated to the levels of government most able to deliver them (chapter 2). As noted in section 3.2, all levels of government have some form of involvement in the design and application of environmental regulation in Victoria.

However, inquiry participants expressed concern about the lack of clarity in the roles of different levels of government. Yarra Valley Water pointed to poor clarity around the relationship between state, federal and local government environmental policy (sub. 22, p. 6) and Wellington Shire Council argued for clearer definitions of federal, state and local government roles and responsibilities in environmental management and regulation (sub. 29, p. 2).

Some submissions reported a lack of interaction between different tiers of governments. Commenting on multiple environmental reporting requirements, Australian Paper stated that ‘there is no indication that federal and state governments communicate effectively with each other’ (sub. 37, p. 3). The Urban Development Institute of Australia (Victoria) (UDIA) expressed concern that government departments are not talking to each other to see what is being done:

The UDIA have attended various meetings/forums that seem to be addressing similar issues, but with different sections of Government leading them e.g. the Department of Planning and Community Development and the Department of Sustainability and Environment appear to be running two separate processes. (sub. 5, p. 4).

The City of Greater Bendigo supported the clear identification of roles and responsibilities between local and state government and prior agreement of new responsibilities (sub. 49, p. 6).

Conflicts of interest

Where conflicts of interest exist, this can diminish the effectiveness of environmental regulation. Several submissions noted that some regulators perform multiple roles which may give rise to conflicts of interest. The APA Group and Envestra Limited, for example, commented on the role of local government regarding site contamination:

Of particular concern are those situations where a local government is acting in more than one capacity (i.e. current owner, developer, planning authority, historical polluter) and the potential conflicts of interest this creates. (sub. 2, p. 2)

In addition, Yarra Valley Water contended that ‘the environmental regulator has potentially conflicting roles as both standard setter and regulatory enforcer in respect to environmental matters’ (sub. 22, p. 5).

3.3.4 Integration with other legislation

To reduce the risk of overlap, duplication and inconsistency, legislation should not address problems that are covered by other legislation. However, inquiry participants submitted many examples of overlap and duplication between environmental legislation.

Commonwealth and state legislation

Colac Otway Shire pointed to overlap between Victorian and Commonwealth legislation:

A prime example is the protection for threatened species that is covered by both the Victorian Government's Flora and Fauna Guarantee Act and the Australian Government's Environmental Protection and Biodiversity Conservation Act. The species listed under the two Acts differ and different terminology is used to describe them making these overlapping regulations very confusing ... (sub. 11, p. 2)

Similarly, the UDIA reported duplication in native vegetation provisions between federal and state legislation:

... the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the requirements of the Victorian legislation through the Planning and Environment Act and Planning Scheme requirements are duplicated in relation to managing native vegetation. (sub. 5, p. 1)

South East Water argued that the overlap between jurisdictions has imposed unnecessary costs in terms of human resources and time; for example, an EPBC referral may be triggered on a site where the business has already acquired local planning permits (sub. 30, p. 2). VicRoads also observed duplication in biodiversity approval processes at the state and federal levels (sub. 50, p. 4).

Yarra Valley Water contended that there is a conflict between the State Environment Protection Policy (SEPP) (Waters of Victoria) and the Commonwealth's EPBC Act:

The SEPP aims to stop effluent discharges into waterways in order to reduce the nutrient and other unnatural contaminant impacts on the receiving environment, whereas the EPBC Act is more concerned with the protection of the Growling Grass Frog population through the provision of a flow to the Merri Creek which will sustain their habitat. (sub. 22, p. 6)

Many submissions pointed to environmental legislation targeting resource efficiency and climate change as an area of duplication. Esso Australia, for example, noted its concerns about duplication between the Commonwealth's Energy Efficiency Opportunities (EEO) program and Victoria's Environment and Resource Efficiency Plans (EREPs) program (sub. 45, p. 1). The Australian Petroleum Production and Exploration Association (APPEA) was also concerned about duplication, stating that:

Industry is currently required to complete energy audits over a 5 year time frame under the EEO Act and Regulations. However, in 2008 the Victorian EPA implemented the Energy and Resource Efficiency Plans (EREPs), which require industry to complete energy, water and waste audits for 2008. (sub. 46, p. 12)

In addition, some submissions questioned whether state-based measures, such as the Victorian Renewable Energy Target (VRET) and Victorian Energy Efficiency Target (VEET) schemes, are needed given the planned introduction of a national emissions trading scheme. For example, the Energy Supply Association of Australia (ESAA) argued that the COAG agreement to progress with the expansion of a national renewable energy target will ultimately result in VRET becoming a duplicative regulation (sub. 44, p. 5).

Victorian legislation

Submissions also pointed to a lack of integration between various Victorian Acts. For example, WWF Australia contended that there is a lack of integration between the Flora and Fauna Guarantee Act, the Environment Effects Act and the Planning and Environment Act. It also claimed there is poor integration between the Water Act and the Planning and Environment Act in the management of irrigation and vegetation clearance (sub. 23, pp. 7, 9).

The Victorian Government's green paper on land and biodiversity reported that poor integration of management activities across property tenures, catchments and statutory planning systems and administrative boundaries is leading to duplication of effort, inconsistencies and in some cases counter-productive effort (Government of Victoria 2008e, pp. 4, 65).

As noted, the MAV pointed to integration issues with environmental and other legislation related to the management of pest weeds and animals on local roads:

The issue arose from ambiguous drafting and intent of the *Catchment and Land Protection Act 1994*, complex interactions with other legislation such as the *Road Management Act 2004* and differing interpretations of the legislation. (sub. 17, p. 8).

According to Colac Otway Shire, another overlap is between regulations under the Country Fire Authority Act concerned with managing bushfire risk and regulations for air quality control under the Environment Protection Act (sub. 11, p. 2).

Moreover, there are a number of approvals processes embedded in various Victorian Acts that give rise to integration and coordination issues. For example, Bendigo Business Council pointed to the multiple regulatory approvals required for the Bendigo Mining Water Treatment Plant (sub. 38, p. 1).

The scope for better integration between Victorian environmental Acts is discussed in chapter 11.

3.3.5 Prescriptive or outcome based approach

Prescriptive rules tend to be inflexible and often do not provide incentives for the intended outcomes of regulation to be achieved at least cost. Such an approach should be avoided if the outcome can be clearly specified and potential technological solutions are available to mitigate the regulatory problem (Government of Victoria 2007b, p. 3-8).

Inquiry participants claimed that some environmental regulations are prescriptive. For example, Citipower and Powercor Australia stated that:

With the increasing prescription of environmental regulation, particularly under the Environment Protection Act 1970, there is increasing difficulty in the practical application of these regulations. (sub. 63, p. 1)

Yarra Valley Water stated that the requirements for some programs (such as septic tank replacement) are very prescriptive and limit the method for compliance to a few traditionally accepted technologies:

When regulation is prescriptive and tells us what to do, we do not have the scope to explore the potential environmental benefits of each alternative spend, and in many instances we do not know what the environmental end point is. Requiring 'best available technology' does not allow us the opportunity to plan for the future. (sub. 22, p. 7)

Coffey Natural Systems reported that it had observed many instances where prescriptive regulation has been applied indiscriminately, banning an activity without first considering a balancing of the benefits and impacts (sub. 55, p. 4).

A number of inquiry participants supported outcome or performance based approach to regulation. For example, pointing to the inflexibility of the detail in the native vegetation framework, VicRoads stated that:

... the introduction of more outcomes based and flexible policy requirements under the *Native Vegetation Management Framework*, rather than the heavily prescriptive approach that currently exists, could facilitate more practical and efficient ways to achieve the State Government's desired environmental outcomes. (sub. 50, p. 3)

Commenting on the project planning stage of development, Wellington Shire Council favoured a 'code' approach which would consider performance standards and 'deemed to comply' provisions (sub. 29, p. 2).

3.3.6 Market based instruments

Historically, governments have responded to environmental problems using regulatory instruments such as prohibitions, restrictions, licensing and standards. This has often been described as a 'command and control' approach. Market

based approaches, however, seek to influence behaviour by changing prices, setting a cap on or altering quantities, improving the way markets work or creating a market where one doesn't exist (DAFF 2007, p. 1).

An example of a market based approach being used to address environmental problems in Victoria is the BushTender program (Government of Victoria 2008e, p. 59). In addition, some environmental regulation provides for market based approaches. For instance, the Environment Protection Act allows for tradeable permit schemes and environmental offsets (ss 19AA–AB). However, the use of market based approaches to pursue environmental objectives in Victoria has been limited.

A number of inquiry participants supported the consideration of market based approaches. Yarra Valley Water suggested that the concept of offsets or trade of different environmental improvements should be explored (sub. 22, p. 2). Indigo Shire Council argued that there needs to be more options to 'offset' removal of native vegetation (sub. 15, p. 2). And, Wellington Shire Council considered that the idea of offsetting native vegetation into larger reserves rather than isolated patches should be explored (sub. 29, p. 2).

Several submissions supported programs such as BushTender and BushBroker. WWF Australia noted the potential role the expansion of targeted tender programs, such as BushTender, could play in the efficient and effective delivery of outcomes on a range of environmental issues (sub. 23, p. 10). Wellington Shire Council supported extending the BushBroker system to include rewards for the maintenance of carbon sinks (sub. 29, p. 3).

A range of submissions commented on the Commonwealth's proposed carbon pollution reduction scheme (for example, Nexus Energy Limited, sub. 9, pp. 6-7; Martin Foley MP, sub. 16, p. 6; Monash Energy, sub. 36, p. 7), which is also a market based instrument.⁵

Some inquiry participants, such as the Australian Conservation Foundation, favoured a cautious, evidence based approach to the development of market based and other alternatives to direct regulation (sub. 66, p. 3). The Victorian National Parks Association argued that market measures and incentives will supplement rather than replace regulation (sub. 59, p. 2).

Chapter 12 examines whether there is scope to increase usage of market based approaches to achieve environmental outcomes.

⁵ There are two key elements to the scheme: the cap on carbon pollution and the ability to trade. The cap achieves the environmental outcome of reducing carbon pollution. The act of capping creates a carbon price. The ability to trade ensures carbon pollution is reduced at the lowest possible cost (Commonwealth Government 2008c, p. 12).

3.3.7 Focus on risk

A risk based approach to regulation ensures that regulatory effort is directed at the areas where it will have most impact. This approach recognises the various dimensions of environmental risk and the strength of market and other incentives to manage these risks. It typically involves the use of tools such as risk identification, assessment and management.

Some inquiry participants supported a risk based approach to regulation. For example, Loy Yang Power stated that:

Efforts to satisfy environmental objectives should be achieved through a risk management approach to maximise the net environmental benefit. (sub. 18, p. 2)

While some regulatory agencies in Victoria have adopted elements of a risk based approach, Nexus Energy Limited stated that:

... [the] Department of Planning & Community Development (DPCD) should always take a risk based approach in assessing proposals and setting the scope of any Environment Effects Statement (EES) rather than applying a standard “one size fits all” EES scope. (sub. 9, p. 5)

A risk based approach to regulation should also acknowledge business incentives to manage environmental risks. Some inquiry participants expressed concern that business efforts in environmental management are not always recognised. For example, SITA Environmental Solutions stated that:

While EPA on one hand state that they encourage industry, including those in the waste industry to become an Accredited Licensee, EPA put up ever changing hurdles to meeting the criteria to satisfy the requirements to become an Accredited Licensee. (sub. 3, p. 2).

Moreover, Yarra Valley Water argued that the EPA’s corporate licences should recognise the licensee’s other environmental programs and actions (sub. 22, p. 3).

3.3.8 Avoiding unnecessary costs

Generally, regulatory arrangements are less likely to impose unnecessary costs when roles and responsibilities are clearly defined; when resources are targeted where they yield the largest benefits; when the selection of regulatory approaches is coordinated, effective and efficient; and when the arrangements integrate with other legislation.

Numerous inquiry participants, however, claimed that Victorian environmental legislation has resulted in excessive costs due to:

- multiple assessment/approval processes
- delays in assessment/approval processes

- multiple reporting requirements
- duplication of instruments
- overly prescriptive regulation.

Multiple assessment/approval processes

In addition to the Commonwealth's EPBC Act, there are assessment/approval processes under numerous Victorian Acts such as the Environment Effects Act, Planning and Environment Act, Environment Protection Act, Extractive Industries Development Act, Mineral Resources (Sustainable Development) Act and Pipelines Act.

Some proposed projects face multiple approval processes. For example, the Bendigo Business Council reported that Bendigo Mining has 234 approval permits to regulate its activities. Some of the regulatory approvals required by the Bendigo Mining water treatment plant include:

- a DPI work plan variation
- an exemption from EPA works approval
- an EPA waste discharge licence
- an EPA environment improvement plan
- a DSE forest produce permit
- a groundwater extraction licence
- a permit to construct a pipeline
- VicTrack pipeline agreement
- council planning permits
- a council building permit (sub. 38, pp. 1–2).

According to Coffey Natural Systems, several government consents overlap with the Environment Effects Statement (EES) process, including the EPA's works approval and assessment/approval under the EPBC Act (sub. 55, p. 5). The Minerals Council of Australia (Victorian Division) (MCA) reported slow progress towards the development of approval bilateral agreements between the states/territories and the Commonwealth under the EPBC Act (sub. 58, p. 32).

Delays in assessment/approval processes

Unexpected delays can add to paperwork and advisory costs, increase debt servicing obligations, cause equipment and staff to remain underutilised and postpone the commencement of revenue streams. Commenting on government approval processes, the UDIA stated that:

The high administration costs are related to data collection and consultant fees but mostly occur due to the holding costs caused by long time delays in Government approvals processes. (sub. 5, p. 3)

Nexus Energy Limited noted that certainty of the process and timeframes are important aspects of any approval process but:

It is the time taken to wade through the process and the implications for project financing and loss of production revenue that is the real cost to a small to medium company, rather than the actual dollars expended in ensuring compliance. (sub. 9, p. 3)

Commenting on its recent application to seek an extension to its existing quarry in Montrose, Boral Resources stated that:

Boral spent from April 2004-June 2007 producing its EES [Environment Effects Statement]. The cost of the reports prepared as part of this process was in excess of \$3.5 million excluding the internal costs incurred by Boral for running this process for more than four years. (sub. 34, p. 7)

The MCA claimed that the EES process was cumbersome, very time consuming and very costly (sub. 58, p. 29). DPI also reported that the time and costs for environmental approvals for earth resource projects have grown over time (sub. 61, p. 11).

Regarding planning permits, Wellington Shire Council observed that:

Applicants for permits are experiencing loss of time on projects which are being held up waiting for completion of the approvals process, which is often taking more than the statutory timeframe. (sub. 29, p. 1)

Commenting on the EPA's prescribed waste regulations, Alcoa of Australia reported that there have been a number of instances where government consideration of Alcoa's applications to use prescribed waste — intended to reduce waste to landfill or to recycle industrial by-products — have been substantially delayed (sub. 21, p. 4). According to Barwon Water, permission for the construction of new infrastructure and maintenance of existing infrastructure under the National Parks Act often takes many months to obtain (sub. 33, p. 1).

A number of submissions argued for statutory or explicit timeframes for approval processes (Barwon Water, sub. 33, p. 2; Monash Energy, sub. 36, p. 3; Nexus Energy Limited, sub. 9, p. 3; UDIA, sub. 5, p. 3).

Environmental assessment/approval processes in Victoria are examined in chapters 6–8 and 10.

Multiple reporting requirements

An important issue, cited in many submissions, is the multiple reporting requirements imposed on businesses by state and federal regulation particularly in the area of resource efficiency and climate change.

Multiple reports are required under some Victorian regulation. For instance, Australian Paper stated that its Maryvale Mill operates under an EPA licence that requires a number of reports, including:

- an annual river discharge report
- an annual river bio-survey report
- a solid waste report
- a groundwater review
- a groundwater audit report
- a prescribed waste report
- a National Pollutant Inventory (NPI) report
- two annual air discharge reports (sub. 37, p. 2).

Jemena stated that, with the introduction of the Commonwealth's *Energy Efficiency Opportunities Act 2006*, there is duplication of reporting requirements with Victoria's EREPs (sub. 28, p. 1). Loy Yang Power stated that:

The EREP program is a classic example of the sheer volume of work required to obtain baseline data let alone determine efficiency opportunities. There is no link or integration of databases for companies to provide the same information contained in EREP, EEO, NGERs, NPI, waterMAP reports – all of which have similar reporting functions. (sub. 18, p. 1).

Similarly, Australian Paper listed the reports required by state and Commonwealth legislation, which included EREP, EEO, National Greenhouse and Energy Reporting (NGER), NPI, Greenhouse Challenge Plus, waterMAP and trade waste (sub. 37, p. 3). Philip Morris Limited identified some overlap and duplication in reporting requirements for water, energy and waste; for example, EREP and waterMAP. It observed that a number of reports require different versions of similar information (sub. 31, pp. 1, 3).

Alcoa of Australia (sub. 21, p. 2), Citipower and Powercor Australia (sub. 63, p. 1) and the EUAA (sub. 39, p. 3) also pointed to duplicative reporting requirements resulting from Commonwealth and state regulations.

Chapter 9 examines environmental reporting requirements faced by Victorian businesses.

Potential duplication of instruments

Numerous submissions from business pointed to potential duplication between state and Commonwealth regulatory measures addressing renewable energy uptake, energy efficiency and greenhouse gas emissions. For example, the EUAA stated that:

The big issue for Australian users is the additional costs that energy users face through mandatory renewable energy targets such as MRET and various State measures. These add directly and significantly to the costs of energy and do so in a way that does not even reduce carbon in a least cost way compared to an emissions trading scheme ... Moreover, duplicative and even higher cost State based schemes are even more inefficient and costly to users. (sub. 39, p. 2)

The Energy Retailers Association of Australia (ERAA) stated that:

The operation of a national mandatory Renewable Energy target (MRET) alongside the Victorian Renewable Energy Target (VRET) unnecessarily increases administrative and regulatory burdens on retailers operating in Victoria. (sub. 27, p. 2)

Origin expressed concern about possible overlap involving energy efficiency programs such as VEET scheme (sub. 41, p. 5). The ERAA supported a national energy efficiency target instead of separate state-based schemes (sub. 27, p. 2).

Some inquiry participants saw a need to review existing energy efficiency regulations such as EREPs, given the proposed introduction of the carbon pollution reduction scheme. Nexus Energy Limited argued that the energy aspects of EREPs should be discontinued on the introduction of a national emissions trading system (sub. 9, pp. 7–8). And, Toyota considered that the continuation of the EREP regulation should be reviewed (sub. 62, p. 2).

3.3.9 Removing regulatory barriers

Regulation should not constrain the community's ability to reduce its environmental impact at the least cost possible, nor should it inhibit the development of new technologies, products, services or industries. This inquiry has been asked to identify any regulatory barriers to growth in areas of the economy that are responding to emerging environmental sustainability challenges.

Submissions commented on a range of responses to environmental sustainability challenges. These responses included the development and use of clean coal technologies, carbon capture and storage technologies, geothermal energy technologies, renewable energy technologies (such as wind and solar), distributed energy generation technologies, recycling technologies, sustainable design, and land, water and waste management.

Monash Energy, for instance, pointed to the potential for clusters of developments in a region to trigger multiple assessment/approval processes (sub. 36, pp. 5–6).

Some inquiry participants claimed that regulatory barriers are impeding investment in distributed energy generation systems. For example, the Northern

Alliance for Greenhouse Action (NAGA) reported that its members' experiences indicate that the installation of distributed generation facilities is hampered by regulatory impediments, particularly regarding connection issues. NAGA stated that project proponents must undertake network connection studies which can add substantially to overall project costs (sub. 20, p. 3). EKO Living argued that government should promote distributed energy generation (that is, small scale installations of solar, wind, gas, hydro, geothermal and bio-fuel power generation) (sub. 10, p. 8).

Several submissions pointed to possible regulatory barriers to recycling water and waste. For example, Eco-Harvest Australia claimed that the costs associated with obtaining certification for re-use water are substantial (sub. 4, p. 2). In addition, EcoNova Operations argued that federal, state and local authority initiatives focus on centralised infrastructure projects, disregarding the benefits available from onsite water recycling (sub. 32, p. 1).

Local government appears to be facing challenges in responding to climate change. The City of Greater Bendigo argued that the Planning and Environment Act (or planning scheme) does not fully allow for sustainable design to be incorporated into development applications. Moreover, councils are facing challenges in processing planning applications that encompass innovative design or new uses that are not defined 'uses' within the planning scheme (sub. 49, p. 2).

According to the VFF, current regulation impedes adaptation to climate change by impeding farmers adopting more efficient land use practices. For example, current permit and licence requirements for large dams encourage inefficient small dams which avoid these requirements (sub. 43, p. 11). The UDIA also argued that a more flexible approach to water management should be allowed as the *Water Act 1989* (Vic.) stifles innovation (sub. 5, p. 3).

Chapter 14 examines potential regulatory barriers to Victorian industries adjusting to a carbon constrained economy.

3.3.10 Performance reporting

Performance reporting is important for measuring the effectiveness of regulation, in terms of achieving its objectives, and for enhancing transparency and accountability. Reporting also provides information to improve regulation; for example, this information could enable resources to be allocated to where they can provide the largest benefits.

The MAV stated that monitoring, evaluation and reporting is a critical component to assess the performance of regulation (sub. 17, p. 5). Commenting on the benefits of environmental regulations, the UDIA stated that 'performance

measures, outcome measures and public reporting should be introduced' (sub. 5, pp. 1–2).

DSE's annual report specifies a number of environmental outcomes and sub-outcomes. Although DSE provides details on strategies taken to achieve these sub-outcomes, it does not detail progress made towards achieving the outcomes (VCEC 2008a, p. 175).

In the *State of the environment* report, the Commissioner for Environmental Sustainability noted that:

A lack of consistent, co-ordinated and repeated data collection and reporting limits the ability to assess and report on the condition of Victoria's environments at the statewide level. (CES 2008b, p. 29)

The quality of performance reporting by environment regulators in Victoria is variable, and often does not link environmental outcomes with regulatory or other instruments. Moreover, as noted, unclear objectives make performance measurement problematic. Performance reporting is discussed in chapters 4 and 11.

3.3.11 Transparency and accountability

While performance reporting enhances transparency and accountability in terms of measuring progress against environmental objectives, transparency in assessment/approval and decision-making processes is also important. The APA Group and Envestra Limited, for example, expressed concerns about transparency in decision making in relation to the management of contaminated sites (sub. 2, p. 2). According to WWF Australia, one of the factors bearing on the effectiveness of the Flora and Fauna Guarantee Act in protecting threatened species is a lack of transparency in the decision making process (sub. 23, p. 7).

3.3.12 Consistency

Inconsistencies in the design and implementation of environmental regulation can impose additional costs and delays on business. These inconsistencies can particularly affect businesses operating in multiple jurisdictions. For example, Yarra Valley Water noted that 'there are a number of examples where Victoria has different (sometimes stricter and sometimes looser) targets than other states' (sub. 22, p. 2). The VFF argued that the SEPP (Air Quality) conflicts in some ways with other government policy statements (sub. 43, p. 9).

Inconsistencies in the application of regulation can arise from staff and resource issues. Nexus Energy Limited argued that:

A consistent lack of consistency is a common theme when dealing with the variety of agencies across the state. In many cases, this appears to be due to a

personal interpretation of the legislation/regulation rather than an organisation/state wide policy decision. Such inconsistencies between regions in the Department of Sustainability & Environment (DSE) or the EPA occur even when there is a hierarchal reporting structure to enforce the implementation of organisation wide policy decisions. Region versus head office tensions compound the issue. (sub. 9, p. 4)

Barwon Water also reported some difficulties in dealing with local offices and Melbourne based offices of regulatory authorities, with local offices lacking the capacity, expertise and imprimatur to deal with some issues (sub. 33, p. 2).

According to Nexus Energy Limited, all government agencies that it deals with are suffering to some degree from a lack of resources (sub. 9, p. 3). Other submissions raised this issue. The City of Greater Bendigo argued that, for some areas where local government has administrative responsibility (for example, the native vegetation framework), it does not have the level of expertise or resources to provide informed advice (sub. 49, p. 5).

3.3.13 Flexibility

The regulatory and institutional framework needs to be able to respond to emerging environmental sustainability challenges, such as a carbon constrained economy. Commenting on the responsiveness of the Planning and Environment Act, the City of Greater Bendigo stated that:

... the Act's cumbersome processes make it impossible to respond quickly to emerging issues such as climate change; rezoning; response to innovation; research development; sustainable design, water use and most recently food security. (sub. 49, p. 1)

The City of Greater Bendigo argued that legislation (as well as innovation and technology) needs to be ahead of the issue not behind (sub. 49, p. 5). Some other submissions saw a need to modernise Victoria's environmental legislation. Nullimbik Shire Council, for example, argued that the Catchment and Land Act, Flora and Fauna Guarantee Act and Wildlife Act all require updating (sub. 40, p. 2).

3.3.14 Consultation

Public consultation is a feature of good regulatory design and is used in many regulatory, assessment or approval processes in Australia. Consultation can bring forth new evidence and identify alternative options. It also promotes transparency by exposing the merits of decisions, assumptions and the analysis used to make those decisions (VCEC 2006b, p. 17).

While public consultation can add to time and administrative costs, it can reveal useful information including the importance or value of a proposed project to

the community. Public consultation processes can identify community concerns about the environmental impacts of proposed projects. The EES, planning system and works approval processes all incorporate some form of public consultation.

Some submissions commented on proposed regulatory requirements to undertake community consultation. Cement Concrete & Aggregates claimed that the Resources Industry Legislation Amendment Bill contains significant new regulatory obligations, including a 'duty to consult' with the community as a condition of work plan endorsement (sub. 25, pp. 5–6). The Construction Material Processors Association anticipated that the financial impacts associated with the proposed 'duty to consult' would be detailed in a business impact statement (sub. 35, p. 5).

At the same time, some inquiry participants argued that opportunities for consultation were limited or non-existent for some processes. For example, the City of Greater Bendigo stated that:

Legislative/regulative changes are often made with little or no ability for business to comment. Change is often immediate with no time for business to phase compliance. (sub. 49, p. 3)

Similarly, the UDIA claimed that the Victorian Government had recently introduced a new set of practice notes and a new clause in the Victorian Planning Provisions which relate to the management of native vegetation, with little consultation (sub. 5, p. 2).

According to WWF Australia, currently there is no formal mechanism for ongoing community input into the implementation of the Fauna and Flora Guarantee Act:

... it was the original practice and is a statutory requirement of the Act that community input be provided through formation of a Conservation Advisory Committee, which has now dissolved. (sub. 23, p. 8)

WWF Australia argued that the reinstatement of this committee is important to the provision of input and advice regarding threatened species and ecological community recovery and protection (sub. 23, p. 8).

3.3.15 Compliance and enforceability

Several submissions reported a lack of monitoring or enforcement mainly regarding biodiversity and native vegetation provisions of the Planning and Environment Act. The Bendigo and District Environment Council quoted Trevor Budge who stated that:

... there are numerous Councils who simply fail to enforce their schemes and carry out their statutory requirements. ... Few planning permits and conditions that are part of them are ever monitored or enforced. Government agencies that are also part of this system principally Department of Infrastructure and the DSE, avoid conflict with land owners and largely take a soft line with councils ... (sub. 7, p. 8)

Councils also raised enforcement issues. Indigo Shire Council stated that:

For many businesses, there is little incentive for environmental protection as there is little or no enforcement. Local governments are responsible for the administration of the native vegetation provisions under the Planning and Environment Act, which requires pre-application consultation, assessment, approval, monitoring and enforcement. Limited resources within local government lead to little or no monitoring and enforcement of breaches occurring. (sub. 15, p. 2)

According to Nullimbik Shire Council, there is inadequate enforcement and monitoring of offsets regarding native vegetation (sub. 40, p. 2). Wellington Shire Council contended that 'meaningful fines' are lacking from the Flora and Fauna Guarantee Act (sub. 29, p. 4).

3.3.16 Information and education

Regulation should be accessible and easy to understand. Information and education can raise community awareness and understanding of environmental regulation and, in some cases, lessen the need for regulation. Commenting on government approval processes, Nexus Energy Limited stated that:

A simplified process with published, clear process flow charts and guidelines would help reduce the need for government facilitators. (sub. 9, p. 2)

In relation to the Flora and Fauna Guarantee Act, WWF Australia argued that one factor inhibiting the effectiveness of the legislation is a lack of understanding of the Act by the public and government departments particularly those outside DSE (sub. 23, p. 6). WWF Australia stated that:

Information and decision making tools are valuable because they can avoid expensive disputes by providing clarity, helping developers to know where they stand from the outset. (sub. 23, p. 5)

Some inquiry participants also saw a need for education about the native vegetation framework. Wellington Shire Council supported, along with other measures, an awareness campaign about the incremental loss of native vegetation (sub. 29, p. 1).

3.3.17 Evaluation

According to best practice principles, there should be mechanisms for evaluating the operation of regulations to assess how well the regulations are achieving their objectives (VCEC 2005a, p. 13). Such evaluations can determine whether regulations are still warranted or can be improved (chapter 11).

Several submissions commented on the need for the evaluation and review of regulation. For example, the UDIA stated that ‘very little monitoring and review of any regulation occurs’, proposing that ‘an audit should be conducted every five years to monitor what the benefits are’ (sub. 5, p. 1). The HIA contended that many local policies do not require a regulatory impact statement (RIS) and do not necessarily demonstrate a net community benefit (sub. 51, p. 10). Yarra Valley Water argued that changes in environmental policy and regulations should always be subject to a RIS process to ensure robust assessment and justification of the costs and benefits (sub. 22, p. 1).

3.4 Conclusion

Victoria has an extensive and complex body of legislation and many regulatory agencies also operate in the environmental domain. In submissions and consultations, inquiry participants raised a large number of issues relating to current arrangements. The principal issues raised by participants include:

- multiple, duplicative and cumbersome processes for assessing environmental approval applications
- overly complex and onerous regulatory requirements, as exemplified by the native vegetation framework
- a lack of coordination among regulatory bodies involved in environmental approval processes
- the limited availability of the necessary technical skills within regulatory agencies to assess environmental approval applications
- multiple and duplicative environmental reporting requirements under Victorian and Commonwealth regulation.

Part A of this report explores opportunities to improve the assessment and approval processes in key Victorian environmental legislation and to streamline environmental reporting requirements. Inquiry participants identified further issues with the quality of regulatory and institutional arrangements. Part B examines the key issues noted, which include: absent or unclear objectives in some environmental legislation; the lack of integration across legislation; inadequate monitoring, reporting and evaluation of the performance of environmental regulation; the limited use of market based instruments to tackle environmental problems; and regulatory barriers facing business in adjusting to a carbon constrained economy.

4 Benefits of Victorian environmental regulation

4.1 Introduction

The terms of reference require the Commission to report on the nature and scope of the benefits from environmental regulation in the modern Victorian economy. This chapter addresses this requirement by:

- identifying the types of benefits that Victoria's environmental regulation are intended to achieve (section 4.2)
- summarising the outcomes for Victoria's environment, based on the recent state of the environment report prepared by the Commissioner for Environmental Sustainability (section 4.3)
- examining the state of knowledge about the extent to which regulation is contributing to these outcomes (section 4.4).

4.2 Intended benefits of environmental regulation

All modern societies regulate, to some degree, the impacts that their activities have on their natural environment (chapter 1).

Regulation is used to realise benefits in six broad areas:

- reducing or ameliorating the damage to the natural environment as a result of pollution
- preventing over-exploitation of natural resources such as water, forests, and fisheries
- facilitating sustainable economic and social development where impacts on the environment are present (or potentially present)
- maintaining and improving biodiversity
- stimulating more efficient use of resources through changes to production methods and innovation, in such areas as electricity generation by renewable or green technologies, energy and water saving technologies, and recycling
- ensuring the environmental and other effects of proposed projects are identified and assessed before the projects can commence.

4.2.1 Victoria's environmental regulation

Victoria's extensive and complex system of environmental regulation aims to deliver benefits that conform in nature to those outlined above.

Regulation also provides a framework for implementing the principles of ecologically sustainable development, which are present in most of the environmental legislation (chapter 13), and aims to provide those wanting to implement projects that may impinge on the environment with clarity about the public decision process and the criteria to be employed (chapter 6).

Table 4.1 provides some detail on the objectives - and hence intended benefits - for a representative selection of Acts and their regulations. Key features include:

- achieving sustainable usage of environmental resources - such as forests, fish stocks and coastal assets - for recreation, conservation and business
- protecting the existing diversity of plant and animal life
- maintaining the productive capacity of agricultural land
- preventing unnecessary air pollution.

These specific objectives of legislation can be viewed within a general context of objectives of government policies set out in *Victoria's Environmental Sustainability Framework* (DSE 2005, pp. 8–9). These broad policy objectives, reproduced below, may also be regarded as a statement of the benefits being sought:

- healthy and productive land
- healthy and productive water systems
- healthy marine and coastal areas
- flourishing biodiversity in healthy ecosystems
- clean air
- comprehensive network of parks
- less waste and increased resource efficiency
- sustainable forests
- increased water, energy and materials efficiency
- reduced climate impact
- communities with a water, energy, materials saving ethic
- liveable cities and towns
- efficient transport systems.

Table 4.1 Prime objectives of selected conservation and protection regulations, Victoria

<i>Area of regulation</i>	<i>Prime objectives (with a focus on outcomes)^a</i>
<i>Coastal Management Act 1995</i>	<p>Manage usage of Victoria's coastal resources on a sustainable basis for recreation, conservation, tourism and commerce.</p> <p>Protect and maintain areas of environmental significance on the coast.</p> <p>Maintain and improve coastal water quality.</p>
<i>Flora & Fauna Guarantee Act 1988</i>	<p>Guarantee that all Victoria's flora and fauna (other than excluded flora and fauna) can survive, flourish and retain their potential for evolutionary development in the wild.</p> <p>Manage potentially threatening processes.</p> <p>Conserve Victoria's communities of flora and fauna and ensure that the genetic diversity of flora and fauna is maintained.</p> <p>Ensure any human use of flora and fauna is sustainable.</p> <p>Encourage conserving of flora and fauna through co-operative endeavours.</p>
<i>Planning and Environment Act 1987- native vegetation regulations</i>	<p>Achieving a reversal, across the entire landscape, of the long term decline in the extent and quality of native vegetation, leading to a net gain</p>
<i>Victorian Renewable Energy Act 2006</i>	<p>Encourage the development of renewable energy sources, encourage regional investment and employment, and reduce greenhouse gas emissions.</p>
<i>Sustainable Forests (Timber) Act 2004</i>	<p>Provide for sustainable timber harvesting in State-owned forests, through controlled demarcation of areas for commercial harvesting and code of practice, which heeds the principles of ecologically sustainable development.</p>
<i>Fisheries Act 1995</i>	<p>Protect and conserve fisheries resources, habitats and ecosystems.</p> <p>Promote sustainable commercial fishing and viable aquaculture industries and high quality recreational fishing opportunities.</p> <p>Facilitate access to fisheries resources for commercial, recreational, traditional and non-consumptive uses.</p>
<i>Environment Protection Act 1970</i>	<p>Prevent pollution and environmental damage, having regard to the various principles of protection as stated in the Act.</p>
<i>Building Act 1993 - 5 Star building regulations</i>	<p>Facilitate construction of environmentally and energy efficient buildings: in particular, to reduce consumption of water and energy (and greenhouse gas emissions) in the home by instituting changes to building design practices.</p>

^a This column only identifies objectives that relate to outcomes. A number of Acts also specify the means for achieving outcomes. For example, one of the objectives of the Catchment and Land Protection Act is to establish the Victorian Catchment Management Council and the Catchment Management Authorities.

Sources: Various Acts.

Most of these broad objectives have one or more 'interim' targets¹ (generally set for up to ten years ahead), which vary significantly in their degree of specificity and capacity to be measured. In conjunction with the Victorian Government's environmental policies and programs, the existing system of environmental regulation contributes to the achievement of these objectives. The specific contribution of regulation to environmental outcomes and benefits requires evaluation on a case-by-case basis, making due allowance for the influence of any other relevant factors, which is considered later in section 4.4.

4.3 Current environmental outcomes for Victoria

The recent *State of the environment* (SOE) report prepared by the Commissioner for Environmental Sustainability (CES 2008b) provides a wide ranging review of the physical condition of Victoria's natural environment.

The report points to a considerable number of unfavourable trends for Victoria's environment, though it also highlights stability and improvement in some areas:

- For most aspects of the natural environment, changes occurring during the last decade have been adverse, with degradation occurring across much of Victoria. Specific areas of environmental concern include (among others) continuing losses in the quantity and quality of native vegetation, and an increase in the number of threatened species of flora and fauna.
- There is an over-riding concern with the wide-ranging impact of the nature and extent of climate change.
- There have been some favourable trends in relation to the land area of Victoria affected by salinity (in part due to drought), and the size of the ozone layer hole (partly repaired).
- Some aspects of the environment have been stable in recent years; the main example is air quality in Melbourne and the major regional centres (box 4.1).

In some instances, the Commissioner was unable to comment on trends due to the lack of historical data on environmental assets and services and their quality. The Commissioner noted that information gaps exist: for example, in relation to the health of Victorian rivers (one-third is currently considered to be in poor to very poor condition), and the overall quality of agricultural soils—the last time an overall assessment of soil health occurred being in 1991 (CES 2008b, p. 117).

The SOE report observes that the environmental trends have occurred despite a wide array of government strategies being put in place to manage and improve environmental conditions (CES 2008b, p. ii).

¹ With three exceptions, no targets being specified for healthy marine and coastal areas, comprehensive network of parks, and communities with a water, energy, materials saving ethic.

Box 4.1 State of the environment report

The Commissioner for Environmental Sustainability examined environmental conditions and trends in a number of key areas:

Greenhouse gas (GHG) emissions

GHG emissions grew by 12 per cent between 1990 and 2006, accompanied by higher temperatures, and markedly lower than average rainfall and reduced inflows to inland water storages.

Ozone formation

Monitoring in metropolitan Melbourne shows that the level of ozone in the stratosphere reached a low point in 1998 and has fluctuated around that level since. Emissions of ozone depleting matter in the metropolitan area have halved during the second half of the 1990s.

Air quality

The quality of Melbourne's air has been stable in recent years, other than during episodes of bush fires and dust storms.

Native vegetation

It has been estimated that Victoria has been losing native vegetation at the rate of some 4000 hectares per annum since the end of the 1980s to 2005, representing 0.4 per cent per annum. These losses have occurred almost wholly on privately owned land.

Agricultural soil

A third of all agricultural land in Victoria was classified as seriously degraded in the last stock take undertaken in 1991. The amount of land affected by salinity has declined, however, due to the prolonged drought.

Marine and coastal assets

Information is limited. However, several marine species are considered to be exploited to the fullest sustainable extent. The natural features of most coastal estuaries have been substantially degraded.

Rivers and inland water reserves

No trend data are yet available. Data for 2004 show conditions of rivers to be no more than moderate overall, with only one-fifth of Victorian rivers assessed to have good characteristics as regards key attributes of water quality and breeding habitats and one-third being in poor to very poor condition.

Threatened species

Currently 160 vertebrate and 780 plant species are considered to be either rare or under threat of extinction. The number in these categories increased during 2002-07.

Source: CES 2008b.

The Victorian Government also publishes a progress report on the policies which collectively form the strategy *Growing Victoria Together* (chapter 3). The most recent of these reports, released in mid-2008 (DTF 2008b, pp. 397–408), covered rivers, air and drinking water quality, native vegetation, agricultural land condition, greenhouse gas emissions, efficiency of water use, and solid waste generation. The goals and highlights on progress include:

- Improving the health of Victoria's rivers significantly by 2010 and returning the Snowy River to 21 per cent of its original flow by 2011. The last state-wide assessment of river health was conducted in 2004, with the next assessment being due in 2009. The Victorian River Health Program was assessed as currently on track to meet its targets for 2011 in the management and restoration of Victoria's rivers. The Snowy River was reported as being at 4 per cent of its original flow, with the capacity for water allocations being constrained by drought.
- Improving the quality of air and drinking water. EPA Victoria data cited relate to 2007 and generally show good to very good quality air, but with a measurable impact from bushfires, drought and dust storms. In 2006-07, 99 per cent of localities where drinking water was supplied met quality standards, an increase of 3.5 percentage points over the previous year.
- Increasing the extent and quality of native vegetation. During 2008, a Native Vegetation Tracking System became fully operational for relevant planning permits referred to the Department of Sustainability and Environment (DSE). In 2005-06 there was a net decrease in native vegetation of around 4000 habitat hectares, comprising a net increase on public land of 5900 habitat hectares offset by a net fall of 9990 habitat hectares on private land.
- Improving the condition of land as the impact of salinity and soil degradation is reduced. The capacity to measure land condition is being developed. The Catchment Condition Report 2007 indicates a decline in the immediate threat of salinity.
- Reducing greenhouse gas emissions from the production and use of energy. The data showed total greenhouse gas emissions rose 3.3 per cent between 1999 and 2006.
- Using water more efficiently in agriculture. The efficiency of the water delivery system fell in 2006-07, which was partly due to lower water supply. Benchmarking indicated Victorian farming enterprises are conservative water users in relation to the commodities being irrigated.
- Reducing Melbourne's water usage by 15 per cent on a per capita basis from the 1990s average by 2010. In 2007 Melbournians consumed 28 per cent less water per person than the 1990s average.
- Reducing the quantity of solid waste generated and increasing the amount recovered for re-use, recycling and energy generation. Total waste in

2005-06 was 3.3 per cent higher than 2004-05, while the amount of waste recycled and reused had risen to 60 per cent in 2004-05 (compared with 43 per cent in 1999-2000).

4.4 The contribution of Victoria's regulations to environmental outcomes

This section addresses the links between Victoria's environmental regulations and the outcomes, recognising that the available evidence is very limited and any conclusions have to be qualified.

4.4.1 The regulatory benefits—an overview

The task of evaluating the contribution that is made by regulation to environmental outcomes is an important one at any stage in a state's development. But it is especially important when the aggregate picture for the condition of the natural environment is at best muted, when the volume of environmental regulation in place is extensive, and when the impact of environmental issues on the broader economy is likely to increase significantly in the next few years.

A range of factors have contributed significantly to the present condition of Victoria's natural environment, most notably:

- the amount of resources committed to environmental policies and programs by federal, state and local governments
- the design and implementation of Victoria's environmental regulations
- policy decisions made by governments on a suitable 'balance' of economic, social and environmental considerations in relation to particular projects
- factors outside the control of the Victorian Government, in particular climate change, the prolonged drought, bushfires and the rate and location of economic development.

The diversity of factors contributing to environmental outcomes generally makes the measurement of the contribution of any particular factor—including Victoria's environmental regulation—a difficult task. The difficulty of attributing causation and determining the effectiveness of regulations is compounded by the presence of multiple regulations addressing similar issues (for example, habitat and biodiversity and public land management).

The Commission has attempted, nevertheless, to make some general observations about the extent to which the effectiveness of Victoria's environmental regulation has been evaluated. This draws on:

- a series of interviews held with officers within the State's regulatory agencies in respect of monitoring and reporting on outcomes for 16 conservation and protection Acts
- one-off reviews of the effectiveness of individual Acts and their regulations
- examples found of good practice
- the Commission's own evaluation of selected Acts and their operation.

The 16 conservation and protection Acts examined are those listed in Table 4.1 plus:

- *Catchment and Land Protection Act 1994*
- *National Parks Act 1975*
- *Wildlife Act 1975*
- *Biological Control Act 1986*
- *Forests Act 1958*
- *Heritage Rivers Act 1992*
- *Water Act 1989*
- *Pollution of Waters by Oil and Noxious Substances Act 1986*

The resulting findings and conclusions follow the above structure.

Monitoring and reporting on outcomes

Overall, the Commission found that whilst it is common for monitoring data to be collected, the focus tends to be very largely on physical conditions to the exclusion of other impacts of the regulations (such as levels of use of the environmental assets for recreation and for commercial purposes). The better examples of monitoring and reporting on physical conditions occur for national parks and forest management, where there are international frameworks and obligations for reporting.²

EPA Victoria makes extensive use of monitoring practices. Historically it has set environmental quality objectives for environmental assets and its role has expanded recently to include initiatives to improve resource efficiency (energy, water and waste generation) and to address climate change. Its monitoring is particularly strong in monitoring and reporting environmental outcomes for air and water quality, including within Port Phillip Bay and the Yarra River. In other areas, public reporting by EPA Victoria is less comprehensive; for example, it does not report on its performance in administering the licensing and works approval regimes (chapter 8).

² The Commission notes, however, concerns about the comprehensiveness of reporting as raised by groups such as the Victorian National Parks Association (2008, pp. 31–32).

EPA Victoria's monitoring work on the whole does not seek to isolate the impact of its regulatory activities on outcomes. Only in a few cases, such as air pollution where regulation is extensive and the occurrence of external factors (chiefly bush fires and dust storms) are few and well understood, can the impact of the regulations be inferred. The outcomes measured by EPA Victoria are also nearly always measured only in physical terms, such as the concentration of pollutants in the atmosphere. This makes it very difficult for those reviewing the effectiveness of particular regulations to judge whether observed changes represent a significant change to the level of benefit experienced by the Victorian community.

In relation to native vegetation regulations administered by DSE, the Commission is not aware of any direct evaluation of the relevant regulations, although there are some outcome measures. As previously reported, for 2005-06 the data shows a net decrease in native vegetation of around 4000 habitat hectares (DTF 2008b). It seems likely that this reduction would have been greater without the native vegetation regulations. According to DSE:

In 2006-07, the proposed clearing of 1009 hectares of native vegetation was avoided as a result of this approach. In the same year approximately 260 hectares of native vegetation was approved for removal with associated offsets to be delivered through improved management of 1460 hectares (sub. 57, pp. 15–16).

Subsequently, during 2007-08, additional net gains in native vegetation have been made through application of the BushTender and EcoTender programs, which have in total delivered gains equivalent to some 1300 habitat hectares (DSE 2008c). Data on the outcome of the permit applications indicate that outright refusal to grant a permit is uncommon, with a permit eventually being granted subject to conditions which include limits on clearing and provision of offsets (chapter 7). Despite the development of such information, the impact of recent bushfires, and the on-going impact of drought, highlight the difficulties of assessing the effect of native vegetation regulations.

One-off reviews of individual Acts

Major, one-off, reviews of Acts and their regulations are exemplified by the current reviews in relation to the Planning and Environment Act, the recently completed review of the Extractive Industries Development Act, and the review of the environmental effects assessment process under the Environment Effects Act which resulted in the existing Ministerial Guidelines (Environment Assessment Review 2002).

For the completed reviews, the focus was on improving the approval processes rather than evaluating whether the objectives of the regulations have been

achieved. It is also noted that the various reviews conducted by the National Competition Council are not focussed on objective achievement.

Good practice examples in Victoria

Two cases were identified of effective evaluation of the impact of applying the regulations themselves, both of which measured the benefits in physical terms and then estimated the value to society of these benefits. These instances of good practice concern pest reduction by the Department of Primary Industries (DPI) under the Biological Control Act, primarily benefiting farmers through preventing production losses on agricultural land, and control of industrial air emissions by EPA Victoria (boxes 4.2 and 4.3).

Box 4.2 Good practice example: biological controls on pest plants

DPI devise and initiate campaigns using biological agents, such as insects and fungi, to reduce and contain populations of weeds, insects and animals that cause harm to agriculture and forestry, and to native species in national parks. Examples of declared pests are: Hudson Pear (cactus), Paterson's Curse (thistle), Bridle Creeper, Alligator Weed, Bitou Bush and Blackberry. Usually, the target species is not eliminated, but rather brought under a level of control sufficient to reduce their harm. These control campaigns require the sanction of a national ministerial council as the impacts often extend across borders.

The campaigns are far from cheap to mount. Once a proposed initiative is sanctioned, DPI has to identify a suitable agent, often involving re-engineering of an organism, and test it in the field to see how effectively it attacks the target species in its home territory. The total development cost, which falls on government, is typically around \$2–7 million. Hence, formal evaluation of the returns on the required input of resources (such as staff time in deciding whether to declare and control a particular species, planning a campaign and scientific testing of candidate agents) is highly desirable.

DPI in conjunction with the Co-operative Research Centre for Australian Weed Management commissioned a set of social cost-benefit studies to estimate the realised benefits to industry from 36 weed control campaigns. The benefits chiefly comprised a rise in crop and other agricultural production, estimated by comparison of trends through time in affected and control areas, plus cost savings for substituted methods of treating weeds.

Around half of the control campaigns showed very high net returns, with net benefits (in present value terms) of at least \$18 million, and a median net benefit of \$69 million and a median benefit to cost ratio of 21 (expressed in 2004-05 prices). The balance of the campaigns had a marginal net present value.

Sources: Page and Lacey, AEC Group 2006.

Box 4.3 **Good practice example: control of industrial air emissions**

EPA Victoria attempted to estimate the benefits to the Victorian community of its licensing and works approval system. This work focused on the reduction in health damage costs due to air pollution.

Firstly, the susceptibility to illness and associated costs from four common types of air pollutants (PM10, NO2, SO2, VOC) was first assessed, reflecting existing pollution levels in Victoria, and a judgement then made on how much greater those levels would be in the absence of EPA Victoria's controls.

The physical output for each of the four pollutants by all of Victoria's industrial establishments was derived from EPA Victoria's facility emissions data base (and expressed in tonnes per annum for typical conditions). These estimates were then applied to unit values (\$ per tonne of pollutant), which represent the associated health costs, thereby giving aggregate costs for each pollutant and an overall total cost.

In the absence of specific local evidence, EPA Victoria based the physical health impacts and unit cost estimates on a 2001 study by the European Commission for France. This approach was based on the view that the health effects of a given pollutant and its resulting economic effects are unlikely to vary greatly between countries.

The question of how much greater such pollution levels would be in Victoria without EPA Victoria's regulations proved difficult to determine. EPA Victoria postulated that pollution levels would be around 5 per cent higher for each of the four pollutants in question, which gave an indicative benefit attributable to its controls of around \$210 million per year, with a plausible range of \$40 to \$400 million per year.

Even at the lower limit specified for benefits, these outweigh the administrative and compliance costs of applying the regulations which EPA Victoria estimated at \$33 million per annum.

Sources: EPA Victoria (2007, pp. 62–65) and Friedrich, Rabl and Spadaro (2001).

The Commission welcomes advice on further good practice examples of monitoring and reporting on the benefits of environmental regulation.

The Commission's own review of the benefits of environmental regulation

The Commission attempted to review the benefits of existing environmental regulation in one area. Reflecting the view of some participants that environmental assessment and approval processes can be a major cause of uncertainty, cost and delays, the Commission analysed the efficiency of the decision-making process under several Acts. The focus was on environmental impact assessments of proposed projects (under the Environment Effects Act), granting of licences and permits for mining activity under the Mineral Resources

(Sustainable Development) (MRSD) Act, and permit approvals under a group of Acts covering petroleum (on- and off-shore) and geothermal energy extraction.

To look at the benefits of the Environment Effects Act, the Commission reviewed twenty prominent projects that set out on the assessment path during the period 2002-07 and one in 2000. They represent around two-thirds of the total number of cases initiated over the period mentioned. All proceeded to a Panel Inquiry involving formal public hearings. Overall, the Commission found that the objectives and associated benefits relating to transparency, opportunities for public participation and accountability of the proponent were well met, whilst tests of timeliness and well integrated assessments have only been partially met. The options for reducing regulatory burdens in the environment effects process that are set out in chapter 6 result in part from this review.

In relation to the MRSD Act, the Commission reviewed data on the timeliness of the approval process for work plans and work authorities. It was found that the majority of approvals occurred within or close to the statutory timeframes (including time taken by referral agencies). Nevertheless, a small proportion of approvals can take a considerable amount of time and the resulting uncertainty is regarded by the Minerals Council of Australia as a disincentive for private sector investment. This matter is discussed further in chapter 10.

In relation to regulations governing the rights to petroleum and geothermal energy exploration and extraction (which span three separate Acts), proponents of projects must obtain approval before they can undertake exploration or extraction works or put in place distribution infrastructure that would have an impact on the environment. The Commission's focus in considering the benefit was on the time taken for exploration and 'production' (extraction) applications, and more specifically on the total time for approvals and the portion that is attributable to DPI's own tasks. With the exception of matters requiring consideration by both the Commonwealth and Victorian Governments, the technical and regulatory assessment processes and decision criteria appear to work effectively and within justifiable timescales. The Commission has been advised that cases of an applicant being deterred by the length or complexity of the approval process have been rare over the past decade.

4.4.2 Improving the evaluation of environmental regulation

The Commission concludes, on the basis of the information currently available to it, that there appears to be considerable scope to improve monitoring and reporting on benefits of environmental regulation as part of a significantly enhanced emphasis on evaluation. This matter is considered further in chapter 11.

One element worth noting here concerns the virtual absence of valuations placed on changes to aspects of the natural environment.³ This is in spite of the fact that research based on social cost-benefit principles to derive estimates of people's valuations of environmental attributes has been occurring for around 25-30 years. However, application of available valuations has been conspicuously absent in the practices of regulatory agencies in Victoria. This is in contrast, for instance, to practice in the field of passenger and freight transport policy, where adverse environmental impacts (such as noise, visual intrusion and air pollution) are routinely encountered and standard valuations are built into project appraisals as a matter of course. In that field, equally difficult measurement issues to those of the natural environment have been successfully addressed, building on pioneering efforts during the 1970s (stimulated by policy debates on urban motorways programs). Similar ingenuity should be applied by Victorian regulatory agencies to establish working conventions, ones which can be refined as further evidence is developed. Encouragingly, there is a growing, though still relatively small, literature on valuing natural environmental assets and services; and a step in this direction has recently been made by the Office of Water (within DSE) in relation to the health of Victoria's rivers.⁴

This work is important in its own right. It is also important in the context of assessing regulatory options, by helping to ensure an effective input to environmental considerations alongside social and economic factors. This matter is further discussed in chapters 11 and 13.

³ Two exceptions were found: the attempt made by EPA Victoria to estimate industrial air emission damage costs (for Class 1 and 2 indicators), derived by applying data for France (EPA 2007b, pp. 62–65); and the valuation of pest control programs under the Biological Control Act.

⁴ Research commissioned from URS (2006a) into the value of improved environmental health in Victorian rivers (report on results from a pilot study).

5 Costs of environmental regulation

The Victorian Competition and Efficiency Commission's (the Commission) terms of reference require it to report on the nature and magnitude of the administrative and compliance burdens of Victorian environmental regulation on business. This chapter describes the nature and magnitude of the costs associated with businesses complying with major Victorian environmental regulations, including those costs associated with delays in environmental approval processes. It draws on recent studies (both international and Australian) which have considered the costs associated with specific environmental regulations and other relevant work.

5.1 Framework for estimating costs of regulation

Throughout this chapter the term 'regulatory cost' refers to any cost that a business incurs as a result of the environmental regulations covered by the Commission's analysis. The term specifically excludes any imposts that a business may choose to incur as part of its business strategy, such as deliberately choosing to build a reputation for 'green' performance. By definition, therefore, the costs of environmental regulation measured in the Commission's analysis may be a subset of the overall resources expended by a business in relation to the environment.

Box 5.1 Costs of regulation

The *costs* of regulation comprise:

- *Administrative* costs, which are incurred by business to demonstrate compliance with the regulation or allow government to administer the regulation
- *Substantive compliance* costs, which are the costs incurred to achieve compliance with the regulation. Within this category, the Commission has attempted to distinguish between monetary costs directly incurred and costs arising from delays
- *Financial* costs, which are all sums paid to the government or relevant authority and include administrative charges, taxes and licence fees
- *Indirect/market-related* costs, which are costs arising from the impact of regulation on market structure or consumption patterns.

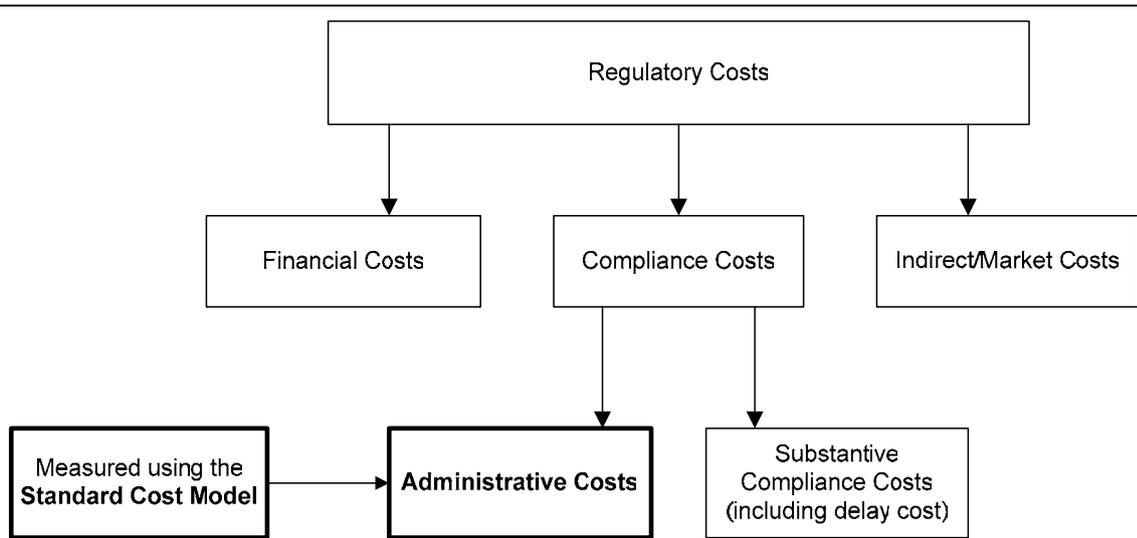
Source: Government of Victoria 2007b, p. F-7.

The focus of the Commission's analysis is on administrative and substantive compliance costs (including delay costs).

5.1.1 Types of costs

Regulatory costs incurred by Victorian businesses may be grouped into four broad categories: administrative costs, substantive compliance costs, financial costs, and indirect (or market costs) (box 5.1). This categorisation is taken from the Victorian Guide to Regulation and is consistent with the framework used in the Commission’s previous inquiries (see figure 5.1).

Figure 5.1 **Business regulatory cost framework**



Source: Government of Victoria 2007b, p. F-6.

Administrative costs

Administrative costs (often referred to as red tape) can include those costs associated with familiarisation with administrative requirements, record keeping and reporting, including inspection and enforcement of regulation.

In July 2006 the Victorian Government announced a regulatory reform program aimed at reducing the administrative cost of State regulation. The program, known as Reducing the Regulatory Burden (RRB) initiative, set specific targets for red tape reduction over a five year period. The specific targets were to achieve a 15 per cent reduction in red tape by 2009 and a 25 per cent reduction by 2011 (Government of Victoria 2007a, p. 5).

The Standard Cost Model (SCM) provides a framework for measuring the administrative costs of regulation. The approach taken by the Commission to estimate the administrative costs of environmental regulation is generally consistent with this framework.

Substantive compliance costs

Substantive compliance costs are often associated with regulations that specify particular requirements for businesses, which may include purchasing new equipment, maintaining the equipment and undertaking specified training in order to meet government regulatory requirements. Substantive compliance costs can be further divided into two broad categories:

- (1) One-off/start up costs – one-off costs incurred to comply with a regulation, such as purchasing/leasing additional equipment and buildings, legal/consultancy fees and training expenses.
- (2) Recurring/ongoing costs – those costs arising from the ongoing need to devote additional time and resources to satisfy regulatory requirements, such as ongoing maintenance expenses, or ongoing monitoring processes.

In some cases these costs may far outweigh administrative costs, particularly in those instances where regulations prescribe certain actions to be taken to achieve desired regulatory objectives. While the SCM provides a framework methodology for measuring the administrative costs of regulation, it does not provide a framework for measuring substantive compliance costs.

In considering whether a regulation imposes a substantive compliance cost it is important to investigate the extent to which the regulation imposes additional imposts that would not have otherwise been incurred by business. For example, due to commercial incentives, it is likely that businesses would still take steps to reduce their impact on the environment even in the absence of environmental regulations. New equipment may be purchased to achieve greater productivity within a given work unit, and may also contribute towards complying with specific environmental obligations. However, it is not always clear what proportion of the total capital expenditure should be classified as an environmental compliance cost.

Identifying and measuring substantive compliance costs is therefore a challenging exercise, particularly in cases where there are different drivers of expenditure and where equipment may be purchased to achieve multiple objectives (integrated technologies). The Business Cost Calculator (BCC) (DFD 2009) is a useful tool that can be used to calculate the substantive compliance costs of regulations, but is nonetheless reliant on these costs firstly being identified through other research methods, including interviews with selected businesses.

Delay costs

Environmental regulations that involve an approval process, such as works approvals under the *Environment Protection Act 1970*, may impose costs on business due to delays in decisions. These costs may be minimal where timeframes for decision can be anticipated or where businesses seek to slow down the approval or assessment process for commercial reasons. Delays can,

however, impose significant costs where timeframes for decisions by government departments or agencies are unclear or unnecessarily long. Further costs may arise when a business encounters a time frame for a particular approval process that is greater than the agreed or expected time frame for that process. For example, in relation to the upstream petroleum sector the Productivity Commission noted:

Project proponents can face significantly higher exploration and development costs as a result of delays for the approval of seismic survey and drilling activities ... given the current daily standby rates for semi-submersible drilling rigs at around \$1.1 million, an unexpected delay of even a few days in obtaining approval could cost the project proponent millions of dollars in operating expenditure ... it is not always possible for project proponents to swiftly reschedule leases of mobile equipment such as drilling rigs and seismic vessels if the original booking is cancelled because of approval delay. This is particularly the case when the equipment is in high demand, or when the activity can only be carried out within a narrow time... (PC 2008, p. 185).

Delay-related costs may be categorised as standby costs (capital and labour down time) and holding costs (interest on loans, rent, material procurement, builder contract costs, additional consultancies and lost business opportunities). Cost may also be incurred as a result of being unable to deliver on time and being perceived as an unreliable supplier (box 5.2). While unnecessary delays can impose a direct cost on affected businesses they can also add to uncertainty for an investment because other businesses may factor the possibility of delays into their investment decisions. As the Victorian Farmers Federation noted:

... aside from administration and compliance costs, or straightforward expenses, unnecessarily heavy regulation can also be a cost to stakeholders in loss of innovation opportunities and holding costs while waiting for environmental approvals. (sub. 43, p.6)

The identification and measurement of delay costs is a difficult exercise, particularly in cases where there are overlapping approval processes and multiple parties to the process (community, local councils, government departments or agencies and business). A further difficulty is that delays reported by business may reflect poorly planned projects or the time taken to respond to information requests. Understanding the activities that a business would undertake in the absence of an environmental approval process would enable more accurate estimates of delay costs to be established. However, these activities are not necessarily known or readily available from affected parties.

Box 5.2 Delay costs

The Bureau of Industry Economics identified several sources of costs associated with environmental assessment processes:

- The cost of keeping funds available for the investment resulting in other investment opportunities being foregone.
- The cost of keeping immobile physical capital idle for a longer period than expected – this exacerbates the cost of time lags between acquiring capital and putting it to use.
- Contractual losses resulting from an inability to deliver on contracts, and future contracting difficulties arising from being perceived to be an unreliable supplier.
- Future competitive disadvantage resulting from delays being used by competitors in contractual negotiations, where the competitor alleges that the Australian producer will not be able to deliver on time.
- A higher cost operation remaining in use for a longer period.

The Productivity Commission also identified costs associated with project delays and uncertainties:

- increased project expenditures
- reduced flexibility to respond to market conditions
- inflated capital costs
- increased difficulty of financing projects
- reduced present value from resource development.

Applying cash-flow discounting techniques to an illustrative case study, the Productivity Commission estimated that the long run cost associated with a one-year delay in approval of exploration (in the petroleum sector) activity equated to a 9 per cent reduction in the net present value of the project.

Sources: BIE 1990, p. 9; PC 2008, pp. 185–189.

Financial costs

Financial costs are the result of a concrete and direct obligation to transfer a sum of money to the government or relevant regulatory body. Such costs include administrative charges and taxes. For example, the fees paid by a business to apply for an environmental permit or approval process would be categorised as a financial cost of regulation.

Indirect / market related costs

Indirect or market costs are those costs that arise from the impact that regulation has on market structure or consumption patterns. For example, the costs of seeking and obtaining environmental approvals may discourage new firms from entering an industry, thereby discouraging competition. In extreme cases this could lead to higher prices for consumers and lessen the pressure on existing firms to innovate. This category of potential costs is extremely difficult to

estimate, given the complex interactions between environmental regulations and other factors influencing industry performance.

5.2 Approach to estimating the regulatory cost of environmental regulation

The measurement of regulatory costs confronts a number of methodological issues:

- Identifying and quantifying the incremental costs of regulation (establishing the counterfactual). For example, it is often difficult to identify the activities that a business would undertake in the absence of environmental regulations.
- Differentiating between the impact of Victorian environmental regulations, Commonwealth environmental regulations and regulations operating in other national markets. This is particularly relevant in the case of businesses operating across Australia or globally.
- Disentangling the costs associated with environmental regulations from other regulatory costs and the general costs of doing business (including responding to commercial opportunities). Businesses may not keep records of environmental costs or may do so in a different format than is required by this study.
- Designing appropriate surveys / questionnaires and identifying target populations and sample businesses.

Many of these methodological issues have been noted by the OECD:

There are theoretical problems that make it difficult to measure and compare regulatory costs. These include, for example, the difficulty of measuring the net costs to companies, taking into account the benefits of regulations to them. They also include the difficulty of estimating the costs that would have been incurred in any case, to obtain information needed for management purposes. There are also practical difficulties in measuring the costs of regulatory compliance. To measure direct costs a researcher needs to track the whole impact of the financial expenditure (e.g. calculating depreciation and overhead) of, for instance, installing a filter to reduce pollution. But he/she may also need to differentiate, as far as possible, which costs are regulatory-driven and which are the result of a business investment decision. Also, one must usually define a baseline assuming the situation without the regulation, which is always uncertain. OECD (2001, pp. 14–15)

The following section provides an overview of the Commission's approach to estimating administrative and compliance costs (including delay costs). In developing the approach the Commission has been cognisant of the issues and challenges presented by the previous literature and its own recent experience.

5.3 Overview of the methodology

The terms of reference require the Commission to report on the nature and magnitude of the administrative and compliance burdens of Victorian environmental regulation on business. With Victorian environmental regulation encompassing at least 43 Acts, it is important to know which of these impose the largest costs. This is reflected in the terms of reference which require the Commission to focus the inquiry by developing an appropriate methodology to identify the types of environmental regulation with the highest regulatory burden.

In addressing the terms of reference the Commission has focused on those Acts and regulations which are likely to have a major cost impact on business (box 5.3). This assessment was informed by work undertaken by the Commission during the course of the inquiry, and by submissions to the inquiry by stakeholders, including community organisations, local councils, government departments and business (chapter 2).

Box 5.3 Focus of the assessment of regulatory cost

The following Acts, regulations and relevant policy instruments were included in the Commission's assessment of the administrative and compliance cost of Victorian environmental regulations:

- Environmental Effects Act 1978
- Environment Protection Act 1970
- Extractives Industry Development Act 1995
- Mineral Resources (Sustainable Development) Act 1990
- native vegetation regulations (under the Victorian Planning Provisions).

The approach adopted by the Commission to estimate the administrative and compliance cost associated with the above environmental regulations is broadly consistent with the Victorian SCM (Government of Victoria 2007b) and the Commonwealth BCC (DFD 2009). The approach, therefore, included:

- mapping the various regulations to identify the drivers of both administrative and compliance costs (with assistance from relevant government departments and industry experts)
- developing a survey (questionnaire) to collect time and cost information from businesses in relation to the activities they undertake to comply with the regulations
- identifying relevant businesses to undertake the survey
- identifying and obtaining relevant population data
- inputting the survey information and other inputs into the SCM/BCC cost model

- testing the estimates derived from the SCM/BCC cost models with independent experts, government departments and agencies and estimates reported in other studies.

The sample of businesses selected to be interviewed was obtained from a variety of sources including industry associations, submissions to the inquiry, relevant regulators, government departments and the Commission's own research.

The mapping of administrative and compliance cost drivers was used as a basis for preparing the questionnaires. The mapping exercise was verified by the Commission with assistance from relevant government departments and agencies where possible, prior to being finalised. In most cases the questionnaire was pre-populated with time and cost parameter estimates in an effort to assist businesses to think about the relevant costs that they incur. The questionnaires were provided to participating businesses a week in advance, and were used as a basis for the interviews that were undertaken.

To enable the measurement of administrative and compliance cost, the business surveys were designed to capture only the costs associated with the activities that a business would undertake to comply with each regulatory requirement, over and above what they would do as a result of normal business practice. This point was emphasised at various stages of the interview to reduce the potential for over-estimation of the regulatory cost.

As indicated earlier, the identification and measurement of delay costs is a difficult exercise. This is particularly relevant in the case of approval processes where several parties may be able to influence the time taken for completion. In order to measure costs associated with delays, the questionnaire sought to capture the costs associated with:

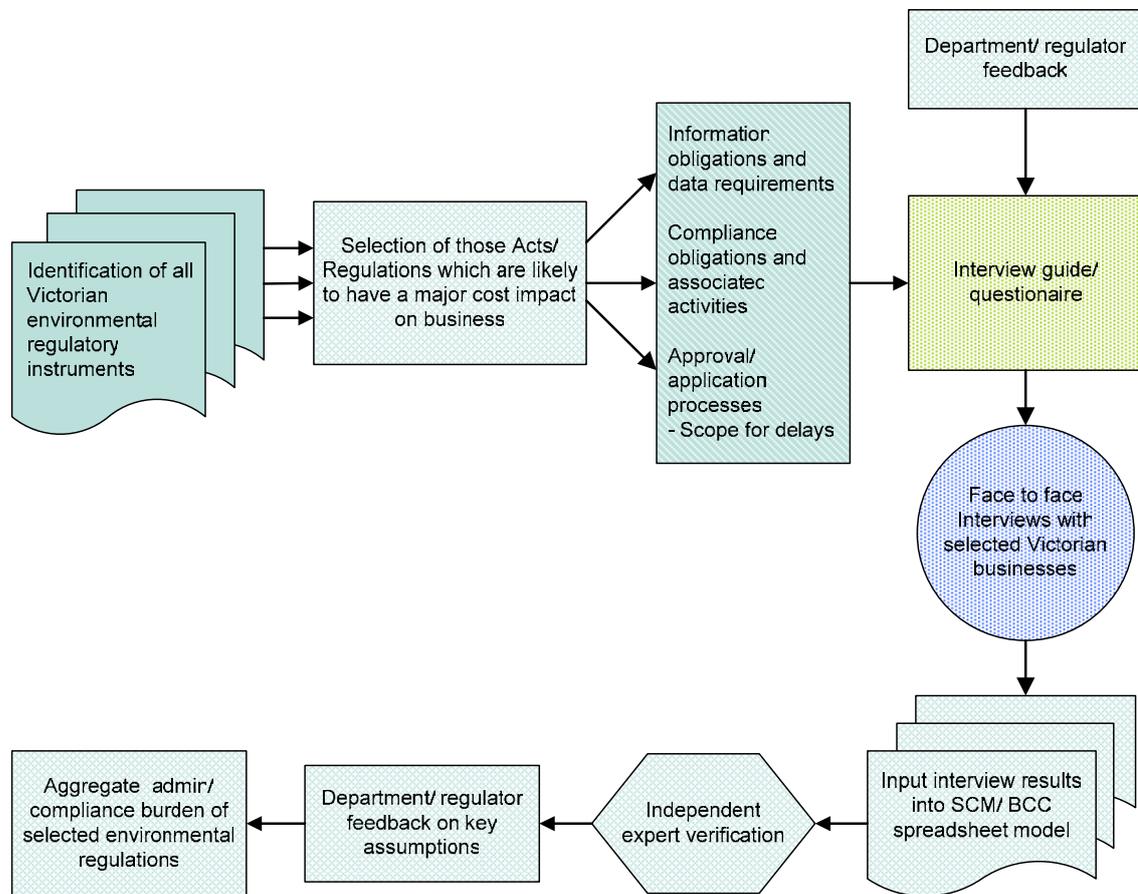
- lost business opportunities (such as lost profit or lost cost savings)
- production delay costs (such as costs of machine and labour down time whilst waiting for an approval)
- development delay costs (such as interest on loans, rent, material procurement, contract costs and additional consultancy fees).

The length of the delay was based on what the business perceived to be a departure from an agreed or acceptable (best practice) timeframe. This 'business perception approach' to estimating delay costs ignores some of the complexities mentioned earlier and therefore needs to be considered carefully when interpreting the outcomes of the surveys.

The interview results, combined with industry data (that is, population data) established the estimated cost associated with each of the regulatory areas and were verified by independent experts (chosen by the Commission). The Commission also checked key assumptions with government departments and

agencies.¹ Judgements made in relation to key assumptions ultimately reflect the views of the Commission and the consultants engaged by the Commission.

Figure 5.2 Summary of methodology



Source: VCEC.

5.4 Survey results

The Commission engaged The Allen Consulting Group (ACG) to undertake a survey of businesses based on the methodology outlined above. The report prepared by ACG (2009) can be accessed on the Commission's website (www.vcec.vic.gov.au). The results of the survey undertaken by ACG are presented in this section.

ACG interviewed 29 businesses from a variety of industry sectors and completed 33 cost based questionnaires (that is, some businesses were able to provide cost information for multiple regulatory areas).

¹ Government departments and agencies were not provided with information that could be used to identify individual businesses that participated in the study.

5.4.1 Summary of findings

Based on the surveys undertaken by ACG, the Commission estimates that compliance costs (administrative and substantive compliance, including separately identified delay costs) of the key environmental regulations on Victorian businesses are likely to be between \$114 to \$378 million per year (table 5.1). This represents 0.04 to 0.14 per cent of 2007–08 Victorian Gross State Product.² This result does not include the financial costs incurred by businesses as a result of environmental regulations. Information provided to the Commission from government departments and agencies indicate that the financial costs associated with the regulations considered by the ACG survey are in the order of \$16.5 million per year.³

Table 5.1 **Estimated costs to business of selected Victorian environmental regulations (2007-08) (million)**

	<i>Administrative and substantive compliance cost per year – point estimate</i>	<i>Administrative and substantive compliance cost per year – range</i>
Environment Effects Act	\$35	\$14–57
Native vegetation regulations (under the Victorian Planning Provisions)	\$42	\$22–62
Environment Protection Act	\$131	\$55–206
Mineral Resources (Sustainable Development) Act	\$21	\$11–32
Extractive Industries Development Act	\$16	\$12–20
Total ^a	\$246	\$114–378

^a Totals may not sum due to rounding.

Source: ACG 2009, p. v.

² ABS 2008a.

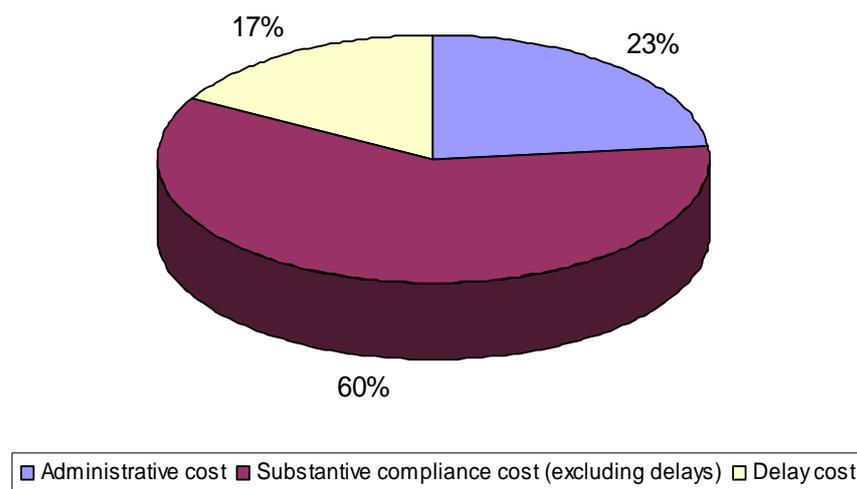
³ This comprises EPA licence revenue (\$14.5 million), native vegetation removal fees (\$0.41 million), and mineral resources and extractive industries fees (\$1.6 million). There are no reported *financial costs* associated with the EES process.

The estimated range reflects ACG's degree of confidence in the estimates for each of the areas of regulation. ACG state that cost estimates for each area of regulation are reported as point estimates with corresponding confidence intervals that reflect the extent to which:

- experts were able to validate results
- interviewees were able to provide data on costs associated with an area of regulation, and the main ways in which those costs are likely to vary
- population figures were drawn from actual numbers of affected businesses.

The total costs of the key environmental regulations can be broken into administrative, substantive compliance (excluding delay costs) and delay costs (figure 5.3), of which, substantive compliance (excluding delay costs) are the largest component. The wider significance of this breakdown in the costs of regulation is explored in detail in chapter 11.

Figure 5.3 **Major components of the costs of key environmental regulations**



Source: ACG 2009, p. v.

5.4.2 Costs by area of regulation

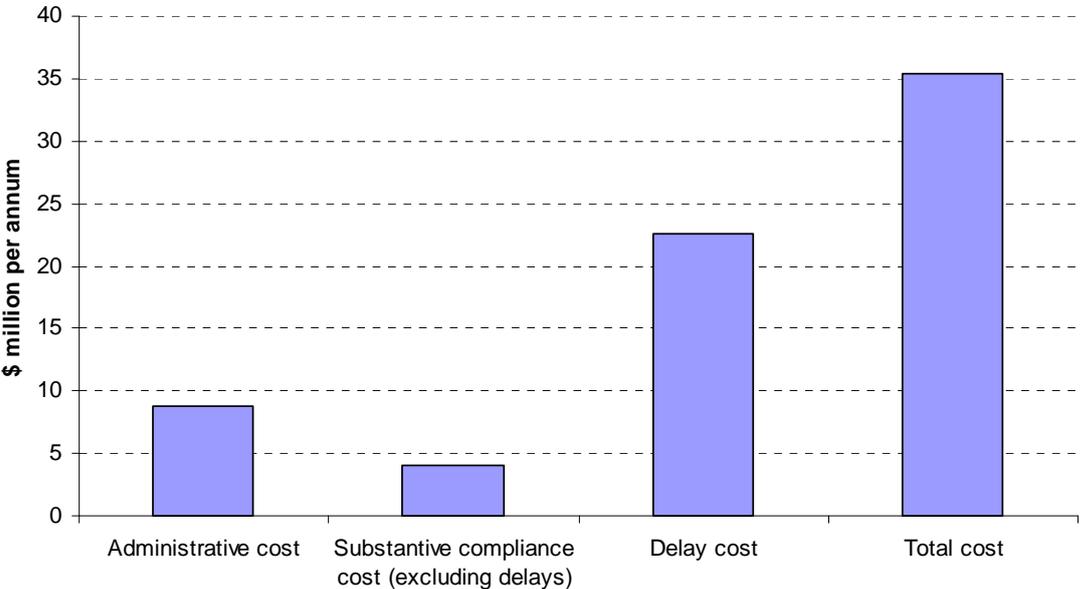
Environment Effects Act

The following results relate to the costs of environmental effect statements prepared under the Environmental Effects Act. The Act sets out the process for assessing proposed projects that are capable of having a significant effect on the environment (Government of Victoria 2006b, p. 2).

The results indicate that the estimated cost of the EES process is in the range of \$14.3 and \$56.6 million per year (ACG 2009, p. viii).

This estimate depends directly on the number of EESs prepared per year. The Commission is aware that while up to 20 (2005/06) EESs have been in process at a given time in recent years, the aggregate number of EESs under active preparation fell to 11 in 2007/08 (table 6.1) and was 5 as at March 2009 (following the completion of 6 assessments in recent months⁴). For present purposes, ACG has assumed that, on average, 5 EESs are under preparation annually.

Figure 5.4 Environment Effects Act – regulatory costs

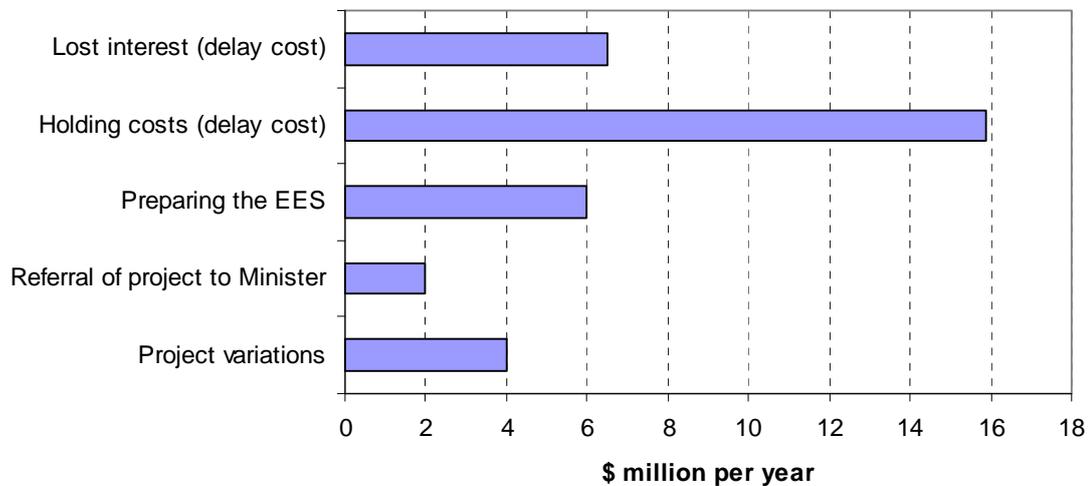


Source: ACG 2009, p. 13.

A breakdown of the point estimate costs indicate that the largest component of total costs is delay costs, which represent some 64 per cent. The main drivers of the delay cost estimate are holding costs (\$15.9 million per year) and lost interest, due to delayed profits (\$6.5 million per year). The preparation of the EES was the main driver of administrative costs, accounting for \$6 million per year. The main drivers (by area of activity and type of delay cost) of the total estimated cost are shown in figure 5.5.

⁴ Based on information provided by DPCD.

Figure 5.5 Key drivers of estimated regulatory costs – EES process



Source: ACG 2009, p. 13.

While having a reasonable level of confidence in the estimate of administrative costs (± 25 per cent), ACG indicated a lower level of confidence in the delay cost estimate (± 75 per cent) due to uncertainty over the extent to which any delays were attributable to government processes or the business themselves and the fact that an independent expert was unable to confirm whether the ‘delay’ cost results were reasonable or not. The ACG had moderate confidence (± 50 per cent) in the estimate of substantive compliance costs, due to advice from DPCD that the cost associated with environmental mitigation may be higher than the \$1 million suggested by the independent expert.

It is also important to emphasise that the delay cost is based on businesses’ perception. There are potentially several explanations as to why delays occur within the EES process, including the actions of the proponent and the interaction between various government departments and between other relevant participants, such as community groups. It is therefore difficult, based on the nature of the survey, to attribute the source of delays reported by businesses. More generally, given the integrated nature of the EES process it is not possible (from this study) to attribute the cost estimate shown above to specific agencies who participate in the process (such as local councils, government departments and regulatory bodies).

The ACG estimates are further considered in chapter 6, which considers how costs related to the EES process are affected by various reform proposals.

Environment Protection Act

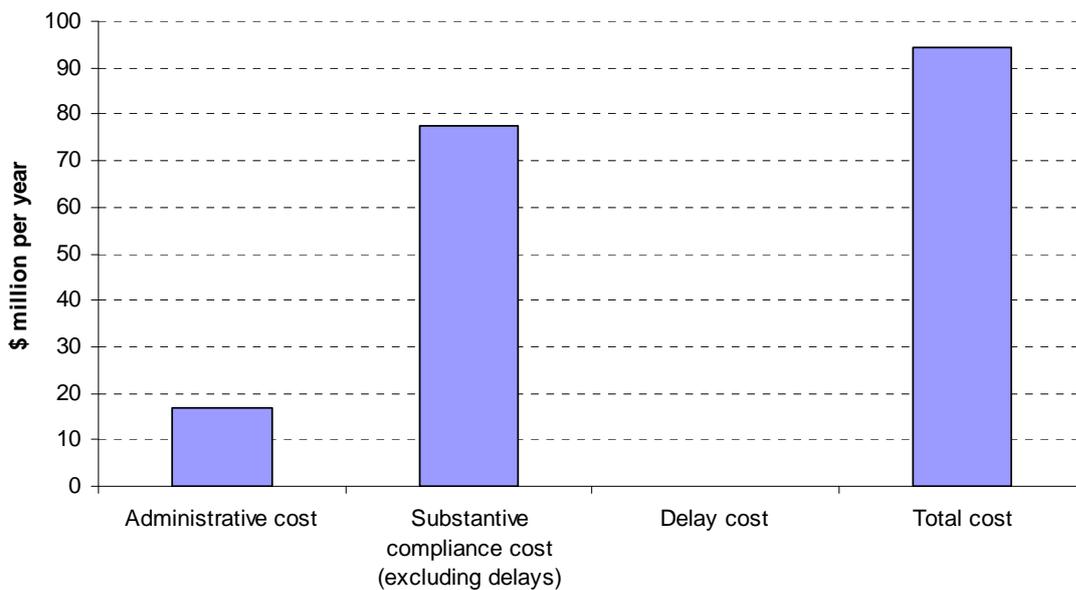
The following results relate to prescribed industrial waste and scheduled premises regulations, which are significant areas of regulation under the Environment Protection Act.

Regulatory costs associated with *Environment Protection (Environment and Resource Efficiency Plans) Regulations 2007* have not been captured by the ACG survey. These costs are identified in chapter 9 and estimated to be about \$2.1 million per year using a methodology that differs substantially from the approach adopted in the current chapter. Given these differences, the costs associated with these regulations are not included in the estimates presented here.

Prescribed industrial waste

In terms of prescribed industrial waste⁵ the results relate to obligations imposed by the EPA Act, *Environment Protection (Prescribed Waste) Regulations 1998* and Industrial Waste Management Policy (Prescribed Industrial Waste) 2000. Together these instruments provide a framework for managing prescribed industrial waste in Victoria.

Figure 5.6 Prescribed industrial waste – regulatory costs

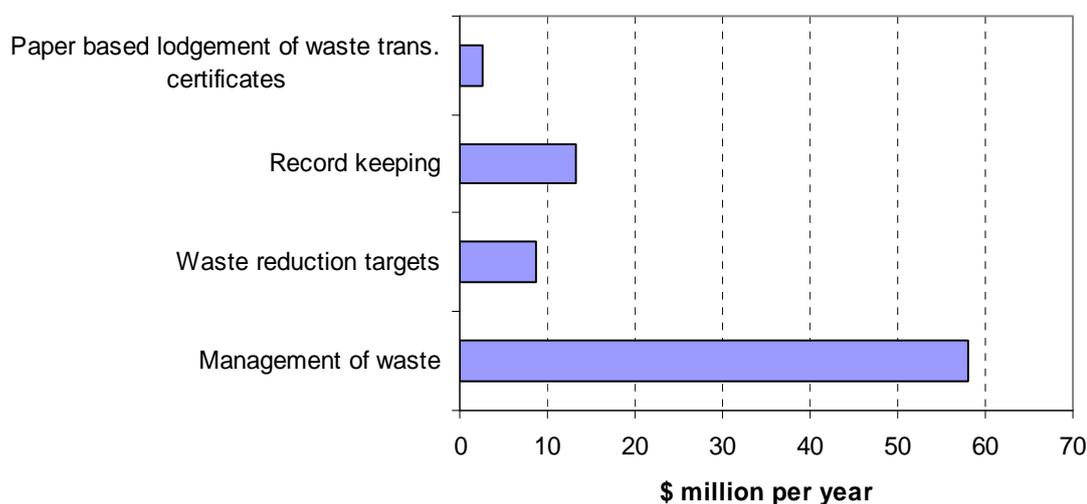


Source: ACG 2009, p. 16.

⁵ In general terms prescribed industrial wastes are generated from commercial or industrial sources and are highly odorous or potentially hazardous to humans or the environment (EPA 2009n, p. 10)

The survey results for prescribed industrial waste regulation indicate that substantive compliance costs (excluding delays) are about \$80 million per year, and account for around 82 per cent of total costs. According to the survey results, the major driver of this cost relates to the management of prescribed waste, which was estimated to cost business about \$58 million per year. Ongoing (recurring) costs (\$8.7 million) associated with complying with waste reduction targets was the second largest contributor to the estimate of substantive compliance costs. The largest contributor to administrative cost related to record keeping, which was estimated to cost \$13.3 million per year. A further contributor to administrative costs related to paper based lodgement of waste transport certificates, which was estimated to cost \$2.5 million per year. The key drivers (by area of activity) of the total estimated cost are shown in figure 5.7.

Figure 5.7 **Key drivers of estimated regulatory costs – prescribed industrial waste**



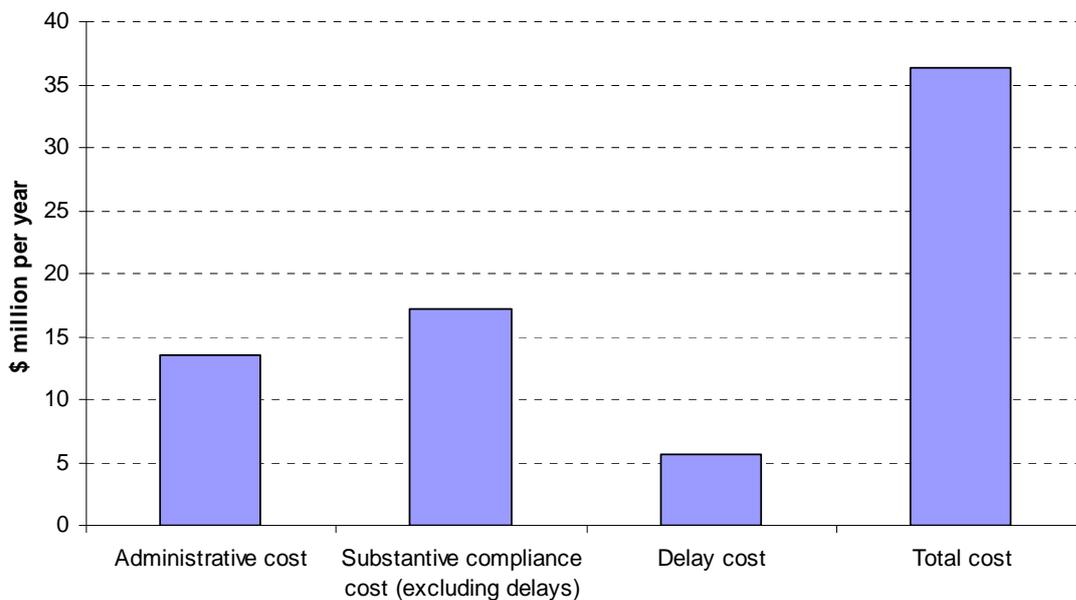
Source: ACG 2009, p. 16.

ACG indicate reasonable confidence in the interviewees' ability to correctly attribute costs to prescribed waste requirements. They also indicate reasonable level of confidence (± 25 per cent) in the administrative cost results. However, they note that substantive compliance costs (excluding delays) have been given a relatively low confidence interval (± 75 per cent) given the small sample size (and assumptions required to produce population estimates), and the potential for significant variations in the costs of managing waste between businesses.

Scheduled premises

The scheduled premises results relate to requirements under the EPA Act, Environment Protection (Scheduled Premises and Exemptions) Regulations 2007, and State Environment Protection Policies. In general, the scheduled premises regulations aim to ensure that premises that conduct activities and operations assessed as posing significant environmental risk, are managed and monitored effectively through works approval and/or licensing (EPA 2007b, p. 6).

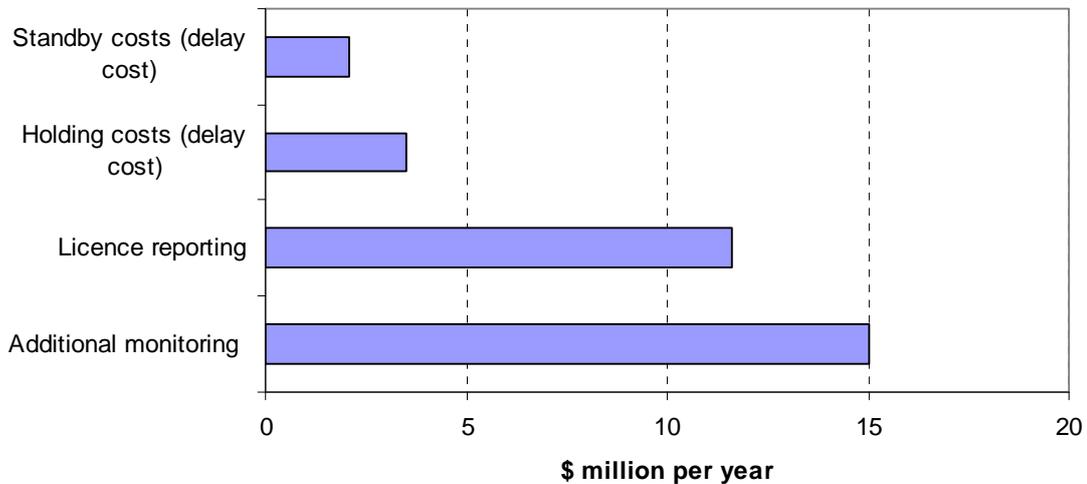
Figure 5.8 **Scheduled premises – regulatory costs**



Source: ACG 2009, p. 18.

The results indicate that about \$36 million per year is incurred by businesses in meeting scheduled premises obligations. Of this total, about half (\$17.2 million per year) is attributed to substantive compliance cost (excluding delays), which is primarily driven by monitoring requirements (\$15 million per year). The main driver of administrative cost is licence reporting, which accounts for around \$11.6 million per year. Delay costs incurred by business in relation to gaining a works approval consisted of holding costs (\$3.5 million per year) and standby costs (\$2.1 million per year). The major cost drivers (by area of activity and type of delay cost) are shown in figure 5.9.

Figure 5.9 Key drivers of estimated regulatory cost – scheduled premises



Source: ACG 2009, p. 18.

The ACG express a moderate level of confidence (± 50 per cent) in the estimate of substantive compliance costs (excluding delays). However, they note that an independent expert had difficulty verifying costs attributable to ‘changed production processes’.⁶ While having a high level of confidence (± 5 per cent) in the estimate of administrative costs, the estimate of delay cost was given a low confidence interval (± 75 per cent) mainly due to the potential for large variations that exist in projects which impact on the nature and magnitude of possible delays.

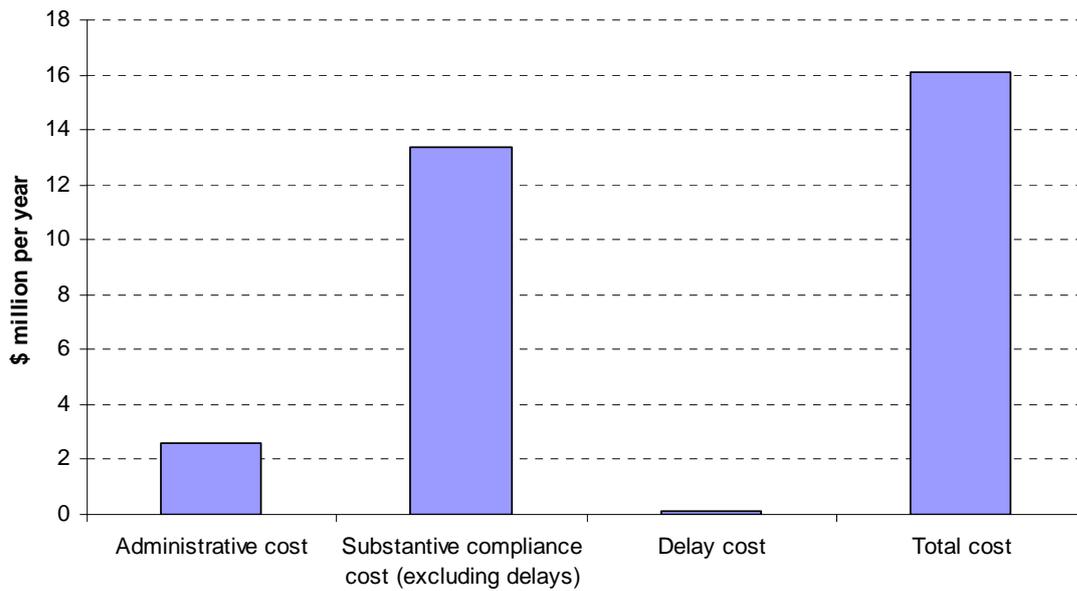
Extractives Industries Development Act

The following results relate to the estimated regulatory costs associated with obligations imposed by the Extractives Industries Development Act (EID Act) and Extractive Industries Development Regulations 2007.

The EID Act regulates quarrying in Victoria, principally by requiring any person who proposes to engage in an extractive activity to obtain approval for a work plan, which provides prescribed information on the proposed works, and to obtain a work authority from the Minister before commencing the works.

⁶ Some businesses may need to make changes to their production process as a result of the scheduled premises regulations. The ACG noted that the independent expert could not validate the cost estimates relating to ‘changed production processes’ given the diverse spectrum of those affected and the range of changes that they may make. In addition, only two interviewees provided cost information in relation to changed production processes (ACG 2009, p. 18).

Figure 5.10 Extractive industries – regulatory costs

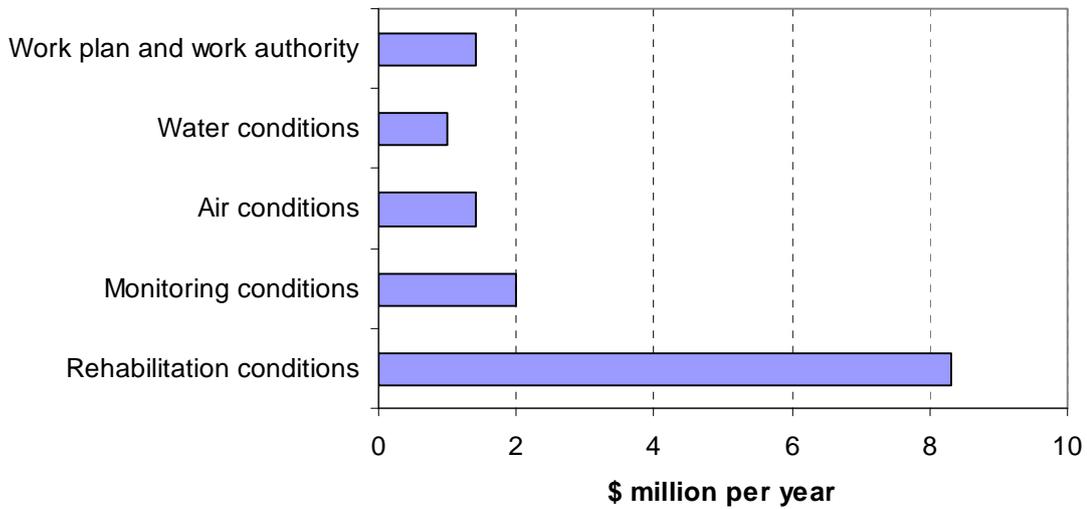


Source: ACG 2009, p. 26.

The estimated costs of regulation relating to the extractive industries are \$16.1 million per year in total with the largest contributor substantive compliance costs (excluding delays), which represent around 83 per cent of the total. This is primarily driven by costs attributed to environmental rehabilitation conditions under the work plan (\$8.3 million per year). Compliance with monitoring (\$2 million), air (\$1.4 million), and water (\$1 million) conditions are the other significant drivers of substantive compliance costs.

The survey results indicate that the major driver of administrative costs is associated with the preparation of work plans and work authorities, which is estimated to cost business about \$1.4 million per year. Significant drivers (by area of activity) of the total estimated cost are shown in figure 5.11.

Figure 5.11 Key drivers of estimated regulatory cost – extractive industries



Source: ACG 2009, p. 26.

While ACG were reasonably confident (± 25 per cent) in the estimated administrative and substantive compliance costs (excluding delays), they were less confident of the costs associated with delays, which accounted for a very small proportion of the total cost.

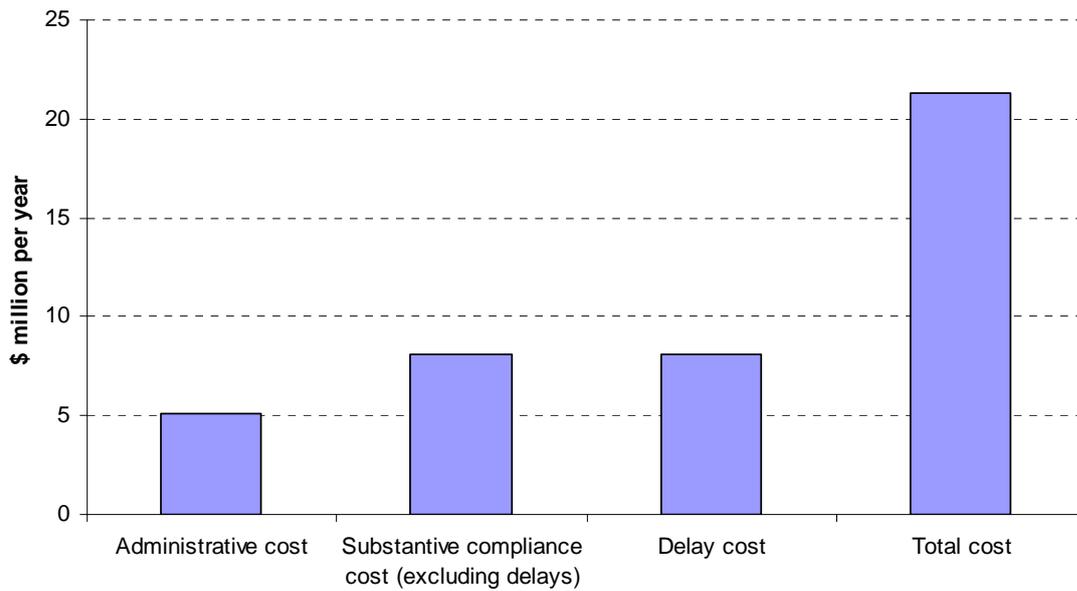
The estimated costs to businesses of the EID Act are additional to any costs incurred by the extractive industry under the Environmental Effects Act.

Mineral Resources (Sustainable Development) Act

The following results relate to the estimated regulatory costs associated with obligations imposed by the *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act) and *Mineral Resources Development Regulations 2002*.

The MRSD Act regulates mining in Victoria, principally through a three step process. A person who proposes to undertake exploration or mining work must obtain a licence and then obtain approval for a work plan. A licensee must also obtain a work authority before commencing the proposed works.

Figure 5.12 Mineral resources – regulatory costs

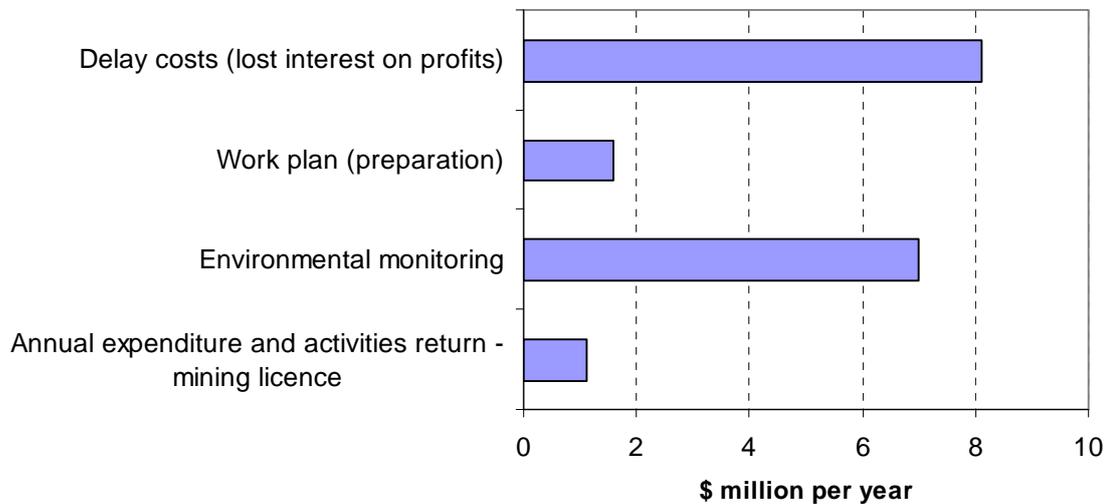


Source: ACG 2009, p. 23.

The results show that the requirements relating to mineral resources are estimated to impose about \$21 million per year. Delay and substantive compliance costs account for about 76 per cent of the total, with administrative costs contributing about 24 per cent. The largest driver of administrative costs relate to the preparation of work plans (\$1.6 million per year), and annual expenditure and activities returns under mining licences (\$1.1 million).

The most significant driver of substantive compliance cost (excluding delays) are associated with environmental monitoring (\$7 million per year). Delay costs comprised lost interest on profits (\$8.1 million per year) incurred as a result of delays in the approval of work plans. The main drivers (by area of activity and type of delay cost) of the total estimated cost are reflected in figure 5.13.

Figure 5.13 Key drivers of estimated regulatory cost – mineral resources



Source: ACG 2009, p. 23.

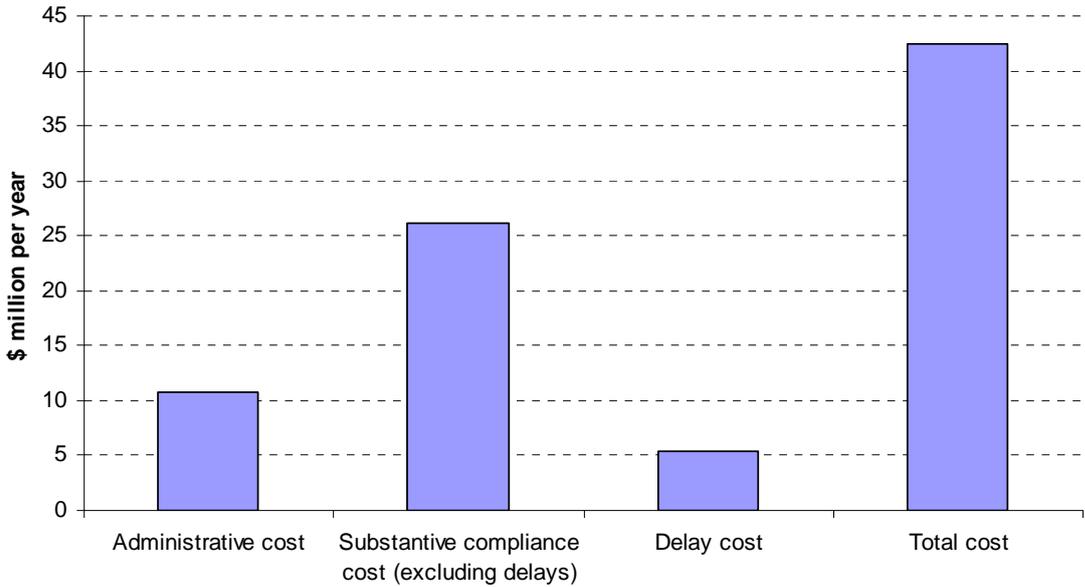
In some instances, businesses may have experienced difficulty in attributing the costs directly associated with obligations under the MRSD Act and Regulations. For instance, the costs of meeting native vegetation requirements were included as part of the estimate even though the Department of Sustainability and Environment is responsible for the State policy framework. Some costs of meeting requirements under the Environment Protection Act and interaction with the EES process may have also been inadvertently attributed to the MRSD Act.

These factors are reflected in the degree of confidence that ACG allocated to administrative (± 50 per cent) and substantive compliance costs (excluding delays) (± 25 per cent). Reflecting a high margin for error, and consistent with estimates of costs in other regulatory areas, delay costs were given a low confidence interval (± 75 per cent).

Native vegetation regulations (under the Victorian Planning Provisions)

The estimated regulatory costs presented below relate to native vegetation requirements imposed under the *Planning and Environment Act 1987* and the Victorian Planning Provisions. These regulations require businesses (land holders) to obtain a permit to lop, clear or remove native vegetation, except in certain specified instances (chapter 7).

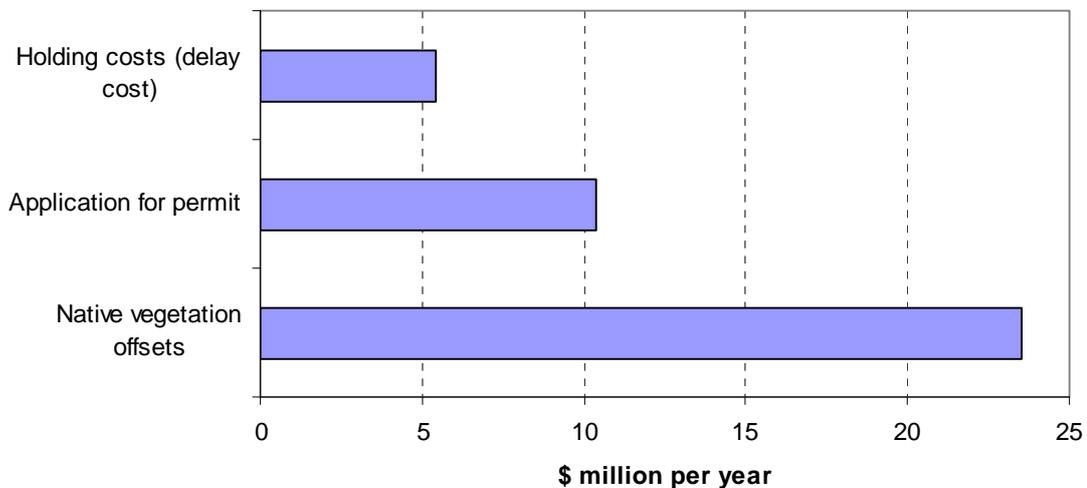
Figure 5.14 Native vegetation regulations – regulatory costs



Source: ACG 2009, p. 20.

The results show that the estimated cost to Victorian business of meeting the native vegetation regulations was about \$42 million per year. The main contributors to the estimated total are substantive compliance costs (excluding delays) (62 per cent), followed by administrative costs (25 per cent). The main driver of substantive compliance costs (excluding delays) relate to the purchase (or maintenance) of native vegetation offsets, which are estimated to cost \$24.2 million per year. The single largest contributor to administrative costs relate to the application for a permit, which is estimated to cost business \$10.4 million per year. The key contributors (by area of activity and type of delay cost) to the total estimated cost are shown in figure 5.15.

Figure 5.15 **Key drivers of regulatory costs – native vegetation regulations**



Source: ACG 2009, p. 20.

The Commission notes that a number of assumptions underpin these cost estimates, particularly in relation to the costs of native vegetation offsets, where there appears to be a range of views concerning the average value of native vegetation offsets. Further assumptions concerning relevant population data were also required to scale up individual results. These issues are reflected in the confidence intervals applied by ACG to the estimates of substantive compliance costs (excluding delays) (± 50 per cent) and administrative costs (± 25 per cent). Delay costs were allocated a low confidence interval (± 75 per cent) given that few interviewees were able to place an estimate on this cost, despite acknowledging that delays (and associated costs) can be an issue.

5.4.3 Limitations and qualifications

In presenting these findings, it is important to note that a number of necessary technical assumptions have been made in order to ‘scale up’ the cost information provided by interviewees to the aggregate estimates for each regulatory area considered. While not disputing the information provided by businesses who were interviewed, the necessary reliance on various technical assumptions does lead to an inherent degree of imprecision in the aggregate estimates, as reflected in the broad confidence intervals assigned to many of the cost components.

While attempts have been made to ensure the reasonableness of any assumptions made (through discussions with independent experts, government departments and agencies, and the Commission’s own research) there still remains a degree to

which the assumptions influence the overall usefulness of the estimates for policy formulation.

- The small sample size means the estimates have a high margin of error. The characteristics and the experience of the businesses interviewed differed significantly. There were large differences, for example, in the size of the businesses interviewed, and in the potential impact of their activities on the environment. While an attempt was made to target interviews at representative businesses, and to standardise the results using independent experts and other sources of information, use of a larger sample may have produced different results.
- Some businesses were only able to give high level or aggregate costs data, which in some cases was driven by a difficulty in disentangling regulatory costs from the ‘business as usual’ costs, particularly in relation to substantive compliance costs.
- The estimates are also sensitive to the assumptions used to ‘scale up’ the results to produce estimates of the total cost to Victorian businesses. For example, the costs of the EES process depend on the assumption about how many EESs are being prepared each year.
- Many businesses found it difficult to identify some of the costs of meeting environmental regulation, thereby further increasing the margin of error. Generally, those businesses that had recently been through an approval or assessment process were better able to estimate costs. This had a pronounced effect on estimates of delay costs, with many businesses unable to report whether unnecessary delays were experienced and, where they had been, what costs, if any, were incurred.
- The estimates ignore some potential costs of regulation. Overly costly or prescriptive regulation can discourage business start-ups and discourage innovation, thereby reducing competition and ongoing productivity improvement. These costs are harder to measure but examples provided to the Commission in areas such as land use planning and environmental protection regulations suggest that such indirect costs do exist.

The estimates only relate to five Acts and do not cover the costs to businesses of the other 38 Victorian environmental acts.

While the Commission has attempted to minimise the level of imprecision associated with the estimates through testing the various assumptions made by ACG with relevant experts, it has also considered the magnitude of the aggregate estimate in the context of previous studies undertaken in Australia and overseas.

The Commission found few studies that have attempted to estimate the costs to business of environmental regulation. Several studies have, however, attempted to estimate expenditure by businesses on ‘environmental protection’. The results of these studies are discussed in greater detail in a supporting paper, which is

available on the Commission's website (www.vcec.vic.gov.au). The key findings were:

- Several studies by the Australian Bureau of Statistics (ABS 1994, 1995, 1998, 2002) provided estimates of private sector environmental protection expenditure which ranged from 0.2 to 0.4 per cent of Australia's gross domestic product (GDP).
- A study of environmental expenditure in the United Kingdom (URS 2008, p. ii) estimated that gross spending on environmental protection in 2006 by industry was around £4.2 billion or 0.34 per cent of GDP.
- Statistics Canada (2008, p. 7) estimated that \$8.6 billion or 0.8 per cent of GDP was spent by Canadian business in order to anticipate or respond to environmental regulations, conventions or voluntary agreements.
- A recent study by the United States Census Bureau (2008, p. v) estimated pollution abatement expenditure by manufacturing business in the United States to be about \$26.6 billion or 0.21 per cent of GDP.

These studies, however, generally measured *aggregate* environmental protection expenditure by business, which include (but do not generally identify) the subset of costs incurred by business to meet regulatory requirements. Despite this limitation, these studies provide an upper bound estimate of the costs of environmental regulation. They suggest that the total environmental expenditure by businesses in Australia may be between 0.2 and 0.4 per cent of the total value of production (gross domestic product). Applying this range locally, suggests that environmental expenditures by Victorian businesses may be between \$0.5 and \$1 billion dollars per year, of which only a proportion will be attributable to Victorian environmental regulations.

Given the advice provided by government departments, agencies and independent experts in relation to the necessary technical assumptions, together with insights provided by previous Australian and overseas studies, the Commission considers the magnitude of the regulatory cost in the range reported by ACG represents a reasonable estimate.

5.5 Conclusion

Various attempts have been made to estimate some of the costs of environmental regulation in developed economies, including Australia. Relevant studies in Canada, the United Kingdom, United States and Australia have proved a useful resource for the Commission to gain an understanding of where the upper bound may lie in terms of estimates of the regulatory cost of environmental regulation.

Estimates of the administrative and substantive compliance costs to businesses of key environmental regulations were obtained from detailed surveys of a

number of Victorian businesses. Based on these surveys (including technical assumptions) the Commission estimates that key environmental regulations imposed administrative and substantive compliance costs on Victorian businesses of between \$114 to \$378 million per year. In addition, cost data received from government departments and agencies indicate that Victorian businesses also incurred financial costs of around \$16.5 million per year.

6 Streamlining environmental assessment of major projects

6.1 Introduction

Large projects contribute to Victorians' living standards and will feature in the projected transition to a carbon-constrained economy. When large projects have environmental consequences, they are exposed to environmental assessment—an 'administrative process that identifies the potential environmental effects of undertaking a proposal and presents these environmental effects alongside the other advantages and disadvantages of the proposal to the decision-makers' (Thomas & Elliott 2005, p. 11).

In Victoria, the *Environment Effects Act 1978* requires that proponents of projects with potentially significant environmental effects should prepare an environment effects statement (EES) for assessment by the Minister for Planning. The Ministerial Guidelines for assessment of environmental effects under the Act specify that the objective of this assessment process is:

To provide for the transparent, integrated and timely assessment of the environmental effects of projects capable of having a significant effect on the environment (DSE 2006d, p. 3).

Projects requiring an EES in recent years have come from the mining, electricity generation, manufacturing, property, waste management, roads and marine sectors.

This chapter suggests ways to reduce the costs of this assessment process without compromising its benefits. It does not assess approval processes for projects requiring either a planning permit or planning scheme amendment under the *Planning and Environment Act 1987*, given that the Minister for Planning has established a separate review of that Act.¹

The chapter describes:

- the generic benefits and costs of environmental assessment (section 6.2)
- the environmental assessment process in Victoria (section 6.3)
- coordination with other statutory processes (section 6.4)
- data on the number of referrals for environmental assessment (section 6.5)
- possible problems with environmental assessment (section 6.6)

¹ DPCD has convened an expert panel to assist the Department to identify and enable opportunities to improve and modernise the operation of the Planning and Environment Act (DPCD 2008b).

- options for improving the process (section 6.7)
- a preferred option for streamlining environmental assessment (section 6.8), its cost and benefits (section 6.9) and its conformity with best practice criteria (section 6.10).

6.2 Benefits and costs of environmental assessment

Sadler (1997) and Sadar (1994) (cited in Thomas & Elliott 2005, pp. 11–12) and the Bureau of Industry Economics (1990) suggest that the benefits of environmental assessment include:

- early withdrawal of unsound proposals
- legitimisation of well founded proposals
- input cost savings in project planning
- lower project costs in the long term (fewer changes at advanced stages, and lower probabilities of environmental disasters and associated clean-ups)
- improvements to proposals, for example:
 - relocation to a more suitable site
 - redesign of projects to reduce, mitigate or avoid environmental impacts
 - securing equity for communities affected by the proposals
 - community development through participation.

The first four of these benefits are about the *timing* of project expenditures, suggesting that a good assessment process can prevent wasted expenditures on unsound proposals, avoid expenditures early in the process when uncertainty about approval is higher, and reduce later expenditures by improving project design. A test for the Victorian process is whether it delivers such benefits.

Assessment processes also involve costs, including:

- administrative costs, such as the costs of preparing an environmental assessment, and running public consultation
- compliance costs, which include the costs of re-designing or re-locating a project to secure environmental approval
- delay costs, whose components were described in box 5.2
- costs caused by uncertainty, if the process causes the proponent to incur expenditures on a number of options, in order to insure against precipitate changes to the process rules (BIE 1990, p. 11)
- lost net benefits, if assessment stops projects that would have generated net benefits even after taking fully into account its environmental costs.

There is little Australian data about the size of these costs. A survey of large Australian businesses by the Bureau of Industry Economics (1990), which covered both assessment and approval processes, found that:

... the cost of EIA was generally not a great concern, but that delays resulting from the EIA process were the most significant cost, being up to 10 per cent of the project cost. Sources of delay were the number of authorities involved and the lack of coordination between them, the lack of uniform standards, and unpredictable changes to the rules of environmental assessment (Thomas & Elliott 2005, p. 22).²

Thomas and Elliott (2005, p. 22) reported that:

A subsequent survey by the Bureau, discussed by Leeson (1994), indicated that EIA was ranked the fourth most important impediment, behind operating costs, construction costs and cost of capital. This put EIA in front of exchange rate volatility, transport costs, company tax and overseas trade barriers.

The Productivity Commission (2008, p. 190) estimates that the cost of unnecessary approval delays for petroleum projects Australia-wide is potentially 'billions of dollars each year'. This estimate, which is both national and covers approval processes in general, cannot be used to indicate the costs of environmental assessment in Victoria. It does suggest, however, that the costs may be significant.

Section 6.5 reports the results of the Commission's survey of the costs of the EES process.

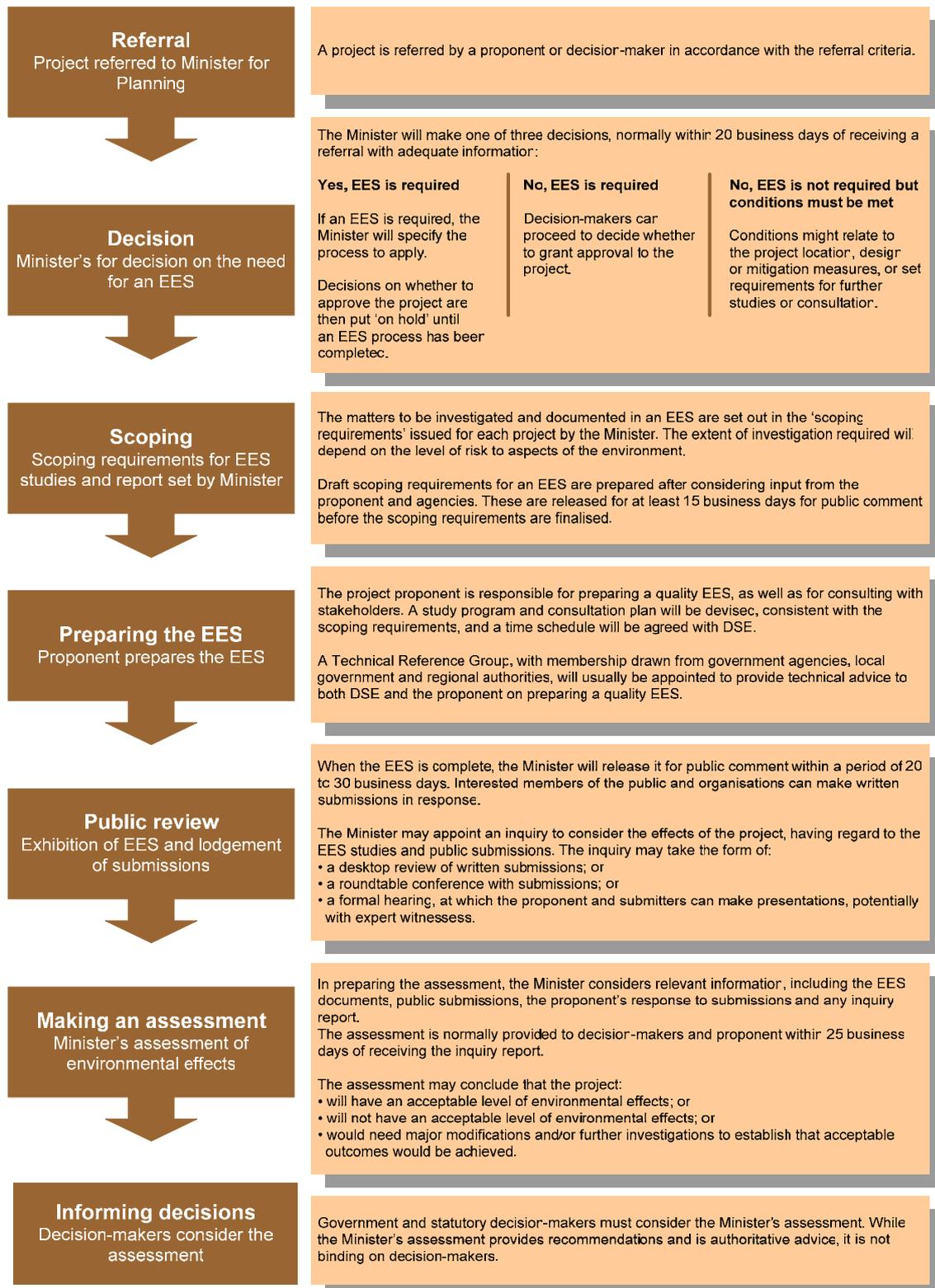
6.3 The process in Victoria

The assessment process set out in the Environment Effects Act and supporting guidelines made by the Minister under section 10 of the Act (DSE 2006d) provides discretion as to the types of activity for which an EES may be required, and the matters to be considered during the assessment process. The Minister for Planning is currently responsible for decisions under the Act and the Department of Planning and Community Development (DPCD) administers the process requirements set by the Minister.³ Figure 6.1 shows that there are seven main stages to an EES that are relevant to considering the scope for improvement.

² This data reflects the costs of EIA conducted under the *Environment Protection (Impact of Proposals) Act 1974* (Cwlth), which was repealed and replaced by the *Environment Protection and Biodiversity Conservation Act 1999*.

³ DSE had this responsibility until the third quarter of 2007.

Figure 6.1 The environmental effects statement process



Source: DPCD 2008a.

Referral

A project's proponent, any Minister or statutory body responsible for public works and decision-makers⁴ can refer a project for potential assessment. Following an amendment to the Act which came into effect on 30 June 2006, proponents have been able to make referrals and normally do so. The guidelines outline six potential effects on the environment that might be of regional or state significance, and therefore warrant referral of a project for assessment. Also, a combination of two or more of 11 other potential effects could warrant referral. Project proponents are required to complete a referral form, describing the project, project alternatives and potential environmental effects. A project generally needs to have reached at least the concept development stage before it can be considered for referral.

Decision

The Minister administering the Environment Effects Act decides whether an Environment Effects Statement should be prepared. Alternatively, the Minister might decide that an EES is not required if conditions specified by the Minister are met, or that an EES is not required. This option was introduced in the 2006 changes to the Act. In considering whether an EES is required, the guidelines provide that the Minister should have regard to the extent to which the project is capable of having a significant effect on the environment⁵.

Scoping

If the Minister decides that an EES is required, he or she sets out the scope of the matters to be investigated and documented in the EES. To assist the Minister in determining the scope, the proponent is required to provide a preliminary list of issues to be investigated and a draft study program. The Minister then issues draft scoping requirements, which according to the guidelines are 'generally prepared within 20 business days of receiving the required information from the proponent' and released for public comment for a minimum of 15 business days

⁴ Defined as any person required by any Act to make a decision about a project.

⁵ In terms of the:

- potential for significant adverse effects on individual environmental assets
- likelihood of effective avoidance and mitigation measures
- likelihood of adverse effects and associated uncertainty of available predictions
- likelihood that available environmental standards provide a sufficient basis for managing key issues
- likelihood that the project is not consistent with applicable policy
- range and complexity of potential adverse effects
- availability of project alternatives
- other available assessment processes that may be suitable to address potential environmental effects
- likely level of public interest in a proposed project (DSE 2006d, p. 10).

(DSE 2006d, p. 13). The proponent can make a submission on the draft scoping requirements, identifying potential improvements in terms of their relevance, clarity and proportionality. The Minister confirms the final scoping requirements after public comments are considered. Since these requirements define the scope of the EES, the scoping stage is a major determinant of the cost and duration of the process.

DPCD normally sets up a technical reference group (TRG) to advise it on issues such as the matters that should be included in the scoping requirements and on the technical adequacy of the EES, once this has been prepared by the proponent⁶. The TRG also advises the proponent on issues such as the required statutory approvals and coordination of procedures, relevant policy provisions, availability of data, conformity of the EES with policy and statutory requirements, and the adequacy of EES specialist study reports (DSE 2006d, p. 14).

Preparing the EES

The proponent then prepares the EES, which should be guided by the scoping requirements set by the Minister. The Ministerial Guidelines identify as core principles the need for a:

- systems approach, so that potential interdependencies with interacting environmental elements and processes can be identified
- risk-based approach, which may mean that a staged study design is appropriate.

They also identify that in some circumstances it may be appropriate to identify the potential for cumulative effects of the project in combination with other existing or proposed projects, though relying on accessible information.

In addition to describing the project, the EES should:

- describe and assess relevant alternatives (including any that lead to superior environmental outcomes)
- assess the project's potential effects on physical systems, ecological systems and human communities
- assess potential effects on land use
- assess potential significant effects on the economic well-being of local areas, the regional and national economies, and key industry sectors (DSE 2006d, pp. 15–17).

⁶ A technical reference group is formed for each project, and comprises members of government agencies, referral authorities and municipal councils.

In practice, EESs tend to focus on the impacts on physical systems, ecological systems and human communities.

A project generally has to have reached the preliminary design stage before an EES can be completed (and approvals considered). This is because it is necessary to articulate a 'project description' as the basis for the impact prediction in the EES which outlines the physical form of the development, its construction techniques and operational regime. There can be tensions between this requirement and the desire of the project proponent to leave room for innovation and flexibility.

Public review

The EES is exhibited for 20 to 30 business days, or longer in exceptional circumstances. Public submissions are invited and the proponent should produce a document responding to issues raised in submissions. The Minister determines the appropriate process for considering submissions on an EES and may decide to appoint one or more persons with relevant expertise to conduct an inquiry, which can be conducted by written submissions, a conference or a formal hearing.⁷ However, all EESs over the past 15 years have involved a public inquiry with formal hearings. The inquiry's report will normally be released at the same time as the Minister's assessment (DSE 2006d, pp. 24–25).

Making an assessment

The Ministerial Guidelines provide that when the Minister determines whether the likely environmental effects of a project are acceptable, he or she and may conclude that a project would:

- have acceptable environmental effects, or
- unacceptable environmental effects, or
- need major modifications and/or further investigations in order to establish whether an acceptable level of environmental outcomes could be achieved.

If the assessment concludes that a project would have acceptable environmental effects, it may provide advice on project implementation and environmental management measures.

Project design will often need to be changed as a result of the EES process, but to varying degrees. Changes to projects can occur throughout the EES process at several points:

- During project investigations, as design responds to environmental impact and risk analysis. For example, the dredging schedule for the Channel

⁷ These options were introduced in the 2006 reforms.

Deepening Project was adjusted to take into account protection for species in the Yarra River listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth), as well as social issues related to recreational activities during the peak Christmas season. Alignment changes were made to the pipeline in the Otway Gas Project to minimise removal of native vegetation.

- After public exhibition, in response to submissions. The proponent may propose project design or mitigation measures, in order to increase the prospect of a positive outcome from the EES process. For example, marina design adjustments and rehabilitation improvements were made to the Wyndham Cove development.
- The Minister's assessment may advise that modifications be made to a project before final approvals are granted, as happened with the Channel Deepening Project. Such modifications could lead to a requirement for further investigations and consultation.

If the proponent initiates design variations, and there are significant new effects on the environment, the proponent may need to refer the revised proposal to the Minister for a decision as to whether further assessment is required. Revised statutory applications may also be needed.

6.4 Coordination with other statutory processes

The Minister for Planning can direct relevant decision makers under other Acts (such as Ministers or statutory bodies responsible for public works, municipal councils, the Environment Protection Authority and Ministers or agencies administering relevant approvals legislation) to defer their decisions until the EES is prepared and assessed. The Environment Effects Act extends any prescribed time limit within which statutory decisions must be made by one month after the decision maker receives the Minister's assessment. Although relevant decision-makers are required to consider the Minister's assessment, they are not bound by the recommendations within the assessment (DSE 2006d, p. 28). Rather, the EES process is intended to inform decision-making under other Victorian legislation.

Ministerial Guidelines do not prescribe any process for coordinating environmental assessment with related statutory procedures, although they note that they 'are often coordinated' (DSE 2006d, p. 29). However, some Victorian Acts provide specific mechanisms for coordinating approval processes with the outcomes of the EES process. Talking about the linkages between the Environment Effects Act and the Planning and Environment and Environment Protection Acts, Thomas and Elliot note that:

In other words, efforts are made to coordinate the approvals process to reduce the need for sequential exhibition periods or inquiries and the delays they entail (Thomas & Elliott 2005, p. 131).

The rest of this section provides examples of coordination processes, which appear to differ between Acts.

Planning and Environment Act 1987

This Act also provides for environmental impact assessment. Where a project requires a planning amendment or permit and an EES, the proposed amendment may be exhibited concurrently. Panels appointed under the Planning and Environment Act will be jointly appointed as an inquiry under the EES Act (DSE 2006d, p. 29). However, the example of Boral's Montrose Quarry indicates that a local government can refuse to put a planning scheme amendment on public exhibition even when a draft EES has been prepared. In this case, the Minister for Planning refused Boral's request that he become the planning authority for the proposed amendment and the application therefore lapsed, after Boral had spent more than \$3.5 million preparing its EES (sub. 34, pp. 7–8).

Environment Protection Act 1970

Projects requiring an EES are often subject to approval under the Environment Protection Act. To minimise duplication, works approval applications required under the Environment Protection Act will normally be exhibited in conjunction with the EES for a project. Where the application is substantially in accordance with the Minister's assessment, third parties are not able to seek review of the decision by the Victorian Civil and Administrative Tribunal (DSE 2006d, p. 30).

This capacity to coordinate major approvals is a potential advantage of the EES process. On the other hand, Cement Concrete & Aggregates Australia claimed that there is considerable duplication and overlap between an EPA Victoria works approval application and the documents required under an EES. It argued that both documents seek the same information but request different formats (sub. 25, pp. 10, 16).

Geothermal Energy Resources Act 2005

A planning permit is not required to carry out any geothermal energy extraction operation if an EES has been prepared and the Minister administering the Act has authorised the operation after considering the EES assessment of the Planning Minister (DSE 2006d, p. 30).

Mineral Resources (Sustainable Development) Act 1990

This Act requires an approved work plan and work authority before mining can take place under a mining licence. Sections 40 and 42 of the Act provide that a planning permit is not required for proposed mining works if these works are assessed under the Environment Effects Act and the assessment is considered

prior to a decision on a work plan or work authority under the MRSD Act. Similarly, s. 42A establishes a special process that may apply to variations to approved work plans for works that have been assessed under the Environment Effects Act. This process enables variations to be approved without a planning permit even if the new work will cause significant additional environmental impacts, provided a report is prepared on the additional environmental impacts, exhibited for public comment, and the final variation approved by the Minister substantially complies with any requirements recommended by the assessment of the Minister administering the Environment Effects Act (DSE 2006d, p. 30).

Pipelines Act 2005

The responsible Minister must consider the assessment of the Minister administering the Environment Effects Act, if an EES has been prepared (s.49 (f)).

Petroleum Act 1998

A planning permit is not required to carry out a petroleum production operation if an EES has been prepared and an assessment of the Minister administering the Environmental Effects Act has been submitted to the Minister responsible for the Petroleum Act (DSE 2006d, p. 31).

Coastal Management Act 1995

Coastal or marine projects that are subject to the EES process may also require approval under this Act (DSE 2006d, p. 31). Where an EES is required, decisions under the Act are directly informed by the outcomes of the EES process.

Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)

The Commonwealth Government has primary responsibility for protecting matters of national environmental significance. If a project requires approval under the Environment Protection and Biodiversity Conservation Act (EPBC Act), the Commonwealth Minister may enter into two forms of bilateral agreement with a state:

- an assessment agreement, where environmental impacts are assessed using state processes, but the approval is made by the Commonwealth Minister
- an approvals agreement, where no further agreement is required under the EPBC Act, because actions are subject to a bilaterally accredited management agreement arrangement or authorisation process in place under state law.

The Commonwealth Government is currently negotiating an assessment bilateral agreement with Victoria. Victoria is the only state without such an agreement (sub. 54, pp. 3–4).

The EPBC Act also allows for strategic assessments, covering issues such as regional-scale development plans and policies, district structure plans and local environment plans. Strategic assessments may examine cumulative impacts of actions and might, for example, be used in high growth areas with a large number of projects potentially requiring assessment or for projects requiring long time-frames and multiple stakeholders. Examples being discussed include a strategic assessment of key growth corridors within the Melbourne 2030 urban growth zone (sub. 54, pp. 5, 7).

Other Acts

At least 11 other Acts may also have a role in the approval process for a major project, including the:

- *Aboriginal Heritage Act 2006*
- *Flora and Fauna Guarantee Act 1998*
- *Heritage Act 1995*
- *Building Act 1993*
- *Road Management Act 2004*
- *Crown Land Reserves Act 1978*
- *Land Acquisition and Compensation Act 1986*
- *Water Act 1989*
- *Water Industry Act 1994*
- *Native Title Act 1993 (Cwlth.)*.

Conclusion

There is some coordination between the assessment process under the Environment Effects Act and a number of other Acts requiring approvals. The coordination mechanisms differ between Acts, however, from the Petroleum Act at one extreme, which appears to rely on the environmental assessment, to the Coastal Management Act at the other extreme, which is silent about the assessment, although in practice decisions under the Act will take it into account.

The Commission would welcome submissions about the reasons for these differences, any issues arising from these differences and whether there is scope for improved alignment.

6.5 Number of projects requiring an EES

Most projects in Victoria do not pass the threshold test for an EES, and most of those that exceed the threshold do not go through the EES process. Table 6.1 shows that the number of new referrals has declined since the Ministerial guidelines were implemented in mid 2006. Moreover, the number of referred projects required to have an EES has also declined. In 2006-07, for example, there were 16 referrals, of which the Minister decided that one required an EES.

Applying an option that was introduced in the amendments to the Environment Effects Act in 2005, the Minister determined that eight projects did not require an EES, provided that the proponent meets specified conditions, which frequently involved the proponent undertaking an action that is considered satisfactory by a government agency. (Box 6.1 provides examples.)

Table 6.1 **Environment Effects Statements, 1999-2000 to 2007-08**

<i>EIA/ EES indicator/ statistic</i>	<i>2007-08</i>	<i>2006-07</i>	<i>2005-06</i>	<i>2004-05</i>	<i>2003-04</i>	<i>2002-03</i>	<i>2001-02</i>	<i>2000-01</i>	<i>1999-00</i>
New referrals for decision on the need for an EES	16	14 ^a	23	26	28	21	32	20	19
Determinations on the need for an EES:									
EES required	2 ^b	1	3	7	7	9	7	6	3
EES not required without conditions	7	6	20	18	18	12	16	13	10
EES not required subject to conditions	6	7							
EESs prepared or being prepared	11 ^c	12 ^c	20	23	20	19	13	17	11
EESs exhibited or still on exhibition	5	3	5	2	7	4	7	6	1

^a Two were later withdrawn. ^b One EES has not commenced. ^c One EES is 'on-hold'.

Source: Based on information provided by DPCD.

Box 6.1 Examples of conditions imposed on projects not requiring an environment effects statement

- A satisfactory native vegetation and offset plan is prepared before any native vegetation is removed (BMB gas pipeline, Goldfields Superpipe, Anglesea borefield project).
- A satisfactory environmental management plan is developed (Goldfields Superpipe, Anglesea borefield project).
- A satisfactory environmental report is to be prepared (Echo mineral sands mine).
- There is a prior assessment of risks to Aboriginal cultural heritage (Oaklands Hill Wind Farm).
- Satisfactory measures are in place to protect species habitats (Melbourne wholesale market relocation project).
- There is consultation with Heritage Victoria, to avoid sites of archaeological sensitivity (Lakes Entrance sand management projects).
- Identified mitigation and measurement measures are implemented satisfactorily (Readymix Colac quarry expansion).
- Satisfactory surveys of species movements and behaviour are undertaken (Darlington wind farm).
- A project impact assessment is concluded satisfactorily (Sugarloaf interconnector).
- A regime for monitoring potential hydrological impacts is designed (Anglesea Borefield project).
- There is a satisfactory report on the impact on cultural heritage significance (Stockyard Hill wind farm).

Source: Various decisions in DPCD 2009b.

6.6 Possible problems with the EES process

While the EES process has the important benefits identified in section 6.2, it also has costs. This means that it is worthwhile assessing the scope for improvement. A starting point is to identify possible problems with the process, drawing on three sources:

- inquiry participants
- the independent review of Victoria's environment assessment procedures under the Environment Effects Act (the Review), commissioned in 2000 by the then Minister for Planning to help deliver better balanced environmental, social and economic outcomes, as well as more transparent and accountable processes⁸

⁸ The aims of the review were to:

- the Commission's previous review of environmental assessment procedures in its inquiry into Regulation and Regional Development (VCEC 2005).

This section discusses general problems and problems with particular stages of the EES process, which may reduce certainty or increase project costs. The general problems relate to the:

- limited coordination with other approval processes
- absence of timelines.

Specific problems raised about particular stages relate to:

- referral and screening
- scoping
- public review.

6.6.1 General problems

Limited coordination with statutory approvals

Submissions sought enhanced integration of assessment and approval processes to reduce unnecessary delays, duplication and uncertainty. Coffey Natural Systems noted there are 'several Government consents that overlap with the EES process' (sub. 55, p. 5). The Minerals Council of Australia (Victorian Division) (MCA) noted that the EES process resulted in 234 regulatory approvals for a Victorian Goldfields project and that the Hazelwood mine project manages 400 separate regulatory instruments (sub. 58, p. 31), although this is a commentary more on the number of approvals required rather than on the EES process itself.

One view is that when different agencies are required to consent to a project, approval can be held up as applications are passed between agencies. Moreover, different referral agencies may impose conditions on a project. This can pose challenging coordination problems for the proponent, who has to secure approval for the same project option. Changes to project design to secure one approval could have implications for other approvals.

-
- review current procedures for environment assessment of proposals
 - develop improved procedures
 - evaluate the need for, and appropriate scope and form of, an environment assessment of strategic proposals (including those for land use, development, resource management and the application of new technologies) that may have significant environmental impacts or implications (Environment Assessment Review Advisory Committee 2002, p. 3).

Note that the problems identified by the Review relate to the process that existed around 2000. This section describes problems that do not appear to have been addressed by the amendments to the Environment Effects Act in 2005 and new Ministerial Guidelines issued in 2006.

There may also be a tension between the objectives of particular Acts, if their objectives are framed in terms of the context of that Act. The consequence could be different approval processes reaching conclusions that are inconsistent with each other.⁹ The Department of Primary Industries (DPI) noted that there are conflicts and duplications between regulations. Some of these tensions may impact on the EES process, to the extent that it has to be used to bridge policy or regulatory uncertainty:

Another valuable area to focus this inquiry is on the duplication and conflict between regulations. Environmental regulations can have significant areas of overlap with industry-specific regulations, which may be duplicative as each regulation achieves the same environmental outcomes (causing unnecessary costs to the proponent) or conflicting, where overlapping objectives can obstruct the operation [of] each other. (sub. 61, p. 9)

While the EES process is intended to guide consistent decision making across different approvals legislation, the MCA nevertheless observed a:

failure of government to ensure whole-of-government decisions, so much so that on occasions different sections of the same Department put forward differing arguments to the Independent panel reviewing the EES. (sub. 58, p. 31)

There can also be duplication of information requirements, as noted in section 6.4.

Mechanisms to help proponents to work through assessment and approval processes can improve coordination. For example, the Department of Industry, Innovation and Regional Development advises project proponents about the processes and the approvals that they will need and cooperates with the Environment Assessment Unit in DPCD in doing so. To the extent, however, that inconsistent objectives between Acts or agencies cause delays and inconsistencies, facilitation mechanisms and devices such as memoranda of understanding, intended to encourage cooperation between agencies, are unlikely to be fully effective.

⁹ The 'anti-commons tragedy' may come into play in this context. This situation applies when a number of persons are assigned rights of exclusion to a resource, such that someone seeking to use the resource needs permission from all those who have exclusion rights. Individuals with rights of exclusion will not take account of the impact on others from exercising their exclusion right. In the limiting case, in which all groups are assigned exclusion rights, the resource may not be used at all. Buchanan and Yoon (2000) argue that the anti-commons construction provides an analytical means of isolating a central feature of disparate institutional structures, where permits are required from separate agencies.

Timelines

The situation

The Environment Effects Act does not specify time limits. The ministerial guidelines provide indicative times for most stages of the assessment process, but without sanctions for non-compliance (table 6.2). The guidelines also provide for agreement of a time schedule between the proponent and Department Secretary about:

- dates for delivery of the proponent’s proposed consultation plan, draft EES study reports and draft EES
- timeframes for TRG feedback on draft documents as well as quality review of the proposed final EES
- timeframes for the proponent to respond to feedback
- protocols for giving advance notice of any delays and for revising the agreed schedule (DSE 2006d, p. 22).

Table 6.2 Indicative timeframes outlined in EES guidelines

<i>Phase/stage</i>	<i>Indicative timeframe</i>
Decision from the Minister for Planning on whether a proposal requires an EES	Normally within 20 business days of receiving all relevant information.
Preparation of draft scoping requirements	Generally prepared within 20 business days of receiving the required information from the proponent.
Public consultation on draft scope of the EES (outline of proposed contents of the EES)	Draft scoping requirements are released for public comment for at least 15 business days.
Finalising scoping requirements	Normally within 15 business days of the close of the public comment period.
Preparing the EES	Timing determined by proponent.
Minister authorises public exhibition of EES	No time limit.
Public comment	Within 20 to 30 business days.
Minister may appoint an inquiry	No time limit, although increasingly negotiated by proponent as part of timing of completion of EES process, particularly for public sector projects.
Inquiry conducts hearing and reports to Minister	The Minister may appoint an inquiry at any time for works subject to the Environment Effects Act. The timeframe for inquiries is not specified in the Guidelines.
Minister assesses environmental effects	Within 25 days of receiving an inquiry report.

Source: DSE 2006d.

These items do not address all of the stages in the process outlined in table 6.2, and most cover items which are the responsibility of the proponent, who would appear to have an incentive to complete the stages quickly in any event¹⁰. Moreover, from the proponent's perspective, timelines in related approval processes are likely to be as important as those in the EES process. These related processes may, however, also not have clearly defined and sanctioned timelines.

Data

Analysis of assessments undertaken since 2002, reported in chapter 4, suggests that:

- the average duration of 13 completed EESs during this period was 30 months, with the shortest taking 14 months and the longest 50 months. Active time (that is, excluding periods when nothing was being done to progress the process) averaged 27 months
- the average duration of the 6 EESs that remain unfinished at the time of writing is 49 months, with individual cases ranging from 20 months to 99 months
- for the completed cases for which detailed information is available, preparation of the environmental effects statement accounted for the highest proportion (39 per cent) of the elapsed time of the process as a whole, followed by development of the scoping document (26 per cent) and the panel inquiry (20 per cent)
- preparing the environmental effects statement took 12.6 months on average (with most individual cases taking between 5 and 19 months, possibly reflecting variations in magnitude and complexity of impacts being examined, and to a lesser extent the capability of the proponent); the panel inquiry averaged 6.3 months (predominantly in the 4-10 months range); and preparing the scoping paper averaged 5.9 months when a single outlier is excluded¹¹ (predominantly in the 4-6 month range).

The MCA provided examples of lengthy processes:

- almost three years to complete the Donald Mineral Sands assessment
- almost three years between the commencement in December 2002 of the EES for the International Power project to develop the West Field of the Hazelwood Mine (stage 2) and the Planning Minister's assessment in September 2005, with the last of the critical subsequent approvals granted in October 2006 (sub. 58, p. 31).

¹⁰ Unless the proponent has commercial reasons to delay a project.

¹¹ This is the Point Lonsdale residential development project, for which the scoping paper was prepared during 39 months of elapsed time.

Assessment

It is difficult to conclude whether these times are excessive. The duration of a best practice assessment will vary between projects, depending on factors such as the amount of information to be assessed, the risk to the environment and the number of parties involved (Gale 2008, p. 271). Part of the delays may be attributable to poor project management by the proponent, or a decision to slow down the project for commercial reasons. Moreover, most of the EESs included in the data, as well as the examples cited by the MCA, were commenced before the Ministerial Guidelines were introduced in 2006. It is possible that EESs undertaken under these guidelines will be completed more quickly.

The Commission has been advised by DPCD that the time taken to complete the scoping stage for EESs commenced since June 2006 has been in line with or less than the indicative timelines reported in table 6.2, and well below the six month average in the Commission's analysis of EESs since 2002. This suggests that this timeline is a reasonable maximum for future EESs.

Evidence about compliance with negotiated timelines would be informative, but the Commission understands that such timelines have rarely been developed. Nevertheless, the very large range in the duration of EES processes, combined with the absence of prescribed timelines, suggests that some cases have taken longer than necessary. For example, firms surveyed by the Allen Consulting Group believe there have been unnecessary delays (see chapter 5). The large ranges in time taken also suggest that project proponents face uncertainty about how long assessment will take. Delays and uncertainty contribute to the costs outlined in section 6.2.

Absence of check points for potentially narrowing the analysis

The EES process does not appear to have transparent 'check points' to provide opportunities to focus the analysis, although proponents are encouraged to take a staged, risk-based approach (DSE 2006d, p. 14). Scoping requirements can be amended during the preparation of an EES if substantive technical clarification is needed, or if the project changes or unforeseen and significant issues are identified (DSE 2006d, p. 13).

Scoping provides an initial opportunity to focus effort. As noted, the Guidelines already provide for some flexibility to permit focussing during the production of an EES. Building check points into the process could ensure that opportunities for focusing are considered, possibly reducing the costs and time required to prepare EESs, as well as lessening the risk that proponents make unnecessary outlays on project design. Such check points would need to be carefully managed to avoid adding further time to the process. To maintain public confidence in the EES process, the outcome of each check point—even if no change in scope is suggested—should be made public, together with the reasons for the decision.

6.6.2 Possible problems with particular stages of the EES process

Referral and screening

This stage is particularly important as it determines which projects are required to prepare an environment effects statement. While submissions to the Review (Environment Assessment Review Advisory Committee 2002, p. 23) noted weaknesses in the referral process, the Government accepted recommendations to address these issues¹². The reduction in referrals since 2006 (table 6.1) may suggest that the new approach is screening out unnecessary referrals.

Scoping

Participants raised two issues:

- the value of a risk-based approach
- handling clusters of projects.

Risk based approach

Before the 2006 reforms, there was 'little or no flexibility for matching the assessment process to the level of environment risk presented by the proposal to be assessed' (Environment Assessment Review Advisory Committee 2002, p. 29). The ministerial guidelines introduced in 2006 a more finely tuned assessment process:

The changes to the system provide for the transparent, integrated and timely assessment of the environmental effects of proposed works capable of having a significant effect on the environment. *The new system allows for the procedures and requirements of the Environment Effects Statement (EES) process to be tailored on a project-*

¹² Weaknesses included:

- failure by some proponents to refer proposals with potentially significant environmental effects
- lack of clarity and transparency about the types of projects that need to be referred
- lack of clarity and transparency in the Minister's decision as to whether an EES is required
- inadequate opportunity for early participation by the public and environmental groups
- absence of a clear up-front option for refusal of a project at the screening stage (Environment Assessment Review Advisory Committee 2002, p. 23)

The Review's recommendations to address these weakness that were accepted by the Government included:

- providing advice to proponents about the studies and consultation they would need to undertake before a project is referred for a screening decision (recommendation 9)
- early discussions between proponents and stakeholders so that key environmental issues and alternatives can be taken into account before project design and location are finalised (recommendation 10)
- developing a prescribed referral form (recommendation 11)
- advertising referred projects before a screening decision is made (recommendation 12) (Environment Assessment Review Advisory Committee 2002, pp. 25–26).

by-project basis to respond to the circumstances and complexity of individual development proposals. This flexible approach for EES's encompasses the range and scope of EES studies, forms of consultation, exhibition timeframes and public hearing options depending on the nature of the proposal and its environmental effects. (Italics added) (Government of Victoria 2007c, p. 11)

Nexus supported a differentiated approach:

Department of Planning and Community Development (DPCD) should always take a risk based approach in assessing proposals and setting the scope of any Environment Effects Statement (EES) rather than applying a standard “one size fits all” EES scope. This should ensure the scale and impacts of the project are matched with an appropriate scaled assessment process. (sub. 9, p. 5)

Cement Concrete & Aggregates Australia questioned the need for public review of the scoping requirements, given the opportunities for public consultation later in the process. They suggested that each issue raised during the review 'requires a full and costly investigation, irrespective of the merits or significance of the issue' (sub. 25, p. 9).

DPI suggested that scoping does not focus the EES on project-specific risks:

the scoping document adds little value to the EES process as the issues identified in the scoping document are often generic in nature and therefore, the document does not provide a mechanism by which the proponent can narrow the scope of the EES and focus on the unique set of issues for the project. The result is that while the scoping document has the potential to create efficiencies in the EES process, in practice it creates an extra step, which duplicates some processes for the EES, without adding value. (sub. 61, p. 10)

Clusters of developments

Monash Energy noted that government policy is aimed at encouraging clusters of developments in areas such as the Latrobe Valley, and that each separate project may trigger an EES, even though common issues are involved. They also point out that clean coal developments will often require decisions about issues such as water and wastewater infrastructure, mine rehabilitation and shared CO₂ pipelines that go beyond any individual project. The presence of such common issues may lead to the scope of individual assessments being unnecessarily broad and possible 'waste arising from having this process repeated by each project in respect of each individual assessment process' (sub. 36, p. 6).

The Ministerial Guidelines in fact only require assessment of the cumulative impacts of a project in combination with other activities, where the proponent

has a practical ability to provide such an assessment (DSE 2006d, p. 18).¹³ However, Monash Energy suggests that the Government needs a mechanism for managing at a regional level those issues that extend beyond a particular development, and a statutory mechanism for ‘ensuring such decisions have status within the environmental approvals process’ (sub. 36, p. 6).

Public review

The Minister for Planning approves that the EES is suitable for public exhibition, drawing on advice from DPCD. With effective scheduling by the proponent in conjunction with DPCD, the ministerial authorisation should not create significant delay. If, however, this breaks down, this extra step can lead to delay and requirement for re-work.

An option for reducing this risk is to enable the proponent to decide when to release the EES. The proponent will already have received comments about the EES from the TRG and has an incentive to ensure that the EES is of adequate quality, to avoid the risks of future delay or non-approval. Allowing the proponent to decide whether to release the EES seems consistent with one of the objectives of the EES process, as outlined in the guidelines, which is to ensure proponents are accountable for investigating potential environmental impacts (DSE 2006d, p. 3).

A counter-argument is that giving the proponent this responsibility would remove a current opportunity for quality control, and that a proponent may release an EES before it is ready; for example, to take advantage of favourable market conditions which might not be expected to persist. The force of this argument is reduced by the fact that the Minister can appoint a public inquiry after the public review process. The proponent has a strong incentive to produce a high quality EES to reduce the need for an inquiry, or at least to reduce the risk that weaknesses in the EES will be highlighted during an inquiry, which could lead to a requirement for a supplementary EES.

How these problems may add to costs

The significance of any problems with the EES process depends on the extent to which they increase costs. Variable timelines and coordination processes may reduce the certainty that a proponent has about the duration and outcome of the assessment and approval processes. While this effect may reduce project returns, it is difficult to quantify. To indicate the magnitudes of other costs, the Commission asked the Allen Consulting Group (ACG 2009) to interview seven

¹³ If the proponent does not have this ability, the proponent will at least need to provide an assessment of relevant effects, in a form that can be integrated with information relating to other projects or activities DSE, p. 18).

businesses which had recently prepared EESs. In preparing the estimate of annual cost for Victorian business as a whole, ACG made the assumption that there would be 5 EESs in process in any year, based on the level of activity in March 2009.

Administrative costs

These costs include those associated with referring the project to the Minister, determining the scoping requirements, preparing the EES and the public review process¹⁴. For example, these costs may be larger if the scope of the EES is broad. The most significant of these costs is preparing the EES. ACG (2009, p. 13) estimates that the annual administrative costs are about \$8.8 million, of which businesses incur almost \$6.0 million in preparing EESs.¹⁵

Substantive compliance costs (excluding time delays)

An independent expert advised ACG that all EES applicants are required to vary their environment management plans, at an average cost of \$1 million (ACG 2009, p. 13). With 4 new EESs per annum, this implies an annual substantive compliance cost of \$4 million (excluding the cost of delays).

Delay costs

Delay costs include holding costs, standby costs, lost interest on foregone profits and lost profits. They are most likely to be caused by the issues around timeliness and coordination between assessment and approval processes. ACG (2009, p. 13) estimates, drawing on the views of the businesses that it surveyed about costs incurred over and above what they would occur anyway, that these costs are about \$22.6 million per year.

6.7 Possible measures to address the identified problems

This section outlines measures to address the problems and reduce the costs identified in section 6.6, drawing on recommendations made by the Review (2002), the Commission's report on regulation and regional development (2005), the West Australian Auditor-General (2008), and the Commission's analysis of the current arrangements. Most options outline possible improvements to the current assessment structure. More radical suggestions for changing the structure

¹⁴ These costs are estimated by comparing the cost of preparing an EES with a situation in which no EES is prepared. Yet if there was no environmental assessment, documentation would need to be prepared for approval processes, possibly at roughly equivalent cost. Given that the Government has asked the Commission to estimate the costs of regulation, this is really an issue about where the cost should be attributed, rather than the cost itself.

¹⁵ ACG assumes there are 5 EESs per year; that preparing an average EES costs \$1.2 million per year; and that the average duration of an EES is 2 years.

itself are discussed towards the end of the section. Section 6.7 builds on these options to suggest a new approach to environmental assessment.

6.7.1 Improving coordination with other statutory approvals

Options (not mutually exclusive) for improving coordination include:

- improved coordination through Technical Reference Groups
- strategic assessments
- memorandums of understanding
- a one stop shop
- combining the assessment and approval process
- expanding use of call-in powers.

Improved coordination through Technical Reference Groups

Nexus pointed out that:

The TRG is a key instrument in ensuring early and authoritative advice is provided to the proponent. Senior members of government agencies, supported by technical experts, should attend TRG meetings to ensure consistent, appropriate advice is actually provided. This should avoid last minute policy reversals by government agencies that could potentially significantly impact on the project. (sub. 9, p. 5)

Participants in the Commission's roundtable on the EES process suggested that TRGs typically fall short of this ideal. Members may not have the authority to express the views of their Department or agency, or may be represented by junior staff without this authority. Attendance at TRG meetings can be patchy and issues raised are not always limited to the scope of the EES.

The functioning of TRGs would be improved by requiring that:

- TRG members are sufficiently senior to express the views of the Department or agency
- TRG develop the agreed timetable for the assessment and approval process, and establish key check points, at which progress against the timetable would be assessed. The precise purpose and timing of the check points would be negotiated at the start of the process, but could include reviews to check whether the scope of the EES could be narrowed, and to identify key decisions that need to be made to avoid delays. This could be formalised through an agreement between the proponent and the Department Secretary, which is already possible under the ministerial guidelines (DSE 2006d, p. 22)
- members of the TRG would not be allowed to raise issues that are outside the scope of the EES, except with the approval of the Department Secretary.

Strategic assessments

Monash Energy's request for planning and environment legislation to enable strategic assessments has already been noted. The Western Australian Auditor-General also discussed this issue, noting that in that state:

The current approvals process assesses proposals project by project without reference to a comprehensive plan for regional or State-wide development. This adds to uncertainty for proponents and agencies.

A forward plan would anticipate resource development and clarify regional and State development priorities. The plan would provide guidance to proponents and agencies when considering potential environmental, economic and social impact on a specific region (Auditor-General for Western Australia 2008, p. 37).

As noted earlier, the EPBC Act allows for strategic assessments, and opportunities for such assessment are currently being discussed by the Victorian and Australian Governments (sub. 54, p. 7).

Memorandums of understanding

The Review supported the use of memorandums of understanding to clarify responsibilities between agencies charged with various forms of assessment. These memorandums should be published (recommendation 55). Negotiating memorandums should not be costly, although their impact may be limited if the agencies administering different Acts are implementing objectives that do not complement each other or are inconsistent.

A one stop shop

A 'one stop shop' for assessment and approval is sometimes suggested. In 2004, the Western Australian Government introduced one approach to this, appointing a development approvals coordinator (who reports to the Premier, via the Development Approvals Ministerial Council) to coordinate approval processes of the four agencies involved. This was supported by an Integrated Project Approvals System (IPAS), which clarified the roles of agencies and proponents. IPAS has not yet, however, delivered its intended outcomes (Western Australian Auditor-General 2008, p. 24). While some reasons for this may be specific to Western Australia, this experience suggests that an integrated approach needs to be supported by other changes. For example, Nexus notes that:

A "one stop shop" to streamline approvals will only be able to make a step change to improve the approvals process if it has the power to enforce decisions within specified times. (sub. 9, p. 8)

Making the assessment process an approval process

Building on the point made by Nexus, one way to implement a 'one stop shop' is to change the assessment process under the Environment Effects Act so that it becomes the vehicle for providing project approvals. For example, the approach

in the Petroleum Act, which removes the need for a planning permit if the EES process is applied, could be extended to other Acts.

A more extensive version of this approach, suggested by the Review (recommendation 58) is that conditions of approval under other legislation should be consistent with those under the Environment Effects Act and that the Minister's assessment should become an overarching approval, rather than advisory. Coffey Natural Systems suggested that the 'Victorian Government should minimise the number of times that it says "yes" to a project proceeding' (sub. 55, p. 6). It proposed that:

the assessment of an EES by the Minister for Planning becomes an in-principle consent with an application to all Acts. Where additional consents are still required, these can be contained in a single secondary consent. (sub. 55, p. 6)

Local and international experience suggests a number of ways in which combining the assessment and approval processes could be given effect (see box 6.2)

Box 6.2 Approaches to integrating approval and assessment processes

- The Victorian Government has proposed transport project facilitation legislation. Although it has not yet stated publicly how this approach would operate, its broad approach is that a favourable environmental assessment also provides approvals under related legislation. An option is to extend this approach to all major projects requiring an EES.
- Part 3A of the New South Wales *Environment Planning and Assessment Act 1979* introduces a single assessment and approval system for major development and infrastructure projects (NSW Government 2007, p. 1).
- Under Tasmania's State Policies and Projects Act, once the Governor in Council, acting on the advice of the Premier, has declared a project to be of State significance, it is taken outside the planning process established under the *Land Use Planning and Approvals Act 1993*. The Resource Planning and Development Commission is responsible for making recommendations on whether the project should proceed and on what conditions. The Government of the day makes the final decisions (Resource Planning and Development Commission 2009).
- The United Kingdom Planning Act 2008 introduces a new system of development consent for nationally significant infrastructure projects. A new independent Infrastructure Planning Commission is responsible for deciding applications (Communities and Local Government, nd).
- Project specific legislation (such as the *Melbourne City Link Act 1995* and *Eastlink Project Act 2004*) has been introduced in Victoria to manage the interface between project proponents and utilities. Monash Energy noted that most project specific legislation in Victoria has been for public sector projects and that there is not an Act which confers powers of facilitation of new investments (sub. 36, p. 4).

Expanded use of call-in powers

A less radical option, which might nevertheless improve coordination between agencies involved in approval processes, would be to include in the Environment Effects Act call-in powers similar to those that the Minister for Planning exercises under the Planning and Environment Act.

This power enables the Minister for Planning to act as the responsible authority for decisions, in cases where:

- the matter raises a major issue of policy
- the decision on the application has been unreasonably delayed to the disadvantage of the applicant
- the matter is also required to be considered by the Minister under another Act and that consideration would be facilitated by referring the application to the Minister (s. 97B (1)).

At the moment, the Minister may exercise the call-in power in respect of planning permit applications where, for example, local government is the decision-maker for projects which have been referred to the EES process. The Stockland development in Point Lonsdale and the Montrose quarry are examples. There seems to be a tension between referring issues to the EES process, because they have an impact that extends beyond the local region, but then having a local government as the decision maker. The call-in power is an option for reducing this tension.

Expanding the scope of this power to all approval processes—including some under which he or she is not the responsible Minister—would enable the Minister to resolve situations where an impasse had been reached between agencies in respect of a project with regional or state significance. There is a risk that proponents could manipulate these powers, by forcing an agency into an apparent impasse situation, in order to encourage the Minister to become the decision maker. Requiring the Minister to publish the reasons for calling in a project would reduce this risk.

6.7.2 Timelines

Specifying timelines could reduce delay costs. The review recommended that time lines should be applied to all stages of the assessment process; some could be statutory and others, such as the time taken to prepare assessment documentation, negotiated at the outset (recommendation 14). Inquiry participants who supported enforceable timelines included Australian Petroleum Production and Exploration Association Limited (sub. 46, p. 11), Monash Energy (sub. 36, p. 3), the oil and gas company Nexus (sub. 9, p. 5), Barwon Water (sub. 33, p. 2), and the Urban Development Institute of Australia

(Victoria) (sub. 5, p. 3). The Auditor-General of Western Australia, however, noted that timelines alone are unlikely to be sufficient. He suggested that agencies should uniquely identify each proposal so that its progress can be tracked and reported (2008, pp. 17–18).

The Commission recognised the benefits of defining timeframes, but while retaining some flexibility:

...greater certainty around timeframes would assist decision making by proponents and monitoring of the administration of, and compliance with, the Act. Greater clarity could be achieved while still retaining some flexibility to account for individual circumstances. One approach would be to specify timeframes but permit the minister to alter these on the condition that the reasons for doing so are provided to the proponent. Alternatively, a range of timeframes could be specified according to the complexity of the proposal. (VCEC 2005, pp. 232–233)

Given that all projects are different, standard timelines may not be appropriate. For example, proponents may be in the best position to decide how long they need to prepare an EES to an adequate standard. Moreover, specified timelines may not be enforceable. While this could be addressed by having default approval when a deadline is not met, this approach has limitations.¹⁶ A better approach may be to strengthen the incentive to comply with timelines by requiring the Minister to publish reasons for granting extensions (VCEC 2005, p. 299). Regular audits of the compliance of the EES process with specified timetables by a respected independent authority, such as the Victorian Auditor-General would further strengthen this incentive.

Setting time limits for the EES process may not, however, reduce the time taken to secure approvals, unless time limits are also applied to approval processes. Hence the timeliness of related approval processes may also need to be considered.¹⁷ For example, all agencies with approval processes could agree at the start of the assessment process to set times for completing their processes and, therefore, an overall timeline.

¹⁶ Default approvals could not be used for those stages of the process at which a decision is not involved; for example, issuing guidelines at the end of the scoping stage:

- They could prevent proper assessment of complicated cases.
- They would not affect the timing of approvals if the assessment and approval processes are separate.
- An assessment provided in this way would be unlikely to be regarded as 'bankable' by financiers.

¹⁷ There is sometimes a trade-off between the EES process endeavouring to resolve issues and hence simplify subsequent approval processes, or to defer issues to those subsequent processes. The key factor is the practicability of resolving issues at the EES stage or deferring them until project design is further advanced.

6.7.3 Improving scoping

Scoping is a particularly important part of the assessment process, because it can be used to ensure that the breadth and depth of assessments match projects' complexity and risks to the environment. To achieve this, the Review recommended three levels of assessment. Similarly, the Environment Protection and Biodiversity Conservation Act provides for a range of assessment methods, to account for the scale of potential and actual environmental impacts, the level of community interest and public submissions (Commonwealth of Australia 2008d, p. 18). The Victorian Government has instead adopted a different approach, retaining a single 'tier' of assessment, while enabling flexible scoping and the setting of conditions as an alternative to an EES.

Both approaches permit flexibility, and in both cases implementation needs to be handled carefully:

While the Commission believes that a more flexible approach has merit, it would need to be carefully designed and accompanied by clear implementation guidelines to avoid increasing uncertainty for proponents. The introduction of additional assessment processes could simply result in an increase in the number of projects required to undergo some form of assessment, without a compensating increase in the economic, environmental and social benefits. This possible outcome reinforces the need for a more flexible system to be supported by clear criteria for determining the applicable level of assessment, and by a statement from the government about its expectations regarding the number and types of project likely to require some form of assessment (perhaps based on a review of previous cases). (VCEC 2005, p. 231)

As noted earlier, scoping has taken about six months on average since 2002 (although the time may have fallen since the Ministerial Guidelines were introduced), but sometimes without narrowing the scope from the initial referral documentation. Incentives for departments to narrow the scope of an EES may be weakened because the proponent bears the costs of the EES, while departments (along with the proponent) would be criticised if any issues were omitted. Moreover, legislative requirements—such as ensuring that all obligations under the Environment Protection and Biodiversity Conservation Act and the Planning and Environment Act—are taken into account.

At the moment, the proponent provides the initial list of issues to be investigated and can comment on the draft scoping requirements prepared by DPCD. If the proponent were responsible for determining the scope of the EES, it would seek to contain the costs of the EES by restricting its scope. It would also be aware that if it excluded relevant issues, the EES process could unravel, to its long term disadvantage. To reduce concerns that the proponent might unduly reduce the

scope, it could remain subject to government approval that it is consistent with guidelines specifying the Government's expectations.¹⁸

The Review pointed to some other advantages from assigning preparation of draft scoping guidelines to proponents:

It would assist proponents to identify and understand key issues, provide the opportunity to continue or commence effective stakeholder consultation and participation in the process, and allow the proponent to ensure that this part of the process is undertaken in a timely manner. The draft scoping guidelines would need to be reviewed and approved by the Department of Infrastructure before being finalised (Environment Assessment Review Advisory Committee 2002, p. 43).

Another safeguard against the proponent unduly narrowing the scope would be provided by requiring it to publish a report at the end of the assessment process comparing the environmental impacts it identified at the outset with the impacts that have become evident as a result of assessment. In effect, the scoping requirements already invite a proponent to do this, since they provide that justification may be provided for any deviation from the scoping requirements (guidelines) on the basis of a risk-based approach.

A further issue that has been raised with the Commission is that departments require new issues to be included after the scope has been settled. As noted earlier, the Ministerial Guidelines outline circumstances under which this may happen (DSE 2006d, p. 13). To ensure that extraneous issues are not included in the EES, the inclusion of issues beyond those in the scoping guidelines could be prohibited unless approved at senior levels, perhaps by the Department Secretary.

6.7.4 Minister releases EES for public comment

As noted earlier, shifting the responsibility for releasing the EES for public comment from the Minister to the proponent could reduce time taken and uncertainty. While this would remove an opportunity for the Minister to exercise quality control, DPCD and the TRG can provide this function during preparation of the EES, building on the proponent's incentives to provide a good quality EES, in order to avoid subsequent delays and to expedite the inquiry that the Minister has the option to establish after the EES has been publicly reviewed.

Nexus Energy commented that:

¹⁸ The consistency of this option with the requirements of the accreditation of the EES process under the EPBC Act would need to be considered.

DPCD certainly has a role in providing advice to the proponent on the technical veracity of reports submitted to the Technical Reference Group (TRG) and whether the final EES Report is appropriate for public exhibition. However, the proponent should decide on the risk associated with accepting or not accepting that advice rather than it is a matter of DPCD approval before progressing to the next step in the process. (sub. 9, p. 5)

6.8 Pathways for streamlining environmental assessment

6.8.1 Overview of the proposed approach

Section 6.7 described suggestions for improving the EES and related approval processes. Some involve fundamental restructuring; others small changes. Piecemeal implementation of small changes, however, is not likely to have a significant impact. The Commission therefore recommends two complementary pathways for environmental assessment. The first pathway combines a number of changes into a package large enough to deliver significant improvements by creating a more efficient and timely process. It also provides the Minister with call-in powers to address situations where unreasonable delays are still occurring. The second pathway incorporates the same process improvements. However, instead of relying on the call-in power to address delays after they have developed, it prevents delays from developing in the first place by integrating the assessment and approval processes under the responsibility of a single Minister.¹⁹

The Government may prefer that most projects requiring an EES would use the first pathway, which does not disturb current decision-making responsibilities. The Minister could, however, decide at the referral stage that particularly significant projects that satisfied specific criteria should go through the second pathway. These criteria might be that:

- the project is of particular strategic significance to the state of Victoria, having regard to its economic, social and environmental outcomes
- unreasonable delays to the project could seriously reduce the project's benefits for Victorians.

The Minister would be required to publish his reasons for deciding that a project should be assessed by this process.

¹⁹ Another option—project specific legislation—is not considered because it is already available and is only likely to be worthwhile for the largest projects, given that developing project specific legislation is itself a lengthy process. For most projects, the time savings in the approval process would be less than the extra time involved in developing specific legislation.

6.8.2 The pathways in detail

Pathway 1: Modifications to the environment assessment process

This option combines a number of the streamlining options identified in section 6.6 while maintaining the broad structure of the current environment effects statement process:

- Time limits— some statutory and others negotiated—would be applied to each stage of the assessment process²⁰, and would include timelines for state government approvals required by the project. Opportunities for parallel processing of approvals would be identified. As now, there could be protocols for giving advance notice of delays and revisions to the agreed schedule. These arrangements would be settled during scoping.
- To encourage compliance with the timelines:
 - the time taken for each stage and approval would be reported publicly
 - reasons for delays would be published
 - performance against these timelines would be assessed regularly by an independent agency, such as the Auditor-General.
- The scoping process would be improved, by:
 - making the current ‘indicative’ 50 business days a firm deadline
 - assigning responsibility for developing the scope to the proponent, but subject to government approval, operating within guidelines
 - using the scoping process to identify the information requirements of the EES process
 - only permitting issues outside the scope to be included subsequently within the EES with the approval of the Department Secretary.
- The functioning of Technical Reference Groups would be improved by requiring that TRG members are sufficiently senior to express the views of the Department or agency. The TRG would develop the agreed timetable for the assessment and approval process and would establish key check points, at which progress against the timetable would be assessed. Members of the TRG would not be allowed to raise issues outside the scope of the EES, except with the approval of the Department Secretary.
- To support the operation of the TRG, memoranda of understanding should be negotiated between the key departments involved in approvals, to provide a framework for handling issues in the TRG that involve inter-dependencies between agencies.

²⁰ A time limit may not be required for the preparation of the EES by the proponent as the proponent has incentives to complete this task rapidly.

- Responsibility for releasing the EES for public review could be shifted from the Minister for Planning to the proponent.

Notwithstanding these streamlining improvements, situations could arise when an unreasonable delay was experienced. To address such situations, the Environment Effects Act could be amended to give the Minister a call-in power which he or she could exercise, as in the Planning and Environment Act, when:

- the matter raises a major issue of policy
- the decision on the application has been unreasonably delayed to the disadvantage of the applicant.

It may be useful for the Government to provide guidance about the meaning of ‘unreasonably delayed’. This might include, for example, if the TRG is unable to reach agreement about the timing of approvals for the assessment and approval process within say, one month of the statutory deadline, or if the process falls one month behind the timing agreed at one of the specified check points.

Pathway 2: Consolidate approval processes

This pathway includes the streamlining improvements of pathway 1. However, rather than providing the Minister with a call-in power, pathway 2 makes a significant additional change by consolidating into the EES process approval processes in all or most relevant Acts. As noted in section 6.4, a large project could require approvals under 15 or more Acts. Hence a shortcoming of pathway 1 is that many decision makers continue to be involved, often with power of veto, with consequent scope for disagreement and delay. While the call-in power helps to address this issue, it can only be exercised after an unreasonable delay has occurred. Pathway 2 makes it less likely that an unreasonable delay will develop in the first place because the assessment process is integrated with project approval, with the Minister as sole decision maker.

While the Minister would draw on the advice of other agencies, as the single decision maker he or she would have stronger incentives to integrate the various approval processes. This would result in major projects being assessed at a State-wide level, with one Minister responsible for integrating the various perspectives that exist within government, but having regard when making decisions to the same criteria that the multiple decision-makers currently consider. To enable the Minister to acquit his expanded responsibilities, the Technical Reference Group would assist the Minister in assessing impacts and making determinations in relation to major projects.

6.8.3 Implementation issues

At least five issues would need to be considered before the pathways were implemented, relating to the choice of pathway, coverage, the nature of

decisions, the approach to strategic assessment, and securing agreement with the Commonwealth Government.

The first issue is the information that the Minister would need, to decide which pathway is appropriate. When a project is at the initial concept stage, it may be so loosely defined that an informed decision about whether it is sufficiently significant to warrant pathway 2 is not possible. If a decision is delayed until project design is locked in, however, the capacity for the assessment process to consider options for improving environmental outcomes is diminished. Guidelines to advise DPCD and proponents about the information that is required to permit a choice of pathway would be helpful. DPCD is in the best position to develop such guidelines, in consultation with proponents.

Second, the Government would need to resolve the number of approval processes that would be incorporated into the EES process under the second pathway, and to which the call-in power would apply under the first pathway. The less comprehensive the coverage, the greater the risk that any time savings would be reduced by a slow approval process that remained outside the integrated approval and assessment process. The Commission believes it is a matter for the Government to decide how many approval processes would be integrated with the assessment process. For example, the Aboriginal Heritage Act might raise particular policy issues.

A third issue is the nature of approval decisions that the Minister makes under the second pathway or after calling in a project under the first pathway. If the decision is absolute, decisions may be delayed until all information is available. Another approach is to provide approval conditional on, for example, the proponent collecting more information to confirm an environmental impact. This would provide less certainty but could accelerate decisions that would enable proponents to carry on with project development.

A fourth issue is the scope for using strategic assessments to provide a setting within which assessment of individual projects take place, as suggested by Monash Energy for clean coal technologies in the Latrobe Valley (section 6.6.1). Strategic assessments would enable issues common to a number of projects to be identified in advance, consequently reducing the additional work (and time) required when a new project was referred. Whether a strategic assessment is useful will depend on factors such as whether it is feasible to identify regional environmental effects of possible projects in the absence of project proposals. This is likely to vary on a case by case basis.

Fifth, as noted earlier the Victorian Government is currently negotiating a bilateral assessment agreement with the Commonwealth Government, in order to allow a proposal to be assessed only once in relation to matters of both

Commonwealth and state environmental significance. These negotiations would need to incorporate the proposed changes to Victoria's processes.

6.9 Costs and benefits

Estimating the benefits

The starting point

The pathways should reduce administration, compliance and delay costs. The cost estimates reported in section 6.5 are a starting point for estimating these benefits, provided that the number, size and complexity of EESs in the future are similar to those covered in the survey. Is this a reasonable assumption?

While 5 EESs are being prepared at the time of writing, only 1 new EES was commenced in 2006-07 and 2 in 2007-08. If these numbers are representative of the future, and if the average duration of an EES were between 18 months and 2 years (assuming that the 2006 reforms reduce time taken below the longer term average), in the future there would be about 3 EESs underway at any time. On the other hand, the number of environmentally sensitive projects subject to EES could be boosted by factors such as the carbon pollution reduction scheme. DPI noted that:

...climate change policies (emissions trading, renewable energy targets, carbon capture and storage legislation etc.) are expected to require very significant investment in energy generation, transmission and distribution projects in the next decade. (sub. 61, p. 11)

Moreover, if the EES process were streamlined (and hence less costly), it may be cost effective to expose more projects to an EES.

Weighing up these factors, the Commission believes it is plausible to expect that the number of EESs being assessed in the future will be between 3 and 5 per year, although variation outside this range is possible.

Benefits from lower administrative costs

ACG estimates that the administrative cost of 5 assessments²¹ is about \$8.8 million per year. If there were 3 assessments per year, the costs would fall to \$6.1 million per year²². The new pathways are unlikely to reduce these costs, unless improvements to the scoping process lead to more targeted environmental effects statements.

²¹ ACG also assumes that there are 17 new referrals each year (ACG 2009, p. 13).

²² This assumes that administrative costs change in proportion to the number of assessments, but that the number of referrals remains at 17 per year.

Benefits from lower substantive compliance costs, excluding delay costs

Implementing the proposed pathways could reduce substantive compliance costs, excluding delay costs (estimated to be about \$4 million per year) by improving the consistency of approvals. Separate administration of the various consents that a project requires creates the risk of a project having different conditions imposed on it that either 'double up' or increase the cost of achieving a desired outcome. To reduce their exposure to such risks, proponents may devote time and resources to informing regulators about such possible risks or may delay applying for particular improvements until project options have narrowed, consequently adding to the time taken to achieve approvals.

The EES process already encourages coordination between approval processes but pathway 2 in particular could take this to a higher level. The Commission has not, however, received any information about the extent of inconsistencies in current approvals and therefore cannot quantify the potential benefits from reducing them.

Benefits from lower delay costs

Reductions in delay costs offer the largest benefits. Both pathways should reduce the time taken to secure assessments and approvals, but how large would the aggregate time and delay cost savings be?

If it was assumed that the pathways removed all delay costs estimated by the Allen Consulting Group survey, the savings from the new process would be between \$13.6 million and \$22.6 million per year, depending on the number of assessments. This, however, may overstate the savings, since the EESs on which these savings estimates are based were commenced before the 2006 reforms, and so may overstate future delay costs to the extent that these reforms shorten the duration of future EESs. It is also possible that the proponents were responsible for part of the delays they reported.

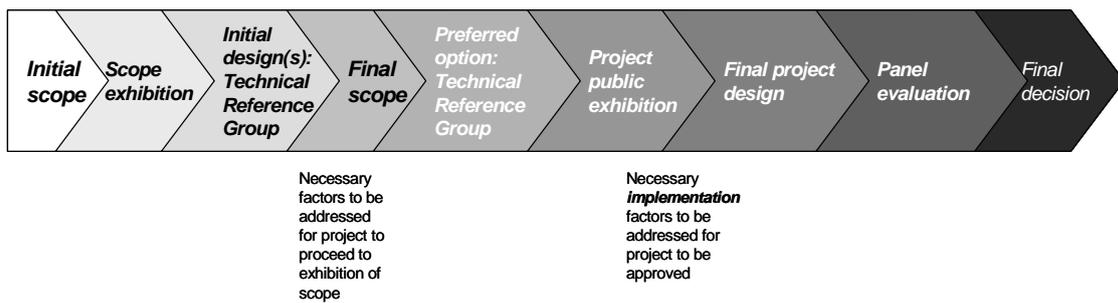
Only one EES has commenced and been completed since June 2006. There is insufficient data to assess by how much the 2006 reforms will reduce the duration of the EES process. An upper bound for the savings from the Commission's proposals is provided by assuming that there are 5 assessments per year, the Commission's proposals remove all delay costs and that the 2006 reforms will not deliver any reduction in delay costs. A lower bound is provided by assuming that there are three assessments per year, that delay costs are reduced by 80 per cent, but that this is equally attributable to the 2006 reforms and the Commission's proposals.

Using these assumptions, the upper bound reduction in delay costs due to the Commission's proposed reforms is \$22.6 million per year, and the lower bound is \$5.4 million.²³

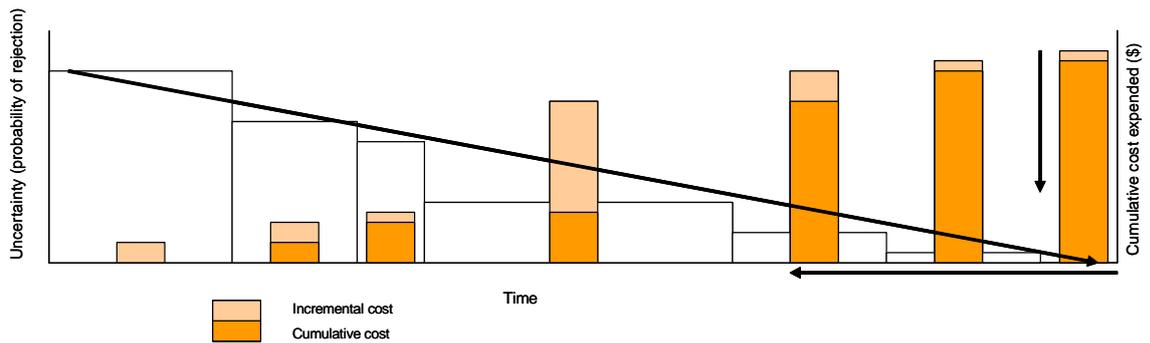
Benefits from reduced uncertainty

The pathways should introduce a more clearly defined process and so reduce uncertainty. The intent is that the scoping process, combined with review check points, enables a progressively sharper focus on the key issues and collection of data about them. As is illustrated in figure 6.2, this will permit a progressive reduction on the issues about which there is genuine uncertainty. The proponent, in the meantime, would normally prefer to delay outlays on the project until uncertainty is lessened, as this avoids the risk that outlays will be wasted, if for example, the assessment creates a need to re-design the project or signals that the project cannot proceed. This benefit, as noted earlier, is difficult to quantify, but may be substantial.

Figure 6.2 Framing the Environmental Effects Statement from a business impact basis



The process should progressively reduce uncertainty and cut unnecessary costs and time.



Source: VCEC

²³ Assuming 3 assessments per year in this case.

Summing the benefits

While the Commission's proposals may lead to savings in all four types of costs, the Commission has only quantified reductions in delay costs, suggesting a range of between \$5.4 million to \$22.6 million per year. This analysis has been necessarily based on assumptions.

The Commission invites comments on the size of potential cost savings from more streamlined assessment processes.

Costs

The impact of the options on environmental outcomes

A key issue is whether the pathways would lead to worse environmental outcomes than the current approvals and assessment process. The first point to note is that the procedural steps required under all options do not differ significantly from current arrangements. The options do not involve changes to requirements in Acts requiring approvals in relation, for example, to the process of assessment, the roles of key advisers and the methodologies to be employed.

The proposed approach could, however, bring about one change that might affect regulatory outcomes. This is because when applying the Acts that involve approvals, decision makers are required to have regard for the objectives and purposes of the Acts. If such Acts give primacy to separable aspects of the environment, this limits the capacity for trade-offs against other economic, social and environmental benefits. Hence it is possible that application of a particular Act could result in a project being refused approval, or different conditions being applied. Under the proposed pathways, the Minister for Planning would be required to make decisions that balance all relevant considerations, because the ministerial guidelines for the environment effects statements require the Minister to apply the principles of ecologically sustainable development. Hence, while it is possible that the proposed approach could result in different decisions in a small number of cases, this should only happen in those few cases where an Act requiring approvals was not guided by the principles of ecologically sustainable development. In such cases, the proposal would result in decisions based more closely on 'triple bottom line' considerations.

Moreover, it is notable that the Allen Consulting Group survey estimates that the EES process only increased compliance costs by \$4 million. This implies that the EES process is not having a large impact on environmental outcomes, which suggests that the proposed processes should not have a large impact on the environment compared with the status quo.

An alternative explanation is, however, plausible; namely, that proponents re-design their projects during the referral stage or even earlier to meet concerns that are raised at that stage or are expected to be raised. To the extent that this

second effect is present, the EES process would be having a significant impact on compliance costs even if the compliance costs that arise during the EES process itself appear small. Assessing these alternative explanations would require detailed case study research.

One way to reduce any concerns about the impact of the options on environmental outcomes is to ensure that all parts of the process are clearly articulated and transparent. For example, the Minister should publish reasons for calling in decisions under option 2²⁴ and for any decisions made in exercising these powers. Similarly, decisions made under the second pathway would also be documented and published.

Additional costs to the Government of operating a streamlined assessment process

If timelines were shortened and enforced, those administering the EES process may need additional resources, given their already extensive roles.²⁵ Whether this would be necessary would require careful assessment, but any additional costs, which are largely increased staff, should be less—possibly considerably less—than \$1 million per year.

Given additional costs of this magnitude, introducing the proposed new pathways appears likely to generate net benefits.

6.10 Assessment against best practice regulatory and institutional criteria

Assessment criteria

Another way to assess the proposed pathways is to review them against characteristics of good processes. Gale (2008) describes characteristics of good environmental processes. Drawing on these characteristics and the best practice criteria outlined in chapter 2, the Commission believes that the following characteristics of processes encourage well-informed and timely decisions:

- transparency
- accountability
- consultation²⁶

²⁴ As already happens when the Minister exercises call-in powers under the Planning and Environment Act.

²⁵ The Environment Assessment Unit in DPCD, for example, liaises with proponents before referral; assesses draft referrals; advises the Minister for Planning on the need for an EES; works with other agencies to assess the scope for aligning processes; project manages an EES if one is required; and briefs the Minister on the outcome of the process and consults with relevant Ministers.

²⁶ Gale (2008, p. 270) expresses this criterion in a slightly different way, as ‘open and balanced decision-making’, relating to the extent to which a policy network can accept new interests and provides relative equality of power in decision making.

- timely assessment and approval processes, bearing in mind the complexity of the issues and the number of parties involved
- consistency and predictability
- evidence-based decision making
- risk-based decision making.

These criteria are consistent with the objective of the EES process, which is to provide for the 'transparent, integrated and timely' assessment of significant projects and to do so in a way that is consistent with the principles of ecologically sustainable development.

Assessment

Transparency

The proposed approach supports transparency in a number of ways:

- There would be no reduction in publication of reports or decisions compared with the current process.
- The current absence of clarity about some timelines would be corrected and reasons for varying timelines published. Subsequent auditing would provide transparent assessment of performance in regard to timelines.
- Reasons for decisions to apply call-in powers (pathway 1) or to use the process under pathway 2 would be published.
- Reasons for approval decisions would be based on published implementation guidelines and the reasons themselves would be published.

Accountability

The increase in transparency under both pathways, with the reasons for all decisions being published, would support accountability. The options would generate considerably more information about agencies' performance in complying with agreed timelines and, would also increase their accountability for timely performance of their responsibilities. Proponents remain accountable for preparing the EES, and making the proponent responsible for releasing the EES would increase its accountability for quality.

Timely assessment and approval processes

The proposed approach would accelerate the assessment and approval processes, but the scoping process and potential for negotiated timelines enables the duration of the process to be varied to suit the complexity and risk to the environment of the project.

Consistency and predictability

The proposed approach would improve the predictability of the EES process, and by so doing reduce the uncertainty facing those who engage in it. It does this by:

- specifying timelines and increasing incentives for adherence to them
- removing the requirement that the Minister approves release of an EES for public review, which is another potential 'hold point' for the EES
- encouraging integration between different approval processes and between the approval and assessment processes, which reduces proponents' exposure to inconsistent requirements and delays.

The proposed pathways would build on the role of the EES process in bringing together different perspectives about a project. The proposed approach increases the responsibility of the Minister responsible for the Environment Effects Act to integrate these different perspectives. The ministerial guidelines specify that the principles of ecologically sustainable development provide the framework for assessment. This means that the Minister would have these principles in mind as he or she assesses the different perspectives of various decision makers and the proponent.

Consultation

There may be concerns that the pathways would deliver less consultation, but this would depend on how the options were implemented. The Minister would only be able to exercise the call-in powers under pathway 1, for example, if the process was 'unreasonably' delayed. The Minister would need to publish reasons for his or her decision, and would be unlikely to call in an issue if there had not been 'reasonable' opportunities for consultation.

Evidence-based decision making

The proposed approach would retain the evidence-based approach to decision making that is a feature of the current processes. Introducing 'check points' to provide opportunities for further focusing during the process is intended to ensure that evidence gathering is focused on the most important issues and decisions.

Risk-based decision making

The two pathways create an approach in which the duration, breadth and depth of the assessments that are undertaken can be varied depending on the project's environmental risks.

6.11 Conclusion

Previous reviews of Victoria's environmental assessment process have led to improvements. However, some options suggested by these reviews have not been implemented and other options are available that would reduce costs to proponents while not compromising the Government's sustainability objectives. Combined implementation of the two pathways would retain the broad structure of the current EES process for most projects, while introducing process improvements and a potential call-in power when there are unreasonable delays. The second pathway would provide an opportunity to use an integrated approvals and assessment process for projects that the Government believes are strategically significant.

Draft recommendation 6.1

That the Victorian Government streamline the environment assessment process by introducing two complementary assessment pathways. The first pathway would build on the current assessment process by:

- **applying time limits to each stage, of which some would be statutory and others negotiated at the start of the process. Opportunities for parallel processing of approvals would be identified. As now, protocols could exist to give advance notice of delays and revisions to the agreed schedule.**
- **encouraging compliance with the timelines by reporting publicly the time taken for each stage of the process and also reasons for any delays, and by requiring an independent agency (such as the Auditor-General) to regularly assess performance against these timelines**
- **improving the scoping process by making the current 'indicative' 50 business days enforceable, assigning responsibility to the proponent for developing the scope (but subject to guidelines and government approval), and permitting the Environmental Effects Statement to include issues outside the scope only with the approval of the relevant department Secretary**
- **improving the functioning of technical reference groups, by requiring that group members have the authority to express the views of their department or agency. Meetings of a technical reference group would coincide with key check points in the Environmental Effects Statement process. The purpose and timing of the check points would be negotiated at the start of the process, but would include checking whether the Environmental Effects Statement scope could be narrowed and identifying key decisions to be made to avoid delays.**

(continued next page)

Members of the technical reference group would not be allowed to raise issues outside the agreed scope of the Environmental Effects Statement, except with the permission of the responsible departmental Secretary.

- negotiating memoranda of understanding among the key departments involved in approvals, to provide a template for how the technical reference group would handle issues
- re-assigning responsibility for releasing the Environmental Effects Statement for public review from the Minister for Planning to the proponent
- providing the Minister for Planning with the power to call in decisions when the matter raises a major issue of policy and the decision has been unreasonably delayed.

The second pathway includes all elements of the first pathway except the call-in power. Instead of this power, it integrates environmental assessment and project approvals, with a single minister responsible for both. This process would be available to projects that the minister determines are strategically significant to Victoria and for which unreasonable delays could seriously reduce the project's benefits for Victorians. The minister would be required to publish the reasons for this determination.

Draft recommendation 6.2

That the Victorian Government assesses the potential to use strategic assessments for regions with common environmental issues.

7 Native vegetation regulations

7.1 Introduction

The first inquiry report by the Commission, *Regulation and Regional Victoria: Challenges and Opportunities* (VCEC 2005a), included a chapter on native vegetation regulation, and made a number of recommendations. In December 2005 the Government published its response to the recommendations which were generally supported. In September 2007 it published a status report on the Government's response which is available on both the Commission's and the Department of Treasury and Finance's websites. This chapter, therefore, refers back to the Commission's earlier work on these issues at a number of points.

The requirement that individuals and businesses obtain a permit from councils to lop, clear or remove native vegetation was first introduced in the late 1980s to stop broad-scale clearing in Victoria. Ongoing clearing then led the Victorian Government to establish in 2002 a new policy framework for managing remnant native vegetation. In a statement called *Victoria's native vegetation management: A framework for action* ('the Framework'), the Victorian Government outlined the overarching policy objective of achieving a reversal, across the entire landscape, of the long term decline in the extent and quality of native vegetation, leading to a net gain—hereafter referred to as the 'net gain objective' (DNRE 2002). Partly as a result of the Commission's previous inquiry (VCEC 2005a), the Victorian Government subsequently implemented a number of changes to reduce uncertainty for business, streamline the controls and improve consistency of implementation.

A number of recent developments have prompted discussion about the impact of Victoria's native vegetation regulations. The recent report of the Commissioner for Environmental Sustainability (CES 2008b) raised concerns about continuing losses in the quantity and quality of remnant native vegetation (chapter 4). The impact of the global financial crisis has also led to a broad rethink about planning policy, as reflected in the Victorian Government's current review of the *Planning and Environment Act 1987* and the Government's public statements about the need to accelerate planning processes to help address the outworking of the global financial crisis. Finally, the recent tragic bushfires across the State have led the Government to announce a Royal Commission into the bushfires, and to indicate its intention to review native vegetation regulations.

7.2 Issues raised by participants

Regulation to limit clearing of native vegetation is designed to ensure that landholders consider a range of public and private benefits when deciding how

to manage their native vegetation. Private benefits include amenity, soil protection, and shade and feed for livestock. Local communities also derive benefits, such as reduced risks of land degradation (erosion, salinity and water quality in catchments), and also amenity (such as the ‘tree-change’ character of regional towns). Vegetation also provides important public benefits such as habitat for threatened species, carbon retention and amenity benefits to the broader community.

The Victorian planning provisions require landholders to obtain a permit from councils to ‘remove, destroy or lop native vegetation’ except in defined circumstances. Most applications are assessed by local councils using a policy framework developed by the State Government. About one-quarter of cases are referred to Department of Sustainability and Environment (DSE) which undertakes the assessment.¹ The aim of the assessments is to achieve an outcome at the individual property level that reflects the particular characteristics and circumstances around the application. Where some clearing is approved, landholders may be required to provide offsets which can be some mix of replanting, protection of on-site vegetation, or purchasing and protecting vegetation on another property.

This case-by-case approach can deliver a benefit in terms of achieving a tailored outcome. However, the best outcome for landholders and the broader community in each case of proposed clearing may depend on a complicated and detailed assessment of private and public benefits. The consequences of this approach are very high levels of complexity, and high administration and compliance costs for councils, DSE and landholders. Another consequence is the potential for perverse incentives, where due to the difficulty of monitoring landholders’ activities, the imposition of restrictions and costs on clearing vegetation alters landholders’ incentives to retain and improve both regrowth and existing vegetation. In addition, different approaches by local councils have led to inconsistent application of the regulations and, equally importantly, led to concerns about the effectiveness of regulation in achieving the Government’s objectives for native vegetation.

The inherent challenges in implementing native vegetation regulations have been recognised for some time. When the Commission last examined native vegetation regulations (VCEC 2005a), it found that the complexity of the regulations and inconsistent implementation had imposed unnecessary uncertainty and costs on landholders. The Government subsequently developed a more strategic approach to the implementation of the regulations, involving, for example:

¹ Based on advice that DSE considered 585 referred permits in 2007-08 (DSE 2008d) out of a total of approximately 2400 permit applications to councils (ACG 2009, p. 20).

- strategic planning tools to identify valuable native vegetation well in advance of proposed developments, to help reduce uncertainty about whether clearing would be permitted
- a streamlined permit application process for councils to use for simple applications, and more information and training for councils
- a revised set of exemptions that attempt to broaden and clarify the circumstances where a permit to clear native vegetation is not required
- a broadly consistent set of local policies (overlays) that were intended to allow councils to protect specific features of the landscape that are important to local communities.

Although some of these initiatives have been in place for a relatively short period, the Commission considers, on the basis of evidence presented to it, that they are unlikely to address the underlying problems that exist with the regulatory and institutional arrangements. The feedback from participants also suggests that the problems of complexity and inconsistent application by councils have not been fully addressed by these changes.

The remainder of this chapter evaluates participants' concerns about key aspects of the regulations and explores opportunities for improvement. The key issues examined are:

- guidance for scoring native vegetation (section 7.3)
- the three step approach (section 7.4)
- rules for determining offsets (section 7.5)
- monitoring and enforcement (section 7.6)
- strategic guidance to businesses (section 7.7)
- role of BushBroker (section 7.8)
- clarity of the objectives underpinning the regulations (section 7.9)
- monitoring and evaluation (section 7.10)
- accountability for outcomes (section 7.11)
- duplication between the Federal and State Governments (section 7.12).

The expected impacts of the Commission's recommendations are outlined in section 7.13.

The Commission's terms of reference do not ask it to consider the relationship of native vegetation regulations (including their implementation) and catastrophic events. The bushfires of 7 February 2009, and over subsequent days, will be considered by a Royal Commission appointed by the Victorian Government. The draft report discusses at length issues with the complexity of native vegetation regulation, including the permit exemptions and offset requirements, and the different approaches to implementation by local councils.

The relevance of these issues to the bushfires is a matter for the Royal Commission.

7.3 Guidance on scoring native vegetation

Applications to remove native vegetation must be accompanied by a variety of information on the site, the vegetation to be removed, topographic information, the steps that have been taken to avoid, minimise or offset the loss of native vegetation and any additional information specified by councils or by DSE if an application has been referred under section 55 of the Planning and Environment Act.

To prepare applications, it is often necessary for landholders to commission expert reports on the conservation significance of the vegetation that is to be cleared, and on required offsets for any clearing. To encourage a consistent approach, DSE (2004) has published guidance on determining the quantity and quality of native vegetation. This guidance is intended to enable native vegetation to be ‘scored’ using a common metric called a ‘habitat hectare’.²

Some participants argued that these guidelines are overly complex, leading to inconsistent application and perverse outcomes for high quality native vegetation. The Minerals Council of Australia, for example, stated that:

Some MCA members have received conflicting advice on determinations and calculations for offsetting and there is significant variation across the regions in interpreting the Framework. It is imperative that the basis of determining habitat hectare is robust and training of government officials removes any inconsistency and personal bias. (sub. 58, p. 38)

The Bendigo and District Environment Council also referred to an example where three surveys of habitat quality were undertaken for the same area and produced different assessments (sub. 7, p. 15).

Environmental consultants who undertake assessments using the quality guidelines indicated in discussions with the Commission that there is scope for simplification, without undermining the overall outcomes. Charles Meredith, for example, argued that the current approach tends to produce scores that are in the middle of the quality range and tends to result in higher scores for lower quality vegetation and scores that are too low for higher quality vegetation. This may result partly from the large number of factors that are assessed, but also relates to methodological issues to do with the threshold values and to the benchmark comparisons. Dr Meredith suggested that it would be a good time to review the

² Essentially, the approach is to determine a ‘score’ for vegetation of a particular type (called an ecological vegetation class) using a benchmark of undisturbed (or pristine) vegetation of a similar type.

methodology through discussions with practitioners both within and external to DSE. In particular, it would be valuable for DSE to be resourced to review the benchmarks, based on the experience that has been gained from using them for some years now (Meredith 2009).

There are trade-offs between the complexity and rigour of the process for scoring native vegetation, the accuracy of the scoring method and the costs of implementing any scoring method. The current guidelines were developed some years ago and with the benefit of accumulated experience and the growth of relevant expertise outside the Government, it is appropriate to re-examine them to ensure that the right balance has been struck between technical sophistication, and useability of the vegetation quality guidelines.

The Commission does not have the expertise to suggest changes to the quality guidelines. It considers, however, that there are sufficient concerns from practitioners and businesses to suggest that the quality guidelines can be simplified. This could reduce costs and timeframes for developing and assessing permit applications, and also reduce uncertainty by contributing to improved consistency. The Commission also considers that the process for revising the guidelines should involve consultation with a range of stakeholders, including environmental consultants, business groups, environmental groups and others with relevant experience of applying the guidelines.

Draft recommendation 7.1

That the Victorian Government simplify the guidance for assessing the quantity and quality of native vegetation. The process of simplification should involve extensive consultation with a wide range of stakeholders.

7.4 Applying the three-step approach

Applicants for a permit to clear native vegetation must provide an explanation of how they have attempted to:

- avoid the removal of native vegetation, where possible
- minimise the removal of native vegetation
- appropriately offset the loss of native vegetation, where required.

This is referred to as the ‘three-step approach’—it is an integral part of the regulations and must be applied when authorities (councils and DSE) are reviewing applications to clear vegetation. How it is applied can have a significant impact on the costs to business of the regulations.

Some participants submitted that councils and DSE had failed to consistently apply an integrated approach involving consideration of the economic,

environmental and social effects of proposed clearing. The Victorian Farmers Federation, for example, argued that:

The VFF believes that the key problem with the assessment process for native vegetation applications is that there is no requirement to undertake a ‘triple-bottom-line’ assessment of the application as opposed to the vegetation removal or even a wider assessment of environmental costs and benefits. A development which may propose a valuable water saving option for a farm, a valuable economic development for the region, and can provide significant offsets as compensation, may still be refused because the native vegetation to be removed is assessed as significant. (sub. 43, p. 8)

The Construction Material Processors Association also submitted that:

Native vegetation assessments only take into consideration the negative impact of removing such vegetation, there is no method to assess the value to the community of any earth resources underneath. (sub. 35, p. 7)

According to Trevor Budge (2009) the first two steps in the native vegetation regulations (avoid, and if that is not possible then minimise), are often not applied in the initial evaluation of a site and its native vegetation and therefore subsequently in the planning permit application process. It was argued that although the proposed extent of native vegetation removal is sometimes reduced through negotiation between the applicant and councils or DSE (as the referral authority), it appears that many if not the majority of applicants approach the issue from the perspective of ‘how can native vegetation removal be offset’, that is, bypassing the three-step process. Furthermore, Trevor Budge argued that it appears in some instances that councils and DSE have accepted offsets as the initial proposal without using the process of avoid then minimise (Budge 2009).

There is conflicting evidence on how the three-step process has been applied, reflecting the case-by-case consideration of permits to clear native vegetation. The Commission was presented with some anecdotal evidence suggesting that economic considerations have on occasion been given insufficient weight when councils and DSE are assessing whether clearing can be avoided or minimised.

In discussions with the Commission, DSE and councils indicated, however, that economic development opportunities are considered in deciding whether clearing can be avoided. The evidence suggests that very few applications to clear native vegetation are rejected.³ In discussions, DSE also indicated that there have been many instances where substantial amounts of clearing have been approved, including areas of higher conservation significance vegetation. The Department

³ Data from the permit tracking system indicated that only 334 of the 2824 applications lodged with councils between 1 July 2007 and 18 November 2008 were rejected, withdrawn or not approved. The majority of permits are approved, subject to conditions (DPCD 2008c).

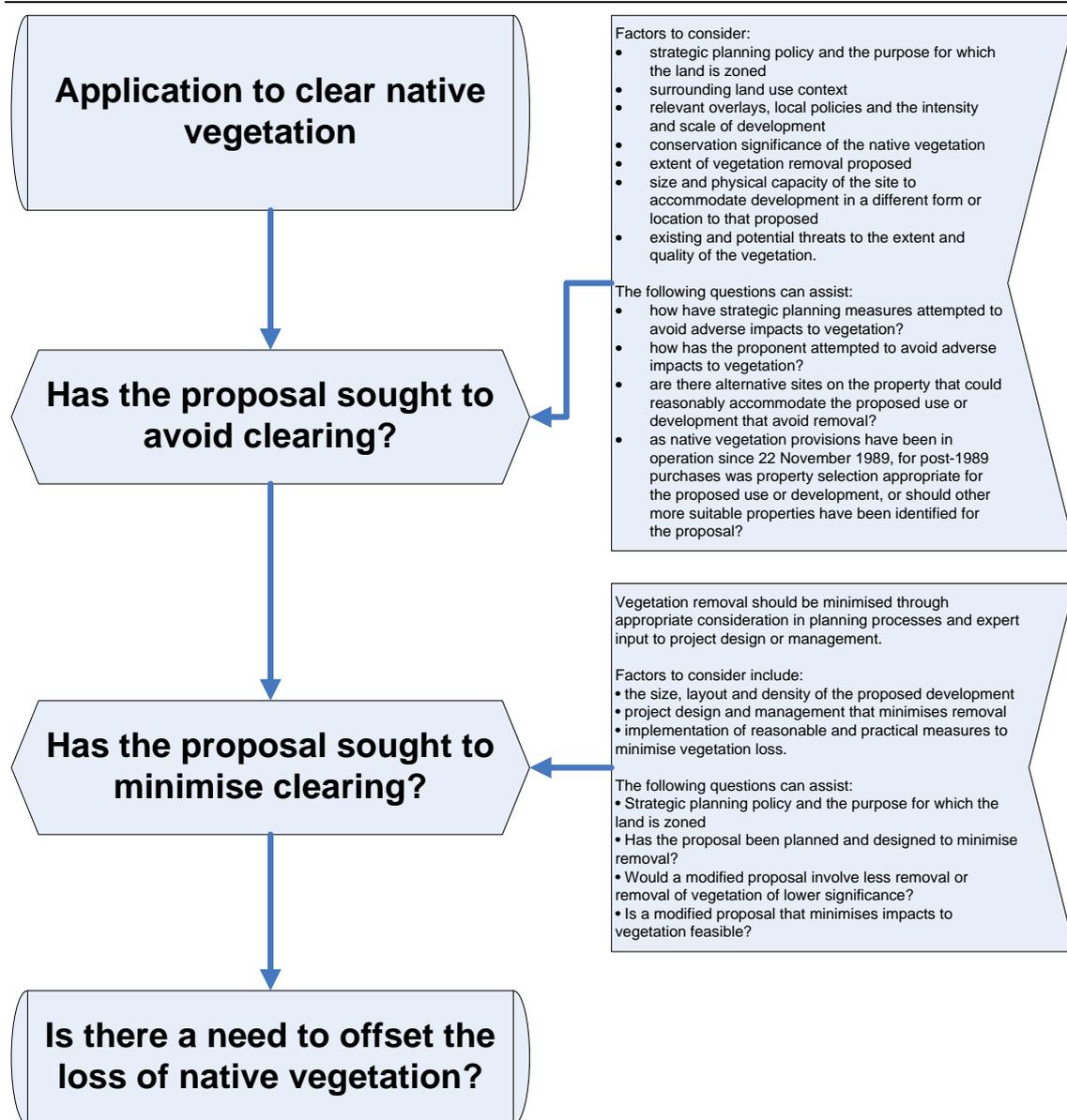
provided a number of examples where large property developments had received approval to clear substantial areas of native vegetation in different areas of Melbourne, subject to providing offsets.

The overall view that emerged from the Commission's consultations was that the three-step process is applied in an inconsistent way by councils. The Commission is aware that some councils have taken an active approach to applying the three-step approach to assessing permits; others have not applied the approach. Differences in councils' approaches may result in uncertainty for landholders about how applications will be assessed. An inconsistent approach may also cause applicants to spend more time and money on the preparation of applications and challenges to VCAT than would be the case with a more consistent approach.

In principle, the economic, environmental and social impacts of proposed clearing should be assessed in applying the three-step approach. Such an approach is consistent with the objectives of the Planning and Environment Act, and the principles set out in the National Strategy for Ecologically Sustainable Development (chapter 13, box 13.1). The available guidance on application of the three-step process is, however, unclear on whether an integrated approach is to be applied.

Assessment guidelines prepared by DSE identify the factors that should be considered in applying the 'avoid or minimise' steps (figure 7.1). A variety of statutory and physical factors are emphasised, such as the purpose for which land is zoned and other relevant planning instruments (for example overlays), the conservation significance of the vegetation, and the capacity of the site to accommodate an alternative design to avoid or minimise vegetation removal. The assessment guidelines do not explicitly require that consideration be given to the economic and social impact of allowing clearing.

Figure 7.1 Guidelines for applying the three-step process^a



^a Shows the factors to be considered in applying the three-step process for assessing native vegetation permit applications.

Source: Based on DSE 2007a, pp. 6-7.

Submissions, discussions with participants and responses to the ACG (2009) survey of businesses, indicated that several types of potential business costs need to be considered in applying the three-step process. Examples are:

- the loss of profitable development opportunities especially on land zoned for residential and commercial development

- costs from re-siting or redesigning developments
- lost opportunities to employ more efficient farming technologies (pivot irrigation, for example)
- potential costs associated with fire and other risks posed by roadside trees and trees near fence lines.

There are several options for encouraging a consistent approach to the assessment of the economic, environment and social effects of clearing. DSE could:

- provide further guidance to councils and applicants, especially in relation to application of the avoid-minimise steps
- supplement existing training and support provided by DSE to councils by developing a peer review system
- assume responsibility for assessing all applications to clear native vegetation, not just those that are referred to DSE by councils
- encourage a ‘community of practice’ among technical staff in DSE, local councils and other practitioners to improve skills, understanding and practice.

The third of these options involves a very significant change in accountability and is examined below (section 7.12). In the absence of such a change in accountability for the regulations, the Commission considers that there is scope to provide improved guidelines and develop a peer review system.

To clarify the application of the three-step approach, the Commission considers that DSE should revise the guidelines to indicate that the economic, environmental and social effects of avoiding or minimising the clearing of native vegetation should be considered. In doing so, DSE should consider the applicability of the principles for ecologically sustainable development (ESD principles). The ESD principles specify, amongst other things, that:

- decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised.

Incorporating ESD principles in the guidance on implementation of the native vegetation regulations would help to address participants’ concerns about the lack of an integrated assessment, and would be consistent with other areas of environmental regulation that reference ESD principles (such as the Planning and Environment Act and the Flora and Fauna Guarantee Act). Recognising the practical difficulties of applying ESD principles to the design and

implementation of environmental regulation, independently of the normal processes, the Commission is also proposing that the Victorian Guide to Regulation (Government of Victoria 2007b) be amended to incorporate ESD principles (chapter 13).

Draft recommendation 7.2

That the Victorian Government provide improved guidance on the factors to consider in applying the three-step approach. The aim should be to require regulators to assess the economic, environmental and social impacts of clearing, so they do not proceed straight to the offset step in the three-step process. When formulating the guidance, the government should have regard for the principles of ecologically sustainable development.

Providing better guidance will only partly address the challenge of achieving more consistent application of the three-step process. A further step, therefore, is for DSE to develop a system for peer review of initial assessments to ensure that the three-step process is applied in a consistent manner. Peer review is an approach used by some regulators to promote consistent decisions and advice.⁴ The development of a peer review system covering councils would complement the training, information and other support already provided by DSE to councils. It would also help to address some of the concerns expressed about the capacity of councils to administer the regulations (see below).

Draft recommendation 7.3

That the Department of Sustainability and Environment (DSE), to improve consistency and address the impact of skill shortages, should develop a system for peer review of decisions on permit applications. Such a system should complement training, information and other support that the DSE provides to councils.

The extent to which improving consistency and achieving more integrated decisions on the application of the three-step process will improve decision making and reduce costs to businesses is difficult to estimate. In some situations, the outcome may be that clearing is avoided or minimised. In other cases, the outcome may be that clearing is permitted in order to facilitate a worthwhile development, subject to provision of offsets. While the impact on clearing activities is difficult to determine, improving consistency and achieving a more integrated decision can help to reduce uncertainty for businesses.

⁴ The Australian Pesticides and Veterinary Medicines Authority (2009, p.3), for example, requires that a selection of technical assessments be peer-reviewed by a senior scientist or more senior staff member.

7.5 Rules for determining offsets

A key feature of the native vegetation regulations is the requirement for landholders to provide offsets for clearing that is permitted. Offsets are described in guidance material in the following way:

A native vegetation offset is an existing area of native vegetation or a proposed revegetation area that is protected and managed in perpetuity to make reparation for the permitted loss of native vegetation through clearing. The relative size of an offset is graded according to conservation significance.

An offset may involve undertaking works or making a payment for certain works to be provided. In either case, an offset should:

- achieve a gain in the quality and quantity of native vegetation commensurate with the native vegetation lost; and
- be secure and on-going. (DSE 2006a, p. 2)

Many participants supported the goals of Government policy and recognised the benefits provided by native vegetation to both landholders and the broader community. Overwhelmingly, however, participants considered that the rules for calculating offsets impose excessive administrative and compliance costs, and time delays on Victorian businesses (box 7.1).⁵ This is clearly an important issue given:

- that DSE considered around 580 referred applications in 2007-08 and responded with ‘no objection’ or ‘no objection, subject to conditions’ (such as provision of offsets) in around 90 per cent of cases (DSE 2008d)
- DSE has argued that as a result of its review of applications around 1000 hectares of clearing was avoided in 2006-07 (sub. 57, p. 21). This represents around 200 habitat hectares, based on a ratio five hectares equals approximately one habitat hectare.
- DSE permitted required offsets of around 1460 hectares in 2006-07 (sub. 57, p. 21)
- based on an average cost of \$100 000 per habitat hectare, the value of the offsets could be around \$23 million (ACG 2009, p. 20)
- costs to business associated with offsets account for a large share (around 57 per cent) of the total cost to business of the native vegetation regulations (ACG 2009, p. 20)

⁵ Issues were also raised about monitoring and enforcement of offset agreements (section 7.6) and confusion about the nature of the outcome that offsets are intended to achieve (section 7.9).

Box 7.1 Issues raised about offsets

The Cement Concrete & Aggregates Australia (CCAA) argued that there are several problems with the offset arrangements relating to the like-for-like requirements, the availability and price of offsets and limited recognition of rehabilitation plans and revegetation more generally in calculating offsets (sub. 25, pp. 7-8).

The CCAA also expressed concerns about the costs of obtaining offsets and proposed that the Victorian Government develop an offset package for businesses wishing to clear native vegetation:

To satisfy the requirements of the Native Vegetation Framework, it is proposed that a coordinated offset supply package be progressed that will provide certainty for extractive development, ease of access to suitable offsets for individual operators and maximum biodiversity outcomes. (sub. 25, p. 14)

Wellington Shire Council raised concerns about the consistency of decision-making concerning offsets:

There is a perceived need to clarify the whole process of assessment of offsets for native vegetation removal. It appears that currently, there is a lack of consistency in decision making and a general lack of understanding of the whole process reflected within the general community. (sub. 29, p. 1)

DPI also raised the issue of the complexity of offset calculations:

The Native Vegetation Management Framework requirements for most earth resources projects are delivered (by DPI/DSE) through the work/operations plan requirements of earth resource legislation, rather than through planning permits granted under the Planning and Environment Act 1987. While this mechanism works quite well, industry concerns with native vegetation assessments and offsets remain, such as complexity in calculating offsets, which often requires the engagement of experts which adds to the costs of the project for the proponent. DPI and DSE are currently preparing earth resources industry-specific guidelines to assist in addressing some of these concerns. (sub. 61, p. 10)

Some participants did not support the provision of offsets. The Bendigo and District Environment Council, for example, argued that:

It has become a habit within Victoria to allow vegetation in areas that are targeted for development to be cleared and traded out into chosen places where developers with large cheque books can buy and protect vegetation that will not damage their development plans. This is what BushBroker helps to facilitate. (sub. 7, p. 9)

Source: Various submissions.

Recognising the costs imposed by offset requirements, the Government has taken a number of initiatives to reduce costs to businesses. These include developing BushBroker (a system for matching potential buyers and sellers of offsets), developing strategic planning tools to signal areas of high conservation significance before land developers seek to purchase land, and developing over-the-counter offsets to deal with simpler cases. Participants considered, however, that there is a need for further action to address concerns about the uncertainty,

cost and delays arising from the offset rules. Before considering potential improvements, the following section outlines some key offset rules.

Rules for determining offsets

To assess the options for reducing the costs of offsets, it is important to understand some of the current rules governing the calculation and provision of offsets.

Many participants considered that the rules for determining native vegetation offsets are excessively complicated, thereby imposing unnecessary costs on businesses. For more complicated applications businesses, therefore, require expert assistance to estimate offsets due to the large number of factors that are taken into account.⁶ The factors influencing the type and quantity of offsets include the type of vegetation to be cleared (defined by the ecological vegetation class or EVC⁷), the amount to be cleared, the habitat score of the vegetation, whether the vegetation provides habitat for threatened species, and the conservation significance of the vegetation (very high, high, medium and low). Further complexity is associated with the wide range of actions that can contribute to offsets for permitted clearing such as:

- credit for prior actions to protect or enhance native vegetation
- enhancing the protection for existing vegetation either on-site or on another site (for example by entering into an on-title agreement under section 173 of the Planning and Environment Act or by transferring ownership of the site to the State)
- making a commitment to maintain vegetation quality, for example by agreeing to forgo uses of the site for grazing and collecting firewood
- agreeing to undertake actions that will improve existing vegetation, such as reducing weeds and pest animals.⁸

To reduce costs and ensure a level of consistency, guidelines specify the quantity of offset generated by various actions. Agreeing to revegetate one hectare of cleared land may, for example, yield gains of between 0.1 and 0.25 habitat hectares. Agreeing to undertake weed and pest animal control on one hectare over a ten year period can generate gains of 0.07 to 0.14 habitat hectares.

⁶ To reduce the need for technical advice on offsets DSE has developed default habitat scores that can be used instead of a full habitat hectares assessment (DSE 2007a, p. 11). Some over the counter offsets may be available (for very small areas or simple cases involving clearing). In estimating the costs of native vegetation regulations, ACG (2009, p. 23) assumed that around 78 per cent of applications were simple (that is, not requiring involvement of an environmental consultant).

⁷ An EVC is a way of classifying and grouping species of flora and fauna that respond in the same way to various environmental pressures. Approximately 300 EVCs have been described for Victoria.

⁸ Regional vegetation plans may also define offset criteria that are different to those in the Framework.

Rehabilitation works by mining and extractive businesses can also count as offsets (although the sector argued that insufficient credit is provided). To obtain credit for these types of actions, applicants may be required to meet additional requirements such as developing an offset management plan, or complying with DSE minimum revegetation planting standards (DSE 2006b, pp. 3-4).

Usually offsets are provided on the applicant's land or another private landholder. In a limited set of circumstances, offsets may be provided on public land:

- Landholders should endeavour to provide offsets on their own site or on another landholder's property (BushBroker can assist in finding third party offsets; see section 7.9).
- If a complying third party offset is not available, applicants may check with DSE or councils to see if there is an area of public land requiring rehabilitation.
- Offsets cannot be located on large parts of the public land estate—namely, on public land that is reserved for the primary purpose of nature conservation, including for example, national parks, wilderness parks and state parks, unless the clearing is in the same reserve or reserve category (DSE 2007a, p. 18).
- If an offset on public land is available, the applicant can pay a fee into the BushBroker trust account to cover the cost of the offset (DSE 2007a, p. 15).

The Commission has examined several additional ways to reduce costs and delays but without undermining the primary objective of offsets—that landholders make reparation for the permitted loss of native vegetation through clearing:

- Providing more flexibility in the rules for calculating offsets.
- Limiting the ability of councils to impose offset conditions that are different to those of DSE.
- Clarifying guidance on the provision of certain offsets, such as those for native grassland and rehabilitation of mine and quarry sites.

Increased flexibility

There are at least three options for increasing flexibility in the provision of offsets:

- (1) Relax the like-for-like requirements.
- (2) Enable offsets to be located in any part of the State.
- (3) Increasing the scope to provide offsets on public land.

One option for reducing the costs of offsets would be to relax the like-for-like criteria, which increase the cost and the time involved in finding offsets by fragmenting markets for offsets.

This option could involve removing the requirement that offsets for the removal of very high conservation status vegetation must be the same EVC (vegetation or habitat type). Offsets could be of any vegetation type (weak version) or of the same conservation status (stronger version). If, for example, an applicant was proposing to clear one habitat hectare of very high or high conservation significance vegetation, the offsets would be either:

- one habitat hectare of any another vegetation type (weak version) or
- one habitat hectare of any very high conservation vegetation (stronger version).

The Commission does not favour these options on the ground that it could jeopardise the key objective of the offset rules, that landholders make reparation for the permitted loss of native vegetation through clearing. The public benefits of vegetation are probably more closely related to the EVC than to the conservation significance of vegetation. Allowing offsets to be of any EVC or any EVC within the same conservation significance could produce an outcome where the public benefits of an offset are insufficient to compensate the community for loss of a particular type of vegetation.

Another way to increase flexibility would be to relax restrictions on the location of offsets. The Framework specifies that offsets should generally be located in the same or an adjacent bioregion.⁹ As some bioregions, by virtue of their location, have fewer adjacent bioregions, this requirement compounds the difficulties for businesses in finding offsets by fragmenting the market for offsets. Allowing more flexibility in the choice of location of offsets would not undermine the objective of offsets in the same way that relaxing the like-for-like criteria would.

In addition, further flexibility could be provided by allowing the provision of offsets on public land, including land that is reserved for the primary purpose of nature conservation. Participants' views about the merits of this option were divided, due to concerns about the potential for private funding to displace public funding for conservation of the public estate.

The Commission is attracted to the option of providing additional opportunities for offsets to be provided on public land. If, however, the Government accepts the Commission's other proposals to provide more flexibility in respect of

⁹ Bioregions are mapping units that share common ecological characteristics within an area of the State. There are 27 bioregions in Victoria.

offsets, there will be less need for public land offsets because landholders will have access to a much larger stock of third-party offsets on private land. In the event that public land offsets were the only feasible option (for instance, because the vegetation to be removed provided habitat for endangered animals), public land offsets may be the only feasible option (or the most environmentally sustainable one).

The mechanism presently used to ensure that payments for public land offsets supplement public funding is the requirement that payments for the provision of offsets on public land must be made to BushBroker. The Commission is advocating that responsibility for managing BushBroker be moved from DSE in order to improve accountability and transparency. This initiative will reduce the likelihood that greater use of public land offsets will displace public funding for the conservation of public land (section 7.9).

The Commission considers, therefore, that there should be additional scope for provision of offsets on public land, subject to appropriate funding arrangements being established. In particular, landholders should have the capacity to provide offsets on public land that is reserved for the primary purpose of nature conservation.

Council conditions on offsets

Under the referral provisions of the Planning and Environment Act and Victorian Planning Provisions, councils must refer to DSE certain permit applications, such as those involving clearing more than 0.5 hectares of vegetation classified as endangered, vulnerable or rare. In practice some councils refer all or most applications to DSE. In 2007-08, DSE considered 585 referred applications and between 150 and 200 other (non-mandatory referred) applications (DSE 2008d). Where an application is referred to DSE, the council remains the responsible authority, but it must take DSE's advice into account when deciding whether to approve or oppose an application. Councils must also adopt any conditions (such as offsets) stipulated by DSE but they can impose additional conditions.

It appears that the capacity for councils to impose additional conditions has added to administrative and compliance costs to business. The Commission was informed of instances where councils required that offsets be provided in the same municipality at additional cost to the permit applicant. Councils might argue that they need a capacity to impose such conditions to enable them to monitor compliance with offset conditions. Councils may also want to impose additional conditions for reasons such as enhancing local amenity. However, such conditions run counter to the objective of achieving the Government's objective for offsets at least cost, because they result in further fragmentation of markets for the supply of offsets. The potential for councils to impose additional

offset conditions means, however, that there is effectively a double veto on permit applications; thereby increasing uncertainty, costs and timeframes for businesses.

The Commission considers that councils should not have the capacity to impose additional offset conditions on permit applications that have been referred to DSE. Such conditions increase the administration and compliance costs to business and, although they may contribute to local amenity, the offset rules as outlined in the Framework relate offsets to conservation criteria, not local amenity considerations. Adopting this approach will necessitate DSE taking on a more active role in monitoring compliance with offset agreements (section 7.9).

Guidance on offsets

Some participants suggested that the administrative and compliance costs of offsets could be reduced by clarifying the guidance on the contribution of rehabilitation towards offsets.

The offset guidelines are ambiguous about the extent to which offsets can be met through rehabilitation of mines and quarries. This is an important issue because the costs of native vegetation offsets are a significant share of the costs of environmental regulation for mining and extractives activities (chapter 5). The CCAA, for example, commented that:

The rehabilitation plan of an extractive operation is not fully recognised in the Native Vegetation Framework. It remains unclear what the offset value of rehabilitation is expressed as habitat hectares. At this stage DPI indicates that rehabilitation works can account for about 10% to 30% of the required offset. CCAA recommends that high quality rehabilitation works should provide for up to 100% of the required offset. (sub. 25, p. 7)

The Commission understands that DSE and DPI are developing guidance on the application of native vegetation regulations to the mining and extractives sectors. In finalising the guidance, DSE and DPI should consult with the mining and extractives industries to ensure that sufficient clarity is provided about the basis for, and limits on, the extent to which rehabilitation counts against offsets.

In conclusion, the Commission considers that there is scope to make a number of improvements to the rules for determining offsets. These improvements are set out in the following recommendation. Section 7.14 discusses the potential cost savings from the Commission's recommendations.

Draft recommendation 7.4

That the Victorian Government, to increase flexibility in the rules for determining offsets, simplify the rules by:

- **enabling offsets to be provided in any bio-region**
- **limiting the capacity for councils to impose additional conditions on offsets when the Department of Sustainability and Environment has already specified the offsets to be provided**
- **increasing flexibility for landholders by permitting offsets on public land, subject to appropriate transparency arrangements**
- **clarifying the offset rules relating to the rehabilitation of mines and quarries.**

7.6 Compliance and enforcement

A number of submissions expressed concerns about inadequate compliance and enforcement of native vegetation regulations. Illegal clearing and inadequate enforcement of offset agreements were the main gaps highlighted.

A number of submissions argued that compliance with and enforcement of the regulations has been lacking. Nillumbik Shire Council (sub. 40, p. 2), for example, expressed a general concern about inadequate enforcement and monitoring of offsets. The Municipal Association argued that significant resource constraints facing councils, as well as features of the regulatory framework, deter councils from undertaking enforcement activities:

Prosecuting offenders who illegally remove native vegetation can be a costly process for councils and therefore a deterrent in many cases. In addition to cost, successful prosecution is limited by:

- the process being time-consuming and cumbersome
- the lack of council resources, particularly time and skills
- difficulty in gathering evidence. (sub. 17, p. 14)

Similarly, Indigo Shire Council stated:

Limited resources within local government lead to little or no monitoring and enforcement of breaches. This resourcing issue illustrates that this tool is not effective, because of this lack of follow-through capacity within local government. (sub. 15, p. 2)

The background to participants' concerns is the finding from the recent report on trends in the quantity and quality of native vegetation (DSE 2008c). The main findings were:

- there is an ongoing net loss in the quantity and quality of vegetation in Victoria estimated at around 4 000 habitat hectares per year
- the net loss is a result of a reduction of around 9 990 habitat hectares on private land (with a margin of error of up to 20 per cent) and a measured increase for public land (of around 5 900 habitat hectares, excluding losses in quality resulting from forest fires)
- around 90 per cent of the estimated losses in native vegetation were due to loss of quality (rather than extent).

The report on trends did not attempt to analyse causes for the observed trends. However, DSE's submission to the inquiry commented that:

On private land the losses in quality of native vegetation primarily resulted from pest plants and animals, inappropriate grazing and removal of firewood, combined with some illegal clearing and clearing that is exempt under the Victoria Planning Provisions. (sub. 57, p. 16)

Concerns about the adequacy of monitoring and enforcement appear to be widespread, as indicated by discussions with participants, and in submissions to the *Land and biodiversity green paper* (Government of Victoria 2008e). The overall extent of enforcement and compliance with the native vegetation regulations is unknown because data on compliance is not collected and reported. However, among participants consulted in the course of the inquiry there was a widespread view that illegal clearing is occurring, and that many individuals and businesses are failing to comply with offset agreements. The latter is a particular concern given the large expenditure on offsets and because lack of compliance with offset agreements undermines the environmental benefits of the regulations, as well as community confidence in them.

In part, concerns about compliance and enforcement reflect the inherent difficulties in monitoring the efforts of landholders, and the lack of skills and financial resources facing councils (section 7.11). Given the lack of information about compliance with the regulations, there is an urgent need for better information and tools to assist councils with monitoring and compliance with the regulations. The Commission recently examined the administration of food safety regulations in Victoria where concerns also existed about inadequate monitoring and enforcement of regulations by some councils. The Commission recommended that the issue be addressed through a combination of stronger enforcement tools (such as on-the-spot fines), and the Government assisting councils to develop monitoring and enforcement strategies, based on principles such as risk based auditing (VCEC 2007b).

If councils retain their current responsibilities for administering native vegetation regulations, there is a strong argument for the State Government taking on a leadership role in assisting councils to improve the monitoring and enforcement

of the regulations and offset agreements. Under any alternative organisational arrangements there will also be a need to develop an enforcement strategy.

Draft recommendation 7.5

That the Department of Sustainability and Environment (DSE) develop a strategy to monitor and enforce compliance with the native vegetation regulations and offset agreements. If councils retain responsibility for implementing the regulations, the Victorian Government should require councils to develop and implement enforcement strategies, with the DSE providing oversight.

7.7 Strategic planning instruments

To address concerns about uncertainty, costs and delays resulting from the implementation of the controls in the growth areas of Melbourne, a number of strategic planning instruments have been developed. Planning instruments include strategic assessments, precinct structure plans and native vegetation precinct plans. The aim of these instruments is to identify environmental constraints such as the presence of native vegetation on private land that should be factored into decision-making at an early stage, rather than once proposed developments have been planned and the proponents have applied for planning permission. Strategic planning instruments provide the opportunity to reduce regulatory burdens by establishing land use conditions upfront, with permits only required for activities outside the agreed plans. Where the process of developing strategic plans involves the Commonwealth, there is also the potential to reduce regulatory burdens resulting from overlap between native vegetation regulations and the Environment Protection and Biodiversity Conservation (EPBC) Act.

Native vegetation precinct plans (NVPP) are being developed for Melbourne's major growth areas in an effort to ensure that vegetation that must be retained or can be removed is identified at the beginning of the development process when rezoning occurs (DSE, sub. 57, p. 20). Once in place, a NVPP allows clearing to occur without the need for a planning permit and, according to DSE, there are over 40 plans in place or being developed (sub. 57, p. 20).

Several additional planning tools are available to councils. Under the planning framework, councils can apply several overlays to protect native vegetation. The function of these overlays is to identify certain features of an area that are to be protected, including native vegetation, coastal or riparian habitat, or aesthetic and broader landscape values. Councils also have the ability to assign a rural conservation zone to land where they wish to protect some aspect of the environment or natural resources. There are concerns about the way that overlays have been applied by councils (section 7.11).

The Federal Government is also promoting a more strategic approach to the management of environmental issues (including native vegetation) under the EPBC Act. The Department of Environment, Water, Heritage and the Arts (sub. 54) identified the capacity to use several tools under the EPBC Act to coordinate Federal and State environmental approvals including, potentially, approvals relating to native vegetation. For example, under s.146 of the EPBC Act, the Commonwealth Minister can agree that a strategic assessment be made of the impacts of actions under a proposed policy, program or plan for the purpose of the EPBC Act. This assessment potentially could be used to satisfy the requirements of Federal and Victorian regulations.

The development of strategic planning tools such as NVPPs and strategic assessment under the EPBC Act has the potential to reduce uncertainty, costs and timeframes for business by:

- giving landholders greater certainty about the presence and conservation values of vegetation before development decisions have been made
- providing a mechanism for coordinating Commonwealth and State approvals to avoid duplication and overlap
- avoiding costs and possible delays in obtaining approvals for permits for activities permitted under the strategic plan.

Strategic planning tools also potentially provide environmental benefits by identifying and protecting areas with high conservation value vegetation, and by specifying accountability for ensuring ongoing protection and enhancement.

While strategic planning tools offer a number of potential benefits to business, they also involve some costs. The process of developing strategic planning tools can take some time and involves some costs due to the need to undertake detailed vegetation mapping.

Strategic planning tools, like native vegetation regulations, can also give rise to perverse environmental incentives. If, for instance, landholders expect that future restrictions may be placed on land uses through a strategic plan, incentives to maintain and enhance vegetation may be undermined. Property developers that purchase and operate farming enterprises on rural land in advance of potential development face such incentives; although no evidence was presented that developers have run down vegetation.

There is the potential also for strategic planning tools to be more prescriptive than the current regulations. The approach to assessing whether vegetation should be retained will influence whether the development of strategic planning tools delivers a net benefit. If the approach adopted only considers the type of vegetation and its conservation significance, overly restrictive conditions may be placed on development of land covered by a strategic planning tool. The process

of developing strategic plans should occur within an integrated framework that considers the economic, environmental and social benefits and costs of retaining vegetation. In this regard, the Commission notes that the guidelines on developing precinct structure plans prepared by the Growth Areas Authority suggest that a ‘net community benefit’ approach is to be used to guide decisions regarding native vegetation retention or removal (GAA 2008, p. 52). The Commission understands that this means the approach adopted involves integrating economic, environmental and social considerations in reaching decisions about native vegetation protection. Adopting such an approach lessens the risk of overly restrictive conditions being imposed on vegetation removal through strategic planning tools.

The potential cost savings to business from adopting strategic planning tools appear to be considerable. DSE and the Growth Areas Authority argued that there will be a significant reduction in the numbers of permits required to remove native vegetation in areas to be covered by precinct plans. It was also argued that further potential savings would result from involving the Commonwealth Government in the development of precinct structure plans and NVPPs.

Although there is not yet sufficient evidence on which to assess the benefits to business of the adoption of strategic planning tools, the Commission considers that the broad approach embodied in tools such as precinct structure plans should be adopted more widely across the State. Although provision exists to use precinct plans and other strategic planning tools to identify important areas of native vegetation on private land, it is unlikely that councils and State authorities such as DSE and DPCD currently have the resources to allow rapid roll-out of a native vegetation mapping exercise to identify priority areas of high value native vegetation.

The Commission recognises that mapping of other areas of the State will occur over time and require significant expenditure by the State Government, with support from the Commonwealth Government. To address the risks that land identified through detailed mapping will be degraded, it is vital that such areas be targeted for support, including through incentive based programs such as BushTender (section 7.9).

Draft recommendation 7.6

That the Victorian Government make greater use of strategic planning tools to improve information for businesses about the locations and types of native vegetation to be protected, and particularly areas of private land containing high value native vegetation where clearing would not be permitted. These areas should become priorities for support under incentive schemes such as BushTender. Detailed mapping of native vegetation of all areas of Victoria should occur as rapidly as resources permit.

7.8 Role of BushBroker

Participants indicated that negotiations with councils and DSE over the provision of offsets have the potential to consume a large amount of staff time, and result in large spending on environmental consultants to identify offset liabilities and identify suitable off-site offsets. One of the causes of the high costs of offsets is that offset buyers may require a certain quantity and type of vegetation, but a single offset provider may be unable to supply the offsets required, or may be unwilling to supply a portion of their offset due to the risk that they will have a small area left over which becomes harder to sell. This is referred to as the ‘offset package problem’ and its effect is to increase the time and transactions costs involved in finding offsets.

In an effort to reduce the time and transactions costs for providers and potential buyers of offsets, the Victorian Government established the innovative BushBroker scheme. DSE explained the intent and use of BushBroker in the following way:

The BushBroker initiative:

- seeks to establish a market for native vegetation offsets by allowing buyers of offsets to discover potential suppliers of offsets;
- deals with the package problem on both sides of the market (e.g. buyers often require a number of different classes of vegetation in an ‘all or nothing’ package and sellers often offer a package of offsets as an ‘all or nothing’ offer);
- discovers prices on a competitive basis; and
- monitors and enforces contractual agreements with suppliers.

Previously, landholders had to engage consultants to conduct costly and time consuming searches of available native vegetation in order to satisfy the offset requirement. BushBroker will reduce the regulatory burden to businesses by reducing the search and other transaction costs associated with satisfying regulatory requirements for native vegetation offsets.

Since the development of BushBroker, DSE has received 221 expressions of interest covering 14 583 ha. In that period, 41 trades have been completed. (sub. 57, p. 21)

Submissions and discussions with participants indicated that BushBroker has helped, but that securing offsets through BushBroker continues to be time consuming. In addition, there are some concerns that the ‘market’ for offsets is too thin, resulting in trades not occurring or occurring at very high prices. This problem could be occurring because potential offset providers are uncertain about the value of their vegetation, and as a result are unwilling to sell their offsets until they can be sure of market values. VicRoads, for example, commented that:

In some instances, it is taking more than eighteen months to procure net gain offsets through the BushBroker scheme, the Government's preferred delivery model. These timeframes are being extended due to a lack of supply of appropriate offsets sites and the complexity and inflexibility of the detail of the Framework (eg. habitat hectare assessment, like-for-like and offset security requirements). In some cases this lack of supply has meant that in some cases suitable offset sites need to be directly purchased from landowners at over \$200 000 per habitat hectare. This can represent a significant impact on project budgets, and the cost is expected to rise as long as demand for net gain offsets continues to outstrip supply. (sub. 50, p. 2)

To address the time and costs involved in using BushBroker, two main improvements were examined by the Commission:

- establishing an electronic market for trading offsets
- contracting with the private sector or not-for-profit sectors to provide BushBroker.

DSE is planning to trial a program to develop an improved market for native vegetation offsets. The program is called electronic BushBroker Exchange (eBX), which is designed to address the problems of high transactions costs and thin markets (chapter 12). The trial is also expected to reveal important information about the operation and effect of the offset rules.

Alternative models for providing BushBroker

In discussions with participants about the effectiveness of BushBroker, some suggested that responsibility for administering the scheme should be shifted to an independent entity. It was suggested that this could be done through a process of seeking expressions of interest in providing the services of BushBroker. Potential providers of the service include conservation organisations, such as Trust for Nature, and private businesses.

Basing BushBroker within DSE made sense in the setup phase. It also was a good way to keep administrative costs low by relying on the administrative, technical and other overhead support functions of DSE. There are now, however, several arguments for separating the functions of BushBroker from DSE:

- There is a potential conflict between DSE's role in designing the overarching policy framework and implementing aspects of the framework such as BushBroker. For example, BushBroker could actively encourage landholders to supply offsets by promoting the high prices that can be obtained, especially for high conservation value vegetation. In advising the Minister, however, DSE must respond to criticism about the costs of offsets, thereby exemplifying the potential for conflicts of interest.

- Increased transparency about the costs and operations of BushBroker could be achieved by separating it from DSE. At present there is little information in the public domain about the activities supported by BushBroker, making it difficult to assess its effectiveness.
- DSE staff may not have the commercial expertise that is needed to efficiently operate what is effectively a real estate service focusing on native vegetation offsets.

The Commission, therefore, considers that the Victorian Government should seek expressions of interest from the business and not-for-profit sectors to provide the BushBroker service to Victorian landholders.

Draft recommendation 7.7

That the Victorian Government seek expressions of interest from the business and not-for-profit sectors to provide BushBroker in its current form.

7.9 Clarity of objectives for native vegetation

In light of the estimated ongoing losses in the quantity and quality of native vegetation in Victoria, some participants questioned whether the State Government’s objectives for native vegetation are sufficiently clear and achievable within the current policy settings.

There appear to be two Government objectives that are relevant.

- (1) The objective for administration of the regulations, particularly offsets. As noted, the stated objective for offsets is that landholders make reparation for the permitted loss of native vegetation through clearing. This objective accords with the Commission’s view expressed in the inquiry into *Regulation and regional Victoria* that landholders wishing to remove native vegetation should bear the cost of any adverse land and biodiversity effects that would result from clearing. However, the Commission also stated that the community should bear the costs of increasing the quantity and quality of native vegetation to enhance biodiversity (VCEC 2005a, p. 178).
- (2) The (broader) net gain objective for native vegetation policy. As noted the goal is to achieve a reversal, across the entire landscape, of the long term decline in the extent and quality of native vegetation, leading to a net gain. This objective is being pursued through a variety of regulatory and non-regulatory approaches.

There appears to be some overlap and potential confusion about these two objectives. The Victorian Farmers Federation, for example, argued that the way offsets are calculated, particularly for vegetation classified as high or very high

significance, suggests that landholders are being required to contribute towards the cost of achieving a net gain:

... the removal of native vegetation and the offsets now required which are far in excess of the amount of vegetation removed is passing the cost of a net gain policy onto landholders. (sub. 43, p. 5)

Similarly, the North Central Native Vegetation Plan appears to suggest that offsets for permitted clearing should deliver a net environmental benefit:

Where clearance of native vegetation is permitted, the net gain approach requires that these losses are more than balanced by gains in native vegetation quality and extent elsewhere. (NCCMA 2005, p. 68)

This linking of the two objectives occurs because the Framework specifies that a multiplier should be applied to offsets for very high and high quality vegetation. Under the Framework, if clearing of very high conservation vegetation is permitted, landholders may be required to provide offsets amounting to two times the permitted clearing (or 1.5 times permitted clearing for high conservation offsets). The Victorian Government explained this approach in the following terms:

The framework takes account of the difficulty of restoring vegetation that is of higher significance. For common types of vegetation, a one-for-one offset is required. Where high value native vegetation is to be cleared, the offset calculated may be greater than the vegetation being cleared, particularly when the offset involves replanting or revegetation. This is because of the high conservation value of the vegetation being cleared and the significant risks that are involved with replanting or rehabilitating vegetation. Indeed, for some very high conservation value native vegetation, it may be necessary to plant several times the number of plants removed to improve the likelihood that a single replacement plant will grow to maturity. (Government of Victoria 2005e, p. 7)

The fact that the multipliers apply to the total area of permitted clearing and are not limited to replanting and rehabilitation proposed as offsets, reinforces the impression that the multipliers were initially designed to achieve a net gain outcome from permitting clearing of higher conservation value vegetation. Also, the approach appears to be based on an assumption (which the Commission is not in a position to validate) that replanting and rehabilitation are much riskier than the option of refusing permission to clear vegetation on private land.

To address concerns that landholders are required to contribute towards achieving net gain through offsets, the Government should clarify its goal for administration of the regulations. An approach is to specify that the objective for private land is to ensure that there is no net loss in the environmental benefits provided by native vegetation (such as land protection and biodiversity benefits). This is consistent with the Government's expressed view that landholders should

be required to make reparations for any loss of public benefits as a result of clearing.

Regarding the broader net gain objective, there is a lack of clarity about what this objective means, the time period over which the goals are to be achieved, and how it is to be achieved. As noted, there is some evidence that there is an ongoing net loss of vegetation extent and quality, suggesting that attaining a net increase in vegetation is not achievable under current policy settings and funding arrangements.

If the Government wishes to achieve the broader net gain policy objective for native vegetation, without imposing the additional costs on landholders, there appears to be no alternative to:

- providing significant additional funding for incentives
- improving the implementation of the regulations by DSE, and councils (if they continue to play a role)
- identifying strategically important vegetation, and improving monitoring and enforcement.

Draft recommendation 7.8

That the Victorian Government clarify the outcome that native vegetation regulations are intended to achieve, by specifying that the objective is to ensure no net loss of environmental benefits as a result of clearing.

7.10 Monitoring and evaluation

When the Commission last examined native vegetation regulation, it discussed the importance of improving the information based on the administration of the regulations and the cost-effectiveness of various instruments for addressing native vegetation issues. There have been several subsequent improvements in the information base, including:

- the release of native vegetation targets for Victorian catchments
- publication of the first report analysing trends in the quantity and quality of native vegetation across the State
- development of a native vegetation permit tracking system recording information on applications to clear native vegetation, including offsets
- publication of further information on the conservation status of various types of native vegetation
- the development of precinct plans and native vegetation precinct plans for areas within Melbourne's urban growth boundary.

Despite these improvements there is still a lack of monitoring and reporting on the efficiency and effectiveness of native vegetation regulations. The Commission has consistently argued that undertaking rigorous monitoring, reporting and evaluation of regulation helps to:

- demonstrate that regulation is making a difference
- build support for the regulations amongst business and community groups
- deal more effectively with adverse events (by providing measures that indicate regulation is effective)
- increase public accountability of those devising and implementing regulations (VCEC 2007a and 2008d).

Ideally, a robust reporting framework for native vegetation regulations would comprise several elements:

- *Objectives*: the framework would specify clear objectives (such as ensuring that clearing does not reduce the environmental benefits of native vegetation).
- *Outcomes measures*: showing the quantity and quality of native vegetation on private and public land at the beginning of the period, the amount of clearing during the year, the incremental amount of offsets provided (and their cost) and the net result.
- *Output measures*: showing the principal regulatory activities that occurred during the period such as the number of applications received, the outcomes (for example, percentages approved, approved with conditions, not approved), the achievement of targets for processing applications, the number of inspections and audits undertaken, rates of compliance with offset agreements, and the number and result of prosecutions for illegal clearing.
- *Input measures*: indicators of the resources devoted to implementing the regulations by government and businesses (such as staff time, purchased materials, and contractors).

Currently, there is insufficient information to enable an assessment of the effectiveness and efficiency of Victoria's native vegetation regulations. Although information is collected through the various mechanisms outlined above, it is not brought together in any systematic way to evaluate the regulations. The Victorian Government should, therefore, develop and publish strategies for undertaking performance reporting and evaluation for native vegetation regulations. These strategies should clearly identify the Government's objectives, identify the body that is accountable for implementing the strategies, and should outline the range of performance measures that are to be collected and reported. There may be merit in an independent body such as the Victorian Auditor-General or the Commissioner for Environmental Sustainability taking on an oversight role in relation to the strategies and their implementation.

Draft recommendation 7.9

That the Victorian Government develop and publish performance monitoring and evaluation strategies to assess the impact of the current regulations and any changes implemented.

7.11 Role clarity and accountability

Some submissions raised issues about accountability of the bodies involved in developing and administering the native vegetation regulations. Specific issues raised included the need for greater role clarity, especially in relation to the policy and implementation functions, and accountability for implementing the planning controls.

Role clarity

Some participants argued that a problem with the current institutional arrangements is that DSE has accountability for both the policy function (advising on and developing the rules and guidance), and key regulatory functions (assessing most major applications to clear native vegetation). The HIA argued, for example, that arbitration and dispute resolution processes are unclear because DSE has the role of both the provider of guidance, and an approval role as a referral authority (sub. 51, p. 8).

Later in this draft report, the Commission outlines why regulatory bodies should not also be responsible for policy functions. The general principle that policy and regulatory roles should be separated has also been accepted by the Victorian Government (chapter 11).

Accountability for implementation

Currently, responsibility for implementing native vegetation regulations is shared between councils and DSE. Other entities such as DPCD, CMAs and the Commonwealth Government (via the Department of Environment, Water, Heritage and the Arts) also have a role. A number of participants expressed concerns about how this demarcation of responsibilities is working. For example, the Minerals Council of Australia (Victorian Branch) commented that:

Whilst we acknowledge this demarcation of responsibilities [between the Victorian Government and councils] there is often very little communication and knowledge sharing across the levels of government to enable efficient, effective and timely decision making. (sub. 58, p. 22)

There are two in-principle reasons for requiring councils to administer native vegetation regulations. First, councils may be better positioned to identify and reflect concerns within local communities. They may also have a better appreciation of the natural assets (including native vegetation) that are valued by

their community. These benefits are significant where local preferences and local knowledge are vital to achieving the State Government's objectives for native vegetation. Second, there may be some efficiencies from councils' involvement because of their role in developing and administering local planning policy. As a result, council involvement has the potential to achieve a more tailored outcome whilst obtaining efficiencies in administration.

Realising these benefits from councils' role in administering the native vegetation regulations is, however, dependent on councils proceeding on the basis of common objectives (including with DSE) regarding native vegetation, on there being clear accountability for the outcomes, and on councils' possessing the required information, skills and resources. The available evidence suggests, however, that these preconditions are not currently being met.

- There is a lack of clear accountability for the outcomes that the regulations are intended to achieve. Whilst the State Government sets the policy framework and state-wide objectives, councils have the lead role in implementation. However, DSE has taken on a greater role in assessing applications, as a result of changes to the referral triggers.¹⁰ This makes it difficult to determine who is ultimately accountable for the overall outcomes, and for the outcomes in specific instances (for an individual permit application).
- The concerns noted previously about the inconsistent administration of the regulations by councils reflect, in part, the different views among councils about the importance of native vegetation issues. Some councils place a high priority on native vegetation issues, whereas others are more concerned about promoting economic development. This is reflected in the divergent views put to this inquiry by councils—whereas some want DSE to take on responsibility for administering the native vegetation regulations, others argued that councils have an important role to play.¹¹
- There are concerns that the implementation of planning scheme overlays, which are used by councils to identify areas of significant native vegetation and provide specific controls for their protection, have often been misapplied or not applied at all, even where significant vegetation has been mapped. For example, Trevor Budge from La Trobe University argued that, in many instances, the application of overlays bears little relationship to the identified and documented conservation significance of native vegetation. As

¹⁰ As noted, DSE assesses around one-quarter of all applications to clear native vegetation.

¹¹ The Wellington Shire Council submitted, for example, that councils are best placed to manage the environmental implications of development, and to implement the native vegetation regulations (sub. 29, p. 4). Indigo Shire Council argued, however, that DSE should be responsible for assessing proposals to clear native vegetation (sub. 15, p. 2).

a result, he argued that in some municipalities there are areas of low significance vegetation that are much better protected by the planning scheme provisions than areas of high value. According to Trevor Budge, this situation has arisen due to a range of factors including: lack of awareness of better mapping information, limited capacity and resources to interpret and apply mapped information, low priority in some councils to keeping this aspect of their planning scheme up to date, the costs to councils and the long timeframes involved in amending planning schemes to implement revised overlay mapping as it becomes available, low priority given by relevant government agencies to ensure that the mapping in the planning schemes is up to date, and limited financial resources and technical skills available to some councils (Budge 2009).

- The capacity of councils to administer the regulations varies. The Municipal Association of Victoria, for example, noted that many councils have limited resources to implement the regulations, resulting in a lack of monitoring and enforcement (sub. 17, p. 14). The Commission previously examined concerns about councils' capacity to implement the regulations (VCEC 2005a, pp. 190-191). Subsequent changes, such as the lowering of the thresholds for referral to DSE, have eased the administrative load on councils. However, this has not addressed other issues such as councils imposing additional conditions on offsets (section 7.5), and the misapplication of overlays to protect certain areas of vegetation.

To improve accountability and clarify roles and responsibilities, the Commission has examined two options, both of which would remove from councils direct responsibility for administering the regulations:

- Allocate responsibility for administering the regulations to DSE and create separate units within DSE to set policy and implement the regulations.
- Allocate responsibility for implementation to an independent regulator, with DSE retaining responsibility for developing policy.

DSE to take on full responsibility for implementation

One way to address concerns about role clarity and accountability is to clarify that the Environment Minister is responsible for the implementation of the native vegetation regulations. This could be done in the Victorian Planning Provisions (by making DSE the referral authority for all permit applications). To ensure there is a clearer distinction between DSE's role in developing the policy

framework and its role in implementing part of the framework, these roles could be more clearly allocated to separate units within DSE.¹²

The option of giving DSE sole responsibility for administering the native vegetation regulations has several potential advantages:

- clarifying accountability for administration of the regulations and the achievement of the Government's objectives for native vegetation
- clarifying responsibility for identifying and protecting areas of significant vegetation (as part of the more strategic approach discussed in section 7.7)
- improving consistency in the administration of the controls due to one entity (DSE) assessing all permit applications
- streamlining the administrative arrangements for businesses as they would need to deal only with one regulator (DSE).

The major limitation of this model is that responsibility for developing policy and implementing it would still rest within DSE. To lessen the ongoing conflicts, new administrative arrangements would need to be developed to ensure greater separation of the policy and implementation functions.

Giving DSE sole responsibility for administering the native vegetation regulations would also impose some transition costs. These costs include devoting additional staff resources to the task of assessing all permits, developing the revised regulatory arrangements and consulting with stakeholders. Although local communities may feel that they would have a reduced say in how the rules are to be applied to clearing in their local areas, this could be addressed to some extent by retaining the scope to advertise and seek public comments on specific permit applications and by providing opportunities for public involvement in the process of identifying significant native vegetation, as part of the more strategic approach discussed previously.

Single regulator model

A more far-reaching option is for the State Government to take native vegetation regulation out of the planning framework by establishing a Native Vegetation Act. The new Act could specify that an existing independent entity, of which the most logical would be EPA Victoria, would be responsible for administering the Act and for reporting to the Environment Minister. The DSE would remain responsible for developing policy, in consultation with councils, CMAs and other

¹² The Commission understands that there are two major groups within DSE with a role in native vegetation regulation. The Biodiversity and Ecosystems Services Group has responsibility for policy and advises on some of the more significant permit applications, such as those requiring Ministerial approval. The regional staff of the Statewide Services Group assess referred applications to clear native vegetation. These two groups report separately to the Secretary of DSE.

groups. The independent regulatory body would be responsible for administration of the Act.

The single regulator model has several advantages and disadvantages compared to maintaining the status quo and the option of DSE assuming the regulatory functions.

The key advantage of the single regulator approach is that clearer and more direct lines of accountability would be established for overall implementation (the responsible Minister), for policy and evaluation (the responsible department), and for the implementation of the controls (the independent regulatory authority). This model would be consistent with the Victorian Government's view, noted above, that regulatory agencies should not have primary responsibility for providing policy advice, and that this should be the role of the relevant government department.

Like the alternative option, creating a single regulator would also help to achieve greater consistency in decision-making, and reduce the number of entities that businesses and other landholders must deal with. This option would also reduce local involvement in implementation, although consultative processes could be established to provide an opportunity for public input to decision-making.

However, moving to a single regulator model (possibly under EPA Victoria) would be more costly to implement than the alternative approach of having DSE administer the regulations, and would take longer to develop. It would, therefore, need to acquire staff with relevant skills to administer the regulations.

The Commission invites input from interested parties on the best way of improving accountability and administrative arrangements for implementing native vegetation regulations.

7.12 Duplication and overlap

Several submissions referred to overlap between native vegetation regulations and Victoria's Flora and Fauna Guarantee (FFG) Act and the Commonwealth's Environment and Biodiversity Conservation (EPBC) Act:

- The FFG Act establishes a process for listing threatened species, potentially threatening processes and excluded species (those posing a serious threat to human welfare). The Act provides for an overarching strategy, action statements, and management plans and agreements. It enables the declaring of protected flora and critical habitats and the issuing of interim conservation orders (prohibition or regulation of particular activities in critical habitats) and compliance orders. The Act also enables the authorisation and issuing of licences or permits to take, trade or keep protected flora and listed fauna.

- The EPBC Act may be relevant to a proposal to clear native vegetation if the proposal has the potential to have a significant impact on a matter of national environmental significance. The Act defines seven matters of national environmental significance for which the Commonwealth has a decision-making responsibility. These matters include nationally threatened species and ecological communities, wetlands of international significance and migratory species. The Department of Environment, Water, Heritage and the Arts may undertake an assessment of a proposal and make recommendations to the Federal Minister about whether or not the proposal should be approved to proceed (and any conditions on approval).

The Municipal Association of Victoria expressed concerns about duplication and overlap involving the Flora and Fauna Guarantee Act and the EPBC Act:

Protection of threatened species in Victoria is covered by the Flora and Fauna Guarantee Act 1988 and the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999. The species listed under the Acts differ and alternative terminology is used in their descriptions which increases confusion within the community when the regulations are triggered. It also makes it difficult for proponents, including local government, to adhere to the requirements. (sub. 17, p. 15)¹³

The World Wildlife Fund considered that the native vegetation regulations are being used to achieve some of the same objectives as the FFG Act due to a lack of resources and unwillingness of Government to implement the Act:

Whilst WWF considers the Native Vegetation Framework to be an important planning and conservation tool, it appears that the Framework is also being used as a surrogate to protect the habitat of threatened species. The Native Vegetation Framework is not designed for this function. The provisions under the Flora and Fauna and Guarantee Act 1988 (FFG Act) were specifically designed for this purpose are not being used in these circumstances and hence planning decisions are not giving adequate consideration to threatened species. (sub. 23, p. 5)

Recently, the Victorian Government flagged the need to re-examine the objectives underpinning the FFG Act, reflecting a view that the objectives of the Act are not achievable. The issue of the relationship between the FFG Act and native vegetation regulations is examined further in chapter 11.

Given the clear potential for overlapping assessments of proposals to clear native vegetation under the EPBC Act and Victoria's native vegetation regulations, it is

¹³ Colac Otway Shire (sub. 11, p. 2) also raised the issue of overlap and inconsistencies between these two Acts.

important that the Victorian Government consult with the Commonwealth Government on any changes to Victoria's regulations arising from this inquiry.

Draft recommendation 7.10

That the Victorian Government address the potential for additional overlap between Victorian native vegetation regulations and the Commonwealth's Environment Protection and Biodiversity Conservation Act by consulting the Commonwealth Government on any changes to the native vegetation regulations resulting from this inquiry.

7.13 Potential cost savings

The Commission's recommendations for improving native vegetation regulations are designed to improve the effectiveness and efficiency of the regulations. Improvements in outcomes for native vegetation are likely to result from:

- improving the guidance on the application of the three-step process to deter applicants and councils from proceeding straight to the offset step
- the State Government taking a leadership role in promoting compliance with the regulations, especially offset agreements
- better mapping of the State to identify areas of native vegetation on private land that are to be retained
- the Government clarifying its goals for native vegetation regulations
- better performance monitoring and reporting to improve accountability and encourage continuous improvement.

The benefits of these changes include more efficient targeting of community resources at protecting and enhancing high-conservation value native vegetation.

The Commission's recommendations are also designed to reduce uncertainty, costs and delays for businesses. The recommended changes include:

- simplifying the guidelines for scoring native vegetation
- limiting the ability of councils to impose offset conditions that are different to those of DSE
- enabling offsets to be provided in any bioregion
- clarify guidance on the provision of certain offsets, such as those for native grassland and rehabilitation of mine and quarry sites
- greater use of strategic planning tools such as precinct plans to identify and protect high quality native vegetation
- opening up BushBroker to provision by non-government organisations.
- improve performance monitoring and reporting to, amongst other things, improve the efficiency of administration of native vegetation regulations.

The Commission was unable to estimate cost savings to business from these changes, partly because some of the likely benefits include reduced uncertainty from greater consistency in the application of the controls. There will also be some costs to businesses resulting from implementing the Commission's recommendations such as more refusals of applications to clear native vegetation (for example, where vegetation has previously been identified as a priority for protection), and also costs to business arising from better monitoring and enforcement of offset agreements. The option of establishing a single regulator, as canvassed in section 7.11, may also impose additional costs.

The Commission seeks feedback from participants on the potential savings and additional costs to business arising from the Commission's recommendations.

8 Streamlining the Environment Protection Act and related regulations

8.1 Introduction

The *Environment Protection Act 1970* (Vic.) (EP Act) established the Environment Protection Authority Victoria (EPA) whose purpose is to ‘protect, care for and improve our environment’ (EPA 2008a, p. 2). The prime rationale for legislation such as the EP Act is market failure arising from externalities and public goods (chapter 2). Without a mechanism to determine and allocate the costs of pollution, businesses would tend to discharge or emit more pollution than is considered desirable from society’s point of view (VCEC 2005a, p. 196).

The EPA is generally well regarded as an environmental regulator by many businesses and other government entities, as reflected in submissions and consultations. Its approach to environment protection has evolved since the EP Act first came into effect. Established as an ‘environment watchdog’, the EPA was given powers to regulate pollution at source and to prosecute polluters who breached their licence conditions, provisions in the EP Act or its policies and regulations. The original EP Act created a regulatory framework largely in the ‘command and control’ tradition but, over time, the EPA has adopted a more cooperative approach as exemplified by voluntary agreements with business. More recently, the EPA has adopted corporate objectives which include, among others, increasing resource efficiency and tackling climate change (EPA 2008a, p. 2).

This chapter explores options for improving the operation of the EP Act and related regulations whilst still meeting the Victorian Government’s objectives. The chapter outlines recent changes to the legislation and regulations (section 8.2). It then identifies and examines a number of specific options for improving and/or streamlining current regulation (sections 8.5–8.8). The focus is on identifying options which have the potential to offer:

- significant cost savings to business (such as reduced compliance costs¹) without compromising the Government’s environmental objectives and/or
- additional environmental or other benefits to business, government and the community.

¹ In this chapter, the term ‘compliance costs’ is used to refer to administrative costs and substantive compliance costs (including delay costs) collectively.

The estimated cost savings from implementing these options are presented in section 8.9.

Institutional settings are also important to the effectiveness of the EP Act and related regulation. Institutional issues relating to the EPA and other environmental regulators are examined in chapter 11.

8.2 Recent changes to the Act and regulations

The Government has introduced a range of changes into the EP Act and its subordinate legislation in recent years. The EPA has also implemented some administrative reforms. Key initiatives are summarised in table 8.1. While some initiatives have reduced the regulatory cost on business, some new obligations have also been imposed.

Table 8.1 Recent initiatives, 2006–2008

<i>Initiative</i>	<i>Nature of initiative</i>
Scheduled premises: works approvals and licensing	Simplified works approval and licensing system. Reduced the number of premises required to be licensed by the EPA.
Prescribed industrial waste management	Introduced increased levies for the disposal of prescribed industrial waste to landfill and different levies reflecting the level of hazard. Introduced an online system for lodging landfill levies.
Corporate licensing	Enabled the EPA to amalgamate two or more licences for different premises held by the same licensee into a single corporate licence. Licence amalgamation is voluntary.
Sustainability covenants	Introduced voluntary agreements between the EPA and organisations to explore new ways of reducing the environmental impact and increasing the resource efficiency of organisations' products and services.
Environment and resource efficiency plans	Introduced environment and resource efficiency plans for large industrial and commercial consumers of energy and water in Victoria.
Enforcement instruments	Changes to pollution abatement notices and clean up notices. Introduced enforceable undertakings.

Sources: DSE, sub. 57; EPA 2008a; 2008i; 2009a.

Works approvals and licensing are key instruments for environment protection under the EP Act. This system has been simplified under the Environment Protection (Scheduled Premises and Exemptions) Regulations 2007. Revisions to the risk-based classification have resulted in fewer sites requiring works

approvals and/or licensing. The remaking of these regulations reduced the number of EPA licences by 171. The EPA has estimated that these changes will reduce administrative costs by \$2.9 million a year (EPA 2008a, p. 15).

The increasing focus of the EPA's regulatory attention on sites that pose significant environmental risk is a notable achievement and part of a longer term trend. In early February 2009, there were 685 EPA licences compared with about 1400 licences on issue in the mid 1990s and around 10 000 licences on issue in the late 1970s (EPA 2009f; 1996, p. 12).

Recent amendments to the EP Act introduced increased levies for the disposal of prescribed industrial waste (PIW) to landfill and differential levies to reflect the level of hazard posed by different classes of waste. PIW is generated from activities such as manufacturing and property development. According to the EPA (2007h, p. 13), these changes are intended to accelerate the drive towards waste avoidance, reuse and recycling and lend support to programs that help industry reduce waste disposal.

The relatively new instruments of corporate licensing and sustainability covenants illustrate the EPA's partnership approach to environmental management. While corporate licences set out compliance requirements, they can also include voluntary commitments developed between the EPA and licensees to deliver outcomes that are beneficial to the environment and business. Corporate licences also reduce administrative costs; for example, Goulburn Valley Water stated that 'having only one licence to administer means a significant reduction in paperwork' (EPA 2007f, p. 2).

In addition, a significant number of organisations have developed sustainability covenants in partnership with the EPA. The Department of Sustainability and Environment (DSE) reported that 20 organisations have sustainability covenants with the EPA in operation (sub. 57, p. 26). These organisations include, for example, the Australian Industry Group, the Plastics and Chemicals Industries Association and the Victorian Employers' Chamber of Commerce and Industry (EPA 2009a). According to DSE, these covenants enable companies or organisations to receive statutory recognition for leadership and commitment to the environment (sub. 57, p. 26).

Instruments such as corporate licensing and sustainability covenants seek to improve the environmental performance of businesses and organisations beyond minimum statutory requirements. Other 'beyond compliance' instruments have included accredited licences and environment improvement plans (EIPs), demonstrating the EPA's capacity to develop innovative approaches.

A further major initiative has been the introduction of environment and resource efficiency plans (EREPS). From 1 January 2008, all industrial and commercial sites in Victoria that use more than 100 terajoules of energy and/or

120 megalitres of water in a financial year need to prepare a plan to improve resource efficiency (EPA 2008d, p. 1). The EREP program has imposed new requirements on these businesses—they are required to register with the EPA, assess their resource use, develop a plan, implement all actions with a three-year or better payback period, and report on the outcomes.

8.3 Scope for cost savings and other improvements

In seeking to identify potential savings in compliance costs, it is useful to have a broad idea of the magnitude of the compliance cost imposed on business by the EP Act and related regulations. The Commission engaged the Allen Consulting Group (ACG) to assist it in developing aggregate estimates of the most significant environmental regulations in Victoria. This work estimated that scheduled premises and prescribed waste regulations under the EP Act impose about \$130.6 million a year in compliance costs, with prescribed waste regulations accounting for most of these costs (ACG 2009, p. 12).

The EPA has already implemented a range of measures to reduce the administrative or ‘red tape’ cost on business, such as the reduced number of EPA licences, the upgrading of the National Pollutant Inventory (NPI) reporting system and the introduction of electronic landfill levy submissions (EPA 2008a, p. 15). Moreover, it plans to introduce a number of other measures to reduce administrative costs even further—the most significant include the rollout of corporate licensing, simplifying licence reporting and streamlining the PIW management framework (DSE, sub. 57, pp. 19–20).

The Commission recognises the considerable effort that the EPA has expended on identifying ‘red tape’ reductions. Taking this work into account, together with input from inquiry participants and the Commission’s own research, the priority areas for closer examination include:

- scheduled premises regulation (works approvals and licensing)
- PIW regulations
- EREPs
- environmental offsets.

The works approval and licensing system and PIW management are examined in this chapter and specific options are proposed. EREPs are examined in chapter 9 and environmental offsets in chapter 12.

8.4 Scheduled premises regulation: works approvals and licensing

The EPA assessed the environmental impacts of more than \$350 million worth of proposed works and monitored around 740 licences in 2007-08 (EPA 2008a, p. 2; 2009f). Ensuring that works approval and licensing processes are efficient is therefore important. Under the EP Act, premises that have potential for significant environmental impact are subject to (1) works approvals for the construction and modification of facilities or processes and/or (2) licences for operating conditions, waste discharge limits, monitoring and reporting.² These instruments place direct controls on the levels of discharge of waste matter from a premises or site.

According to the regulatory impact statement (RIS) on the Environment Protection (Scheduled Premises and Exemptions) Regulations 2007, key benefits of the works approval and licensing system include providing businesses with a 'social licence to operate', ensuring a level playing field regarding environmental practice, and driving internal environmental improvement opportunities. The works approval and licensing system can also reduce clean-up costs and retrofitting costs. Benefits to the community include protection of the environment for current and future use as well as non-use values such as species and forest preservation (EPA 2007b, pp. 58–62). Although there are several potential benefits of this system, the key benefit arguably is to ensure compliance with environmental standards.

At the same time, the works approval and licensing system imposes costs on business and government. ACG (2009, p. 12) estimated the compliance costs at about \$36.3 million a year. The EPA estimated the costs to government at around \$15.1 million a year (EPA 2007b, p. 69).

8.4.1 Participants' concerns

Some submissions questioned whether works approval should apply in certain circumstances, such as upgrades to existing facilities which improve environmental outcomes. SITA Environmental Solutions stated that:

Operators of existing 'Scheduled Premises' ... seeking to upgrade their facilities with new and improved technology are required to apply for Works Approvals through a full public process to make improvements when it will lead to a better environmental outcome. ... The issue is not when the changes are seeking an

² The key elements of the works approval and licensing system are outlined in a supporting paper on regulatory and institutional arrangements published separately on the Commission's website (www.vceec.vic.gov.au).

expansion of the operation but simply improving the environmental performance. (sub. 3, p. 2)

Several inquiry participants commented on delays in the works approval process. Nexus Energy Limited reported that it had been exposed to delays in the approvals process when an EPA works approval was appealed to the Victorian Civil and Administrative Tribunal (VCAT):

By the time VCAT handed down its decision, the start of construction of the plant upgrade was delayed by about six months. Six months production from the upgraded plant is expected to be worth A\$35 million. This combined with the increased cost of capital of about A\$50 million over the period results in a significant impact on a small to medium company. (sub. 9, p. 3)

The Minerals Council of Australia (Victorian Division) (MCA) reported an example where a company received a works approval after a period of more than a year (sub. 58, p. 33). According to Yarra Valley Water, there are opportunities to improve the efficiency of the works approval process (sub. 22, p. 8).

The MCA also contended that, when a new discharge licence is required due to a revised work plan or the planning permit process, the EPA approval process becomes excessively demanding, complex and lengthy. It argued that the process can result in perverse outcomes for the environment and businesses (sub. 58, pp. 33–34).

In addition, some inquiry participants pointed to difficulties in obtaining accredited licences (for example, SITA Environmental Solutions, sub. 3, pp. 2–3) and the prescriptive nature of standard licences which may have resulted in additional compliance costs.

8.4.2 Broad approaches

Having considered participants' concerns and undertaken its own research, the Commission has identified a number of approaches (possibly complementary) to improve the works approval and licensing system, including:

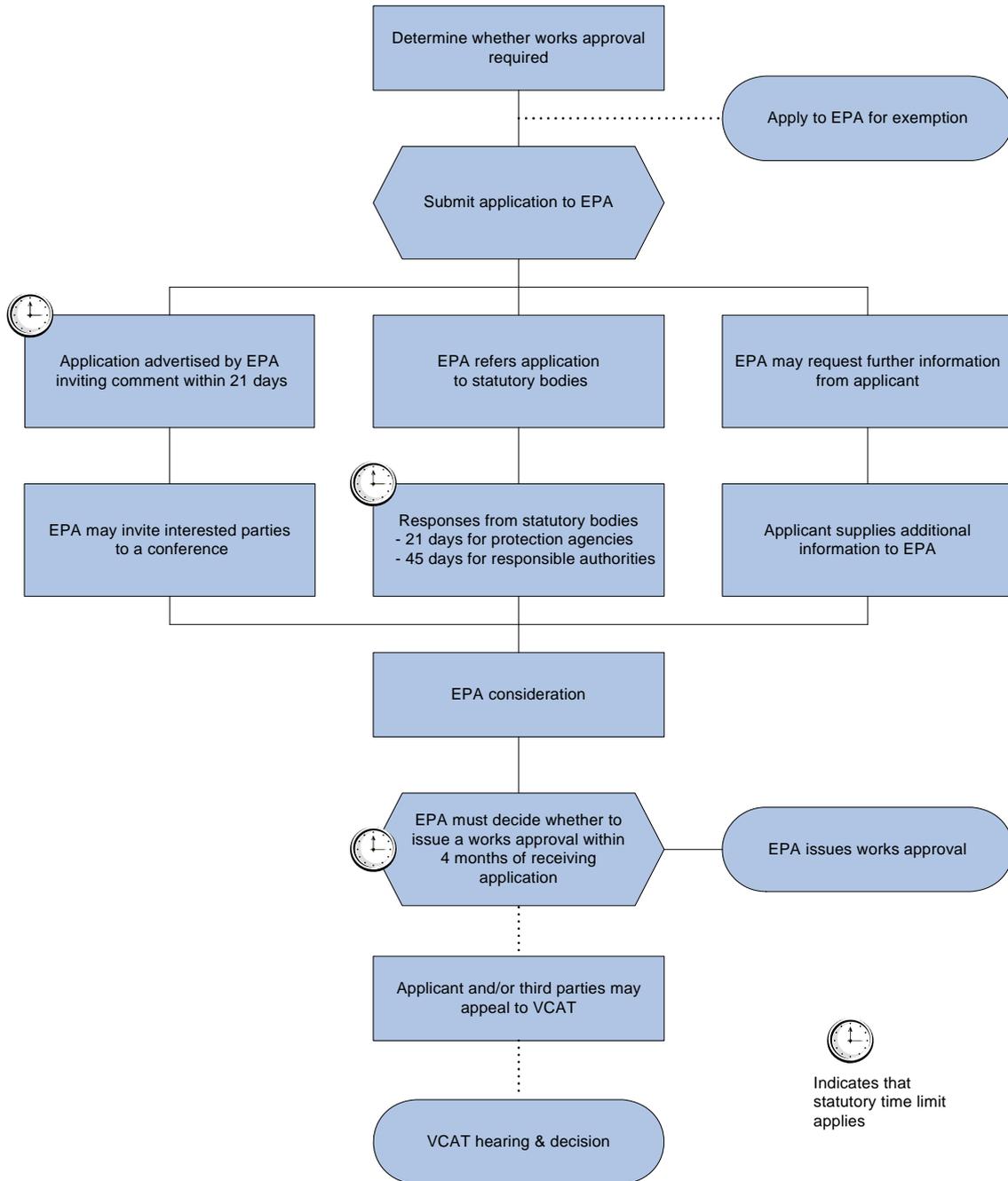
- streamlining the works approval process
- improving the accredited licensee system
- accelerating the rollout of corporate licences
- reviewing the conditions of standard licences.

8.5 Works approval process

The works approval process allows the EPA and the project proponent to resolve potential pollution problems and finalise waste discharge, storage and handling requirements before a project or operation commences (EPA 2008e).

The process also enables third party concerns to be considered through various mechanisms. The steps in the works approval process are shown in figure 8.1.

Figure 8.1 Works approval process: key steps ^a



^a A protection agency is a body that has powers or duties under any other Acts with respect to the environment in Victoria. A responsible authority is defined in s. 13 of the Planning and Environment Act.

Sources: EPA 2008e; EP Act.

Key statistics about works approval applications in recent years are shown in table 8.2. Most applications were finalised (that is, received approval) by the EPA, with only a small number of decisions being appealed to VCAT.

Table 8.2 Works approvals, key statistics, 2003-04 to 2007-08

	2003-04	2004-05	2005-06	2006-07	2007-08
	(no.)	(no.)	(no.)	(no.)	(no.)
Applications received	78	73	74	81	60
Exemptions ^a	7	5	13	11	14
Section 19B(2) non-compliance ^b	2	4	2	4	3
Applications referred ^c	78	68	65	76	58
Conferences held	1	1	6	2	6
Section 22 information request ^d	20	15	29	31	23
Section 67A agreement ^e	23	18	19	19	25
Applications rejected/withdrawn	0	5	9	5	2
Applications finalised	75	68	65	74	56
Appeals to VCAT	1	6	4	4	3

^a Excludes exemptions for accredited licensees. ^b Section 19B(2) of the EP Act states that the EPA shall not deal with an application that does not comply with the requirements in s. 19B(1) of the Act. ^c Applications referred to protection agencies and/or responsible authorities. ^d Section 22 enables the EPA to require the applicant to supply any information, plans or specifications that the EPA considers necessary and relevant to the consideration of the application and/or to participate in a course of study to enable the EPA to assess the likely effects of any discharge, emission or deposit of waste into the environment. ^e Under s. 67A, applicants and the EPA can agree to timeframes which exceed the statutory time limit of four months in s. 19B(7).

Sources: EPA 2009f; EP Act.

Having examined the works approval process, the Commission considers that there is potential to make procedural improvements by:

- refining the triggers for works approvals
- exempting pre-approved standard technologies from the process
- reducing the statutory timeframe for assessing works approval applications
- public reporting of performance against statutory and target time limits
- adopting a more strategic approach to assessing works approval applications, coupled with improved guidance and advice to applicants
- better integration with the environmental effects statement (EES) process.

8.5.2 Refining the triggers for works approvals

The triggers for works approval are set out in s. 19A of the EP Act. In essence, any proposed works at a scheduled premises requires a works approval if the proposed works is likely to cause:

- (1) an increase or alteration in the waste discharged or emitted from, deposited to or produced at the premises
- (2) an increase or alteration in the waste (or substances that are a danger to the environment) which are reprocessed, treated, stored, contained, disposed of or handled at the premises
- (3) a change in any method or equipment used at the premises for the reprocessing, treatment, storage, containment, disposal or handling of waste (or substances that are a danger to the environment)
- (4) a significant increase in the emission of noise or a state of potential danger to the quality of the environment.

As currently expressed in the Act, the triggers for works approvals are quite broad and open to interpretation. The current triggers provide the EPA with significant discretion as to when a works approval is required. The first and second triggers would require a works approval where a proposed works is likely to cause an alteration in the waste discharged—even if that alteration were to significantly reduce the toxicity of the waste. Moreover, the third trigger is technology or process focused and would require a works approval even when a change in equipment or method would substantially reduce the volume and/or toxicity of waste discharged to the environment.

To some extent, the EPA has sought to clarify the triggers, stating that ‘any alteration, modification or addition which is likely to increase the discharge of waste requires a works approval’ (EPA 2008e; 2008f, p. 2). The EPA reported that, while no specific data are kept on this issue, there are few works approvals each year that involve a reduction in environmental impacts, with the possible exception of printers and wastewater treatment plants (EPA 2009k).

Nonetheless, where an alteration or upgrade to existing premises will reduce or maintain the same level of discharge to the environment, it would seem unnecessary for the upgrade to be subjected to the full works approval process (although there is still a need to monitor the level of discharge or emissions following the upgrade). If the process is invoked in such cases, it would impose additional costs on business and government for little apparent gain. SITA Environmental Solutions reported that the works approval process applying to upgrades can result in additional time and costs (sub. 3, p. 2). These costs may deter or delay businesses from investing in new technologies or methods of production that could potentially reduce harmful environmental impacts. Thus,

some opportunities of achieving environmental benefits whilst improving business operations may be lost or postponed.

It is possible that the EPA, to identify and manage community concerns, wishes to expose most proposed works to public scrutiny—even if some of these works would reduce the level and/or toxicity of discharges to the environment. The Commission was told that, in some cases, licensees discuss proposed upgrades with the EPA in the hope of seeking a licence amendment rather than having to go through the full works approval process. In its submission, Yarra Valley Water argued for better descriptions of when a works approval is required for upgrade works. It suggested that additional guidelines be developed which would enable works compliant with the guidelines to be undertaken without a requirement for a works approval (sub. 22, p. 9).

The Commission considers that, where upgrades to existing premises would result in a reduction in (or the same level of) discharge of waste to the environment, these works should not be subject to the full works approval process. The triggers for works approvals in the EP Act should be redrafted to remove this anomaly. Where upgrades are expected to improve environmental outcomes at EPA licensed premises, licences should be amended to reflect the new operating conditions (including discharge limits and/or quality requirements) and monitoring conducted following the upgrade to ensure that the facilities are operating according to the revised conditions. This change is estimated to generate savings of about \$400 000 a year in compliance costs.

Draft recommendation 8.1

That the Victorian Government redraft the triggers for works approvals in the *Environment Protection Act 1970* so works approvals are not required for premises upgrades that will result in the same or less environmental harm (to be defined as either the same or lower level of waste discharged, or the same level of discharge, but less toxic). Where appropriate, licences should be amended to reflect the new operating conditions.

8.5.3 Exempting pre-approved standard technologies

Yarra Valley Water suggested that the efficiency of the works approval process could be enhanced in a number of ways, including by establishing lists of approved technologies which are commonly subject to the works approval process (sub. 22, p. 9).

For some works using standard technologies, it may be unnecessary to subject these works to the full work approval process—if that technology has been approved on a previous occasion. Some ‘off-the-shelf’ or standard technologies, such as certain printers, septic tank systems and recycled water treatment plants,

have proven performance characteristics relating to the volume and quality of discharge or emissions. If the EPA were to assess the same, proven technology multiple times, this would simply result in additional and unnecessary costs for government and business. Concrete batching plants are an example of an industry that uses standard technology and, for this reason, the industry was removed from the scheduled premises regulations in 2007 (EPA 2009k).

A possible approach is for the EPA to develop and maintain lists of pre-approved standard technologies which would be exempt from the works approval process. Businesses proposing to use a pre-approved technology would need to apply to the EPA for an exemption. Where a standard technology is being deployed in a location potentially affecting existing residents and industry, there could still be grounds for requiring a works approval. For instance, some standard technologies may create unpleasant odours or emit noise.

An example where regulators maintain lists of approved technologies is found in the healthcare sector. The Therapeutic Goods Administration (TGA) assesses the safety and efficacy of new therapeutic goods. Products assessed as having a higher level of risk (including most prescription medicines) are evaluated for quality, safety and efficacy. If approved by the TGA, these products are included on the Australian Register of Therapeutic Goods (ARTG) as ‘registered’ products. Products assessed by the TGA as lower risk are evaluated for quality and safety. If approved by the TGA, they are included on the ARTG as ‘listed’ products (PC 2005b, pp. 185–86).

The Commission sees merit in this type of approach. The EP Act should be amended to enable the EPA to develop and maintain lists of pre-approved standard technologies which are exempt from the works approval process. The lists should be posted on the Authority’s website. This is likely to result in some cost savings for business and the EPA. This is estimated to result in savings of about \$400 000 a year in compliance costs.

Draft recommendation 8.2

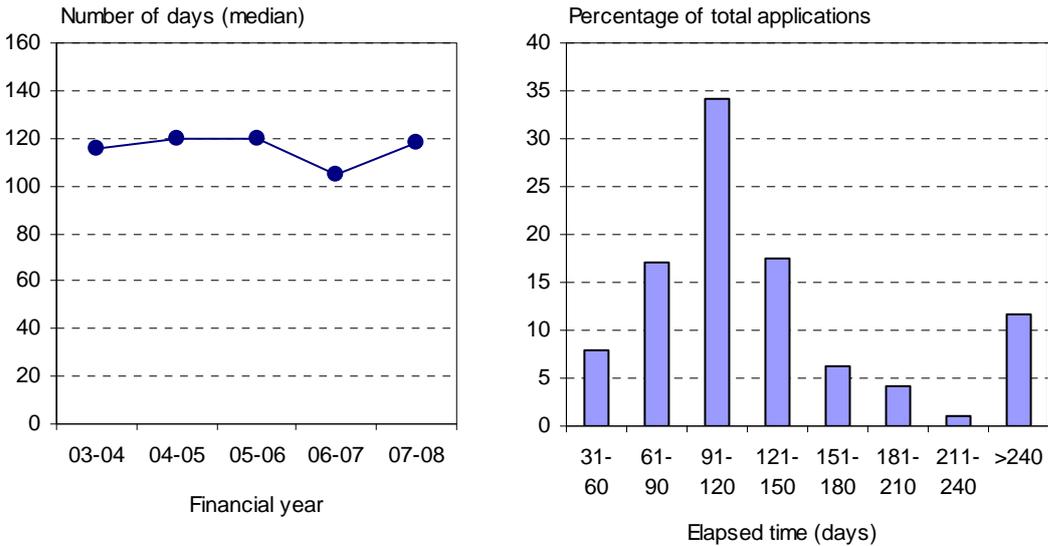
That the *Environment Protection Act 1970* be amended to enable EPA Victoria to develop and maintain a list of pre-approved technologies that are exempt from the works approval process. For a technology to be included on the list, EPA Victoria must assess it to have demonstrated and predictable environmental impacts. The lists should be posted on the EPA Victoria website.

8.5.4 Reducing statutory time limits

For businesses seeking approval for new works, it is the elapsed time to obtain a works approval that is most relevant to them. The median elapsed time taken to

process a works approval application was just under 120 days over the period 2003-04 to 2007-08 (figure 8.2). Elapsed times are influenced by a number of factors including the quality of initial applications, the complexity of proposed works, requests for further information by the EPA, whether concerns are raised by referral bodies and/or third parties, and consideration of applications by the EPA.

Figure 8.2 **Elapsed times, works approval applications, 2003-04 to 2007-08^a**



^a The elapsed time is measured as the number of calendar days from the date an application is received to the date a decision is made.

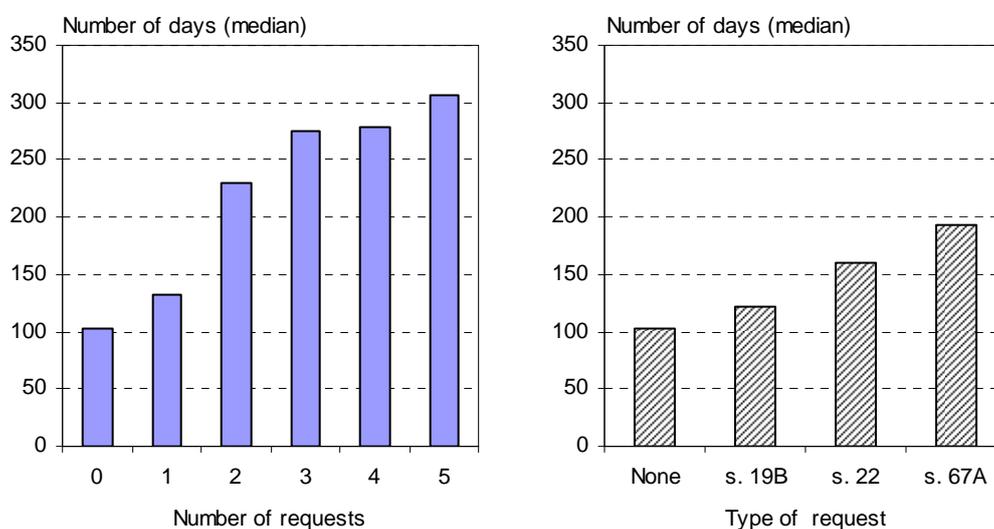
Source: EPA 2009f.

Most applications in the past five financial years were referred by the EPA to other bodies (table 8.2). For a significant number of applications, there is no formal record of a response from referrals bodies—although in many cases the referral body may have communicated informally with the EPA to indicate they had no need to make formal comment. Based on the sample of recorded responses, most responses from responsible authorities were received by the EPA before or on the due date. A responsible authority has 45 days from the date of referral to indicate whether it supports, does not object to or objects to an application or to include specified conditions in the works approval (ss. 19B(4A)(b)–(c) of the EP Act). Most of these recorded responses were received well before the statutory 45-day time limit.

Information requests by the EPA, however, appear to have been an important factor that has contributed to longer elapsed times. The EPA can serve a notice requesting further information from applicants under s. 22 of the EP Act. If the

applicant does not supply the information by the due date specified in the notice, the EPA can ‘stop the clock’ on the assessment process. On average, there have been about 24 requests for information a year under s. 22 (table 8.2) and about one in six applicants were asked for information multiple times (EPA 2009f). In most cases, applicants took longer than the due date to respond. Information requests may also occur under the s. 19B(2) failure to comply provision and s. 67A agreements to waive statutory time limits. Figure 8.3 shows that information requests are associated with longer elapsed times; for instance, the median elapsed time for applications with no information requests was around 100 days compared to 230 days for applications with two information requests.

Figure 8.3 Elapsed times by number and type of information requests, 2003-04 to 2007-08



Source: EPA 2009f.

Under s. 19B(7) of the EP Act, the EPA has four months in total to consider the application, based on the time that the application is actually with the EPA; that is, the elapsed time less the time the EPA is waiting for further information from the applicant beyond the specified due date (EPA 2009d). Some inquiry participants sought to provide some guidance on how long the approval process should take. For instance, Nexus Energy Limited stated that while approval times are likely to vary depending on the complexity of project proposals, ‘a period of four weeks for a decision by government ... would be a reasonable benchmark to aim for’ (sub. 9, p. 3).

According to the EPA (2008e), routine works approvals will be assessed in three months or less and only very complex applications will require up to the four months provided in the Act (s. 19B(7)).³ The EPA has identified potential to halve the median time for assessing works approval applications (EPA 2008q). The Commission therefore recommends that the EP Act be amended to reduce the statutory time limit for assessing works approval applications from four to two months. To ensure the EPA is not held up waiting for responses from responsible authorities, the Act should also be amended to reduce the statutory time limit in s. 19B(4A) from 45 to 30 days.

Faced with a two-month statutory period, there is a risk that the EPA may ‘stop the clock’ more frequently under s. 22 of the Act or seek s. 67A agreements with applicants, potentially prolonging the assessment process. As noted, the frequency and nature of information requests influences the elapsed time taken to assess applications. This risk would be mitigated by a requirement for the EPA to publish the number and type of information requests and the length of any resulting time extensions.

For some applications, there may be extraordinary or exceptional circumstances (such as complex and/or controversial projects) where the EPA may require more time to address the particular issues associated with these works. Exceptional circumstances may represent grounds for time extensions. Section 67A enables the EPA, with the agreement of the applicant, to extend the timeframe beyond the statutory limit. However, it appears that s. 67A agreements have been used frequently rather than occasionally (table 8.2). The Commission considers that s. 67A agreements to make time extensions (beyond the proposed statutory timeframe of two months) should be used in exceptional circumstances only.

Draft recommendation 8.3

That the *Environment Protection Act 1970* be amended to:

- **establish a two-month maximum limit on the time taken by EPA Victoria to assess works approval applications (excluding the time it waits for further information from the applicant beyond the specified due date)**
- **allow time extensions beyond the two-month statutory time limit in exceptional circumstances only**
- **establish a 30-day maximum time limit for responsible authorities to support or object to applications or to request specified conditions be included in works approvals.**

³ The EPA has indicated that it advises businesses of the expected processing time (VCEC 2008b, p. 140).

8.5.5 Public reporting of performance against time limits

While the EPA has estimated median times to assess works approval applications for its own purposes and sets internal targets (EPA 2008q), it does not publicly report its performance against the statutory time limit in the EP Act. (Broader performance reporting issues are discussed in chapter 11.)

Public reporting of performance against statutory and target timeframes would have several benefits. In addition to enhancing transparency and accountability, it would place a discipline on the EPA to improve the efficiency of the works approval process, including by taking a more strategic approach to assessing applications.

A prime example where legislation requires a regulator to report on the efficiency of approval processes is found in the Prescription Drug User Fee Act 1992 (United States). The Act sets performance goals for the Food and Drug Administration (FDA) regarding the timeliness of drug approval processes. It also requires the FDA to submit an annual performance report to Congress documenting, among other matters, its performance against the goals set out in the Act (FDA 2003).

The Commission considers that the EP Act should be amended to require the EPA to publicly report on its performance against the new statutory time limit on an annual basis. The EPA should also incorporate the statutory time limit and target timeframes into its annual plan of key deliverables. Information reported could include:

- the elapsed time to assess works approval applications
- the time taken by the EPA to assess applications compared to the statutory and target time limits
- the percentage of applications that are assessed within the statutory and target timeframes
- for applications where the assessment time exceeded the statutory or target time limits, the reason(s) for the delay.
- the number of information requests made under s. 22 of the EP Act and the length of any resulting time extensions (that is, the time the ‘clock was stopped’)
- the number of time extensions made under s. 67A of the Act and the length of these extensions.

Appropriate summary measures (such as medians, averages and/or percentages) could be used to report performance data. The data could be accompanied by commentary explaining the reasons for the reported performance. To ensure that the quality of the performance reporting is adequate, there should be an independent audit of performance reporting on a periodic basis (for example,

once every five years) as part of a broader program of assessment of environmental regulation (chapter 11). This audit could be undertaken by the Auditor General or another independent body.

Draft recommendation 8.4

That the Victorian Government amend the *Environment Protection Act 1970* to require EPA Victoria to report on its performance against the statutory and target time limits in its annual report, including:

- **the elapsed time to assess works approval applications**
- **the time taken by EPA Victoria to assess applications (excluding the time it waits for further information from the applicant beyond the specified due date) compared with the statutory and target time limits**
- **the percentage of applications assessed within the statutory and target time limits**
- **the number of information requests made under s22 of the Act and the length of any time extensions**
- **the number of time extensions made under s67A of the Act, and the length of these extensions.**

EPA Victoria should incorporate statutory and target time limits in its annual plan of key deliverables. An independent entity such as the Victorian Auditor-General should periodically audit the organisation's performance reporting on approval times (for example, once every five years).

8.5.6 A more strategic approach with improved guidance

The EPA provides some guidance to works approval applicants. It has prepared notes to assist applicants in ensuring that works approval and licence applications are submitted to the Authority with the correct information and appropriate attachments (EPA 2008f, p. 1). According to the EPA:

The application must describe the proposed discharges to the environment and the manufacturing and waste treatment facilities. ... Works approvals will not only address the quantity and quality of potential discharges, they may also specify the type and operation of pollution control and monitoring equipment, pollution abatement measures and investigations funded by the applicant to assess the impact of proposed or existing waste discharges. (EPA 2008e)

In the case of technical documentation, EPA guidance provides general information. For applications relating to air, water/land discharges, landfills, noise emissions, industrial wastes and biomedical wastes, applicants may need to

contact the EPA office in the appropriate region to obtain a list of additional technical requirements (EPA 2008f, p. 1). Applicants may also seek advice from EPA officers before submission of applications and during the assessment process.

Participants' feedback on the EPA's guidance

Respondents to the survey on the costs of environmental regulation in Victoria suggested that more definitive guidelines are needed as to what information is to be supplied with works approval applications (ACG 2009, p. 31). Similarly, Yarra Valley Water contended that the EPA could better define the required content of applications (sub. 22, p. 9).

Insufficient or unclear guidance could lead to applicants supplying too little or too much information. Applicants incur substantial costs in preparing documentation, which often involves engaging consultants to collect data, undertake analysis and draft reports. The typical administrative cost of preparing a works approval application is about \$26 000 (ACG 2009, p. 18). This cost, and the time taken to assess applications, is likely to increase where the EPA requests further information. During consultations, some businesses told the Commission that much of the additional information requested by the EPA is too detailed and unnecessary. Table 8.3 reports the length of some recent works approval applications submitted to the EPA.

Table 8.3 Recent works approval applications and supporting documentation

<i>Application</i>	<i>Documents</i>	
	(no.)	(pages)
Australian Landscapes	1	23
Bacchus Marsh Abattoir	23	301
Clayton South Landfill Cell	12	90
Connect East	27	3348
Murray Basin Stage 2	2	7
Security Food Works	1	186

Source: EPA 2008h.

In addition, some inquiry participants commented on the quality and consistency of advice provided by the EPA (section 8.8). During consultations, some businesses reported that they had received conflicting advice from different officers within the EPA.

Proposed approach

The Commission sees scope for a more strategic approach to the preparation and assessment of works approval applications. There are a number of elements to this approach that the EPA should adopt (follow):

- Identify and focus on the important aspects of the proposed works. Applying a more risk based approach would enable the EPA and applicants to identify these aspects and prioritise their effort and resources accordingly. Martin et al. (2007, p. 33) observed that society lacks the resources to eliminate all risks, but activities can be prioritised according to their riskiness and the most risky should receive attention first.
- Develop outcome based conditions for works approvals wherever appropriate. Work approval conditions often form the basis of licence conditions. As noted in section 8.6, many current EPA licences contain prescriptive conditions which may be appropriate in some circumstances (for example, firms with a poor track record of environmental compliance). However, in many cases, outcome based conditions would provide businesses with greater flexibility and promote innovation in meeting performance standards.
- Prepare templates to provide more guidance to applicants on the structure and content of applications. These templates should be posted on the EPA's website.
- Hold pre-application meetings with applicants for more complex proposals or who may need further clarification of what is required in applications. Pre-application meetings in the design phase of projects are used in some other jurisdictions and countries. For example, in Queensland, pre-application meetings are intended to save businesses time and money, and help them develop projects within environmental guidelines (EPA 2009p).
- Improve the quality and consistency of advice to applicants. The issue of providing consistent advice is discussed in section 8.8.

At the same time, businesses seeking works approvals also have a responsibility to contact the EPA to discuss the proposed works well before finalising the design and preparing a works approval application.

By identifying the key information requirements and the appropriate level of detail that is needed from applicants, a more strategic approach has the potential to reduce regulatory costs and shorten the approval process for works approval applications. The proposed measures are estimated to reduce compliance costs by about \$3.8 million a year (including a reduction in delay costs of about \$2.8 million a year).

The EPA itself has recognised the potential to improve the efficiency of the works approval and licensing process. It has established a project team to plan major works approval and licensing reform (EPA 2008a, p. 15), and has gathered information about environmental licensing in other jurisdictions and internationally. Moreover, the EPA has acknowledged that some of its guidance needs to be updated and is in the process of doing so (EPA 2009e).

Draft recommendation 8.5

That EPA Victoria adopt a more strategic approach to works approval applications. It should:

- **apply a risk-based approach to assessing works approval applications**
- **wherever appropriate, develop outcome-based conditions for works approvals**
- **prepare templates for works approval applications**
- **offer the option of holding pre-application meetings for complex works.**

8.5.7 Integration with other processes

In some cases, businesses are required to submit works approval applications as well as documents to the EES process. Some submissions contended that there is duplication in documentation requirements between these processes (see, for example, Cement Concrete & Aggregates Australia (sub. 25, p. 10) and Coffey Natural Systems (sub. 55, p. 5)). Coordination issues with the EES process are examined in chapter 6.

8.6 Licensing

The coverage of businesses within the works approval and licensing system is primarily determined by the EPA's risk assessment framework.⁴ As noted in section 8.2, the EPA recently reviewed the risk classification of scheduled premises, which resulted in fewer sites requiring licensing. The significant reduction in the number of standard licences reflects this change but also the impact of corporate licensing (table 8.4). Given this change and that little specific input on the risk classification was received, the Commission focused on the

⁴ Factors considered by the EPA in an environmental risks assessment included the toxicity and volume of emissions or discharges from a sector, and whether those emissions are continuous or intermittent, the potential for odorous emissions and noise that might impact on the local community, the volume and hazard level of waste generated, and the nature of the materials handled on site (EPA 2007b, p. 25).

characteristics of EPA licences including accredited, corporate and standard licences.

Table 8.4 EPA licences, 2003-04 to 2008-09

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09 ^a
	(no.)	(no.)	(no.)	(no.)	(no.)	(no.)
Accredited licences	21	21	21	21	20	20
Corporate licences ^b	..	..	..	..	4	8
Standard licences	1002	1015	977	966	718	657
Total licences	1023	1036	998	987	742	685

^a Early February 2009. ^b The first corporate licence was issued in late 2007.

Source: EPA 2009f.

8.6.2 Accredited licences

The accredited licensee system aims to achieve environmental improvements through cooperation between industry, government and the community (EPA 2008g, p. 1). Accreditation enables businesses—that have sound environmental management systems, community involvement and a commitment to good environmental performance—to be subject to a less prescriptive approach by the EPA to works approvals and licensing.

An intended benefit of the accredited licensee system was to give increased flexibility to licensees to manage their own environmental performance within the framework provided by the EP Act. Accredited licensees obtain simpler performance based licences which provide greater operating freedom compared with standard licences with more prescriptive conditions. Accredited licences can take the form of ‘bubble’ licences which set performance criteria (such as overall discharge levels) for a whole plant or site, giving licensees greater flexibility in managing their operations. Licensees also receive a 25 per cent reduction in licence fees (EPA 2008g, p. 1).

A further potential benefit is that new works (except works involving a major change in a process or a significant increase in discharge) will not be subject to the works approval process. The EPA reported an example where a works approval was not required:

In order to meet the new fuel quality standards Mobil needed to make modifications to the Altona Refinery including installation of a new benzene reduction facility and recommissioning of existing equipment. EPA determined that as an accredited licensee Mobil did not require a works approval to

undertake these modifications, which under a standard licence would have been required. (EPA 2005b, p. 20)

The EPA reported that a small number of exemptions from works approvals are granted to accredited licensees (typically less than five a year). The value of works exempted under accredited licences varies project by project; for example, from several million dollars to several hundred million dollars (EPA 2009e; 2009f).

Accredited licensees may also gain a competitive edge in domestic and international markets because customers increasingly are examining the environment credentials of their suppliers (James 1998, p. 64).

However, SITA Environmental Solutions argued that the accredited licensee system needs to be reviewed. It stated that: the ‘EPA put up ever changing hurdles to meeting the criteria to satisfy the requirements to become an accredited licensee’ (sub. 3, p. 2). Respondents to the survey on the costs of Victorian environmental regulation reported that the accreditation process is too involved and better guidance needs to be provided (ACG 2009, p. 31).

While the accredited licensee system has been operating since the mid 1990s, available evidence suggests that participation has been limited. In recent years, the number of accredited licences has remained static at around 20–21 licences (table 8.4), representing about 3 per cent of the total number of EPA licences currently on issue.

To be eligible for accreditation, applicants must satisfy four key requirements:

- (1) a demonstrated high level of environmental performance and an ongoing capacity to maintain and improve this performance
- (2) a suitable environmental management system (EMS) in place which is certified by a person approved by the EPA
- (3) an environmental audit program involving the participation of an independent appointed environmental auditor
- (4) an environment improvement plan (EIP)—developed in consultation with the local community—that has been, or is likely to be, approved by the EPA.

During consultations, some businesses told the Commission that the expected costs of accreditation outweighed the expected benefits. In a previous review of the EP Act, industry stakeholders reported that the accredited licensee system required significant resource input for relatively small benefit (ACG 2000, p. 49). This may explain the relatively low participation in the accredited licensee system.

Meeting the requirements for accreditation is likely to impose additional costs on business, particularly for small to medium sized businesses. A recent survey on environmentally sustainable practices reported that, while around 70 per cent of large businesses in Australia have (or are planning to introduce) an EMS, the

proportion for all businesses was less than 30 per cent (AIG 2007, p. 32). These results suggest that small to medium businesses are less likely to have an EMS in place. Moreover, the cost of developing an EMS for a small to medium sized firm has been estimated at around \$15 000–\$20 000 (2003 dollars) and implementing an EMS usually takes around 12 months, taking into account business's normal workload (Briggs 2003).

The EPA has indicated that it will generally accept EMS certification to ISO 14001 which has been undertaken by an EMS certification body accredited by JAS-ANZ or an equivalent certification body.⁵ The EPA guidelines outline 12 minimum requirements needed for EMS certification by an EPA appointed environmental auditor (industrial facilities) (EPA 1998a, pp. 2–4).

As noted above, one of the major benefits of accredited licences is that works approvals are not required for some new works. Accreditation may therefore benefit those businesses which have many new works which are not significant works (s. 26D(2) of the EP Act) or will not result in increases in discharges or emissions beyond the levels specified in licences. It is possible that many businesses see little benefit in accreditation because they have few such works each year or have works which are likely to cause a significant increase in waste discharged or emitted to the environment—in which case, they would still be subject to the full works approval process.

In the absence of specific suggestions in submissions on how to improve the accredited licensee system, the Commission has identified several potential options:

- Increasing the discount on annual licence fees from 25 to 50 per cent. This option would reduce the financial cost to business, potentially inducing more businesses to apply for accredited licences.
- Removing the requirement for an environmental audit program where applicants already have an EMS. (EMSs typically require internal and external audits.) If there is duplication between audits required by an EMS and those required by the EPA, there would be cost savings from removing any overlap.
- Removing the requirement for an EIP. An EIP is a 'beyond compliance' tool which ensures that businesses seek input from the community in developing their plan and to make a public commitment to improve their environmental performance. Without this requirement, greater reliance would be placed on EMSs to underpin licensees' environmental performance. However, a criticism of the ISO 14001 standard is that it does not require certified facilities to reduce their environmental impacts or to set specific

⁵ There were around 2000 ISO 14001 certificates in Australia in 2006 (JAS-ANZ 2008, p. 2).

performance targets—it simply calls on firms to commit to legal compliance (Neumayer & Perkins 2004, p. 825).

The Commission seeks further information and comment on the advantages and disadvantages of the following options for improving the accredited licensee system: (1) increasing the discount on annual licence fees to 50 per cent; (2) removing the requirement for an environmental audit program where applicants already have an environmental management system in place; and (3) removing the requirement for an environment improvement plan.

8.6.3 Corporate licences

As noted in section 8.2, the EPA now has the capacity to amalgamate multiple licences for different sites held by the same licensee into a single corporate licence. Licence amalgamation requires the licensees' consent. The Commission notes that this is an innovative approach and has been reported as a 'world first' initiative (EPA 2007f, p. 1). Corporate licences have two parts:

- (1) a sustainability commitment which sets out the licensee's and the EPA's public commitment to work in partnership to increase sustainability and resource efficiency of the licensee's business operations
- (2) environmental performance conditions which contain the legally enforceable performance conditions that the licensee must comply with in its business activities.

According to the EPA, the benefits of corporate licences are that they will streamline monitoring and management processes, and give businesses flexibility to invest in environmental improvements across their whole organisation in a more effective and cost efficient way. Corporate licensing will also streamline existing reporting requirements (annual reports for each site) into a single annual performance statement (EPA 2007h, p. 13; 2008i). The statement will provide a summary of how licence objectives were met, progress against sustainability commitments, and compliance against licence conditions with details of any failure to comply and any remedial actions taken (EPA 2008w).

Corporate licensing has already delivered cost savings to some regulated businesses. The first corporate licence was issued in late 2007 to Goulburn Valley Water (GVW), which previously held 26 EPA licences totalling 226 pages of licence requirements. GVW is expected to save at least \$50 000 in administrative costs by amalgamating its licences (EPA 2007f, p. 1). The move to corporate licences for GVW and some other water businesses has resulted in significant reductions in licence documentation (table 8.5).

The EPA has estimated that the take-up of corporate licences will reduce the number of EPA licences by 30 per cent, and reduce administrative costs by about \$3 million a year and substantive compliance costs by at least \$12 million a

year without compromising environmental outcomes (EPA 2008j; DSE, sub. 57, p. 20). Overall, this equates to a reduction in compliance costs of at least \$15 million a year. These estimates are based on full take-up of corporate licences (EPA 2009e).

Table 8.5 Reductions in licence documentation, examples from the water sector

<i>Business</i>	<i>Multiple licences</i>	<i>Corporate licence</i>
	(pages)	(pages)
Coliban Water	118	9
East Gippsland Water	113	9
Goulburn Valley Water	226	8
Grampians Wimmera Mallee Water Corporation	288	9
Western Region Water Corporation	82	10

Sources: DSE, sub. 57; EPA 2008j.

The corporate licences recently issued to water businesses generally contain outcome-based licence conditions. For example, the licences generally establish the waste discharge limits for discharge to land and water. In addition, as a general condition, the licences state that ‘there must be no emission of odours offensive to the senses of human beings beyond the boundaries of the premises’. That said, the licences also include cross references to guidelines which are likely to contain a greater level of detail.

While corporate licensing seeks to simplify compliance requirements, all existing compliance requirements are maintained (DSE, sub. 57, p. 19). The Commission considers that, in addition to licence simplification, corporate licensing is a valuable opportunity for the EPA and licensees to review existing licence conditions to identify whether they could be made more performance or outcome based. This could result in additional compliance cost savings for businesses.

As corporate licences are voluntary, the full benefits of this reform will not be achieved unless all corporate entities with multiple EPA licences in Victoria choose to amalgamate their licences.⁶ The EPA anticipates that almost all

⁶ At the commencement of corporate licensing, there were more than 100 businesses holding multiple EPA licences (440 licences in total) (DSE, sub. 57, p. 20). Water businesses, milk processing factories, and food and beverage plants account for a large proportion of these multiple licence holders (MFECC 2007).

multiple licence holders will apply for a corporate licence over time (EPA 2009e). As at early February 2009, there were eight corporate licences on issue (table 8.4) which replaced 111 single site licences (EPA 2009f). This rate of rollout suggests it will take a number of years before the full benefits of corporate licensing are realised.

To deliver the bulk of these benefits within the next few years, the EPA should include a set of rollout targets in its annual plan of key deliverables. Recognising that time and costs are involved in negotiating and drafting corporate licences, the Commission proposes that the EPA should aim to issue 25 per cent of total potential corporate licences by June 2010, 50 per cent by June 2011, and 75 per cent by June 2012. Assuming a 75 per cent rollout of corporate licences by June 2012, the savings in compliance costs are estimated to be \$4.4 million a year.

Draft recommendation 8.6

That EPA Victoria, in addition to simplifying compliance and reporting requirements in corporate licences, should aim to incorporate performance-based conditions wherever appropriate. To deliver the benefits of corporate licensing as soon as is practicable, EPA Victoria should establish targets in its annual plan of key deliverables to achieve 25 per cent of the total potential rollout of corporate licences by June 2010, 50 per cent by June 2011 and 75 per cent by June 2012.

Some businesses see corporate licensing as an opportunity for a more holistic approach to environmental compliance and performance. For instance, Yarra Valley Water supported the concept of a corporate licence which considers all environmental aspects and impacts. Such a licence would consider not only point source discharges but also the licensee's other environmental actions or programs (sub. 22, p. 3). These other actions could include environmental offsets which are discussed in chapter 12.

8.6.4 Standard licences

Standard licences currently are the primary licensing tool that the EPA uses to regulate businesses with significant potential to cause environmental harm. There were 657 standard licences for single sites on issue in early February 2009 (table 8.4). Features of standard licences that were raised during the inquiry included:

- the prescriptive nature of licences
- extent of reporting obligations
- frequency of licence amendment.

Prescriptive licence conditions

While the EPA has made some efforts to introduce more performance based licensing through the accredited licensee system, the rollout of such licences has been limited (table 8.4).

During consultations, several businesses told the Commission that the conditions or requirements in some EPA licences are quite prescriptive in nature and limit their ability to implement the most cost-effective measures, imposing additional costs. This prescription includes specifying how certain environmental outcomes are to be achieved rather than leaving it to the business or organisation to do this in the least cost way.

The EPA itself has noted that standard approach to licensing is prescriptive, stating that the accredited licensee system enables companies ‘to be freed from the standard prescriptive approach to works approval and licensing’ (EPA 2007i; 2008g, p. 1). The prescription in some licences stems in part from provisions in the EP Act. Section 21 of the Act enables the EPA to specify the type of pollution control equipment that is to be installed as well as the manner in which it is to be installed and operated. Policies, regulations and guidelines made under the EP Act, and often referred to in licences, may also contribute to the level of prescription.

Moreover, Yarra Valley Water reported that there are instances where outcome and input regulation is applied at the same facility:

A good example of this is Melbourne Water’s discharge licence at the Western Sewage Treatment Plant located in Werribee. At this plant, the output discharge regulatory obligations are specified by the EPA as well as salt load input obligations. This type of regulation can result in conflicts between output and input requirements and would seem contrary to Victorian Government policy on regulation given that there are technological solutions available for overcoming the input obligations. (sub. 22, p. 6)

The key advantages of performance or outcome based licences over a more prescriptive approach include the greater flexibility afforded to regulated businesses in achieving desired outcomes and the ability to use these licences in situations where circumstances may change over time (Government of Victoria 2007b, p. 3-9). This increased flexibility allows businesses to adopt least cost technologies or methods to achieve the desired outcomes. In contrast, highly prescriptive instruments lack flexibility and do not facilitate least cost solutions (Gunningham and Sinclair 2004, p. 117).

A potential disadvantage of performance based licences is that the greater flexibility in meeting the specified outcomes may create some uncertainty over what is required to satisfy the licence conditions. Thus, one argument for prescriptive licences is that they provide more guidance and certainty on the

means of compliance, particularly for small to medium sized businesses which may not have access to the same level of resources or knowledge regarding environmental management that may be available to larger firms. Prescriptive conditions may also be appropriate for licensees with a poor track record of environmental performance. The EPA's operations manual states that 'as there will always be poor environmental performers we [the EPA] retain the right to give more prescriptive licences where necessary' (EPA 2009e).

It is not feasible for the Commission to examine every standard licence and suggest the appropriate changes. The EPA is better placed to undertake such a review. In early February 2009, there were around 330 standard licences currently on issue that are not amenable to corporate licensing. The review should examine the conditions of these licences and, where appropriate, replace prescriptive conditions with performance or outcome based conditions. The Commission recognises that such a review could take several years to complete. To give impetus to the review, the EPA should establish targets in its annual plan of key deliverables to have reviewed 25 per cent of these licences by June 2010, 50 per cent by June 2011 and 75 per cent by June 2012.

Monitoring and reporting

The costs of monitoring and reporting under EPA licences are significant. The ongoing administrative costs of licence reporting have been estimated at about \$11.6 million a year and additional monitoring has imposed substantive compliance costs of around \$15.1 million a year on EPA licensees (ACG 2009, p. 18).

The EPA requires licence holders to provide annual reports to demonstrate that their environmental obligations under the Act are being met. Many standard licences have between 5-10 components to their annual environmental reporting and reports are often submitted to the EPA separately and in paper form (Thwaites 2006, p. 2507). For example, Australian Paper noted that its Maryvale Mill operates under an EPA licence which requires a number of reports, including an annual river discharge report, an annual river bio-survey report, a solid waste report, a groundwater review, a groundwater audit report, a prescribed waste report, an NPI report and two annual air discharge reports (sub. 37, p. 2).

Monitoring and reporting requirements may vary depending on the type of business. For example, a power station may need to monitor air emissions from discharge points, conduct ambient air monitoring in the surrounding area and undertake water monitoring whereas a water business may be required to monitor wastewater, groundwater and treated effluent. The frequency of monitoring and reporting can also differ. Monitoring can be periodic and/or

continuous; licensees are required to report annually but more frequent reporting may be specified in licences.

Recent amendments to the EP Act signalled that simplified reporting requirements would be introduced for all licensees. This may involve requiring licensees to report by way of a performance statement (s. 31D of the EP Act). The Commission encourages the EPA to develop and implement plans to streamline licence conditions and reporting requirements in standard licences for single sites.

Environmental reporting obligations under other government programs are examined in chapter 9.

Frequency of licence amendment

Under the EP Act, a licence remains in force until revoked, suspended or surrendered (s. 26). Although standard licences are perpetual, their prescriptive nature can lead to frequent amendments, creating costs for businesses and the EPA. Performance based licences, because of their greater flexibility, are likely to require less frequent review and amendment. For instance, accredited licences are reviewed every five years. The Commission recommends that, when licensees seek amendment to their standard licences, the EPA should examine the conditions of standard licences and, where appropriate, replace prescriptive conditions with performance based conditions. At the same time, the EPA should remove redundant conditions, redraft unclear conditions and generally update licences. This is likely to reduce the frequency of licence amendment and the associated administrative and substantive compliance costs.

The Commission estimates that the rolling review of standard licences will reduce compliance costs by \$2.2 million a year, assuming 75 per cent of these licences are reviewed by June 2012.

Draft recommendation 8.7

That EPA Victoria conduct a rolling review of standard licences on issue.

The review should:

- **examine the conditions of standard licences and, where appropriate, replace prescriptive conditions with performance-based conditions**
- **simplify licence conditions and reporting requirements.**

EPA Victoria should establish targets in its annual plan of key deliverables to review 25 per cent of standard licences by June 2010, 50 per cent by June 2011 and 75 per cent by June 2012.

Generic licensing

Some jurisdictions in Australia reduce the licensing burden for low risk operations by issuing generic licences with standard conditions. In New South Wales, ‘model licences’ containing generic licence conditions for each industry exist for many activity types. Queensland uses streamlined licence applications which involve standard conditions applicable to specific industries and can be used as generic licences for low risk operations (EPA 2009p). To date, the EPA has not applied generic licensing conditions to any industries or sectors in Victoria—although it has removed the requirement to be licensed from certain generic industries (for example, concrete batching) (EPA 2009o; 2009p).

The Commission seeks further information and comment on the advantages and disadvantages of generic licensing and its applicability to industries or sectors in Victoria.

8.7 Prescribed industrial waste regulation

The EPA is responsible for the development and implementation of Victoria’s statutory framework for waste. The framework provides for solid wastes such as municipal, commercial and industrial, and prescribed wastes.⁷ Prescribed waste includes hazardous waste which can be toxic, flammable, explosive and/or creates unpleasant odours. The majority of these wastes are from industrial sources and are referred to as ‘prescribed industrial waste’ (PIW) (EPA 2009m). This section focuses on PIW regulation.

The EPA manages PIW more stringently than municipal or commercial wastes because PIW has the potential to be hazardous to human health or the environment (EPA 2005a, p. 1). PIW in Victoria is regulated by provisions in the EP Act, the Environment Protection (Prescribed Waste) Regulations 1998 and the Industrial Waste Management Policy on PIW (IWMP (PIW)). These regulations and policy are currently being reviewed. In July 2008, the EPA released a discussion paper on the future of hazardous waste management in Victoria (EPA 2008m).

In a broader context, the Government developed the *Towards Zero Waste Strategy* as part of Victoria’s Environmental Sustainability Framework. The strategy sets out state-wide targets for Victoria’s municipal and business sectors to deliver more sustainable use of resources by 2014. The strategy stated that it does not impose any mandatory or regulatory requirements on Victorian businesses (Government of Victoria 2005d, p. 35).

⁷ Municipal wastes are typically collected from households by local council through kerbside collections. Commercial and industrial wastes pose a low hazard to the environment and stem from commercial, industrial or trade activities and include construction and demolition wastes.

The EPA acknowledged that the system of controlling the handling, transport and disposal of hazardous waste is complicated, time consuming and, in some cases, imposes considerable compliance costs on industry (EPA 2008m, p. 3). Submissions to the inquiry and the Commission's research suggested that there is potential for cost savings or other improvements from changes in the following instruments under prescribed waste regulations and policy:

- waste transport certificates
- waste producer annual returns
- waste hierarchy and targets
- hazard classification system.

8.7.1 Waste transport certificates

The EP Act and prescribed waste regulations set out the legislative requirements for transporting PIW in Victoria. These regulations require PIW to be transported using an EPA permitted vehicle with a waste transport certificate accompanying the load. These wastes can only be transported to facilities with EPA approval and the waste producer, transporter and receiver must complete relevant sections of the certificate (EPA 2008v). The certificate contains a description of the waste, hazard category, the name of the waste producer, the amount of waste and the date of dispatch. In certain circumstances, applications can be made to the EPA to have wastes exempted from the transport tracking system (EPA 1998b, p. 2).

A paper-based system for processing waste transport certificates has been operating since the mid 1980s. The EPA introduced the WasteCert system in 2001, which develops and submits the relevant information electronically. The main benefits of the electronic system include: improving the quality and accuracy of data collected in certificates, and improving the overall efficiency of the system by preventing unnecessary duplication of data entry and preventing avoidable administrative errors (EPA 2006a, p. 2). According to the OECD, electronically based systems are an important tool to simplify and reduce administrative burdens (OECD 2006, p. 61).

Despite the introduction of the WasteCert system, about two-thirds of all waste transport certificates are still lodged in paper form. The drawbacks of the paper-based system include delays and costs in processing certificates and updating databases as well as the potential for administrative errors. In addition, the cost of using paper certificates is considerably more than for electronic certificates. Given the advantages of the electronic system, the Commission considers that the EPA should encourage waste producers, transporters and receivers who are still using the paper based system to switch to the WasteCert

system. To move this forward, the EPA should establish targets in its annual plan of key deliverables.

The Commission recognises that there are possible constraints on a full phase-out of the paper based system (for example, some premises, sites or vehicles may not have computer/internet facilities and businesses which infrequently transport waste may prefer to use paper-based certificates)⁸, although such constraints should lessen over time as businesses continue to adopt information and communication technologies. If 75 per cent of all waste transport certificates are lodged in electronic form by June 2012, this is estimated to achieve compliance cost savings of about \$1.1 million a year.

A further benefit of wider use of the electronic system will be a reduction in record keeping costs. The regulations currently require that information from waste transport certificates must be kept for at least 24 months (EPA 2007c, p. 2), which imposes record keeping costs on business. The current administrative cost of record keeping is around \$13.3 million a year (ACG 2009, p. 16). Electronic record keeping is likely to be less cumbersome than paper-based filing systems and result in significant time savings for businesses. This is estimated to save businesses about \$4.0 million a year in compliance costs.

Draft recommendation 8.8

That EPA Victoria encourage waste producers, transporters and receivers to use the WasteCert system. It should establish targets in its annual plan of key deliverables to have at least 50 per cent of all waste transport certificates lodged in electronic form by June 2011 and at least 75 per cent by June 2012.

8.7.2 Waste producer annual returns

PIW producers are currently required to submit an annual return if they meet certain conditions.⁹ The return must include information on the quantity and type of PIW that has been transported from the premises to a waste receiver, waste recycler, waste re-user, a recoverer of energy, and PIW which has been disposed of (other than to sewer) at the premises over the financial year

⁸ According to the Victorian Waste Management Association, paper based systems are preferred for smaller operators (those businesses without access to computer and/or internet) and for 'one-off' jobs (VWMA 2008a, p. 1).

⁹ That is, if PIW producers: (1) arrange transport of more than five consignments of PIW from their premises in a 12-month period; (2) have an exemption from the use of waste transport certificates regardless of how many consignments of PIW they arrange in a 12-month period; and (3) dispose of PIW (other than to sewer) at their premises (EPA 1999, p. 1).

(EPA 1998b, p. 2). It appears that the purpose of these returns is for the EPA to collect and analyse data on PIW.

Philip Morris Limited pointed to possible duplication between an EREP and the PIW annual return:

... a company's total prescribed industrial waste is required as part of both the EREP registration process and the ongoing EREP reporting, even while that information is already being reported to EPA Victoria in the prescribed industrial waste annual return. (sub. 31, p. 4)

Moreover, at a recent roundtable attended by EPA staff and members of the Prescribed Industrial Waste Advisory Committee, some participants commented that annual returns are redundant because similar information is collected through waste transport certificates (EPA 2008n, p. 2).

The EPA recently proposed new regulations without the requirement for annual producer returns (EPA 2009n, p. 11). It reported that—of the waste producers who are required to submit an annual return—only about 20 per cent fulfil this requirement; and that all relevant data can be obtained from waste transport certificates (EPA 2009i). The Commission supports the EPA's proposal, by recommending that the requirement for annual producer returns not be included in the proposed Environment Protection (Industrial Waste Resource) Regulations. This is estimated to result in compliance cost savings of about \$300 000 a year.

Draft recommendation 8.9

That the requirement for annual producer returns not be included in the proposed Environment Protection (Industrial Waste Resource) Regulations.

8.7.3 Waste hierarchy and targets

The substantive compliance costs of the Environment Protection (Prescribed Waste) Regulations are estimated at around \$77.6 million a year, though this point estimate has a wide confidence interval (ACG 2009, p. 12). These costs are largely attributable to the waste management obligations. One of the key elements of PIW management is the waste hierarchy.

The 'waste hierarchy' was introduced into the EP Act in 2001. The Act states that wastes should be managed in the following order of preference: (a) avoidance; (b) re-use; (c) recycling; (d) recovery of energy; (e) treatment; (f) containment; and (g) disposal (principle 1I). The hierarchy is also incorporated into some waste management policies (WMPs) and state environment protection policies (SEPPs). For example, the first principle in the IWMP (PIW) states that PIW should be managed in accordance with the order

of preference in the policy principle (clause 6). This principle largely replicates s. 1I from the EP Act. In seeking to reduce the amount of waste generated in Victoria, the EPA uses the waste hierarchy as a guiding principle (EPA 2008m, p. 4).

Although the waste hierarchy is a central element of many waste minimisation strategies in Australia and overseas, it has been the subject of much debate (Ackerman 2005, p. 26). There have also been calls to review the waste hierarchy embedded in the prescribed waste management framework in Victoria. The Victorian Waste Management Association, for example, recently stated that ‘the waste hierarchy is somewhat outdated and simplistic’:

Today there is a greater understanding of life cycle analysis and energy flows which provide a greater understanding of how waste can be utilised. We would argue that the waste to energy function has very limited validity because of community attitudes. We would argue that landfill is the only viable method for some wastes and therefore should not be seen as a last resort. (VWMA 2008a, p. 1)

While the waste hierarchy is a way of communicating a simplified list of actions or options with the primary aim of minimising waste, the generalised ranking of options in the hierarchy has been questioned.

It is unclear whether the ranking is based on cost benefit analysis or some other type of analysis. Regarding the waste hierarchy as interpreted within the European Commission (EC), Pearce (2005, p. 62) commented that the basis for the ranking has never been clear and it appears to have emerged as a ‘consensus’ ranking. Collins (2005, p. 10) interpreted the waste hierarchy, as implemented in Australia, to reflect a technical goal of waste minimisation rather than economic efficiency. The waste hierarchy in the IWMP (PIW) makes no reference to benefits and costs, and is potentially at odds with another principle in the policy and s. 1F(4) of the EP Act which states that environmental goals should be pursued in the most cost effective way.

Even if the ranking in the hierarchy were formulated using indicative benefits and costs of each action, there are some drawbacks with this approach. The generalised ranking may not be appropriate for every business or type of waste material. For example, Pearce (2005, pp. 63, 77) found that, based on net social cost (that is financial and environmental costs less associated benefits), the ranking in the EC waste hierarchy may change depending on the volume and type of waste and by location; in addition, the ranking of landfill and incineration could easily reverse and the desirability of recycling varies by material.

Moreover, the costs and benefits of various options listed in the hierarchy are not static. The development and adoption of new technologies or processes can alter the effectiveness and cost of various waste management options. Market

prices for labour and material inputs also change over time. These changes could alter the cost effectiveness or net benefit, and possibly the ranking, of the different actions listed in the hierarchy. This means that, by following the waste hierarchy, some businesses may incur additional compliance costs by implementing a less efficient option.

In its analysis of waste hierarchies in state and territory waste management legislation across Australia, the Productivity Commission argued that applying the waste hierarchy can lead to poor policy outcomes if it circumvents good policy practice; in particular, the need to rigorously assess the costs and benefits of relevant options. It concluded that the influence of the waste hierarchy on policy development and waste management decisions is likely to have resulted in net costs to the community (PC 2006b, pp. 146–47).

Given the potential for the waste hierarchy in the EP Act to conflict with good policy practice and to impose additional compliance costs on businesses, the Commission considers that the waste hierarchy in the EP Act and in any SEPPs, WMPs or IWMPs should be replaced with a principle of waste management that requires businesses to consider the costs and benefits of relevant options to manage waste and select actions that will deliver the largest net benefits.

Draft recommendation 8.10

That the Victorian Government redraft principle 1I of the *Environment Protection Act 1970* to state that waste should be managed according to the net benefit criterion—that is, waste management strategies should be based on actions which deliver the largest net benefits. This may involve considering the costs and benefits of actions such as avoidance, reuse, recycling, recovery of energy, treatment, containment, disposal and any other relevant options. Relevant state environment protection policies, waste management policies and industrial waste management policies should reflect this change.

In January 2007, the Government announced its objective to reduce PIW disposed to landfill to 40 000 tonnes a year by 2009, and to eliminate hazardous waste landfill by 2020 (EPA 2009l). The IWMP (PIW) enables the EPA to establish, in consultation with generators of PIW and the community, specific targets for avoidance, re-use and recycling and/or recovery of energy from PIW and targets for reduction in the need for long term containment of PIW (clause 10). To date, the EPA has not used the waste reduction targets provisions in the IWMP (PIW) (EPA 2009o).

Because the proposed Environment Protection (Industrial Waste Resource) Regulations will replace key elements of the IWMP (PIW), the EPA has proposed that the IWMP (PIW) be revoked if the regulations are made (EPA 2009n, pp. 8, 11).

8.7.4 Hazard classification system

The hazard classification system became mandatory in July 2007 and applies to PIW listed in the regulations. The system aims to ensure that PIW of different hazard levels is appropriately managed if sent to landfill, and to reduce the volume of PIW disposed to landfill by improving treatment standards and achieving greater waste separation. Under this system, all PIW destined for landfill must be classified into one of three categories (A, B or C) according to their level of hazard (EPA 2008o, p. 1). Waste sent directly to landfill must first be tested to determine which category it falls under. According to the EPA, these rules set stricter standards for what wastes will be accepted at landfills and require some wastes to be treated before disposal (EPA 2007a, p. 1).

Some inquiry participants claimed that recent amendments to the EP Act and prescribed waste regulations have imposed considerable costs on business. For example, the Urban Development Institute of Australia (Victoria) (UDIA) noted that the burden:

... in relation to the landfill costs having doubled over the last 12 months and are projected to double again in the next 12 months. This causes enormous problems as it can add millions of dollars to a building development. (sub. 5, p. 2).

Similarly, Citipower and Powercor Australia stated that:

Significant cost burdens have been imposed on industry with the 2007 changes to the Environmental Protection (Prescribed Industrial Waste) Regulations 1998 in relation to contaminated soil classification, treatment and disposal. Disposal and treatment costs have escalated and for some categories of soil, it is costing \$800-\$1000 per tonne. (sub. 63, p. 1)

These additional costs stem from the costs associated with testing samples in order to classify waste, the costs of treating PIW to a lower level of hazard, and increased landfill levies as a result of the *Environment Protection (Amendment) Act 2006*. Citipower and Powercor Australia noted that the EPA's soils sampling guideline makes no allowance for small quantities of soil (sub. 63, p. 1). For example, under the guidelines (EPA 2007e, p. 3), one cubic metre of contaminated soil would require the same number of samples as 75 cubic metres. Some participants at the EPA's workshop on hazardous waste reported that 'waste stream classification can be costly and slow' (EPA 2008s, p. 3).

The state-wide costs of sample testing are likely to be significant, considering that around 565 000 tonnes of PIW was transported to Victorian landfills for disposal in 2007-08. About 80 per cent was contaminated soil from property development, road and rail construction and clean-up of old industrial sites. Manufacturing and asbestos wastes are the other major streams of prescribed waste (EPA 2008p, pp. 1-3).

The Commission seeks further information and comment regarding the costs imposed on business from sample testing that is required to classify prescribed industrial waste and whether these requirements should be streamlined.

8.8 Other issues

Inquiry participants raised a number of issues relating to:

- processes for developing policies and guidance
- best practice guidance
- consistency of advice
- environmental audit system.

These issues are discussed below.

8.8.1 Process for developing policies, protocols and guidelines

Some submissions commented on the process for developing SEPPs and protocols for environmental management (PEMs).

Policy development process

The EP Act sets out a policy development process for SEPPs and WMPs which involves a number of steps.¹⁰ In essence, the EPA is required to advertise its intention to declare or vary a SEPP or WMP; issue a discussion paper, draft policy and policy impact assessment (PIA); and respond to feedback from stakeholders. Yarra Valley Water argued that changes to environmental policy and regulations (such as SEPPs and WMPs) should always be subject to a regulatory impact statement (RIS) process:

This ensures a robust assessment and justification of the costs is undertaken and assigns a value to the community benefit of improved environmental outcomes. We also believe it is preferable that Regulatory Impact Statements be prepared independently of the proponents of the new or changed regulation or if the statements are prepared by the proponents, they are independently audited. (sub. 22, p. 1)

In its report on *Regulation and regional Victoria*, the Commission found that the PIA process was broadly well designed but a shortcoming was that the process did not provide for any independent assessment of the PIA against best practice principles for regulation. After considering several options (including the option

¹⁰ SEPPs and WMPs provide more detailed requirements and guidance for the application of the EP Act to Victoria. SEPPs define the environmental quality objectives and indicators and describe the attainment and management programs that will ensure the necessary environmental quality is maintained (EPA 2007j).

of subjecting SEPPs and WMPs to a standard RIS process), the Commission recommended that the PIA process be modified to require the EPA or the Minister for the Environment to seek an independent review of draft PIAs (VCEC 2005a, pp. 205–212). The Victorian Government supported this recommendation, stating in December 2005 that the EPA would seek independent review of draft PIAs before they are released for public comment along with the draft statutory policy. The Government stated that this change would be adopted as part of EPA procedures for the development of SEPPs and WMPs (Government of Victoria 2005e, p. 11).

The EPA reported that no PIAs have been required to be prepared since December 2005. The WMP (Used Packaging Materials), which adopted the National Environment Protection Measure (NEPM) (Used Packaging Materials), was gazetted in March 2008. The National Environment Protection Council prepared an impact statement for a variation to the NEPM in March 2005, so a separate PIA for the WMP was not required (EPA 2009g). In addition, the IWMP (Movement of Controlled Waste between States and Territories) was varied in 2008 under s. 18B of the EP Act. Under ministerial certification that the policy be varied without delay, no PIA was required.

The EPA indicated that its internal procedures reflect the commitment to provide all draft PIAs for SEPPs and WMPs to the Commission for review prior to release for public comment (EPA 2009g).

Process for developing protocols and guidelines

In addition to SEPPs and WMPs, the EPA prepares protocols for environmental management (PEMs) and guidelines for environmental management (GEMs). PEMs and GEMs provide additional and more detailed guidance to help businesses comply with SEPPs and WMPs. For example, the PEM on Greenhouse Gas and Energy Efficiency in Industry is an incorporated document of the SEPP (Air Quality Management) (SEPP (AQM)). The PEM provides guidance on the SEPP and its requirements for the management of greenhouse gas emissions and energy consumption (EPA 2002, p. 1).

The MCA, however, expressed concern about the process for developing the PEM for air quality management at mines and quarries in Victoria and the apparent use of the draft PEM by the EPA:

The process of consultation and the time taken to finalise the PEM was entirely unsatisfactory. Throughout the three years that the Draft was in existence, it was invariably used by the regulator as a final document. ... A draft is just that – not a final government position. (sub. 58, p. 34)

Some guidelines have been in draft form for many years. For example, interim guidelines for the control of noise from industry in country Victoria were

released in 1989. The EPA has indicated that these guidelines are under review and it plans to release a draft for public comment in 2009 (EPA 2009j).

The Commission observed that the EPA—in developing some guidelines and framework documents (such as the draft industrial water reuse guidelines and the discussion paper on environmental offsets (EPA 2008t, 2008u))—called for public comment but did not publish timeframes for finalising these documents. To provide industry with greater certainty about the status of protocols and guidelines, the Commission recommends that the EPA should publish the key steps in these processes and their timing, including the expected date of finalisation.

Draft recommendation 8.11

That EPA Victoria, in developing protocols and guidelines for environmental management, publish the key steps in the process as well as timeframes.

8.8.2 Best practice guidance

Some inquiry participants commented on the interpretation of regulatory requirements in SEPPs and WMPs. For example, Alcoa of Australia noted that, while enhanced flexibility provides for greater scope of interpretation of SEPPs and their implementation, this often leads to longer discussion periods on issues and delays in approvals (sub. 21, p. 3). Yarra Valley Water stated that requiring ‘best available technology’ does not allow it the opportunity to plan for the future (sub. 22, p. 7). In addition, Loy Yang Power argued that the EPA needs to source staff with a better working knowledge of best practice and industry standards (sub. 18, p. 2).

Many SEPPs and WMPs use the term ‘best practice’. For instance, the SEPP (Prevention and Management of Contaminated Land) states that, to prevent contamination of land, any occupier or person involved in the transport, storage or handling of any chemical substance or waste must apply best practice and comply with WMPs (clause 17). The SEPP (AQM) states that emitters must apply best practice to the management of their emissions where best practice means:

... the best combination of eco-efficient techniques, methods, processes or technology used in an industry sector or activity that demonstrably minimises the environmental impact of a generator of emissions in that industry sector or activity. (SEPP (AQM), p. 15)

Where best practice is not defined in a SEPP or WMP, the EPA typically provides additional guidance on what constitutes best practice in PEMs, GEMs

and other guidelines. For instance, the EPA has published best practice guidance on the siting, design, operation and rehabilitation of landfills (EPA 2001).

The terms ‘best practicable environmental outcomes’, ‘best practicable approaches’ and ‘maximum extent achievable’ are also found in the SEPP (AQM). The term ‘maximum extent achievable’ is defined as:

... a degree of reduction in the emission of wastes from a particular source that uses the most effective, practicable means to minimise the risk to human health from those emissions and is at least equivalent to or greater than that which can be achieved through the application of best practice. (SEPP (AQM), p. 16)

In addition, some guidelines use the terms ‘best practicable measures’ and ‘best available technology’.

It is not immediately clear from the policies and guidelines the extent to which consideration of costs forms part of these ‘best practice’ concepts. The risk with such concepts is that businesses may seek to achieve the environmental standards or outcomes required by regulation by using the most effective rather than the most cost-effective technology, method or process. This may result in unnecessary costs.

The Commission considers that the concepts discussed above should have regard to costs. These terms should be defined in a way that allows businesses the flexibility to meet the environmental outcomes required by regulation in a least cost way. Clearer definitions will also ensure that the EPA and regulated businesses have a common understanding of the terms. This would reduce potential for differing interpretations and confusion, which can result in further costs and delays.

Draft recommendation 8.12

That EPA Victoria clarify the definitions of ‘best practice’, ‘best practicable outcome’, ‘best practicable measure or approach’ and ‘best available technology’ in its policies and guidance to ensure they do not constrain businesses from meeting the required performance or outcome standards in a least cost manner.

8.8.3 Consistency of advice

Inquiry participants emphasised the importance of maintaining a good working relationship with the EPA. For example, Australian Paper stated that:

In the case of the Maryvale Mill this (client manager function) has built a level of trust between the company and the authority and the officer involved has made the effort to learn about the industry. (sub. 37, p. 2)

Alcoa of Australia noted that, while the EPA has a well developed system of client managers, Alcoa would welcome a review of contact points within the EPA for specific environmental issues:

Regional EPA client manager[s] are required to provide advice across a broad range of environmental management issues and for specific enquiries on innovative process variations, are not always the subject expert. (sub. 21, p. 3)

Nexus Energy Limited expressed concern about a lack of consistency in the interpretation of legislation or regulation by regulators:

Such inconsistencies between regions in ... [DSE] or the EPA occur even when there is a hierarchical reporting structure to enforce the implementation of organisation wide policy decisions. Region versus head office tensions compound this issue. (sub. 9, p. 4)

The EPA is currently implementing a new organisational structure, which aims to make the organisation more client focused. The new structure has the potential to improve the consistency of decision making and advice. It has been reported that there will be an improved centralised decision making process to facilitate better consistency and uniformity in decision making (VWMA 2008b, p. 2).

Under the new structure, all works approvals will be consolidated into one unit, which may assist a consistent approach. Previously, seven regions or work units assessed approvals. Consistency relied on two monthly meetings between team leaders handling approvals, supplemented by informal discussions between staff handling similar applications and monthly regional manager meetings to resolve any remaining issues. The EPA has indicated that additional training and documentation is also planned (EPA 2009e).

The quality and consistency of advice provided by EPA officers depends on a range of factors including recruitment, training, internal guidance material, information and communication systems within the EPA, and organisational structure. The Commission recognises that the EPA is taking steps to address the consistency of its advice to businesses. The next steps should involve the EPA reviewing and updating its training procedures and internal guidance material. Businesses also value continuity of contact with an EPA officer or at least dealing with officers who are aware of the business's circumstances. The EPA should examine whether its information systems and other methods of internal communication enable the effective transfer of information between officers.

Draft recommendation 8.13

That EPA Victoria, to promote the consistency of its advice to business, should review its training procedures, internal guidance material, information systems and other methods of internal communication.

8.8.4 Environmental audit system

The statutory environmental audit system has operated in Victoria since 1989. An environmental audit is an assessment of the nature and extent of harm (or risk of harm) to the environment posed by an industrial process or activity, waste, substance or noise. The EP Act allows for environmental audits of any segment of the environment and the issuing of a certificate or statement of audit for that segment. It also provides for the appointment of environmental auditors, with the aim of ensuring that high quality rigorous environmental audits are conducted by appropriately qualified professionals (EPA 2003, p. 1; 2007d, p. 1).

The most extensive use of the system to date has been by planning authorities, government agencies and the private sector to provide assurance that potentially contaminated land is suitable for its intended use or to advise what is needed to make the land suitable for its intended use (EPA 2006b). To enable the sale of contaminated land, a certificate or statement of environmental audit is required.

Some inquiry participants expressed concern about the time and cost involved in meeting the ‘clean up to the extent practicable’ (CUTEPA) obligation in relation to polluted groundwater. The auditor will issue a certificate or statement of audit only when CUTEPA has been achieved. However, according to the UDIA:

The problem is that satisfying the EPA that CUTEPA has been reached, can require remediation works to the ground water or monitoring for a considerable period of time (up to five years). (sub. 5, p. 2)

A further issue concerned the grounds on which auditors could reasonably be perceived to face a conflict of interest. SITA Environmental Solutions reported cases where EPA appointed auditors have been ‘conflicted out’ and therefore not permitted to undertake audits on a site because they have represented the company previously (or one of its neighbours) in a consultancy role or as an expert witness at a VCAT hearing (sub. 3, p. 2). This could affect the supply of audit services.

SITA Environmental Solutions also questioned the need to submit environment audit reports on an annual basis, suggesting that it would be more appropriate to extend the submission of audit reports to 2–3 years in certain cases (sub. 3, p. 2).

The Commission seeks further information and comment on the operation of the environmental audit system in Victoria, including, but not limited to the application of the ‘clean up to the extent practicable’ approach, the supply of accredited auditors and the frequency of audit reports.

8.9 Estimated cost savings from proposed options

This chapter has proposed changes designed to streamline the operation of the EP Act and related regulations without compromising the Government’s

environmental objectives. Table 8.6 shows the estimated changes in administrative and substantive compliance costs from implementing a number of the options proposed in this chapter.

Table 8.6 Estimated cost savings, annualised basis

<i>Instrument</i>	<i>Administrative cost saving</i>	<i>Substantive compliance cost saving^a</i>	<i>Delay cost saving</i>	<i>Total cost saving</i>
	\$m a year	\$m a year	\$m a year	\$m a year
<i>Works approvals</i>				
Refine triggers for works approvals	0.2	0.2	..	0.4
Lists of pre-approved technologies	0.2	0.2	..	0.4
Strategic approach to works approvals ^b	0.5	0.5	2.8	3.8
<i>Licensing</i>				
Rollout of corporate licensing ^c	1.8	2.6	..	4.4
Review of standard licences	0.9	1.3	..	2.2
<i>Prescribed waste regulation</i>				
Encourage use of WasteCert	1.1	..	..	1.1
Reduce record keeping	4.0	..	..	4.0
Remove annual producer returns	0.3	..	..	0.3
Total	9.0	4.8	2.8	16.6

^a Excludes delay cost savings. ^b Includes implementing a more strategic approach, new statutory time limits and performance reporting on approval times by the EPA. ^c Estimates based on the number of standard licences that were amenable to corporate licensing at the commencement of the reform.

Source: VCEC.

The estimates rely on data from the ACG (2009) report, information from a range of EPA publications, and unpublished information provided by the EPA. The ACG (2009) noted that there is a band of variability around its estimates of compliance costs. Due to a paucity of information in some areas, the Commission needed to make a number of assumptions and judgements. Feedback on these estimates and the underlying assumptions is welcomed.

Refining the triggers for the works approval process is estimated to reduce compliance costs for business by about \$400 000 a year. This estimate is based on standardised estimates for administrative and substantive compliance costs for each works approval application (ACG 2009, p. 18) and assumes that the average number of works approval applications is reduced by 10 per cent. The

estimate for administrative costs also incorporates the costs of amending licence conditions.

A similar method was used to estimate the compliance cost savings for the options of maintaining lists of pre-approved technologies and adopting a more strategic approach. For the lists of pre-approved technologies, it was assumed that this option would reduce the number of works approval applications by 10 per cent. The estimate for administrative costs also incorporates the costs of the exemption process. This option is estimated to generate total compliance cost savings of about \$400 000 a year.

For the strategic approach with improved guidance, this option is assumed to reduce the standardised compliance costs by 30 per cent. This is estimated to generate savings in total compliance costs of about \$1.0 million a year. Reducing the statutory time limit for the EPA to assess works approval applications is assumed to halve current delay costs (ACG 2009, p. 18), saving businesses around \$2.8 million a year.

Corporate licensing is estimated to save business about \$4.4 million a year in compliance costs, based on 75 per cent rollout by June 2012. This estimate is based on standardised estimates for administrative and substantive compliance costs for each EPA licence (ACG 2009, p. 18). Administrative costs and substantive compliance costs are assumed to be reduced by 30 per cent respectively.

The rolling review of standard licences is estimated to result in savings of about \$2.2 million a year in total compliance costs, assuming that 75 per cent of licences are reviewed by June 2012. It is assumed that simplified licence conditions and reporting, and replacing prescriptive conditions with performance based conditions, will reduce the average compliance cost per single site licence by 20 per cent. This is applied to the number of standard licences for single sites (that are not amenable to corporate licensing).

Encouraging greater use of the WasteCert system so that 75 per cent of waste transport certificates are lodged in electronic form by June 2012 is estimated to save business about \$1.1 million a year in administrative costs. This estimate is derived by multiplying the difference between the administrative cost (per certificate) of using paper versus electronic waste transport certificates by the number of paper-based certificates used each year. Electronic record keeping, assumed to involve half the costs of paper-based filing systems, is estimated to save businesses around \$4.0 million a year. Removing the requirement for annual producer returns is expected to save business about \$300 000 a year in administrative costs (ACG 2009, p. 16).

9 Overlap and duplication of environmental reporting

9.1 Introduction

The terms of reference require the Commission to report upon opportunities for improving environmental regulation by reducing any overlap and duplication of federal, state and local government regulation. Many of the businesses consulted during the inquiry argued that a key area of overlap and duplication is environmental reporting under Commonwealth and Victorian Government programs.

Currently, many Victorian businesses report on resource use and other aspects of their environmental performance to several Commonwealth and Victorian programs. Environmental reporting may cover usage of resources such as electricity, gas and water, waste generation (including greenhouse gas emissions) as well as businesses' plans to reduce their resource use and waste production.

These environmental reporting requirements are intended to encourage more efficient use of resources such as energy and water, particularly when the prices of such inputs do not reflect the full social costs of resource use (chapter 2). Environmental reporting requirements also provide important information needed to assess the compliance with environmental policies (such as regulation by the Environment Protection Authority (EPA)).

Many of the businesses consulted by the Commission considered that there has been insufficient attention to coordinate the design of many new requirements to ensure that they do not overlap or duplicate existing obligations.¹ It was argued that streamlining current reporting obligations would produce significant savings to businesses without undermining the benefits of environmental reporting.

This chapter:

- describes current environmental reporting requirements faced by Victorian businesses (section 9.2)
- examines the costs to businesses of environmental reporting (section 9.3)
- looks at potential improvements to environmental reporting requirements (sections 9.4).

¹ Nexus Energy Limited (sub. 9); Loy Yang Power (sub. 18); Alcoa of Australia (sub. 21); Yarra Valley Water (sub. 22, p. 9); Jemena (sub. 28); Philip Morris Limited (sub. 31); Australian Paper (sub. 37); Energy Users Association of Australia (sub. 39); Esso Australia Pty Ltd (sub. 45); and Australian Petroleum Production and Exploration Association Limited (sub. 46); and Citipower and Powercor Australia (sub. 63).

9.2 Current reporting requirements

Large users of resources such as electricity and water, and emitters of wastes such as greenhouse gases, face multiple mandatory reporting obligations under a variety of Commonwealth and Victorian programs. Businesses in Victoria can be required to report environmental information under six mandatory Victorian and Commonwealth programs and licences:

- Environment and Resource Efficiency Plans (EREPs)
- Water Management Action Plans (WaterMAP)
- EPA licences (including Industry Greenhouse Program requirements)
- Energy Efficiency Opportunities Act (EEO)
- National Pollutant Inventory (NPI)
- National Greenhouse Emissions Reporting System (NGERS).²

The first three of these are Victorian programs and the remainder Commonwealth Government programs. Key features of the mandatory federal and state reporting requirements are summarised in tables 9.1 to table 9.4.

In the course of surveying sites that participate in the EREP program, the Commission was advised that trade waste agreements may add to businesses' reporting costs. While trade waste agreements are not a focus of this chapter, the Commission invites comments on the extent to which reporting under trade waste agreements impose unnecessary costs on businesses.

² These mandatory reporting obligations also sit alongside several voluntary reporting programs and corporate sustainability reporting. At the state level these programs include Waste Wise and SV Resource Smart Business, and at the Commonwealth level these include Greenhouse Challenge Plus, the National Packaging Covenant and the ABARE fuel and electricity survey. The Commission has not examined the scope to improve these programs.

Table 9.1 **Overview of mandatory programs and licences**

<i>Program/licence</i>	<i>Purpose</i>	<i>Major reporting requirements</i>	<i>Timing</i>	<i>Responsible body</i>
EREP	Improve the energy, water and waste efficiency of industrial and commercial sites in Victoria.	Environment and Resource Efficiency Plan (includes data on, and actions to reduce, energy, water and waste). Implementation of the EREP and updated data on energy, water and waste.	Once over the life of the EREP regulations (seven years). Annually from year three of the program, by 30 September, or as agreed with the EPA.	Environment Protection Authority (Victoria)
WaterMAP	Improve the water efficiency of major water using industrial, commercial and institutional water customers.	Water management action plan (includes baseline water use and actions to improve water efficiency).	Once, by 31 December 2007, or within three months of meeting the threshold, or before connection if the local water authority estimates the threshold will be met. Reviewed every 12 months.	Local water corporations (Victoria)
EPA licences ^a	Control the operation of sites in order to ensure that they have no adverse effect on the environment.	Emissions to air, land and water, waste generated, incidents and licence breaches. Sites may have slightly differing requirements.	Annually, or as specified in licences and whenever incidents occur.	Environment Protection Authority (Victoria)
Industry Greenhouse Program ^b	Improve the energy efficiency and reduce the greenhouse gas emissions of EPA licence holders and works approval applicants.	Energy consumption, greenhouse gas emissions and energy and greenhouse gas reduction actions.	Annually, through EPA licence reporting.	

(continued next page)

Table 9.1 **Overview of mandatory programs and licences**
(continued)

<i>Program/licence</i>	<i>Purpose</i>	<i>Major reporting requirements</i>	<i>Timing</i>	<i>Responsible body</i>
EEO	Improve the energy efficiency of large energy-using corporations.	Assessment plan (outlining energy use and savings data; how and when assessments will be conducted; and a reporting schedule) Assessment of outcomes and business response (reported to the public and DRET). ^c	Once every five years, within 18 months of the corporation's trigger year. Annually, beginning within 15 months of assessments, or 30 months of the start of the assessment cycle.	Department of Resources, Energy and Tourism (Commonwealth)
NPI	Promote waste minimisation, cleaner production, and energy and resource efficiency of businesses; facilitate planning and management; and provide current information.	Emissions to air, land and water, and transfers of waste, for up to 93 substances. ^d	Annually, usually by 30 September.	Department of the Environment, Water, Heritage and the Arts (Commonwealth)
NGERS	Underpin emissions trading, inform the public, meet international reporting obligations, assist government programs and activities, and avoid duplication of reporting.	Greenhouse gas emissions and energy production and consumption levels, of up to 66 types of fuels and energy.	Annually, beginning the financial year during which the corporation first meets a threshold.	Department of Climate Change (Commonwealth)

^a Includes standard, accredited and corporate licences. ^b The EPA estimated that IGP reporting obligations are written in to about 170–515 licences, but stated that it does not actively enforce these obligations. ^c A corporation can report through its annual report, a sustainability or similar type of report, or by posting the report on its website (DRET 2008). ^d The NPI is a database that displays information via the NPI website (DEWHA 2008b).

Sources: EPA 2007k (p. 22, 24 and 27), 2008x, 2009q, 2009r & 2009t; DSE 2007c & 2009; DRET 2008; DEWHA 2008b; DCC 2008a.

Table 9.2 Thresholds and coverage under each program

Program	Thresholds for participation (annual)				Victorian participants	
	Energy use	Water use	Greenhouse gas (CO ₂ -e)	Other	Entities covered	Number
EREP	100TJ	120ML	-	-	Sites	250
WaterMAP	-	10ML	-	-	Sites	1845
EEO	500TJ	-	-	-	Corporations	125 ^a
NGERS ^b	500TJ	-	125kt	-	Corporations ^c	
	100TJ	-	25kt	-	Facilities	160 ^d
EPA licences ^e	5MW ^f	-	-	5000L ^g	Premises (sites)	685
				100kg ^h		
				500kg ⁱ		
				Qty>0 ^j		
NPI ^e	60 000MWh ^{k l} 20MW ^m	-	-	10t, 25t or 5kg ⁿ	Facilities	770
				400t or 1t ^o		
				15t or 3t ^p		

^a Number of sites covered in Victoria, based on 19/38 respondents to the Commission's survey of EREP sites indicating that they participate in the EEO program, scaled up to the EREP population (250 sites) (VCEC 2009). ^b Lower thresholds for corporate groups will be phased in by 2010-11. The final thresholds will be 50 kilotonnes of greenhouse gases (CO₂ equivalent) or 200TJ of energy. ^c The Commission was unable to find data on the number of corporations covered under the NGERS program. ^d Number of sites covered in Victoria, based on 25/38 respondents to the Commission's survey of EREP sites indicating that they participate in the NGERS program, scaled up to the EREP population (250 sites) (VCEC 2009). ^e Not all thresholds for this program are included. ^f Capacity of a power station to generate electrical power from the consumption of a fuel. ^g Design or actual flow rate of treatment, discharge or deposit of sewage effluent, or discharge or deposit of industrial wastewater effluent not generated at the premises, on or from a premises. ^h Proposed or actual discharges or emissions to the atmosphere of volatile organic compounds, particles, sulphur oxides, nitrogen oxides, or other acid gases (excluding carbon dioxide). ⁱ Proposed or actual discharges or emissions to the atmosphere of carbon monoxide. ^j Proposed or actual discharges or emissions to the atmosphere from any industrial plant or fuel burning equipment of any class 3 indicator substance in the SEPP (Air Quality Management). ^k Facilities that meet the energy thresholds must report emissions of 19 Category 2b substances outlined in the NPI Guide (exemptions may apply). ^l Electrical energy for other than lighting or motive purposes. ^m Maximum potential power consumption for other than lighting or motive purposes. ⁿ Use of any Category 1 substance, Category 1a substance, or Category 1b substance respectively. ^o Burning of fuel, or of fuel or waste in one hour respectively. ^p Discharge of Total Nitrogen or Total Phosphorus to water (including to sewer) respectively.

Sources: EPA 2008I & 2009s; DEWHA 2008b; *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007*; DSE 2009a & VCEC 2009.

While table 9.2 shows the number of Victorian businesses that currently report under each of the six mandatory programs, it is not clear what proportion of these businesses report the same information under multiple programs. Table 9.3 shows the information required under each program. In addition, to help assess the extent of overlap, the Commission surveyed 38 sites (21 businesses) that are

required to report under the EREP program. Survey respondents were asked to nominate the programs under which they must currently report. Table 9.4 shows that many of the sites are currently reporting similar data under several other mandatory programs and licences. About 63 per cent of the EREP sites surveyed report on their energy use to between 4 and 5 programs, while about 34 per cent report on actions to between 4 and 5 programs. About 90 per cent of sites in the sample report on waste to between 2 and 3 different programs, while 68 per cent report on water use to between 2 and 3 mandatory programs. This suggests that there is a high degree of overlap for reporting of energy use and actions, and to a lesser extent waste production and water use also.

Table 9.3 Information required under each program

	<i>Water</i>	<i>Electricity</i>	<i>Gas</i>	<i>LPG</i>	<i>Fuels^a</i>	<i>GHG</i>	<i>Waste^b</i>	<i>Other^c</i>	<i>Actions^d</i>
EREP	✓	✓	✓	✓	✓		✓		✓
WaterMAP	✓								✓
EPA licence ^e		✓f	✓f	✓f	✓f	✓f	✓	✓	
EEO		✓	✓	✓	✓				✓
NPI		✓	✓	✓	✓		✓	✓	
NGERS		✓	✓	✓	✓	✓			

^a Combustible fuels. ^b Solid and/or liquid waste. ^c Includes fugitive emissions. ^d Plans for and progress at increasing efficiency of resource use. ^e Specific reporting requirements can differ depending on the industry and environmental risks of the site. ^f The EPA estimated that IGP reporting obligations (covering energy use and greenhouse gas emissions) are written in to about 170–515 licences.

Sources: EPA 2008x, 2008y, 2009q & 2009t; DSE 2007c & 2009; DRET 2008; DEWHA 2008b; DCC 2008a; VCEC 2009.

Table 9.4 Number of EREP participants reporting similar information under six mandatory programs and licences^a

<i>Number of programs/licences</i>	<i>Water^b</i>	<i>Energy^c</i>	<i>Greenhouse gas^d</i>	<i>Waste^e</i>	<i>Efficiency actions/improvements^f</i>
0-1	79	13	132	20	46
2-3	171	79	118	230	118
4-5	0	158	0	0	86

^a Figures are based on a survey of 38 EREP sites, and are scaled up to the population of 250 EREP sites. ^b Reporting under EREP and WaterMAP. ^c Reporting under EREP, IGP (EPA licence), NPI, EEO and NGERS. ^d Reporting under IGP (EPA licence) and NGERS. ^e Reporting under EREP, EPA licence and NPI. ^f Reporting under EREP, WaterMAP, IGP (EPA licence) and EEO.

Source: VCEC 2009.

The comparison of the six mandatory reporting programs shows that the programs are characterised by:

- *shared objectives* such as:
 - increasing efficiency of resource use (and minimising waste or emissions)
 - providing information to governments and the community
- *extensive duplication in terms of the information that must be reported*, including:
 - energy use (including electricity, gas and solid fuels)
 - waste, greenhouse gas and other emissions
 - water use
 - plans for and progress at increasing efficiency of resource use (and minimising waste or emissions)
- *different reporting times*, with some requiring annual reporting and others requiring reporting within a certain number of days of program commencement
- *similar participation thresholds and overlapping coverage*, especially for energy use, actions and generation of waste.

9.3 Costs of environmental reporting

Many of the businesses consulted during the inquiry expressed concerns about the costs of environmental reporting. The Commission reviewed the available literature and undertook a survey of 38 Victorian sites (21 businesses) that are required to participate in EREP, to examine the potential costs to Victorian businesses of environmental reporting requirements.

9.3.1 Participants' views on the costs of environmental reporting requirements

Businesses submitted that they incur unnecessary costs as a result of duplication and overlap, and the complexity and variability of the rules for reporting and seeking exemptions. Participants also raised concerns about several specific aspects of current environmental reporting requirements:

- The cumulative burden of environmental reporting programs is imposing a significant cost on some businesses. These costs are increased when businesses are required to report similar information in different formats.
- While opportunities are available under some programs to obtain exemptions or use reports from other programs to satisfy reporting requirements, the complexity and cost of obtaining full or partial exemptions inhibits uptake of such opportunities.
- The time and cost of complying with mandatory reporting obligations diverts resources from worthwhile environmental improvement activities.

Cumulative burden of environmental reporting

A number of participants argued that there has been a steady accumulation of environmental reporting obligations imposed on businesses, resulting in significant overlap and duplication.

Although a number of submissions from business were critical of the growth in mandatory environmental reporting, few provided specific information on the resulting costs.

- Both Loy Yang Power (sub. 18, p. 1) and Australian Paper (sub. 37, p. 3) stated that collating and analysing figures to obtain baseline data, and determining efficiency opportunities for the EREP program involve a large volume of work.
- The Energy Users Association of Australia (EUAA) (sub. 39, p. 3) estimated that audits required under EREPs can cost its members between \$20 000 and \$75 000 each to perform, excluding internal costs.
- The APPEA (sub. 46, p. 8) stated that ExxonMobil Australia, for example, currently spends approximately 130 person-days per year on environmental reporting requirements.
- Australian Paper (sub. 37, p. 2) also argued that the volume of reporting required by its EPA licence imposes significant costs. It stated that its licence requires eight reports, including an annual river discharge report, an annual river biosurvey report, a solid waste report, a groundwater review, a groundwater audit report, a prescribed waste report and two annual air discharge reports.

Several participants³ submitted that the costs of reporting are increased as a result of the need to present information in different formats. Australian Paper, for example, stated that many of the reports ‘consist of data which is quite similar in content, however each individual report requires the basic data to be statistically altered and presented in a varied format’ (sub. 37, p. 3). Philip Morris stated that of the different environment-related reports that it was required to lodge in 2008, a number require different versions of similar information, including two reports on water, two reports on energy and three reports on waste (sub. 31, p. 3). In addition to concerns about reporting formats, Alcoa noted that differences in reporting timelines impose additional work and costs on businesses (sub. 21, p. 3).

Estimates of the costs to business of environmental reporting are presented below.

³ Loy Yang Power (sub. 18, p. 1); Yarra Valley Water (sub. 22, p. 9); Philip Morris Limited (sub. 31, p. 3); Australian Paper (sub. 37, p. 3).

Costs of obtaining exemptions

Some stakeholders stated that gaining exemptions from reporting requirements is also very complex for businesses. Philip Morris Limited (sub. 31, p. 4) stated that the amount of work required to obtain an exemption from the EREP water component, and the uncertainty around whether an exemption would be granted, did not justify the efforts. The APPEA (sub. 46, p. 12) stated that gaining EREP (energy) exemptions for EEO assessments was complicated by the fact that assessments needed to be finished earlier than the EEO program required, and detailed information needed to be modified to the EREP format.

Foregone environmental benefits

Some participants stated that environmental reporting requirements obstruct businesses from undertaking other more valuable activities, including activities that can benefit the environment.

Philip Morris, for example, stated that overlapping reporting work consumes the time of staff whose role is to reduce the company's environmental footprint (sub. 31, p. 5). Similarly, Australian Paper stated that overlap and inconsistencies between reporting requirements result in administrative burden which leads to reduced time spent on site specific projects (sub. 37, p. 3). Loy Yang Power added that the current regulatory environment encourages businesses to stay in the compliance space, rather than looking for opportunities to be innovative (sub. 18, p. 2).

9.3.2 Estimated costs of environmental reporting requirements

To examine the potential costs and benefits to Victorian businesses of environmental reporting requirements, the Commission reviewed the available literature and undertook a survey⁴ of 38 Victorian sites (21 businesses) that are required to participate in the EREP program.⁵

Surveyed businesses were asked to estimate the time and costs incurred in fulfilling Commonwealth and Victorian reporting obligations on a site-by-site basis. The Commission used the responses to develop indicative estimates of the cost of mandatory reporting obligations.

Responses to the survey and information provided in regulatory impact statements and other sources, suggest that Victorian and Commonwealth mandatory environmental reporting requirements impose costs of approximately

⁴ Participating businesses were sent a questionnaire and then the survey was conducted via a telephone interview.

⁵ All financial estimates in this section are presented in nominal terms.

\$23 million per year on Victorian businesses (table 9.5). About \$3 million of the total costs are the one-off/start-up costs of preparing action plans for efficiency. The majority are ongoing costs, including monitoring, keeping records, and annual reporting.

These cost estimates are based on a number of simplifying assumptions and represent an average for large numbers of businesses. In reality, the costs per business are likely to vary significantly, reflecting the businesses' activities, potential environmental impact, size and other factors.

This point can be illustrated by examining the overall findings of the Commission's survey for the EREP program.⁶ The survey suggests that the one-off cost of preparing an EREP is about \$23 000 (\$3300 annualised over seven years), and the annual cost of monitoring, reporting, training and capital expenditure is about \$25 900, on average for each site. The survey also suggests that the average benefit of EREP is about \$44 300 per year for each site. Overall, this suggests that the EREP program delivers an annual net benefit of about \$3.8 million⁷, and total benefits over seven years of about \$26.3 million, to Victorian businesses.⁸ However, results from one business (five sites) drastically influenced these estimates. Removing these five sites from the calculation results in one-off costs of about \$14 000 (\$2000 annualised over seven years), annual costs of about \$9800, and annual benefits of about \$13 100, on average for each site. Overall, this suggests that the EREP program delivers an annual net benefit of only about \$0.3 million⁹, and total benefits over seven years of about \$2.2 million, to Victorian businesses.

While EREP may deliver a benefit overall, the impact of EREP on individual business varies considerably, suggesting that there may be gains from targeting the program. The survey suggests that about 37 per cent of sites reap substantial net benefits from participating in EREP. This implies that EREP provides a net benefit for about 90 sites, valued at about \$4.5 million¹⁰ per year (or \$3.5 million per year excluding one business with five sites that drastically influenced these estimates).

⁶ In order to establish the incremental impact of the EREP program, the Commission asked surveyed businesses to estimate benefits and costs **in addition to** their own initiatives and/or other government programs.

⁷ Calculated as (average benefit per site – average annualised one-off cost – average ongoing cost) * 250 sites = (44 267 – 3282 – 25 945) * 250.

⁸ This is lower than estimated in the regulatory impact statement for EREP, which estimated net cost savings to Victorian businesses from the EREP program of about \$65.4 million over 10 years (EPA 2007k, p. vi).

⁹ Calculated as (average benefit per site – average annualised one-off cost – average ongoing cost) * 250 sites = (13 120 – 2009 – 9844) * 250.

¹⁰ Calculated as (average benefit per site – average annualised one-off cost – average ongoing cost) * 92 sites = (132 300 – 6500 – 77 100) * 92.

On the other hand, nearly 40 per cent of sites considered that the costs of EREP exceeded the benefits; the remainder were unable to quantify the benefits and costs. This implies that about 100 sites (2 out of 5 sites) face a net cost as a result of EREP (worth about \$1 million per year¹¹, or about \$7.2 million in total over the seven years of the program). Overall, these results suggest that there may be gains from targeting schemes such as EREP (see section 9.4.3).

Another significant finding from the survey is that mandatory reporting has a cumulative burden which can be measured in terms of the amount of staff resources needed to meet reporting obligations. The Commission's survey found that businesses participating in the EREP program devote an average of about 51 days per year of staff time in maintaining and reporting environmental information under all of their mandatory programs and licences. This equates to annual staff costs of approximately \$6.2 million for EREP participants alone.¹²

Table 9.5 The costs of mandatory environmental reporting

<i>Program/licence</i>	<i>Population (sites or facilities)</i>	<i>Annualised one-off/ start-up costs (\$m)</i>	<i>Ongoing costs (\$m)</i>	<i>Total annual costs (\$m)</i>
EREP	250	0.8 ^a	1. 3 ^b	2.1
WaterMAP	1845	2.0 ^c	4.4 ^d	6.4
EPA licences	685	-	11.6 ^e	11.6
NPI	770	-	2.3 ^f	2.3
EEO	125	0.1 ^c	0.3 ^d	0.4
NGERS	160	-	0.4 ^d	0.4
Total		2.9	20.3	23.2

^a Based on an estimated average cost of preparing an EREP of around \$23 000 per site, divided by seven years (the life of the program). ^b Based on annual costs of monitoring, maintaining, reviewing and reporting information under the EREP program of \$7104 per site (incurred in years 3–7 of the program), spread over the seven years of the program (EPA 2008l, pp. 6 & 8). The annual cost estimate from the Commission's survey is not used, as this included capital expenditure and training costs. ^c Assumes that the average one-off cost of preparing the plan is \$7657 (one-third of the average cost of preparing an EREP) and that the average life of the program is seven years. ^d Assumes that the annual cost is \$2368 (one-third of the average cost of monitoring, maintaining, reviewing and reporting information under the EREP program). ^e Assumes that the average cost of reporting per site is \$17 000 (ACG 2009, p. 18). ^f Assumes that the average cost of reporting per site is \$3000 (Environment Link 2005, p. 51).

Sources: ACG 2009, p. 18; EPA 2008l, pp. 6–9; Environment Link 2005, p. 51; & VCEC 2009.

¹¹ Calculated as (average annualised one-off cost + average ongoing cost) * 99 sites = (2245 + 8214) * 99.

¹² Calculated as (days * hours per day * hourly rate) * 250 sites = (51.41 * 8.24 * 58.91) * 250 (Government of Victoria 2007b, pp. C-3–C-5; ABS 2008b; & ABS 2009, p. 8).

These estimates of the costs of multiple reporting requirements only cover direct costs. As noted previously, businesses incur indirect costs resulting from key staff being diverted from more profitable activities or from activities that would generate larger environmental benefits to the business. For example, the 51 days that EREP participants spend on average per year on maintaining and reporting environmental information, could be allocated to other activities including research, development and implementation of projects that increase businesses' resource efficiency and reduce waste generation and other emissions. The next section examines options for reducing the costs of mandatory environmental reporting requirements without undermining objectives.

9.3.3 Mutual recognition and exemptions

Reflecting the potential for overlap and duplication, some programs seek to recognise work done under other reporting programs, or provide an avenue for seeking exemptions. In practice, mutual recognition and exemptions are limited by strict requirements for previous work to be in specific formats.

According to the EPA (2008x, p. 29), for example, information from WaterMAPs and EEO, and several voluntary programs including Industry Greenhouse Program, GHC Plus, Waste Wise, and SV Resource Smart Business, could be accepted in an EREP. To qualify for an EREP exemption, however, information from other programs must include all the necessary elements of an EREP, such as baseline data, planned actions, costs and payback periods and timeframes for implementation (EPA 2008k, p. 3). Possibly reflecting this strict requirement, only 27 EREP exemptions have been granted to businesses, comprising five complete exemptions, 10 partial exemptions, 10 program exemptions and two exemptions for unique circumstances (EPA 2008y).

The WaterMAP program also provides some exemptions. Plans developed under the Victorian Government's 'Pathways to Sustainability' and trade waste programs may be accepted as a WaterMAP. The local water authorities which administer the WaterMAP program have some discretion in whether plans produced under other reporting programs will be accepted as a WaterMAP (CWW 2009). In addition, some water corporations may seek to recognise work done under the EREP program. Yarra Valley Water stated that it has granted 15 complete exemptions from WaterMAP where customers exceeded the threshold based on estimated use or because of a major leak, or because the site was closing down (YVW 2009).

Opportunities for gaining exemptions from Commonwealth programs appear to be very limited. Reflecting the specific data requirements of an emissions trading scheme, Victorian businesses that already report energy or greenhouse gas emissions data will not be able to receive exemptions under the NGERS

program. Energy assessments conducted prior to the commencement of EEO assessment cycles may satisfy the requirement to conduct an EEO assessment. However, in order to satisfy this requirement, the prior work must meet 19 key requirements and 29 corresponding conditions outlined in the industry guidelines (DRET 2008, pp. 34 & 41–50).

9.3.4 Current and prospective improvements

A number of current and prospective reviews and changes may lead to moderate reductions in overlap and duplication of environmental reporting requirements.

EPA commenced a two year reform of the licensing and works approval system in May 2008 that is looking at a number of different streams of work, including simplifying and reducing reporting requirements (EPA 2008y). The EPA expects that its ongoing reforms, involving a move towards corporate licences, Annual Performance Statements (APS) and other licensing reporting simplification will reduce licence reporting requirements (chapter 8).

Both the EPA and the Department of Sustainability and Environment (DSE) are working with other jurisdictions (including the Commonwealth Department of Climate Change) to minimise duplicative reporting requirements. This work is being coordinated through the 'Experts Group on Streamlining' for the Working Group on Climate Change and Water at the Council of Australian Governments (EPA 2008, p. 1). The Working Group is addressing the way that reporting will be done through the Online System for Comprehensive Activity Reporting (OSCAR). A draft 'Implementation Plan for Streamlining Greenhouse and Energy Reporting' has been prepared and tabled at the Council of Australian Governments (COAG) but is not publicly available (EPA 2008, p. 1).

In addition, COAG has agreed to develop a National Strategy for Energy Efficiency to accelerate energy efficiency efforts across all governments and to help households and businesses prepare for the introduction of the Commonwealth Government's Carbon Pollution Reduction Scheme (CPRS). The strategy will involve, amongst other things, streamlining roles and responsibilities for energy efficiency policies and programs by early 2009 (COAG 2008a & 2008b).

There is not sufficient information available as yet to assess whether these initiatives will result in a significant reduction in the duplication and overlap between mandatory Commonwealth and Victorian Government reporting programs.

9.4 Opportunities for improvement

Participants proposed two principal options for addressing the overlap and duplication between reporting requirements:

- (1) better aligning current reporting requirements
- (2) developing a centralised reporting system.

9.4.1 Better aligning current reporting requirements

Several stakeholders proposed options for streamlining the EREP and WaterMAP programs. Alcoa of Australia (sub. 21, p. 3), for example, stated that the reporting formats and timelines of EREP and WaterMAP could be merged, allowing the same information to be submitted once. Philip Morris Limited (sub. 31, p. 1) recommended that companies triggering the EREP threshold should no longer be required to lodge WaterMAP reports. Similarly, 12 respondents (32 per cent) to the Commission's survey of EREP participants stated that sites participating in the EREP program should be automatically exempted from WaterMAP, given the overlapping objectives and requirements.

Several stakeholders proposed options for streamlining the EREP and EEO programs. For example, the EUAA stated that the two programs should at least be rationalised into a single reporting obligation (sub. 39, p. 3). Both Jemena and the EUAA stated that the energy requirements under EREP could be removed given the similar requirements of the EEO (sub. 28, p. 1; sub. 39, p. 3). Similarly, eight respondents (21 per cent) to the Commission's survey of EREP participants stated that sites participating in the EEO program should be automatically exempted from the energy component of the EREP program, given the overlapping objectives and requirements. Nexus Energy Limited (sub. 9, p. 7) argued that the energy component of the EREP program and the EEO program should be discontinued after a national emissions trading scheme is introduced.

Philip Morris Limited (sub. 31, p. 1) also recommended that the EPA should investigate consolidating the prescribed waste annual return requirements into EREP, so all companies that are required to lodge an EREP are no longer required to lodge the return.

9.4.2 Developing a centralised reporting system

To reduce overlap and duplication, some participants suggested that governments develop a single environmental reporting system with the facility for on-line reporting. Loy Yang Power (sub. 18, p. 1) and Australian Paper (sub. 37, p. 3) suggested that state and Commonwealth environmental reports be

merged into a single detailed environmental report that meets all relevant reporting requirements. They also proposed that a central on-line reporting system and database be developed, to allow companies to enter the required data into the system, and regulators to access that data to meet their needs.

About 70 per cent (26 sites) of respondents to the Commission's survey of EREP participants stated that adopting one on-line reporting point for all mandatory programs and licences, with standard formats and timing for reporting, would benefit their business. More respondents stated that this improvement would benefit their business than any other proposed improvement.¹³ Respondents estimated that such a system would save their staff about 9 days (full-time equivalent) per year on average, equating to savings of approximately \$750 000 per year for EREP participants alone.¹⁴ However, Loy Yang Power stated that issues such as who manages the data, what data is published, and what effect this would have on regulators would need to be resolved (sub. 18, pp. 1–2).

9.4.3 The Commission's assessment

The description of current reporting obligations and the estimated costs to businesses suggest that there is significant scope to reduce costs without undermining the benefits of environmental reporting.¹⁵ There is significant overlap between mandatory Commonwealth and Victorian reporting requirements. As noted, the current requirements are characterised by:

- shared objectives
- requiring the same or similar information
- differing reporting times
- similar participation thresholds and overlapping coverage.

It is difficult to estimate the extent of duplication of reporting requirements due to the number of mandatory programs and differences in their coverage. However, the Commission's survey of EREP participants suggested that:

- about 160 sites (63 per cent of the EREP population) report energy use under 4–5 programs or licences, while another 80 sites (32 per cent) report energy use under 2–3 programs or licences

¹³ Other proposed improvements included: standard formats or timing for all mandatory reporting, easier exemptions from the EREP or other programs, and merging or abolishing certain requirements or programs.

¹⁴ Calculated as (days * hours per day * hourly rate) * 171 sites = (9.1 * 8.24 * 58.91) * 171 (Government of Victoria 2007b, pp. C-3–C-5; ABS 2008b; & ABS 2009, p. 8).

¹⁵ All financial estimates in this section are presented in nominal terms.

- about 140 EREP sites (55 per cent of the EREP population) report waste information under 4–5 programs or licences, while another 105 sites (42 per cent) report waste information under 2–3 programs or licences
- about 92 EREP sites (37 per cent of the EREP population) report resource efficiency actions and improvements under 4–5 programs, while another 105 sites (42 per cent) report this information under 2–3 programs
- about 171 EREP sites (68 per cent of the EREP population) report water use under 2–3 programs
- about 118 EREP sites (47 per cent of the EREP population) report greenhouse gas emissions under 2–3 programs.

The Commission considers that the costs of environmental reporting for Victorian businesses can be significantly reduced, without undermining environmental benefits, by:

- (1) Exempting EREP sites from the requirement to submit WaterMAP Plans. This would eliminate the need for 74–184 WaterMAP Plans.
- (2) Targeting the EREP program at sites that are most likely to benefit from the program. This could be achieved by exempting current and potential participants from the EREP program based on, for example, previous resource efficiency improvements and participation in other programs.
- (3) Streamlining the WaterMAP program by cutting the number of information requirements from about 90 to about 35.
- (4) Encouraging further licensing reforms by the EPA, focused on reducing the regulatory burden of licence requirements (chapter 8).
- (5) Developing an on-line reporting point for environmental reporting programs and licences, with standard formats and timing.

Table 9.6 shows the estimated administrative cost savings for Victorian businesses from each of these improvements, including the interactions between the recommendations (see the footnotes for detail).

Table 9.6 Cost savings from improving mandatory environmental reporting

<i>Improvement</i>	<i>One-off/ start-up cost saving (\$)</i>	<i>Ongoing cost-saving (\$m)</i>	<i>Total ongoing cost-saving (\$m)</i>
Targeting EREP ^a	15 700 ^b	0.7–1.1 ^c	0.7–1.1
WaterMAP exemptions	7700 ^d	0.2–0.4 ^e	0.2–0.4
Streamlining WaterMAP	2000 ^f	2.4–2.6 ^g	2.4–2.6
Victorian on-line reporting ^h	-150 000 ⁱ	0.3–0.5 ^j	0.3–0.5
National on-line reporting ^k		2.3–2.6 ^l	2.3–2.6
Total		5.9–7.2	5.9–7.2

^a These estimates do not include cost savings from reduced capital expenditure (as all mandatory capital expenditure under the EREP program would have a payback of three-years or less) or reduced education (estimated to cost each site about \$840 per year (EPA 2007k, p. 50)). ^b Estimated savings for each site exempted from the program in the future. Calculated as the one-off costs of registering and preparing an EREP for the 40 per cent of sites (100 sites) that incur a net cost from the EREP program. ^c Calculated as the ongoing costs of monitoring, maintaining, reviewing and reporting information under the EREP program (\$7104) multiplied by the 100–150 sites (40–60 per cent) that would be exempt from EREP by this recommendation. ^d Estimated savings for each site exempted from the program in the future. Assumes that the average one-off cost of preparing a WaterMAP plan is one-third (\$7657) of the average cost of preparing an EREP (\$23 000). ^e Based on 74–184 EREP sites participating in the WaterMAP program (74 assumes a 60 per cent reduction in the EREP population, and 184 assumes no reduction in the EREP population), multiplied by \$2368 (one-third of the average cost of monitoring, maintaining, reviewing and reporting information under the EREP program). ^f Estimated savings for each site that joins the program in the future. Assumes that the average one-off cost of preparing a WaterMAP plan is \$7700 (one-third of the average cost of preparing an EREP (\$23 000)), and that the information obligations in the WaterMAP plan are reduced by about 25 per cent. ^g Based on 1660–1845 sites participating in the WaterMAP program (1660 assumes that there is no reduction in the EREP population and all of the EREP sites in WaterMAP (about 184) are exempt from WaterMAP, while 1845 assumes that no EREP sites are exempt from WaterMAP). Assumes that the average ongoing reporting costs under the WaterMAP program are \$2368, and that the annual information obligations under WaterMAP are reduced by about 60 per cent. ^h Estimated savings for Victorian businesses from developing a single on-line reporting point for EREP, WaterMAP and EPA licences, with standard formats and timing. ⁱ The estimated cost of developing an on-line reporting point for environmental reporting programs and licences. ^j Assumes that of the 100–150 sites remaining in the EREP program, 57–104 sites report energy use, and 79–124 sites report waste, under both EREP and EPA licences (based on the Commission’s survey), and will save \$2368 each from reporting this information once. ^k Estimated additional savings for Victorian businesses from expanding the Victorian on-line reporting point to include NPI, EEO and NGRS. ^l Assumes that: of the 100–150 sites remaining in the EREP program 100–144 also report waste under the NPI, 184–230 sites with EPA licences but not in the EREP program also report waste under the NPI, 450–540 sites report energy information to the EEO, NPI and/or NGRS, 135 sites report GHG information under both EPA licences and NGRS, that 40–90 EREP sites also report efficiency actions/improvements to the EEO (based on the Commission’s survey), and that each of these sites will save \$2368 from reporting this information once.

Source: Commission estimates.

While the EREP program appears to deliver net benefits to only about 40 per cent of participants, these net benefits can be large. Given the large percentage of businesses that do not derive any benefits, it is important to find ways to better target the program. This could be achieved by making it easier for businesses with particular characteristics to obtain an exemption from the EREP program. These characteristics could include, for example, a demonstrated track record in resource efficiency savings, an obligation to report under other mandatory and voluntary programs (such as EPA licences, EEO, NGERs, National Packaging Covenant, ABARE fuel and electricity survey, Greenhouse Challenge Plus and corporate sustainability reporting), and an environmental management system with ISO certification. At present only 27 sites receive any form of exemption from complying with the EREP regulations. By better targeting EREP requirements there is scope to save Victorian businesses the ongoing cost of reporting against their plans as well as the cost of preparing future EREP plans. The Commission estimates that better targeting the application of EREP could save about \$1 million per year for five years (the duration of annual reporting requirements), without undermining environmental benefits.

Draft recommendation 9.1

That EPA Victoria reduce the unnecessary costs of the Environment and Resource Efficiency Plans (EREPs) by exempting sites that do not derive benefits from participating in the EREP program. These sites could include those that:

- **have a track record of sustained resource efficiency improvements**
- **already report under other mandatory programs such as EPA Victoria licences, Energy Efficiency Opportunities and the National Greenhouse and Energy Reporting System**
- **participate in voluntary reporting and programs such as corporate sustainability reporting, the National Packaging Covenant, the ABARE fuel and electricity survey and Greenhouse Challenge Plus**
- **have an environmental management system with ISO certification**
- **depend on water and energy use and waste generation for their core business, and have proportionally high water, energy and waste costs.**

There is also scope to reduce the costs of the WaterMAP program without undermining benefits. This can be achieved by automatically exempting EREP participants from the WaterMAP program, and by reducing the 90 or so information obligations under WaterMAP to a core of about 15 one-off obligations and 20 annual reporting obligations (see box 9.1). Many of the information obligations are unnecessary given the underlying purpose of the scheme and seem to be designed to garner information for use by water businesses and DSE. A key best practice regulatory principle is that it should be

the minimum necessary to achieve the objective. In addition, some information obligations could be provided by the relevant water authority, or automatically calculated in an on-line reporting system. The WaterMAP Handbook (DSE 2007c) could be revised to include a minimum set of mandatory information obligations, followed by voluntary guidelines on how to generate the information. The Commission estimates that these changes to WaterMAP will save Victorian businesses about \$2.6–\$3 million per year.

Draft recommendation 9.2

That the Department of Sustainability and Environment reduce the unnecessary costs of the WaterMAP program by:

- **automatically exempting Environment and Resource Efficiency Plan participants from the WaterMAP program**
- **reducing the 90 or so information obligations under WaterMAP to a core of about 15 one-off information obligations and 20 annual reporting obligations.**

Reporting obligations under EPA licences appear to impose more costs on Victorian businesses than any other program (\$11.6 million per year). The Commission considers that ongoing licensing reforms by the EPA can further reduce the costs of licences without undermining environmental benefits (chapter 8). In addition, the Commission considers that overlap between EPA licences and other programs, such as the NPI and EREP, can be reduced by adopting an on-line reporting point for mandatory programs and licences, with standard format and timing.

The Commission considers that the Victorian Government could play a lead role in encouraging a reduction in overlap and duplication between state and federal reporting programs by developing, and advocating through COAG, one on-line reporting point for all programs and licences.

Adopting one on-line reporting point for the remaining (streamlined) mandatory programs and licences, with standard format and timing for all required reporting, would yield significant additional benefits for businesses. More respondents to the Commission's survey of EREP participants stated that adopting one on-line reporting point would yield benefits for their business than any other proposed improvement. The Commission's survey suggests that the cost-savings of such a system are likely to be about \$750 000¹⁶ per year for EREP participants alone. The Commission estimates that the annual cost savings to all Victorian businesses could be about \$2.6–3.1 million.

¹⁶ Calculated as (days * hours per day * hourly rate) * 171 sites = (9.1 * 8.24 * 58.91) * 171 (Government of Victoria 2007b, pp. C-3–C-5; ABS 2008b; & ABS 2009, p. 8).

The Commission recommends establishing a single on-line reporting point, to which businesses could lodge all of their required environmental reporting. Each business's environmental data would then go into a central database. The relevant agencies could access the database, check whether businesses have provided the information required, and extract information as the need arises. The EPA or another organisation could administer the system and ensure that any audits of businesses' information are coordinated.

The cost of establishing a single on-line reporting point and database would depend on the ability of regulators to use existing systems. On-line reporting systems currently exist for several environmental reporting programs. For example, the EEO and NGERs programs use the Online System for Comprehensive Activity Reporting (OSCAR), a web-based data collection tool for reporting energy, waste and greenhouse data (DCC 2009). OSCAR appears to have some key advantages, including that it facilitates the cross-program sharing of common data, and can perform automatic calculations (such as greenhouse emissions based on energy consumption figures), saving time for businesses (DCC 2009). In addition, the Commonwealth Department of Climate Change is currently investigating enhancements to OSCAR to automatically upload energy, greenhouse gas and other environmental information from businesses' internal systems (DCC 2008b). In addition, Yarra Valley Water has already developed an on-line system for the WaterMAP program, which could potentially be further developed at relatively low cost to accommodate reporting under other programs.

In its final report, *Simplifying the Menu: Food Regulation in Victoria*, the Commission estimated that developing a new single database for approximately 86 000 food businesses would cost between \$150 000 and \$200 000 (VCEC 2007b, pp. 77 & 214). Given several on-line environmental reporting systems already exist, it seems likely that the cost of establishing the proposed system would not exceed \$150 000. The Commission considers that the cost of establishing and operating a single on-line reporting point and database would be more than offset by savings to the businesses providing, and government agencies collecting, environmental information.

The Commission considers that a single on-line reporting point and database for all programs and licences, with standard formats and timing, would reduce costs to businesses, government regulators and the broader community. Costs to businesses would decrease as they would no longer report similar data in different formats and at different times to multiple agencies. The system would also likely reduce transaction costs for many businesses that operate in different jurisdictions. It would likely create scale economies for government regulators such as the EPA, who administer multiple environmental reporting requirements. A central on-line reporting system and database would enable

businesses and regulators to invest more time in higher value activities, including those that produce greater environmental benefits. Given the likely net benefits of the system for many Victorian businesses, the Commission recommends that the Victorian Government advocate at COAG for a national on-line reporting point for all programs and licences, with standard formats and timing.

While the Commission considers that a single on-line reporting point would help streamline Commonwealth and Victorian reporting requirements, it has not examined opportunities for streamlining individual Commonwealth requirements for several reasons. These include:

- the potential for change as a result of deliberations about the design of a national emissions trading regime
- the work underway through COAG to minimise duplicative reporting requirements through the 'Experts Group on Streamlining' for the Working Group on Climate Change and Water
- work underway through COAG to consider the future of Commonwealth energy efficiency programs (including energy reporting requirements).

Draft recommendation 9.3

That the Victorian Government reduce the costs to business of meeting environmental reporting requirements by:

- **developing one on-line reporting point for all Victorian programs and licences, with standard formats and timing**
- **promoting a broader review of reporting at the Council of Australian Governments, which would include assessing ways in which to develop a national on-line reporting point for all programs and licences, with standard formats and timing, using OSCAR.**

Box 9.1 Streamlined reporting requirements under WaterMAP

A streamlined WaterMAP could include:

Registration for each site consuming more than 10ML, including:

- (1) Details of existing water conservation initiatives for the previous three years

Short term (0–3 years) water management actions, including:

- (2) Estimated costs
- (3) Estimated reduction in water consumption (kL)
- (4) Savings (\$)
- (5) Payback period
- (6) Date to be completed
- (7) Status

Long term (4+ years) water management actions, including:

- (8) Estimated costs
- (9) Estimated reduction in water consumption (kL)
- (10) Savings (\$)
- (11) Payback period
- (12) Date to be completed
- (13) Status

Annual reports on the implementation of the WaterMAP and savings, including:

Business summary, recent history and target compared to experience:

- (14) Target saving identified in WaterMAP
- (15) Estimated cost of water saving in the year under review
- (16) Actual cost of completed projects
- (17) Target unit cost of savings (\$/kL)
- (18) Change in consumption attributed to WaterMAP projects
- (19) Comment on variation between savings generated by WaterMAP projects and total variation
- (20) Business water use indicator identified in WaterMAP
- (21) Target in WaterMAP
- (22) Actual achieved

Implementing management actions:

- (23) Action description
- (24) Action status
- (25) Estimated water use before action (kL)
- (26) Target water saving by implementing action in a full year (kL)
- (27) Estimated actual savings at date of report (kL)

(continued)

Box 9.1 Streamlined reporting requirements under WaterMAP (continued)

- (28) Revised estimated full year savings (kL)
- (29) Actual cost of completed action
- (30) Projects to be completed in next review period
- (31) Projects for future years
- (32) Cancelled projects
- (33) New projects added to WaterMAP
- (34) Original WaterMAP Totals

The Commission considers that the omitted information obligations are either unnecessary given the purpose of the scheme, could be provided by water authorities, or could be automatically calculated in an on-line reporting system.

Source: DSE 2007c July, pp. 2, 25-29.

10 Regulation of the mining and extractive industries

10.1 Introduction

The first inquiry report by the Commission, *Regulation and Regional Victoria: Challenges and Opportunities*, (VCEC 2005a), included a chapter on mining regulation, and made a number of recommendations. In December 2005 the Government published its response to the recommendations which were generally supported. In September 2007 it published a status report on the Government's response which is available on the websites of the Commission and the Department of Treasury and Finance. This chapter, therefore, refers back to the Commission's earlier work on these issues at a number of points.

The mining and extractive industries are economically important to Victoria. In 2007-08, their combined output was valued at around \$2.3 billion (DPI 2008a, pp. 10, 12 and 15), which represents about one per cent of the Victorian economy. However, by their nature, the mining and extractive sectors can have a significant impact on the environment.

The Commission's estimates of regulatory burdens indicate that the efficiency and effectiveness of environmental regulation can have a significant effect on the costs of the mining and extractive industries. Chapter 5 reported that the combined cost to business of the *Mineral Resources (Sustainable Development) Act 1990* (Vic) (MRSD Act) and the *Extractive Industries Development Act 1995* (Vic) (EID Act) is around \$45 million (representing around 1.9 per cent of industry output). But as major new mining and extractive projects may be required to prepare an environmental effects statement under the *Environment Effects Act 1978* (Vic), the total costs of Victorian environmental regulation for the mining and extractive sectors is likely to be higher.

10.2 Issues raised by participants

Participants from the mining and extractive industry sectors raised concerns about Victorian environmental regulation. The key issues raised were:

- the costs, timeframes and uncertainty associated with environmental assessment processes
- the costs, timeframes and uncertainty resulting from current native vegetation regulations

- the costs, timeframes and uncertainty associated with approvals processes under mining and extractives legislation, specifically the EID Act and the MRSD Act
- the complexity of approval processes
- the costs of undertaking monitoring and reporting on operations
- the potential for duplication and overlap of Federal and State Government environmental assessment processes
- the costs imposed by regulation of low impact exploration activities.

Participants also raised concerns about the costs associated with regulations that are outside the scope of this inquiry.¹

Previous chapters have addressed a number of concerns raised by participants from the mining and extractive industry sectors. The improvements to environment assessment processes and native vegetation regulation, for example, should deliver significant reductions in regulatory costs, timeframes and uncertainty for mining and extractive businesses (chapters 6 and 7). In addition, the proposed improvements to environment protection regulation and environment reporting regulation will, if implemented, reduce regulatory costs to the sectors (chapters 8 and 9).

There are, however, additional issues that can be addressed to reduce administrative and compliance costs, whilst still meeting or strengthening the objectives of current environmental regulation. The issues addressed in this chapter are:

- delays in the approval processes provided under the MRSD Act and the EID Act (section 10.3)
- the complexity of approval processes (section 10.3)
- the regulation of low impact exploration (section 10.4).

Some of these issues were raised by participants in the Commission's Regulation and Regional Victoria inquiry. In its report to the Victorian Government, the Commission made recommendations for improving the regulation of the mining and extractive sectors. The Government supported most of the recommendations, resulting in changes subsequently implemented by the Department of Primary Industries (DPI). Some recommendations have, however, not yet been fully implemented.

The Commission recommended that delays under the MRSD Act and EID Act be addressed by:

¹ For other regulations affecting the mining and extractives sectors, see submissions by the Minerals Council of Australia (Victorian Division) (sub. 58, p. 6) and Cement Concrete & Aggregates Australia (sub. 25, p. 4).

- developing and publishing a memorandum of understanding (MoU) with the Department of Sustainability and Environment (DSE)
- improving reporting on timeframes for approvals and providing reasons for any delays.²

These recommendations have been partly implemented. To address the impact of delays, DSE and DPI have agreed and published an MoU covering mining and extractive industry work plan approvals and an MoU for exploration work plan approvals.³ (The impact of the MoU on timeframes is discussed below.) In line with the Government's commitment, DPI has also improved reporting on the performance of the works approval system. DPI now publishes on its website information on the dates of applications for exploration and mining work plan approvals and some information on dates of referral to other authorities. Participants indicated, however, that they do not find the information that is currently reported sufficiently useful (and suggestions for further improvement are examined below). A key shortcoming is that the reasons for delays are not provided to give a picture of any systemic problems. This was recommended by the Commission and subsequently accepted by the Government. DPI explained that:

The overwhelming majority of referrals are to DSE and [DPI's] system records those fairly well. The data can provide explanations as to the reasons for delay but is reliant on officers entering comments. [DPI has] invested significant time and effort into establishing and improving this system to make the current data available. However, the sort of functionality sought in the recommendation will not be fully available until our next generation of IT systems is in place. [DPI] are in the first year of a four year project to implement this at present. (DPI 2008d)

Another concern raised by participants related to the definition of low impact exploration. The concern expressed during the Commission's previous inquiry was that the definition of low impact exploration was too narrow, resulting in the requirement for some activities they considered to be low impact exploration activity to obtain work plan approval.

The Government supported the Commission's recommendation that the definition of low impact exploration be reviewed but this decision has not yet been implemented. DPI indicated that the principal reason for the delay is the difficulty experienced in getting agreement with relevant stakeholders.⁴ This

² The relevant recommendations were 9.2 to 9.7 (VCEC 2005a, p. xlvii–xlvi).

³ DPI expects to undertake a review of the mining and extractive industry MoU to be completed by late 2009.

⁴ DPI said that changing the definition has 'proven to be more difficult than expected. After some months of discussion with DSE, [DPI] have decided to take a different approach and [is] now preparing an issues paper for release early 2009. Following comments from stakeholders [DPI] expect to put a proposals paper to DSE

amendment would remove the more onerous requirements for commencement of exploration activities which are genuinely low impact on the environment. Onerous requirements at the exploration stage may discourage exploration activity and consequently, may have a negative impact on minerals development and production. (The scope to address the definition of low impact exploration is examined in section 10.4 below.)

While most of the Commission's recommended improvements to mining and extractive regulations have been implemented, the feedback from participants indicates that there is scope for further improvement. The remainder of this chapter examines the scope for further improvement.

10.3 Delays in approval processes

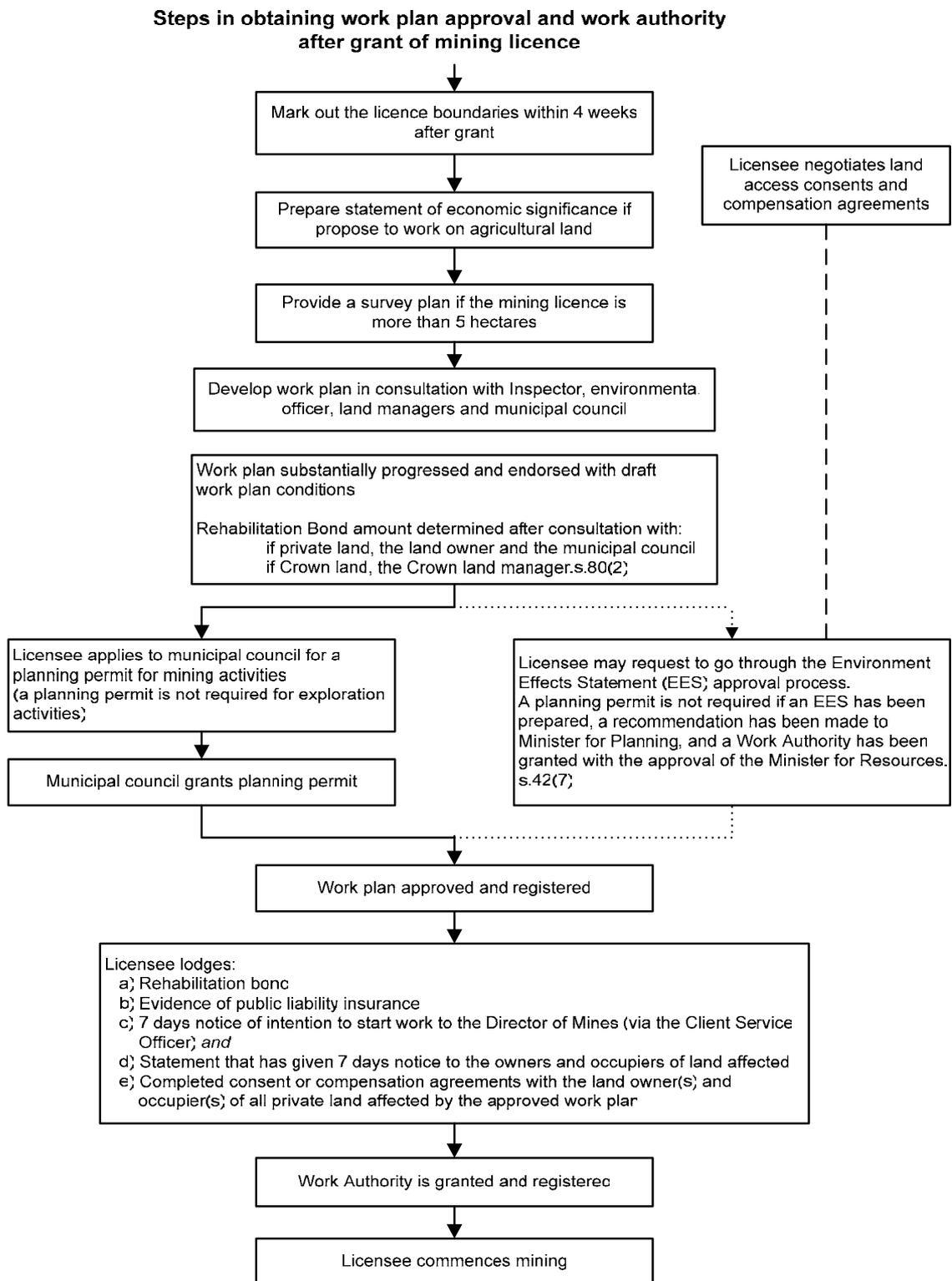
10.3.1 Concerns of participants

Inquiry participants submitted that a number of features of the regulatory processes under the MRSD Act and EID Act continue to impose unnecessary costs, delays and uncertainty on mining and extractive businesses. The MRSD Act establishes a three-stage approval process for mining. The first stage involves the granting of a mining licence which confers certain mineral rights but does not authorise mining operations. The second stage involves an application by a licence holder for approval of a work plan which provides information on the proposed on-site works and is accompanied by approvals from referral authorities. The third stage requires the licence holder who has an approved work plan to obtain a work authority which DPI will grant only when the licence holder has satisfied various requirements, such as consents from landowners, and has lodged a rehabilitation bond.

Participants raised concerns with approval processes covering work plans, work plan variations and work authorities. The steps involved in the approval of mining work plans and grant of work authorities are illustrated in figure 10.1.

and hope to finalise later next year. If [there is agreement, there would then be the option] of either changing the definition by Ministerial declaration or waiting for the amendments arising from the review of the MRSD Act that is currently commencing' (DPI 2008d).

Figure 10.1 Mining work plan and work authority approvals process



Source: Based on DPI (2009).

According to participants, several key features of the approval processes are causing problems:

- the complexity of the processes relating to work plans and work authorities
- the need for some applications to be processed sequentially rather than simultaneously
- the lack of accessible information on approval processes.

Approvals under the MRSD Act and the EID Act are dependent on approvals by regulators other than DPI under several other acts and, in some cases, on approval from affected land owners. Although regulatory approvals are generally given promptly, as demonstrated in section 10.3.2, some delays occur. In some cases, the timeframes for approval reflect the actions of proponents (such as revising proposed works or delaying the planned commencement of projects).

The Construction Materials Processes Association (CMPA) claimed that the costs of meeting the work approval requirements were significant:

The approval process has reached a point where the CMPA is advising [m]embers not to proceed with a [Work Approval] application unless they have allowed five years from start to finish (i.e. initial investigation to planning permit approval) and are willing to spend \$500 000 irrespective of the size or location of the site without accounting for any appeal process (which can reach \$300 000 in its own right). (sub. 35, p. 4)

The Cement Concrete & Aggregates Australia (CCAA) referred to problems caused by the approvals process for work authorities. The CCAA stated that the principal criticism raised by it and other extractive industry bodies during the Government's recent review of the EID Act was 'the complexity and costliness of the approvals process' (sub. 25, p. 5):

CCAA members ... experience a range of impediments with regard to fulfilling the requirements of the approvals process.

These impediments include:

- Delays with other departments and agencies [apart from DPI] in regard to specific aspects of an extractive approval
- Unresponsiveness of departments and agencies in regard to an inquiry about an extractive approval
- Coordination issues between agencies. (sub. 25, p. 13).

Boral Resources Pty Ltd also made a submission on coordination issues and the absence of appeal rights in some circumstances relating to the approvals process for work authorities (sub. 34).

The Minerals Council of Australia (Victorian Division) (MCA) claimed that the time taken in the approvals process as a major disincentive for investment:

The time taken to achieve project approvals, the high cost of approvals processes, the uncertainty of outcome and the conflicting views of government officials participating in the process all add to investment uncertainty. The approvals process as it currently operates is a major disincentive to investment in Victoria. (sub. 58, pp. 51-52)

The Earth Resources Development Council (ERDC) expressed a similar concern:

[T]he number of approvals required can ... result in project proponents incurring additional time and costs to obtain the necessary approvals. Proponents can find it difficult to plan or coordinate their input because it was difficult to determine what inputs would be required. (sub. 14, p. 9)

URS Australia stated that timeliness is an 'important criterion for mining project approvals given the opportunity cost incurred through delaying investment and subsequent returns'. '[D]elays in project approvals [can] place a restriction on companies in arranging finance... for a project' (URS Australia 2006b, p. 4-23).

In its submission to the inquiry, DPI acknowledges that 'there are concerns within primary industries regarding the time taken for environmental approvals processes to meet environmental expectations' (sub. 61, p. 11). DPI goes on to recognise that '[t]he time and costs for environmental approvals for earth resource projects have grown over time' (sub. 61, p. 11). The Commission understands that this statement takes into account the whole range of environmental approvals, not just those directly connected with the MRSD Act and the EID Act.

The MCA and the ERDC claimed that the time taken for the approval of projects contributes to uncertainty in investment in the Victorian earth resources industry (sub. 58, pp. 51-52). The ERDC submitted that one of the sources of delays was poor coordination between agencies which are involved in the approval process (sub. 14, p. 49). Another possible reason for the time taken to obtain approvals may be that proponents require time to become familiar with the complex approvals process. In addition, proponents may contribute to delays by their own changes to projects during the approvals process.

DPI, however, states that it 'has successfully utilised alternative measures such as the provision of information, advice, education programs and codes to improve regulatory outcomes' (sub. 61 p. 13). Its initiatives include entering into MoUs with DSE and WorkSafe. Other DPI initiatives are the preparation and publication on its website of guidelines relating to work plans, native vegetation (soon to be published) and aboriginal affairs. It has also published the exploration code of practice and conducted periodical forums for the mining and minerals exploration industries to communicate policies and procedures. DPI is also reviewing the manner of disclosure on its website of time taken for approval

of work plans and is making provision for the possibility of future lodgement of work plans as well as other matters in the development of its new data and work flow management system. DPI expects that these initiatives may be implemented progressively.

10.3.2 Review of approval timeframes

In order to ascertain the reliability of concerns raised by industry participants, the Commission examined data on approvals collected by DPI to examine participants' concerns.

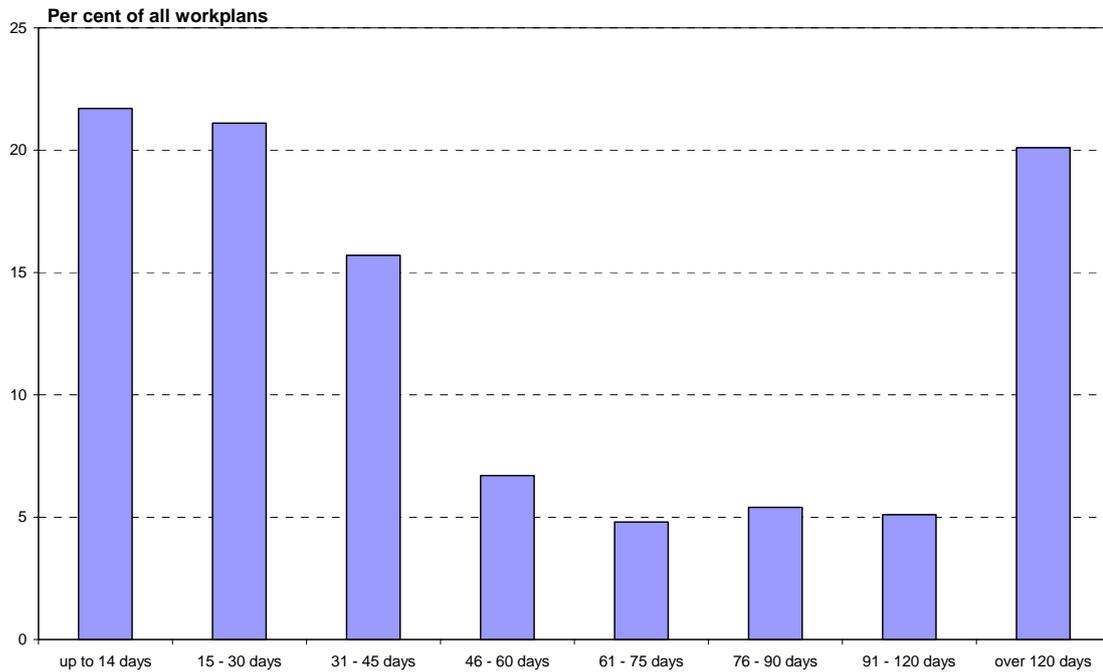
Work plans approved under the MRSD Act

Between January 2006 and September 2008, DPI approved 313 exploration and mining work plans (including variations to work plans), the great majority of which were for exploration work plans. In 2007-2008, DPI approved 54 work plans, 44 of which were for exploration and ten for mining. DPI approved 64 work plan variations. In that period, two work authorities were granted (DPI 2009).

During the 33 months to September 2008, the time taken for approval of work plans, following submission of a draft, under the MRSD Act averaged 75 days in elapsed time per work plan (nearly 11 weeks) from initial contact by the proponent with DPI to grant of approval.⁵ The average time taken is halved, however, when the influence of a small number of applications which went through an environmental impact assessment process is removed (figure 10.2). The main area of delays appears to be the process of referring applications to other authorities. DPI took an average of 26 days (nearly four weeks) on average to complete its tasks (DPI 2009).

⁵ The average includes approvals for work plan variations which are typically quicker to obtain than initial work plans.

Figure 10.2 Timeframe for mining work plan approvals



Source: DPI 2009.

Work plans approved under the EID Act

Between January 2006 and September 2008, DPI approved 117 work plans under the EID Act. In 2007-2008, only 11 work authorities were granted (DPI 2009).

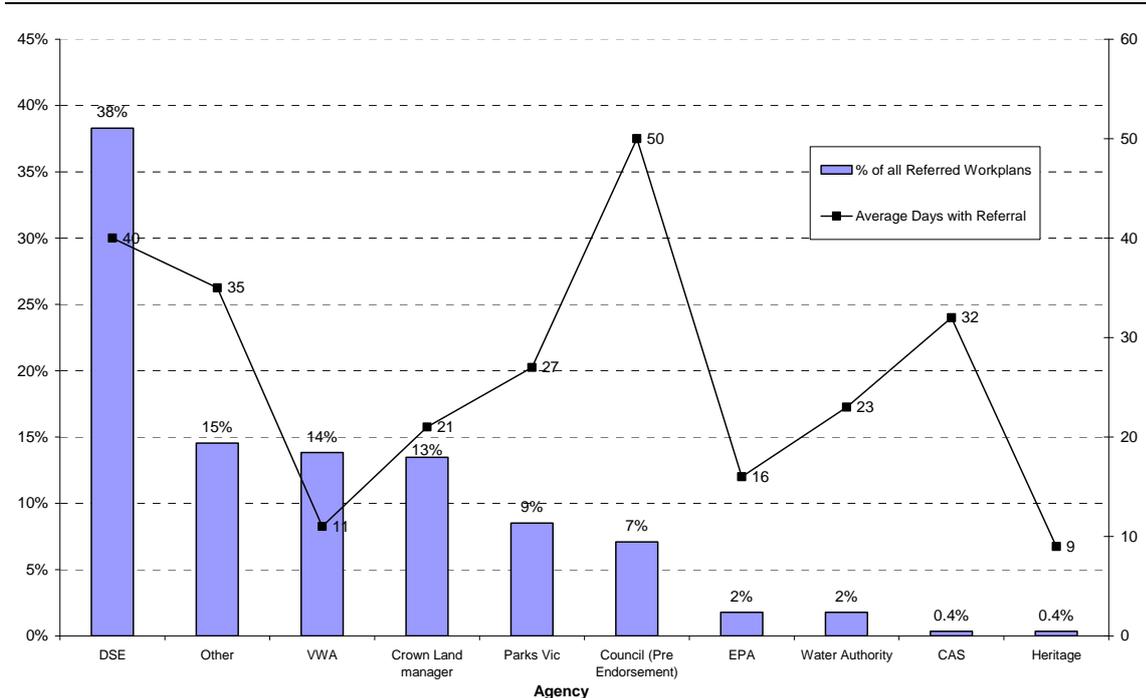
Approval of work plans under the EID Act was faster than under the MRSD Act. Close to 70 per cent of the work plans were approved within 45 days, and nearly 90 per cent within 90 days. Delays in approving the remainder were primarily due to environmental effects assessment requirements (DPI 2009). The Resources Industry Legislation Amendment Bill 2008, currently before Parliament, repeals the EID Act and incorporates many of its provisions into the MRSD Act. DPI plans to review the merged Act.

Role of referral agencies

Various government referral agencies are involved in the approvals process under both the MRSD Act and the EID Act. When the data for work plans and work plan variations under these acts are combined, DSE had a regulatory responsibility in respect of the largest number of work plans (38 per cent), Victorian WorkCover Authority (14 per cent) and the Crown Land Manager—which is part of DSE (13 per cent) (DPI 2009). The time taken by the various referral agencies in responding to work plans (including variations), together with

the percentage of work plans for which they had some responsibility, is shown in the chart below (figure 10.3). This indicates that the average number of days taken by referral agencies to discharge their responsibilities varies from 50 days for local councils and 40 days for DSE to 11 days for Victorian WorkCover Authority and 9 days for Heritage Victoria. The varying times taken by different referral agencies largely reflects the complexity and range of issues dealt with by them and, in part, delays for which proponents are responsible in responding to any issues raised by the agencies.

Figure 10.3 Elapsed time for MRSD Act and EID Act work plan approvals



Source: DPI 2009.

10.3.3 Options for streamlining approvals

The work undertaken for the Commission by the Allen Consulting Group on the costs to businesses of environmental regulation suggests that delay costs (generally delays in approval processes) account for about one quarter of these costs (ACG 2009, pp. 23, 26). It is important to consider, therefore, whether these processes can be improved.

The Commission's recommendations relating to the environmental assessment process and to native vegetation are likely to address a number of the more significant concerns of the mining and extractive sectors about processing delays, especially given that local councils and DSE are significant referral agencies.

However, the Commission has also considered a number of other options for reducing the time taken for regulatory approvals. These options are:

- integrated decision making on applications—the one-stop shop
- coordination arrangements between referral agencies
- publication of time taken for approvals
- provision of information on the approvals process.

Integrated decision making on applications – the one-stop shop

The MCA advocates establishing a one-stop shop for regulatory approvals:

The big issue that the minerals industry seeks in this regard is a one-stop shop for project approvals. That is, a single agency charged with the authority to approve projects. Whilst such an agency would be required to do an intense amount of work across all relevant agencies to reach a whole of government position on a proposal, the proponent would only deal with the one point in government.

Such an approval requires a great deal of maturity by agencies who may feel threatened by what they perceive to be a loss of their agency's 'control' being delegated to a single whole of government agency. However, it does mean that project proponents are not required to 'hawk' their projects across all relevant agencies of government for approval, which is most inefficient and a disincentive to invest. (sub. 58, p. 52)

The ERDC submission did not favour the establishment of a one-stop shop for the earth resources sector. The ERDC submitted that the costs of establishing a one-stop shop are unlikely to be justified in the context of Victoria's relatively small earth resources sector (sub. 14, p. 25). Furthermore, many proponents use their own consultants to navigate the approvals process and they would be unlikely to shift their demand to a government provided one stop shop (sub. 14, p. 25). The URS report for the MCA also noted:

... some companies have expressed their preference to interact directly with the relevant authorities rather than have arms-length involvement through a government agent. Where the proponent will have to work directly with these agencies at a later date it can be beneficial to build a working relationship earlier in this process. (URS Australia 2006b, p. 4-20)

If the Government accepts the recommendation for projects requiring environmental assessment set out in chapter 6, this would be consistent with the MCA's views. For smaller projects, the data reported in section 10.3.2 suggests that delays could be reduced, in part, by improved coordination arrangements between DPI and the referral authorities, which are addressed in the next section.

Coordination arrangements between DPI and referral agencies

Under the MRSD Act, approvals may be required from multiple departments and agencies as well as DPI, including DSE, the Minister for Planning, the Environment Protection Authority and local councils, before a proponent may commence mining activities. A lack of coordination between these agencies may result in significant time delays to projects.

Improved coordination between agencies can reduce the time taken for approvals and may ensure that subsequent approval processes can commence promptly after pre-requisite approvals are obtained.

In respect of earth resources applications, DPI appears to be an appropriate coordinator. Coordination is best achieved by a department or agency that is an integral part of the approvals process and has sufficient oversight of the process to effectively encourage timely approvals by referral agencies. DPI presently performs to some extent a coordination role to assist applicants for mining work plans.

Section 2(2) of the MRSD Act specifically provides for DPI to coordinate applications for related approvals. The Minister may, in respect of any project, convene meetings of representatives of relevant Ministers, local councils and other public bodies. Alternatively, the Minister may, after consultation with each relevant Minister and subject to the provisions of any other Act, 'do anything else that is necessary or convenient to be done for or in connection with the achievement' of coordination of related approvals (s2(2)(a) and (b)).

There is a clear Parliamentary intention that when it is cost effective for it to do so, DPI should exercise a coordinating role in respect of related approvals and it has been given specific powers for this purpose. If there is some defect with the powers granted for this purpose, DPI should identify that defect and, if appropriate, the MRSD Act should be amended so that Parliament's intention can be given effect.

Draft recommendation 10.1

That the Department of Primary Industries (DPI), on behalf of work approval applicants, should coordinate with other departments and agencies whose approvals are required in respect of mining and extractive approvals, when requested to do so by proponents.

In appropriate cases, the DPI should exercise the coordination powers granted to it by s2(2) of the *Mineral Resources (Sustainable Development) Act 1990*. It should identify whether these powers are insufficient in any way, and propose a remedy

In addition, there is scope to strengthen the formal arrangements between the agencies involved in the approvals process so as to improve the coordination between them.

As noted earlier, following the recommendations in the Commission's *Regulation and Regional Victoria* inquiry, DPI entered into an MoU with DSE in order to integrate DSE requirements for exploration activities with requirements under the industry specific MRSD Act approvals process. DPI indicated that the average time taken for approvals post-MoU of 26 days is substantially less than the total time taken prior to the MoU with DSE of 47 days (DPI 2009). This represents an improvement in timeliness of around 45 per cent.

DPI could enter into similar arrangements with other referral bodies which either receive a large proportion of referrals for approvals, such as work plans, or which contribute a large proportion of the overall time taken for approvals. Such arrangements are likely to be low-cost and offer promise of reductions in time taken for approvals, similar to the reductions in time taken by DSE under the MoUs between DPI and DSE.

Draft recommendation 10.2

That the Department of Primary Industries should enter into memoranda of understanding with referral agencies, other than the Department of Sustainability and Environment with which one already exists, to ensure better coordination and shorter timeframes for their approval processes.

Publication of time taken for approvals

Although DPI has provided some information on its website about time taken for approvals pursuant to the recommendation in the Commission's *Regulation and Regional Victoria* inquiry, the information is not comprehensive and does not provide a clear picture of the reasons for delays. The information published does not specify the dates on which each referral agency received the referral, requested further information from the applicant, and gave approval (where applicable). As noted, it does not provide an explanation for any extensions granted or substantial delays in the approvals process. DPI has accordingly yet to implement fully the decision made by the Government in response to VCEC's recommendations. This matter is clearly important to the mining and extractives industries, and DPI should give effect to the Government's decision, without waiting for the development of a new IT system (which could be several years away).

Information published by DPI on its website regarding the overall time taken for approvals can be improved. The design of performance measurement indicators is critical to ensuring that there can be continuous evaluation and improvements

in the approvals process. At a minimum, performance monitoring should involve:

- working with referral agencies to establish targets for approvals (for example, that a target percentage will be dealt with in various timeframes)
- measuring timeliness across government, as well as, the time taken for each agency for each phase of the assessment process, from initiated contact with proponent, requests for further information, and through to final approval
- data collected should be published and analysed by DPI to assess performance against targets and determine where future improvements may be made.

In some other areas of environmental regulation examined in this report, the Commission has suggested that an independent body such as the Auditor-General review and report periodically on the implementation of performance reporting by environmental regulators. The Commission sees merit in such scrutiny also being applied to performance reporting by DPI.

Draft recommendation 10.3

That the Department of Primary Industries (DPI) commit to:

- **establish and publish target timeframes for approvals under mining and extractives legislation**
- **measure and publish information on the time taken by the DPI and referral authorities to process approvals required under mining and extractives legislation**
- **provide an explanation on its website of the reasons for any substantial delays in granting approvals by the DPI or any referral agencies**
- **regularly review and report on timeframes for approval with a view to finding areas for future improvements.**

Reporting by the DPI on the timeliness of approval process should be reviewed periodically by an independent agency such as the Victorian Auditor General.

Provision of information by DPI on the approvals process

Project proponents often incur additional costs in understanding and coordinating the approvals process (ERDC, sub. 14, p. 22). The ERDC Report highlighted that in Victoria there is not one list of all approvals that are or may be required as part of a mining project on the DPI website. While each project is unique, a full set of approvals that may be required will help both department officials and proponents to plan their project and contribute to ensuring that all

legislative requirements are undertaken in an efficient and timely manner (sub. 14, pp. 10–11).

Stakeholders noted that obtaining information and understanding the Victorian approvals process could be more of an issue for smaller companies or companies entering the Victorian industry (sub. 14, p. 9).

The ERDC made the following submission on the approvals process:

Proponents can find it difficult to plan or coordinate their input because it was difficult to determine what inputs would be required. For example, it could sometimes transpire that the scope of consultancy works undertaken to demonstrate compliance with requirements needed to be adjusted or extended after the fact because the full extent of the requirements were not fully known or understood at the time. (sub. 14, p. 9)

When approval requirements are not clear or cannot be determined from the available information, the proponent may need to submit drafts to DPI and seek a number of iterations which can prolong the approval process.

The MCA (sub. 58, p. 16) and ERDC (sub. 14 p. 23) both suggested that a dedicated website should be established for Victoria’s earth resources approvals. A website which outlines all the approvals for a mining project and requirements of each approval would assist proponents by informing them of all the requirements they would need to meet for undertaking exploration or mining activity. This will reduce the time taken for proponents to prepare their application to the satisfaction of DPI and the agencies responsible for assessing their applications.

The Commission considers that DPI should take responsibility for the development of such a website, with the assistance of other relevant regulators.

Draft recommendations 10.4

That the Department of Primary Industries (DPI) expand its website to list all the approvals that a mining or extractive industries proponent may need, and to provide guidelines, policy notes and advice on the requirements of each approval.

The DPI should regularly update the website, to ensure proponents are informed of any proposed changes to the legislation or the approvals process.

10.4 Definition of low impact exploration

Exploration activities which are classified as ‘low impact exploration’ under the MRSD Act are not subject to the requirement to prepare a work plan (s40(1A)) or obtain a work authority before commencement (s39(4)(b)). Exploration will not be ‘low impact’ unless it is conducted without the use of equipment—other than non-mechanical hand tools—regardless of the impact of the exploration on the surrounding environment (s4).

In 2005, in its Regulation and Regional Victoria inquiry report, the Commission recommended that DPI should examine the definition of low impact exploration to assess whether the definition should focus on the impact of exploration rather than the equipment used for exploration and report accordingly (VCEC 2005a, p. 291). The Government supported this recommendation but DPI has not been able to implement it because of difficulties in obtaining stakeholder agreement.

This issue should be included in the proposed review of the MRSD Act which DPI has commenced (section 10.2).

Draft recommendation 10.5

That the Department of Primary Industries, with input from the Department of Sustainability and Environment, review the definition of ‘low impact exploration’ in the *Mineral Resources (Sustainable Development) Act 1990* and propose a legislative amendment to the definition based on environmental impact rather than on the use of mechanical equipment.

10.5 Performance reporting and evaluation

Performance reporting by regulators is important for measuring the effectiveness of regulation in achieving its objectives; enhancing transparency and accountability; and providing information which can be used to evaluate and improve regulation (chapter 4).

There is scope for DPI to report more transparently on its exercise of regulatory functions and how they contribute to the achievement of the objectives of the MRSD Act. In addition to reporting on the timeframes for approvals under earth resources legislation there is also scope for improved reporting on enforcement action and on the achievement of objectives, having regard to the ecologically sustainable development (ESD) principles that are referenced in the Act.

Draft recommendation 10.6

That the Department of Primary Industries (DPI) website report at least annually on the DPI's administration of the *Mineral Resources (Sustainable Development) Act 1990*, detailing matters such as monitoring and enforcement, the implementation of ecologically sustainable development principles, and the contribution its administration makes to achieving the objectives of the Act.

10.6 Estimated cost savings of proposed reforms

Estimating the benefits of improvements to earth resources legislation is difficult as it will depend on how agencies change their behaviour in response to initiatives such as transparent monitoring and reporting on the timeliness of approvals. Nevertheless, the Commission has attempted to estimate potential cost savings to businesses (table 10.1).

Table 10.1 Estimated cost savings

<i>Recommendation</i>	<i>Estimated cost savings (\$m per year)</i>
Streamlining work plan approvals process	3.7
Amending definition of low impact exploration	0.1–0.2
Estimated savings to business	3.8–3.9

Source: VCEC.

The most significant cost savings to the mining and extractives sectors would occur if the recommended changes to environmental effects processes and to native vegetation regulation were adopted. The cost savings from these recommendations are incorporated in the estimated savings in chapters 6 and 7.

The only other cost savings that the Commission can estimate with any confidence relate to recommendations for streamlining the work plan approval process to reduce timeframes, and amending the definition of 'low impact exploration'.

Using the Allen Consulting Group's findings from its analysis of the cost to business of delays under the MRSD Act and the EID Act (ACG 2009), and applying the reduction of 45 per cent as the average saving in time taken for approvals by DSE after its MoU with DPI, would suggest potential cost savings of \$3.7 million. Reducing the need for work plan approvals for 'low impact exploration' would mean less time needed to be spent by DPI and referral

agencies in assessing work plans with very little or no impact on the environment. There are also potential administrative savings for businesses. As noted, DPI reported that 44 exploration work plans were submitted in 2007-08. If each cost businesses between \$5000–\$10 000 in staff time (including time in meetings with government agencies) to prepare, and half were no longer required, the savings in administrative burdens would be between \$110 000–\$220 000 per year.

The Commission is unable to estimate the potential savings from some recommendations; specifically those relating to DPI's coordination role, MoUs with other referral agencies (excluding DSE), and improved reporting on the implementation of regulation.

Comments are invited on the potential savings to business from the Commission's proposals.

11 Improved institutional and interface arrangements

11.1 Introduction

The description of Victoria's framework for environmental regulation in chapter 3 highlighted the volume and complexity of Victorian environmental regulation. While previous chapters have identified a number of opportunities to streamline environmental regulation, without undermining government objectives, the focus was necessarily on areas of Victorian environmental regulation that are likely to impose the largest burden on business.

It is also important to look beyond particular areas of regulation to examine broader issues such as why has Victoria developed such an extensive and complex set of regulatory arrangements, and what can be done to ensure that the future design of environmental regulation meets the Victorian Government's objectives in an efficient and effective manner.

The broad reach and complexity of Victoria's framework of environmental regulation raises questions about why there are so many Acts (at least 43) and so many pages of legislation and regulation (over 9000). Possible reasons include:

- the emergence of new environmental challenges such as climate change (examples include the *Victorian Renewable Energy Target Act 2006* and *Victorian Energy Efficiency Target Act 2007*)
- gaps in performance monitoring, reporting and evaluation that result in redundant or ineffective legislation being retained
- a strong preference for regulation over non-regulatory approaches because of the perceived certainty that regulation will achieve the desired outcome (chapter 12)
- governments and regulators adopting a risk-averse approach—given that governments are seldom praised for not taking pre-emptive or unnecessary action, there is an incentive to err on the side of caution
- the development of new technologies requiring the definition or clarification of legally enforceable property rights (such as carbon capture and storage and geothermal energy generation).

While the likely explanations for Victoria's current regulatory framework are many and varied, the characteristics of this framework have led to interest in ways of reducing the amount and complexity of environmental regulation. Previous chapters in this report have proposed specific changes to key areas of regulation that are intended to:

- simplify key environmental regulations
- improve clarity about objectives and accountability for their achievement
- promote better coordination between the different regulatory bodies
- achieve greater consistency in decision making
- develop and implement performance reporting and evaluation frameworks to assess the effectiveness and efficiency of regulation
- ensure regulatory bodies have the necessary skills and resources to implement regulation efficiently.

These types of improvements to objectives, accountability, and performance reporting and evaluation help to build an institutional framework for environmental regulation that is effective and efficient, that identifies successes and areas for improvement, and that shifts resources to areas that deliver the greatest economic, environmental and social benefits for Victoria.

The terms of reference invite the Commission to go beyond identifying opportunities for improving specific areas of environmental regulation. They also require the Commission to examine whether Victoria's regulatory framework has the flexibility and capacity to respond to the economic opportunities arising from the environmental sustainability challenges facing Victoria, including a carbon constrained economy. The Commission has approached this terms of reference by examining the flexibility and capacity of Victoria's framework for developing, administering and reviewing environmental regulation.

Victoria's regulatory framework is a product of three key elements:

- (1) The *institutional and interface arrangements*, including the allocation of accountability to organisations within government (and to the different levels of government), the coordination mechanisms to ensure that environmental, economic and social considerations are reflected in decisions, and the processes for monitoring and evaluating regulation.
- (2) The *instruments* that are used to achieve environmental objectives, especially in light of the growing experience with new approaches to environmental protection based around creating markets and incentives for providing environmental services.
- (3) The *principles* applied by environmental agencies in developing and implementing regulation, including the relevance of best practice and ecologically sustainable development principles to decision making.

This part of the report identifies and examines some key issues that will shape the future development and implementation of environmental regulation in Victoria. It does this for each main element of the regulatory system. This chapter examines the institutional and interface arrangements. Subsequent chapters examines opportunities for using market based measures to address the

environmental challenges facing Victoria (chapter 12) and the principles to guide future regulation (chapter 13).

Focusing on the institutional and interface arrangements, previous chapters identified a number of recurring issues affecting the costs to business of Victoria's environmental regulations. These recurring issues are described in this chapter, drawing on examples covered in previous chapters, as well as additional examples identified during the inquiry. The issues examined in this chapter are:

- the clarity of objectives in legislation and other legislative instruments (section 11.2)
- the scope of the Victorian Government's agenda for reducing the unnecessary costs of environmental and other regulation (section 11.3)
- the quality of monitoring, reporting and evaluation as tools to encourage continuous improvement of regulation (section 11.4)
- roles and responsibilities of organisations within the regulatory framework and the capacity of organisations to implement regulation in an effective and efficient manner (section 11.5)
- future opportunities to improve natural resource management through the development of better integrated frameworks (section 11.6).

11.2 Clarity of objectives

Best practice institutional principles stress the importance of specifying clear objectives. Such objectives define the outcomes that regulation is to achieve in a way that is not ambiguous and not open to contrasting interpretations (chapter 2). However, in reporting on the benefits of regulation, chapter 4 identified a number of practices that are inhibiting assessment of the effectiveness of environmental regulation. In particular:

- regulatory objectives are often specified at a high level such as 'protecting the environment' and consequently, their broad scope does not enable easy identification of the outcomes that the regulations are intended to achieve
- where multiple conflicting objectives are specified, limited guidance has been provided to regulators on how to make trade-offs between conflicting objectives.

11.2.1 Broad scope of objectives

Setting clear objectives, in legislation or in supporting guidance, helps to ensure that regulation and its implementation focuses on the identified problem and desired outcomes rather than the process (the 'ends' rather than the 'means'). Setting clear objectives also facilitates effective performance monitoring and evaluation, which in turn, enables continuous improvement, improved

accountability and greater community acceptance of the need for, and effectiveness of, regulation. Establishing clear objectives also helps to limit excessive regulatory discretion.

The Commission identified a number of instances where the objectives of environmental regulation have been framed in a broad way or in a way that signifies the Government's 'aspirations' for some aspect of the environment. Best practice institutional principles suggest that regulatory objectives should be based on the outcomes that governments want to achieve, and that objectives for individual agencies should also be similarly defined (chapter 2, box 2.6). The following examples were highlighted elsewhere in the report and in submissions:

- The objective of the environmental effects statement (EES) process, set out in Ministerial Guidelines is 'to provide for the transparent, integrated and timely assessment of the environmental effects of projects capable of having a significant effect on the environment'. Although the guidelines provide indicative timeframes for various stages of an EES, and highlighted the importance of integrated decision-making using ESD principles, no guidance is provided to the Department of Community Development and Planning, or other government entities on what would be considered a timely assessment, and whether timeliness should be viewed from the perspective of business, the community or government (chapter 6).
- The objective for native vegetation policy is to achieve a reversal, across the entire landscape, of the long term decline in the extent and quality of native vegetation, leading to a net gain. There is confusion about the extent to which this broad objective should be applied to implementation of native vegetation regulations, and in particular to the process of determining any offsets that are to be provided by landholders in the event that clearing is permitted (chapter 7).
- The *Environment Protection Act 1970* does not contain explicit objectives. The Act states that the purpose is 'to create a legislative framework for the protection of the environment in Victoria', having regard to a number of principles of environmental protection. The Act defines 'environment' very broadly to include the climate. In a recent annual report, the EPA (2008, p. 19) stated that it intends to pursue a new corporate objective around tackling climate change. The climate change objective stated in the annual report is very broad and it is not clear how the EPA intends to pursue this corporate objective.
- The objective of the *Flora and Fauna Guarantee (FFG) Act 1988* is to guarantee that all species (other than those expressly excluded) can survive and flourish and retain their potential for evolutionary development. Although this might be viewed as an aspirational objective, taken literally, it does not recognise that regulation, by itself, cannot ensure the survival of all threatened species.

The Land and Biodiversity Green Paper questioned the suitability of this objective, pointing to the potential for climate change to impact on the viability of flora and fauna (Victorian Government 2008, p. 53).

- The central objectives of the *Wildlife Act 1975* are the protection and conservation of wildlife, and the prevention of species of wildlife from becoming extinct. The Commission understands that the focus of administration of the Act has shifted over time from preventing wildlife poaching via surveillance of wildlife reserves, to regulating the activities of wildlife breeders. The existing objectives could be altered to better align with the current focus (DSE 2009b).
- One objective of the *Mineral Resources (Sustainable Development) Act 1990* is to provide an efficient process for granting licenses and approving workplans. The efficiency of the process depends on coordinated input from the Department of Primary Industries, local councils and referral authorities. Consistent with the objective of the Act, the Commission has recommended that target timeframes for approvals under earth resources legislation be established and information be reported on the time taken by DPI and referral authorities to process approvals (chapter 10).

To make it feasible to measure the contribution that regulations are making to addressing problems and achieving desired outcomes, objectives should be framed in a more specific way than is typical in current practice. Firstly, the objectives have to be focussed on an aspect of the environment that regulation can directly influence or control. Secondly, objectives should, if possible, be made specific enough so that relatively few non-regulatory factors substantially influence the outcome.

The FFG Act provides an illustration of how objectives can be framed in a more specific manner. As noted, the Government's Land and Biodiversity Green Paper (Government of Victoria 2008e) questioned the suitability of the objective of the FFG Act, partly due to the potential for climate change to impact on the survival of flora and fauna. The FFG Act's objective could be recast in a more specific form such as 'to decrease human-induced threats to the survival of endangered species.'

11.2.2 Conflicting objectives

A number of Victorian environmental regulations have multiple objectives which can conflict with each other. The practice of defining multiple, conflicting objectives for regulation is common across Australia and internationally. While there is nothing necessarily wrong with this practice there needs to be a basis for reconciling conflicting objectives and for making the reconciliation transparent. In some areas of environmental regulation examined by the Commission, decisions about how to reconcile conflicting objectives have been left to

decision-makers, without any guidance from the Government or a requirement that regulatory decisions be transparent.

The Commission identified several instances where multiple conflicting objectives are defined in environmental regulation. The following examples were highlighted elsewhere in the report and in submissions:

- *Environment Effects Act 1978*—implementation guidelines specify as one of its five objectives, ‘to provide integrated assessments of proposed projects’...‘decision-making should effectively integrate both long and short term environmental, social and economic considerations.’ No guidance is provided, however, on how these diverse impacts are to be integrated, or how the related principles of ecologically sustainable development are to be applied. (Chapter 13 discusses the application of ESD principles.) The same Act also contains objectives of extensive public involvement and timely decision-making which often conflict in practice, without recognition of this conflict or advice on how to address it.
- *Sustainable Forests (Timber) Act 2004*—of the seven objectives specified by DSE to guide the management of State forests under this Act, those relating to conservation potentially conflict with of the goal of enhancing the socio-economic benefits to Victorian communities from recreation use and production activities. The Act and supporting documents contain no principles for resolving conflict between competing uses of these forests, which in practice has been done on a case-by-case basis.
- *Coastal Management Act 1995*—specifies several potentially conflicting objectives including managing ‘usage of Victoria’s coastal resources on a sustainable basis for recreation, conservation, tourism and commerce’, ‘protect and maintain areas of environmental significance on the coast’ and ‘maintaining and improving coastal water quality.’

As noted, the Commission considers that a number of process shortcomings in environmental regulation resulting in delays and uncertainty are related to a view that economic, environmental and social factors need to be ‘balanced’ (chapter 2). The Commission suggests that different language is needed to describe better the process of integrating these factors to achieve ESD-based outcomes. Accordingly, the Commission has proposed the use of the phrase ‘synthesis of economic, environmental and social factors’, to emphasise an outcomes-based approach.

Guidance on resolving conflicts

Several approaches can be used to resolve conflicts between multiple objectives of regulation. Governments can, for example, provide guidance to regulators about the weights and relative priorities to be assigned to particular objectives or the process to be followed to resolve conflicting objectives.

As noted, a common approach in environmental regulation is to leave the resolution of conflicting objectives to decision-makers (regulators). Thus, for example, regulators (DSE and councils) have been given only broad guidance about the factors to be considered when assessing proposals to clear native vegetation. It was found that the guidance does not require regulators to consider the costs to society of refusing to clear native vegetation (chapter 7), giving rise to the risk that only the environmental impact of clearing will be considered.

One approach that is used to identify and manage conflicting objectives is to require regulatory bodies to be transparent in how they intend to reconcile conflicting objectives. Under the Coastal Management Act, for example, the Coastal Management Council is required to develop detailed management strategies every 5 years that, amongst other things, outline the priorities to be given to the three objectives of the Act (see above). The ordering of these objectives must be endorsed by the responsible Minister before the strategies are finalised.

In conclusion, a number of opportunities exist to re-examine the objectives underpinning a number of areas of environmental regulation to improve the clarity of some objectives, and to provide greater guidance to regulators on how they are to respond to conflicting objectives.

The Commission recommends that the Victorian Government review the objectives of environmental regulations to improve their clarity and, where conflicting objectives are warranted, that guidance is provided to regulators on how trade-offs are to be resolved.

The Commission invites views on the adequacy of existing language and guidance to define and resolve conflicts between economic, environmental and social objectives.

Draft recommendation 11.1

That the Victorian Government review the objectives of environmental regulation to ensure that all environmental legislation and supporting guidance contain clearly stated and specific objectives. Priority areas for attention are:

- *Environment Effects Act 1978*
- native vegetation regulations (under the *Planning and Environment Act 1987*)
- *Environment Protection Act 1970*
- *Flora and Fauna Guarantee Act 1988*
- *Wildlife Act 1975*
- *Sustainable Forests (Timber) Act 2004.*

11.3 The scope of Victorian initiatives to reduce regulatory burdens

The Victorian Government announced the Reducing the Regulatory Burden Initiative in the 2006-07 state budget to reduce regulatory costs for the business and not-for-profit sectors in Victoria (Brumby 2006). This approach draws heavily on the approach adopted in several European countries to set targets for reducing the 'administrative burden'¹ of regulation and to measure these changes using the Standard Cost Model.

The specific elements of the Initiative in Victoria are:

- A commitment to reduce the administrative burden of State regulation by 15 per cent over three years (\$154 million per annum by July 2009) and 25 per cent over five years (\$256 million per annum by July 2011).
- To ensure that the administrative burden of new regulation is met by an 'offsetting simplification' in regulation in the same area.
- Undertaking a series of targeted reviews, supported by an incentive fund, to reduce the burden of regulation (DTF 2008a).

The effectiveness of the Victorian Government's approach has not yet been evaluated, but studies of similar overseas approaches have highlighted several key impacts of administrative burden reduction programs (OECD 2002a, 2006). At a practical level, administrative burdens are generally easy to measure, and reductions are easy to monitor and can be achieved relatively quickly. There is also a lower risk of stakeholder opposition to targets to reduce regulatory 'red tape'.

In the short term, administrative burden reform programs can also help to focus the attention of policy makers and regulated entities on the costs of regulation, and to stimulate interest in the broader application of best practice regulatory principles (for example, through the existing regulatory impact statement process). It can also provide an indication of the Government's interest in reducing regulatory costs more generally.

Further, an exclusive focus on reducing the administrative burden of regulation in the longer term can be counter-productive. The Commission's experience in estimating the costs of environmental regulation in Victoria suggests that administrative costs are, generally, a relatively small proportion of total regulatory costs (which include substantive compliance costs, including costs of delays). If

¹ A distinction is drawn between 'administrative costs', which are costs incurred by firms to demonstrate compliance with regulation or allow the government to administer the regulation (for example, the cost of completing a license), and substantive 'compliance costs', which are costs that directly lead to the desired regulatory outcome (such as installing pollution control equipment) (Brumby 2006).

cost reduction initiatives are limited only to administrative costs, then other opportunities to reduce regulatory costs, and generate higher benefits for Victoria, may be missed.

Perhaps more importantly, the OECD has noted that focussing on reducing the administrative costs of regulations also risks downplaying the potential trade-offs between different levels of regulatory costs (broadly defined) and different regulatory outcomes (OECD 2007, pp. 81-82). Victoria's regulatory impact statement and business impact assessment processes already provide for the systematic review of regulatory costs and benefits. However, the Commission's experience is that, while the quality of regulatory impact analysis has improved over time, there remains substantial scope to actively review and streamline regulatory processes in Victoria (VCEC 2008b).

During its consultations, the Commission also found that the great majority of businesses did not distinguish between different types of costs, such as administrative and substantive compliance costs (including delays), and simply regarded all of them as the costs of regulation. As a result, these participants were understandably interested in reducing the overall costs rather than any particular component.

The cost savings identified by the Commission in this inquiry highlight the importance of ensuring that initiatives to reduce aggregate regulatory costs cover substantive compliance costs as well as administrative burdens. Some of the Commission's recommended improvements to environmental regulation will lower substantive compliance costs by reducing unnecessary delays in environmental assessment and approval processes. Departments and agencies are well placed to address compliance burdens associated with environmental and other regulations, particularly those arising from delays, as most of these are within their control.

Draft recommendation 11.2

That the Victorian Government consider extending the scope of the Reducing the Regulatory Burden Initiative to include substantive compliance costs (including delay costs) at the end of the first phase of the Initiative.

11.4 Monitoring, reporting and evaluation

A recurring issue in this report is the limited evidence on the effectiveness and efficiency of the regulations. Chapter 4, for example, summarised the available evidence on the benefits of Victoria's environmental regulations, concluding that despite a number of adverse trends for aspects of the environment, little is known about the impact of environmental regulation. The chapters on key areas

of environmental regulation, such as environmental assessment, native vegetation, and mining, also highlighted major gaps in monitoring and reporting.

Experience and theory support the case for developing robust systems to monitor and report on the implementation of regulation. With good information on the effectiveness and efficiency of regulation:

- regulatory authorities can respond quickly and effectively to adverse events (such as pollution and losses in native vegetation)
- regulatory effort can be targeted at areas where the risks to the environment are greatest
- community and business support for regulation is increased if positive outcomes are observed; without such information debate may focus disproportionately on the costs of regulation
- public accountability of those devising and implementing regulation is enhanced
- it is possible to objectively assess calls for new regulations and new regulatory bodies, especially if the available information shows that existing regulations are effective.

Performance reporting frameworks for environmental regulation have an important role to play in Victoria given the extent and complexity of Victoria's environmental regulation. The lack of evidence on the effectiveness and efficiency of regulation has contributed to the tendency to retain ineffective or outmoded regulations and to deal with problems by creating new regulations.

Ideally, a robust reporting framework should contain the following components (VCEC 2007a, 2007b):

- *Clear objectives*: the outcome that regulation is intended to achieve should be clearly specified (such as reducing emissions of particulate matter from industrial sources in order to improve air quality in urban areas).
- *Outcome indicators*: measures that show the extent of changes to the aspect of the environment to which an objective relates and progress towards any target (such as measures of the concentration of particulates in the air, based on samples taken across urban areas).
- *Output measures*: measures of the principal regulatory activities that contribute to the recorded outcome such as number of licences issued or revoked, the number of inspections and audits, rates of compliance with licence conditions, and physical works to control environmental risks (such as spending by businesses to reduce particulate matter). Reporting of outputs helps governments to assess how the administration of regulations is affecting the environment, assisting in decisions on whether to strengthen or ease regulation.

- *Input measures*: indicators relating to the resources devoted to implementing regulation (such as staff time, purchased materials, monitoring undertaken) and the impact on businesses/households who are being regulated (such as timeframes for responding to license applications or works approvals and quantitative and qualitative measures of regulatory costs and ease of compliance). Estimates of inputs are essential to assessing both the cost-effectiveness and the efficiency of regulations.

Although the tasks of devising and implementing performance reporting frameworks are not especially demanding in a technical sense, there are relatively few cases where they are employed by regulators in Australia and overseas. The Hampton (2005) review of the United Kingdom's regulatory system, for example, found that there were major gaps in performance reporting and advocated that the Government commit to developing performance reporting frameworks in a number of key areas. And it has been only quite recently that the European Commission has formally recognised the importance of establishing outcome reporting frameworks before new regulation comes into force, a matter forming part of its work on impact assessment methodology (European Commission 2006 and 2008).

Previous work by the Commission has also highlighted that undertaking performance monitoring and reporting is only an initial step. The evaluation of regulations, involving the process of assessing whether the regulation is still appropriate, whether it is effective, and whether it is operationally efficient, also has an important role to play in ensuring that regulation is effective and efficient in a dynamic environment (VCEC 2008d, pp. 2-7). Evaluation can be more costly than performance monitoring and reporting because detailed analysis may be required to identify and measure causal relationships; for example, whether regulation is causing improved environmental outcomes (VCEC 2007a, p. 2).

Performance monitoring and evaluation in Victoria

To identify the current practice concerning monitoring, reporting and evaluation of environmental regulation in Victoria, the Commission undertook a detailed review of practice in a wide range of areas. The areas covered included:

- Environmental protection and conservation regulations (covering fifteen Acts listed in chapter 4).
- Project assessment and approval regulations, covering seven Acts (the Environment Effects Act, *Planning and Environment Act* (native vegetation regulations) 1987, Mineral Resources Act, *Petroleum (Submerged Lands) Act* 1982 and *Petroleum Act* 1998, *Pipelines Act* 2005 and *Geothermal Energy Resources Act* 2005).

Based on the review, it appears that comprehensive reporting frameworks for environmental regulation are uncommon in Victoria, mirroring the Commission's findings across other areas of regulation in Victoria (VCEC 2008d, pp. 7-9). The review also found that there have been very few detailed studies of the effectiveness of environmental regulation (chapter 4). Other findings were:

- although extensive monitoring and reporting does occur in some areas, it rarely extends beyond the physical condition of the environment to include information on regulatory outputs and inputs
- there have been few attempts to use available information to evaluate the contribution of environmental regulations to outcomes. The Commission is aware of such attempts in Victoria for only two of the 22 areas of environmental regulation reviewed; and a literature review suggested relatively little in this respect is carried out in other jurisdictions within Australia.

The Commission identified several areas where performance reporting frameworks have been developed for Victorian environmental regulations. These frameworks cover the health of catchments, national parks and forest management (box 11.1), and illustrate that developing robust monitoring and reporting approaches for environmental regulation is possible. There is also growing recognition of the need to develop sound performance reporting frameworks in other areas of regulation in Victoria. For example, Consumer Affairs Victoria is currently exploring ways of better applying performance measurement within a 'better business regulation' framework (CAV 2008). The Department of Human Services is also proposing to implement a comprehensive state-wide performance reporting regime for food safety (DHS 2008).

Box 11.1 Monitoring and reporting on management of rivers, national parks and forests

The Annual Report of the *Goulburn Broken Catchment Management Authority* is an example of reporting that identifies clear objectives, and provides measures of the outcomes and outputs from the regulatory and other activities. The Annual Report:

- identifies five objectives for environmental management in the catchment:
 - conserve, protect and enhance the condition, diversity and extent of natural resources
 - minimise damage to natural ecosystems and resource-based industries
 - provide innovation in water and land management, as a result of investment in research
 - minimise damage to public and private assets from flooding and erosion
 - support development that conserves, protects and enhances the diversity of the existing natural resource base.
- reports on outcomes for nine aspects of rivers and their catchment areas (such as salinity of watertables, biodiversity, flood protection, and pest plants and animals), describing the reasons for the observed changes
- reports on outputs against targets under 14 categories (including length of irrigation drains built, long-term conservation agreements concluded, hectares of revegetation and hectares of weeds treated).

Parks Victoria is responsible for managing national parks in Victoria and is required to prepare reports on the condition and management of Victorian parks. A State of the Parks report, produced at 5 year intervals, retrospectively assesses performance against ten year objectives.

Monitoring by Parks Victoria covers both the physical condition of parks and usage by the community. Parks Victoria monitors native and threatened flora and fauna, and exotic species, and the threats posed by pest plants and animals, and records changing levels over time. It also undertakes and reports the results of surveys of park visitors to help understand the drivers of visits and the level of satisfaction with the visit experience. Such information informs the process of updating and revising park management plans.

For forests and timber harvesting, DSE produces two pertinent monitoring reports:

- A state-wide summary of the timber harvesting and regeneration done each year.
- The State of the Forests publication, produced every five years, reports on the physical health of forests using 45 internationally recognised indicators that are grouped under the 7 objectives of the Sustainable Forests Act.

Sources: Goulburn Broken CMA, Annual Report 2007-08 and Corporate Plan 2008-9 to 2012-3; Parks Victoria, State of the Parks Report, May 2007, and Signs of Healthy Parks Monitoring Program, 2008; DSE, State of the Forests Report, 2005, and Criteria and Indicators for Sustainable Forest Management in Victoria, June 2007.

Options for improving performance reporting and evaluation

At present the balance of positive and negative incentives is not clear cut in favour of undertaking rigorous monitoring, reporting and evaluation of the effectiveness and efficiency of regulation. Although there are positive incentives such as the desire to recognise good performance and progress towards achieving objectives, these incentives are undermined, and possibly outweighed, by a number of disincentives such as:

- the managerial burden on regulators
- the risk of revealing a lack of progress, especially when mechanisms for rewarding good performance are absent
- the risk that limits will be placed on regulatory discretion
- uncertainty about the how any information reported will be used, or misused (VCEC 2007a, p.8).

The playing out of these incentives and disincentives is reflected in a slow or partial take-up of recommendations, made by bodies such as the Commission and the Victorian Auditor-General, to improve performance reporting and evaluation in a number of areas. For example, chapter 10 found that although DPI has provided some information on its website about time taken for approvals, in line with the recommendations in the Commission's inquiry into *Regulation and Regional Victoria* (VCEC 2005a), the information is not comprehensive and does not provide a clear picture of the reasons for any delays, as recommended.

The Commission has previously considered several options for overcoming the weak incentives to undertake performance reporting and evaluation (VCEC 2007a, pp. 12-13). One option is to provide guidelines to assist regulators and departments. Such guidelines could be developed by the Department of Treasury and Finance or the Department of Premier and Cabinet, and could outline general principles and advice on techniques for performance reporting and evaluation, and provide illustrative case studies. Another approach is to mandate performance reporting and evaluation frameworks through, for example, legislating for their development or incorporating a requirement in program funding agreements.

On balance, the Commission favours the option of mandating that performance reporting and evaluation frameworks be developed.

In relation to performance reporting frameworks, the Commission sees merit in requiring an independent body to oversight the development and use of performance reporting. The main benefit of this approach is that it would facilitate a form of yardstick competition, allowing recognition of good practices and implicit criticism of under-performance.

Whether the body that provides oversight of performance frameworks has an environmental brief, such as the Commissioner for Environmental Sustainability, or a broader focus, such as the Victorian Auditor-General, is secondary to getting the role and exact focus right. The pros and cons of the two options raise similar issues to those arising in the debate about whether general or industry-specific economic regulation delivers better outcomes (Beesley 1997). In essence, the main points are that a specialist has a ready-made knowledge base of existing practices and often forward plans of the agency concerned, but is liable to 'capture' by sectional interests. On the other hand, a generalist body brings valuable cross-industry experience and comparisons to bear on the tasks of review and recommending improvements. It should be added that there is nothing which is unique to the natural environment field that makes it necessary to appoint a specialist.

The Commission also recognises that establishing performance reporting frameworks and an oversight function will impose costs on government agencies. Whether these costs should be met through provision of supplementary funding or reprioritisation of current funding is a matter for the Government to determine. The development of performance reporting frameworks has the potential, however, to deliver savings to the Victorian Government and to businesses by helping to identify and drive improvements to the efficiency and effectiveness of regulation. Such frameworks can also assist the Victorian Government in deciding on and focusing resources on its environmental priorities.

Draft recommendation 11.3

That the Victorian Government develop performance reporting frameworks for environmental regulations to be implemented by the relevant department or agency. The frameworks should:

- **specify regulatory objectives, including the outcomes that regulation is intended to achieve**
- **specify the types of indicators (outcome, output and input) and the frequency of reporting**
- **specify how the results are to be used (for example, the frequency of public reporting and the use of the information to review the regulations).**

The development and implementation of performance reporting frameworks should be subject to oversight by an independent body such as the Victoria's Office of the Commissioner for Environmental Sustainability or the Victorian Auditor General's Office, which would report periodically on implementation.

Improving the evaluation of regulation

The Victorian Guide to Regulation says that ‘an evaluation strategy, to monitor the effectiveness of the preferred regulatory option, is particularly important for significant pieces of primary legislation or regulation, and it is highly desirable for the details to be included in the BIA or RIS’ (Government of Victoria 2007b, p. 30). Whilst the Guide is firmly of the view that regulation should be evaluated regularly, it stops short of saying this must happen.

This reluctance to mandate that evaluation strategies be developed is due, in part, to technical difficulties of separating the influence of regulation from the many other factors that can influence environmental outcomes. The Guide therefore leaves it to the agency concerned to judge whether such an analysis is worthwhile.

As noted, these technical difficulties are, however, much reduced if regulatory objectives are stated in a specific form, thereby limiting the influence of non-regulatory factors (section 11.2). Analysis can be facilitated further by using less proximate performance indicators, that is, ones having an indirect link to the stated objectives.

Given the lack of knowledge about the effectiveness of much of Victoria’s environmental regulation, and the evidence relating to the costs to business of key areas of regulation, there is a strong case for implementing a program of evaluations to determine whether regulation is likely to be achieving its objectives (where these are sufficiently clear).

Draft recommendation 11.4

That the Victorian Government commit to the principle that all new environmental regulations with a potentially significant impact on business should have an evaluation strategy and associated data collection plan.

11.5 Roles and responsibilities of regulators

The Commission has previously expressed the view that regulatory bodies should not be responsible for policy. In its report on *Housing regulation in Victoria*, the Commission explored the issue of the extent to which regulatory bodies should have responsibility for developing the policy approach and instruments to give effect to government objectives (VCEC 2005b, pp. 304-308).

The policy functions in environmental regulation include tasks such as advising the Minister on the nature of environmental problems, the design of potential solutions, including regulation, and, where regulations are in place, on the effectiveness and efficiency of implementation. Outputs of this function include, amongst other things, regulatory impact statements (RIS) and business impact assessments (BIA).

The Commission argued that regulators are well placed to comment on the problems that may require government intervention and the technical feasibility of proposed solutions, including regulation. Combining policy and regulatory functions can, however, lead to a number of risks:

- That regulation will become more complex, where regulators have an interest in creating complex regulatory arrangements in which it becomes difficult to determine whether regulatory outcomes are attributable to the regulators' performance or the inability of regulated entities to understand and comply with regulation.
- Regulatory creep, where it is in the regulator's institutional interest to maintain and expand its role by adding new regulation.
- Reduced accountability by lessening incentives for regulators to set out clear objectives against which their performance can be assessed.
- The risk that regulators may be 'captured' by particular interest groups.
- That regulators will be drawn into political debates about policy issues, thereby compromising their actual or perceived independence.

The Victorian Government has accepted the principle that:

... regulatory agencies should not have primary responsibility for provision of policy advice, and that this should be the role of the relevant government department. The Victorian Government supports ongoing review of the functions of the regulatory agencies to reflect an appropriate allocation of roles and responsibilities between departments and agencies. (Government of Victoria 2006d, p. 17)

The Government also accepted the principle that policy functions such as preparation of RISs and BIAs should be prepared by agencies responsible for primary regulatory policy advice to governments (Government of Victoria 2006d, p. 17).

In the course of the inquiry, three areas have been identified where there appears to be insufficient separation between the policy development and regulatory functions:

- The DSE develops the policy relating to native vegetation regulations but also has a regulatory function, giving rise to a conflict of interest. For example, DSE develops and implements the regulations but also reports on the outcomes for native vegetation across Victoria (chapter 7).
- The EPA is responsible for developing state environmental protection policies and waste management policies that set environmental standards and for preparing policy impact assessments that are similar to RISs in that they explain the proposed policy, its rationale and outlines the key impacts of adopting the policy. It is also responsible for implementing these policies through its role in licensing businesses, reviewing works approvals and enforcing the Environment Protection Act.

- The DSE has management responsibility for commercial harvesting in the west of the state as well as a policy and regulatory role for all State forests. DSE sets and monitors the levels of harvesting in each Forest Management Area. DSE is also responsible for the Timber Harvesting Operator licensing system specified by the Sustainable Forests (Timber) Act, monitors the level of sawlog harvesting and enforces penalty provisions for breaches of specified environmental requirements.

In each of these cases, the policy and regulatory functions are combined within the one organisation. The Commission invites further comment on the issues raised by the existing role allocations in native vegetation, environmental protection and forestry.

The Commission invites comment on the reasons for combining policy and regulatory functions in relation to native vegetation, environmental protection and forestry, and the advantages and disadvantages of options for achieving a clearer separation of the functions.

11.6 Future legislative and organisational arrangements

Submissions and discussions with participants indicate that there may also be opportunities to simplify and better integrate Victoria's legislative and organisational frameworks. According to the Municipal Association of Victoria:

The institutional arrangements in which environmental regulation operates, lends itself to creating confusion over responsibilities and, in some cases, duplication of roles and effort. (sub. 17, p. 7)

In a submission to the land and biodiversity green paper process, the Environmental Defenders' Office commented that:

... review and improvement of the current institutional arrangements is required, and that the role of each relevant agency should be made clear, transparent and accountable. The submission overwhelmingly concludes that there is a need for a simplified, coordinated and integrated approach to the institutional arrangements. (EDO 2008)

The Victorian Government has already recognised the need to move towards a simpler and better-integrated natural resource management framework as one of the key options for addressing the land and biodiversity challenges facing Victoria. According to the Government's land and biodiversity green paper:

For more than a decade, the Victorian and Australian Governments have invested in natural resource management and biodiversity protection through a model of regional service delivery at a catchment scale. Separate strategies have been developed for coastal management and public land is generally managed outside of this framework.

Poor integration of management activities across tenures, catchments and statutory planning systems and administrative boundaries is leading to duplication of effort, inconsistencies and in some cases counter-productive efforts. An inconsistent focus on priorities across the state means strategic assets are not always effectively protected. Skills and resources available to management organisations do not always appropriately match responsibilities. Many submissions to the consultation paper suggested a need to better define the roles and responsibilities of CMAs, Water Corporations, DSE regions, the Department of Primary Industries, Coastal Boards, local government and other agencies to reduce confusion and inefficiencies. (Government of Victoria 2008e, p. 4)

A recent example relating to the management of roadside weeds illustrates the problems that can be caused by a complex approach to management, and governance arrangements for, environmental issues. Some councils maintain that the Catchment and Land Protection Act requires that landholders prevent the spread of certain weeds on the sides of undeclared roads adjoining their property (Northern Grampians Shire 2008, p. 86). However, the Land Act gives the Crown ownership of all vegetation on roadsides, suggesting that the responsibility for management of roadside vegetation rests with crown land managers. The contradictory approaches have led to confusion about responsibility for managing weeds and litter on roadsides in regional areas and undermined the effectiveness of efforts to combat weeds.² Apart from landholders, the government bodies with responsibility for managing roadside vegetation may include VicRoads, DSE, DPI, and councils (depending on the road type and the type of weed). In a submission to the land and biodiversity green paper process the Shire of Yarra Ranges argued that:

Currently there is a fair amount of overlap of effort and resource expenditure, and at times conflict, between state government agencies operating in the region in relation to land management and biodiversity protection issues. It is critical these agencies work to integrate their programs more holistically with each other and local governments so as to work more effectively and efficiently in a climate of limited resources and great community demand and environmental need. For instance, there are three State agencies (DSE, DPI, and CMAs) who attempt to manage environmental weeds, alongside local government bodies, and none of which are able to achieve this effectively. (Shire of Yarra Ranges 2007, p. 6)

The issues facing Victoria are not unique. Similar challenges face other Australian states and other countries.³ Despite the similarity of the issues, different

² As an interim measure, the Victorian Government announced that it would provide financial grants to assist councils in undertaking weed and pest control on roadsides (Helper 2008).

³ On 2 January 2009 the West Australian Government announced a review of the States' natural resource management model. The review is to examine, amongst other things, alternative regional models for effectively and efficiently delivering priority NRM outcomes for the State (Redman 2009).

jurisdictions appear to have taken different approaches to the challenge of achieving a simpler set of integrated environmental regulations. The experience in New Zealand and South Australia provides useful lessons for Victoria (box 11.2).

Box 11.2 Consolidating natural resource management legislation

Recent reforms to environmental regulation in New Zealand and South Australia were designed to streamline legislative frameworks for natural resource management.

New Zealand

The Resource Management Act 1999 (RMA) created an integrated framework for the management of New Zealand's land, air and water resources. The RMA was first introduced in 1991 and was intended to create a simpler, consistent and coordinated framework for regulating the environment. The Act provides for the establishment of national, regional and district plans that set environmental standards for the air, land, coastal areas, waterways and other resources. These plans identify activities that can occur 'as of right' and that require consents (permits) (Ministry for the Environment 2006, p. 12).

There have been long standing concerns about the degree of simplification, consistency and coordination achieved under the RMA. Recently, the New Zealand Government announced further reforms to the RMA designed to:

- streamline and simplify processes
- provide priority consenting of major projects
- reduce costs and delays
- speed-up plan making processes
- restrict trade competition, vexatious and frivolous objections (Smith 2008).

South Australia

The Natural Resources Management Act 2006 (Sth Aust.) created an integrated statutory framework for animal and plant control, soil conservation and water resource management. The object of the Act is to promote sustainable management of the State's natural resources consistent within the principles of ecologically sustainable development, including the precautionary principle. The effect of the Act has been to:

- amalgamate three existing Acts
- amalgamate the existing structure of three peak bodies and 27 (rural) animal and plant control boards, 27 soil conservation boards and eight catchment water management boards into regionally based and integrated natural resources management boards
- reduce duplication by incorporating joint State and Commonwealth programs, to be administered through the administrative arrangements established by the Act.

Sources: Smith (2008); Ministry for the Environment (2006).

11.6.1 Towards the better integration of Victoria's legislative and organisational framework

The Commission considers that there is merit in examining the scope for developing integrated legislation based around clearly defined objectives, common guiding principles (potentially the ESD principles), clear accountabilities, and requirements for public monitoring, reporting and evaluation. The experience in other jurisdictions highlights the potential advantages and disadvantages of moving to more integrated legislative frameworks. The main advantages are:

- encouraging governments to apply consistent frameworks and principles to different environmental issues
- ensuring that agencies take a consistent approach to decision-making using a consistent framework
- facilitating continuous review and reassessment of priorities
- enhancing the capacity for resources to be shifted into areas of higher priority
- reducing complexity and search costs for government, individuals and businesses
- improving the effectiveness of regulation provided outcomes are clearly defined, and that there is clear accountability for outcomes.

These advantages need to be viewed against potential disadvantages, such as:

- transitional costs to government in developing and explaining to the community how a new legislative framework will impact on the environment, the community and businesses
- uncertainty for businesses and individuals about the impacts and the potential for a lengthy period of frequent changes to address unanticipated issues
- the risk that moving to more integrated frameworks merely involves replacing multiple Acts with one very large Act.

As noted, the Victorian Government has indicated that there is scope to improve the integration of environmental regulations. The Commission has therefore considered several options for grouping existing environmental legislation, as a basis for potentially consolidating a number of pieces of legislation.

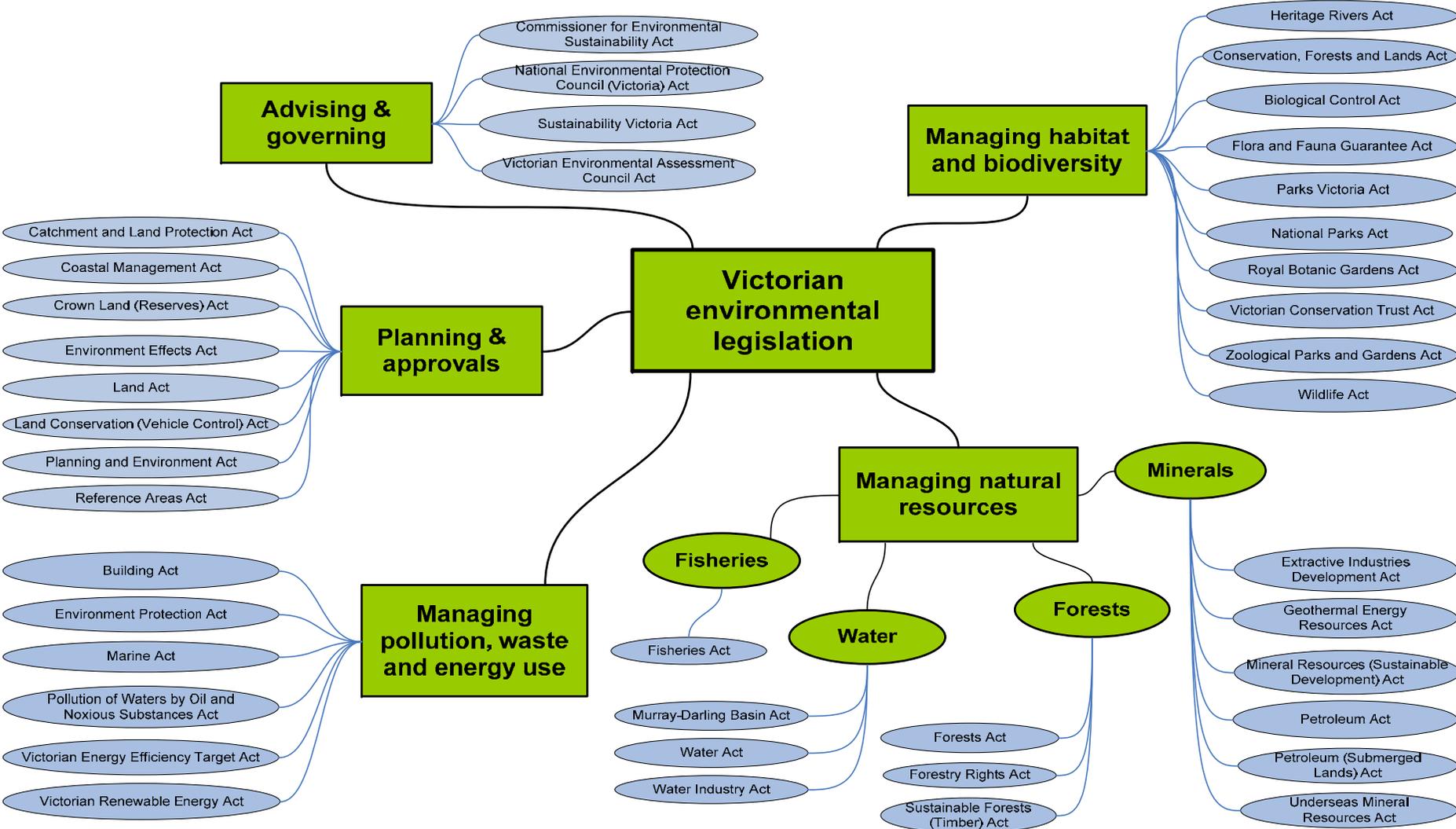
Although Victoria's legislative framework comprises as many as 43 Acts covering 9000 pages of legislation and regulation, the legislation can be grouped into a number of categories related to key purpose, namely:

- general environmental legislation
- land use planning legislation
- habitat and biodiversity legislation
- natural resource legislation
- pollution, waste and energy management legislation (chapter 3).

The relationship of the main Acts to each other is shown in figure 11.1.

The Commission has not made a recommendation for consolidation of existing environmental legislation because there is scope to make a number of improvements within the existing architecture. These improvements are discussed elsewhere in this draft report. Nevertheless, the discussion in previous chapters highlights a number of potential opportunities for consolidating legislation. Given the concerns expressed elsewhere about the complexity and effectiveness of native vegetation regulations (chapter 7), habitat and biodiversity legislation may be a high priority area for attention.

Figure 11.1 Victorian environmental legislation



One option is to create a consolidated Act that combines the major pieces of habitat and biodiversity legislation, such as the native vegetation regulations (currently contained in the Victorian planning provisions, which fall under the Planning and Environment Act), the Flora and Fauna Guarantee Act and the Wildlife Act. Such an option was supported by the Victoria Naturally Alliance in a submission to the land and biodiversity green paper:

The alliance recommends the consolidation of key land management and biodiversity conservation laws to achieve better biodiversity outcomes, reduce complexity, overlaps and gaps, clarify roles and responsibilities, and lessen the administrative burden of state regulation.

A consolidated Act may include relevant aspects of the Flora and Fauna Guarantee Act 1988, Wildlife Act 1975, Conservation Forests and Lands Act 1987 and the Catchment and Land Protection Act 1994 and other relevant Acts. A suggested working title for consolidated legislation is the Biodiversity and Ecological Processes Act. Likewise, it may provide a mechanism for strengthening the regulatory basis of the Native Vegetation Management Framework (NVMF). (Victoria Naturally Alliance 2008, p. 25)

The complexity of Victoria's legislative framework is matched by the complexity of the organisational arrangements for developing and implementing the regulation (chapter 3). The bodies involved in habitat and biodiversity regulation, for example, include:

- Victoria's 79 Victorian local councils
- the Biodiversity and Ecosystem Services Division in DSE
- the Natural Resources Division in DSE
- the Public Land Division in DSE
- DPI (Fisheries Victoria)
- Parks Victoria
- Trust for Nature
- the 10 Catchment Management Authorities also have some regulatory responsibilities for weeds and pests under the CLP Act.

In relation to native vegetation, for example, the large number of entities playing a role may have contributed to the concerns examined in chapter 7, about the lack of effectiveness, cost, uncertainty and delays associated with the regulations. The entities involved in the design and implementation of the regulations include the 79 local councils, DSE, DPCD, DPI (under mining and extractives legislation), Catchment Management Authorities and Trust for Nature.

Clearly, implementing a major restructuring of Victoria's legislative and organisational arrangements offers some potential benefits but there would also be a number of costs, especially in the period before and after any change. Little

evidence was presented about these benefits and costs and consequently, the Commission is seeking feedback from participants on the need for such changes, the alternative options that are available and the benefits and costs of these alternatives.

The Commission seeks comment on options for simplifying and improving Victoria's environmental legislation and the corresponding organisational framework.

12 Opportunities for using market-based approaches¹

12.1 Introduction

The terms of reference direct the Commission to report opportunities for improving regulation; for example, by applying alternative regulatory models, including market-based approaches. This chapter describes:

- recent advances that increase opportunities to use market-based approaches
- the range of market-based approaches
- experience with these approaches in Victoria and overseas
- potential applications in Victoria
- implications for environmental policy in Victoria.

12.2 A new approach to policy design

Advances in economic theory², collectively referred to as mechanism design (see Roth 2002), open up the prospect of developing new solutions to previously intractable policy problems. The mechanism design approach makes it possible to design policy mechanisms that embody the efficiency properties of markets in sectors of the economy where markets are missing or inefficient. These mechanisms are often referred to as 'market-based instruments' because they are designed to mimic the way markets efficiently allocate resources and create wealth, by overcoming two fundamental information problems that would otherwise impede transactions. Markets discover which firms can produce goods and services at low cost (overcoming a hidden information problem) and resolve the hidden information problem that arises because buyers cannot observe the actions of producers (a hidden actions problem). (See box 12.1.)

¹ This chapter draws heavily on a report prepared for the Commission by Gary Stoneham, chief economist at the Department of Sustainability and Environment. However, responsibility for the content of the chapter, and particularly for its recommendations, rests entirely with the Commission.

² These advances have occurred particularly in: game theory (Von Neumann and Morgenstern (1944), Nash (1950 and 1951) and Vickrey (1961)); information economics Akerlof (1970); incentive design Mirlees (1971); and experimental economics Smith (1982); and Plott (1979).

Box 12.1 Information problems

Hidden information – To create value, production must be allocated to firms that can produce at low-cost and consumption must be allocated to firms and individuals with the highest valuations of goods and services. However, information about costs of production and valuation of consumption is decentralised and private firms and individuals are reluctant to share this information. This is referred to as the hidden information problem. If not resolved, hidden information leads to *adverse selection* – the wrong producers/buyers producing/consuming goods and services. Markets are an institution that leads low-cost producers of goods and services to self-select into supply decisions and high-value consumers to self-select into purchase decisions, thereby creating wealth. In this sense markets are an institution that is *incentive compatible*.

Hidden actions (also referred to as *moral hazard*) refers to the problem that buyers cannot always observe the actions of those producing goods and services. Buyers want outcomes but producers have incentives to minimise inputs needed to produce outcomes because of the impact on profits. When buyers delegate production decisions to others, they are not able to observe all of the actions of producers. For example, the owner of a motor car cannot observe the actions completed in the workshop contracted to complete repairs. Different markets deal with the hidden actions problem in different ways. In commodity markets, for example, metrics are developed to convey information about the attributes of the commodity. Risk markets deal with the moral hazard problem by shifting risk to the insured even though it may be costly to do so.

The emergence of markets in some parts of the economy, but not in others, does not necessarily denote the absence of opportunities to create value. Rather it may suggest the existence of impediments to transactions (generally related to information problems) between those willing to pay for goods and services and those willing to supply these goods and services. The mechanism design approach now allows economists to design, test and create purpose-built institutions that mimic the way markets create value. This begins by identifying the impediments to transactions; applies economic theory to propose institutions that might overcome these impediments; uses experimental sessions or field pilots to compare the proposed institutions with a control; and finally evaluates and refines the institutional design based on laboratory and/or field data.³

There are three important implications of the mechanism design approach for policy makers and the selection of policy instruments:

³ Roth (2002) signals the emergence of a more disciplined, evidence-based approach to policy design and the prospect of creating policy instruments that perform much more efficiently and effectively than in the past.

- It is now possible to create unique solutions to policy problems. Micro-market structures, including the way incentives are designed and information is revealed, become core elements of policy design.
- A more robust approach to policy design has emerged, using evidence from experimental sessions/pilots to guide the choice of institutions and their architecture.
- The introduction of new institutions raises governance, linkage and risk management issues. Roth (2002, p. 40) notes that 'markets don't grow like weeds – some of them are hothouse orchids. Time and place have to be established, related goods need to be assembled, or related markets linked so that complementarities can be handled, incentive problems have to be overcome etc'.

12.3 New policy mechanisms relevant to the environment

Although initially employed to create markets in areas such as mobile phone spectrum (Cramton 1995, and McAfee and McMillan 1996); airport landing slots (Plott et al. 1981); space station resources (Plott & Porter 1996); intern placement (Roth 1982); and electricity markets (Wilson 1999); the mechanism design approach is beginning to influence the way economists design policy mechanisms for the environment. From a policy perspective, the environment is not a special problem – it is one of many situations where specific impediments have blocked transactions such that markets have not taken hold.

In the environment sector, the basic conditions exist for value to be created through transactions. It is possible, for example, to identify individuals or organisations, such as governments and NGOs, willing to pay to maintain or enhance the stock of environmental assets. Similarly, there are individuals/firms able to invest in actions that produce additional environmental goods and services. For example, landholders could improve the stock of habitat by investing in fences to exclude livestock from areas of remnant vegetation. Landholders in this case may be willing to supply environmental goods and services but currently lack the incentives needed to reward this investment. More generally, our economic system lacks the institutions capable of overcoming the impediments that prevent beneficial transactions from occurring between potential buyers and sellers of environmental goods and services.

Each environmental policy problem demands a unique solution derived through accurate diagnosis of the causes of market failure; recourse to economic theory to identify potential solutions; bench-testing of proposals and evaluation of performance against the theoretical optimum. However, there are several broad classes of interventions likely to be of interest to environmental policy makers.

12.3.1 Tradeable pollution schemes

Tradeable permit schemes create a market for pollution permits by: defining a ‘cap’ on total pollution; defining legally binding rights to pollute within the cap (for example, a greenhouse gas emissions permit); allowing private trade in permits; and identifying rules needed to limit the emergence of hot spots (referred to as trading rules).

This institution achieves two broad objectives:

- It converts a public good problem (for example, global greenhouse emission control) into private goods by capping total emissions and allocating property rights to pollute within the cap. A cap defines the physical amount of pollution able to be emitted into the environment. This is important when there are ecological thresholds beyond which pollution becomes toxic or causes some irreversible change (for example, dangerous climate change).
- It resolves the hidden information problem, because firms with low-cost abatement options self-select into abatement activities, and firms with high-value products self-select as the buyers of pollution permits. This occurs because pollution permits can be traded in the same way as occurs in other markets. The market also deals with the moral hazard problem, if pollution is readily observable (i.e. if it is point-source). Tradeable pollution permits mimic the way markets resolve the decentralised information problems that otherwise impede the efficient allocation of resources between pollution and abatement activities.

12.3.2 Auction conservation contracts

Some pollution and environmental problems arise from diffuse-, rather than point-sources⁴. Where pollution has diffuse sources, it is not possible to define and create robust property rights to control the quantity of pollution emitted from human activities. In these situations there is a serious hidden actions problem that, if unattended, will prevent transactions from occurring – causing market failure.

For diffuse-source problems, the actions of individuals (for example, applying fertiliser to a crop) precipitate changes to the environment (for example, nutrient contamination of waterways) through buffered biophysical processes including surface and sub-surface hydrology, and ecological systems. There are a broad range of diffuse-source environmental problems that arise in this way including:

⁴ A point source of pollution is a single identifiable localised source of pollution; for example, where waste is discharged into a river from a pipe or drain. Diffuse-sourced pollution might occur over a large area, associated, for example, with particular land uses (EPA 2006d).

dryland salinity, water quality decline and degradation of terrestrial and aquatic habitat. In these circumstances, property rights are difficult, if not impossible, to define and enforce, ruling out the use of a market, such as tradeable emission permits, to allocate investment and consumption of resources.

A new institution will be needed to facilitate efficient transactions between buyers and sellers of environmental goods and services with diffuse-source characteristics. For diffuse-source problems, the impediments to transactions between buyers and producers of environmental goods and services can be largely overcome by employing contracts. For example, a contract could be developed in which a landholder agrees to change land use in ways that improve the environment in exchange for financial consideration needed to compensate for increased costs and/or reduced profitability.

The key problem with contract-based schemes arises because the principal (the government or other purchaser) delegates responsibility for the supply of environmental goods and services to a third party (the agent). In these circumstances it is difficult for the principal to monitor the actions of agents who have different incentives from the principal; and there is uncertainty associated with the transformation of inputs to environmental outcomes. These conditions create an incentive for the agent to avoid fulfilling contractual responsibilities, underlining the need for careful design of the incentives embodied in contracts.

Even if contracts can be designed efficiently, the second problem of hidden information also needs to be resolved to discover which agent can supply environmental outcomes at low-cost. There are several possible mechanisms that could be used to discover the low-cost providers. Auctioning conservation contracts is particularly useful as the number of firms involved increases (Klemperer 2004) and has proven to be practical for diffuse-source environmental problems (Stoneham et al. 2003, 2007b).

12.3.3 Smart markets

A third category of policy mechanisms will be needed to facilitate transactions between those permitted to degrade or destroy the environment and those able to improve it. These transactions are often referred to as offsets. For example, the Planning and Environment Act requires that developers obtain a permit to clear native vegetation and to offset the loss of native vegetation. Offsets can be supplied through on-site investments or by an independent agent, such as a landholder, able to match the characteristics of the vegetation that is cleared by the developer. These transactions involve three parties: buyers of offsets (developers who destroy nature in the process of developing roads, houses, gas pipelines, firebreaks etc.); sellers of offsets (landholders able to restore nature);

and the environment (represented by government through the no-net-loss objective).

These transactions are complex, because:

- *nature is complex*. Specific measures will be needed to safeguard the interests of nature as a party in the transaction. Complex trading rules are needed and have been developed under the Native Vegetation Framework (see chapter 7) to avoid transactions that degrade the natural stock of habitat, and site assessments are needed to identify the characteristics of the habitat being cleared or supplied as an offset.
- *markets are thin*. The number of participants able to supply specific offsets is likely to be small because of the complexity of nature and the scarcity of some vegetation types (for example, grasslands).
- there are *package/synergy problems*. Developers often seek to clear large tracts of habitat, such as required for a freeway or pipeline, where many different types of vegetation in different bioregions are required in an all-or-nothing package. Similarly, landholders provide offsets to developers as an 'all-or-nothing' proposition because it is uneconomic to offer land below the paddock scale. This suggests that there are package or synergy problems on both sides of the market.
- *assets are lumpy*. Both developers and landholders participate in offset markets with lumpy units of assets. Developers require certain quantities of offsets to cover the environmental liability caused by development and landholders offer offsets in quantities defined by convenient fencing regimes that are not divisible.

These complexities impose high transaction costs on participants in the offset market, unless investments are made to resolve them. Even where developers are willing to pay more for offsets than landholders' asking price, these impediments may be so severe that they extinguish the potential value created.

The policy challenge in this case is to design a new institution capable of overcoming the complex trading rules, package, scale and thin market problems that characterise transactions in offsets. This requires special institutions, sometimes referred to as 'smart markets', in which computers are employed to assist market participants by: simultaneously exploring multiple complementary transactions; using multiple rounds of interactions between buyers and sellers; completing complex calculations to provide buyers and sellers with information needed to re-configure bids; and enforcing stopping rules when the optimal set of transactions is achieved (Plott et al. 1981). These processes reduce transaction costs for market participants who complete exchanges in an electronic market (ebay is an electronic market) in a matter of seconds rather than months as is the current situation.

12.3.4 Taxes and subsidies

Taxes aim to discourage unwanted behaviour (for example, harmful emissions) by introducing the marginal social cost⁵ of various actions into the decision-making process. For example, if this was the chosen policy instrument, the introduction of a tax on emissions equal to the marginal damage cost of these emissions should limit emissions to the social optimum level.

12.3.5 Information provision

Market efficiency may be improved by ensuring that participants have access to information relevant to consumption and production decisions. Including additional information on the labels of products is one way of exposing relevant information in markets. For example, labels are sometimes used to reveal that a particular company has invested in conservation actions and some consumers are willing to pay a premium for such credence attributes⁶. Revealing this information can, therefore, raise investment by private firms in conservation activities.

12.3.6 Regulation/legislation

As discussed in chapter 2, under certain circumstances, regulation is an efficient response to environmental problems. There are essentially two roles for legislation/regulation with respect to environmental policy.

First, legislation is needed to support other policy mechanisms. For example, emission trading schemes can only exist if: government is able to define and create legally binding property rights for pollution permits; property rights are enforced; markets operate fairly; and government defines and enforces trading rules needed to avoid hot spots in emissions trading schemes. In this role, legislation complements other policy mechanisms.

The second role for legislation is as a policy mechanism in its own right to change investment and consumption patterns in order to achieve an environmental outcome. In this role, legislation competes with other policy mechanisms and must be able to be shown to have superior economic efficiency and effectiveness. This is more likely when there are:

- *homogeneous cost structures* – Where the costs of relevant conservation actions do not vary greatly between different firms, there is no advantage from

⁵ Marginal social cost includes all costs associated with a particular action, not just those evident to the decision-maker.

⁶ Credence goods are those where the quality attributes are not discerned through the senses such as taste, touch and smell.

developing mechanisms (such as markets and auctions) that identify low-cost suppliers, because all agents have the same unit costs.

- *irreversible outcomes* – Where environmental assets are near an ecological threshold precipitating irreversible outcomes, legislation—provided it can be enforced—can prohibit actions that cause the collapse of ecological systems.
- *observable actions* – Legislative programs are more likely to be effective where the actions of individuals and firms are observable and the threat of punishment is credible.

Enabling legislation is therefore essential to establish robust property rights and secure commercial and legal environments. Beyond this level of intervention, whether proactive legislation and regulation represent an efficient intervention strategy depends on the presence of the conditions identified above and the practicality and cost of developing and applying alternative approaches.

12.4 Experience with market-based institutions

12.4.1 Tradeable pollution schemes

The many successful applications of tradeable pollution permit schemes around the world include: the SO_x and NO_x schemes developed by the EPA (US); the Reclaim scheme in California; Australia's water market; the Hunter Salinity Scheme; a number of fishery management schemes such as Victoria's tradeable quota for rock lobster. Tables 12.1 and 12.2 summarise the findings of studies that compare the performance of tradeable permit schemes with command and control approaches. For point-source pollution problems, these studies show that tradeable pollution permits schemes achieve specific environmental outcomes at significantly lower cost than schemes that rely on regulation. Table 12.1 shows that in the examples studied, the cost of reducing air pollutants using a traditional approach is often close to double what it is using an incentive approach and can be significantly more than this. Table 12.2 indicates broadly similar results for measures to reduce water pollution.

The reason for these findings is that a market for pollution permits allocates pollution/abatement activities to high-value/low-cost firms, overcoming the information asymmetry problems noted in box 12.1. Command and control programs, on the other hand, cannot be efficient because they rely on a central authority to make these allocation decisions (through the distribution of licences), even though they do not hold information about individual firms' costs and valuations. When information is decentralised (that is, distributed across the relevant firms and individuals) and where there are commercial incentives not to reveal this information to competitors or buyers), a centrally regulated approach will not match the efficiency properties of a well-designed tradeable emissions permit scheme.

Table 12.1 Potential savings from using economic incentives to control air pollution

<i>Pollutant controlled</i>	<i>Study, Year, Source</i> ^a	<i>Geographic Area</i>	<i>Traditional Regulatory Approach</i>	<i>Ratio of costs: Traditional Approach vs. Incentive Approach</i>
Hydrocarbons	Maloney & Yandle (1984) T	DuPont facilities in United States	Uniform percent reduction	4.15
Nitrogen dioxide	Seskin et al. (1983) T	Chicago	Proposed Reasonably Available Control Technology (RACT) regulations	14.4
Nitrogen dioxide	Krupnick (1986) O	Baltimore	Proposed RACT regulations	5.9
Total Suspended Particulates (TSP)	Atkinson & Lewis (1974) T	St. Louis	State Implementation Plan (SIP) regulation	6.0
Particulates (TSP)	McGarthland (1984) T	Baltimore	SIP regulations	4.18
Particulates (TSP)	Spofford (1984) T	Lower Delaware Valley	Uniform percent reduction	22.0
Particulates (TSP)	Oates et al. (1998) O	Baltimore	Equal proportional treatment	4.0 at 90 ug/m ³
Reactive organic gases and NO ₂	SCAQMD (1992) O	Southern California	Best Available Control Technology	1.5 in 1994 1.3 in 1997
Sulfur dioxide	Roach et al. (1981) T	Four Corners Area	SIP regulation	4.25
Sulfur dioxide	Atkinson (1983) A	Cleveland		
Sulfur dioxide	Spofford (1984) T	Lower Delaware Valley	Uniform percent reduction	1.78
Sulfur dioxide	ICF Resources (1989) O	United States	Uniform emission limit	5.0
Sulfates	Hahn and Noll (1982) T	Los Angeles	California emission standards	1.07
Six air pollutants	Kohn (1978) A	St. Louis		
Benzene	Nichols et al. (1983) A	United States		
Chlorofluorocarbons	Palmer et al (1980); Shapiro and Warhit (1983) T	United States	Proposed emission standards	1.96
All regulated air pollutants	Bates et al. (1994) O	Poland	European Community and German standards	1.1 to 1.2
Sulfur dioxide	Haklos (1994) O	Europe	Uniform percent reduction	1.42
Ozone	Hahn (1995) O	United States	Vehicle mandate in CA and Northeastern United States	1.3 (NE only) 2.0 (CA + NE)
NO _x	Krupnick et al. (2000) O	Eastern United States	EPA SIP call provisions	1.83 (utilities) 2.0 (all sources) ²³

^a T refers to original citation in Tietenberg (1992), A to original citation in Anderson et al. (1990), and O to original publication of paper.

Source: NCEE 2001.

Table 12.2 Potential savings from using economic incentives to control water pollution

<i>Substance controlled</i>	<i>Source Year, Source ^a</i>	<i>Geographic Area</i>	<i>Traditional Regulatory Approach</i>	<i>Ratio of costs: Traditional Approach vs. Incentive Approach</i>
Biochemical Oxygen Demand (BOC)	Johnson (1967) T	Delaware Estuary	Equal proportional treatment	3.13 at 2 mg/l 1.62 at 3 mg/l 1.43 at 4 mg/l
BOD	O'Neil (1980) T	Lower Fox River, WI	Equal proportional treatment	2.29 at 2 mg/l 1.71 at 4 mg/l 1.45 at 6.2 mg/l
BOD	Eheart et al. (1983) T	Willamette River, OR	Equal proportional treatment	1.12 at 4.8 mg/l 1.19 at 7.5 mg/l
BOD	Eheart et al. (1983) T	Delaware Estuary	Equal proportional treatment	3.00 at 3 mg/l 2.92 at 3.6 mg/l
BOD	Eheart et al. (1983) T	Upper Hudson River, NY	Equal proportional treatment	1.54 at 5.1 mg/l 1.62 at 5.9 mg/l
BOD	Eheart et al. (1983) T	Mohawk River, NY	Equal proportional treatment	1.22 at 6.8 mg/l
Heavy metals	Opaluch & Kashmanian (1985) O	Rhode Island jewelry industry	Technology-based standards	1.8
Selenium	EDF (1994) O	Central Valley, CA	Best management practices	1.2
Nitrogen	Moore (2000) O	Long Island Sound	Equal treatment	1.46 at 3.5 mg/l
Nitrogen	Shabman and Stephenson (1998) O	Long Island Sound	Equal treatment	1.56 at 3.5 mg/l
Phosphorus	Faeth (2000) O	Minnesota River Valley	Equal treatment	2.7 at 1ppm/l
Phosphorus	Faeth (2000) O	Rock River, WI	Equal treatment	1.74 at 1 mg/l
Phosphorus	Faeth (2000) O	Saginaw Bay, MI	Equal treatment	5.9 at 1 mg/l

^a T refers to original citation in Tietenberg (1992), A to original citation in Anderson et al. (1990), and O to original publication of paper.

Source: NCEE 2001.

12.4.2 Auctioned conservation contracts

There is much less experience with the application of market-based instruments to manage diffuse-source emissions problems. Table 12.3 refers to a number of case studies where conservation contracts have been used as the policy mechanism to address environmental problems.

Table 12.3 **Comparison of auctioned conservation contracts with alternative mechanisms**

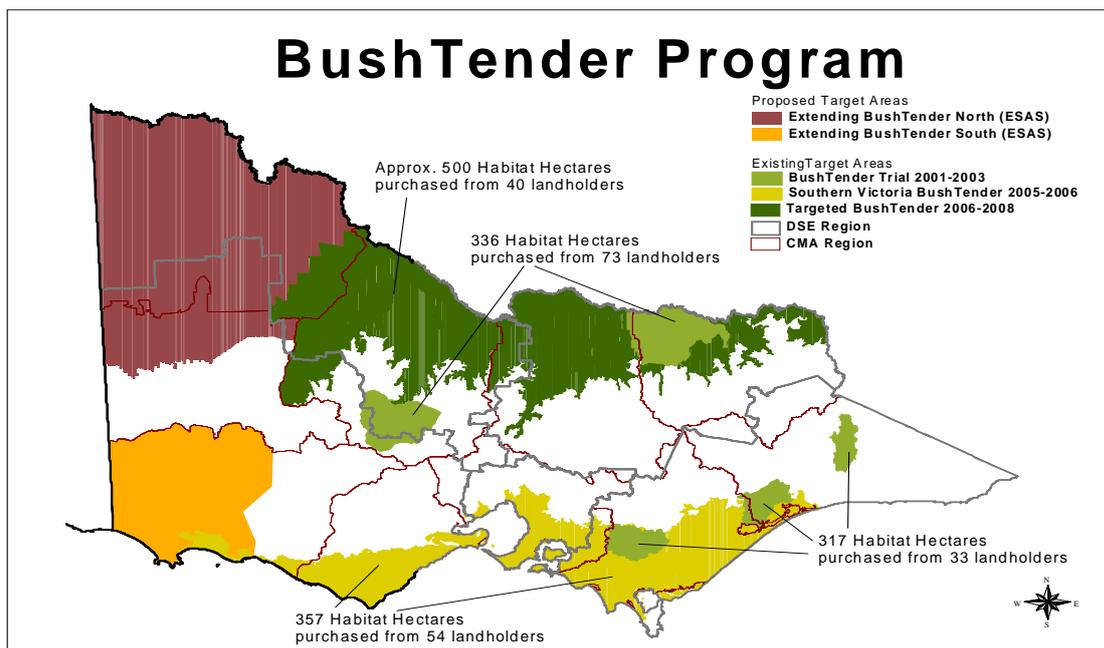
<i>Environmental good/ service</i>	<i>Source</i>	<i>Geographic area</i>	<i>Comparison</i>	<i>Cost-effectiveness (a) Economic efficiency (b)</i>
Terrestrial habitat	(Stoneham et al. 2003)	Northern Victoria	Fixed-price grant	(a) 7 times improvement (b) Na
Terrestrial habitat	(Stoneham et al. 2007a)	Gippsland	Fixed-price grant	(a) 2 times improvement (b) Na
Terrestrial habitat, aquatic habitat Dryland salinity Carbon	(Stoneham et al. 2007b)	Northern Victoria	Fixed-price grant, administered schemes	(a) Na (b) 30% efficiency gain
Grassland	(Groth, 2008)	Germany	Administered system	(a) 21 to 36% improvement

BushTender and EcoTender

The two important examples have been the Conservation Reserve Program⁷ in the US and the BushTender and EcoTender programs in Victoria. Beginning with the BushTender pilot in 2000 (see Stoneham et al. 2003), pilots involving auctioned conservation contracts have been successfully completed in Victoria. Over \$7 million of conservation funding has been allocated to landholders through auctions, resulting in contracts covering more than 19 000 hectares of private land. This approach has been applied to a number of locations in Victoria to a wide range of vegetation types including: Box Ironbark, grasslands, wetlands and riverine habitat (see figure 12.1).

⁷ The CRP mixed farm income assistance with environmental conservation objectives, resulting in some important design issues.

Figure 12.1 The location of BushTender Pilots in Victoria



Source: Biodiversity and Ecosystem Services Division of DSE.

Recognising that most interventions generate multiple outcomes (Eigenraam, 2006), the Victorian Government has sponsored a program to extend the BushTender concept to deal with multiple environmental outcomes. This has been funded through the Environmental Sustainability Action Statement (ESAS) (DSE 2006c). This initiative includes a major investment in landscape modelling capability and spatial information management systems. These capabilities are needed to estimate the impact of site-specific interventions on catchment-scale environmental impacts including stream flow, water quality, dryland salinity, nutrient movement and carbon sequestration. Funds allocated under ESAS also support major demonstrations in three catchments around Victoria (Corangamite, Port Phillip and a third to be determined). These demonstrations have been designed to expose landholders to a new set of markets for environmental goods and services such that they will efficiently allocate land, labour and capital between commodity production and the environment.

An important objective of the EcoTender auctions has been the investigation of combinations of policy mechanisms needed for the different domains of the environment. This has been achieved by exposing landholders to three policy instruments: a duty of care requirement (embedded in legislation that specifies the obligations of landholders with respect to land management); a tradeable pollution permit for carbon represented by a fixed price for carbon sequestered;

and an auction of conservation contracts (for diffuse-source environmental problems). This institutional setting addresses the missing markets for environmental goods and services relevant to land-based activities. Box 12.2 reports findings from the completed EcoTender pilots.

Box 12.2 Findings from EcoTender pilots

- Most investments (around 70 per cent) in land use change and management generate multiple environmental outcomes. Some of these environmental goods and services (for example, carbon) will be able to be sold to private firms through tradeable emissions permit markets, while others have public good attributes (for example, terrestrial and aquatic habitat).
- Auctioning conservation contracts to discover low-cost suppliers of environmental goods and services improved economic efficiency by 30 per cent (compared with planning and legislative solutions involving all landholders, irrespective of whether they are high or low cost providers).
- There are advantages to be gained from linking markets for different environmental goods and services, as this avoids unwanted environmental outcomes (for example, trees planted where they adversely influence the supply of irrigation water and/or environmental flows) and takes advantage of jointly supplied environmental outcomes.
- As the price of carbon pollution permits rises, pilot data suggests that there are significant savings to be made to government environmental budgets. If appropriate species of trees are planted, these will sequester carbon and generate bundles of environmental goods and services with public good attributes. If the price of carbon pollution permits were \$12/tonne (\$20/tonne) a saving of 26% (40%) to the government's environmental procurement budget was estimated. In effect the carbon market pays part of the cost of habitat restoration.

Source: Stoneham et al. 2007a.

12.4.3 Smart markets

There are few practical applications of smart markets. These include: the allocation of mobile phone bandwidth, the allocation of airport landing slots (Plott et al. 1981), the allocation of spectrum for television and radio, and the allocation of aquaculture sites in Port Phillip Bay. These markets often take the form of combinatorial auctions where government is the seller of an asset and private firms require packages of units of this asset. While many governments and NGOs have introduced markets for offsets, including: the Wetlands Mitigation Scheme⁸; Transferable Development rights⁹; biodiversity banking and

⁸ The Wetlands Mitigation Scheme exists under the US Farm Bill 2009 and initially under the Food Securities Act 1985 and the Clean Water Act.

⁹ See www.state.nj.us/pinelands/infor/broch/density.html

mitigation banking¹⁰; and the Victorian BushBroker scheme, these markets have not been designed to overcome many of the impediments noted above; that is the package, lumpy asset and thin markets problems.

The Victorian BushBroker scheme currently involves a bilateral negotiation process, designed to deal with some of the impediments to efficient transactions in an offset market.¹¹ Nevertheless, the transaction costs associated with buyers negotiating with sellers of offsets in a bilateral process remain high and the potential efficiency of the market is not being realised¹² (chapter 7).

The Department of Sustainability and Environment (DSE) has completed the design and laboratory testing phases of a major program to develop a smart market for native vegetation offsets. This market (called the Native Vegetation Exchange; NVeX) operates in an electronic, web-based environment, employing computers to form transactions between multiple buyers and sellers. Once bids and offers for offsets are lodged electronically, transactions can take place in seconds rather than months (as in the current bilateral market) and significantly more value is created because the architecture of the market has been specifically designed to overcome the impediments noted above (that is, the thin market, package, and lumpy asset problems). Because the trading rules described in the Native Vegetation Framework are coded electronically, this system offers potentially higher levels of governance and lower transaction costs than has been possible in the past. NVeX is the only example of a market that resolves package problems on both sides of the market. Following extensive laboratory testing and evaluation, DSE will commence testing NVeX in the field from early 2009.

¹⁰ See www.environment.nsw.gov.au/biobanking; www.epa.qld.gov.au/register, and for US schemes see (<http://mitigationbanking.org/>).

¹¹ The bilateral BushBroker scheme: includes trading rules that reflect the complexity of nature (referred to above); has developed governance processes to achieve the no-net-loss objective including a requirement for site assessments; employs contracts with incentive structures and monitoring to address the hidden actions problem; and is implementing a tracking system to record transactions.

¹² Laboratory experiments (Plott, Nemes and Stoneham 2008) indicate that bilateral transactions (where a developer privately negotiates with a landholder) exploit around 18% of the potential value that could be created in the offset market (determined mathematically). This compares with a smart market for offsets developed by Plott which realises between 80% and 90% of the potential value added. These gains in economic efficiency are in addition to the red tape savings that will flow from employing an electronic market to assist buyers and sellers to find transactions and allow the market place to discover prices.

Box 12.3 Native Vegetation Exchange (NVeX)

In the case of native vegetation offsets, four impediments to market formation have been identified and all need to be addressed before efficient transactions can occur. The NVeX addressed all four complexities.

- **Policy complexities** require market participants to understand the regulatory requirements and the ‘like-for-like’ criteria in order to identify potential trading partners. These requirements increase transaction costs and are addressed in the NVeX by encoding the ‘like-for-like’ constraints in the market algorithm.
- **Transaction complexities/impediments** can create an information asymmetry. The NVeX overcomes this problem by making all information that defines the unit of trade (bioregion, EVC, habitat score, habitat hectare, etc) observable, together with the identity of the market participants. Combinatorial bidding features on both the buyers’ and sellers’ sides allow participants to express their preferences for single goods as well as for packages of goods. These features avoid mismatches between the size and features of native vegetation patches landowners are willing to sell and buyers wish to procure. Buyers and sellers can fashion ‘all-or-none’ offers for a package of items preventing them from buying/selling part of a package and not being able to buy/sell the rest.
- **Strategic complexity** refers to the natural tendency of buyers and sellers to act strategically when facing competition or having an opportunity to free ride on others buyers’ and sellers’ effort (e.g. hold out and expect other market participants to increase/decrease their buy/sell offers). Such strategic posturing has the potential to reduce efficiency or to lead to the complete lack of trading activity. The NVeX has a number of features that prevent strategic posturing by creating competitive pressures on both sides of the market.
- **Time complexities** have also been considered in the market design in response to the observation that buyers and sellers enter the market asynchronously and have different time preferences. In mature, well established markets for large volumes of homogeneous goods (e.g. commodity markets, financial markets) futures trading has evolved to address time preferences. Due to the highly heterogeneous nature of the items traded at the NVeX exchange, it is difficult to estimate future demand and supply and thus time complexities are not addressed in depth.

Source: Plott et al. 2008.

12.5 Potential applications of market-based instruments in Victoria

12.5.1 Example 1: A tradeable permit scheme to reduce nitrogen loads in Port Phillip Bay

Following the extensive experience in the US and Australia, tradeable emissions permit schemes should translate readily to point-source problems in Victoria, particularly where notional or mandated caps on pollution exist, such as the cap on nitrogen emissions to Port Phillip Bay. The SEPP (Waters of Victoria) established a reduction target of 1000 tonnes a year for Bay nitrogen loads. This reduction is to be achieved by a 500 tonne reduction from catchment waterways and a 500 tonne reduction from Melbourne's western and eastern waste treatment plants.

According to DSE, tradeable permit schemes are relevant to environmental problems where emissions are generally confined to point source emissions problems and are able to be monitored at low cost (sub. 57, attachment 1, p. 6). Point source pollution accounts for about 40 per cent of nitrogen emissions to Port Phillip Bay (Parslow et al. 1996).

Nutrient trading schemes have been piloted in the United States and in Australian locations such as the South Creek nutrient trading scheme in New South Wales, the Hunter river salinity trading scheme also in New South Wales and offsets for a wastewater trading plant at Busselton in Western Australia. A proposal for a nutrient trading program for Moreton Bay in Queensland estimated that its compliance costs would be about half those of a traditional regulatory approach (BDA Group 2005, pp. 6, 16–18). Such schemes allow additional flexibility and innovation in reducing nitrogen loads, as polluters seek opportunities to reduce pollution and sell excess permits to polluters with higher control costs.

12.5.2 Example 2: Auctions to manage stormwater run-off

Stormwater outfalls that drain the urban catchment of Melbourne are another source of pollution in the Bay. These outfalls are point-source but many diffuse-source emissions contribute to each outfall. The Stormwater Tender pilot illustrates the potential to use auctions to increase investment in urban, diffuse-source environmental problems.

Box 12.4 Stormwater Tender Pilot

Stormwater runoff in urban areas has a significant negative impact on creek river health. Rain-gardens and rainwater tanks can reduce the frequency and volume of polluted flows from drains to receiving waters. Current government incentives provide a fixed rebate for installation of rainwater tanks, irrespective of the environmental benefit delivered. Auctions and tenders are an alternative to the traditional grants approach and can provide financial incentives in proportion to the environmental benefit delivered.

A Stormwater Tender pilot was run in the Little Stringybark Creek on the eastern fringe of Melbourne: a stream degraded primarily by urban stormwater runoff from a suburban development of about 800 houses and 20 industrial buildings. An environmental benefit (EB) index was developed to assess the value of stormwater retention that households could provide by installing rain-gardens and rainwater tanks on their properties. The policy aim was to maximize the environmental benefit obtained given a fixed budget. Households submitted bids for installing rainwater tanks and/or rain-gardens on their properties. Bidders were ranked according to their 'value for money' (i.e. lowest to highest dollar requested per unit of EB). Successful bidders received the same payment per unit of environmental benefit (uniform price auction).

12.5.3 Example 3: Environmental offsets

Offsets have been applied to a number of environment problems including greenhouse gas emissions, waste management, emissions to water and air, vegetation management and biodiversity (Commonwealth Government 2007c, p. 1). The EPA has negotiated offsets with some licensees in the past, despite the absence of a formal framework.

Offsets allow businesses to achieve a given environmental improvement at lower cost or, alternatively, a greater environment benefit for a given level of expenditure in situations where the costs of achieving additional environmental benefit differ between locations. Institutions that facilitate search for offsets can uncover opportunities to reduce costs and deliver greater environmental outcomes (EPA 2008u, p. 1). Examples of potential offsets include:

- revegetating and stabilising river banks to prevent erosion and reduce the amount of nutrients and other pollutants entering the river (Jennings 2008)
- constructing a wetland system downstream of a sewage treatment plant to remove nutrients compared to installing a chemical process at the plant to produce a higher quality effluent discharge (Yarra Valley Water, sub. 22, p. 5)
- allowing customers to extract water directly from a waterway which has an upstream sewage treatment plant discharge, negating the need to construct a direct pipeline link and delivering a net nutrient reduction (Yarra Valley Water, sub. 22, p. 5)

- offsetting volatile organic chemical emissions at a chemical plant through installing vapour recovery units at petrol stations (EPA 2008u, p. 1).

12.6 Constraints on the use of market based instruments

While market-based instruments offer considerable potential, significant regulatory design issues may constrain their use:

- New rights that are defined need to be backed up by a clear and demonstrable link between the rights and the outcome sought and on the capacity to measure the linkage. If an indirect metric is used, and environmental outcomes associated with the subsequent behavioural changes are poorly understood, environmental benefits may be small, even perverse. The key issue is that the market failure and therefore the policy objective must be clearly defined prior to instrument selection and the policy instruments applied closest to the point of market failure (environmental damage), not at some distant point in product supply chains (Whitten, van Bueren and Collins 2003, pp. 5, 14).¹³
- Market based instruments can be costly to design and implement. The issue is whether they generate cost savings once implemented which outweigh these set-up and transaction costs.
- Developing and applying market based instruments requires specific skills, which may not yet be widespread in government agencies with responsibility for environmental management.
- Introducing market-based instruments may change the allocation of rights and responsibilities from those under conventional approaches. Given that definitions of rights and responsibilities determine who pays and who loses, introducing market based instruments may create winners and losers, leading to opposition from those who feel they are disadvantaged by the change (Whitten, van Bueren and Collins 2003, pp. 5, 14).
- While not a constraint, the introduction of market based instruments may not be efficient if there is a lower cost alternative. Whitten, van Bueren and Collins point out (2003, p. 14) that there are perverse incentives in the energy, transport and agricultural sectors, and suggest that agricultural industry rescue packages are an example. Reforming perverse incentives may be a more effective way to address resource management policy goals rather than introducing market based approaches.

¹³ Whitten, van Bueren and Collins (2003, p. 14) cite the example of the use of landfill taxes and recycling subsidies to drive down waste disposal volumes to landfill to illustrate how poorly defined environmental goals may prevent market based instruments from achieving efficient outcomes.

Reflecting issues such as these, the Australian Conservation Foundation urges a cautious, evidence-based approach to the development of market-based and other alternatives to direct regulation.

Environmental markets, such as trading in offsets, are still in their infancy and are far from divinely ordained as successors to regulation. Markets for biodiversity offsets, for example, often look better in theory than they do in practice. There again, carbon markets, properly regulated and capped, can play a powerful role in reducing emissions. Moreover, while offset markets may lead to better conservation outcomes, their efficacy will depend on the implementation of the precautionary principle – as acknowledged in Victorian law – and the details of their design and implementation. Environmental markets are typically challenged by issues of permanence, leakage, additionality, uncertainty, complexity, high transaction costs, measuring and monitoring difficulties and the potential for new perverse externalities. In short, markets should neither be regarded as a universal salve for environmental problems nor as an automatic replacement for regulation. In any case, so-called ‘next generation’ policy instruments, including new environmental markets, etc., will require a regulatory underpinning if they are to be effective and engender public confidence. (sub. 65, p. 3)

12.7 Implications for environmental policy in Victoria

12.7.1 Victoria's skill base in mechanism design is developing

While the availability of skills can constrain the use of market based instruments, Victoria is developing the skills and capabilities needed to develop efficient environmental policy mechanisms, through:

- experience gained from policy design – Victoria is establishing a national and international reputation for the design and application of new policy mechanisms (Salzman 2005)
- the Capacity-Building Initiative – An interdepartmental committee has been developed to build policy design capability in the Victorian public service. This program has sponsored several skill development and training programs for economists and policy makers in mechanism design covering auction design, contract design and experimental economics
- professional interaction – Important links have been established between Victorian Government economists and leaders in mechanism design and experimental economics. This has been facilitated through programs such as

the Economic Design Network hosted by the University of Melbourne¹⁴, and professional interaction with CalTech and Purdue University in the US. DSE is a partner in two Australian Research Council Linkage Grants that have been developed to transfer policy design skills to Victorian government agencies

- experimental economics laboratory – The University of Melbourne and the Government of Victoria have jointly invested to upgrade the experimental economics laboratories at the University of Melbourne. Agencies of the Victorian Government now routinely utilise this laboratory to test and refine environmental policy mechanisms. DSE has developed elements of BushTender and EcoTender through the economics laboratories and the NVeX market for native vegetation offsets has been wholly designed through the laboratory test bed at CalTech and the University of Melbourne.

12.7.2 Increased use of market-based approaches should generate savings

The evidence from international and local experience suggests that the potential cost savings from using well-designed market-based approaches to achieve environmental outcomes may be large. Thirty per cent efficiency gains from auctioned conservation contracts have been reported (table 12.3), while the costs of traditional approaches to control air pollution have been reported as between 1.2 and 14.4 times from using an economic incentives approach (table 12.1), and between 1.2 and 3 times in the case of water pollution (table 12.2).

It is difficult to quantify the aggregate potential gains from increased use of market based approaches in Victoria. The Commission does not have data on the proportion of existing and emerging environmental problems that are amenable to market-based approaches, although market-based approaches are not widely used in Victoria. And just \$14 million of the \$203.5 million of expenditure on environmental programs announced in the Sustainability Action Statement in 2006, was allocated to market solutions, and \$2.7 million to extending BushTender (DSE 2006c, p. 87).¹⁵

The best that can be said with current knowledge is that the large size of overall expenditures on environmental programs and the potentially significant cost savings from successful market based approaches is prima facie evidence that increased use of these approaches could generate substantial benefits, although each case needs to be justified on its merits. Victoria's skill base in mechanism

¹⁴ <http://pluto.ecom.unimelb.edu.au/ednetwork/>

¹⁵ Some other projects, such as smart metering (\$2 million) and support for national emissions trading (\$0.25 million) may be classified as market based approaches.

design and opportunities to apply market-based approaches suggest that Victoria is well placed to employ this approach to environmental problems. The next section makes some suggestions about how Victoria could build on this opportunity.

12.7.3 Recommendations for building on the use of market-based approaches

Strengthen the regulatory impact assessment process

While there are potential opportunities from increased use of market-based approaches to environmental issues, applying these approaches requires a departure from conventional approaches and modes of thinking. There are some risks involved, as a market instrument that is poorly designed or applied in the wrong context will not generate desired outcomes. For example, Whitten, van Bueren and Collins point out (2004, p. 14) that narrowly applied market based instruments 'limit community responses as much as prescriptive regulations that seek to "pick winners" '.

Developing a well-functioning policy response, whether it involves regulation or the creation of specialised markets, will benefit from the application of a mechanism design approach. Depending on the problem and the nature of impediments, this could involve a lengthy design, testing and piloting process. Given the combination of potential opportunities and risks, there are not obvious answers to important questions such as how many resources the Government should allocate to market-based approaches and how frequently these approaches should be applied.

Two observations are relevant to this issue. The first is that any form of intervention must address the fundamental causes of market failure if it is to be effective. This applies as much to regulatory intervention as it does to the use of market-based approaches. In this sense regulation or any other form of intervention represents a design problem that will succeed only if the fundamental causes of the problem have been addressed. The second observation is that modern ideas in economics now open up the prospect of creating solutions to previously intractable policy problems. However, the Government could be more confident that appropriate consideration was being given to market based approaches if it was mandatory to consider the use of these instruments as part of regulatory review processes.

Section 10(1)(c) of the *Subordinate Legislation Act 1994* requires that non-regulatory options must be considered as part of a regulatory impact statement (RIS). While the Guide to Regulation identifies market-based instruments as an example of a non-regulatory option, there is no requirement that such instruments be considered. In the Commission's experience, proponents of new

regulations often meet their commitment to consider non-regulatory options by assessing public information and non-disclosure options. Market-based approaches of the type outlined in the chapter are rarely assessed. The Government could have more confidence that market-based approaches had been seriously considered, if a requirement to consider such instruments was written into the Guide to Regulation, except in cases where the proponent could demonstrate that such approaches were not practicable.

This proposal would impose on proponents of intervention the cost of developing a market-based approach as an option. However, this cost would be reduced by the option for the proponent to argue that such an approach is not practicable. If, on the other hand, a market based approach is practicable, it seems reasonable to consider it as an option so that the Government can be confident that the best option is chosen.

An advantage of building this requirement into the Guide to Regulation is that it would encourage the development of expertise in the public sector in applying market-based approaches. Possible strategies to increase this expertise include developing linkages between practitioners in government and theoretical experts outside government, and the use of pilot projects to test specific applications of market-based approaches.

Draft recommendation 12.1

That the Victorian Government amend the Victorian *guide to regulation* to require that regulatory impact statements and business impact assessments for new environmental regulations and legislation include a market-based approach such as tradeable pollution permits, auction conservation contracts and smart markets, unless the proponent can demonstrate that such approaches are not practicable.

An important limitation of this recommendation is that the RIS process applies only to statutory instruments made under the Subordinate Legislation Act. Yet there are other instruments—Ministerial orders, directions, guidelines and the like—through which governments can influence the behaviour of private individuals and firms. The Commission guesstimates that about 600 such instruments are added each year—about 2400 over the Commission's four year life (VCEC 2006b, p. 141). Given the possibly large impacts of these interventions, there is a case for scrutinising them as rigorously as regulations. This would be a system-wide change that is beyond the scope of this report, although in its second annual report, the Commission supported better targeting of regulatory impact analysis to ensure it is focused where it can have the greatest impact, although there would be some implementation issues to overcome (VCEC 2006b, pp. 12–16).

In the longer term, regulatory budgets could be considered as a way to encourage the selection of approaches which minimise the costs that intervention imposes on society. Setting a limit on the costs of regulation for a set period would encourage proponents of regulations to choose approaches which minimise the cost of achieving given outcomes. This approach is not, however, widely applied, and depends on the capacity to measure the costs of regulation which, as chapter 5 demonstrated, is limited. Moreover, it may be costly to apply this approach to all regulations, even though this is required to minimise overall costs, and a budget based on cost does not take account of benefits. The United Kingdom is considering the trial use of a regulatory budget (Better Regulation Executive 2008). Trials such as this may suggest lessons that are relevant for Victoria.

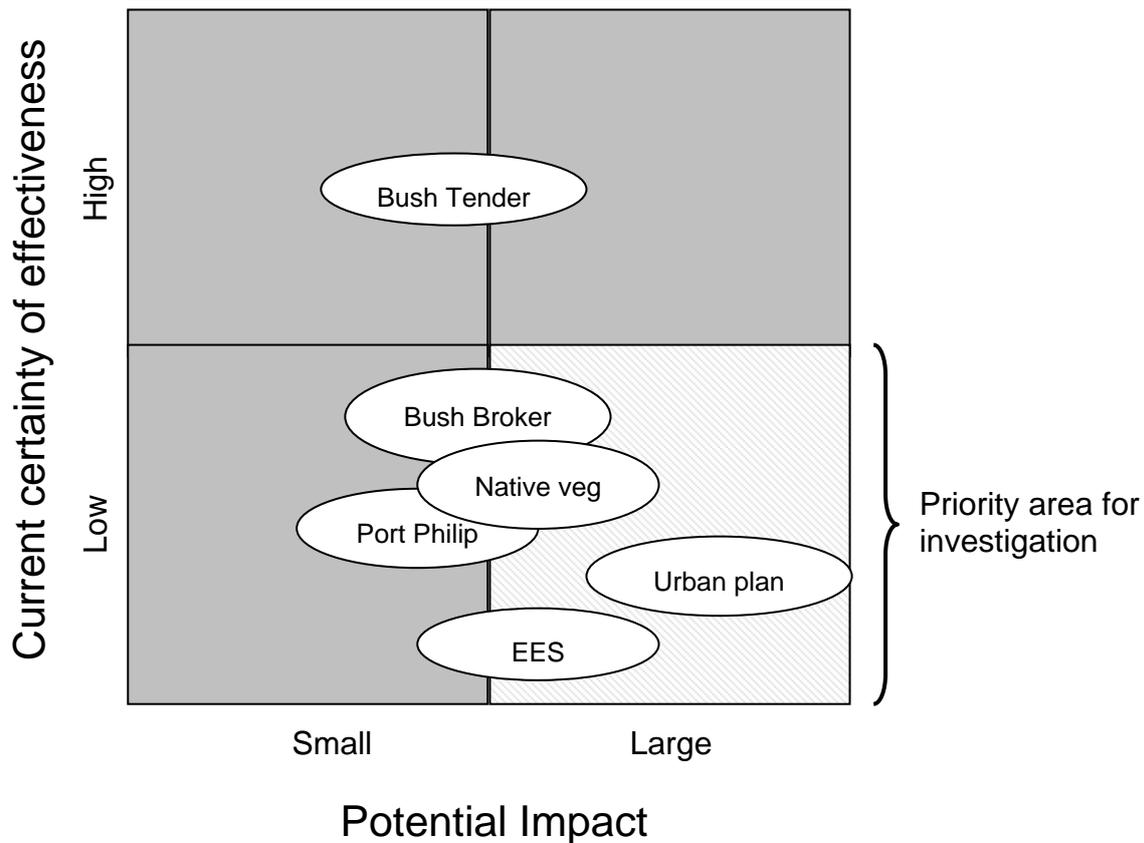
Establishing a policy design reference group

The design and creation of policy instruments demands input from highly skilled economists, experimental economists and scientists, who will usually work outside government. A policy design reference group, consisting of an independent expert group including a small group of academic economists and senior policy makers, would secure access to these skills. The cost of having available a small part-time group should not be large.

An initial task of this group could be to rank possible applications of market-based approaches, using criteria such as the current certainty that a market based approach would be effective as an alternative to existing arrangements, and the potential impact. Figure 12.2 illustrates a possible outcome of this approach, drawing on these criteria, and suggests the starting point for investigation is for issues where little may be known about the potential for applying market-based approaches but where the potential efficiency gains may be large.

An ongoing role of the reference group would be to support interested departments and agencies in developing market based instruments as options for responding to environmental regulatory challenges. It would provide advice on the adequacy and efficacy of evidence from experimental and pilot work. This group should also focus on the governance and risk management issues relevant to the use of new institutions to achieve policy outcomes. The way that market-based approaches interact with supporting legislation and processes will be one important aspect of good policy design.

Figure 12.2 Applying Market-based approaches



Source: VCEC

Draft recommendation 12.2

That the Victorian Government establish a policy design reference group, consisting of an independent expert group that includes academic economists and senior policy makers. The group's functions would include advising interested departments and agencies about:

- the likely efficiency and effectiveness of new policy solutions
- the adequacy and efficacy of evidence from experiments and/or pilots
- governance and risk management issues relevant to the use of market-based instruments to achieve policy outcomes.

Pursue offset opportunities

As noted earlier, the EPA is exploring the use of offset markets to achieve environmental outcomes. It believes that this approach can be used to enhance EPA programs in areas including works approvals and licensing, corporate licensing, carbon management strategies and Environment and Resource Efficiency Plans (EREP), and has sought comments on a set of principles to

guide its consideration of offsets proposals (EPA 2008u). It has also suggested a framework for considering the use of environmental offsets, which implies that on site avoidance, and reduce and reuse options must be considered before offsets can be applied. This approach, however, appears inconsistent with the objective of minimising the cost of achieving environmental targets, as lower cost options may be available off-site.

The Commission considers that the EPA should continue to develop a framework and principles for environmental offsets, but should be guided in doing so by the object of minimising the cost of achieving environmental objectives. Minimising the cost is consistent with the government's desire to reduce the regulatory burden, while reducing the cost of achieving higher environmental outcomes, should that be the government's preferred trade-off.

Applying an offset arrangement to a particular environmental problem would involve developing application and monitoring processes. Hence the cost effectiveness of this approach would need to be compared with other options.

Draft recommendation 12.3

That EPA Victoria finalise by June 2010 its framework and process for assessing applications for environmental offsets, taking into account that offsets can be used to minimise the costs of achieving environmental objectives.

Draft recommendation 12.4

That EPA Victoria implement offset arrangements where it can demonstrate their cost effectiveness relative to other approaches.

13 A system for future environmental regulation

13.1 Introduction

Previous chapters identified issues in regard to environmental regulation that have detracted from both optimal environmental and economic outcomes. Two recurring themes were the effectiveness of measures to integrate economic, environmental and social considerations and the importance of risk-based and evidence-based approaches. These challenges are central to the development and implementation of effective and efficient environmental regulation in Victoria.

Future environmental regulation will be partly shaped by the principles that agencies follow in developing and implementing regulation, including the principles relating to best practice regulation and ‘ecologically sustainable development’ (ESD). The relationship between future regulation and the principles that shape regulation is recognised in the terms of reference. These require the Commission to report on:

... the capacity and flexibility of Victorian regulation to respond to the economic opportunities arising from the environmental sustainability challenges facing Victoria, including a carbon constrained economy. This may include consideration of principles to guide the development and implementation of future Victorian regulation to respond to emerging environmental sustainability challenges.

This chapter examines the purpose of regulatory principles, and identifies the principles relevant to Victorian environmental regulation (section 13.2). It examines the challenge posed by the ESD principles and the integration of environmental, economic and social factors from a best practice principles perspective (section 13.3). It also looks at principles relating to risk and uncertainty, in particular, the ‘precautionary principle’ which will become increasingly relevant for future environmental regulation (section 13.4).

13.2 Current regulatory principles

Government decision-making operates in a broad institutional framework that consists of a spectrum of incentive mechanisms. These range from formal ‘black letter’ laws and rules, to conventions and informal rules, to behavioural and social norms and understandings. These can be enforced in different ways and by different parties. ‘Principles’ of the kind that the Commission is concerned with in discussing a system for future environmental regulation lie somewhere in the

middle. These are the principles that guide decision-makers, including in the development of legislation, rules, regulatory and administrative decision-making.

Principles are important. They provide checkpoints, presumptions and guidelines for decision-making.

Decision-making principles can be useful in directing attention to the importance of opportunity costs (associated with action and inaction) and regulatory priorities. This learning process, can, in turn, change the practice of regulatory agencies. (Cameron 2006, p. 5.)

Decisions resulting from proper consideration and application of these principles should, in theory, produce environmental regulations that achieve the desired environmental outcomes at least (opportunity) cost to society. The principles relevant to this inquiry can be stratified into two levels:

- (1) Broad principles of 'best practice regulation' such as those in the Victorian Government's Victorian Guide to Regulation, or the Australian Government's Best Practice Regulation Handbook. These are applicable to the development and implementation of regulations in all policy areas.
- (2) Specific principles such as those written into environmental legislation, regulations, inter-governmental agreements, and policy statements. In Australia, the core principles adopted in environmental policy are enunciated under the banner of 'ecologically sustainable development'.

These are briefly described below.

Best practice regulatory principles

The Victorian Government has developed a set of best practice regulatory principles which are embodied in the Victorian Guide to Regulation (Government of Victoria 2007b). These principles, outlined in chapter 2, are intended to guide the development and implementation of regulation in Victoria. New regulatory proposals that must undergo the Regulatory Impact Statement (RIS) and Business Impact Assessment (BIA) processes must have regard to these principles. Similar principles are provided at the Commonwealth level in the Best Practice Regulation Handbook (Commonwealth Government 2007a).

The aim of best practice principles is to ensure that proposed regulations are necessary, efficient, effective, targeted, transparent, proportional, consistent, predictable, accountable and produce net benefits for the community as a whole.

The aim of regulatory 'gatekeeping' processes such as the RIS and BIA processes is to 'ensure a rigorous assessment of regulatory and legislative proposals, and other viable options, to better inform government policy decision-making' (Government of Victoria 2007b, p. 4-2). The focus is on critiquing the information and analysis provided by the agencies in support of their proposals,

and providing an assessment of their ‘adequacy’ for facilitating public consultation and debate.

Principles for environmental regulation

While best practice principles apply broadly, further guidance on the design and implementation of environmental regulation is provided by:

- principles of ESD such as those enunciated under the Intergovernmental Agreement on the Environment (IGAE) and the National Strategy on Ecologically Sustainable Development (NSESD), and incorporated into a wide array of Victorian environmental legislation (see section 13.3.1 below)
- the precautionary principle, incorporated into the principles of ESD, Victorian environmental legislation and at common law
- principles of ‘environmental protection’ such as those in *the Environment Protection Act 1970 (Vic.)*, ss. 1B to 1L. These were inserted in 2001. They incorporate the ESD principles and other principles.¹

These environmental principles are not discussed in the Victorian Guide to Regulation.

Challenges in applying these principles

Many of the concerns faced by stakeholders stem from an actual or perceived failure to consider economic, environmental and social considerations in an integrated manner or to adequately address uncertainty and risk.²

The remainder of this chapter investigates the challenge of ensuring, in the application of the ESD principles generally (section 13.3), and the precautionary principle in particular (section 13.4), that future Victorian environmental regulation is consistent with best practice regulatory principles. There may continue to be issues of inconsistency, limited transparency, diffuse accountability, imprecision, and disproportionality, if the development and implementation of this regulation is not placed within the context of best practice regulation. The Commission identifies a number of opportunities for improvement.

¹ Such as the ‘Principle of shared responsibility’, ‘Principle of stewardship’, ‘Principle of waste hierarchy’, ‘Principle of integrated environmental management’, ‘Principle of enforcement’, ‘Principle of accountability’.

² Some participants, for example, consider that there is insufficient recognition of the economic benefits of development in processes for considering whether to permit clearing of native vegetation (chapter 7). Similarly, some of the concerns about the length of environmental assessment processes reflect a view that referral authorities takes a risk-averse approach to the identification of environmental impacts (chapter 6).

13.3 Integrating economic, environmental and social considerations – ESD principles

A central tenet of ESD or ‘sustainable development’ is the integration of long and short term, economic, environmental, and social factors in decision-making. The emphasis is on achieving a more holistic or ‘balanced approach’ to weighing up the tradeoffs between these factors. The notion of inter-generational equity is central to the objectives of ESD. This is evident in the commonly cited definition of sustainable development from the Brundtland Report:

Development that meets the needs of the present without compromising the ability of future generations to meet their needs. (WCED 1987, p. 43)

Victoria is a party to the 1992 Intergovernmental Agreement on the Environment (IGAE) and the National Strategy on Ecologically Sustainable Development (NSESD), both of which refer to ESD and its core objectives and principles (Box 13.1). This includes the principle that decision-making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations. It also lists other, more specific, principles or factors that should be recognised and considered in pursuing ESD. A key effect of the ESD framework is that it ‘emphasises the importance of placing health and environmental issues in a social, as well as a technical or economic context, so as to ensure environmental equity considerations are given due weight and a voice in decision-making processes’ (Peel 2005, p. 28.).

Although these principles are embedded in environmental law and policy in Victoria and elsewhere, there is continuing debate as to the degree to which they have been integrated into government decision-making, whether and how they might be given effect in Victoria by decision-makers (section 13.3.1). Some of this stems from difficulties in arriving at a common, definitive and operational notion of ‘sustainability’. Although much has been written on sustainable development, at a practical level, this remains an unclear concept. This has led to questions as to the ability of governments to apply the ESD principles and the potential costs of an uncritical or undisciplined approach to their application. For example, Bennett and Collins argue:

The definition of sustainability generally and sustainable consumption specifically has been at best vague. In turn, government policies to promote these concepts have been varied and their performance indeterminable. Moreover, the concepts have been used as justification for a wide range of intervention strategies with popular appeal that has allowed their introduction without rigorous critique. Such policy interventions, often of a coercive and regulatory nature, have occurred at all stages in production-consumption supply chains. (Bennett and Collins 2009, in press)

Box 13.1 Core objectives and guiding principles of ESD

The Goal is:

Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The Core Objectives are:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations
- to provide for equity within and between generations
- to protect biological diversity and maintain essential ecological processes and life-support systems.

The Guiding Principles are:

- decision-making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations
- where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation [i.e. the precautionary principle]
- the global dimension of environmental impacts of actions and policies should be recognised and considered
- the need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised
- the need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised
- cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms
- decisions and actions should provide for broad community involvement on issues which affect them.

These guiding principles and core objectives need to be considered as a package. No objective or principle should predominate over the others. A balanced approach is required that takes into account all these objectives and principles to pursue the goal of ESD.

Source: Commonwealth Government 1992.

This problem is not unique to Victoria but is common across jurisdictions, as Peel (2008) summarises:

In Australia to date, the record of implementation of ESD has reflected this confusion over the concept's meaning and implications for environmental management. At a formal level, the recognition of ESD is widespread. Some 125 statutes, both state and federal, embody notions of ESD ... with ecologically sustainable development or management frequently enshrined as a central legislative objective. However at the institutional level, the impact of ESD is less in evidence. Despite some promising experimentation with different models

over time, Australia currently lacks the kind of adaptive, inclusive and broadly-focused institutions necessary to transform ESD from a general policy goal into an operational concept. At the level of practice there are also very few examples one can point to of effective ESD implementation. This is mirrored in the Australian case law, where the tendency has been for broad statements about the nature of ESD or the extent of the legal obligation to take it into account, rather than detailed consideration of its requirements for environmental management. (Peel 2008, p. 3)

To look at the approach in Victoria it is worthwhile examining how the ESD principles have been adopted in Victorian regulations (section 13.3.1), the recurring issues that have arisen in specific areas of environmental regulation (section 13.3.2), the type of guidance that is needed (section 13.3.3), the way that the Victorian Guide to Regulation deals with economic, environmental and social considerations (section 13.3.4), and opportunities for improvement and integration of ESD with best practice regulation principles, frameworks and processes (section 13.3.5).

13.3.1 Adoption of ESD principles in Victoria

Almost half of the Victorian environmental Acts identified by the Commission incorporate ESD principles in part or in whole, and/or refer to ‘sustainability’ (Table 13.1). Many of these Acts also specify that these concepts should guide the ‘administration of the Act’, should be ‘considered’ or ‘implemented’ in decisions, or in the development of various instruments made under the Act.

The Victorian Government has made a number of other commitments, directions and actions to integrate ESD into the decision-making and operations of departments and agencies. These include statements and actions in the Environmental Sustainability Framework (Victorian Government 2005), and the Environmental Sustainability Action Statement (DSE 2006c). The Government has committed to ‘lead by example’, by integrating sustainability into all aspects of its operations, including the environmental management systems of its departments and agencies as well as ‘government policies, programs, regulations, investments and budgets.’ (CES 2008a, p. 35)

The Commissioner for Environmental Sustainability (CES) has functions and objectives to promote decision-making that facilitates ESD. However, the CES found in an audit of Victorian agencies that the ‘integration of the principles of environmental sustainability with core policies and programs has been limited to date.’ (CES 2008a, p. 29) The CES found that only 7% of the agencies audited reported that they had any processes in place to integrate environmental sustainability into agency policy development processes (CES 2008a, p. 39).

The CES detailed a number of missing elements that were preventing integration of sustainability into government decision-making, including: high-level

commitment; legislative or similar backing, clarity of expectations or guidance about what actions are required or performance outcomes; clear ownership and accountabilities; tools, methodologies, education and training to assist agencies; sufficient funding and resources; and executive engagement.

Agencies noted an ‘absence of explicit and/or sophisticated consideration of the environment within common whole of Government decision-making processes and... practical decision-making support tools...’ (CES 2008a, p. 39). The Victorian Guide to Regulation and Business Impact Statements were listed among the long list of these processes and guidelines. Agencies acknowledged that the quality of the ‘three-page Cabinet Handbook guideline’ on requirements for environmental impact assessments, could be improved and supported with training on assessing environmental, economic and social impacts. ‘These two elements will, if undertaken in part provide for the development of better, evidence-based, public policy.’ (CES 2008a, p. 35).

The integration of ESD principles into government decision-making and policy development is clearly a continuing challenge which will have implications for the development and implementation of future environmental regulation in Victoria.

13.3.2 Economic, environmental and social considerations and the role of ESD principles

The inquiry has highlighted a number of areas where the consideration of economic, environmental and social factors could be improved, including:

- the environmental effects process and the extent to which referral authorities in the process take into account ESD principles relating to economic development and competitiveness (chapter 6)
- in administering native vegetation regulations, concerns about the weight given to development issues in determining whether clearing should be avoided and the nature of any offsets that are to be provided (chapter 7)
- the extent to which EPA considers the impact on business costs of changes in policies for state environmental protection and industrial waste management (chapter 8)
- the priority given to facilitating development in the mining and extractive sectors when referral authorities are reviewing the environmental impact of proposed work plans (chapter 10).

Table 13.1 Sustainability principles in Victorian legislation

Act	Reference to ESD, SD or 'sustainability'			Use of ESD, SD or 'sustainability'		
	a	b	c	d	e	f
Catchment and Land Protection Act 1994			●			
Coastal Management Act 1995			●			
Commissioner for Environmental Sustainability Act 2003	●					●
Environment Protection Act 1970	●			●		
Fisheries Act 1995	●					●
Flora and Fauna Guarantee Act 1988		●	●			
Forests Act 1958			●			
Geothermal Energy Resources Act 2005	●		●			
Mineral Resources (Sustainable Development) Act 1990	●			●		
National Environment Protection Council (Victoria) Act 1995	●					
Pipelines Act 2005	●			●		
Planning and Environment Act 1987		●			●	●
Sustainability Victoria Act 2005	●			●		
Sustainable Forests (Timber) Act 2004	●				●	●
Victorian Environmental Assessment Council Act 2001	●				●	
Water Act 1989	●				●	●
Water Industry Act 1994			●		●	
Wildlife Act 1975			●			●
Zoological Parks and Gardens Act 1995		●				

The Act: **a** contains the principles of ESD/SD (e.g. in the objects/purposes of the Act, in a Schedule, or in other provisions); **b** refers to at least one element of ESD/SD (e.g. biodiversity); **c** refers to the concept of 'sustainability' generally.

The Act provides that: **d** administration of the Act should give effect to principles of ESD/SD; **e** consideration should be given to ESD/SD principles in (certain) decision-making processes; **f** ESD/SD/sustainability must be implemented in other ways under the Act (e.g. in developing Charters/management plans/strategies/regulations, allocating permits, providing advice to the Minister).

Source: Various Acts.

Submissions to the inquiry indicate concerns from businesses and environmental groups alike about how decision-makers ‘strike the balance’ between the economic, environmental and social factors – the integration of which lies at the core of the ESD principles. The concerns suggest a need for mechanisms to assist agents in achieving the ESD objectives to promote transparency and community understanding about the development, implementation and administration of environmental regulation. Providing clearer guidance and adopting best practice processes could be part of the solution.

13.3.3 Practical guidance on ESD principles

In considering what type of guidance would generate the greatest benefits for agencies and stakeholders, three key points should be acknowledged: (1) that ESD objectives and principles are commonly agreed at a high level, and where they have been incorporated, are consistently worded across Victorian Acts; (2) the key purpose of ESD is to highlight the complexities in achieving the ultimate goal of ‘development that improves the total quality of life, both now and in the future, in a way that maintains the ecological process on which life depends’ (NSESD, Box 13.1); and (3) ESD is a set of general objectives and principles that are intended to be common across a wide range of environmental or natural resource management issues. They are not narrowly targeted at specific issues or sectors at a single point in time. They leave room for interpretation in implementation.

The level at which ESD gives rise to potential problems (and deviations from best practice principles) is primarily in its implementation. It stems from the non-trivial demand on decision-makers to: (1) translate the ESD objectives and principles for the specific decision, environmental issue or sector at hand; (2) devise a course of action that achieves the optimal outcome according to this particular interpretation of ESD. The ESD principles prompt decision-makers to consider the implications of their decisions as part of a more complex system of factors (e.g. intergenerational equity, cost-effectiveness, economic capacity, community involvement etc). Regardless of the preferred definition of ‘sustainability’, there are elements of ESD that ultimately require significant value judgments (e.g. equity, priorities of environmental and economic values, tolerable risk and level of precaution). Considered in this light, it is almost inevitable that there will be variations in how ESD is implemented in practice and under different Acts, even though they are based on a common and consistent set of objectives and principles.

This also suggests that efforts to provide further guidance would be better targeted at the level of implementation, application and interpretation of ESD for decision-making, and at specific environmental sectors, policy areas or scenarios. Such *context-based* guidance would better inform both agents and

stakeholders on how general high-level ESD concepts would be interpreted and bear upon the final synthesised decision in the specific context in which they are given effect.

The challenge in applying ESD principles is to do this in a way that is consistent with the NSESD position that ‘No objective or principle should predominate over the others’ (NSESD, Box 13.1). The NSESD position interpreted ‘A balanced approach’ as one that ‘takes into account all these objectives and principles to pursue the goal of ESD’. In practice this might mean that environmental considerations are sometimes given greater weight than economic ones, and vice versa, but in all cases economic, social and environmental factors are considered. The guidance provided as to implementation should give practical examples or case studies to illustrate this point.

If this were supported with education and training in practical decision-making methodologies, and the development of a ‘community of practice’ between the areas in which ESD is implemented, this would generate substantial benefits in terms of promoting transparency, predictability, accountability, and consistency at the operational level of ESD implementation.³ For example, at the Commonwealth level, the Australian Fisheries Management Authority (AFMA) put ‘Ecologically sustainable development in context’ to try to explain what sustainability means for managing Australian fish stocks (AFMA 2009). The development of context-based guidelines, at the practice level, should be a matter for individual agencies, taking advice from an oversight body (e.g. CES). The objective would be to achieve more transparent processes and outcomes on the ground, that are also adaptive to changing circumstances and advances in knowledge and practice. Furthermore, the development of professional skills, understanding and the sharing of insights and what works in practice, will generate significant benefits for ESD implementation in regulatory and administrative decision-making.

³ Findings of the Commission for Environmental Sustainability seem to support this proposition:

“The executive interviews also provided a sense that although many policies and guidelines for different decision-making processes ... include a requirement that the environment be considered, they do not go further than this. Agencies expressed the need for Government to establish and provide education and training in practical decision-making methodologies to consider the relative value or weighting of environmental impacts or opportunities within decision-making environments, such as policy development, operational and strategic business planning and procurement planning and implementation.” (CES 2008a, p. 41)

Draft recommendation 13.1

That because there will be variations in how ecologically sustainable development (ESD) principles are applied generally to environmental regulation:

- **departments and agencies involved in the development and implementation of environmental regulation publish how they apply or intend to apply ESD principles to particular sectors and regulations, and that this be supported by practical examples of good decision-making**
- **the Commissioner for Environmental Sustainability oversight the development of a community of practice to exchange ESD implementation skill and best practice.**

The other area of ESD implementation is in the development of environmental measures. ‘Due diligence’ type processes and practical analytical frameworks that align ESD considerations closer with best practice principles, should be the focus of the Government’s efforts in this area. The major benefit would be in greater transparency, to ensure that policy judgements are well-informed. Opportunities for this closer alignment are discussed below.

13.3.4 Victorian Guide to Regulation and the integration of economic, environmental and social impacts

There is significant common ground between the best practice principles and the ESD principles. Both sets of principles identify the grounds for government intervention, and both highlight the importance of considering and weighing up the trade-offs for society. Both provide presumptions, prompts, constraints and (some) guidance to the decision-maker:

- Best practice principles indicate regulation is or should be a response to the lack of, or serious imperfections in, a market for environmental services, and outline the factors to be considered to ensure the benefits of regulation outweigh the costs (chapter 2). The ‘benefits’ and ‘costs’ weighed up encompass economic, environmental and social factors.
- ESD objectives and principles emphasise an integrated approach to economic development that considers long and short term, environmental, economic and social impacts. They also suggest pertinent factors or dynamics to account for: e.g. threats of serious or irreversible environmental damage, global dimensions of impacts and actions, economic capacity for environmental protection, international competitiveness, preference for cost-effective and flexible instruments etc. (Box 13.1).

The Victorian Guide to Regulation explicitly calls for a consideration of the expected impacts, including economic, social and environmental impacts in legislative and regulatory proposals.⁴ However, unlike the Commonwealth's Best Practice Regulation Handbook (see Box 13.2), it makes no references to ESD principles. It therefore does not direct decision-makers to consider the elements that are central to ESD.⁵ A more focussed consideration of environmental effects leading to outcomes which are a synthesis of economic, environmental and social impacts should, arguably, incorporate these considerations.

13.3.5 Opportunity for improvement – integrating ESD into best practice regulation

There are likely to be significant benefits from amending the Victorian Guide to Regulation to include ESD factors in the assessment of economic, environmental and social impacts. These flow from leveraging the respective strengths and synergies between ESD, best practice principles and the RIS process in the development of new measures that affect the environment.

Firstly, there is a recognition that best practice principles can alleviate many of the problems in ESD integration (e.g. challenges discussed in section 13.3.3). The Productivity Commission, in a review of practices at the Commonwealth level, identified that a major impediment to better implementation of ESD principles within government is a failure to follow 'good practice policy making principles'.⁶ The Australian Government's move to incorporate ESD principles into the RIS process and guidance was largely a response to the Productivity Commission's review. It has been observed more recently, however, that there is further scope for improvement, particularly in the application of the precautionary principle:

⁴ "Given that legislation and regulation can potentially have significant impacts on the parties that it affects, as well as on society, the environment, and the economy as a whole, it is vital that legislative proposals are closely examined to ensure that they represent the best option available to government to meet the relevant policy objective. In Victoria, this is achieved through the adoption of stringent and formalised evaluation processes, which are based on an analytical cost-benefit framework that examines the economic, social and environmental impacts of the legislative proposals." (Government of Victoria 2007b, p. 1-6)

⁵ Some elements of ESD may already be addressed, to varying degrees, in the Victorian Guide to Regulation: e.g. welfare, cost-effective and flexible policy instruments, tradeoffs, social and equity objectives (as an alternative justification for government intervention), risk-assessment and management, community involvement. However, the Guide does not include any references to key elements of ESD: e.g. 'sustainability', 'inter-generational equity', 'biological diversity', 'global dimensions' of environmental impacts of actions or policies, 'irreversible threats' or 'scientific uncertainty'.

⁶ "ESD implementation is largely about good practice policy making. To the extent that this involves consideration of the foreseeable costs and benefits—short term and long term, private and social—good practice policy making is consistent with achieving ESD objectives. Indeed, many of the observed shortcomings in the context of ESD implementation can be traced back to failures to follow general good practice policy making." (Productivity Commission 1999, p. xxii.)

... many of the shortcomings of the precautionary principle result from a failure to place the application of the principle within a framework of good regulatory practice. Scientific uncertainties and the potential for serious, irreversible or even catastrophic harm do not exempt precautionary decision-making from normal standards of good regulatory practice. (Peterson 2006, p. 22)

The precautionary principle is examined in detail in section 13.4.

Box 13.2 ESD in the Commonwealth RIS process

ESD principles and objectives are considered as part of a Regulation Impact Statement (RIS) under the Australian Government's 'Best Practice Regulation Handbook'. The Handbook notes that 'some additional government requirements...' must be addressed if the RIS deals with options that '...will affect small business, export performance or ecologically sustainable development'. More specifically it states that:

Where applicable, the analysis should also assess any impacts on ecologically sustainable development, including short-term and long-term economic, social and environmental costs and benefits. Specifically, the analysis should consider whether the proposal is consistent with the application of the seven ecologically sustainable development principles and the extent to which it meets the three core objectives...(Australian Government 2007a, p. 76).

The inclusion of ESD in the RIS guidelines was partly a response by the Australian Government to the Productivity Commission's recommendation in its 1999 inquiry into the Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies. The Office of Regulatory Review implemented the Government's decision by including the assessment of ESD impacts in the adequacy criteria for RISs, and amendment of A Guide to Regulation (now superseded by the Best Practice Regulation Handbook). Some guidance is provided on how to identify proposals with 'ESD impacts' (e.g. environmental protection, natural resource management, other policies) and how to assess proposals with ESD impacts (e.g. problem identification, impact assessment, present and future stakeholders, direct and indirect impacts, scientific uncertainty, serious or irreversible environmental damage, the precautionary principle).

Sources: Australian Government 2007a, Best Practice Regulation Handbook, Canberra. Australian Government; Australian Government 2008e, 'Ecologically Sustainable Development and the RIS Process', Office of Best Practice Regulation, Department of Finance and Deregulation; Productivity Commission 1999; Australian Government 2007b, 'Postscript 2003 to the Government Response to the Productivity Commission Inquiry into the Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies', p. 2.

There is likely to be substantial benefit from leveraging the rigour of the best practice principles and the RIS process, to improve the quality – especially the transparency and consistency – of future proposals that have ESD impacts.

Secondly, the incorporation of ESD principles can add value to the existing guidance, by providing an expanded statement of key considerations intrinsic to

the development and assessment of environmental measures. It also links the consideration of these impacts to the growing literature and developing case-law on ESD. Its incorporation would be appropriate, given that ESD is accepted by all jurisdictions including Victoria, and its incorporation across the Victorian environmental legislative landscape and government policies.

Importantly, the inclusion in the Victorian Guide to Regulation would serve to promote the consideration of ESD impacts, and its consideration within the context of best practice regulatory design and processes. This represents possibly the most important improvement on the status quo.

Implementation options

The Government would incur some implementation and administrative costs by including ESD in the Victorian Guide to Regulation and the RIS process. The nature and scale of these costs and the resultant net benefit will depend on how this is implemented. There is a range of options available to the Government. Table 13.2 attempts to illustrate a spectrum of options: from the ‘minimum’ option of inserting a mere reference to ESD in the Victorian Guide to Regulation, to the ‘maximum’ option involving not only assessing a relevant RIS in terms of its ‘adequacy’ for public debate, but against more substantive ESD criteria.

The preliminary view of the Commission is that the Government should (only) consider options along the ‘minimum’ or ‘medium’ end of the spectrum. The Commonwealth’s approach (which approximates the ‘medium’ option) should be considered for adaptation and adoption in Victoria. This is more likely to generate the synergies from a closer alignment between best practice and ESD principles discussed above, at least cost. It is far more feasible than the ‘maximum’ option which is likely to be extremely costly to implement, but will not necessarily produce superior benefits to the ‘medium’ option.

Regardless of the option chosen, implementation will entail two main tasks: (1) design of the process, its scope (or ‘triggers’) and requirements (for ‘adequacy’); (2) providing additional guidance to agencies to promote their understanding of and ability to comply with the process. Process design should be modelled, where applicable, on current RIS/BIA processes and with input from the Commonwealth’s experience. Stakeholders, experts, natural resource/environmental economists, lawyers and academics, might also be consulted in the development of the guidelines.

A learning or ‘grace’ period will be desirable for both the gatekeeper and agencies to calibrate the ‘triggers’ (affecting the scope) and the standard of ‘adequacy’ (affecting the burden) of the process. The principle of ‘analysis commensurate with impact’ currently applied in assessments of RIS/BIAs, would be

appropriate. At minimum, the criteria would be a recasting of current requirements to provide assessments of economic, environmental and social impacts, to consider ESD factors and reveal underlying judgments, assumptions and any quantitative or qualitative analysis. Over time, a base of knowledge and experience would be established on both sides of the regulatory ‘gatekeeping’ process. Some agencies may need to acquire the capacity to provide or assess information on ESD impacts. However, many ‘environmental’ agencies likely to trigger the process should already have some capacity to comply. The process might also highlight areas in which capacity can and should be improved.

The benefits from adopting these recommendations depends on whether pending amendments to the *Subordinate Legislation Act 1994* (Vic.) brings proposed environmental regulations and other measures within the scope of the RIS/BIA processes. The Government should make the necessary amendments to this Act to ensure this occurs.⁷

Previously in its Inquiry into Liveability, the Commission said that there was a case for reconsidering the Scrutiny of Acts and Regulations Committee (SARC) review recommendation that the Subordinate Legislation Act be amended to include appreciable environmental burden as part of the threshold test for preparation of a Regulatory Impact Statement and consultation requirements (VCEC 2008, pp. 192-193, 196). This is taken into account in draft recommendation 13.2.

Draft recommendation 13.2

That the Victorian Government amend the Victorian *guide to regulation* to ensure that policy makers and regulators have proper regard to the principles of ecologically sustainable development (ESD) by:

- **referring to the objectives and principles of ESD**
- **requiring, where a proposed measure has significant ESD impacts, the consideration of the objectives and principles of ESD in the development and implementation of regulation as part of the regulatory impact statement (RIS) process**
- **providing guidance on how to comply with the RIS adequacy requirements given the above changes.**

⁷ The Government stated in its ‘Annual Statement of Intentions’ that it will complete its reform of this Act in 2009 the main element of which is to broaden the RIS process to extend the RIS process to legislative instruments that may impose an appreciable regulatory impact on business and the community; and improve public accessibility to all legislative instruments and statutory rules. The intention is that: ‘These reforms will help reduce the cost and burden of regulation, by increasing public scrutiny of the making of new legislative instruments that have a regulatory impact.’ (Government of Victoria 2009, pp. 83-84).

Table 13.2 Options for incorporating ESD into the Victorian Guide to Regulation or the RIS process

<i>Options</i>	<i>Minimum</i>	<i>Medium</i>	<i>Maximum</i>
Model	Reference to ESD in the context of environmental and social impacts. No requirements to do anything different in preparing a RIS.	In addition to the 'Minimum' option, a requirement to: (1) identify proposals with ESD impacts; and if so (2) provide in the RIS relevant information.	Prescriptive and detailed RIS requirements and guidelines based on what would satisfy the 'achievement' of ESD principles.
Pros	Acknowledgement of the existence of ESD objectives and principles. Elaborates on 'consideration of environmental and social impacts'. Links this to the body of literature on ESD. <i>Low implementation and administrative cost.</i>	Promotes transparency and consistency in how ESD is considered in proposals; incentives to adopt/develop tools for assessing and communicating ESD. In keeping with the focus on 'adequacy' of the RIS for public consultation	Would be the 'ultimate' regulatory gate-keeping process of both 'adequacy' of the RIS and substantive 'achievement' of ESD objectives and principles.
Cons	The VGR already asks for consideration of all impacts – qualitative and quantitative, tangible and intangible, environmental and social (VGR, p. 3-6) – so arguably, is broad enough already to encapsulate many of the impacts without reference to the ESD principles and objectives. Arguably mere 'lip-service' to ESD.	Need to provide guidance on 'triggers' (e.g. 'proposals with 'ESD impacts') and the 'adequacy' of information provided for a RIS. But these should fall short of prescriptive 'standards'. VCEC may need external advice to better judge 'adequacy' of information provided on certain ESD impacts (e.g. biodiversity). <i>Medium implementation and administrative cost</i>	Not achievable in a robust or cost-effective manner if it requires the definition of universal 'standards' for ESD compliance. Not desirable, because: (1) it goes beyond the focus on 'adequacy' of RIS for public consultation; (2) creeps into policy-making (e.g. equity judgements); (3) creeps into science (e.g. biodiversity impact judgements) <i>High implementation and administrative cost.</i>
Net Result	Small net benefit (small increase in 'guidance', acknowledgement of ESD)	Medium to high net benefit (those of 'Minimum' option plus incentives for greater transparency and rigour in factoring in ESD, and greater consistency with BPP)	Medium to high net benefit (unlikely to achieve much more than 'medium' model) Net cost (if 'standards' chosen are sub-optimal, or create perverse incentives and outcomes)

Source: VCEC

13.4 Uncertainty and the precautionary principle

Best practice regulatory principles state that regulation should be used only in cases where there is a clear market failure and when the expected benefits of regulation outweigh the costs. Previous chapters highlighted, however, problems involving scientific uncertainty and potentially serious or irreversible threats of environmental harm, making judgments as to the expected benefits and costs of government intervention more difficult. As concern for problems such as climate change and biodiversity loss have become more acute, pressures on governments to respond have risen. Accordingly, the precautionary principle has become increasingly relevant as one of the foundations for decision-making.

How the precautionary principle is applied can impact on the efficiency and effectiveness of environmental regulation. An unclear or unstructured approach to applying this principle has the potential to impose high costs on business, government and society more generally. There are also concerns about consistency, transparency, proportionality, precision and accountability in its application. However, it is not clear how the precautionary principle sits within the best practice regulatory principles. Existing guidance on best practice regulation in Victoria does not refer to the precautionary principle.

Given the potential for the application of the precautionary principle to influence the future growth and efficiency of Victorian environmental regulation, the remainder of this section examines how the precautionary principle has been defined and interpreted (section 13.4.1), how the precautionary principle has been incorporated in Victorian legislation (section 13.4.2), problems that have arisen from applications of the principle (section 13.4.3) and opportunities for improvement (section 13.4.4).

13.4.1 What is the precautionary principle?

The key tenet of the precautionary principle, from its most widely quoted formulation (from the 'Rio Declaration', Principle 15) is:

where there are threats of serious or irreversible environmental damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environment degradation. (United Nations 1992)

Put another way, the precautionary principle supports decisions to 'act now on the side of caution', in response to demands to 'resolve uncertainties before taking action'. There are many formulations of the principle, with varying interpretations (see below), but underlying all of them is a recognition or

assumption that preventing environmental damage is often easier than trying to repair it later, including if and when the scientific uncertainty is resolved.⁸

The precautionary principle focuses on situations involving uncertainty. This is often distinguished against situations involving risk, although there are different taxonomies. Cameron (2006, p. 4) draws the distinction this way:

Risk describes situations where there is uncertainty about which outcome will eventuate, but the range of all possible events is known and outcomes can be assigned a probabilistic value. On the other hand, uncertainty describes situations where the probabilities are unknown. There could be uncertainty about what events are possible as well as insufficient information to assign probabilities to their outcomes.

A wide range of decision-makers are routinely called upon to apply precautionary notions, including regulators, environmental resource managers, planning authorities, judges, scientists, and risk-assessors. These applications can involve highly complex systems involving a wide array of factors, where information on certain elements of the problem is ambiguous, incomplete or unknown. There might be threshold effects and long time-lags before potential effects become apparent. Scientific uncertainty can include both ‘uncertainties which are part of conventional scientific processes of inquiry and data collection, and uncertainties that arise where science is operating at the limits (or ‘frontiers’) of current knowledge.’ (Peel 2005, p. 6.) For example, in the area of climate change policy, decision-makers have to contend with numerous areas of uncertainty.⁹ Other examples include the protection of threatened species, forestry and biodiversity.

Uncertainty gives rise to both ‘environmental risk’ and ‘regulatory risk’. The ‘environmental risk’ is that if action is deferred until there is sufficient scientific evidence (e.g. to show an activity was damaging the environment), then it may be too late to take action to reduce or reverse that damage (Ernst & Young 2006, p. 106). The ‘regulatory risk’ arises because the uncertainty makes it difficult for policy makers to determine whether the benefits of intervening will outweigh the costs – i.e. a ‘regulatory failure’ that imposes a net cost on society as a whole.

⁸ The OECD (2002b, p. 6) argues that the precautionary principle is ‘based upon the assumption that in certain cases, scientific certainty, to the extent that it is obtainable with regard to environmental issues, may be achieved too late to provide effective responses to environmental threats.’

⁹ “Climate change mitigation decisions in 2008, and for the foreseeable future, are made under conditions of great uncertainty. There is great uncertainty about the climatic outcomes of varying concentrations of greenhouse gases; about the impact of various climate outcomes; and about the costs and effectiveness of adapting to climate change. There is uncertainty about the costs of various degrees of mitigation in Australia; about the extent to which the international community will make effective commitments to mitigation; and about the relationship of global to Australian mitigation efforts.” (Garnaut 2008, p. 2)

'Formulations' of the precautionary principle

The particular formulation of the precautionary principle applied by decision-makers will be 'a major factor in determining the economic consequences of precautionary measures' (Peterson 2006, p. 9). By extension, the choice of formulation and the interpretation of the principle are critical from the perspective of best practice regulation.

VanderZwaag (1999) identifies fourteen different definitions of the precautionary principle. Formulations of the principle vary in terms of:

- the threshold level of potential harm to trigger the application of the principle
- whether consideration of costs and benefits of alternative actions (including precautionary actions) is required
- whether the principle imposes a positive obligation to act or simply permit action
- whether there is a switching of the burden of proof from substantiating a risk of harm to substantiating the lack thereof
- whether liability for the harm is assigned, and to whom. (Weier & Loke 2007, p. 7; Peterson 2006, p. 6.)

13.4.2 The precautionary principle in Victorian regulation

Australia was an early adopter of the principle, systematically incorporating it in environmental policy documents, legislation and in court decisions (Gullet 2000, p. 123). Indeed Peel argues that:

Endorsement of the principle in Australia has been particularly widespread, to the level that it is described by some commentators as having been 'institutionalised' in health and environmental decision-making processes. (Peel 2005, p. 16)

The precautionary principle is included in a wide range of legislation across all jurisdictions, either explicitly or by reference to the ESD principles contained in the NSESD or the IGAE. The form of the precautionary principle commonly used in Australian legislation generally takes the standard, that scientific uncertainty should not be used as a reason for postponing measures to prevent environmental damage.

Table 13.3 References to the precautionary principle in Victorian legislation

<i>Legislation</i>	<i>Section containing the precautionary principle</i>	<i>Formulation</i>
Commissioner for Environmental Sustainability Act 2003	4 'What is ecologically sustainable development?': 4(3)(b)	Same as IGAE ^a
Environment Protection Act 1970	'Principles of environment protection' [1B to 1L]: 1C (1).	Same as IGAE ^b
Geothermal Energy Resources Act 2005	3 (2)(g)	Same as IGAE ^b
Mineral Resources (Sustainable Development) Act 1990	2A 'Principles of sustainable development' [inserted in 2006]: 2A (2)(g)	Same as IGAE ^b
National Environment Protection Council (Victoria) Act 1995	3 'Principles of Environmental Policy': 3.5.1	Same as IGAE ^b
Pipelines Act 2005	4 'Principles of sustainable development': 3.5.1	Same as IGAE ^b
Sustainability Victoria Act 2005	4 'Principles': 4 (b)	Same as IGAE
Sustainable Forests (Timber) Act 2004	5 'Principles of ecologically sustainable development': 5(4)(b)	Same as IGAE
Water Act 1989	93 'Sustainable management principles for water corporations': 93 (e)	Minor modification of IGAE: '... lack of full scientific certainty as to measures to address the threat should not be used as a reason for postponing such measures.'

^a IGAE and NSESD i.e. 'If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.' ^b Includes references to an 'assessment of the risk-weighted consequences of various options' as specified in the IGAE.

Sources: Various Acts.

Several Victorian Acts contain a reference to the precautionary principle (Table 13.3). Most, but not all, of these also include the additional reference to an 'assessment of the risk-weighted consequences of various options' as specified in

the IGAE.¹⁰ For example, the *Environment Protection Act 1970* (Vic), s 1C(2) provides that:

Decision-making should be guided by—

- (a) a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and
- (b) an assessment of the risk-weighted consequences of various options.

The Victorian Coastal Council's coastal strategy provides an example of how the precautionary principle has contributed to shaping planning policy in the face of uncertain climate change impacts (Box 13.3).

13.4.3 Problems in the application of the precautionary principle

The key problems and challenges in the application of the precautionary principle are as follows (based on the review by Peterson 2006, pp. 11-14):

- *Excessive discretion* : resulting in unpredictable and inconsistent environmental management decisions that create uncertainty and higher costs for businesses. Uncertainty from the outcomes of any legal challenges and new interpretations adds to the costs to government and businesses.
- *Reversal of the burden of proof* : which may impose excessive costs on developers and producers, the magnitude of which depends on the standard of proof, and the extent to which this would be incremental to existing obligations requiring production of evidence on the environmental consequences of proposed activities (e.g. as part of an approvals or licensing process).
- *Distorting regulatory priorities* : which redirect regulatory attention from 'known or plausible hazards to speculative or ill-founded ones' (Graham 2004, p. 4), potentially increasing environmental damage.
- *Impeding development and technological innovation* : by both precautionary actions and by the uncertainty surrounding the application and interpretation of the precautionary principle. Counter-arguments suggest that the precautionary principle promotes the development of safer alternatives. However, the precautionary principle might not be the best way of achieving this objective.
- *Costs of undertaking precautionary measures* : imposed on society can turn out to be unnecessary if a hazard does not eventuate. This highlights the need for

¹⁰ The IGAE states that: 'in the application of the precautionary principle, public and private decisions should be guided by: i. careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and ii. an assessment of the risk-weighted consequences of various options.' (Australian Government 1992, s. 3.5.1)

hazard (risk) assessment and the identification of cost-effective options for managing risk.

- *Unintended consequences*: might result if the reactions of businesses and individuals, potential new risks and costs arising from the measures, are not well understood.
- *Misuse as a protectionist barrier*: by those who stand to gain from precautionary measures; for example those opposing new developments on the grounds of unproven environmental and other effects (see Box 13.5).

These challenges in applying the precautionary principle highlight the importance of undertaking a 'thorough assessment of the costs, risks and consequences of the policy options as well as of the potential environmental hazard, using the best information available at the time' (Peterson 2006, p. 13).

Box 13.3 Precaution in practice – Victoria's coastal strategy

The Victoria Coastal Council's (VCC) Victorian Coastal Strategy 2008 ('the Strategy') illustrates some of the issues involved in applying the precautionary principle. The Strategy is intended to provide a vision and policy commitment for the planning, management and use of Victoria's coastal, estuarine and marine environments and a framework for the development and implementation of other strategies and plans. It is also intended to guide the exercise of discretion by decision-makers. The precautionary principle comes into play in the context of scientific uncertainty about the size and impacts of sea-level rises resulting from climate change.

The potential threats to coastal areas are wide ranging, including threats to marine biodiversity, coastal erosion, loss of land and habitat, damage to infrastructure, water contamination, health threats, tourism impacts, insurance issues (VCC, p. 14). However, there is uncertainty about the nature and size of these risks, with the impacts likely to be influenced by the combined effects of sea level rise, tides, storm surges, wave processes and local conditions such as topography, elevation and geology (VCC, p. 13).

On the impact of climate change, the Strategy identified several adaptation options: protect, accommodate or retreat. It argued that 'Adaptation strategies should be precautionary, that is, planning for likely future circumstances even if full scientific certainty is not possible' (VCC, p. 13). The Strategy concluded that a precautionary approach of planning for sea level rise of not less than 0.8 metres by 2100 should be adopted. This policy will be reviewed as scientific data becomes available or when national benchmarks are established (VCC, p. 36). To give effect to this decision, the Strategy stated that: 'This policy should be generally applied for planning and risk management purposes' (VCC, p. 13).

The Strategy, in effect, chose to constrain decision-makers' discretion in developing and adopting precautionary strategies, by nominating a minimum standard.

(continued)

Box 13.3 Precaution in practice – Victoria's coastal strategy (continued)

This number (0.8 meters by 2100) was based on IPCC (2001) projections and recent observations in sea level rises (1990 to 2006) which were tracking near the upper bound of IPCC's projections, suggesting that the initial projections may have been underestimating the potential impacts.

Setting a standard has important ramifications for planning and development decisions and their future flow-on effects. The benefits and costs of the choice of this standard however are unknown, depending on the degree to which the potential threats are avoided. Nevertheless, the VCC's choice in using the upper bound estimate (albeit supported by observations from the last 15 years) might be perceived to be a relatively high level of precaution. This presumably reflects a judgment that there is a relatively low tolerance of risk in the community.

Uncertainty increases the value of flexible options and options that reduce the uncertainty. Although the VCC might appear to be taking a 'worst case scenario' approach to precautionary decision-making, the cost of this approach might be offset by the Strategy's commitment to 'refine' the policy as new scientific data becomes available. It also recommended the completion of a coastal vulnerability study and the establishment of a climate change scientific research and data system to support planning and management frameworks in responding to best available and emerging science (VCC, p. 14).

One benefit in choosing a standard is that it reduces the current uncertainty facing businesses and unpredictability of agents exercising discretion over precautionary decision-making. Sometimes an uncertain rule can be more costly for society than a rule that turns out to be sub-optimal. Businesses can often manage 'bad' rules but can deal less easily with unpredictable rules. So arguably, the declaration of a presumed sea level rise (and how this was derived) is better than silence on the matter. It is not clear however, whether and what other alternatives were considered (e.g. specification of a process for precautionary decision-making without an assumed sea-level rise).

Source: Victorian Coastal Council (VCC) 2008, Victorian Coastal Strategy 2008.

13.4.4 Opportunities for improvement

Many of the problems that can result from application of the precautionary principle may be alleviated by improving the guidance, processes or decision-making frameworks available to policy makers. The development of these should be the priority for improving the implementation of the precautionary principle in practice. But despite the great need for this, it appears that little has been done in Australian jurisdictions.

Relatively little innovation has occurred to fashion decision-making processes that are more responsive to issues of uncertainty and indeed there is a perception, particularly among courts, that such innovation is unnecessary because 'commonsense' will suffice (Peel 2005, p. 227).

An often cited authority for the ‘common sense’ view, is the judgment of Stein J in *Leatch v National Parks and Wildlife Service*.¹¹ Unfortunately, this approach does not offer much by way of practical guidance to agents. Ongoing development of the case-law might contribute more, but the specification of a universally applicable definition presents significant difficulties. Firstly, there is a trade-off between specificity and adaptability. Like the other ESD principles, the precautionary principle is intended to be broad in application. As such, attempts to narrowly define the principle could reduce its adaptability to different environmental problems. Statements made by Osborn J in a recent decision in the Supreme Court of Victoria highlight this limitation:

The terms of the [precautionary] principle are stated in the Waters SEPP [Waters of Victoria, State Environment Protection Policy] in ordinary English words. The application of those words must be flexible to embrace land uses of potentially novel kinds. Their meaning in any given situation is in my view a question of fact.

That meaning is not to be ascertained by reference to a judicial gloss on the meaning of the words used to state the principle. The decisions of previous tribunals of fact may offer useful guidance in a particular case but they do not define the principle. The meaning is on the other hand plainly intended to be informed by scientific understanding of the risk in issue in a particular case. (per Osborn J in *Western Water v Maurice and Esther Rozen & Macedon Ranges Shire Council and Others*, [2008] VSC 382, para 96-97).

Secondly, the ‘application of precaution will always involve some degree of subjectivity’ (Peterson 2006, p. 28). Thus, the improvements that would be most valuable for the future would be those that: (1) provide practical tools for precautionary decision-making, and (2) involve processes that reduce and reveals the areas of subjectivity in precautionary decision-making.

Several commentators have called for guidelines for the precautionary principle that are aligned with existing ‘good regulatory practice’ and relevant guidelines. For example, Peterson (2006, pp. 28-29) was of the view that ‘placing the principle within the context of good regulatory practice’ would avoid many of the problems identified in its application and generate substantial benefits:

Placing the principle within the context of good regulatory practice helps to ensure that decision-making is transparent, consistent and accountable; that it utilises all relevant information; that costs, benefits and risks are identified,

¹¹ (1993) 81 LGERA 270, at p. 282: ‘The precautionary principle is a statement of common sense and has already been applied by decision-makers in appropriate circumstances prior to the principle being spelt out. It is directed towards the prevention of serious or irreversible harm to the environment in situations of scientific uncertainty. Its premise is that where uncertainty or ignorance exists concerning the nature or scope of environmental harm (whether this follows from policies, decisions or activities), decision-makers should be cautious.’

assessed and compared; and that measures are targeted at, and proportionate to, the problem. This decision-making framework will help to avoid many of the potential problems arising from application of the precautionary principle, including the risk of perverse outcomes, over-reaction to trivial risks, and misuse as a rent-seeking (or protectionist) measure.

The benefits also include greater predictability, lower costs for businesses and government agencies, and greater confidence that the decision-making process would produce the most cost-effective and efficient alternative. Existing guidelines of ‘best practice’ can be used as a starting point (Peterson 2006, p. 30).

Cameron (2006, p. 8) also emphasises the importance of the ‘mode’ of decision-making and ‘good regulatory practice’. This should ‘provide scope for more subtle management using appropriate information under conditions of uncertainty’, prompt the consideration of a full range of precautionary options and the use of techniques to ‘evaluate cost effectiveness, including cost-benefit analysis and other tools that may be applied under conditions of uncertainty’.

More systematic processes that seek to unravel the scale and scope of scientific uncertainty can promote consistency and accountability, and constrain the exercise of discretion by decision-makers, while preserving the desirable aspects of flexibility in applying the principle.¹²

The greatest opportunities for improvement seem to be in ensuring that precautionary decision-making is undertaken within the framework of best practice regulation. This needs to be augmented with further guidance and tools for dealing with the risks and uncertainties surrounding environmental threats. The combination should encourage a more rigorous, transparent and consistent exercise of discretion and judgment, leading to improved practice.

The remainder of this section discusses the key issues that this guidance and decision-making framework should address and the mechanisms for enforcing this discipline. These include:

- undertaking an assessment of risks, areas and degrees of uncertainty
- consideration of a range of different precautionary measures
- cost-benefit analysis and complementary techniques for dealing issues pertinent to precautionary decision-making

¹² “... the goal of precautionary implementation should be to develop processes of decision-making focused on the principle’s central concern for scientific uncertainty... Guidelines relating to the scrutiny of scientific material, transparency and the inclusion of a range of views in decision-making can act as constraints on the conduct of decision-making processes concerned with health and environmental protection, circumscribing the exercise of discretion by decision-makers so as to produce greater consistency and accountability in the application of the precautionary principle. Within the skeleton of principles that this framework provides, decision-makers will be able to flesh out flexible applications of precaution in a range of decision-making settings.” (Peel 2005, p. 228)

- integrating precautionary decision-making into best practice regulation processes.

Undertaking risk and uncertainty assessment

The first step in applying best practice principles is to be clear about the nature of the problem, to investigate the areas of uncertainty and the risks from not taking some form of action. In certain areas of environmental and health policy, risk assessment and management frameworks currently provide decision-makers with methods of dealing with uncertainty—whether or not these are applied with reference to the precautionary principle.

Weier and Loke (2007, p. 77) argued that currently, ‘Decision-makers have little practical alternative but to deal with uncertainty within some form of risk management framework’. They examined the frameworks in Australian fisheries management and in licensing of releases of genetically modified organisms:

AFMA’s Ecological Risk Management (ERM) framework and Harvest Strategy Policy Guidelines and the Gene Technology Regulator’s Risk Analysis Framework (RAF) set out detailed processes for dealing with information gaps and uncertainties, such as sensitivity analyses, identification of ‘worst case’ scenarios, assignment of confidence levels to assessments, and guidelines for using qualitative risk assessment techniques. (As noted in chapters 2 and 3, decision-makers need to recognise the inherent shortcomings of these approaches, which are an unavoidable result of information gaps and uncertainties.) The decision frameworks also provide operational guidance on what actions to take when confronted with uncertain threats. (Weier and Loke 2007, p. 77.)

There are potential lessons for natural resource management more generally from the AFMA and Gene Technology Regulator’s decision-making and assessment processes. Both processes involve extensive public consultation, documentation and communication of the basis for precautionary decision-making. This can promote transparency and improve public confidence in decision-making. The key is having clear frameworks for decision-making under uncertainty (Weier and Loke 2007, p. 77). Cameron (2006, p. 7) also argued that:

Many of the shortcomings of the precautionary principle could be avoided or minimised through applying it in a more generic and integrated risk management framework that would enable risk and uncertainty to be addressed in a more efficient and cost-effective manner.

The application of the precautionary principle should start from the basis of generic risk assessment and risk management frameworks, drawing on best practice in natural resource management. This would better inform the design of measures to address the problem, and identify areas in which the precautionary

principle might apply. Analytical tools are also needed to better target the uncertainty and weigh up different precautionary measures.

Considering a range of different precautionary measures

Having identified and clarified potential risks and uncertainties, the next step is to consider the range of possible options for addressing identified risks. Precautionary options can ‘range from deferring a decision until more information is available through to banning an activity until there is evidence of safety, with a range of alternatives between’ (Cameron 2006, p. 8). These include actions for early warning, information gathering, harm reduction, increasing transparency, burden shifting, and restricting use (Box 13.4).

There are clearly numerous strategies for addressing uncertain threats. What is most appropriate will depend on the nature of the specific problem, but the main implications of uncertainty for the choice and development of precautionary measures are as follows.

First, it increases the value of measures that increase information and reduce uncertainty. Uncertainty-reducing measures such as research on environmental impacts, abatement and adaptation measures can supplement the natural revelation of information and erosion of uncertainty over time. Information is valuable if it changes the decision made. Focussing on information deficiencies helps to overcome uncertainty at various stages in the analysis of the problem.

Second, uncertainty increases the value of precautionary measures that are flexible, adaptable, and allow policy makers to react to new information as it comes to light. Flexible measures allow the capturing of the ‘option value’ associated with deferred choice (Quiggin 2008, Trigeorgis 1993).

Third, uncertainty increases the attractiveness of ‘no regrets’ options, which generate net benefits regardless of which future scenario eventuates. For example, given uncertainty in the timing and/or extent of climate change impacts, ‘no regrets’ policies might address other non-climate change related problems and thus generate benefits in addition to facilitating abatement or adaptation.¹³ The consideration of ‘no regrets’ options can create more options that pass a ‘net benefit’ test than otherwise, by virtue of being able to offset the costs of a proposed intervention with a wider range of benefits. However, such a strategy should be critically analysed through the prism of best practice principles. This is because such measures run the risk of having multiple and unclear objectives which may confuse ‘ends’ and ‘means’.

¹³ ‘If we dealt with emissions from electricity generation and from traffic congestion, we would get far along our emission task quickly. But what is more, if it turned out that the climate change risk was far lower, we would still have the benefit of reduced pollution and old-fashioned externalities.’ (Gans 2008)

Box 13.4 Some precautionary options

- Defer a decision until more information is available (i.e. ‘wait and see’).
- Research alternative, less damaging options, and/or provide funding for the development of such options.
- Identify national or regional constraints (ie, environmental standards) necessary to prevent serious or irreversible damage, and maintain opportunity sets.
- Actions to increase the capacity of social and ecological systems to recover from or adapt to changed conditions.
- Adaptive management – identify knowledge gaps, ongoing monitoring and research, incorporate flexibility and reversibility into decisions so that measures can be modified in line with advances in information.
- Use the best available technology.
- Require pre-market safety testing and approval or product registration, or permits to undertake certain activities, and a process for review.
- Mandatory environmental impact assessments, to increase the amount of information available to decision-makers and identify uncertainties and potential hazards associated with the proposed activity.
- Inclusion of “safety margins” or “uncertainty factors” in risk assessments.
- labelling laws.
- Values analysis – qualitative measures taken into account as well as quantitative.
- Burden-shifting – economic incentives for preventing harm, such as compensation/liability regimes, bonds, compulsory insurance and extended producer responsibility.
- Restriction of use – voluntary restriction agreements, “cautions”, impositions on condition of use, priority lists of potentially harmful substances for observation, exposure or extraction limits, phaseouts or bans until there is either “reasonable certainty” or “strong evidence” of safety.

Source: Cameron 2006, based on Myers (2005) and survey by Peterson (2006), p. 8-9.

Finally, precautionary options should provide for periodic review, to enable reassessment as more information becomes available. Indeed, the European Commission’s guidelines for the application of the precautionary principle (Box 13.5) state that measures should be periodically reviewed in light of new scientific data, and amended as necessary, that they ‘...should be maintained so long as scientific information is incomplete or inconclusive, and the risk is still considered to be too high to be imposed on society, in view of chosen level of protection.’ (European Commission 2000). The approach taken in the Victorian Coastal Strategy 2008 (Box 13.3) – i.e. commitments to ‘refine’ the policy in light of new scientific information and to acquire this information – are mechanisms that reduce the potentially deleterious effects of an incorrect ‘call’ today.

In this regard it should be noted that uncertainty does not always equate to risk. For example, one of the areas of greatest uncertainty is in technological advances, particularly where there are strong incentives to innovate. This can produce outcomes which in fact help alleviate risk. There are particular opportunities in regard to alternative energy technologies (chapter 14).

Cost-benefit analysis and complementary techniques

Having identified suitable options, these options should be subject to cost-benefit assessment to determine the preferred approach. Uncertainty, however, poses a number of challenges for undertaking cost-benefit analysis.

The Victorian Guide to Regulation (Government of Victoria 2007b) offers some (minimal) guidance on how to allow for uncertainty (in Appendix C.4). One technique is the use of ‘sensitivity analysis’ to account for differences in judgement (or uncertainty) about: (1) the range of future costs and benefits (or their ‘best estimates’) and (2) the impacts these have on the cost-benefit assessment outcome. A range of results empower decision-makers with more information about possible margins of error. Recent inquiries in relation to climate change (e.g. the Garnaut Review) are examples of the use of sensitivity analysis to inform policy making and to facilitate public debate.

Some argue that, in order for the precautionary principle to be properly implemented, decision-making approaches need to ‘go beyond examining risk and causality to consider the magnitude of potential harm, reversibility, temporal and spatial scales, vulnerable populations, need, and availability [of] alternatives.’ (Tickner & Myers, nd).

New techniques are being developed that have the potential to enhance cost-benefit analyses and address these challenges associated with the application of the precautionary principle and other issues of environmental valuation.¹⁴ With further development, these techniques may enable conventional cost-benefit analyses to better deal with uncertainties, information gaps, and large intertemporal disparities in the incidence of costs and benefits (Peterson 2006, p. 29).¹⁵

¹⁴ Peterson (2006, p. 29) lists some techniques that have been developed in the past decade: formal modelling of choice under uncertainty (eg Quiggin 2005); formal modelling of policy choice with uncertainty and irreversibilities (eg Pindyck 2000, 2002); option valuation (eg Gollier and Treich 2003); environmental valuation techniques (see eg Bennett 2005; Wills 2006); intergenerational discounting (eg Arrow 1995; Sumaila and Walters 2005); minimax choice rules (see eg Majone 2002; Quiggin 2005; van den Bergh 2004; Wills 2006); value-of-information theory (eg Macauley 2005).

¹⁵ However, Cameron (2006) cautions that there may still be limitations involved in taking sufficient account of how society, industry and technology change over time, and the cost of obtaining information versus the gains.

The integration of cost-benefit analysis with risk assessment methodologies established for environmental and public health issues and real options provide a possible avenue for more rigorous implementations of the precautionary principle.

Integrating precautionary decision-making into best practice regulation processes

The literature supports the conclusion that working within best practice principles can assist in addressing risks resulting from applications of the precautionary principle. Key aspects of this approach were discussed above (i.e. assessment of the problem; identification of options; evaluation of options). This section considers how these principles can be more closely aligned in practice, by way of providing guidance, tools and use of regulatory 'gate-keeping' processes to elicit the desired behaviour and best practice regulation.

Internationally, attempts have been made to provide guidelines that place the precautionary principle within principles of best practice regulation, albeit at a fairly high level. An example of this are the guidelines communicated by the European Commission (Box 13.5). Guidelines have also been developed by the UK, US, Canada and the 'Precautionary Principle Project' (Peterson 2005 and Cameron 2006 provide brief reviews of these guidelines).

Some guidelines have also been developed for specific policy areas relating to environmental and human health. For example, for genetically modified organisms, fisheries management (FAO 1996) and child health (WHO 2004, Martuzzi and Tickner 2004). Many of these are based around a risk-assessment framework. For example, the Ecological Risk Assessment Framework of the Australian Fisheries Management Authority (AFMA) and the Office of the Gene Technology Regulator (OGTR 2007).

Other agencies have sought to survey and develop frameworks for decision-making under uncertainty in the context of facilitating the development of climate change adaptation policies. Examples of this include the framework developed by the UK Climate Impacts Programme (Willows, R. I. and Connell, R.K. (eds) 2003) and the Netherlands Environmental Assessment Agency (Dessai and van der Sluijs, 2007). Similar work is currently being undertaken within the Department of Treasury and Finance (DTF).

There is significant scope for the Government to draw upon existing guidelines, risk-assessment and decision-making frameworks in building the capacity of agencies to develop and implement future environmental regulation in Victoria. As with the ESD principles (section 13.3.5), there are substantial benefits in incorporating these within a best practice regulation context.

The Victorian Guide to Regulation and the RIS process, as mechanisms to promote better regulation, can provide the basis for behavioural change among agencies, and to support a more disciplined and transparent precautionary decision-making, without compromising the precautionary principle's *raison d'être* or flexibility in dealing with environmental and other policy issues.

Box 13.5 European guidance on the application of the precautionary principle

The European Commission's (EC) 'Communication on Precautionary Principle' sought to provide guidelines or constraints on the 'measures that may be taken under the precautionary principle'. This was a response to perceived problems that arise from the application of the precautionary principle. One concern involved the 'unwarranted recourse to the precautionary principle as a disguised form of protectionism', as a way to restrict trade on the basis of possible threats to environmental and/or human health. Also, some decisions being made 'undermined the confidence of public opinion' and generated doubts as to their legitimacy because they were not supported by 'full scientific evidence'. The EC was of the view that the precautionary principle should be 'considered within a structured approach to the analysis of risk which comprises three elements: risk assessment, risk management, risk communication.' The EC argued that the precautionary principle is 'neither a politicisation of science or the acceptance of zero risk but that it provides a basis for action when science is unable to give a clear answer'.

The guidance on the application of the precautionary principle reflects best practice principles. Where action is deemed necessary, measures based on the precautionary principle should be, inter alia:

- proportional to the chosen level of protection,
- non-discriminatory in their application,
- consistent with similar measures already taken,
- based on an examination of the potential benefits and costs of action or lack of action (including, where appropriate and feasible, an economic cost/benefit analysis),
- subject to review, in the light of new scientific data, and
- capable of assigning responsibility for producing the scientific evidence necessary for a more comprehensive risk assessment. [i.e. it does not rule out a reversing the burden of proof]

The UK guidelines have much in common with the EC's guidelines and 'demonstrate many features of good regulatory practice' (Cameron 2006, p. 22).

Source: European Commission, 'Commission adopts Communication on Precautionary Principle', (Press Release, IP/00/96, Brussels, 2 February 2000)

The RIS process provides an avenue for the independent assessment of the adequacy of proposed measures for submission to cabinet and public debate. Assuming that amendments to the *Subordinate Legislation Act 1994* (Vic) bring

proposed precautionary (and other environmental) measures within the scope of the RIS, an assessment could then be made as to their adequacy according to best practice principles. This would promote ‘due diligence’ in the development of precautionary measures.

The RIS process should be supported by guidance. As suggested above, the Victorian Guide to Regulation currently has a very limited section on how to deal with uncertainty. There is substantial scope for improvement. Amendments to the Victorian Guide to Regulation should provide further guidance and suggest frameworks, tools and methodologies for making decisions under uncertainty generally, and circumstances in which the precautionary principle might be applied.

As noted above, DTF has been investigating approaches to decision-making under climate change uncertainty. One of the objectives of the project is to examine a range of decision-analysis tools that can help decision-makers deal better with uncertainty. These include decision tools such as: scenario analysis, real options analysis, probability-weighted cost-benefit analysis, tolerable windows approaches, the precautionary principle and others. The aim is to combine these tools with a practical, step-by-step decision-making framework. An early version of this framework is reproduced in Figure 13.1.

Such a framework has significant potential for facilitating the closer alignment of the application of the precautionary principle with best practice principles. Namely, it prompts decision-makers to undertake a systematic analysis of the nature of the risks and uncertainties, to clarify the problems and policy objectives, to identify and evaluate a range of options. The framework also empowers decision-makers by linking each stage of the decision-making process to practical analytical tools. This process can elicit useful information for policy makers and for public debate. The information deduced in the process can also facilitate *ex post* reviews of the measures adopted. The framework appears amenable for adaptation for the Victorian Guide to Regulation. This would provide the much needed additional guidance on precautionary measure design and decision-making under uncertainty more generally. Importantly, it would complement the RIS process by requiring policy makers to substantiate their precautionary measures in a way that is aligned with best practice principles. However, agents required to employ this framework and the tools of analysis need to have the capabilities to apply them. Therefore, training and education should be available for building the necessary capacity. The development of a community of practice for ESD implementation should include the exchange of techniques and insights on the implementation of the precautionary principle.

In summary, the Commission considers that the precautionary principle is an important reminder of the high stakes of inappropriate action (or no action) in response to environmental threats in the presence of uncertainty. Nevertheless,

decision-making under uncertainty is not unique to environmental policy making. Uncertainty should not necessarily translate to less transparent, accountable or consistent processes in the development and implementation of future environmental policy – the potential costs to society are too high. Decision-makers require tools and further guidance to help them apply the precautionary principle – to deal with uncertainties, information gaps and in determining the appropriate level of precaution.

In addition to the opportunities for improvement identified in section 13.3 in relation to ESD principles, the Commission recommends the following.

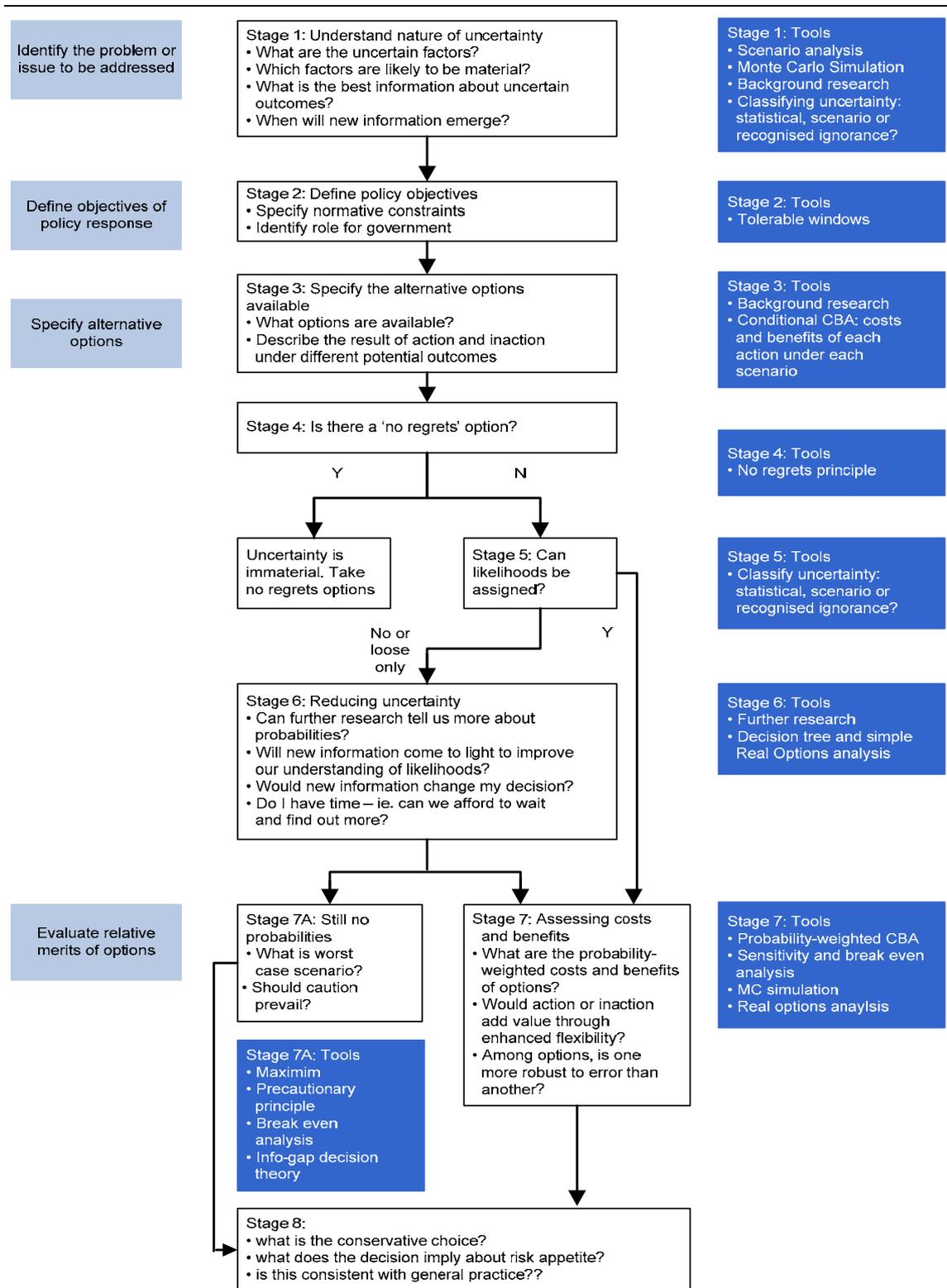
Draft recommendation 13.3

That the Victorian Government amend the Victorian *guide to regulation* to provide further guidance and tools for dealing with uncertainty in the development and implementation of environmental regulation, including measures that might invoke the precautionary principle. The government should also build the capacity of agents to apply these techniques in developing and implementing environmental regulation.

The additional guidance should be grounded on the principles of best practice regulation. It should draw upon the developments in guidance from other jurisdictions, existing risk-assessment and management frameworks and the latest thinking on decision-making under uncertainty. Capacity building may include investing in training and enhancements to cost-benefit analyses, the expansion of existing risk assessment/management frameworks to a broader range of environmental policy areas, and the development of a community of practice to facilitate continuous improvements in implementation.

The Commission welcomes further input on the issues raised in this chapter, and intends to hold a high-level roundtable discussion of these issues before the final report. The Commission also seeks input on other ESD principles where there may be other opportunities for improvement in their application.

Figure 13.1 DTF's draft framework for decision-making under uncertainty



Source: PWC 2009, report commissioned by DTF.

14 Implications for adjustment to a low carbon Victorian economy

14.1 Introduction

The terms of reference direct the Commission to inquire and report on reducing regulatory barriers to growth in areas of the economy that are responding to the emerging environmental sustainability challenges, to help businesses to respond to the challenges of a carbon-constrained economy. This chapter considers the:

- sectors and industries for which adjustment to a carbon-constrained economy might be most affected by regulatory barriers (section 14.2)
- regulatory barriers in those industries that impede adjustment and what can be done to reduce them (section 14.3)
- regulatory barriers that extend beyond particular industries and what can be done to reduce them (section 14.4).

14.2 Sectors that may be most affected by adjustment to a carbon-constrained economy

14.2.1 Predictions from modelling

The defining characteristic of adjustment to a carbon-constrained economy is an increase in the relative price of carbon. As this works its way through the economy, it can be expected, for example, to:

- increase the costs of carbon-intensive goods and services, with electricity generated from brown coal a key example for Victoria
- encourage substitution in electricity generation away from brown coal and other carbon-intensive energy sources towards less carbon-intensive sources such as natural gas and renewable energy
- encourage substitution in consumption away from carbon-intensive goods and services (such as electricity) towards replacements (such as smaller, energy efficient houses and more energy efficient appliances)
- encourage substitution in production processes (for example, less energy intensive farming techniques)
- encourage the development of technologies and production processes for capturing carbon (biosequestration, geosequestration and the like).

Such effects will substantially change the structure of the Victorian economy. The Australian Government has modelled the impacts of several policy

scenarios, each of which assumes coordinated global action to reduce greenhouse gas emissions, but with different levels of atmospheric concentrations achieved around 2100 (Commonwealth Government 2008a). Relevant results from the modelling include:

- while the aggregate economic costs of mitigation are small, costs vary widely between sectors and regions: growth in emission-intensive sectors slows, and growth in low and negative emission sectors accelerates (Commonwealth Government 2008a, p. 137)
- Victoria's real GSP declines relative to the reference scenario by less than Queensland, Western Australia and New South Wales, but by more than Tasmania and South Australia. This is due to some partially offsetting impacts on Victoria's economy:
 - Victoria is relatively reliant on emission-intensive industries — coal fired generation, aluminium and gas. Adverse impacts on these industries are, at least partially, offset by improvements in export-oriented or import-competing manufacturing (Commonwealth Government 2008a, p. 160).
- emissions reductions occur at different rates across sectors and over time (Commonwealth Government 2008a, p. 140)
- reductions in emission intensities are slower where mitigation costs are higher. For example, agriculture has more costly mitigation than other sectors, as most emissions occur naturally and fewer technological options are available (Commonwealth Government 2008a, pp. 142–43)
- pricing emissions:
 - drives a structural shift in the economy, from emission-intensive goods, technologies and processes, towards low-emission goods, technologies and processes. As a result, growth slows for emission-intensive sectors, such as coal, gas, iron and steel, and livestock. Growth accelerates for low and negative-emission sectors, such as forestry, renewable energy, and rail transport (Commonwealth Government 2008a, p. 162).

Table 14.1 and 14.2 list industries which the modelling predicts will grow and decline significantly. These predicted changes are Australia-wide; the impacts on Victoria's industries will depend on factors such as the costs and emission-intensity of Victorian plants relative to those in other states. Moreover, such modelling does not capture completely new industries that might develop; for example, the provision of services for trading carbon permits or advisory services for reducing consumption of carbon-intensive products.

Table 14.1 Industries which grow strongly under a CPRS-5 scenario¹

<i>Industry</i>	<i>Change from reference scenario in gross output by 2050 (per cent)</i>
Forestry	150.1
Dairy cattle	3.9
Other food	5.7
Textiles, clothing and footwear	5.3
Wood products	8.8
Paper products	3.1
Other metals manufacturing	21.1
Electricity: gas fired	12.0
Electricity: other	1735.4
Rail transport: passenger	10.4

Source: Commonwealth Government 2008a, p. 164.

Table 14.2 Industries which decline significantly under a CPRS-5 scenario

<i>Industry</i>	<i>Change from reference scenario in gross output by 2050 (per cent)</i>
Sheep and cattle	-6.7
Coal mining	-30.1
Gas mining	-17.0
Refinery	-37.7
Aluminium	-45.2
Electricity: coal fired	-71.5
Electricity supply	-12.8
Construction	-6.4
Accommodation and hotels	-3.8
Ownership of dwellings	-4.2

Source: Commonwealth Government 2008a, p. 164

¹ CPRS-5 is a scenario with a carbon pollution reduction scheme beginning in 2010 and achieving emissions 5 per cent below 2000 levels by 2020 (Australian Government 2008a, p. 76).

14.2.2 The impacts of technology on adjustment costs

Modelling such as that reported above relies on assumptions about when new technologies are introduced in areas such as carbon capture and storage, energy efficiency improvements, electricity and transport, and elimination of non-combustion agricultural emissions (Commonwealth Government 2008a, p. 159).

The Australian Academy of Technological Sciences and Engineering (ATSE) comments that:

it is probable that no single technology will achieve the carbon dioxide (CO₂) reduction outcome targets currently proposed. Rather, the response will likely require the development and application of a portfolio of technologies, probably including nuclear energy. Many of the technologies reviewed have significant commercialisation issues and high investment cost in terms of CO₂ reduction, and many technological uncertainties remain. The issues are also related to public perception and government policy (e.g. nuclear energy), current technical and environmental uncertainty regarding carbon dioxide storage sites (e.g. CCS), high present investment cost to replace carbon (e.g. CCS, solar energy and geothermal generation) or environmental issues (e.g. extensive application of biomass, wind and wave generation) (ATSE 2009, p. 5).

The pace of introduction, effectiveness and availability of technology is uncertain. 'Predictions of what mix of technologies will be most cost effective cannot be accurate' (Commonwealth Government 2008a, p. 157). For example, Garnaut suggests that quite different scenarios are possible for Victorian brown coal. In a 'transformational' scenario, new baseload fossil fuel generation technologies incorporate coal drying and gasification technologies, sustaining demand for conventional energy sources:

This phase will be characterised by investment in technologies for which the electricity costs have been demonstrated at commercial scale through the investments in research, development and commercialisation of the first phase. Victoria's brown coal resource, unsuitable in its natural state for export, could be expected to have a strong future in this scenario (Garnaut 2008, p. 481).

If, however, such technologies are not developed:

... there are possible scenarios in which significant adverse impacts arise for communities dependent on coal and coal-fired generation, notably those in the Latrobe Valley (Garnaut 2008, p. 493).

The wide range of technological futures, combined with the equally wide range of local and international carbon reduction policy scenarios, is further support for regarding the industry impacts in tables 14.1 and 14.2 as indicative only, although the general direction of change (from carbon-intensive towards less carbon-intensive industries) is more predictable, as is the likelihood that the changes will be large.

14.2.3 Implications for regulation

Regulation can affect technological change and choice in a number of related ways.

Impact on the incentive to innovate

First, regulation can affect the incentive to innovate. This will be illustrated below by the debate over which form of economic regulation for the electricity industry provides stronger incentives to innovate. Also, the chapter provides examples of where new regulatory frameworks are being developed so that investors have sufficient confidence about their rights and responsibilities to make the large investments required (geosequestration and geothermal energy), and other cases (stormwater and wastewater) where participants believe that the absence of a regulatory framework is holding back investment.

And regulation may affect incentives to innovate by altering the relative competitive position of different firms, as Origin points out:

Origin has voluntarily introduced products that have the objective of improving environmental responsibility, particularly in relation to the reduction of greenhouse gas emission by its customers. Regulatory intervention that compels Origin's competitors to introduce similar measures to those it has introduced voluntarily reduces opportunities (and incentives) for Origin to differentiate in a highly competitive, commodity based market. ...

While Origin accepts that some regulatory intervention to encourage improved environmental outcomes is required, sufficient flexibility must be retained to allow innovative responses by industry (in the absence of market failure) in competitive markets. (sub. 41, p. 5)

Regulation that is unduly prescriptive can also discourage innovation, as Yarra Valley Water suggests:

When regulation is prescriptive and tells us what to do, we do not have the scope to explore the potential environmental benefits for each alternative spend, and in many instances we do not know what the environmental end point is. Requiring 'best available technology' does not allow us the opportunity to plan for the future. Without this information, we have little room to optimise either our spend, the environmental benefits we deliver, or pursue innovative options that could potentially deliver better returns at a lower cost either within our business area or outside of it that could. (sub. 22, p. 7)

The Urban Development Institute of Australia (Victoria) made a similar point, arguing that 'a more flexible approach to water management should be allowed as the Water Act 1989 stifles innovation' (sub. 5, p. 3).

Impact on choice of technology

Second, regulation can affect the choice of technology and consequently the costs of adjustment. Table 14.3 reports a recent estimate of the investment that would be required to replace coal-fired electricity generation, and illustrates that the investment costs vary substantially between different technologies. While there is uncertainty about future investment costs, the table illustrates that the cost of adjusting to a less carbon-intensive economy will depend on whether the least costly technologies are implemented.

Table 14.3 **Investment costs to replace 10 per cent of Australia's total current CO₂e emissions using different new technologies in 2020**

<i>Technology</i>	<i>Estimated capital cost \$/W</i>	<i>Cost to replace 60 Mt/a coal fired CO₂ (10% of total Australian GHG) (\$billion)</i>
CCS-coal	3.5	49
Biomass	2.5	25
Solar PV	5.0	174
Solar thermal	3.0	104
Wind	2.0	46
Wave	1.5	42
Geothermal	6.0	60

Source: ATSE 2009, p. 22.

Participants disagreed about whether regulation should be used to influence the choice of technology. For example, the Energy Users Association of Australia argued that mandatory renewable energy targets:

... add directly and significantly to the costs of energy and do so in a way that does not even reduce carbon in a least cost way compared to an emissions trading scheme. (sub. 39, p. 2)

Martin Foley MP has a different view about the carbon pollution reduction scheme (CPRS):

The CPRS whilst central to the process of energy investment futures won't of itself be enough to deal either with the regulatory issues associated with energy production or with the demands that clean energy is predicted to have to meet. We will need complementary regulatory measures in place to cut waste and guarantee an increasing portion of our power from renewable sources to meet

these policy outcomes. This can best be achieved in the timeframes sought by Government policy through effective market based regulation. (sub. 16, p. 6)

Impact on resource movements

Third, regulation might be used to discourage resource movements; for example, from the industries that are projected to decline in table 14.1 to those that are projected to grow in table 14.2. As Garnaut points out:

There will be pressures to protect particular interests and asset values from the changes that are inevitably associated with successful adjustment to the carbon constraint. There is a danger that governments will respond to these pressures in ways that greatly increase the costs of adjustment and which seriously diminish prospects for economic growth (Garnaut 2008, p. 584).

14.3 Regulatory barriers in particular industries

The sectors identified in tables 14.1 and 14.2 are likely to be at the sharp point of adjustment and it is therefore reasonable to ask what regulations are likely to have a particular impact on them. The rest of this chapter identifies regulatory barriers in these sectors, and seeks ways to reduce them in order to reduce the cost of adjustment. Many of these barriers are specific to particular sectors. This section discusses such barriers, while section 14.4 discusses barriers extending beyond particular sectors.

14.3.1 Electricity pricing

Changes may be substantial

Modelling commissioned by the Electricity Supply Association of Australia illustrates the significant costs as the electricity industry adjusts to a carbon constraint. This modelling estimated that achieving a 10 per cent reduction on 2000 level emissions by 2020 would require:

- the premature retirement of 4500MW to 6000MW of brown coal generation
- the construction of 4500MW of gas-fired open cycle and combined cycle generation
- approximately 2600MW of renewable generation, including 2250MW of wind generation (sub. 44, p. 5).

Maintaining system reliability with a growing proportion of supply generated from intermittent sources such as wind power and solar energy will be technically challenging. Equally important, however, is the challenge of delivering these changes at least cost, which will require that regulation does not impede

commercial incentives for existing firms and new entrants to implement innovative responses to a higher carbon price.

These two challenges are inter-connected. For example, Garnaut points out that having a genuinely national energy market across all regions that can be connected at reasonable cost would facilitate the adjustment to a low carbon economy, because it will allow electricity production to expand from the lowest cost sources. Moreover, there would be reliability benefits as:

Deeper interconnectivity will support efficient expansion and use of potential for pump storage in Australia's main hydroelectric assets in the Snowy Mountains and Tasmania, thus easing the constraints associated with intermittency of wind and solar power. (Garnaut 2008, p. 585)

Participants and others believe there are regulatory barriers to adjustment

The operation of the national electricity market is governed by the National Electricity Rules, which are administered by the Australian Energy Market Commission. The current version of these rules (version 25) is almost 1200 pages long, covering issues such as the market rules, power system security, network connection, economic regulation and metering.

Pricing and demand management

Some submissions described regulations that impede the sector's transformation to low carbon intensity. The Energy Supply Association of Australia (ESAA, sub. 44, p. 3) argued that the absence of dynamic, cost-reflective pricing of energy prevents consumers from making more energy efficient choices. The Department of Sustainability and Environment (DSE) (sub. 57, p. 29) noted that uniform pricing of electricity leads to excessive electricity consumption at various times and over-investment in transmission capacity. Garnaut (2008, p. 584) suggests that a 'critical' innovation to assist with movement to a less carbon-intensive economy is the removal of price caps on retail power prices accompanied by reliance on competition to secure reasonable pricing.

Cost-reflective pricing would be facilitated by more advanced metering. EkoLiving supported movement towards a 'smart grid', with enhanced application of communication and information technology through, for example, advanced metering infrastructure and demand response capabilities. This would, for example, lead to better management of the air conditioning load to reduce the peak in Victoria's electricity demand (sub. 10, pp. 11–12).

Barriers to small scale generation

Other participants argued that regulatory barriers discourage the development of small scale generation from 'green' sources.

DSE pointed out that micro- and cogeneration facilities face obstacles such as relatively high costs in gaining access to the distribution network (sub. 57, p. 30). Similarly, the Northern Alliance for Greenhouse Action (sub. 20, p. 3) argued that regulatory impediments discourage installation of distributed generation facilities. EkoLiving suggested that distributed micro-generation should be promoted through feed-in tariffs. It noted that renewable energy credits and a model similar to a PPP contract are other ways to encourage micro-generation (sub. 10, pp. 9–10). Martin Foley MP suggested that:

- the rules of electricity distribution do not cover the security and competition benefits that come from clean energy generating locations (mostly rural or small scale urban)
- technical standards inhibit the registration of renewable generators
- system models to protect power distribution also hinder new renewable projects
- there needs to be a nationally consistent regime on solar feed-in tariffs (sub. 16, pp. 7, 10).

The City of Greater Bendigo, in a meeting with Commissioners, noted that electricity distribution businesses have been set up on the basis of centralised electricity generation and have an incentive to resist the uptake of small scale generation, which will typically be located away from current power stations. Regional and rural network prices are generally 10 to 40 per cent higher than metropolitan prices (KPMG 2007, p. 5) and supply may be less reliable. Renewable and low emission embedded generation has the potential to reduce these costs because it will be located closer to the regional or rural customer.

The Commissioner for Environmental Sustainability pointed out that:

A number of barriers to distributed electricity generation currently exist in Victoria. These include application and approvals processes that can be costly and time consuming, and network connection requirements that can be complex and also add significantly to costs. There is also a lack of price signals that reflect both the reduction in transmission and distribution costs, and the reduced need to upgrade infrastructure. (CES 2008b, p. 82)

EkoLiving (sub. 10, p. 3) made a more general point, arguing that the structure of the electricity market discourages energy efficiency. Retailers, which do not own infrastructure, have an incentive to sell more electricity, while distributors have little incentive to encourage energy efficiency. Consumers have too little access to energy consumption data.

Some barriers are being reviewed nationally

Most electricity regulation is administered through national regulatory arrangements.² The Australian Energy Market Commission (AEMC)—an independent body responsible for rule making, market development and policy advice concerning both the national electricity market and elements of natural gas markets³—is currently undertaking six reviews of aspects of the market rules.⁴ Box 14.1 describes two reviews that seem particularly relevant to the issues raised by participants.

Dr John Tamblyn, the chairman of the AEMC, has pointed out that introducing a price for carbon and setting ambitious targets for renewable generation capacity will trigger a transformation over the next 15 years:

... existing frameworks have much to commend them, and appear capable of handling many of the challenges that a CPRS and expanded RET might bring. However, there are specific areas that may require change. (Tamblyn 2009, p. 27)

Risks that Dr Tamblyn identifies include:

- providing regulated networks and generators with the right signals to connect large-scale remote renewables efficiently
- heightened risk of plant failure during the transition period that coal fired generation capacity is run less frequently
- that locational price differences do not fully reflect costs being imposed by the connecting generator, leading to inefficient location decisions
- the ability of transmission network service providers to process efficiently the large numbers of connection applications from wind farms and to determine the appropriate size of connection asset (Tamblyn 2009, pp. 12, 17–18, 21).

The Commission has written to the AEMC, to draw to its attention the issues raised by participants.

² National responsibilities include distribution economic regulation, distribution network expansion, distributor connection service obligations, and distributor and retailer general business authorisations (Standing Committee 2006, pp. 9–10).

³ The Council of Australian Governments, through its Ministerial Council on Energy, established the AEMC in July 2005.

⁴ These six reviews are:

- (i) Review of the effectiveness of competition in the gas and electricity retail markets
- (ii) Review of demand side participation in the national electricity market
- (iii) Review of the effectiveness of competition in electricity and gas retail markets in South Australia
- (iv) Review of energy market frameworks in light of climate change policies
- (v) Review into the use of total factor productivity for the determination of prices and revenues
- (vi) Review of national framework for electricity distribution network planning and expansion (AEMC 2009).

Box 14.1 Two current AEMC reviews

In April 2008, the AEMC initiated a review to consider whether the electricity market rules limit the efficient involvement of demand-side participation (DSP), through conservation practices (such as installing energy efficient light bulbs), shifting the time of use of appliances away from peak network usage, investing in distributed generation, and substituting alternative fuels for electricity (NERA Economic Consulting 2008, p. 4). The review seeks to identify impediments to DSP, where impediments are defined as a 'condition or characteristic of the market that would place potentially efficient demand-side participants at a disadvantage compared to alternatives' (AEMC 2008a, p. 6). The review identifies possible impediments in five topic areas:

- economic regulation of networks
- network planning
- network access and connection arrangements
- wholesale markets and financial contracting
- reliability.

In October 2008, the Ministerial Council on Energy directed the AEMC to commence a further review, of energy market frameworks, to determine whether they should be amended to accommodate the planned introduction of the CPRS and expanded Renewable Energy Target. Issues it is considering include:

- the risk that current uncertainty about greenhouse policy settings could lead to businesses deferring investment in generating capacity
- investment in other forms of generation (or transmission) capacity to meet reliability standards when wind generation is unavailable
- more flexible operation of thermal generation plant when there is increased intermittent generation
- managing the connection of new generators to networks
- whether changes in the level or volatility of costs faced by retailers, combined with price regulation, could reduce the effectiveness of retail competition
- whether adjustments to market frameworks are needed to ensure that investment in renewable and non-renewable generation capacity is forthcoming at least cost.

Sources: AEMC 2008a, 2008b.

A broader issue: the form of economic regulation

While the AEMC's reviews will look at specific impediments to new technologies, the form of economic regulation will influence strongly the incentives for electricity businesses to innovate. It may exert this influence in a number of ways, including by affecting the structure of the industry and whether firms are able to capture the benefits of innovation across the value chain and by changing incentives faced by individual firms to invest in research and

development and introducing new products. Prices are a very important incentive and signal, especially where they reflect underlying conditions of demand and efficiency. In the absence of clear incentives, governments may introduce programs to achieve the objectives—such as the introduction of specific renewable technologies—that government believes innovation should generate. As DSE points out:

Government intervention in the supply-side of the market is problematic and there is only a very limited set of circumstances where government has better information than private firms about the incentives that might exist for innovation and the technological and production possibilities. This information advantage suggests that government should specifically avoid ‘picking winners’. On the demand side, however, there is an important role for government to ensure that individuals and firms are exposed to market signals. (sub. 57, p. 29)

Proponents of different approaches to economic regulation of electricity prices disagree about their impacts on incentives. The two approaches can be broadly defined as the building block and total factor productivity approaches, which the Department of Primary Industries (DPI) defines as follows:

- under the building block approach, expenditure (and derivatives, namely the depreciation allowance and regulatory asset base) and demand are forecast over the regulatory period and the trajectory for prices is set so that forecast revenue equates to forecast cost (in present value terms); whereas
- under the TFP approach, prices are set to increase by CPI-X, where X is set with reference to the estimated growth in total factor productivity over an historical period (DPI 2008c, p. 3).

Victoria’s Essential Services Commission sees significant problems with building block regulation:

- it does not create strong incentives for dynamic cost efficiency, because it links returns directly to the regulated asset base (RAB), or the value of the assets used to provide regulated services. Networks have little to gain from an effective demand response or investments in distributed generation
- the need to determine RABs can raise cost allocation issues, particularly if networks are providing regulated and non-regulated services
- it requires regulators to determine efficient investment levels, which will become more complicated as renewable and distributed generation become more common
- it may discourage investment in distributed generation if it reduces the network's overall RAB because the incremental cost of distributed generation is less than the incremental cost of network expansion (ESC 2009, pp. 63–64).

It argues that these perverse incentives can be:

... “locked in” as utility financial structures and corporate cultures adapt to the incentives created by the building block model. Since building blocks tend to discourage dynamic efficiency and prudent risk taking (e.g. through sensible vertical integration), capital markets will over time inevitably establish highly geared (i.e. leveraged through debt), risk-averse business models and management styles. An example might be a privatised enterprise where retail is separated from distribution operations, with the remaining network financed largely through bonds and the residual equity marketed as a low risk stock to retail “mum and dad” investors. By having little equity, the network business is relatively capital constrained and thereby lacks the resources and flexibility to pursue somewhat riskier investments, such as distributed generation, which can have important spillover benefits for the broader marketplace.

This can be contrasted with the experience immediately after privatisation in Victoria where various networks (at that time integrated with retailing operations) pursued a variety of ventures that leveraged company expertise and assets into competitive market applications. Examples included advising customers on efficient lighting applications, providing HVAC maintenance and installation, energy service company operations, developing private networks, and participating in cogeneration, geothermal heating and cooling projects. These efforts required equity and were generally successful, but they were largely abandoned after the regime increasingly took on cost-based characteristics.... A different regulatory approach may have encouraged the businesses to remain more integrated and active across a range of businesses in the broader energy marketplace, which in turn could contribute to enhanced energy efficiency across the entire value chain on both the supply and demand sides of the marketplace. (ESC 2009, pp. 64–65)

The Victorian Government has requested that the national electricity rules be changed to permit the use of total factor productivity as a regulatory economic methodology to be applied by the Australian energy regulator⁵ (DPI 2008c, p. 3). The AEMC initiated a review in response to this request and has published an issues and framework paper (AEMC 2008c) and a commissioned study which describes how TFP methodologies are applied in various countries (Brown and Moselle 2008). The AEMC is seeking comments on whether a TFP based methodology addresses any perceived problems with current applications of the building block approach and what impact a TFP approach would have on the

⁵ The Government's submission notes some qualifications to the conclusion that a TFP approach to regulation can reduce the costs of regulation. These include that: the derivation of an estimate of industry-wide TFP is controversial and data intensive; there is a question as to whether an industry-wide estimate of TFP should be applied to all firms, or whether assumed growth in TFP should be differentiated between firms; and a number of specific issues would need to be addressed in order to make the TFP approach operational (DPI 2008c, p. 4).

incentives to make efficiency improvements and make efficient investments (AEMC 2008c, p. 39).

Assessment

Adjustments in the electricity industry to a carbon constraint will be complicated by complex technical issues and the significant and sometimes subtle interactions between technical and economic regulation. The regulatory framework needs to maintain system reliability but without stifling incentives for the development and implementation of new approaches. The Australian Government is strengthening the external incentive for change by introducing the CPRS and this needs to be matched by a regulatory framework in the electricity industry which encourages innovative responses to this incentive.

The Victorian Government has indicated its support for a TFP based approach to economic regulation. The Commission agrees with this approach and believes, more generally, that the Government should attach a high priority to promoting in relevant national forums (such as the AEMC and the Ministerial Council on Energy) changes to electricity regulatory arrangements which strengthen commercial incentives to innovate in more effective and less costly ways. Given the Government's support for increased use of renewable sources of electricity generation, it should also promote the removal of any regulatory barriers to their use.

Draft recommendation 14.1

That the Victorian Government promote in relevant national forums removal of regulatory impediments to the introduction of renewable energy sources of power generation, such as barriers to distributed energy generation.

The Commission invites views as to whether there are any gaps or impediments in regulatory arrangements that would not be addressed by this approach.

14.3.2 Wind power

Regarding investment in wind power, two broad sets of issues arise:

- approval processes
- access to land with high potential locations for wind power.

Approval processes

Martin Foley MP (sub. 16, p. 9) suggested that consideration should be given to removing barriers to unreasonable use of planning scheme components applied to wind but designed to regulate other industries and manage other values. Pacific Hydro indicated that:

Our tabulation of 10 Victorian wind farm planning applications between 2004 and 2008 indicates an average duration of 17 months from lodgement to decision. Typically it takes between 12 to 18 months to prepare a planning application, implying a 3 year time frame overall to obtain planning approval in Victoria, which is consistent with our experience. This is significantly longer than other states where, for example, the overall planning time frame is 12 months in WA and 18 months in South Australia. This is a time saving of 18 months to 2 years with associated cost savings.

The longer duration in Victoria is in part due to policy design; that is the level of environmental assessment required from a wind farm is equivalent to an Environmental Effects Statement (EES). This prolongs both the pre-lodgement preparation time and the time needed for the decision-maker to wade through the evidence. Whilst Pacific Hydro is comfortable that it is appropriate for some development sites to be given high scrutiny, it is questionable whether all wind proposals carry environmental risk and land use factors to warrant that scrutiny. In contrast, Western Australia uses a proportionate response whereby the Environmental Protection Authority first determines what level of scrutiny is required by a particular development proposal, only applying an 'EES' style assessment to proposals that have the potential for significant impact (typically big ticket resource projects but to date generally not wind farms).

It should be noted that the added complexity, cost and time risk to achieve a planning outcome in Victoria is having the effect of encouraging proponents to develop projects in other states, in preference to Victoria. (sub. 69, p. 2)

Pacific Hydro provided the data shown in table 14.4 in support of their submission.

Table 14.4 Victorian wind farm projects planning process timeframes – where determined by planning panel process

<i>Wind farm^a</i>	<i>Municipality</i>	<i>Application lodged</i>	<i>Panel appointed</i>	<i>Directions bearing</i>	<i>Panel bearing</i>	<i>Panel report</i>	<i>Permit decision</i>	<i>Timeframe</i>
Waubra	Ballarat/Pyrenees	12/08/04	4/11/04	8/12/04	17-31/01/05	30/04/05	15/06/05	10 months
Mt Gellibrand	Colac Otway	24/04/05	28/07/05	12/09/05	18-27/10/05	23/12/05	20/08/06	16 months
Naroghid	Corangamite	?/12/04			?/05/05	22/07/05	11/08/06	19 months
Mt Mercer	Golden Plains	28/10/05	1/06/06	19/06/06	16-22/08/06	20/12/06	?/04/07	18 months
Yaloak	Moorabool	30/03/04	13/07/04	14/09/04	6-23/12/04	4/04/05	06/07/05 (refused)	15 months
Hawkesdale	Moyne	21/06/06	14/02/07	15/03/07	11-18/04/07	6/07/07	12/08/08	26 months
Macarthur	Moyne	14/07/05	27/09/05	8/11/05	07/02-10/03/06	23/05/06	26/10/06	15 months
Woolsthorpe	Moyne	24/10/06	14/05/07	4/06/07	16-17/7/07 & 06/09/07	?/02/08	16/04/08	18 months
Oaklands Hill	South Grampians	4/06/07	14/09/07	10/10/07	12/11-5/12/07 & 29-31/01/08	11/04/08	30/10/08	15 months
Crowlands	Pyrenees/Ararat	20/06/07	13/11/07	6/12/07	5-14/02/08 & 01/04/08	Not yet received	Not decided	N/A
Average time = 17 months								

^a Bald Hills, Portland and Ryan Corner wind farms were not included in this list as they were subject to an EES process.

Source: Pacific Hydro, sub. 69, p. 3.

The assessment process for wind energy facilities provides for the possibility of an EES or, if this is not required, for a planning permit process. The process differs from the general process described in chapter 6. In particular, it allows for the Minister for Planning to call in planning permit applications after the proponent has finalised the EES and lodged the planning permit applications. This implies that the Minister takes responsibility for the planning permit applications, in a way that is similar to that recommended by the Commission in chapter 6. Timelines are specified for some stages but not all, and there do not appear to be mechanisms for enforcing the timelines. For reasons similar to those outlined in chapter 6, the Commission supports more use of timelines and mechanisms to enforce them.

Draft recommendation 14.2

That the Victorian Government:

- **apply time limits to each stage of the environmental assessment and planning permit processes for wind projects, some of which would be statutory and others negotiated at the start of the process. There could be protocols for giving advance notice of delays and revisions to the agreed schedule.**
- **report publicly the time taken for each stage of the process and reasons for any delays**
- **ensure that performance against these timelines is assessed regularly by an independent agency, such as the Victorian Auditor General.**

Another option is to apply the same EES process to wind power as applies to most other projects, by applying either the current general process or as amended if the Government accepts the recommendation in chapter 6.

Pacific Hydro also indicated that native vegetation regulations are 'complex and unwieldy' (sub. 65, p. 3). These regulations were discussed in chapter 7.

Access to land

The viability of renewable energy sources such as wind power and geothermal energy is sensitive to location. For example, in the case of wind:

Across Victoria, local topographic conditions can have a significant effect on wind speed, with minor changes in location resulting in major variations in speed. Wind speed in turn is the single most important factor affecting the financial viability of a wind energy facility. (Sustainable Energy Authority Victorian 2003, p. 9)

Wind energy development, along with development of other renewable energy, is excluded from land reserved under the National Parks Act 1975. This excludes wind power from approximately 43 per cent of the length of Victoria's coastline and 32 per cent of the area within 1 kilometre of the coast (Sustainable Energy Authority Victoria 2003, p. 10).

This policy was implemented before the proposed introduction of the CPRS, when the value attached to carbon reduction was lower than it will be in a low carbon future. This means that the value foregone from excluding wind projects from national parks (and the contribution this would make to renewable energy) is higher now than it was when the exclusion was implemented. Excluding wind power projects from those national parks that have the location requirements—the strong, reliable wind required for wind power—could increase the costs of adjusting to a carbon-constrained economy.

If the exclusion were removed, this would lead to some loss of amenity in national parks. There may, however, be areas within national parks where the loss of amenity would be outweighed by the benefits of carbon reduction, as the price of carbon increases. The Government could enable such sites to be utilised by removing the exclusion, but ensuring that all wind power projects face rigorous environmental assessment, including having regard to the original objectives in setting aside the relevant land as national parks.

The current assessment process for a wind power facility requires either that an environment effects statement (EES) be prepared, or that the proponent lodges permit applications with the responsible authority, which must consider the project's:

- contribution to government policy objectives (including reducing greenhouse gas emissions)
- visual amenity
- impact on the amenity of the surrounding area
- impact on aircraft safety
- impact on flora and fauna (Sustainable Energy Authority Victoria 2003, pp. 23-25).

This process considers the environmental costs and benefits of wind projects, and could readily be applied to developments in national parks, including with stronger threshold tests on environmental impacts. The process has been in place for some years, and neither private sector nor government department participants have made adverse comments to the Commission about the way it functions, except about its timeliness, as previously mentioned. To the extent that national parks have higher environmental values than other areas, wind projects would face a higher hurdle than projects elsewhere. Removing the exclusion would help to ensure that projects were developed where they contributed the largest net social benefits.

The Commission invites comments on the costs and benefits of the Government supporting the development of renewable energy projects in national parks, when they have received a favourable assessment under the existing environmental assessment processes.

14.3.3 Carbon capture and storage

Background

Carbon capture and storage (CCS) involves:

... capturing and purifying carbon dioxide that would otherwise be emitted to the atmosphere, compressing it, transporting it to a suitable site and injecting it into deep geological formations where it will be trapped for millions of years. (CO2CRC nd, p. 1)

The Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC) has identified 15 potential CCS projects in Australia, of which 7 are in Victoria. The commercial viability of CCS projects will be influenced by the price of carbon and the costs of CCS relative to other technologies. A regulatory framework which clarifies rights and responsibilities is a prerequisite for firms to commit to the large investments that would be involved.

To clarify technical and regulatory issues, the CO2CRC has worked with industry and government to demonstrate the safe injection of carbon dioxide in a pilot project in the Otway Basin in south west Victoria. When the project was initiated, there was no specific national or Victorian legislation for sequestration. Hence this project assisted in:

... testing the applicability of the existing regulatory environment in relation to transport, injection and geological storage of carbon dioxide and providing data and advice, as needed, toward development of a future regulatory regime (CO2CRC nd, p. 3).

Ultimately, after 'exceptional collaboration between all regulating bodies', the approval process was defined using a combination of Acts for different activities (Sharma et al. 2008, p. 5).

Victorian legislation

Subsequent to this exercise, the Government introduced the *Greenhouse Gas Geological Sequestration Act 2008*, which covers onshore storage activity. The Act is modelled on the Petroleum Act, because CCS uses many of the same technologies as the petroleum industry. It has been developed as stand-alone legislation because it addresses a number of unique legal issues, such as the potential migration of injected greenhouse gases and the management of long term liabilities and monitoring and verification responsibilities. For offshore waters under state government control, the Government proposes to introduce legislation that mirrors Commonwealth geosequestration legislation (Batchelor 2008a, p. 3672).

Key features of the legislation include:

- property rights in underground geological storage formations are vested in the Crown. This allows the Crown to grant exclusive rights to explore for geological storage formations
- on surrender or cancellation of a licence, the Crown becomes the owner of any greenhouse gases that have been injected into the geological formation. The Act provides for transfer of liability to the state following the closure of an injection site, provided certain requirements have been met by the CCS operator

- if there is a significant risk that proposed inspection testing will lead to contamination or sterilisation of other resources, the Minister may still approve the proposed operation, if it is in the public interest to do so
- CCS injection operations are prohibited in certain areas, including wilderness areas and marine parks and sanctuaries (Gibbs & McCormack 2008, pp. 3–4).

Commonwealth legislation

Geosequestration offshore Victoria is regulated by Commonwealth legislation, the *Offshore Petroleum Amendment (Greenhouse Gas Storage) Act 2008* (OPGGS Act). The OPGGS Act amends the *Offshore Petroleum Act 2006* (Cwlth) to establish a system of offshore titles that authorise the transportation, injection and storage of greenhouse gases in geological formations under the seabed and manage interactions with the offshore petroleum industry.

Containing the Commonwealth's offshore greenhouse gas regime in amendments to the Offshore Petroleum Act recognised:

... the synergies between the CCS and petroleum industries, which utilise similar technologies. This was seen as an efficient way of regulating the inevitable interaction between CCS investors and oil and gas companies. (Barrymore & Mathison 2008, p. 349)

Issues

Competing interests of CCS and petroleum producing businesses

CCS and petroleum operations will sometimes be located in the same area and Exxon Mobil (2008, p. 5) believes that the injection of carbon dioxide into or near operational oil and gas fields within the Gippsland basin poses a major safety and operational risk. Barrymore and Mathison (2008, p. 360) believe that:

Balancing these competing interests will be the most significant challenge faced by the government in implementing the GHG regime.

One issue that this raises is how to achieve a nationally consistent framework to handle such issues, while allowing for locational differences. The Victorian Government, for example, has argued that:

The considerations for managing such things as the co-existence of CCS and petroleum activities are practically different in an onshore and offshore context (Government of Victoria 2008a, p. 12).

Liability

Determining an appropriate liability regime for the health, safety and environmental risks associated with CCS, that continue indefinitely into the future, is a regulatory challenge. Although the risk of leakage from appropriately

selected and monitored geological formations is likely to be low, gradual or abrupt leakages are possible, with significant environmental and commercial consequences.

Under the OPGGS Act, long-term liability for stored greenhouse gases may be assumed by the Commonwealth Government upon the satisfaction of certain conditions. This can occur not less than 15 years after the storage site is closed and also in circumstances where the storage operator has ceased to exist.

Australian States and Territories have enacted, or are in the process of enacting, complementary legislation for their respective jurisdictions. This legislation is not uniform. In Victoria, the *Greenhouse Gas (Geological Sequestration) Act 2008* (Vic) differs from the Commonwealth Act in that it does not alter the common law liabilities of a carbon capture and storage proponent (Batchelor 2008a, p. 3673).

The Commission agrees with the assessment of DPI (2008b, p. 59) that defining long term liabilities for the long-term underground storage of carbon dioxide is 'a key regulatory priority'. The existence of differences between jurisdictions in their approach to long term liability suggests that the regulatory approach to this issue requires further development.

The Commission is presently unaware of other regulatory barriers to the introduction of CCS and invites advice on this matter.

14.3.4 Geothermal energy

The Government believes that geothermal energy is another emerging technology that has an important role to play in meeting Victoria's renewable energy target (Batchelor 2008b).

Geothermal energy relies on techniques similar to those found in oil and gas production and has a very strong locational characteristic, being entirely dependent on the discovery of appropriate geological bodies. Sites are usually in remote locations and some may have been reserved for other purposes. A benefit of this form of energy is that its contribution to base load electricity generation is controllable, predictable and reliable but without the greenhouse gas emissions associated with coal (Martin Foley MP, sub. 16, p. 11).

In 2005, Victoria introduced the *Geothermal Energy Resources Act 2005*, which provides a new framework for the large scale commercial exploration and extraction of geothermal energy at depths greater than 1000 metres and at temperatures greater than 70 degrees centigrade. Small scale projects are excluded, and will continue to be regulated by existing planning, environmental and water legislation (Driscoll 2006, p. 1). The Geothermal Energy Resources Regulations 2006 govern the identification, assessment and management of the environmental, health and safety hazards involved in undertaking geothermal

energy operations. Their objective is 'to ensure that the environmental, health and safety hazards and risks involved in undertaking geothermal energy operations are eliminated or minimised so far as is practicable' (Reg 1 (a)).

While the Commission is not aware of any regulatory barriers to geothermal energy, it would welcome advice on issues that should be addressed.

14.3.5 Solar energy

Martin Foley MP pointed out that the absence of a consistent national policy on feed-in tariffs for solar photovoltaic energy impedes the sector's continued growth (sub. 16, pp. 9–10). Victoria, Queensland and South Australia operate under different versions of a net feed-in tariff, while the Australian Capital Territory has, and Western Australia is committed to, a gross feed-in tariff. Martin Foley MP suggested that Victoria should support a nationally consistent regime (sub. 16, p. 10). The Energy Retailers Association of Australia, on the other hand, argued that 'the benefits to be gained from feed-in tariffs do not justify the costs' (sub. 27, p. 3).

In November 2008 the Council of Australian Governments (COAG) agreed to a 'set of national principles to apply to new feed-in tariff schemes and to inform the reviews of existing schemes. These principles will promote national consistency of schemes across Australia, although they may not lead to equivalent prices. In summary, these principles are:

- micro renewable generation to receive fair and reasonable value for exported energy
- any premium rate to be jurisdictionally determined, transitional and considered for public funding
- the Ministerial Council on Energy to continue to advance fair treatment of small renewables
- feed-in-tariff policy to be consistent with previous COAG agreements (particularly the Australian Energy Market Agreement) (COAG 2008b, p. 8).

Interventions to support solar energy also need to be assessed in the context of the CPRS, which is intended to drive least cost abatement of greenhouse gas emissions. The Commissioner for Environmental Sustainability notes that:

The Victorian Government estimates the total abatement cost of a small photovoltaic system at around \$500 per tonne — ten or twenty times the expected price of carbon in the first years of the CPRS, and six times more expensive than Solar Systems' proposed large scale photovoltaic power station. (CES 2008b, p. 101)

Recognising the tension between the high cost of solar power and the CPRS driving least cost abatement, the Commissioner recommended (CES 2008b,

p. 101) that the Government should review the purpose and design of the feed-in tariff in the context of the CPRS, accounting for the full range of potential costs and benefits. The Commission endorses this recommendation.

14.3.6 Building efficiency

Participants raised issues in relation to building efficiency regulation and the interaction of other regulations on building energy efficiency.

Building efficiency regulation

The Victorian Government introduced 5 star energy regulations for new homes in July 2004. The regulations were extended to cover alterations and additions from 1 May 2008. The Government 'wants strengthened Australian building standards by 2010' (Government of Victoria 2008d, p. 2).

Participants' views

Wood Products Victoria, while supporting regulation, argued that there are differing views on the costs of the 5 star regulations and there should be a biyearly cost-benefit survey to monitor and report back the real impact of the regulations and that the government should set clear performance targets for buildings (sub. 60, pp. 7–8). It noted that builders have shifted from raised timber sub-floors to concrete slab on ground 'simply to achieve simpler compliance using the energy assessment computer software' and that meeting 5 star requirements on sloping sites, while retaining raised floor construction, imposes substantial additional compliance costs (sub. 60, pp. 7–8, 14).

Wood Products Victoria also pointed out that not all states are implementing the 5 Star standard.

Victoria has recently broached the concept of raising the minimum BCA [Building Code of Australia] requirements to 6 Stars; this has not been supported by other states.

As many companies and organisations within the building industry undertake cross border business it is not beneficial when different states set different levels of regulation – the whole purpose of a national regulatory document such as the BCA is to standardise requirements across Australia.

This Submission contends that the proposal of the Victorian Government to regulate to a 6 Star level, or higher, without substantial changes to the current assessment frameworks is not in the best interests of the broader Victorian community. Aspirational higher voluntary targets for individual home builders are another matter; that is a business choice based on consumer and market demand. (sub. 60, p. 20)

The Master Builders Association of Victoria (MBAV) expressed its concern about the rising cost of regulation and its impact on housing affordability, suggesting that the additional cost of 5 star regulation is between \$2500 per dwelling for a large volume builder with orientation freedom on flat land, to \$30 000 per dwelling for a coastal or regional builder dealing with a sloping block and no ability to use a concrete slab. It believes that the additional cost of lifting a standard 5 star designed home to 6 or 7 star standard would be between \$10 000 and \$14 000. It notes that while the standards have improved energy efficiency, changing consumer habits have worked against this, referring to a study prepared for DSE, which shows that energy-related greenhouse gas emissions in new houses are nearly 6 per cent higher than existing dwellings (sub. 56, pp. 4–5).

The MBAV suggests that the cost of regulation could be reduced by:

- using price signals for water and energy to encourage water and energy efficiency
- providing greater flexibility for builders to meet existing sustainability regulation standards
- making future sustainability regulations performance based
- not mandating installation of particular technologies (such as water tank or grey/black water system installation or photovoltaic solar panel) in new housing (sub. 56, pp. 5-6).

The Urban Development Institute of Australia (Victoria), while not commenting directly on the 5 star standard, preferred a voluntary approach, pointing out that:

Regulation can stifle innovation in managing environmental issues, whereas more flexible arrangements can result in creative new ways of doing things. For example, the Green Building Council of Australia has a voluntary scheme called the Green Star certification scheme which encourages the development of buildings that have an environmental performance that greatly exceeds outcomes delivered by regulation. (sub. 5, p. 3)

VicUrban, one of Victoria's largest residential land developers, pointed out in a meeting with the Commission that building energy efficiency needed to be considered in a wider context that includes precinct-wide initiatives and well designed compact homes that reverse the trend for ever-increasing housing sizes and the low density of development on the urban fringe. In VicUrban's view, combining these factors will achieve the step changes being sought by government.

Comment

Participants have tended to focus on the costs of building efficiency regulation rather than its benefits. While the benefits also need to be considered, careful

analysis of the costs should precede any strengthening of the regulations, along with assessment of the role of energy and water pricing as an alternative way to encourage building efficiency. If regulation is adopted, a performance based approach, which avoids prescription, has the benefit of permitting builders and homeowners more flexibility in choosing ways to improve building efficiency. Moreover, performance based regulation, by permitting flexibility, is less likely to stifle the development of innovative ways of enhancing energy efficiency. This, in turn, would encourage lower cost adjustment to a carbon-constrained economy.

Draft recommendation 14.3

That in any revision of building efficiency regulations, the Victorian Government seek opportunities to make these regulations performance based rather than prescriptive.

Impact of other regulations on building efficiency

Other regulations or institutional arrangements can affect building energy and water efficiency.

EkoLiving suggested that interactions between utilities and property developers may discourage the uptake of energy efficient technologies in new housing developments:

Greenfield housing developments offer the best opportunity to introduce new, environmentally efficient technology to every home. Often, these developments have a Body Corporate, and the utilities provide a meter at the gate – creating the possibility of the Property Operator, providing individual sub-metering and becoming a service provider or “micro-utility”. This applies to telecommunications and broadband, as well as electricity, water, gas, and other services.

When micro-generation can be applied to new housing developments, as well as on an individual basis, the potential impact is significant. For example, in a new home development of 1000 homes, 3 kw of solar panels on each, = 3 MW.

District heating and cooling is a further example of energy efficiencies possible in new developments: the technology exists, is proven worldwide to be more cost effective and energy efficient; but there is little knowledge or incentive amongst developers to use it.

With all of these models, there is a large up-front capital cost, which in the current model must be borne by the property developer – even though it is society which receives the benefit of less emissions. The developer is unlikely to sell more units just because they have a district cooling system. Likewise, the individual home-owners do not experience any direct benefit, if they pay utility costs via a Body Corporate.

However, the technology is more financially efficient and energy efficient. Done on a big scale, it would bring many benefits to the State. (sub. 10, p. 7)

The Commission has also been informed about examples where different decision makers had different perspectives about moving beyond 5 star energy efficiency in a greenfields development, and where proposals for innovative approvals to reduce environmental impacts were being delayed by planning approval processes. Such delays can add to holding costs and so reduce housing affordability or the supply of housing.

The Commission invites comments on regulations that are reducing the uptake of energy efficient technologies in housing developments.

14.3.7 Biosequestration through forestry

Plantation forests

Table 14.1 noted potential growth in forestry to sequester carbon. Garnaut (2008, p. 543) reports that plantations have an emissions removal potential equivalent to 143 million tonnes of carbon dioxide per year for 20 years, which would use 9.1 million hectares of land. Regulatory arrangements will influence Victoria's contribution to this potential. Water is a critical consideration, especially in regard to its alternative uses.

The Commission's 2005 report

The Commission assessed regulatory arrangements for plantation forests in its inquiry into regulation and regional Victoria (VCEC 2005a, pp. 312–338.) Much of the key regulation of the sector is administered through the planning system. The state section of all local government planning schemes incorporates the Code of Practices for Timber Production, and the planting of commercial forests must be conducted in accordance with the code. While the establishment of plantations is generally supported as an 'as of right' activity (in that it does not require a planning permit), Councils can specify an area (which must be at least 40 hectares) which, if exceeded, requires a planning permit. Zoning and planning overlays are sometimes put in place and can impose additional regulatory control.

Participants in the 2005 inquiry provided information about:

- the complexity of the regulatory framework
- delays and inconsistency experienced with the planning process
- perceived inequitable treatment of the plantation industry compared with other land uses.

The Commission recommended that DPI develop a new approvals process for the establishment of plantations, in which accredited operators would be deemed to comply with planning provisions. The Government agreed that there was

scope to improve the regulatory framework and directed DPI to review the framework in collaboration with DSE, within the broader context of planning approval processes for land use change (Government of Victoria 2005e, p. 18).

The Timber Industry Strategy

The Government has not yet implemented the Commission's recommendation but is currently developing a new timber industry strategy for Victoria, which provides an opportunity for regulation reform. The Minister for Agriculture has indicated that the Strategy is to take into account recommendations in the report of the Sustainable Timber Industry Council (STIC) (Helper 2008). This report noted that:

... there are a number of legislative and regulatory provisions relating to the private plantation forestry sector which have been shown to put this activity at considerable disadvantage relative to other agribusiness enterprises operating in rural areas. During consultations, STIC was given feedback from industry that Victoria's regulatory environment was increasingly being seen as a hostile one for plantation investment compared to other states. (STIC 2007, p. 11)

The STIC recommended a 'thorough investigation...of Victoria's existing machinery of Government arrangements, ... leading to further legislative, regulatory and administrative reform' (STIC 2007, p. 11).

The Australian Plantation Products & Paper Industry Council (A3P) in its submission to the review of the Strategy, noted that:

Conflicting legislative and regulatory requirements among various State Government departments and local government, particularly in relation to the establishment of new plantations creates a less than competitive regulatory environment for investment in Victoria, compared with other States including NSW and South Australia (A3P 2008, p. 2).

A3P suggested that the Timber Industry Strategy should support the implementation of the Commission's recommendation made in 2005 (A3P 2008, p. 4).

Less onerous regulatory arrangements would enhance the potential for the plantation sector to contribute to sequestration of carbon dioxide. A large switch in land use towards forests could, however, have additional negative consequences, such as impacts on water supply, or positive effects, such as mitigating dryland salinity and assisting with habitat restoration. Garnaut suggests that these externalities be addressed through market-based instruments, such as for water quality and quantity (Garnaut 2008, p. 551). The Australian Government's white paper on the CPRS makes a similar point, noting that there are national frameworks to protect native vegetation, and that Australian governments have agreed to assess the significance of water interceptions on catchments and aquifers by no later than 2011 and to apply appropriate planning

management and regulatory measures where necessary (Commonwealth Government 2008b, p. 6-49).

Other regulatory issues may emerge. The *Forestry Rights Amendment Act 2000* enables trees and sequestered carbon to be owned separately from the land on which they grow. However, Hepburn (2008) notes that Victoria's approach of validating carbon rights as land interests differs from other states, and 'diminishes their scope, form and durability' (Helper 2008, p. 7).

The Commission's assessment

Given the Government's favourable response to the Commission's 2005 recommendation, and the apparent indications that regulatory problems remain, the Commission believes that the Timber Industry Strategy provides an opportunity to reduce the regulatory burden. While expanded use of plantations could bring with it some positive and adverse side effects, they can be addressed by instruments directed specifically at them.

Draft recommendation 14.4

That the Victorian Government include in the Timber Industry Strategy a new approvals process for the establishment of plantations, in which accredited operators would be deemed to comply with planning provisions. The process should be based on accreditation and ongoing compliance with an enhanced Code of Forest Practice and consistent with best practice principles of regulation.

The Commission has not formed a view on the most efficient form of carbon rights, but expects that there would be benefits from a nationally uniform approach.

The Commission invites comments on the form of carbon rights that would facilitate forestry carbon trading, and the benefits of a nationally uniform approach.

Native forests

Emissions and removals of greenhouse gases from native forests are covered under the CPRS only if the forest meets Australia's definition of a forest for Kyoto protocol purposes:

- a forest of trees with a potential height of at least two metres and crown cover of at least 20 per cent and
- in patches greater than 0.2 hectares in area and
- established after 1 January 1990 (Commonwealth Government 2008b, pp. 6-46–6-47).

This implies that naturally grown pre-existing native forests are not counted as a source of sequestration. However, international accounting rules for a post-2012 climate change agreement, including for land use, land-use change and forestry, are currently under negotiation. The Australian Government intends that, if international rules change, the CPRS should be flexible enough to include additional sinks and sources or accounting approaches that have been internationally agreed (Commonwealth Government 2008b, p. 6-48).

The primary legislation for forest management in Victoria is the *Sustainable Forests (Timber) Act 2004* (SFT Act), which allocates timber to VicForests for the conduct of its commercial forestry operations.⁶ The SFT Act also establishes timber harvesting operator licences and prescribes an enforcement and penalty regime for breaches of specified environmental requirements. The Sustainable Forest (Timber Harvesting) Regulations 2006 provide the licensing and enforcement rules for timber harvesting operators.

VicForests manages the harvesting and commercial sale of timber resources from Victoria's state forests located east of the Hume highway. It engages all harvesting and cartage contractors and directly sells the timber resources at the customer's mill door.

DSE has management responsibility for commercial harvesting in the west of the state as well as a policy and regulatory role for all state forests. DSE sets and monitors the levels of harvesting in each forest management area. DSE is also responsible for the timber harvesting operator licensing system specified by the SFT Act, monitors the level of sawlog harvesting and enforces penalty provisions for breaches of specified environmental requirements.

VicForests points out that:

DSE's relationships to VicForests covers a number of functions which are in conflict with each other - policy setter, supplier, regulator, business partner and competitor. (VicForests 2008, p. 5).

VicForests suggests that the current regulatory and governance arrangements can be improved to deliver better, more effective regulation at lower cost. For example, it suggests that the governance would be clarified by separating land management, regulation and policy mechanisms, for delivery by separate agencies (VicForests 2008, p. 2).

VicForests' suggestions for improving the institutional arrangements are consistent with the best practice principles for institutional arrangements outlined in chapter 2. The Commission has not undertaken a sufficiently comprehensive review of native forest regulation to enable it to recommend

⁶ This description of the regulatory arrangements is drawn from Sinclair Knight Merz (2008, pp. 12–15)

specific changes. However, the preparation of the Timber Industry Strategy provides an opportunity for the Government to consider such options.

Draft recommendation 14.5

That in preparing the Timber Industry Strategy the Victorian Government considers options for improving the regulation of native forests, such as separating land management, regulation and policy mechanisms, for delivery by separate agencies.

Transport

The Commission's report into options for managing transport congestion (VCEC 2006a) analysed the costs of transport congestion in Melbourne, and included observations about the environmental effects of congestion (box 14.2).

Box 14.2 Environmental effects of congestion

According to Environment Victoria, motor vehicle emissions are a primary cause of air pollution and greenhouse gas emissions in Victoria and impose significant environmental costs.

DSE stated that using carbon monoxide as an indicator, approximately 77 per cent of emissions in Melbourne are from motor vehicles. It also noted research by the BTRE and the Environment Protection Authority (EPA) Victoria had found that:

... roughly 2.9 million tonnes per annum of greenhouse gas (CO₂-e) emission in Melbourne can be attributable to road traffic congestion. This is about 25 per cent of all transport CO₂-e emissions in Melbourne and more than all industrial process CO₂-e emissions for Victoria.

The Commissioner for Environmental Sustainability, Dr Ian McPhail, noted that while congestion can increase vehicle emissions and noise pollution, the effects are difficult to quantify:

Increased congestion can also increase fuel consumption and emissions per vehicle kilometre. However the system-wide impact on total energy use and emissions is harder to estimate, given the counterbalancing effects of congestion on suppressing demand for car travel and encouraging use of more energy efficient modes.

Clarke and Hawkins stated that transport congestion exacerbates the social and environmental costs generated by motor vehicle emissions because, under congested conditions, motor vehicle fuel consumption and emission of pollutants increase.

Source: VCEC 2006a, p. 62.

Garnaut (2008, p. 526) points out that 'there are many opportunities for decarbonising the transport system'. Transport emissions could be reduced faster and at lower cost if governments:

- plan for more compact cities and invest more in public transport infrastructure

- address policies that distort the costs of vehicle ownership and use (Garnaut 2008, p. 526).

Some of the distorting policies identified by Garnaut are the responsibility of the Australian Government, such as the structure of import tariffs and the application of fringe benefits tax. State or local governments are responsible, however, for:

- car registration fees and insurance, where the costs do not increase with use, providing no incentive for people to use their cars less⁷
- the current treatment of parking spaces (Garnaut 2008, pp. 526–527).

The Commission proposed a large number of regulatory options in its inquiry report into transport congestion, including ones to address Garnaut's concerns about parking spaces (VCEC 2006a). The Government supported many of these options and commenced implementation (Government of Victoria 2007d).

The report highlighted the importance of addressing a number of supply bottlenecks both for infrastructure and public transport. It noted that demand-side options such as road use charging would not be viable without a substantial increase in public transport capacity. The Government's response to the report reiterated its policy that roads should only be tolled when it is a very substantial new road that cannot be built within current budget capacity and would not require the closure of other roads (Government of Victoria 2007d, p. 13).

In December 2008, the Government released the Victorian Transport Plan, involving \$38 billion in new projects, including \$14.1 billion investment in rail transport, recognising the substantial growth in patronage over the preceding three years and anticipating further significant increases (Government of Victoria 2008c, Kosky 2008). The Plan also expands bus services into new suburbs and the SmartBus network (Government of Victoria, 2008c, p. 85). The business case for such investments includes the contribution to reducing transport congestion and greenhouse gas emissions, and should be incorporated into cost-benefit analysis of public infrastructure expansion.

The Commission's report also made a number of recommendations to improve coordination between land use and transport planning by state agencies. These were all supported in principle by the Government. The issue was more explicitly addressed in a planning update also released by the Government in December 2008, and which was prepared in consultation with the Department of Transport:

⁷ One option, which would require an inter-governmental agreement, would be to shift the third party personal injury component of registration fees to fuel excise (Garnaut 2008, p. 527).

... to ensure that the future shape of Melbourne and Victoria is well serviced by an integrated and modern transport system.

The initiatives and projects in the Victorian Transport Plan will be based on the latest population projections from Victoria in Future 2008 and the planning analysis of Victoria's future settlement patterns in Melbourne@ 5 million. (DPCD 2008d, p. 2)

The Commission welcomes further comments on the relation between transport, planning and a carbon-constrained economy.

Finally, a set of regulatory issues could emerge around the transition to different fuels, with the introduction of, for example, hydrogen fuelled and electric cars. For example, both fuels may involve safety issues that are different to the ones involved in petroleum fuels, and may test the existing frameworks for occupational health and safety and land use regulation. The Government will need to consider whether there is a need for separate regulatory frameworks for these fuels.

14.3.8 Water

Climate change is projected to affect the quantity and location of rainfall. If indeed Victoria has moved to permanently lower rainfall, and water becomes more scarce, this will add still more benefit from institutions which allocate water to its highest valued uses. The drought means that this is already a pressing issue. In the case of urban water, for example:

... the annual cost of water restrictions to Australian households—above and beyond the cost of achieving the same level of water use with higher water charges—is probably a multi-billion dollar figure. (Byron et al. 2008, p. 402)

Participants commented on restrictions to the efficient use of water and to the use of 'new' sources of water.

Restrictions on the efficient use of water

WWF Australia pointed out that:

Continuing to insist on a 4% or even 6% cap on trade out of catchments distorts those market mechanisms that Victoria, and other governments, seem to favor with regard to the management of water within a system of private property rights. That Victoria continues with this policy does not give WWF confidence that Victoria's statements on use of market mechanisms in other areas of environmental management will be free of perverse rules and incentives that favor extractive and environmentally damaging activities. (sub. 23, p. 8)

Constraints on water trade vary considerably across Australia and in addition to restrictions on volumes can take the form of restrictions on who can participate

in water markets, exit fees, fees associated with trading seasonal allocations and entitlements. A recent review by the Productivity Commission (2006) concluded that governments should reduce constraints on water trade, because:

Structural adjustment issues are better addressed through existing safety net and rural adjustment programs, and/or additional targeted assistance where appropriate, than through restrictions on water trade (PC 2006a, p. 67).

The Commission agrees with this general assessment.

There are also opportunities to improve the performance of urban water markets. In its recent report on the metropolitan retail water sector, the Commission outlined a work program that the Government could consider to assess options for longer term reform of the metropolitan water sector that would improve the efficiency of use of water resources, while noting that considerable work remains to be done to determine which options are most promising (VCEC 2008c, pp. 183–197).

'New' sources of water

Wastewater

Eco-Harvest Australia (sub. 4) suggested that potentially beneficial water recycling is impeded by regulation, including uncertainty about which agency's (EPA or NEPHC) guidelines should be applied to recycled water projects in Victoria; the complexity of and costs of obtaining certification for wastewater systems; restrictions on multi-dwelling buildings to treat and re-use grey or black water; and restrictions on disposing treated wastewater to the ground during wet weather and winter conditions.

EcoNova suggested that:

Climate change is now an accepted phenomenon, and Australian consumers armed with this information are demanding change both on a legislative and personal level. ... However the regulatory framework needs to change for the available technology to be implemented and used. (sub. 32, p. 1)

The regulations of concern to EcoNova relate to onsite recycling and use of water which 'still classify tertiary treatment and recycling technology in the same category as septic tank systems' (sub. 32, p. 1). Eco-Harvest Australia is also concerned about regulation of recycled water.

Most of the issues raised by Eco-Harvest Australia and EcoNova draw in health issues which are beyond the Commission's expertise. In its 2008 report on the metropolitan retail water sector (VCEC 2008c), however, the Commission noted that the Government has committed to clarifying the responsibilities of water authorities for recycled water services and to bring recycled water within the existing water resource management framework. The Commission pointed out

that while the Government has provided some clarification of the rights framework, uncertainties remain. The Commission therefore recommended that the Government clarify this framework. The Government supported this recommendation and indicated that a report clarifying the rights to alternative water sources and identifying areas where the rights framework could be improved would be completed by June 2009 (Government of Victoria 2008b, p. 9).

In its recent water inquiry, the Commission also noted gaps in the regulatory framework that could discourage use of stormwater (VCEC 2008c, pp. 106–110). The Municipal Association of Victoria raised this issue in the current inquiry, arguing that legislation does not give councils the right to capture, store and trade stormwater for re-use:

Stormwater has been the subject of legal interpretation in cases where councils have sought advice on its ownership as a resource. The interpretation suggests that local government has no ‘proprietary’ rights to stormwater, only ‘possessory’ rights limited to controlling and conveying flows to mitigate property and social loss and damage. At present councils do not have the rights to capture, store and trade stormwater for reuse.

This example demonstrates where sustainability objectives within local government can be inhibited by current legislation, and regulatory review can provide councils with the option to drive innovation and best practice in the sector. (sub. 17, p. 8)

The Government accepted the Commission's recommendations to clarify rights and responsibilities in this area as well (Government of Victoria 2008b, p. 9). The Commission understands that DSE is currently preparing the report foreshadowed in the Government’s response to the water inquiry.

14.4 Regulatory and adjustment barriers extending beyond particular sectors

14.4.1 Approvals processes

Adjustments in many industries will involve construction that requires planning approval. Participants suggested that planning, land use and environmental regulations can inhibit adjustment within the electricity sector:

- Martin Foley MP (sub. 16, p. 8) argued that land planning and approvals processes are a barrier to entry to clean energy technologies in the electricity market and that land use planning can delay renewable energy projects.
- The ESAA (sub. 44, p. 5) requested the Commission to emphasise minimising the burden of planning and environmental regulation, to allow

timely decisions in a context of large augmentations of transmission and gas pipeline infrastructure.

Planning and land use issues are likely to become particularly pressing for renewable power sources, such as wind power and geothermal energy, which have to be located where the energy source is, and which is unlikely to be where generation is currently concentrated. Similar issues are likely to arise for carbon capture and storage projects.

These areas of regulation have been discussed in chapters 6, 7 and 8, where recommendations have been made to streamline processes and avoid unnecessary costs. For example, the Commission is proposing:

- streamlining the EES process, with a new dual pathway process (draft recommendation 6.1). Large electricity projects and carbon dioxide storage projects may qualify for the second pathway, which integrates the approval and assessment processes for projects that are considered to be strategically significant.
- streamlining works approval processes (draft recommendations 8.1–8.5).
- changing native vegetation regulation, by simplifying the guidance for assessing the quantity and quality of native vegetation (draft recommendation 7.1) and the rules for determining offsets (draft recommendation 7.4); improving information for businesses about the locations and types of native vegetation to be protected (draft recommendation 7.6); and addressing the potential for overlap between state and federal regulations (draft recommendation 7.10).

14.5 Conclusion

Most parts of Victoria's economy will need to adjust to a carbon-constrained economy, but the industries discussed in this chapter are likely to be particularly affected. The Commission has found examples of regulations that may impede adjustment or increase the costs of adjusting in most of these industries. However, the regulations concerned are typically part of a much broader regulatory 'scaffolding', and removing one part of this scaffolding may sometimes have broader and possibly adverse implications for the frameworks as a whole. This is clearly the case for the electricity industry in making the transition to a higher level of dependency on alternative sources of energy.

The Government's policy intention in positioning Victoria to respond to the challenge of a carbon-constrained economy is clear. How effectively this adjustment takes place will reflect a range of factors, including pricing, technology adaptation, infrastructure provision and the regulatory framework. There are some risks in disaggregating regulatory issues from other factors. Nevertheless, the Commission has put forward a number of suggestions which

would increase the opportunities for efficient industries to be successful in a carbon-constrained economy. The regulatory changes that are likely to have an early and significant impact are those which the Commission has identified elsewhere in the report, and particularly those relating to delays in approval processes. The challenge to Victoria of a carbon-constrained economy only increases the urgency of addressing these issues.

Appendix A: Consultation

A.1 Introduction

In keeping with its charter to consult extensively during public inquiries, the Victorian Competition and Efficiency Commission advertised the inquiry into Victoria's environmental regulation in the major metropolitan newspapers in August and September 2008, following the Treasurer's announcement of the terms of reference on 23 July 2008. The Commission then published an issues paper in August 2008, which outlined:

- the scope of the inquiry
- how to make a submission
- the Commission's consultation processes
- the inquiry timetable.

The issues paper invited inquiry participants to make submissions. The Commission received 67 submissions before the release of the draft report (section A.2).

The Commission undertook an extensive program of meeting and visiting with over one hundred businesses, academics, associations and individuals (section A.3).

The Commission held two roundtables in November and December 2008 on the environmental assessment process and native vegetation regulations which included participants from a range of business, government and not-for-profit sectors (section A.3).

The Commission appointed The Allen Consulting Group to prepare a paper on the costs of major areas of Victorian environmental regulation.

To encourage public debate on the draft report, the Commission has made these documents available on its website at www.vcec.vic.gov.au. The views presented are those of the consultants, the Commission's position on the issues covered in these reports is reflected in this draft report.

A.2 Submissions

The invitation to make submissions was open to members of the public, community groups, employees, businesses, industry associations, Victorian Government departments and agencies, and local government. The Commission received 67 submissions (table A.1). The submissions are public documents that can be viewed on the Commission's website.

Table A.1 Submissions received

<i>Participant</i>	<i>Submission no.</i>
Raymond Hoser	1
APA Group & Investra Limited	2
SITA Environmental Solutions	3
Eco-Harvest Australia	4
Urban Development Institute of Australia (Vic)	5
Carol O'Donnell	6
The Bendigo and District Environment Council Inc	7
Active Research Pty Ltd	8
Nexus Energy	9
EKOLiving	10
Colac Otway Shire	11
Victorian Abalone Industry	12
Victorian Local Governance Association	13
Earth Resources Development Council	14
Indigo Shire Council	15
Martin Foley MP	16
Municipal Association of Victoria	17
Loy Yang Power	18
Victorian Water Industry Association	19
Northern Alliance for Greenhouse Action	20
Alcoa of Australia	21
Yarra Valley Water	22
WWF Australia	23
Monash Sustainability Institute	24
Cement Concrete & Aggregates Australia	25
Melbourne Water	26

Table A.1 Submissions received (continued)

<i>Participant</i>	<i>Submission no.</i>
Energy Retailers Association of Australia	27
Jemena	28
Wellington Shire Council	29
South East Water	30
Philip Morris Limited	31
ECONOVA	32
Barwon Water	33
Boral Resources Vic Pty Limited	34
Construction Material Processors Association Inc	35
Monash Energy	36
Australian Paper	37
Bendigo Business Council	38
Energy Users Association	39
Nillumbik Shire Council	40
Origin Energy	41
Barry Watson	42
Victorian Farmers Federation	43
Energy Supply Association of Australia	44
Esso Australia Pty Ltd	45
Australian Petroleum Production & Exploration Association Limited	46
Janina McMahon	47
Land Owners Rights Association Inc	48
City of Greeter Bendigo	49
VicRoads	50
Housing Industry Association	51
Western Coastal Board	52

Table A.1 Submissions received (continued)

<i>Participant</i>	<i>Submission no.</i>
Alison Joseph	53
Department of the Environment, Water, Heritage and the Arts (CWlth)	54
Coffey Natural Systems	55
Master Builders Association of Victoria	56
Department of Sustainability & Environment	57
Minerals Council of Australia	58
Victorian National Parks Association	59
Wood Products Victoria	60
Department of Primary Industries	61
Toyota	62
Citipower and Powercor Australia	63
Confidential Submission	64
Pacific Hydro	65
Australian Conservation Foundation	66
Janina McMahon	67

A.3 Roundtable and Consultations

The Commission held 2 roundtables in November and December 2008 on the environmental assessment process and native vegetation regulations. In addition, further consultations were held with various employees, businesses, industry associations, Victorian Government departments and agencies. Table A.2 outlines the various participants in the workshop as well participants in the consultation process.

Table A.2 Roundtable participants

<i>Participant</i>
Ian Munro – Department of Innovation, Industry & Regional Development
John Panozzo – Department of Innovation, Industry & Regional Development
Jason Shaw –Stockland
Peter Bielby – Iluka Resources Limited
Richard Aldous – Department of Primary Industries
Doug Sceney - Department of Primary Industries
Simon Toop – Department of Sustainability & Environment
Kimberely Dripps - Department of Sustainability & Environment
Kim Lowe - Department of Sustainability & Environment
Steven Tsikaris – Department of Treasury & Finance
Stuart McConnell – Environment Protection Authority
Trevor Blake – Department of Planning & Community Development
John Ginivan - Department of Planning & Community Development
Christine Wyatt – Maunsell AECOM
Craig Jennion – Housing Industry Association
Ron Espie – Australand
Graeme Ford – Victorian Farmers Federation
Jenny Tame - Victorian Farmers Federation
Luke Murphy – Municipal Association of Victoria
Helen Murphy – VicRoads
Christopher Reeve – VicRoads
Mike Gooley – Trust for Nature
Megan Davison – Minerals Council of Australia

Table A.3 Consultation Participants

<i>Participant</i>
Alcoa World Alumina
Associate Professor Jacqueline Peel, University of Melbourne
Australand
Australian Conservation Foundation
Australian Food and Grocery Council
Australian Industry Group (AIG)
AV Jennings
Bendigo and District Environment Council
Bendigo Business Council
Bendigo Mining
Best Hooper Lawyers – John Cicero
BHP Billiton Petroleum Pty Ltd
BP Australia
Biosio Research – Charles Meredith
Boral Resources (Vic) Pty Ltd
Bosch
Brad Jessup, ANU College of Law
Bridgestone
British Petroleum (BP)
Cadbury Schweppes Australia Pty Ltd
City of Greater Bendigo
City of Melbourne
Commission for Environment Sustainability

Table A.3 **Consultation Participants** (continued)

Participant
Commonwealth Treasury
Construction Materials Processors Association
Co-operative Research Centre for Greenhouse Gas Technologies
Dennis Family Homes
Department of Climate Change (Cwlth.)
Department of Environment, Water, Heritage and the Arts (Cwlth.)
Department of Innovation, Industry and Regional Development
Department of Planning & Community Development
Department of Premier & Cabinet
Department of Primary Industries
Department of Sustainability & Environment
Department of Treasury & Finance
Donald Minerals Sands
Dr. Yet Bryant, Monash Law
Energy Users Association of Australia (EUAA)
Environment Defenders Office
Environment Protection Authority
Environment Victoria
EWSR Australia – Adrian Vlor
Fonterra Australia Pty Ltd
Foster’s Group
Geocycle
Growth Areas Authority (GAA)

Table A.3 **Consultation Participants** (continued)

<i>Participant</i>
Housing Industry Association
Huntsman
Illuka Mineral Resources
International Power
Investa Land
KPMG – Gary Veale
Linfox
Martin Foley MP
Maryvale Pulp Mill
Maunsell AECOM – Christine Wyatt
Metricon
Minerals Council of Australia (Victorian Branch)
Monash Energy
Municipal Association of Victoria
Northgate Minerals
Organisation for Economic Cooperation and Development (OECD)
Paperlinx
Port Philip and Western Port Catchment Authority
Philip Morris Limited
Productivity Commission
Professor Harry Clarke, Latrobe University
Professor John Freebairn
Professor Joshua Gans, Melbourne Business School

Table A.3 **Consultation Participants** (continued)

Participant

Professor Lee Godden

Professor Paul Martin, University of New England

Professor Philip Adams, Monash University

Professor Ross Garnaut

Rocla Industries

Shell Australia

State Services Authority

Stockland

Sustainability Victoria

Toyota

TRU Energy

Trust for Nature

Urban Development Institute of Australia (Victoria Branch)

Vic Urban

VicRoads

Victorian Civil Construction Industry Alliance

Victorian Farmers Federation

Victorian National Parkes Association

References

A3P (Australian Plantation Products & Paper Industry Council) 2008, *Submission to the Review of the Timber Industry Strategy*, May, Canberra.

ABS (Australian Bureau of Statistics) 1994, *Cost of Environment Protection Australia, Selected industries 1990-91*, cat. no. 4603.0, Canberra.

— 1995, *Cost of Environment Protection Australia, Selected industries, 1991-92*, cat. no. 4603.0, Canberra.

— 1998, *Environmental Protection Expenditure Australia, 1994-95 and 1995-96*, cat. no. 4603.0, Canberra.

— 2002, *Environmental Protection, Mining and Manufacturing Industries, Australia 2000-01*, cat. no. 4603.0, Canberra.

— 2008a, *Australian National Accounts: State Accounts, 2007/08*, cat no. 5220.0, Canberra

— 2008b, *Average Weekly Earnings, Australia - TABLE 11B. Average Weekly Earnings, Victoria (Dollars) – Trend*, cat. no. 6302.0, August, Canberra.

— 2009, *Australian Labour Market Statistics*, cat. no. 6105.0, January, Canberra.

ACG (The Allen Consulting Group) 2000, *Review of the Environment Protection Act 1970 and the Litter Act 1987*, National Competition Policy review, Final report, August, Melbourne.

— 2009, *The cost of environmental regulation in Victoria*, Report to the Victorian Competition and Efficiency Commission, February, Melbourne.

Ackerman, F 2005, 'Cost-effective recycling', in Environmental Assessment Institute 2005, *Rethinking the waste hierarchy*, Copenhagen, March, pp. 22–34.

AEMC (Australian Energy Market Commission) 2008a, *Review of demand-side participation in the national electricity market, Stage 2: Issues Paper*, 16 May 2008, Sydney.

— 2008b, *Review of energy markets in light of climate change policies: Scoping Paper*, 10 October 2008, Sydney.

— 2008c, *Review into the use of total factor productivity for the determination of prices and revenues: framework and issues paper*, 12 December 2008, Sydney.

— 2009, *Current reviews: electricity*, www.aemc.gov.au/electricity.php?r=20070710.172341.pdf (accessed 17 February 2009).

AFMA (Australian Fisheries Management Authority) 2009, *Ecologically Sustainable Development in Context*, www.afma.gov.au/environment/esd/default.htm (accessed on 12 February 2009).

AGV (Auditor General Victoria) 2008, *Victoria's planning framework for land use and development*, Melbourne.

AIG (Australian Industry Group) 2007, *Environmental sustainability and industry: road to a sustainable future, findings of the national survey on environmental sustainable practices*, September.

Akerlof, G A 1970, 'The Market for 'Lemons': Quality Uncertainty and the Market Mechanism', *Quarterly Journal of Economics*, Vol. 84, Issue 3, pp. 488–500.

ANAO (Australian National Audit Office) 2000, *Better practice principles for performance management*, Canberra.

Argy, S & Johnson, M 2003, *Mechanisms for improving the quality of regulations: Australia in an international context*, Productivity Commission staff working paper, Melbourne.

ATSE (Australian Academy of Technological Sciences and Engineering) 2009, *Energy technology for climate change: accelerating the technology response*, ATSE, Melbourne.

Auditor-General for Western Australia 2008, *Auditor General's Report – Performance Examination – Improving Resource Project Approvals*, Report 5, October, Perth.

Australian Paper 2006, *Productivity Commission Report into Waste Management – Submission July 2006*, Melbourne.

APVMA (Australian Pesticides and Veterinary Medicines Authority) 2009, *APVMA Standard on Good Regulatory Science Practice*, www.apvma.gov.au/community/downloads/CCC39_Standard_GRSP.pdf (accessed 1 March 2009).

Australian Wildlife Conservancy (nd), *About Australian Wildlife Conservancy*, www.australianwildlife.org/About-AWC.aspx (accessed 11 March 2009).

Banks Review (Regulation Taskforce) 2006, *Rethinking regulation: Report of the taskforce on reducing regulatory burdens on business*, Report to the Prime Minister and the Treasurer, Canberra.

Barrymore, S & Mathison, A 2008, 'Legislative notes: Offshore Petroleum (Greenhouse Gas storage) Bill 2008 (Cth)', *Australian Resources and Energy Law Journal*, vol. 27, pp. 349–367.

- Batchelor, Hon. P (Minister for Energy and Resources and Community Development) 2008a, Second Reading Speech, Greenhouse Gas Geological Sequestration Bill, *Hansard*, 11 September 2008, pp. 3668–3674.
- 2008b, ‘New major player to explore Victoria’s geothermal hotspots’, Media release, Melbourne, 27 November.
- Bates, G 2001, *A duty of care for the protection of biodiversity on land*, Consultancy Report, Report to the Productivity Commission, Ausinfo, Canberra.
- 2006, *Environmental law in Australia*, 6th Edition, Butterworths, Sydney.
- BC (Building Commission Victoria) 2008, *5 star standard for all new homes*, www.buildingcommission.com.au/www/html/390-5-star-standard-for-all-new-homes.asp (accessed 29 January 2009).
- BDA Group 2005, *Scoping study on a nutrient trading program to improve water quality in Moreton Bay*, report to Queensland Government, Environmental Protection Agency, Melbourne and Canberra.
- Beesley, M 1997, *Privatization, Regulation and Deregulation* (second edition), Routledge, London.
- Bennett and Collins (in press), The policy implications of sustainable consumption, article submitted to the Australian journal of Environmental Management.
- Better Regulation Executive 2008, *Regulatory Budgets: a consultation document*, HM Government, London.
- Better Regulation Task Force (UK) 2003, *Independent Regulators*, London.
- BHP Billiton 2007, *BHP Billiton Sustainability Report – Full Report 2007*, Melbourne.
- BIE (Bureau of Industry Economics), 1990, *Environmental Assessment Impact on Major Projects*, Research Report No. 35, AGPS, Canberra.
- Briggs, C 2003, ‘Implementing an environmental management system: a guide for small and medium sized businesses’, *Waste Management and Environment*, Special reports, July, www.wme.com.au/categories/special_reports/july5_03.php (accessed 9 December 2008).
- Brown, T & Moselle, B 2008, *Use of total factor productivity analyse in network regulation: case studies of regulatory practice*, Paper prepared for the AEMC review into the use of total factor productivity for the determination of prices and revenues, Brussels.

Brumby, Hon J. (then Treasurer of Victoria) 2006, *2006-07 Strategy and outlook: Budget paper no. 2*, Melbourne.

Buchanan J M & Yoon, Y J 2000, 'Symmetric tragedies: commons and anti-commons', *Journal of Law and Economics*, April, Vol. 43, Issue 1, pp. 1–13.

Budge, T 2009, Correspondence, March.

Bush Heritage Australia (2009), *About Us*, www.bushheritage.org.au/about (accessed 11 March 2009).

Byron, N, Johnston, A, Baker, R & Barker, A 2008, 'Towards urban water reform', *The Australian Economic Review*, vol. 41, no. 4, pp. 401–12.

Cameron, L 2006, 'Environmental Risk Management in New Zealand – Is There Scope to Apply A More Generic Framework?', *New Zealand Treasury Policy Perspectives Paper 06/06*, July, Wellington.

CES (Commissioner for Environmental Sustainability) 2008a, *Strategic Audit of Victorian Government Agencies' Environmental Management Systems*, January, Melbourne.

— 2008b, *State of the environment Victoria 2008 summary*, Melbourne.

Clear Horizons 2007, *Evaluation of the Victorian Biodiversity Strategy*, Final Report, for the Department of Sustainability and Environment, November.

CO2CRC (Cooperative Research Centre for Greenhouse Gas Technologies) nd, *An emission-free vision for the future*, Canberra.

— 2008, *CCS Activity in Australia 2008*, Canberra.

COAG (Council of Australian Governments) 2008a, *Council of Australian Governments' Meeting*, 2 October, www.coag.gov.au/coag_meeting_outcomes/2008-10-02/index.cfm (accessed 11 March 2009).

— 2008b, *Council of Australian Governments' Meeting*, 29 November, www.coag.gov.au/coag_meeting_outcomes/2008-11-29/index.cfm (accessed 11 March 2009).

Collins, D 2005, *Waste policy, MBIs & misguided information*, Spring 2005 Seminar Series of the Economics and Environment Network, 3 November, Australian National University, Canberra.

Commonwealth Government 1992, *National Strategy on Ecological Sustainable Development*, www.environment.gov.au/esd/national/nsesd/strategy/index.html (accessed 11 March 2009).

— 2007a, *Best Practice Regulation Handbook*, Canberra.

- 2007b, 'Postscript 2003 to the Government Response to the Productivity Commission Inquiry into the Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies', www.environment.gov.au/esd/national/productivity/pcesd-response-postscript.html (accessed 22 December 2008).
- 2007c, *Environmental Offsets, Market-Based Instruments for NRM Change*, Canberra.
- 2008a, *Australia's low pollution future: the economics of climate change mitigation*, Commonwealth of Australia.
- 2008b, *Carbon pollution reduction scheme: Australia's low pollution future*, White paper, Volume 1, December.
- 2008c, *Carbon pollution reduction scheme, Green paper, Summary*, Canberra.
- 2008d, Independent review of the *Environment Protection and Biodiversity Conservation Act*, Discussion Paper.
- 2008e, 'Ecologically Sustainable Development and the RIS Process', Office of Best Practice Regulation, Department of Finance and Deregulation, www.finance.gov.au/obpr/ris/esd-and-ris.html (accessed 13 February 2009).
- Communities and Local Government (nd), 'Planning Act 2008', www.communities.gov.uk/planningandbuilding/planning/planningpolicyimplementation/reformplanningsystem/planningbill/ (accessed 12 March 2009).
- CAV (Consumer Affairs Victoria) 2008, *Better Business Regulation*, May, Melbourne.
- CWW (City West Water) 2009, *waterMAP Program*, www.citywestwater.com.au/business/watermap_program.htm (accessed 5 January 2009).
- DAFF (Department of Agriculture, Fisheries and Forestry) 2007, *What are market based instruments?*, Fact sheet, Canberra.
- DCC (Department of Climate Change) 2008a, *National Greenhouse and Energy Reporting Guidelines*, Canberra.
- 2008b, *Online System for Comprehensive Activity Reporting (OSCAR) - Electronic Data Upload Discussion Paper*, Canberra.
- 2009, *OSCAR - Online System for Comprehensive Activity Reporting*, www.climatechange.gov.au/oscar/index.html (accessed 13 February 2009).
- DHS (Department of Human Services) 2008, *Proposed changes to the Food Act: Consultation Paper*, July, Melbourne.

Dessai, S & van der Sluijs, J 2007, *Uncertainty and Climate Change Adaptation – a Scoping Study*, Copernicus Institute for Sustainable Development and Innovation, Utrecht.

DEWHA (Department of the Environment, Water, Heritage and the Arts) 2007, *Intergovernmental Agreement on the Environment*, www.environment.gov.au/esd/national/igae/index.html (accessed 28 January 2009).

— 2008a, *National Environment Protection Council*, www.environment.gov.au/about/councils/nepc/index.html (accessed 28 January 2009).

— 2008b, *National Pollutant Inventory Guide*; July, Version 4.2, Canberra.

DFD (Department of Finance and Deregulation) 2009, *Business Cost Calculator*, <https://bcc.obpr.gov.au/home.aspx>, (accessed 11 March 2009).

DNRE (Department of Natural Resources and Environment) 2002, *Victoria's native vegetation management: A framework for action*, Melbourne.

DPC (Department of Premier and Cabinet) 2008, *Growing Victoria Together Progress Reports*, www.dpc.vic.gov.au (accessed 20 January 2009).

DPCD (Department of Planning and Community Development) 2008a, *Environment assessment process in Victoria*, www.dse.vic.gov.au/DSE/nrenpl.nsf/LinkView/17BB9EF931D6DC1FCA256D480003CF34B7237E83DC18022BCA2572DA007F9DD9 (accessed 29 January 2009).

— 2008b, *Review of Planning and Environment Act*, www.dse.vic.gov.au/DSE/nrenpl.nsf/childdocs/-3AFDBF77580D7A93CA256D19002583CC?open (accessed 24 October 2008).

— 2008c, Correspondence, 6 November.

— 2008d, *Melbourne 2030: A planning update Melbourne@ 5 million*, December.

— 2009a, *Summary of EES Process*, [www.dse.vic.gov.au/CA256F310024B628/0/5881F5916F4247CACA257325001D6EE1/\\$File/EES+process+flowchart.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/5881F5916F4247CACA257325001D6EE1/$File/EES+process+flowchart.pdf) (accessed 11 March 2008).

— 2009b, *Environment Assessment Referrals July 2006 - June 2007*, www.dse.vic.gov.au/DSE/nrenpl.nsf/childdocs/-5CB2E7637B969E93CA256D1900290F46?open (accessed 12 March 2008).

DPI (Department of Primary Industries) 2008a, *Victoria's Minerals, Petroleum and Extractive Industries – 2007/08 Statistical Review*, Melbourne.

—— 2008b, *A regulatory framework for the long-term underground geological storage of carbon dioxide in Victoria*, Melbourne, January.

—— 2008c, *Proposed rule change to the Australian Energy Market Commission to permit the use of the 'TFP approach'*, Submission to the Australian Energy Market Commission.

—— 2008d, Correspondence, 19 December.

—— 2009, Correspondence, 10 March.

DRET (Department of Resources, Energy and Tourism) 2008, *Industry Guidelines: Energy Efficiency Opportunities*, Canberra.

Driscoll, J. 2006, A preliminary regional geothermal assessment of Victoria, Australia, printed from CSIRO Publishing -ASEG Extended abstracts, www.publish.csiro.au/paper/ASEG2006ab039.htm

DSE (Department of Sustainability and Environment) 2004, *Native vegetation: sustaining a living landscape, Vegetation Quality Assessment Manual—Guidelines for applying the habitat hectares scoring method*, Version 1.3, Melbourne, October.

—— 2005, *Our Environment, Our Future – Victoria's Environmental Sustainability Framework – Creating a healthier environment and a stronger state*, Melbourne.

—— 2006a, *Native vegetation: Scoring gain from an offset – DSE gain calculator user instructions*, East Melbourne.

—— 2006b, *Vegetation gain approach—Technical basis for calculating gains from improved native vegetation management and revegetation*, East Melbourne.

—— 2006c, *Our environment our future: sustainability action statement*, Melbourne.

—— 2006d, *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978*, (7th ed), [www.dse.vic.gov.au/CA256F310024B628/0/6243C40E42C9449DCA25719C001D2DF4/\\$File/DSE097_EES_FA.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/6243C40E42C9449DCA25719C001D2DF4/$File/DSE097_EES_FA.pdf) (accessed 11 March 2009).

—— 2007a, *Native vegetation: Guide for assessment of referred planning permit applications*, Victorian Government, East Melbourne, April.

—— 2007b, *Native vegetation: Planning permit applicant's kit*, Victorian Government, East Melbourne, April.

—— 2007c, *waterMAP handbook*, Melbourne.

—— 2008a, Submission to the Victorian Competition and Efficiency Commission (2008), *A State of liveability: An inquiry into enhancing Victoria's liveability*, Draft report, Melbourne, May.

—— 2008b, *Biodiversity Strategy Renewal*, www.dse.vic.gov.au/DSE/nrence.nsf/childdocs/-8946409900BAC6344A256B260015D4AF?open (accessed 29 January 2009).

—— 2008c, *Native vegetation net gain accounting first approximation report*, East Melbourne.

—— 2008d, Correspondence, 9 December.

—— 2009a, Correspondence, January 29.

—— 2009b, Correspondence, 16 February.

DTF (Department of Treasury and Finance) 2008a, *Reducing the Regulatory Burden: 2007-08 Progress Report*, Statement by the Hon. John Lenders (Treasurer of Victoria) Melbourne.

—— 2008b, *Service Delivery 2008-09*, Budget Paper No. 3, Melbourne.

Eigenraam, M, Strappazon, L, Lansdell, N, Ha, A, Beverly, C & Todd, J 2006, *EcoTender: Auction for Multiple Outcomes*, IN GROUP, M.-B. I. P. P. W. (eds) National Market-Based Instruments Pilot Program - Round 1. Canberra.

Environment Assessment Review Advisory Committee 2002, *Report of the Environment Assessment Review Advisory Committee*, Hearings undertaken from 15 to 29 August 2002, 2 December, Melbourne, [www.dse.vic.gov.au/CA256F310024B628/0/C2BEE4394A4DD233CA25702000A2BFA/\\$File/Environment+Assessment+Review+AC+Report+.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/C2BEE4394A4DD233CA25702000A2BFA/$File/Environment+Assessment+Review+AC+Report+.pdf) (accessed 11 March 2009).

Environment Link 2005, *Final Report – Review of the National Pollutant Inventory*, prepared for the Department of the Environment and Heritage, Canberra.

EDO (Environmental Defenders Office) 2008, *Submission on the Land and Biodiversity Green Paper*, July.

EPA (Environment Protection Authority Victoria) 1989, *Interim guidelines for control of noise from industry in country Victoria*, N3/89, April, Melbourne.

—— 1996, *Regulatory impact statement: proposed Environment Protection (Scheduled Premises & Exemptions) Regulations*, May, Melbourne.

—— 1998a, *Guidelines for environmental management system certification*, Information Bulletin, Publication 619, June, Melbourne.

—— 1998b, *Environment Protection (Prescribed Waste) Regulations, Outline of regulations*, Information Bulletin, Publication 623, September, Melbourne.

- 1999, *Environment Protection (Prescribed Waste) Regulations, Annual returns of prescribed industrial waste*, Information Bulletin, Publication 661, August, Melbourne.
- 2001, *Best practice environmental management: Siting, design, operation and rehabilitation of landfills*, Publication 788, October, Melbourne.
- 2002, *Protocol for environmental management: Greenhouse gas emissions and energy efficiency in industry*, January, Melbourne.
- 2003, *Environmental auditing in Victoria*, Information Bulletin, Publication 902, April, Melbourne.
- 2005a, *Industrial Waste Management Policy (Prescribed Industrial Waste) progress review*, Information Bulletin, Publication 994, May, Melbourne.
- 2005b, *Annual report 2004-05*, Melbourne.
- 2006a, *Electronic lodgement of waste transport certificates*, Information Bulletin, Publication 758.2, August, Melbourne.
- 2006b, *Environmental auditing in Victoria*, www.epa.vic.gov.au/envaudit/eas.asp (accessed 25 February 2009).
- 2006c, *EPA Living sustainably*, Strategic and corporate plan, Melbourne.
- 2006d, *Understanding point source and non-point source pollution*, www.epa.vic.gov.au/water/threats/sources.asp (accessed 27 January 2009).
- 2007a, *Hazard classification of waste*, Publication 1096, February, Melbourne.
- 2007b, *Environment Protection (Scheduled Premises and Exemptions) Regulations 2007 – Regulatory impact statement*, Melbourne, April, Melbourne.
- 2007c, *EPA Publication 448 classification of wastes*, Information Bulletin, Publication 448.3, May, Melbourne.
- 2007d, *Environmental auditing of contaminated land*, Publication 860.1, August, Melbourne.
- 2007e, *Soils sampling guideline (off-site management and acceptance to landfill)*, Information Bulletin, Publication 1178, November, Melbourne.
- 2007f, *Corporate licensing — a world first, Cutting red tape for Victorian business*, Publication 1190, November, Melbourne.
- 2007g, *Instructions for completion of waste transport certificates*, Information Bulletin, Publication 395.3, December, Melbourne.
- 2007h, *2007 Annual report*, Melbourne.

- 2007i, *EPA licences and approvals*, www.epa.vic.gov.au/bus/licences/default.asp (accessed 10 February 2009).
- 2007j, *State environment protection policies*, www.epa.vic.gov.au/about_us/legislation/sepps.asp (accessed 15 March 2009).
- 2007k, *Environment and Resource Efficiency Plans Regulations 2007 – Regulatory Impact Statement*, Melbourne.
- 2007l, *Environmental legislation*, www.epa.vic.gov.au/about_us/legislation/ (accessed 29 January 2009).
- 2008a, *2008 Annual report*, Melbourne.
- 2008b, Correspondence, December 8.
- 2008c, Correspondence, December 18.
- 2008d, *Environment and Resource Efficiency Plans (EREP) and Water Management Action Plans (waterMAP)*, Fact Sheet, Publication 1212, March, Melbourne.
- 2008e, *Works approvals*, www.epa.vic.gov.au/bus/licences/works_approvals.asp (accessed 3 March 2009).
- 2008f, *Instructions for completing works approval, licence & licence amendment applications*, Information Bulletin, Publication 375.7, July, Melbourne.
- 2008g, *Accredited licensee system – Guidelines for applicants*, Information Bulletin, Publication 424.2, July, Melbourne.
- 2008h, *About works approval and licence applications*, www.epa.vic.gov.au/bus/comments/ (accessed 11 February 2009).
- 2008i, *Environment Protection (Amendment) Act 2006*, www.epa.vic.gov.au/about_us/legislation/amendment_act.asp (accessed 3 September 2008).
- 2008j, *Corporate licence launched in Grampians Wimmera Mallee*, www.epa.vic.gov.au/publications/epanews/grampians-wimmera.asp (accessed 11 February 2009).
- 2008k, *Environment and Resource Efficiency Plans (EREP) and the Energy Efficiency Opportunities program*, Melbourne.
- 2008l, *Environment And Resource Efficiency Plans Regulations 2008 – Recalculation Of The SCM Following Program Finalisation*, Melbourne.
- 2008m, *The future of hazardous waste management in Victoria*, Discussion Paper, Publication 1238, July, Melbourne.

- 2008n, *Hazardous waste regulatory review, Notes of workshop 1*, EPA staff and the Prescribed Industrial Waste Advisory Committee, 30 July, Victoria University Melbourne.
- 2008o, *Industrial Waste Management Policy (Prescribed Industrial Waste) – Three-year progress review*, Information Bulletin, Publication 1246, July, Melbourne.
- 2008p, *Prescribed industrial waste disposed to landfill – Annual trends*, Melbourne.
- 2008q, Correspondence, 22 December.
- 2008r, *Corporate licences*, www.epa.vic.gov.au/bus/licences/corporate_licences.asp (accessed 11 February 2009).
- 2008s, *Hazardous waste regulatory review, Notes of workshop 2*, 5 August, EPA Victoria Conference Room, Melbourne.
- 2008t, *Draft for comment: Industrial water reuse guidelines*, Publication 1265, Melbourne.
- 2008u, *Environmental offsets*, Discussion paper, Publication 1202.3, June, Melbourne.
- 2008v, *Transporting waste / WasteCert*, www.epa.vic.gov.au/waste/transporting_waste_wastecert.asp (accessed 2 March 2009).
- 2008w, Correspondence, 11 November.
- 2008x, *EREP Guidelines: Environment & Resource Efficiency Plans*, Melbourne.
- 2008y, Correspondence, November 19.
- 2009a, *Sustainability covenants*, www.epa.vic.gov.au/bus/sustainability_covenants/default.asp (accessed 6 February 2009).
- 2009b, Correspondence, 23 January.
- 2009c, Correspondence, 2 February.
- 2009d, Correspondence, 9 February.
- 2009e, Correspondence, 10 February.
- 2009f, Correspondence, 16 February.
- 2009g, Correspondence, 18 February.
- 2009h, Correspondence, 19 February.
- 2009i, Correspondence, 23 February.
- 2009j, Correspondence, 24 February.

- 2009k, Correspondence, 27 February.
- 2009l, *Avoiding prescribed industrial waste*, www.epa.vic.gov.au/projects/PIW_Reduction/default.asp (accessed 2 March 2009).
- 2009m, *Waste*, www.epa.vic.gov.au/waste/default.asp (accessed 12 February 2009).
- 2009n, *Draft Environment Protection (Industrial Waste Resource) Regulations – Regulatory impact statement*, Publication 1275, March, Melbourne.
- 2009o, Correspondence, 4 March.
- 2009p, Correspondence, 10 March.
- 2009q, *Licences*, www.epa.vic.gov.au/bus/licences/licences.asp (accessed 12 February 2009).
- 2009r, *Industry Greenhouse Program*, www.epa.vic.gov.au/greenhouse/industry-greenhouse-program.asp (accessed 13 February 2009).
- 2009s, Correspondence, 16 February.
- 2009t, Correspondence, 6 March.
- Ernst & Young, ‘Australia’s Marine Protected Areas: Challenging Times Ahead’, 2006, pp. 106, www.bia.org.au/marine-parks/ (accessed 27 November 2008).
- ESC (Essential Services Commission) 2009, *Submission to the Australian Energy Market Commission review into the use of total factor productivity for the determination of prices and revenues: framework and issues paper*, March.
- ESDSC (Ecologically Sustainable Development Steering Committee) 1992, *National Strategy for Ecologically Sustainable Development*, www.environment.gov.au/esd/national/nsesd/strategy/intro.html#GoalsEtc (accessed 20 January 2009).
- European Commission 2000, ‘Commission adopts Communication on Precautionary Principle’, Press Release, 2 February, Brussels, <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/00/96&format=HTML&aged=0&language=EN&guiLanguage=en> (accessed 30 December 2008).
- 2006, *Impact assessment guidelines*, March, Brussels.
- 2008, *Second strategic review of Better Regulation in the European Union*, January, Brussels.

Exxon Mobil 2008, *Submission to the House Standing Committee on Primary Industries and Resources Inquiry into Exposure Draft Legislation for Greenhouse Gas Storage*, Melbourne, June.

FAO (Food and Agriculture Organisation of the United Nations) 1996, *Precautionary Approach to Capture Fisheries and Species Introductions*, FAO Technical Guidelines for Responsible Fisheries No. 2, www.fao.org/DOCREP/003/W3592E/W3592E00.HTM (accessed 12/2/09).

FDA (Food and Drug Administration) 2003, *FY 2003 Performance report to the President and the Congress for the Prescription Drug User Fee Act of 1992 as reauthorized and amended by the Food and Drug Administration Modernization Act of 1997 and the Public Health Security and Bioterrorism Preparedness and Response Act of 2002*, www.fda.gov/oc/pdufa/report2003/default.htm (accessed 10 February 2009).

Friedrich R, Rabl A and Spadaro J V, 2001, 'Combien vaut l'air propre – how much is clean air worth', *Pollution Atmosphérique*, Dec 2001.

Gale, F 2008, 'Tasmania's Tamar Valley pulp mill: A comparison of planning processes using a good environmental governance framework', *Australian Journal of Public Administration*, vol.67, no.3, pp. 261–82.

Gans, J 2008, 'Climate Change Policy', Speech to the University of Melbourne, Department of Economics, Annual Honours Alumni Function, 8 October, <http://economics.com.au/?p=1812> (accessed 27 November 2008).

Garnaut, R. 2008, *The Garnaut climate change review*, Final report, Cambridge University Press, Port Melbourne.

Gibbs, M & McCormack, P 2008, No consistent approach in CCS legislation, Blake Dawson, www.blakedawson.com/Templates/Publications (accessed 12 February 2009).

Gibson, A & Watson, A B 2008, *Risk Management*, www.riskmanagement.com.au/News/EnvironmentalLiabilityInsurance20040205/tabid/124/Default.aspx (accessed September 5 2008).

Government of Victoria 2005a, *Growing Victoria Together, A vision for Victoria to 2010 and beyond*, Department of Premier and Cabinet, Melbourne, March.

——— 2005b, *A Fairer Victoria, Creating opportunity and addressing disadvantage*, Melbourne, April.

——— 2005c, *Our Environment, Our Future: Victoria's Environmental Sustainability Framework, Creating a Healthier Environment and a Stronger State*, Department of Sustainability and Environment, April, Melbourne,

- 2005d, *Sustainability in Action: Towards Zero Waste Strategy*, September, Melbourne.
- 2005e, *Victorian Government response to Victorian Competition and Efficiency Commission's final report, Regulation and regional Victoria: challenges and opportunities*, December, Melbourne.
- 2006a, *Meeting Our Transport Challenges, Connecting Victorian Communities*, May, Melbourne.
- 2006b, *Ministerial Guidelines for Assessment of Environmental Effects under the Environment Effects Act 1978*, 7th edition, Department of Sustainability and Environment, June, Melbourne.
- 2006c, *Our Environment, Our Future: Sustainability Action Statement 2006*, Department of Sustainability and Environment, July, Melbourne.
- 2006d, *Housing Regulation in Victoria: Building Better Outcomes, Response to VCEC's Final Report*.
- 2007a, *Reducing the Regulatory Burden, The Victorian Government's Plan to Reduce Red Tape, 2006-07 Progress Report*, September 2007.
- 2007b, *Victorian Guide to Regulation*, Second edition, Department of Treasury and Finance, Melbourne.
- 2007c, *Regulation and Regional Victoria: Challenges and Opportunities, Victorian Government Response Progress Report*, September, [www.dtf.vic.gov.au/CA25713E0002EF43/WebObj/RegionalInquiryProgressReport-Final-September2007/\\$File/Regional%20Inquiry%20Progress%20Report%20-%20Final%20-%20September%202007.pdf](http://www.dtf.vic.gov.au/CA25713E0002EF43/WebObj/RegionalInquiryProgressReport-Final-September2007/$File/Regional%20Inquiry%20Progress%20Report%20-%20Final%20-%20September%202007.pdf) (accessed 11 March 2009).
- 2007d, *Victorian Government response to Victorian Competition and Efficiency Commission's final report: Making the right choices: options for managing transport congestion*, Melbourne, March.
- 2008a, *Submission to the House of Representatives Standing Committee on Primary Industries and Resources: Inquiry into the Draft Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008*, Melbourne.
- 2008b, *Victorian Government response to Victorian Competition and Efficiency Commission's final report: Water ways: inquiry into reform of the metropolitan retail water sector*, Melbourne.
- 2008c, *The Victorian transport plan*, Melbourne, December.
- 2008d, *Building a sustainable future*, Melbourne.

—— 2008e, *Land and biodiversity at a time of climate change*, Green Paper, Department of Sustainability and Environment, April, Melbourne.

—— 2008f, *Victorian climate change program*, www.climatechange.vic.gov.au/index.html (accessed 10 February 2009).

—— 2008g, *Our Environment, Our Future: Sustainability Action Statement, The Victorian Government's Environmental Sustainability Framework Progress Report*, Department of Sustainability and Environment, August, Melbourne.

—— 2009, *Annual Statement of Government Intentions*, February.

Graham, J 2004, 'The perils of the precautionary principle: lessons from the American and European experience', Heritage Lectures, The Heritage Foundation, www.heritage.org/Research/Regulation/hl818.cfm (accessed 9 January 2009).

Groth, M 2008, 'An empirical analysis of repeated auctions for biodiversity conservation', *Working Paper Series in Economics*, University of Lueneburg, Lueneburg.

GAA (Growth Areas Authority) 2008, *Precinct structure Planning Guidelines*, Consultation draft, October.

Gullet, W 2000, 'The Precautionary Principle in Australia: Policy, Law and Potential Precautionary EIAs', 11 *Risk: Health, Safety and Environment* 93.

Gunningham, N & Sinclair, D 2004, 'Designing smart regulation', in OECD 2004, *Economic aspects of environmental compliance assurance*, Proceedings from the OECD Global Forum on Sustainable Development, 2–3 December, Paris.

Hampton, P 2005, *Reducing administrative burdens*, March, London.

Helper, Hon. J (Minister for Agriculture, Minister for Small Business) 2008, 'A new timber industry strategy for Victoria', Media release, 19 March.

—— 2008, *Future farming grants to help councils tackle weeds*, Media release, 2 October.

Hepburn, S 2008, Carbon rights as new property: towards a uniform framework, paper presented to ANU College of Law seminar series, 21 August, http://law.anu.edu.au/news/2008_college_seminars.asp

HM Treasury 2000, *Choosing the right fabric: a framework for performance information*, London.

Hurwicz, L 1960, 'Optimality and informational efficiency in resource allocation processes', in Arrow, K J (eds), *Mathematical Methods in Social Sciences*, Stanford University Press, Palo Alto.

ICN (Industry Capability Network Victoria Ltd) & I&J Management Services 2008, *2008 Victorian Environment Industry Survey*, Melbourne.

James, D 1998, *Environmental incentives: Australian experience with economic instruments for environmental management*, Report prepared for Environment Australia, Canberra.

JAS-ANZ 2008, *Case study: environmental management systems, Environmental management systems benefit Australian and New Zealand organisations*, March.

Jennings, Hon. G (Minister for the Environment, Climate Change and Innovation) 2007, *New corporate licence saves money, helps environment*, Media release, 29 November, www.gavinjennings.org/pageGen.cgi?id=163 (accessed 23 February 2009).

——— 2008, 'New Plan Aims to Cut Red Tape and Net Green Rewards', Media release, 16 April.

Jones Lang LaSalle 2008, *Navigating the Risks of the Victorian Native Vegetation Management Framework*, October.

Klemperer, A 2004, *Auctions: Theory and Practice*, Princeton, Princeton University Press, Princeton.

Kolstad, C D 2000, *Environmental Economics*, Oxford University Press Inc., New York.

Kosky, Hon. L (Minister for Public Transport, Minister for the Arts) 2008, '\$14.1 billion investment to move Melbourne to a modern metro network', Media release, 8 December.

KPMG 2007, *National electricity equity (business) project*, Report prepared for the City of Greater Bendigo, July.

——— 2009, *Sustainability Reporting: A guide*, www.kpmg.com.au/Default.aspx?TabID=1402&KPMGArticleItemID=3063 (accessed 10 March 2009).

Lipshutz, D, Gibbs, M & Jamieson, R. 2008, *Regulatory frameworks for the long term storage of carbon dioxide in Victoria*, Blake Dawson, www.blakedawson.com/Templates/Publications, May.

Martin, P, Bartel, R, Sinden, J, Gunningham, N & Hannam, I 2007, *Developing a good regulatory practice model for environmental regulations impacting on farmers*, Report prepared for the Australian Farm Institute and Land & Water Australia, July, Canberra.

Martuzzi, M & Tickner J A (eds) 2004, *The precautionary principle: protecting public health, the environment and the future of our children*, World Health Organization.

- McAfee R P & McMillan J 1996, 'Analysing the Airwaves Auction', *Journal of Economic Perspectives*, pp. 159–75.
- McGeoch, S 2007, *The challenge of green tape: Growth of environmental law and its impact on small and medium enterprises across Australia*, NSW Business Chamber, Sydney.
- Meredith, C 2009, Correspondence, February.
- Ministry for the Environment, 2006, *Getting in on the Act, An everyday guide to the RMA, Series 1.1*, June, Wellington.
- NAO (National Audit Office) 2000, *Good practice in performance reporting in executive agencies and non-departmental public bodies*, London.
- Nash, J 1950, 'Equilibrium Points in N-Person Games', *Proceedings of the National Academy of Sciences*, pp. 48–9.
- 1951, 'Non-Cooperative Games', *Annals of Mathematics*, pp. 286–95.
- NCCMA (North Central Catchment Management Authority) 2005, *North Central native vegetation plan*, Huntly.
- NCEE (National Center for Environmental Economics) 2001, *The United States Experience with Economic Incentives for Protecting the Environment*, Office of Policy, Economics and Innovation, Office of the Administrator, Washington.
- NERA Economic Consulting 2008, *Review of the role of demand side participation in the national electricity market*, Report prepared for the Australian Energy Market Commission, 9 May 2008, Sydney.
- Neumayer, E & Perkins R 2004, 'What explains the uneven take-up of ISO 14001 at the global level? A panel-data analysis', *Environment and Planning*, vol. 36, pp. 823–39.
- Northern Grampians Shire Council 2008, *Roadside Vegetation Management Plan 2008-2011*, 26th June.
- NSW Government 2007, *Critical Infrastructure Major Projects assessment system: fact sheet 7*, Department of Planning, September 2007.
- OECD (Organisation for Economic Co-operation and Development) 1995, *Recommendation of the Council of the OECD on improving the quality of government regulation*, Paris.
- 2001, *Businesses' views on red tape, administrative and regulatory burdens on small and medium size enterprises*, Paris.
- 2002a, *Regulatory policies in OECD countries: From interventionism to regulatory governance*, Paris.

—— 2002b, *Joint Working Party on Trade and Environment, Uncertainty and Precaution: Implications for Trade and Environment*, OECD, September, [www.oalis.oecd.org/olis/2000doc.nsf/LinkTo/NT00000906/\\$FILE/JT00130913.PDF](http://www.oalis.oecd.org/olis/2000doc.nsf/LinkTo/NT00000906/$FILE/JT00130913.PDF) (accessed 12 March 2009).

—— 2006, *Cutting red tape, national strategies for administrative simplification*, Paris.

—— 2007, *Cutting red tape: Administrative simplification in the Netherlands*, Paris.

OGTR (Office of the Gene Technology Regulator) 2007, *Risk Analysis Framework*, [www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/raf-3/\\$FILE/rafinal3.pdf](http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/Content/raf-3/$FILE/rafinal3.pdf) (accessed 12 February 2009).

ORR (Victorian Office of Regulation Reform) 1996, *Principles of good regulation*, Melbourne.

Page A R & Lacey K L (AEC Group) 2006, *Economic Impact Assessment of Australian Weed Biological Control*, Prepared for the Cooperative Research Centre for Australian Weed Management, Adelaide.

Paperlinx 2008, *People Paper Progress – Sustainability Report 2008*, Melbourne.

Parslow J, Skyring, G & Walker, S 1996, *Port Phillip Bay Environmental Study Final Report*, CSIRO, Canberra.

PC (Productivity Commission) 1999, *Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies*, Report No. 5, AusInfo, Canberra.

—— 2001, *Constraints on Private Conservation of Biodiversity*, Commission research paper, Ausinfo, Canberra.

—— 2004, *Impacts of native vegetation and biodiversity regulations*, Report no. 29, Melbourne.

—— 2005a, *Annual Report 2004-05*, Annual Report Series, Productivity Commission, Canberra.

—— 2005b, *Impacts of advances in medical technology in Australia*, Research report, Melbourne.

—— 2006a, *Rural water use and the environment: the role of market mechanisms*, Research Report, Melbourne, August.

—— 2006b, *Waste management*, Report no. 38, Canberra.

—— 2008, *Review of regulatory Burden on the Upstream Petroleum (Oil and Gas) Sector*, Draft Research Report, Melbourne.

- Pearce, D. 2005, 'Does European Union waste policy pass a cost-benefit test?', in Environmental Assessment Institute 2005, *Rethinking the waste hierarchy*, Copenhagen, March, pp. 60–79.
- Peel, J 2005, *The Precautionary Principle in Practice: Environmental Decision-making and Scientific Uncertainty*, Federation Press, New South Wales.
- Peel, J 2008, 'Ecologically Sustainable Development: More than Mere Lip Service?' *Australasian Journal of Natural Resources Law and Policy* 1.
- Peterson, D C 2006, *Precaution: principles and practice in Australian environmental and natural resource management*, Presidential Address, 50th Annual Australian Agricultural and Resource Economics Society Conference, 8–10 February, Manly.
- Plott, C R (eds) 1979, *The application of laboratory experimental methods to public choice*, John Hopkins University Press, Baltimore.
- Plott, C R, Grether, D M & Isaac, R M 1981, 'The Allocation of Landing Rights by Unanimity Among Competitors', *The American Economic Review*, Vol. 71, Issue 2, pp. 1063–71.
- Plott, C R & Porter, D P 1996, 'Market Architectures and Institutional Testbedding: An Experiment with Space Station Pricing Policies', *Journal of Economic Behaviour and Organization*, 31, pp. 237–72.
- Plott, C R, Nemes, V & Stoneham, G 2008, *Electronic Bushbroker Exchange: Designing a combinatorial double auction for native vegetation offsets*, National market Based Solutions Pilot Program Round 2, Canberra.
- PPWCMA (Port Phillip and Westernport Catchment Management Authority) 2008, *Assessing the effectiveness of local government planning scheme controls in protecting native vegetation in the Port Phillip and Westernport Region*, Parsons Brinkerhoff in conjunction with RMIT University and Latrobe University Bendigo, Draft report, November.
- PWC (PricewaterhouseCoopers) 2008, 'Approaches to climate change uncertainty', Report commissioned by the Victorian Department of Treasury and Finance, Melbourne.
- Quiggin, J 2008, 'Uncertainty and Climate Change Policy', *Economic Analysis & Policy*, Vol. 38, No. 2, September.
- Redman, Hon. T (Minister for Agriculture and Food; Forestry; Minister Assisting the Minister for Education) 2009, Funding to protect and care for WA environment, Press release, 8 January.

- Resource Planning and Development Commission 2009, 'Projects of State Significance', www.rpdc.tas.gov.au/poss (accessed 12 March 2009).
- Roth, A E 1982, 'The economics of matching: Stability and Incentives', *Mathematics of Operations Research*, Vol. 7, No. 4, pp. 617–28.
- 2002, 'The Economist as Engineer: Game Theory, Experimentation, and Computation as Tools for Design Economics', *Econometrica*, 70.
- Sachs, J 2008, *Common Wealth: Economics for a crowded planet*, Penguin, London.
- Salzman, J 2005, 'Creating Markets for Ecosystem Services: Notes from the Field', *New York University Law Review*, pp. 870–961.
- Sharma, S, Cook, P, Berly, T, & Lees, M 2008, 'The CO2CRC Otway project: overcoming challenges from planning to execution of Australia's first CCS project', *Energy procedia*, www.sciencedirect.com (accessed 18 January 2009).
- Shire of Yarra Ranges 2007, Submission to the Department of Sustainability and Environment on the Land and Biodiversity White Paper, July.
- Sinclair Knight Merz 2008, *Forest audit program review*, Final review report, July.
- Smith, N 2008, *RMA reform group announced*, Media release, 16 December.
- Smith, V L 1982, 'Microeconomic Systems as an Experimental Science', *American Economic Review*, Vol. 72, No. 5, 923–55.
- Sparrow, M 2000, *The regulatory craft: controlling risks, solving problems and managing compliance*, The Brookings Institution, Washington.
- Standing Committee of Officials on the Ministerial Council on Energy 2006, *A National Legislative Framework for Gas and electricity*, July.
- Statistics Canada 2008, *Environmental Protection Expenditures in the Business Sector - 2006*, cat. no. 16F0006X.
- Stoneham, G, Chaudhri, V, Ha, A & Strappazon, L 2003, 'Auctions for Conservation Contracts: An Empirical Examination of Victoria's BushTender Trial', *Australian Journal of Agricultural and Resource Economics*, Vol. 47, No. 4, pp. 477–500.
- Stoneham, G, Chaudhri, V, Strappazon, L & Ha, A 2007a, 'Auctioning biodiversity conservation contracts: an empirical analysis', in Kontoleon, A, Pascual, U & Swanson, T (eds), *Biodiversity Economics: Principles, Methods and Applications*, Cambridge University Press, Cambridge.
- Stoneham, G, Beverly, C, Eigenraam, M & Bardsley, P 2007b, 'Creating markets for environmental goods and services on private land', Paper presented at the 32ème Congrès De L'Association des Économistes, Québécois, Canada.

- Sustainable Energy Authority Victoria 2003, *Policy and planning guidelines for development of wind energy facilities in Victoria*, Melbourne.
- Sustainable Timber Industry Council 2007, *Recommendations for a new timber industry strategy for Victoria*, Report to the Minister for Agriculture, Melbourne, July.
- Tamblyn, J 2009, *The reform journey continues: energy markets and climate change policies*, Paper presented at the Committee for Economic Development of Australia Energy Forum, 19 February, Melbourne.
- Thomas, I & Elliott, M 2005, *Environmental impact assessment: theory and practice in Australia*, The Federation Press, Fourth edition, Sydney.
- Thwaites, Hon J. (then Deputy Premier) 2006, Environment Protection (Amendment) Bill: Second reading, *Victorian Parliamentary Hansard*, 20 July, pp. 2504–10.
- Tickner, J & Myers, N (nd) ‘Current Status and Implementation of the Precautionary Principle’ www.sehn.org/ppcurrentstatus.html (accessed 29 December 2008).
- Tietenberg, T 1992, *Environmental and Natural Resource Economics*, HarperCollins College Division.
- Trigeorgis, L 1993, ‘Real options and interactions with financial flexibility’, *Financial Management*, Vol. 22, No. 3, pp. 202-24.
- Trust for Nature 2007, *About Us*, www.trustfornature.org.au/content.asp?PageId=2 (accessed 11 March 2009).
- United Nations 1992, Report of United Nations Conference on Environment and Development, Annex 1, Rio Declaration on Environment and Development, Principle 15, Rio de Janeiro, 3–14 June.
- United States Census Bureau, *Pollution Abatement Costs and Expenditures* 2005, April 2008.
- URS (URS Australia Pty Ltd) 2006a, *The Value of Improved Environmental Health in Victorian Rivers: Results from the Pilot Phase*, July.
- 2006b, *National audit of regulations influencing mining exploration and project approval processes*, Final Report prepared for Minerals Council of Australia.
- URS Corporation 2008, *Final Report: Environmental Protection Expenditure Survey by Industry*, Report prepared for Department of Environment, Food and Rural Affairs, June 2008.
- VAG (Victorian Auditor General) 2008, *Enforcement of planning permits*, Victorian Government Printer, November.

VCEC (Victorian Competition and Efficiency Commission) 2005a, *Regulation and regional Victoria: challenges and opportunities*, Final report, June, Melbourne.

— 2005b, *Housing Regulation in Victoria: Building Better Outcomes*, Final report, September, Melbourne.

— 2006a, *Making the right choices: Options for managing transport congestion*, Final report, September, Melbourne.

— 2006b, *Annual report 2005-06*, September, Melbourne.

— 2007a, *Annual Report 2006-07*, Melbourne.

— 2007b, *Simplifying the Menu: Food Regulation in Victoria*, Final Report, Melbourne.

— 2008a, *A state of liveability: An inquiry into enhancing Victoria's liveability*, Draft report, May, Melbourne.

— 2008b, *The Victorian regulatory system*, June, Melbourne.

— 2008c, *Water ways: inquiry into reform of the metropolitan retail water sector*, Final report, February.

— 2008d, *Annual Report 2007-08*.

— 2009, *Estimating the costs and benefits of environmental regulation – EREP and environmental reporting survey*, Melbourne.

VicForests 2008, *Submission to the review of the timber industry strategy*, Melbourne, May.

Vickrey, W 1961, 'Counterspeculation, auctions and competitive sealed tenders', *Journal of Finance*, pp. 55–84.

Victoria Naturally Alliance July 2008, *Victoria's biodiversity: issues and recommendations on the Victorian Government's Land and Biodiversity Green Paper*.

VCC (Victorian Coastal Council) 2008, *Victorian Coastal Strategy 2008*, www.vcc.vic.gov.au/vcs.htm (accessed 24 January 2009)

Victorian National Parks Association 2008, *Submission by the Victorian National Parks Association In response to the Victorian Government's Green Paper Land and Biodiversity at a time of Climate Change*, July, Melbourne.

Vivid Economics 2006, *Opportunities for innovation: the business opportunities for SMEs in tackling the causes of climate change*, Shell springboard, October.

Von Neumann, J & Morgenstern, O 1944, *Theory of Games and Economic Behaviour*, Princeton.

- VWMA (Victorian Waste Management Association) 2008a, *VWMA submission to the EPA, The future of hazardous waste management in Victoria*, August.
- 2008b, *Mick Bourke at VWMA Breakfast@RACV Club*, 14 November, www.vwma.com.au/Article.asp?d=SE&t=SE&p=375 (accessed 3 March 2009).
- WCED (World Commission on Environment and Development) 1987, Report of the World Commission on Environment Development: Our Common Future, Annex to General Assembly document A/42/427.
- Weier, A & Loke, P 2007, *Precaution and the Precautionary Principle: two Australian case studies*, Productivity Commission Staff Working Paper, Melbourne, September.
- Whitten S, van Bueren M & Collins D 2003, *An Overview of Market-Based Instruments and Environmental Policy in Australia*, Proceedings of the 6th Annual AARES National Symposium, September, Canberra.
- WHO (World Health Organisation) 2004, *Dealing with Uncertainty – How Can the Precautionary Principle Help Protect the Future of Our Children?*, Working paper presented to the Fourth Ministerial Conference on Environment and Health, Budapest, Hungary, 23–25 June. www.euro.who.int/InformationSources/Publications/Catalogue/20041119_1 (accessed 12 February 2009).
- Willows, R I & Connell, R K (eds.) 2003, *Climate adaptation: Risk, uncertainty and decision-making*, UKCIP Technical Report, UKCIP, Oxford.
- Wilson, R B 1999, *Market Architecture*, Econometrics Society, Presidential address.
- YVW (Yarra Valley Water) 2009, Correspondence, February 13.