POLICY IMPACT ASSESSMENT

PROTECTING THE OZONE LAYER

INDUSTRIAL WASTE MANAGEMENT POLICY

(PROTECTION OF THE OZONE LAYER)

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Industrial waste management policy

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FOREWORD

Most of us would be aware that naturally occurring stratospheric ozone performs the vital function of filtering out harmful ultraviolet radiation before it reaches the Earth's surface. More than two decades of accumulated scientific research has shown that depletion of this protective ozone layer, and subsequent increases in damaging ultraviolet radiation, is being caused by human-made ozone-depleting substances such as chlorofluorocarbons (CFCs), halons and hydrochlorofluorocarbons (HCFCs).

Professor Mario Molina who, along with Professor Sherwood Rowland, shares the honour of the Nobel Prize for Chemistry for their CFC-ozone depletion theory, has made the sobering observation that, "We have known for centuries that humans can pollute their immediate environment, but this was the first example demonstrating that human-generated pollution can reach global proportions. The ozone problem also illustrated how fragile the atmosphere is."

The response internationally has put into practice the concept "Think global. Act local". The Environment Protection Authority (EPA) has been working with the Commonwealth and the other States and Territories since the late 1980s to help combat this environmental problem and respond to Australia's international obligations. Victoria played its part by introducing a range of measures in the late 1980s and early 1990s to minimise emissions of ozone-depleting CFCs and halons. Significant progress has been made by industry towards eliminating ozone-depleting CFCs and halons. However, some equipment still contains and uses these substances, and other ozone depleting substances such as HCFCs and methyl bromide have now been included in the range of ozone-depleting substances to be phased out globally by 2040 under the *Montreal Protocol on Substances that Deplete the Ozone Layer*, an international treaty declared in 1987. The scientific indications are that these measures are working when considered globally. However, in the words of Mostafa Tolba, who was a driving force behind the development of the original Montreal Protocol, "We know the saga of Ozone is not yet over". The 'world that was avoided' is still dependent on implementation of measures to avoid emissions of ozone-depleting substances.

In response to these developments, EPA has conducted a review of Victoria's statutory framework for ozone layer protection. The review considered: the need to manage ozone-depleting substances not controlled within Victoria's statutory framework; developments in industry practices and new technologies, and the type of statutory instruments or other measures needed to minimise emissions of ozone-depleting substances while meeting the future needs of Victorian industry and the broader community. As part of this broader review, EPA has developed the *industrial waste management policy (Protection of the Ozone Layer)*. This Policy Impact Assessment (PIA) sets out the policy and seeks to explain its rationale and anticipated impacts within the context of a broader statutory framework for ozone layer protection. All Victorians were invited to comment during the formal three month public consultation period between November 2000 and March 2001. Twenty eight submissions were received and have been taken into account, together with all other feedback received

throughout the review, in developing Victoria's final statutory framework for ozone protection and in the development of the final policy and PIA.

The *industrial waste management policy (Protection of the Ozone Layer)* provides an improved strategic framework for ozone layer protection and will ensure that Victoria continues to play its part in helping Australia meet its international obligations under the Montreal Protocol.

BRIAN ROBINSON
CHAIRMAN

C O N T E N T S

1. INTRODUCTION

Australia is a signatory to the 1985 *Vienna Convention for the Protection of the Ozone Layer* and the 1987 *Montreal Protocol on Substances that Deplete the Ozone Layer* made under the Convention. Australia's obligations under the Protocol, including subsequent amendments, have been implemented through complementary legislation and controls enacted by the Commonwealth, State and Territory Governments. Under this framework, the Commonwealth, State and Territory Governments have had different roles and responsibilities. The Commonwealth is primarily responsible for limiting the supply of ozone-depleting substances through import, export and manufacture controls. State and Territory Governments are currently responsible for measures to reduce end-use consumption and emissions of ozone-depleting substances through statutory measures on their sale and use. Australia has an ongoing obligation to implement any international developments under the Montreal Protocol which is regularly revised to take account of scientific and technological developments. The Montreal Protocol has been amended from time to time to accelerate phase-out dates for ozone-depleting substances and to extend the range of chemicals controlled under the Protocol.

Victoria's regulatory framework for the protection of the ozone layer was introduced in 1989, to enable Victoria to play its part in helping Australia meet its obligations under the Montreal Protocol. The Victorian framework is described in more detail in chapter 4. Key elements of Victoria's statutory framework have included:

- *Environment Protection (Control of Ozone-depleting Substances) Regulations* 1989 (the ODS Control Regulations);
- *Environment Protection (Purchase and Sale of Products Containing Ozone-depleting Substances) Regulations* 1990 (the ODS Purchase and Sale Regulations);
- *industrial waste management policy (Control of Ozone-depleting Substances)* 1990.

These statutory measures have been supported and built upon through comprehensive industry programs for ozone layer protection. Together these interdependent programs made up the former framework for ozone layer protection in Victoria.

Other States and Territories have similar regulatory frameworks to reduce consumption and emissions of ozone-depleting substances. However, there have been differences in the scope and application of measures across jurisdictions, including the range of substances under control. EPA recognises and supports the need for national consistency and sought submissions particularly on this issue.

The Victorian review has provided an up-to-date framework consistent with the Montreal Protocol which maintains and improves the best and most effective features of the former framework and will enable Victoria to continue to contribute to international efforts to combat ozone layer depletion. The *industrial waste management policy (Protection of the Ozone Layer)* (the policy), comprises a key statutory element of the revised framework and varies the *industrial waste management policy (Control of Ozone-depleting Substances)* (the former policy) made by EPA in November 1990. This PIA provides a discussion of

the likely environmental, social and financial impacts of the revised framework, including the anticipated impacts of the policy and incorporates a description of the policy development process. Through this PIA the reader should gain an understanding of:

- Victoria's environment protection system and the policy development process for the policy and revised framework;
- the background to the revised framework and policy including a brief description of the harmful impacts of ozone layer depletion on human health and the environment as well as economic impacts, the international response to ozone layer depletion and Australia's national program for ozone layer protection;
- the refinements to the broader statutory framework for the management of ozone-depleting substances including improvements under the policy;
- a summary of the impacts of the revised framework and policy.

1.1 What is an Industrial Waste Management Policy?

Industrial waste management policies (IWMPs) are statutory instruments under the Act. IWMPs are the way in which the EPA sets a framework for publicly agreed environmental objectives for ecologically sustainable development and for the management of industrial wastes in Victoria. Industrial wastes include wastes arising from commercial and trade activities or from laboratories. IWMPs provide a framework for aspects of the management of industrial wastes, including their generation, re-use, recycling, handling, transport, treatment, storage and disposal, and for the use and disposal of notifiable chemicals.

IWMPs give effect to principles such as those established in Victoria's *Industrial Waste Strategy – Zeroing in on Waste* – that waste generators are responsible for the proper management of their wastes from 'cradle-to-grave' and that such wastes are most effectively dealt with through waste avoidance. Victoria's first industrial waste strategy, adopted fourteen years ago, focused attention on waste minimisation and the waste management hierarchy. The hierarchy has been reinforced in statutory policy through the 1990 *industrial waste management policy (Waste Minimisation)*. This policy established a generic framework for waste management and has driven the adoption of cleaner production and waste avoidance principles in Victoria. Similarly, the *industrial waste management policy (Control of Ozone-depleting Substances)* established management principles specifically for ozone-depleting substances to engender a life cycle management approach that can minimise waste generation.

IWMPs are legally enforceable and binding on all private individuals and all private and public sector organisations.

1.2 Why Revise Victoria's Framework?

Despite the establishment of international, national and Victorian frameworks, depletion of the ozone layer remains a priority issue for Australia and, more broadly, the international community. Ozone depletion is predicted to peak in the next few years. Scientific research anticipates that the ozone layer will recover to pre-1980 "ozone hole" levels by 2050. However, this prediction depends upon the

international community, including Australia, maintaining their commitment to ozone layer protection so that the significant gains over the past 10 years are not undermined.

As referred to earlier, the Commonwealth, State and Territory Governments have had different roles and responsibilities under the national program under which supply, consumption and emissions of ozone-depleting substances are controlled. These controls implement national phase-out schedules for ozone-depleting substances consistent with phase-out schedules under the Montreal Protocol. The reviewed framework and policy enables Victoria to continue its current role under the national program to develop measures to avoid and minimise end-use consumption and emissions of ozone-depleting substances during the transition to national phase-out. Recovery of the ozone layer continues to depend on Commonwealth, State and Territory jurisdictions maintaining their commitment under the national program. In order to maintain and build on past gains, there was a need to review Victoria's statutory framework for ozone-depleting substances, including the former policy. The framework was no longer considered adequate to meet the needs of the community and the on-going challenge of ozone layer protection and recovery. Key factors contributing to the need for a revision of Victoria's statutory framework included:

- key statutory elements of the framework were due to sunset;
- Australia's ongoing obligation to implement international developments including amendments to the Montreal Protocol which extend the range of substances covered under the Protocol and accelerate the scheduled phase-out dates;
- the need to promote national consistency by managing ozone-depleting substances currently controlled under the Montreal Protocol but not controlled within Victoria's former statutory framework;
- developments in scientific research which provides an improved understanding of atmospheric processes and impacts of ozone depletion;
- the transition by a number of industries to alternative substances through developments in industry practices and new technologies;
- the development of voluntary industry schemes and initiatives and co-regulatory arrangements with industry;
- environmental and other implications of some alternatives, for example, some alternatives are greenhouse gases addressed under the Kyoto Protocol;
- the effectiveness of the former suite of statutory instruments in Victoria's framework and whether a different mix of measures was warranted; and
- concurrent reviews of the National Ozone Protection Program and the Commonwealth ozone protection legislative framework.

1.3 What Should Make Up the Framework?

EPA considered a range of possible policy options for Victoria's statutory framework for ozone layer protection. These options were judged against their ability to achieve the desired outcome of an effective and robust framework of environment protection based on:

- the principles of ecologically sustainable development; and
- providing certainty to industry and assurance to the community in the management of ozone-depleting substances for the next decade.

Three key possible approaches considered were:

Option 1: allow statutory elements of the Victorian framework to lapse;

Option 2: maintain former framework;

Option 3: strengthen and improve Victoria's ozone layer protection program by varying the former framework.

The possible implications of each option (including the potential benefits and costs of each option) are discussed in detail in chapter 5. Option three was EPA's preferred approach under which the revised Victorian framework includes the policy variation but not the ODS Control Regulations or the ODS Purchase and Sale Regulations.

Under option three the policy variation aims to provide an up-to-date statutory framework which maintains and improves the best and most effective features of the former framework which is well established and accepted by industry. In particular, this option provides an improved strategic policy framework, which is tailored to address international, national, scientific, industry and community expectations and developments, and introduces additional flexibility to meet future needs and developments over the next decade. Key features of the established approach under the former policy, which are continued under the revised policy, include –

- implementation facilitated through partnerships with industry (eg industry Boards, Codes of Practice, industry training programs) aimed at improving awareness of ozone-depletion impacts and work practices to minimise emissions;
- a registration/accreditation system to ensure that individuals have the skills, expertise and equipment to avoid or minimise emissions of ozone-depleting substances for a limited range of industry activities, where the risk of emissions is relatively high;
- recovery/recycling obligations for ozone-depleting substances used for a limited range of activities where the risk of emissions is relatively high;
- essential use exemption system for halon fire protection equipment; and
- labelling obligations addressing contamination of ozone-depleting substances to reduce associated costs to industry.

The table below provides a summary of the key impacts of the revised framework for Victoria's ozone layer protection program, including the policy. These impacts are outlined in detail in chapters 6 and 7.

Benefits	Costs
• Strengthens Victoria's ability to continue to play its part under the national framework in helping Australia meet its international obligations under the Montreal Protocol. • Strengthens protection of human health and the environment from the harmful effects of ozone layer depletion by updating and improving emission and consumption reduction measures under Victoria's established ozone protection framework. • Provides an up-to-date statutory framework tailored to address international, national, scientific, industry and community expectations and developments. • Clarifies and simplifies the former framework by streamlining three statutory instruments into one through which industry can be confident it has met its responsibilities under Victoria's ozone protection programs. • Addresses industry calls for improved national consistency by: – including ozone-depleting substances that have been added to the Montreal Protocol, but were not in the former policy; – including suppliers within the framework; consistent with other State and Territory ozone protection frameworks. • Introduces environment improvement plans (EIPs) as an additional and complementary tool to assist industry develop, or support and build upon existing, strategies to:	• transition costs in anticipation of phase-out including: – research & development; – developing transition and emission reduction strategies. These costs are partly attributable to national programs and cannot all be attributed to the revised Victorian framework. Well established industry programs help ensure associated costs are minimised and equitable through voluntary industry levies and other industry initiatives. • Costs of obtaining grant of registration and/or accreditation. Costs, including Board fees (currently levied on a cost recovery basis to minimise costs ranging up to $250 for registration and up to $50 for accreditation) and course fees. • Costs of developing an EIP: these are likely to be minor as EIPs can integrate with or be driven by industry initiatives developed in response to national phase-out schedules and national strategies. – No service fees to apply to EIP process. • Costs of implementing management strategies under an EIP: – Will be variable depending on a number of factors including whether the industry under the EIP has been covered by the former framework and whether recovery and recycling equipment is included, where this is practicable;

– meet internationally mandated phase-out dates; – manage transition to alternatives; and – avoid or minimise emissions. • Expands industry options through EIPs for developing emission reduction strategies tailored to meet the specific needs of individual businesses or industry sectors on the most cost effective basis while supporting industry initiatives and while helping to ensure environment protection. • Provides a tool for industry, through EIPs, to help ensure consistent requirements across industry and minimise competitive disadvantage during national phase-out . • Provides for improved handling and management of ozone-depleting substances by the identification and adoption of best practice management options through the EIP process and the development and updating of Codes of Practice. • Updates recovery and recycling provisions by inclusion of revised range of ozone-depleting substances helping to ensure environment protection. • Clarifies the roles and responsibilities of Ozone Layer Protection Boards and provides for improved transparency and accountability. • Updates registration/accreditation provisions to include: – the revised range of ozone-depleting substances for certain activities with relatively higher risks of emissions;	– Can be offset by providing industry with a mechanism through EIPs helping to minimise commercial disadvantage during the transition to alternatives; and – Can be recovered through savings accruing from improved management of ozone-depleting substances thereby conserving stocks and extending their use through recovery, recycling or other emission minimising strategies. • Costs to EPA in assessing and approving grants of registration and/or accreditation, EIPs and implementing enforcement programs.

– suppliers of ozone-depleting substances helping to ensure that suppliers, as with purchasers and users, have the expertise and facilities to minimise emissions; and – additional activities with relatively higher risks of emissions responding to industry calls for consistent requirements across industry sectors helping to ensure environment protection. • Simplifies record-keeping and reporting requirements, including removal if record-keeping requirements on purchasers, reducing costs to industry. • Strengthens labelling obligations to address industry concerns relating to contamination of ozone-depleting substances and reducing associated costs. • Eliminates unnecessary duplication of Commonwealth ozone layer protection laws and existing State statutory frameworks for occupational, health and safety.	

1.4 What is a Policy Impact Assessment?

PIAs are required for all new or revised IWMPs. PIAs are intended to bring together all the information relating to the impact of the IWMP in a clear and transparent manner for the community and decision-makers to consider. The PIA provides an assessment of the possible financial, social and environmental impacts of the alternatives. In line with the requirements under the *Environment Protection Act* 1970, notices of the Victorian review and the intention to vary the former policy were advertised in November 1999. Public comment was sought on those occasions.

A draft of this PIA was released with a draft version of the policy to provide information to assist interested persons and organisations to comment on the policy and other refinements to Victoria's framework for ozone layer protection. Public comment on the Victorian review, including the policy and PIA was sought prior to the closing date for submissions on 6 March 2001.

1.5 Finalising the revised framework for ozone layer protection

All public comments received throughout the review were considered, and a written summary of public submissions and EPA's responses to those submissions has been prepared and distributed to all individuals and organisations that made written submissions. Following the consideration of public comment, a final revision of the policy was prepared. Similarly this final PIA was prepared to ensure that the final policy provide a clear statement of the management regime applicable to ozone-depleting substances within the broader revised Victorian framework. The final policy and PIA were submitted to the Governor in Council for adoption through the processes specified in the *Environment Protection Act* 1970. Finally, the revised policy and PIA will be tabled in Parliament.

2. OZONE PROTECTION – BACKGROUND

2.1 What is the Ozone Layer?

Ozone occurs naturally in the earth's upper atmosphere, known as the stratosphere, about 10-50 kilometres above the surface of the earth. The ozone in this region is commonly known as the ozone layer. Stratospheric ozone plays a beneficial role by absorbing most of the biologically damaging ultraviolet radiation (UV-B radiation) from the Sun, thereby forming a protective shield around the Earth's surface.

2.2 What is Ozone Depletion?

Scientific measurements have shown global decreases in stratospheric ozone levels. Up to 60% of the total amount of ozone overhead is depleted in some parts of Antarctica during Spring. This phenomenon was first observed in 1985 and is known as the Antarctic ozone hole. A similar effect has been observed in the Arctic region in more recent years. Satellites have confirmed that the 2000 ozone "hole" over the Antarctic is the largest ever recorded. The hole measures a record 28.3 million square kilometres, over one million square kilometres larger than the previous record in 1998. Stratospheric ozone losses have also been measured at more human-populated regions of the globe. The current ozone losses at Southern Hemisphere mid-latitudes (similar to Victoria) are about 5% on a year-round basis relative to values observed in the 1970s. A recent study by McKenzie et al., (*Science*, 285, 1709, 1999) showed total summertime ozone levels at 45ºS in New Zealand have declined by about 15% over the past two decades.

2.3 What are the Main Causes of Ozone Depletion?

While smaller fluctuations in ozone levels are known to occur naturally, two decades of accumulated scientific evidence has shown that human-made chemicals are predominantly responsible for the observed significant global depletions of stratospheric ozone. Atmospheric releases of large quantities of ozone-depleting chemicals have been shown to upset the natural atmospheric processes that had maintained the protective ozone layer for millennia.

Human-made ozone-depleting chemicals including, chlorofluorocarbons, carbon tetrachloride, methyl chloroform and hydrochlorofluorocarbons have been used in many applications worldwide including refrigeration, air conditioning, foam blowing, aerosols, cleaning of electronics and metal parts, and as solvents. Another important group of human-made chemicals called halons have been used mainly as fire extinguishants. Other chemicals such as methyl bromide also contribute to ozone depletion. Methyl bromide is made for use in fumigation for agriculture and quarantine purposes. In addition to these anthropogenic sources, natural sources and sinks of methyl bromide also affect atmospheric methyl bromide levels.

2.4 What are the Impacts of Ozone-Depletion?

In 1998, the United Nations Environment Program (UNEP) reported that stratospheric ozone levels were close to their lowest point since measurements began and that the ozone layer will be in its most vulnerable state during the next two decades Possible consequences of increased penetration of

UV radiation to the earth's surface is set out more detail below.

Human Health

Human health directly suffers from the increased ultraviolet radiation that results from stratospheric ozone depletion. The principal impacts of increased ultraviolet radiation on health are felt in the skin, eyes and the immune system. A recent study by McKenzie et al., (*Science*, 285, 1709, 1999) showed total summertime ozone levels at 45ºS in New Zealand have declined by about 15% over the past two decades resulting in 20 and 35 per cent increases respectively in erythemal and DNA damaging UV radiation on clear-sky days in summer. Assuming these trends to be representative of mid-latitude Southern Hemisphere, with Melbourne ozone data showing a similar trend, CSIRO scientists have predicted that people at these latitudes sunburn 20% faster now than they would have 20 years ago, assuming no change in sun-light exposure behaviour in these years such as use of hats, sun-screens and protective clothing.

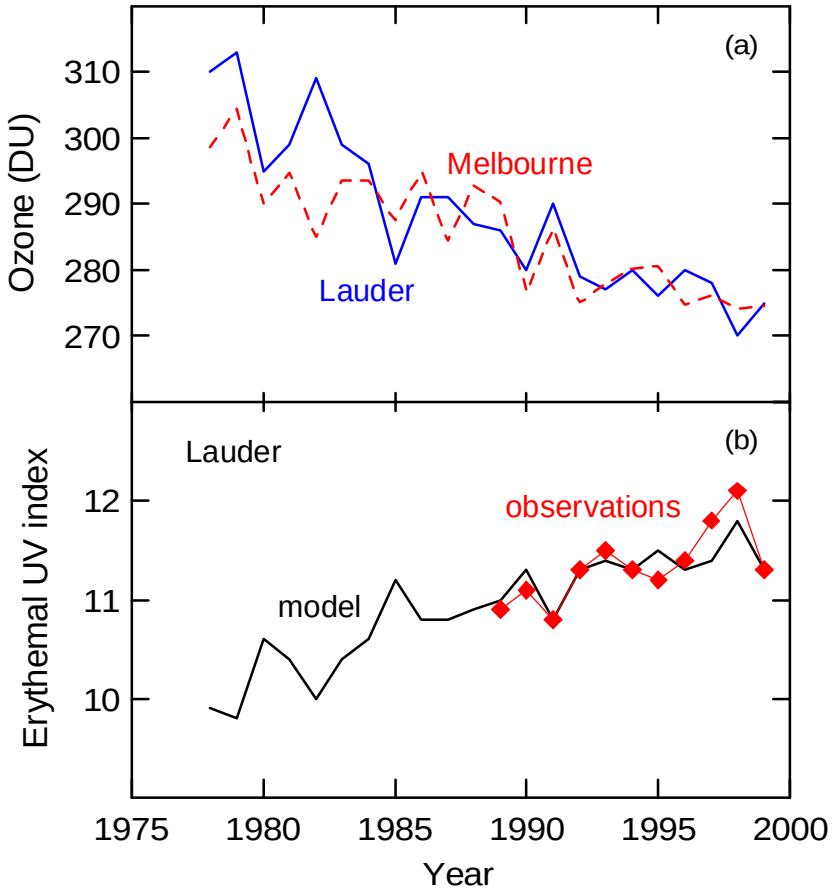

Figure 1: Ozone and UV Fluctuations – Lauder, New Zealand and Melbourne, Australia

(a) Mean summer (December – February) total ozone (Dobson Units) for Lauder, New Zealand (45ºS, solid line) and Melbourne (38ºS, dotted line).

(b) Estimated (solid line) and measured (connected diamonds) summer UV Index under clear-sky conditions for Lauder, NZ.

Source: (McKenzie et al. 1999, 2000; Bureau of Meteorology, Melbourne, unpublished data. Provided courtesy of Dr P. Fraser of CSIRO Atmospheric Research and Mr A. Downey, Bureau of Meteorology)

Research has linked several health impacts in humans to increased exposure of ultraviolet radiation including:

- skin tumours: melanoma, the most serious form of skin cancer, is also one of the fastest growing types of cancer in Australia. The number of - melanoma cases per 1000 in Victoria has doubled in the past two decades and this trend is expected to continue (Victorian Anti-Cancer Council report 'Melanoma Cancers in Victoria 1982-1997'). Recent observations of an increase in non-Hodgkin's lymphoma with increasing solar radiation have led to the suggestion that ultraviolet radiation induced systemic immunosuppression contributes to cancer development in this system. This induced immunosuppression may assist in the formation of melanoma and non-melanoma skin cancers (UNEP, Environmental Effects of Ozone Depletion 1991).
- cataracts: this form of eye damage, in which a loss of transparency in the lens of the eye clouds vision, if left untreated can lead to blindness. It is estimated that a 10 per cent reduction in the ozone layer would result in two million new cases of cataracts per year globally (World Health Organisation).
- immunological responses: these can include reduction in effectiveness of immunisations, worsen conditions such as lupus, adversely affect reactions to medication, increase the rate of carcinogenic mutations, while compromising our immunological responses. *(Dr. K.D. Cooper, University of Michigan)*
- children at higher risk: recent findings from animal studies support concerns that exposure of children to UV-B radiation may be more damaging than exposure to adults. Researchers have shown in studies on opossums that low-dose UV-B exposure early in development can lead to widespread melanoma later in life. The total dose used in the exposure experiments was less than that needed to cause sunburn in these animals (*Environmental Effects of Ozone Depletion*, Interim Summary, September 1999, UNEP Environmental Effects Panel).

Environmental

- *Increases in UV-B radiation*

Increases in UV-B radiation, which are directly linked to stratospheric ozone losses, have been shown to cause a variety of environmental effects to terrestrial and aquatic ecosystems and environments. Recent reports, which summarise the global research in environmental effects, by the UNEP Environmental Effects Panel are summarised below.

- large increases in DNA-damaging solar UV-B radiation with each unit of ozone reduction including damage to the DNA of intact plants under natural conditions;
- changes in plant, animal and microbe interactions in nature. For example, changes in the chemical composition of plant foliage in turn leading to either increased or decreased tissue consumption of plants by insects;
- plant growth and production demonstrating a wide range of responses and occasionally sizeable decreases;

- adverse affects on aquatic primary producers such as phytoplankton and macroalgae. Alterations in the community structure and development and the succession of species have been indicated.
- bacterioplankton and small non-photosynthetic flagellates, which play central roles in the aquatic ecosystem, are highly affected by UV radiation, causing DNA damage.;
- adverse effects on cyanobacteria, which constitute 40 per cent of the marine biomass, including capacity to absorb atmospheric nitrogen and converting it to a form that can be incorporated by phytoplankton, and by higher plants, such as in rice paddies;
- potentially impacts on some freshwater fish species in clear lakes;
- production of air pollutants and smog production in the lower atmosphere (known as the troposphere); and
- photo-damage to materials such as polymers used in plastics and wood. New improved classes of additives are being developed to protect materials against UV-B radiation damage.

- *Links to Climate Change*

Ozone depletion and climate change are also linked in a number of ways. Stratospheric ozone losses due to human-made ozone-depleting substances have a cooling effect on the Earth's surface. Meanwhile, increases in tropospheric ozone resulting from urban air pollution have a warming effect, contributing to the greenhouse effect. In addition, changes in the climate of the Earth could affect the behaviour of the ozone layer through changes in meteorological conditions and atmospheric composition that could result from climate change. An important factor is that the stratosphere will most probably cool in response to climate change, thereby maintaining the conditions conducive to halogen-caused ozone depletion in the stratosphere for a longer period. At present, the extent of such cooling and consequent delay in recovery of the ozone layer, have yet to be fully assessed.

2.5 What has been the International Response?

The 1985 *Vienna Convention for the Protection of the Ozone Layer* (the Vienna Convention) was a response to the comprehensive and intense scientific research findings from the mid-1970s to the mid-1980s into the causes and effects of ozone-depletion. The Convention provided formal recognition by the international community that ozone-depletion was a genuine problem and signified a global commitment to combat the issue. The Montreal Protocol provides a detailed framework to implement the commitments under the Vienna Convention.

The Montreal Protocol initially targeted CFCs and halons as a priority due to their high ozone depleting potential and their long-life in the atmosphere. Subsequent amendments to the Protocol have seen the range of ozone-depleting substances covered by the Protocol extended and phase-out schedules for these substances accelerated. The Protocol currently covers the following substances:

- *Halons*: these substances are used as fire suppressant agents.

- *Chlorofluorocarbons* (CFCs): CFCs have been commonly used as refrigerants, solvents, and foam blowing agents.
- *Carbon tetrachloride*: this substance was widely used as a raw material in many industrial uses, including as a feedstock for the production of CFCs and as a solvent.
- *Methyl chloroform*: this substance is used as an industrial solvent.
- *Hydrobromofluorocarbons* (HBFCs): HBFCs have been used as fire suppression agents and as a pesticide.
- *Hydrochlorofluorocarbons* (HCFCs): HCFCs deplete stratospheric ozone, but to a lesser extent than CFCs. HCFCs are used as a transitional alternatives to CFCs. HCFCs are also greenhouse gases.
- *Methyl bromide*: this substance is used to control pests and diseases in horticultural soils, stored grains, quarantine and pre-shipment applications and for building fumigation.

Is the Montreal Protocol Working?

The Montreal Protocol is under continuous revision to keep it up-to-date with the latest available information. Scientific measurements and predictions are showing that the Protocol is working. In the absence of factors such as non-compliance with the Protocol or impacts due to climate change, stratospheric ozone levels should increase and recover to pre-1980 "ozone hole" levels by approximately 2050.

However it is important to note that the predicted recovery of stratospheric ozone is dependent on implementation of measures to avoid emissions of ozone-depleting substances under the Montreal Protocol. A failure to implement or to continue to implement these measures will affect recovery of the ozone layer by prolonging a return to pre-1980 conditions, thereby extending the period of increased UV-B radiation exposure.

What are the Economic Benefits of Mitigating Ozone-Depletion ?

Several attempts to estimate the global economic benefits and costs of dealing with ozone-depleting substances have found it difficult to fully quantify impacts. The effects on human health, plants and agriculture, animals and materials can often best be estimated in qualitative terms. The most comprehensive attempt to estimate the costs and benefits of the Montreal Protocol was undertaken by Environment Canada as part of its contribution to the 10th Anniversary of the Montreal Protocol in 1997.

The Canadian study estimated the quantifiable global benefits of the Montreal Protocol associated with avoided health impacts and economic benefits from reduced damage to forest and agricultural resources and aquatic ecosystems to be US $459 billion. This includes over 330,000 fewer cases of fatal skin cancers, 3.4 million fewer cases of melanoma and non-melanoma skin cancer, and approximately 129 million fewer cases of cataracts. These estimates cover the period 1987 to 2060 and only relate to quantifiable benefits. The study reports that the benefits would be larger still if the full range of beneficial impacts could be quantified.

The Canadian study also estimates that the global society will incur costs of approximately US $235 billion to meet the Protocol's controls over the period to 2060. However in many instances

eliminating ozone-depleting substances has led to improvements to products and processes. For example, for aerosol applications, conversions in technology have led to alternatives that are cheaper than the ozone-depleting substances they replaced. ('Global Benefits and Cost of the Montreal Protocol on Substances that Deplete the Ozone Layer', conducted for Environment Canada by ARC, Applied Research Consultants 1997).

The Commonwealth Government has recently undertaken a cost/benefit analysis as part of a Commonwealth review of its *Ozone Protection Act 1989* which identified that the quantifiable benefits of the Commonwealth legislation outweigh the costs by a factor of more than 7:1, covering the period from the time the Commonwealth legislation was introduced in 1987 to 2060.

One economic study linking methyl bromide use to human health effects found that 1kg of methyl bromide used resulted in about $A36 of health effects globally. (Lubulwa et al. (1995).

3. WHAT IS AUSTRALIA'S FRAMEWORK FOR OZONE LAYER PROTECTION?

3.1 The National Strategy for Ozone Protection 1989

National ozone protection measures in Australia have until recently been coordinated through the Australian and New Zealand Environment and Conservation Council (ANZECC)] which comprised the environment and conservation Ministers of the Commonwealth, State and Territory Governments and New Zealand. ANZECC has now been succeeded by the Environment Protection and Heritage Council (the EPHC). In 1989, a National Strategy for Ozone Protection (the National Strategy) was endorsed by the then Australian Environment Council, ANZECC's predecessor, and adopted by all Australian Governments and New Zealand.

The National Strategy provides the overarching national framework to enable Australia to implement its international obligations under the Montreal Protocol. The development and implementation of the National Strategy has been undertaken through a cooperative and consultative approach between the Commonwealth, State and Territory Governments, industry, environment groups, and the broader community. The original Strategy has been revised to take account of accelerated phase-out programs for ozone-depleting substances adopted under the Montreal Protocol.

As referred to earlier, the Commonwealth is primarily responsible under the national framework for the supply and consumption of ozone-depleting substances through import, export and manufacture controls while State and Territory Governments are responsible for measures to reduce consumption and emissions of ozone-depleting substances through controls on the sale and use of these substances.

3.2 Implementation of the National Strategy: Commonwealth Government

The *Ozone Protection Act 1989* (the Commonwealth Act) is the key statutory instrument through which the Commonwealth government implements its role and responsibilities under the National Strategy. The Commonwealth Act regulates the manufacture, import and export of ozone-depleting substances currently covered by the Montreal Protocol. The manufacture, import and export of these substances are prohibited under the Commonwealth Act unless a licence has been granted. There are three types of licences that may be granted under the Commonwealth Act:

- *Essential Uses Licence*: for the manufacture, import or export of CFCs, halons, HBFCs, carbon tetrachloride or methyl chloroform for a limited range of uses that meet essential use criteria under the Commonwealth Act;
- *Controlled Substances Licence*: for the manufacture, import or export of HCFCs or methyl bromide; and
- *Used Substances Licence*: for the import or export of specified used or recycled CFCs and halons.

Fees are payable upon the granting of any of these licences. In addition, an activity fee is payable in respect of HCFCs and methyl bromide based upon the quantity of these substances imported or manufactured. HCFCs are also subject to a quota system under the Commonwealth Act which sets a

maximum annual limit on the quantity of HCFCs that may be imported under a licence.

The Commonwealth Act also prohibits the manufacture and import of certain products where those products contain or use certain ozone-depleting substance controlled under the Act. These products are:

- dry cleaning machinery
- extruded polystyrene packaging and insulation
- aerosol products
- products containing halon
- rigid polyurethane foam products
- moulded flexible polyurethane foam
- disposable containers of refrigerants
- refrigeration and air conditioning equipment
- automotive air conditioning maintenance kits

An exemption may be granted under section 40 of the Commonwealth Act for the importation or manufacture of a banned product where:

- the product is essential for medical, veterinary, defence, industrial safety or public safety purposes; and
- no practical alternative exists to the use of the ozone-depleting substance in the operation or manufacture of the product

3.3 Implementation of the National Strategy: State and Territory Governments

State and Territory Governments have implemented their role and responsibilities under the National Strategy through a variety of statutory and other measures aimed at reducing consumption and emissions of ozone-depleting substances. Measures include manufacture bans on a range of products containing or using ozone-depleting substances and controls on the sale and use of these substances. Registration and accreditation requirements in a number of jurisdictions, including Victoria, have aimed to raise ozone awareness and industry standards to ensure that only those with the skills and expertise to minimise emissions of ozone-depleting substances are permitted to have access to, and use of, these substances. Victoria's statutory framework is discussed in chapter 4.

There have been differences in the scope and application of measures across jurisdictions, including the range of substances under control. The revised framework for Victoria and the policy promotes national consistency addressing this issue.

3.4 National Programs

Implementation of the National Strategy through Commonwealth, State and Territory ozone protection programs is supported and complemented by a number of comprehensive national and industry programs for ozone layer protection. Together these interdependent programs make up the framework for ozone layer protection in Australia.

Refrigerant Reclaim Australia (RRA)

RRA was set up in 1992 by the refrigeration and air conditioning industry to share the cost of reclamation, recycling and destruction measures for ozone-depleting refrigerants such as CFCs and HCFCs across the whole industry. The destruction and reclamation activities are carried out by the National Halon Bank discussed below.

National Methyl Bromide Response Strategy

The *National Methyl Bromide Response Strategy Part 1 – Horticultural Uses*, (the National Methyl Bromide Strategy) which was released in June 1998, provides a framework for the phase-out of methyl bromide use in horticultural industries by 2005 as required by the Montreal Protocol. The National Methyl Bromide Strategy was developed in consultation with the Methyl Bromide Consultative Group, a body comprising representatives from the horticultural industry, researchers and Commonwealth and State Governments, and coordinated by the Commonwealth Government. The National Methyl Bromide Strategy identifies two basic challenges: the transition to alternatives and increasing production capacity to meet increasing market demand while methyl bromide is decreasing. The Victorian Department of Natural Resources and Environment participates in the Methyl Bromide Alternatives Research Coordination Committee established to coordinate research and trials of methyl bromide alternatives and promote education on its phase-out. Users of methyl bromide in the horticultural sector has been proactive in the development and implementation of the National Methyl Bromide Strategy by committing to use reduction targets and by making changes in industry practices to reduce methyl bromide consumption and undertaking research and development into alternatives. Phase-out and emission reduction strategies for other methyl bromide applications, such as quarantine and pre-shipment applications, are yet to be addressed under the National Ozone Protection Program. Quarantine and pre-shipment uses are currently exempt from the phase-out schedule under the Montreal Protocol although mandatory consumption reporting under the Protocol has been undertaken by the Commonwealth Government since 2000. However, given the direction of international discussions, it is probable that at some stage they will become subject to restrictions under the Protocol. In anticipation of likely international controls the Commonwealth Government is currently developing a national strategy to address quarantine and pre-shipment uses.

National Halon Essential Uses Panel

The National Halon Essential Uses Panel (NHEUP) is an independent technical advisory panel established to regularly review and make recommendations for essential uses of halon. Through this approach, Governments can take statutory decisions that are informed by up-to-date technical information ensuring that halons can be phased out of fire protection applications as feasible alternatives become available. The Panel comprises representatives from key industry and environment groups. Members of the Panel work cooperatively to provide Governments with independent expert technical advice and make recommendations on essential uses of halon to ensure that halons are eliminated from such applications as alternatives become available. The Panel plays a key role in enabling a practicable program to phase out halon use.

The NHEUP was originally established by EPA. In 1992, the US EPA awarded EPA a Stratospheric Ozone Protection Award in recognition of EPA's leadership in halon elimination. NHEUP subsequently expanded its activities nationally and currently operates under the stewardship of the

Commonwealth Government which also provides secretariat services.

National Halon Bank

The National Halon Bank (NHB) was established by the Commonwealth in 1993, to collect, safely store, decant and destroy halon stocks accumulating within Government, industry and the community from decommissioned fire fighting equipment. While the NHB remains a Commonwealth owned facility, it is operated by DASCEM Holdings Pty Ltd (DASCEM), a company formed following the privatisation of the Commonwealth Department of Administrative Services Centre for Environmental Management, which originally established the Bank. Major storage facilities are at Tottenham in Victoria and Oaklands in NSW. In 1995, the US EPA awarded DASCEM a Stratospheric Ozone Protection Award in recognition of its corporate leadership in halon phase-out.

Australian Halon Management Strategy

The Australian Halon Management Strategy was developed by the Commonwealth Government in 2000 to fulfil Australia's obligations under the Montreal Protocol to develop a national strategy for the management of halons, including emissions reduction and the ultimate elimination of their use. Under the Commonwealth Act, the importation of halons into Australia ceased from 31 December 1992 for all but essential uses. Similarly the use of halons in non-essential equipment has been banned in most State and Territory Government jurisdictions since 31 December 1995. In Victoria progressive bans on the use of halons commenced in 1990 with halon based equipment to be finally decommissioned by January 1996. Essential use applications requiring halon utilise recycled halon. The Australian Halon Management Strategy seeks to manage Australia's halon stocks to 2030 to ensure sufficient supplies of recycled halon are available for Australian essential use applications. Implementation of the Strategy has been assisted by the activities of the National Halon Bank and the NHEUP.

National Certification Program

A national certification program has been initiated by the refrigeration and air conditioning industries. The scheme will be managed and largely financed by industry and would aim to ensure national standards for the use of ozone-depleting substances and alternatives to these substances through training and certification programs for technicians. Each State and Territory would be encouraged to reflect the requirements of the scheme in their own legislation to help ensure national consistency. The Commonwealth Government has approved initial funding under its Greenhouse Gas Abatement Program to establish the scheme to minimise emissions of hydrofluorocarbons (HFCs).

3.5 National Reviews

In 1997, ANZECC's Standing Committee on Environment Protection recommended a review of Australia's National Ozone Protection Program. In the context of the review, the 'national program' includes the National Strategy, associated statutory and non-statutory measures implemented by Governments, industry and the broader community, and consultative arrangements. The national review

considered the effectiveness of the National Strategy and the future roles and responsibilities of the Commonwealth, States and Territories in relation to ozone layer protection. EPA provided input to the review.

A key finding of the review was that the national program has been very successful in helping Australia to meet its international obligations under the Montreal Protocol. The review is now completed. Recommendations include the need for a "...review of legislation underpinning the National Ozone Protection Program, including the future need for and form of Commonwealth and State/Territory legislation..." including better integration with other environmental programs, such as those to implement the National Greenhouse Strategy, and opportunities to use National Environment Protection Measures, economic instruments and voluntary industry schemes.

One recommendation from the national review is for Governments to investigate opportunities to develop a National Environment Protection Measure (NEPM) for ozone-depleting substances. NEPMs are policy instruments which establish nationally consistent goals for the protection of the Australian environment. NEPMs are developed by the National Environment Protection Council (NEPC), a ministerial council consisting of a minister from each of the Commonwealth, State and Territory Governments. NEPMs are legally binding and must be implemented on a consistent basis by each jurisdiction. A NEPM for ozone-depleting substances for ozone-layer protection is one option that can be considered as a means to help ensure national consistency across jurisdictions and consistency of industry requirements by removing any competitive disadvantages currently being experienced as a result of the different regulatory controls across State and Territory jurisdictions.

Some of the review's recommendations are already being implemented. For example a number of jurisdictions are already reviewing their legislation and in May 2000, the Commonwealth commenced a review of its ozone protection legislation (the Commonwealth review). Recommendations from the national review have been taken into account in the development of this PIA and the policy.

A key recommendation of the Commonwealth legislative review is that the Commonwealth Government extend its ozone protection legislation to cover end-use controls for ozone-depleting substances, currently within State frameworks, and synthetic greenhouse gases used as replacements for ozone-depleting substances. Extending its ozone protection legislation is the Commonwealth's preferred approach for improving national consistency. The Commonwealth does not support the development of a NEPM for a range of reasons.

The Commonwealth proposal to extend its ozone protection legislation and the potential application of a NEPM as an alternative approach is currently under consideration by Commonwealth, State and Territory jurisdictions. It is anticipated that the issue will be referred for consideration by the Environment Protection and Heritage Council (formerly ANZECC) later this year which would determine the future roles and responsibilities of the Commonwealth, State and Territory jurisdictions. EPA will continue to monitor and participate in national processes and will work to ensure that well established measures accepted and supported by Victorian industry are

considered for transition to any changes in the national framework such as extended Commonwealth legislation.

4. VICTORIA'S REGULATORY FRAMEWORK FOR OZONE LAYER PROTECTION

As discussed in chapter 3, State and Territory Governments are responsible under the National Strategy for measures to reduce consumption and emissions of ozone-depleting substances. State and Territory Governments have implemented their role and responsibilities under the National Strategy through a variety of statutory and other measures. The Victorian framework is described in more detail below.

4.1 *Environment Protection Act* 1970

Victoria's environment protection system is established under the *Environment Protection Act* 1970 (the Act). The Act provides the overarching legislative framework for the protection of the Victorian environment. The Act establishes the EPA, defines EPA's powers, duties and functions, and provides for a range of instruments to minimise pollution, wastes and environmental risks including, State environment protection policies (SEPPs), IWMPs, regulations, works approvals, licences, notices such as pollution abatement notices, notifiable chemical orders and environment improvement plans.

Under the framework "ozone-depleting substance" has meant any CFC, halon or any other substance prescribed to be an ozone-depleting substance. Specific ozone-depleting substances which have been prescribed under the former policy are:

- CFC-11, CFC-12, CFC-113, CFC-114, CFC-115
- Halon 1211, Halon 1301.

These ozone-depleting substances have a high ozone depletion potential. CFCs and halons were the first ozone-depleting substances to be targeted under the Montreal Protocol because of their relatively high ozone-depleting potential and for this reason were the first ozone-depleting substances to be targeted by Commonwealth, State and Territory Governments. Victoria's statutory framework for the protection of the ozone layer has been limited to these ozone-depleting substances. In 1990, these ozone-depleting substances were also declared as notifiable chemicals for the purposes of the Act in recognition of the hazard these substances pose to the environment.

The Act also provides for a range of offences relevant to ozone-depleting substances. For example:

- it is an offence to contravene any rules or requirements specified in an IWMP: section 27A(1)(a);
- any person who contravenes any regulation dealing with the use of any ozone-depleting substance or goods, equipment, machinery, or plant containing or using an ozone-depleting substance will be deemed to have polluted the atmosphere and committed an offence: sections 41, 43.

EPA has used a range of enforcement approaches. An enforcement program, including prosecution action, spot audits, and a number of specific investigations has been conducted by EPA during the last ten years to help ensure compliance with the statutory framework and raise awareness of measures to control emissions of ozone-depleting substances under the framework.

The community has assisted EPA with its enforcement program by bringing potential non-

compliance to its attention. Given the nature and scope of activities using ozone-depleting substances, and the community's direct contact and knowledge of these day-to-day activities, this has been an effective tool in the enforcement program. Enforcement of Victoria's statutory program is assisted by continued community vigilance.

EPA also undertakes focussed enforcement activities through spot audits in specific industry sectors. Minor breaches have been rectified following the issuing of warnings by EPA, in the process helping industry to better understand their obligations. Minor breaches under the policy have been effectively dealt with through a warning approach, assisting industry to comply with their requirements. The Boards have played an important role in improving industry compliance with the policy.

4.2 *Environment Protection (Control of Ozone-depleting substances) Regulations* 1989

The ODS Control Regulations expired in June 2000. These regulations imposed manufacture bans on a limited range of products and equipment that use or contain certain CFCs including aerosol products, some foam products, dry cleaning equipment and some specific air conditioning and refrigeration products. The same range of products and equipment as those under the ODS Control Regulations are currently included in product bans under the Commonwealth Act. The prohibitions relating to aerosol products under both the Regulations and the Commonwealth Act applied unless the manufacturer had been granted an exemption in relation to that product under section 40 of the Commonwealth Act. The exemptions under section 40 include essential uses and where there are no practical alternatives.

4.3 *Environment Protection (Purchase and Sale of Products Containing Ozone-depleting Substances) Regulations* 1990

The ODS Purchase and Sale Regulations expired in March 2001. The ODS Purchase and Sale Regulations imposed bans and controls on the sale and purchase of a limited range of products and equipment that used or contained certain CFCs and halons. These were extruded polystyrene packaging and insulation material, aerosol products and portable halon fire extinguishers. These products and equipment had become subject to manufacturing bans under the Victorian ODS Control Regulations and the Commonwealth Act progressively since 1989.

4.4 The IWMP (Control of Ozone-depleting Substances) 1990

The former policy provided a strategic framework for the management of CFCs, halons and equipment that contained or used these substances. The policy provided mechanisms to avoid and reduce the consumption of CFCs and halons and to avoid or minimise their emission to the atmosphere. The policy implemented these objectives by limiting access to and use of CFCs and halons in respect of particular industries and activities to persons who have the expertise and facilities to handle these substances with minimal or no discharge to the atmosphere. The policy established a partnership approach between industry and Government to provide programs for appropriate training and awareness in minimising emissions of CFCs and halons through accreditation and registration

requirements. This partnership approach under the former policy has proven to be a successful model for meeting environmental objectives through cooperative partnerships with industry.

In the past Victorian industry has indicated its strong support for this approach when applied to CFCs arguing that this approach has provided the most equitable and sustainable way of more carefully managing the gradual phase-out of CFC-based applications. Industry has also identified unintended benefits to the industry generally, by improving industry work practices and standards.

The former policy contained a sunset clause and was due to expire on 27 November 2000. The operation of the policy was extended under the provisions of the Act for twelve months. This provided an opportunity to incorporate the outcomes of the concurrent Commonwealth review of its ozone protection legislation into the Victorian review while maintaining an effective regulatory framework for the management of ozone-depleting substances. As stated earlier, the Commonwealth proposal to extend its ozone protection legislation and the potential application of a NEPM as an alternative approach is currently under consideration by Commonwealth, State and Territory jurisdictions. It is anticipated that the issue will be referred for consideration by the EPHC later this year. EPHC's recommendation will help determine the future roles and responsibilities of the Commonwealth, State and Territory jurisdictions under the National Ozone Protection Program. The policy has been framed to enable it to take account of any Commonwealth changes.

5. ALTERNATIVE POLICY OPTIONS

A number of alternatives to the development of the policy were considered by EPA during the process of community consultation and policy development. The outcomes of the review indicated that the framework for ozone-depleting substances needed to be updated and improved to protect human health and the environment from risks posed by the depletion of stratospheric ozone resulting from human activities and to enable Victoria to continue to play its part in meeting Australia's obligations under the Montreal Protocol. In determining how best to achieve this goal, the following options were considered:

- allow statutory elements of the former Victorian framework to lapse;
- maintain the existing framework; and
- update and improve Victoria's ozone layer protection program by varying the existing framework.

The advantages and disadvantages of each option are discussed below.

5.1 Allow Statutory Elements of the Former Victorian Framework to Lapse

This option would result in the three key statutory instruments (the ODS Control Regulations, the ODS Purchase and Sale Regulations and the policy) lapsing.

The success of the ODS Control Regulations which introduced manufacturing bans on certain products and equipment has resulted in only small quantities of these products and equipment remaining in the market place. Accordingly remaking these Regulations in their former form is unlikely to provide any ongoing environmental benefits. In addition, as the Victorian manufacturing bans were effectively duplicated under the Commonwealth Act and extended to encompass a broader range of substances, there will be no detrimental impact on the environment in not remaking these Regulations. This is because the product bans under the Commonwealth Act continue to apply where those products use or contain certain ozone-depleting substances including, CFCs, halons, carbon tetrachloride or methyl chloroform. These bans are consistent with the requirements of the Montreal Protocol. The Victorian bans were limited to products that only used or contained CFCs or halons. Accordingly, even without regulations in Victoria, manufacture bans on the same products and equipment continue to have effect both in Victoria and nationally. Removing duplication between the ODS Control Regulations and the Commonwealth Act also provides benefits in that it removes any confusion in identifying legal requirements and, in the event of an offence, removes the potential of being prosecuted under both legislative regimes.

Finally it should be noted that while remaking the Regulations may enable Victoria to extend its range of manufacture bans this is unlikely to be necessary as there are no other products, equipment or ozone-depleting substances that are likely to be subject to product bans. It is anticipated that where amendments to the Montreal Protocol require further product bans or for the range of ozone-depleting substances being used or contained in such products to be extended, the Commonwealth Act will be amended accordingly. Retaining the Regulations would result in continuing duplication

between State and Commonwealth regimes without any additional benefits.

Similarly, the products and equipment under the ODS Purchase and Sale Regulations have been subject to manufacturing bans since 1989 and are unlikely to be available in the market place in significant quantities. The use of portable fire extinguishers is currently limited to applications that meet essential use criteria under the policy. Therefore, remaking these Regulations would not result in additional benefits.

However, while allowing the two sets of regulations to lapse would not result in significant costs, the option is not preferred in entirety as it also envisages allowing the policy to sunset without replacement. The policy provides an overarching framework for Victoria's ozone-layer protection program. If the policy lapsed the co-regulatory partnerships with Industry Boards established under the policy would also lapse resulting in a failure to provide a flexible and practicable approach to avoiding or minimising the consumption of ozone-depleting substances and their emission to the atmosphere. Allowing the policy to lapse would also mean that the benefits of improved standards and practices across a number of industry sectors both in relation to the handling of ozone-depleting substances and generally would be avoided as would the benefits of new codes of practice to be developed by industry under the policy in co-operation with EPA.

Essentially, allowing the policy to lapse would mean that statutory measures to avoid and minimise the consumption of ozone-depleting substances and their emission to the atmosphere would no longer be mandated in Victoria. The Commonwealth Act would continue to regulate the import, export and manufacture of ozone-depleting substances and impose product bans. However, currently the Commonwealth Act does not include any specific controls for end-uses which aim to minimise emissions, as these have been the responsibility of State Governments under the National Ozone Protection Program.

The benefits involved in continuing statutory measures to avoid or minimise emissions of ozone-depleting substances are obvious, as these measures remain a high priority in meeting Australia's obligations under the Montreal Protocol. Businesses such as RRA and DASCEM are likely to continue to commercially operate national programs to facilitate recovery, recycling and destruction of ozone-depleting substances. However, without a policy, these end-use activities would no longer be supported by a statutory instrument in Victoria. There would no longer be a legislative basis for the registration and accreditation system which sought to reduce consumption by restricting access to ozone-depleting substances to persons who have the skills and facilities to avoid or minimise emissions to the atmosphere. As a consequence, recovery of ozone-depleting substances may decrease and venting of these substances to the atmosphere may increase. Allowing the former policy to lapse may undermine Victoria's ability to support national policies and to help Australia meet its international obligations.

In the absence of these subordinate instruments, any person handling ozone-depleting substances would still be subject to general requirements under the Act, in particular not to cause pollution or an

environmental hazard. However, while allowing the two sets of regulations to lapse would not necessarily result in significant costs, allowing the policy to lapse would fail to provide a clear consistent framework for the safe management of ozone-depleting substances and protection of the ozone layer and create uncertainty as to how Victorians should meet their broader obligations under the Act.

5.2 Maintain Former Framework

Victoria's former statutory framework for ozone layer protection has been successful in helping Australia to meet some of its international obligations over the past ten years.

Remaking the framework in its current form would result in benefits as there would continue to be a framework for the management of ozone-depleting substances and protection of the ozone layer providing certainty to industry and the community. However, as the current framework only covers CFCs and halons, the benefits from this approach would be limited.

This option is, therefore, not preferred, as it would fail to take account of developments in ozone layer protection over the past decade including amendments to the Montreal Protocol. In particular, the extended range of controlled substances under the Protocol and the acceleration of scheduled phase-out dates for these substances could not be included in the framework. The failure to include these substances means that Victorian industry would be at a disadvantage as there would be no guidance to industry as to what is required to meet obligations under the Montreal Protocol.

As discussed under the first alternative, in their current form, the two sets of regulations would be unlikely to provide any significant ongoing benefits. Without revisions, the policy would fail to take account of technological and other developments by industry who have made significant progress in making the transition to alternatives.

5.3 Update and Improve Victoria's Ozone Protection Program by Varying the Former Framework

This option is EPA's preferred approach, under which the statutory elements of the revised Victorian framework would include the revised policy but not the ODS Control Regulations or the ODS Purchase and Sale Regulations thereby streamlining three statutory instruments into one. This option provides a simplified up-to-date statutory framework which updates and refines the framework while maintaining and improving its best and most effective features. The costs associated with conforming with the requirements of the policy are minimal compared with the potential long term effects on the industry and the environment if the policy were not adopted.

A number of benefits flow from the policy such as certainty for industry as to their obligations in relation to ozone-depleting substances within an improved strategic policy framework and the introduction of more flexible statutory measures which can be tailored to address international and scientific development as well as meeting industry needs and community expectations for environment protection. Importantly the policy would allow the ozone-depleting substances covered under the former Victorian framework to include additional substances consistent with the Montreal Protocol

and Federal, State and Territory ozone protection regulatory frameworks and would also provide flexibility to meet future developments over the next decade. By removing the two sets of regulations from the framework unnecessary duplication of Commonwealth ozone layer protection laws would be avoided. In addition, the policy complements existing State statutory requirements for occupational, health and safety and has been designed to provide opportunities to help ensure complementary statutory measures between State regulatory agencies. As the policy would build on existing initiatives and controls that are well understood and accepted in the industry, any increases in costs on industry are likely to be minor, while the environmental benefits are significant.

Small businesses represent the majority of commercial enterprises typically affected by State and Territory ozone protection frameworks including Victoria. The policy retains key features which have been developed specifically to facilitate the ability of small business to implement their obligations. For example in Victoria recovery/recycling provisions have reduced transition costs to small business by effectively extending transition periods beyond national phase-out dates through conserving stocks of ozone-depleting substances for reuse and providing a cost effective solution to rising costs of ozone-depleting substances as supplies dwindle. New mechanisms also adopt low cost strategies. For example, exemptions under the recovery provisions may be granted on a class or individual basis. EPA has also reassessed the provisions of the policy to remove record keeping requirements from purchasers.

6. THE POLICY: *INDUSTRIAL WASTE MANAGEMENT POLICY (PROTECTION OF THE OZONE LAYER)*

This chapter of the PIA describes the potential impacts (environmental, social and financial) of adopting the policy and the implications generally for Victoria's framework for ozone layer protection. Variations from the former policy are discussed in the detailed description of the policy below. A more detailed discussion of the impacts on specific industries is provided in chapter 7.

Clause 1 – Title

Clause 1 states that the policy title is *industrial waste management policy (Protection of the Ozone Layer)*. This title varies the title of the former policy to emphasise the intent of the policy. The revised title also reflects the objectives of both the former policy and the policy to not only manage ozone-depleting substances but to also avoid consumption and emissions of these substances.

Clause 2 – Commencement

Clause 2 states that, except for Parts 3, 4, 5, 6 and 7 of Schedule A, the policy comes into effect upon publication in the Government Gazette. This will occur following approval of the policy by the Governor-in-Council. Parts 3, 4, 5, 6 and 7 of Schedule A come into operation three months after the date of commencement of the policy covering ozone-depleting substances controlled under the Montreal Protocol but not covered under the former policy. This sub-clause provides a transitional period for those using these substances.

Clause 3 – Revocation of industrial waste management policy (Control of Ozone-depleting Substances)

Clause 3 provides that the former policy is revoked.

Clause 4 – Contents of Policy

Clause 4 outlines the contents and structure of the policy.

Clause 5 – Application of Policy

Clause 5 states that the policy applies throughout the State of Victoria. The provisions of this policy are binding on both the private and public sectors as all have the potential to impact on the environment. This ensures that nobody can receive a competitive advantage based on where they are located or whether they are public or private sector.

Clause 6 – Circumstances in which policy may be revoked or varied

Clause 6 is framed to enable the policy to take account of any outcomes of the Commonwealth review, for example, extended Commonwealth legislation covering end-use controls. The clause provides that the Authority may recommend to the Governor in Council that the policy be revoked or varied where, in the opinion of the Authority, the policy objectives and intent can be otherwise met through Commonwealth law intended to control the consumption and emissions of ozone-depleting substances.

Clause 7 – Obligation to comply with industrial waste management policies

Clause 7 provides that any person who contravenes any rules or requirements specified in the policy is guilty of an indictable offence under the

Environment Protection Act 1970. This provision adds to the former policy. It is included for clarity only and does not introduce any new obligations.

Clause 8 – Definitions

Clause 8 provides specific definitions of various words and terms used throughout the policy. These definitions clarify the use and intent of terms used within the policy. The key term '*ozone-depleting substance*' means an ozone-depleting substance for the purposes of the Act and includes a substance listed in Schedule A of the policy. Clause 8 varies the definition in the former policy which was limited to certain CFCs and halons listed in Schedules A and B to that policy. These Schedules have been consolidated into one schedule and have been varied to include all ozone-depleting substances under the Montreal Protocol (as ratified by the Commonwealth Government). This is to ensure consistency with the Montreal Protocol and national, State and Territory ozone protection frameworks and to ensure that only substances which have undergone rigorous evaluation and determined to be ozone-depleting under the Protocol, and ratified by the Commonwealth Government, are to be subject to Victoria's regulatory framework for ozone layer protection.

To ensure transparency and certainty of obligations for industry these ozone-depleting substances have remained scheduled to the policy. Victoria will monitor international developments to ensure that these scheduled substances remain consistent with the provisions of the Montreal Protocol as amended from time to time. This will also help ensure that Victoria's framework remains consistent with the National Ozone Protection Program. For example, substances can be added, if appropriate, following amendments to the Montreal Protocol to cover new substances. Public consultation would be undertaken before any changes were made to the range of substances covered to ensure that any such changes were considered fully. The term "ozone-depleting substances" now includes CFCs, halons, HCFCs, carbon tetrachloride, methyl chloroform, methyl bromide and HBFCs. All of these substances are currently subject to import, export and manufacturing bans and controls under the Commonwealth Act as described in chapter 3. A number of other jurisdictions already have controls over these substances. Including these substances under Victoria's statutory framework will help to reduce costs to industry by helping to ensure national consistency. However, premises at which any of these substances are decanted may be subject to licensing requirements as schedule six premises under the Act. EPA is currently undergoing a review of the *Environment Protection (Fees) Regulations* 1991. Premises prescribed as schedule six premises under the Act may be subject to licensing fees under the Fees Regulations. EPA will endeavour to work with industry during consultation for the review of the Fees Regulations to clarify the potential costs involved.

The definition of the term "recycling" has been varied from the former policy by broadening the definitions to cover both on and off-site processing and the expanded range of substances covered by the policy. The term "reclamation" is based upon a definition sanctioned by UNEP and adopted by RRA which varies the definition under the former policy by covering the extended range of substances and reflecting more accurately the meaning of the term

as it relates to ozone-depleting substances. The term "reuse" is new and has been included for clarification. The policy has omitted a number of terms from the former policy where these terms are no longer used within the policy. Other minor variations to the definitions under the former policy have been made to clarify the policy and make it easier to read.

PART I – POLICY FRAMEWORK

The policy varies the former policy to insert Part I comprising clauses 9 to 11 covering the policy objectives, principles and the policy intent. The aim is to articulate the fundamental policy statements within statutory policies by providing strong, plain English, straightforward statements that can be understood by a variety of stakeholders in environment protection.

Clause 9 – Objectives

Clause 9 varies the former policy by providing a short, sharp statements of overall objectives. These objectives are expanded upon in more detail under clause 11 "Policy Intent"

Clause 10 – Principles

Clause 10 aims to capture key environment protection public policy principles that will help EPA, stakeholders, the public, the Victorian Civil and Administrative Tribunal and the Courts interpret the policy. The principles adopted are drawn from established statements of principle (eg. through international and national debate on ecologically sustainable development, such as the Intergovernmental Agreement on the Environment) and those with particular relevance to statutory policies made under the Act. Following recent amendments to the *Environment Protection Act* 1970, these environment protection principles are now included under the Act. Clause 10(8) describes the Principle of wastes hierarchy which sets out the Victorian Government's preferred order of waste management options. While in the past the final and least preferred option for some wastes may have been disposal to landfill, in the case of ozone-depleting substances disposal has in practice meant destruction of these substances by chemically altering them into harmless components and is the current preferred practice. To minimise any potential adverse environmental impacts associated with substitutes for ozone-depleting substances, such substitutes should also be managed in accordance with these principles and, where applicable, in accordance with any national, Commonwealth or State requirements relating relating to their use.

Clause 11 – Policy Intent

Clause 11 further describes the key aims of the policy. It provides more detail than the overarching objectives. It explores what the application of the principles means in practice. The policy intent describes what the result of achieving the policy will be.

PART II – ATTAINMENT MEASURES

Part II comprises clauses 12 to 30. The policy has effectively retained most of the mechanisms and measures under the former policy. The policy simplifies and clarifies the requirements and obligations under the attainment program of the former policy. The policy also aims to build on the

success of the former policy which has applied in Victoria since 1990 to ensure that the policy continues to provide an appropriate policy framework to enable Victoria to continue to play its part in helping Australia meet its obligations to protect the ozone layer in the future.

The attainment measures under the policy have been divided between general and specific measures. General measures comprise clauses 12 and 13. Clause 12 sets out the strategic approach that EPA will adopt to achieve the policy objectives. A number of these approaches are already successfully operating in practice under the former policy such as the various co-regulatory partnerships between the Government and industry through which a number of the measures and requirements under the former policy are implemented. Clause 13 of the policy sets out the various actions or measures that EPA can adopt now to achieve the policy objectives reflecting the measures set out in clauses 6 and 7 of the former policy and include measures that have been implemented over the past 10 years and those that may be implemented in the future. Sub-clause 13(2) sets out the considerations that the Authority will take into account when applying this term 'practicable' under the policy including environmental, health, safety, technical, logistical and financial considerations. Specific measures comprise clauses 14 to 29 which set out the obligations and mechanisms for ozone layer protection in more detail. These provisions are discussed below.

Clause 14 – Obligation to adopt alternatives and minimise emissions of ozone-depleting substances

Clause 14 imposes a general obligation that any person who handles ozone-depleting substances or equipment or products that use ozone-depleting substances must replace the ozone-depleting substance where practicable with an alternative substance and, where there are no practicable alternatives, avoid or minimise emissions of these substances to the atmosphere so as to achieve the best environmental outcome. The obligation to adopt alternatives is implicit under the former policy which included as an objective the reduced consumption of ozone-depleting substances through limiting access to such substances and through other measures under the policy. Clause 14 clarifies this obligation and reflects implementation of the former policy in practice. The former policy imposes an obligation to avoid or minimise emissions of ozone-depleting substances but limits the obligation to particular activities for specified industries. The policy has simplified the former policy by making this requirement an overarching obligation on any person using ozone-depleting substances. A number of industries specified in the former policy have made the transition to alternative substances or significant progress in phasing out ozone-depleting substances. Clause 14 removes repetition within the body of the former policy and enables the obligation to be flexible and take into account those industries which have adopted non-ozone-depleting alternatives.

Clause 15 – Recovery of ozone-depleting substances

Sub-clause 15(1) provides for the recovery, reuse, recycling, and destruction of ozone-depleting substances in order to reduce the emission of ozone-depleting substances to the atmosphere as a means for meeting the obligations under sub-clause 14(b) of the policy to avoid or minimise emissions. This clause reflects the former policy which set out the recovery and reuse obligations for particular activities for specified industries but updates these provisions to include the revised range of ozone-depleting substances. The clause varies the former policy by removing the option of secure storage of recovered substances 'pending destruction'. This option was necessary in the early operation of the former policy, as technologies and systems for large scale recycling and destruction were not readily available. This is no longer the case following the establishment of RRA and DASCEM.

As with clause 14 the policy simplifies the former policy by consolidating these obligations into one clause thereby removing unnecessary repetition.

- *Specified Activities*

Clause 15 varies the former policy by providing only for activities and not industries to be specified under the policy for the purposes of the clause. This is proposed on the basis that the risk of emissions of ozone-depleting substances to the atmosphere varies according to the activity being undertaken irrespective of the industry the activity may be covered by.

The policy varies the former policy by including certain activities in relation to domestic refrigeration (manufacturing, installing and servicing), and motor vehicle air conditioning equipment (decommissioning) and portable fire extinguishers (servicing, maintaining, and decommissioning). Recovery of CFCs in relation to these activities is already required under relevant Codes of Practice specified in the former policy. Specifying these activities under the policy provides clarification and does not introduce any new obligations. Industry has indicated strong support for the inclusion of additional activities in relation to: industrial and commercial air conditioning and refrigeration units (commissioning, manufacturing and installing); domestic air conditioning units (commissioning, manufacturing, installing and decommissioning) and, domestic refrigeration units (commissioning, maintenance and decommissioning). Inclusion of these activities addresses industry concerns to ensures that the obligations under clause 15 of the policy apply consistently across all activities with a relatively high risk of emissions in the refrigeration and air conditioning industries. The impacts of these changes are set out in more detail in chapter 7 of this document.

The policy also includes fumigation activities for the first time under the Victorian regulatory framework in response to the inclusion of methyl bromide as a controlled substance under the Montreal Protocol. In addition, the proposed recovery and recycling obligations under clause 15 in relation to fire protection equipment are not limited to halon-based equipment as under the former policy but to equipment using any ozone-depleting substance. In practice this would cover halon and HCFC-based equipment. The anticipated benefits and impacts of these refinements under the policy are set out in more detail in chapter 7.

The particular activities affected by the recovery provisions under the former policy are now specified in the Schedule B of the policy. EPA is of the view that these activities should be scheduled to the policy to ensure transparency and certainty of obligations for industry.

- *Exemption*

Sub-clause 15(2) varies the former policy by providing for an exemption in relation to recovery/recycling obligations under sub-clause 15(1) for any person who satisfies EPA that it is not practicable to recover the ozone-depleting substance. Alternatively, under sub-clause 15(2)(b) the Authority may grant a general exemption by public notice stating that it is satisfied that it is not practicable to recover ozone-depleting substances in the situation or situations described in the notice.

The former policy does not provide for an exemption from the recovery and recycling obligations under that policy. The exemption recognises that it may not be practicable for ozone-depleting substances to be recovered from all applications or that consumption volumes or the environmental risks posed are not significant enough to justify the associated costs of recovery. This is consistent with the principle of integration of economic and environmental considerations which states that measures adopted should be cost-effective and not be disproportionate to the significance of the environmental problems being addressed. The exemption provides flexibility by ensuring only those activities and applications using ozone-depleting substances that pose a significant environmental risk are covered by the recovery obligations under clause 15. Exemptions under sub-clause 15(2) may be granted on an individual or class basis.

Registration and Accreditation: Clause 16 – Ozone Layer Protection Boards

The former policy provided for the establishment of 'Industry Boards' which have played a critical role in the implementation of Victoria's industry-based programs for ozone-depleting substances designed to raise awareness, and improve and maintain industry standards geared towards ozone layer protection. Specifically the Boards assessed applications for registration and accreditation under the former policy and have helped to ensure that only persons with the skills and equipment to avoid or minimise emissions of ozone-depleting substances have access to these substances. Four boards were established under the policy including the Dry Cleaning Registration Board, the Automotive Air Conditioning Registration Board (Vic), the Commercial, Industrial and Domestic Refrigeration and Air Conditioning Chlorofluorocarbons (CFC) Registration Board of Victoria and the Fire Protection Registration Board (Halon). Under both the former and revised policy Board members are approved by EPA and comprise key industry representatives or persons with expertise in the particular industry or both. Where there is no appropriate Board or where a Board has refused an application, registrations and applications may be processed by EPA.

In practice, applicants for registration tend to be companies or businesses whereas applicants for accreditation tend to be employees or contractors. Registration was granted only if the Board was satisfied that the applicant will only supply the ozone-depleting substance for use by an accredited

person and that the applicant had access to equipment necessary to minimise emissions of ozone-depleting substances. Accreditation was granted only if the Board was satisfied that the applicant had an adequate understanding of the environmental effects of ozone-depleting substances and a proven ability to minimise emissions of ozone-depleting substances.

The Boards have worked in consultation with EPA to assess applications for registration or accreditation using criteria endorsed by EPA. The Boards have worked cooperatively with EPA to establish training courses and develop Codes of Practice to improve industry practices in handling ozone-depleting substances and equipment that uses these substances. Applicants for registration are required to provide evidence that they have access to appropriate recovery and recycling equipment. Applicants for accreditation are required to provide documentary evidence of their qualifications and experience in the relevant industry sector and must undergo an ozone-depletion awareness course. The Boards ensure that applicants for accreditation are also examined on the Code of Practice relevant to their industry sector. Each Board sets its own fees on a low cost recovery basis to meet its administrative costs which currently range up to $250 for registration and up to $50 for accreditation. The Boards also vary as to the frequency of renewals ranging from a once only charge to an annual, bi-annual or three yearly basis. In some cases renewals are at a reduced rate.

Boards have also assisted EPA with monitoring compliance.

- *Board Roles and Responsibilities*

Clause 16 varies the former policy by renaming Industry Boards as "Ozone Layer Protection Boards" and by clarifying the roles and responsibilities of such boards. The change of name to "Ozone Layer Protection Boards" seeks to emphasise the role of the Boards and that they exercise their functions for the benefit of both industry and the community as a whole. The policy retains the principle responsibility of Boards to assess applications for registration and accreditation under the policy. Under sub-clause 16(1)(b), the Boards may also provide assistance to the Authority upon its request regarding any other matters including: identifying alternatives to ozone-depleting substances; the development of EIPs and monitoring consumption trends for ozone-depleting substances. Boards are well placed to assist the Authority in such matters as board members include representatives of key industry stakeholders and are in close contact with industry members through the registration and accreditation process.

- *Board Composition*

Sub-clause 16(2)(a) varies the former policy by broadening the range of Board members to include any interested stakeholders with appropriate skills, experience or knowledge. This will enable board members to include community, as well as industry representatives in recognition of the impacts on the broader community of ozone-depletion. Under the policy composition of Boards is flexible and may for example, comprise one or more established associations or organisations representing an industry or community group provided all key stakeholder views are adequately represented.

Where appropriate, Boards may comprise or include organisations established by other regulatory authorities to help ensure complementary and mutually beneficial links between agencies so as to maximise environmental protection and minimise unnecessary costs to industry.

- *Terms of Reference*

Under sub-clause 16(2)(b), Boards are to exercise their functions in accordance with terms of reference approved by EPA, which may include roles and responsibilities of the Board, record keeping and reporting obligations, the application of Board funds and any other matter that EPA considers appropriate. It is anticipated that terms of reference will be developed by EPA in consultation with the relevant Board and will be tailored to address issues relevant to the particular industry sector the Board is servicing. For example, application of funds will depend upon how advanced the relevant industry sector is in adopting alternatives to ozone-depleting substances. Board funds may best be applied in the further development of training courses or in raising awareness through seminar and workshop programs or in research and development projects.

Any record keeping requirements would aim to assist EPA in monitoring consumption trends of ozone-depleting substances by industry sector. For example, enabling the Board and EPA to determine which registrations and accreditations remain active and which have ceased to use ozone-depleting substances. It is anticipated that reporting would be on an annual, bi-annual or needs basis to enable consumption trends to be monitored. Terms of reference will, through improved transparency and accountability of Board activities, help assure the community that the registration and accreditation process remains an effective mechanism to limit the use of ozone-depleting substances to persons who have the expertise and facilities to handle ozone-depleting substances with no or minimal discharge to the atmosphere.

Registration and Accreditation: Clauses 17-19

The policy maintains a registration and accreditation system in relation to ozone-depleting substances. Clauses 17 to 19 under the policy simplify clauses 17 to 21 and 23 to 27 of the former policy by consolidating the requirements into three clauses thereby removing unnecessary repetition. The registration and accreditation provisions under the former policy seek to ensure that purchasers and users of ozone-depleting substances have the expertise and facilities to handle ozone-depleting substances with no or minimal discharge to the atmosphere. These provisions applied only to purchasers and users of ozone-depleting substances in respect of certain activities specified under the former policy.

Under the policy the registration and accreditation provisions will apply to the revised range of ozone-depleting substances, an updated range of activities and to suppliers of ozone-depleting substances. Persons covered by the registration and accreditation provisions of the policy will obliged to undergo ozone-awareness training and, where appropriate, training in any relevant Code of Practice, and demonstrate that they have access to appropriate equipment and the expertise to minimise emissions of ozone-depleting substances. Where appropriate, Board fees and training costs

may also be payable. These obligations are discussed below.

Clauses 17 and 19: Registration and Accreditation

- *Specified Activities*

Clause 17 provides for the registration/accreditation of any person who purchases or uses any ozone-depleting substance in relation to certain activities specified by EPA. Registrations and accreditations are processed by a Ozone Layer Protection Board or, under clause 19, by the Authority where there is no appropriate Board or where a Board has refused an application. These obligations mirror the former policy and do not change existing requirements other than update the registration/accreditation provisions to include the revised range of ozone-depleting substances.

Clause 17 varies the former policy by providing only for activities and not industries to be specified under the policy for the purposes of registration and accreditation. As with clause 15, this is proposed on the basis that the risk of emissions of ozone-depleting substances to the atmosphere vary according to the activity being undertaken irrespective of the industry the activity may be covered by.

The particular activities affected by the registration/accreditation provisions of the policy are specified in Schedule C to the policy. These activities remain scheduled to the policy to ensure transparency and certainty of obligations for industry.

The policy varies the former policy by updating the list of activities that are currently subject to the registration and accreditation obligations. Activities listed in Schedule C under the former policy in relation to dry cleaning equipment using CFC-113 have been deleted in recognition of the near total phase-out of CFCs by the dry cleaning industry. The references to halon-based fire protection equipment under the former policy have been varied to apply to equipment using any ozone-depleting substance consistent with the inclusion of the revised range of ozone-depleting substances under the Montreal Protocol. In practice this variation would apply to halon and HCFC based equipment.

Some new activities have been specified namely, decommissioning of motor vehicle air conditioning equipment and the service and maintenance of domestic air conditioning equipment. The former policy requires that any person that purchases or uses any ozone-depleting substance in relation to the service or maintenance of domestic refrigeration equipment must be registered or accredited as the case requires. Specifying the same activities for domestic air conditioning under the policy removes an anomaly under the former policy and will help ensure that emissions of ozone-depleting substances during these activities are avoided or minimised. Similarly, the former registration and accreditation provisions apply to the service, maintenance and installation of motor vehicle air conditioning equipment. The inclusion of decommissioning activities will help ensure that emissions of ozone-depleting substances during such activities are also avoided or minimised.

The policy varies the former policy by including additional activities in relation to industrial and commercial air conditioning and refrigeration units (commissioning and manufacturing) and in relation to domestic air conditioning units and domestic

refrigeration units (commissioning, manufacturing, installing and decommissioning).

Additional activities have been included in response to industry calls to ensure that the obligations under clause 17 of the policy apply consistently across all activities in the refrigeration and air conditioning industries with a relatively high risk of emissions. The impacts of these changes are set out in more detail in chapter 7 of this document.

- *Revised Range of Ozone-Depleting Substances*

Victoria's former statutory framework for ozone layer protection regulated two types of ozone-depleting substances namely, CFCs and halons. Over the past 10 years applications for registration and accreditation have been decreasing as industry has made the transition from CFCs and halons to alternative substances. For example, the Dry Cleaning Registration Board has ceased to operate in response to the near total phase-out of CFCs by that industry. Under the policy the range of ozone-depleting substances has been updated to also include HCFCs, methyl bromide, carbon tetrachloride, methyl chloroform and HBFCs.

The registration and accreditation requirements will apply to the revised range of ozone-depleting substances to a varying extent. For example, the use of CFC-based solvents for electronic cleaning and degreasing systems are not subject to the registration and accreditation provisions under the former policy. Similarly solvent cleaning applications using ozone-depleting substances will not be affected by the registration and accreditation provisions under the policy and accordingly do not affect purchasers or users of the solvents carbon tetrachloride and methyl chloroform. Currently HBFCs are not imported by or manufactured in Australia and are unlikely to be in use in Victoria in any significant quantities either in fire protection equipment or pest control applications.

Applications for registration and accreditation for Boards re-established under the policy for the air conditioning and refrigeration industries will increase in relation to HCFCs which are mainly used as transitional substances to phase out CFCs. Similarly, applications for registrations and accreditations to the Boards re-established under the policy for the fire protection industry may increase to cover activities in relation to HCFC-based equipment.

- *Suppliers*

The registration and accreditation requirements under the former policy did not apply to suppliers of ozone-depleting substances who handle bulk quantities of these substances, which often involves decanting ozone-depleting substances from one container to another for sale or distribution. Clause 17 varies the former policy by requiring suppliers of any ozone-depleting substances to be registered in recognition of the need to ensure that suppliers, as in the case of purchasers and users, have the expertise and facilities to handle ozone-depleting substances with no or minimal discharge to the atmosphere.

This variation is consistent with the statutory ozone protection frameworks of other State and Territory jurisdictions and is unlikely to significantly impact Victorian suppliers. For example, no essential use licences were granted under the Commonwealth Act for the year 2000 for carbon tetrachloride or methyl chloroform for any person or organisation in

Victoria. Similarly there have been no essential use licenses granted under the Commonwealth Act for HBFCs. Only one supplier in Victoria has been granted controlled substances licences for the supply of methyl bromide. Suppliers of CFCs, HCFCs and halons will be covered by the obligation to be registered. Suppliers of recycled stocks of any of these substances, such as DASCEM and RRA, are already obliged to be registered as purchasers of these substances.

It is anticipated that suppliers may wish to join relevant Boards re-established under the revised policy. Alternatively, either a new Ozone Layer Protection Board could be established under the policy to process applications for registration from suppliers or EPA may process these applications under clause 19. EPA will fully consider these options in consultation with suppliers and the Boards during implementation of the policy.

Clause 18: Granting of Registration or Accreditation

Under the policy the former process for granting applications for registration and accreditation has been varied to incorporate consideration of policy intent and principles and to consolidate criteria for grants of registration and accreditation.

Sub-clause 18(1) empowers Ozone Layer Protection Boards to: grant or not grant an application for registration or accreditation as the case requires; grant an application subject to such conditions, if any, as the Board considers appropriate and specifies a time frame of 60 days within which the Board must make its decision. These provisions reflect the former policy and do not change introduce any new requirements.

Sub-clause 18(4) varies the former policy by requiring the Board to provide written notification to the applicant of its decision whether to grant registration or accreditation within 7 days of its decision. This is to help ensure that such decisions are communicated to applicants within a reasonable period.

- *Consideration of Policy Intent and Principles*

Sub-clause 18(2) varies the former policy by providing that in deciding whether or not to grant an application, the Board must, so as to achieve the best practicable environmental outcome, have regard to:

- the policy intent and principles under the policy;
- practicable alternatives for ozone-depleting substances and equipment or products that use ozone-depleting substances; and
- whether the person is a fit and proper person to hold such a grant.

Having regard to the policy intent and principles under the policy will help ensure that the wastes hierarchy, eco-efficient practices and principles of ecologically sustainable development are considered in granting or refusing applications for registration or accreditation. The proposed requirement that alternatives for ozone-depleting substances be considered is to help ensure that registrations and accreditations are only granted where there are no practicable alternatives. An application may be refused on the basis that practicable alternatives to ozone-depleting substances are available in the marketplace. The inclusion of a new sub-clause 13(2) states the factors the Authority will take into account when considering the term 'practicable' under the policy.

These factors include environmental, health and safety, technical, logistical and financial considerations.

- *Consolidation of Criteria for Grants of Registration and Accreditation*

Under clauses 18 and 24 of the former policy, Boards or the Authority, as the case requires, could only grant applications for registration or accreditation when satisfied of a number of matters specified under these clauses. These matters varied depending on whether the application was for registration or accreditation. Sub-clause 18(3) varies the former policy by combining clauses 18 and 24 and by requiring that the Board must be satisfied of each of these matters for all applications.

For example, under the former policy only applicants for accreditation must have an adequate appreciation of the role of ozone-depleting substances in depleting stratospheric ozone and the consequences of the depletion of stratospheric ozone as well as a proven ability to take effective measures to minimise emissions of any ozone-depleting substances. Under sub-clause 18(3) suppliers and purchasers will also need to meet these obligations. In practice, this will mean that purchasers and suppliers seeking a grant of registration will be required to undergo training programs on ozone awareness and, where applicable, relevant codes of practice which users of ozone-depleting substances currently undertake. This will help ensure that suppliers and purchasers of ozone-depleting substances, as well as users, have an understanding of the need for ozone-layer protection and the expertise to take effective measures to minimise emissions of any ozone-depleting substances. Similarly, users and suppliers of ozone-depleting substances will be required to have access to the necessary equipment to minimise emissions of any ozone-depleting substances. Currently only purchasers must meet this criteria.

Clause 18 varies the former policy by removing the obligation upon Boards to be satisfied that a purchaser seeking registration will only supply ozone-depleting substances for use by an accredited person as it is not practicable for Boards to implement this obligation.

Clause 19 (1) enables the Authority to grant registration or accreditation where there is no appropriate Ozone Layer Protection Board or where registration or accreditation has been refused by a Board. This clause reflects the former policy and does not introduce any new obligations. Under this clause the Authority will have regard to the same criteria for granting registration/accreditation as the Board under clause 18.

Clause 20 – Rescinding Grant of Registration or Accreditation

Clause 20 varies the former policy by specifying the conditions under which the Authority may rescind a previous grant of registration or accreditation. The Authority may rescind a grant of registration or accreditation if it is satisfied that:

- a grant of registration or accreditation by a Board under clause 18 is not appropriate;
- any information supplied by the applicant was false or misleading;
- any condition of the grant of registration or accreditation has been contravened;

- where a person has an environment improvement plan approved under the policy, any condition of the environment improvement plan has been contravened; or
- the person is not a fit and proper person to hold such a grant.

If the Authority rescinds a grant of registration or accreditation, it must notify the applicant of its decision and of its reasons within 7 days of making the decision. Any person who has been granted registration or accreditation is entitled to purchase or use any ozone-depleting substance for certain activities specified under the policy. Such an entitlement would cease to have effect if the grant of registration or accreditation was rescinded. While EPA would be guided by the advice of the appropriate Board in making such a decision, the power to rescind the grant of registration or accreditation provides an important safety net for the protection of the environment from the risks of ozone-depleting substances where the criteria set out in the clause are met. This approach will help avoid any concerns of industry and provide a level of assurance to the general community about the Board system. However, the Authority recognises the seriousness of such a decision and would endeavour to work with industry to overcome problems that may arise so as to avoid any need to rescind a grant of registration or accreditation.

Clause 21 – Codes of Practice

The former policy required compliance with particular codes of practice for persons in specified industries. A number of these codes have been superseded or are now defunct. Clause 21 varies the former policy by replacing these outdated references into a general requirement which will provide flexibility and help ensure that compliance is only required in relation to relevant and current publications. It is anticipated that relevant publications will be specified by EPA for the purposes of this clause in either an information bulletin or guidelines published by EPA as amended from time to time.

Clause 22 – Obligation to Check Registration and Accreditation

Clause 22 of the policy seeks to address an anomaly under clause 18(1) of the former policy. It was implicit from this clause that, where the registration accreditation requirements applied, ozone-depleting substances would only be supplied to persons who have been granted registration or accreditation. Clause 22 expressly sets out this obligation by way of clarification. In practice, this will oblige suppliers and purchasers to take steps to satisfy themselves that the person to whom they are supplying ozone-depleting substances is registered or accredited as the case requires. For example, this may mean that proof of registration or accreditation is requested at the time the ozone-depleting substance is supplied. In practice accredited users show identification cards issued by the appropriate Board on the grant of accreditation. Such practices can be extended to registered persons. The term 'supplier' is defined under the policy to include reclaimers of ozone-depleting substances who supply such substances. This is to ensure that the requirement applies consistently across all suppliers of ozone-depleting substances.

Clause 23 – Suppliers to Record and Report Consumption Data

Clause 23 of the policy sets out the obligations of suppliers in relation to the return of ozone-depleting substances recovered from equipment and in relation to record-keeping and reporting obligations.

- *Return of Recovered Ozone-Depleting Substances to Suppliers and Reclaimers*

Sub-clause 23(1)(b) of the policy obliges suppliers to accept, wherever practicable, all recovered ozone-depleting substances returned for reuse, recycling, reclamation, storage or destruction. This provision is based upon clause 15(1) of the former policy. Sub-clause 23(1)(b) varies sub-clause 15(1) by extending the obligation to the updated range of ozone-depleting substances and, by the use of the term 'supplier', to reclaimers. The term "reprocessing" has also been replaced with the terms "reuse, recycling, reclamation, safe storage or destruction". These terms reflect the range of options that are currently available for returned ozone-depleting substances and reflect current practices.

Sub-clause 23(2) is based upon clause 13 of the former policy and requires wholesalers and distributors to return recovered ozone-depleting substances to a supplier for reclamation, recycling, destruction or storage wherever practicable. Sub-clause 23(2) varies clause 13 by extending the obligation to wholesalers to reflect current practice and to ensure consistency for all suppliers. Clause 13 of the former policy provided for CFCs to be returned to manufacturers only. Sub-clause 23(2) varies clause 13 by providing that returned ozone-depleting substances can, by the use of the term 'supplier', be returned to reclaimers. This reflects current practice and recognises the return of recovered ozone-depleting substances to reclaimers as an option that has become available since the former policy was declared.

- *Simplification of Record-Keeping and Reporting Obligations*

Sub-clauses 23(1)(a), (3) and (4) set out the record-keeping obligations for suppliers of consumption data to enable EPA to monitor consumption trends for ozone-depleting substances. Sub-clause 23(1)(a) of the policy obliges suppliers to maintain records of the name and address of the purchaser, the end use category, the quantity of the ozone-depleting substance supplied, and quantities of ozone-depleting substances returned. Such records are required under clauses 14, 15 and 16 of the former policy and do not introduce any new requirements. Sub-clause 23(1)(a) varies clause 16 of the former policy by requiring that the name of the ozone-depleting substance also be recorded. This is to address an anomaly under the former policy and to ensure completeness.

Sub-clause 23(3) significantly simplifies the record-keeping and reporting provisions under the former policy by: deleting record-keeping obligations upon purchasers as it believes that the record-keeping and reporting provisions applicable to suppliers will be sufficient to enable EPA to monitor consumption trends of ozone-depleting substances covered by the policy; providing for records to be kept for a limited period of two years and in a form so as to enable aggregate information to be supplied thereby replacing the former need for records to be provided in relation to individual sale transactions. Sub-

clause 23(3) also simplifies the former policy by requiring records to be provided annually or upon request rather than quarterly. Under this sub-clause records are to be provided to the relevant Board or where there is no appropriate Board, to the Authority. This is consistent with the expanded role of the Boards which may include record keeping and reporting under terms of reference under clause 16 of the policy.

The record keeping provisions apply to the updated range of ozone-depleting substances controlled under the revised policy. The end use categories to be recorded for the purposes of sub-clause 23(1)(a)(iii) have been varied to include fumigation in response to the inclusion of methyl bromide as an ozone-depleting substance controlled under the policy.

EPA acknowledges the desirability of avoiding record-keeping and reporting obligations under the policy and that duplicate other Victorian or national statutory frameworks. Sub-clause 23(5) allows equivalent information provided for other statutory purposes to be supplied in satisfaction of this policy. This will help minimise administrative costs to industry associated with the reporting obligations and integrate with other Victorian and national statutory requirements for ozone-depleting substances.

The record-keeping obligations under the policy are based upon normal business records and should not impose any additional cost burden on industry. These provisions will reduce the regulatory burden on industry covered by the former policy and will assist EPA to monitor consumption of ozone-depleting substances and identify any remaining applications for the use of such substances.

Environment Improvement Plans: Clauses 24 - 25

Clauses 24 to 25 of the policy varies the former policy by providing for EIPs as an additional and complementary tool for Victoria's ozone layer protection program. EIPs can be used to build on the initiatives of industry, which have already made significant progress in phasing out ozone-depleting substances, to assist them in their final transition to alternative substances. EIPs can also be used to assist industries which have not previously been covered by Victoria's regulatory framework to develop strategies to meet mandated phase-out dates and to avoid or minimise emissions.

EIPs are a tool used under the Act to improve the environmental performance of particular sites but the principles of EIPs can be extended to all operations, which can potentially degrade the environment. EIPs identify opportunities for environmental improvement and can include an action plan with clear goals, timelines and provision for ongoing monitoring and reporting. Many organisations already have an EIP in one form or another (although they might be given different titles such as 'health and environment policy'), and the policy allows the flexibility for those existing mechanisms to be continued or built upon in the future. EIPs provide a mechanism for effective planning and management of activities that have the potential to adversely affect the environment. Pursuant to the eco-efficiency principle, effective environmental management should be applied to all stages of an activity, including the planning and operation stages, to ensure that the risk of adverse

environmental impacts is minimised throughout the lifecycle of an activity. EIPs are a useful tool that, with guidance from EPA, can be adopted by both the private and public sector to improve the environmental management of business operations.

- *Initiating EIPs Under Clause 24*

Under sub-clause 24(1), an EIP may be initiated by either an individual or, an industry association or body representing an industry sector. There are no fees applicable for the submission or approval of an EIP under the policy. Industry EIPs may be the preferred option for many industries as a way for its members to save the time and costs of preparing individual plans with similar strategies and objectives. Alternatively, individual EIPs provide flexibility to enable plans to be tailored to the specific issues and concerns of persons or organisations using ozone-depleting substances.

Under sub-clause 24(2), EPA may initiate an EIP where industry feedback has indicated that this would be beneficial in helping the industry to identify strategies for the transition to alternatives and reducing emissions. Where an industry EIP has been approved, EPA may initiate additional EIPs with industry stakeholders that have not signed up to the industry plan to ensure that those who make a commitment in an EIP to develop alternative technologies and improved environmental practices, including recovery and reuse, are not at a competitive disadvantage during the transition to total phase-out compared to others who do not make such a commitment. It is anticipated that EIPs will provide a legislative safety net to help ensure consistent requirements for industry and to support and build upon existing voluntary initiatives of industry.

Minimal costs to industry are anticipated from the development of EIPs as they can integrate with or be driven by industry initiatives developed in response to national phase-out schedules and national strategies. EIPs will not impose any additional research and development costs as industry is already incurring such costs in the transition to non-ozone-depleting alternatives to meet international obligations. Voluntary industry levies through organisations such as RRA and under the National Methyl Bromide Strategy help defray these existing costs across industry.

- *Management of Ozone-Depleting Substances to be in Accordance with EIP*

Clause 25 states that any person who is a signatory to an approved EIP must manage ozone-depleting substances in accordance with the conditions and requirements of the plan. This clause seeks to ensure that once an EIP has been developed and approved under the policy that its terms become binding upon signatories to the plan.

Sub-clause 24(3) sets out the matters that an EIP is to make provision for. The clause is not exhaustive so as to maintain flexibility in the range of matters and issues that can be addressed. The matters specified are indicative of the focus on identifying opportunities for environmental improvement throughout the lifecycle of using ozone-depleting substances. These range from avoiding or minimising use in the first instance by adopting alternatives, recovery, reuse and recycling or other measures to minimise emissions through to safe storage and destruction.

Recovery and recycling would only be included within EIPs where this is considered practicable. Where recovery was considered practicable, an EIP would not necessitate the acquisition of recovery equipment provided access to such equipment was possible, thereby minimising industry costs. For example, commercial recovery services may be available on a fee for service basis to an industry included within an EIP.

The key outcome of an EIP is that the application or use of an ozone-depleting substance will be performed in a more environmentally sound manner. While EIPs may sometimes involve businesses and individuals adopting additional practices or using additional resources, often EIPs may involve changes in existing practices and making better use of existing resources to undertake activities in an environmentally sustainable manner. For example some farmers have developed new approaches as to how they apply methyl bromide to their pastures to minimise consumption which also helps reduce emissions to the atmosphere. Appropriate application of methyl bromide does not necessarily require additional resources but may require altered application methods. Consequently, EIPs do not necessarily impose significant new resources on stakeholders and in some cases may lead to cost savings.

Decreasing supply of ozone-depleting substances due to Commonwealth import and manufacturing controls and imminent phase-out dates makes changes in current practices necessary in any event. The impacts associated with the adoption of improved environmental management practices cannot be readily quantified or exclusively attributed to the policy.

EIPs can identify methods in which activities, which pose an environmental risk can be better planned and implemented. Integrating the protection and improvement of the environment into all aspects of planning and implementation of activities is essential to achieving the best possible environmental outcomes. Business planning and management practices regularly take account of economic and health and safety concerns. EIPs provide a tool to integrate environment protection and improvement and the principle of eco-efficiency into those practices to ensure the protection of the environment for current and future generations.

- *Recision of an Approved EIP*

Sub-clause 24(4) provides that the Authority may rescind its approval of an environment improvement plan if it is satisfied that any condition of the environment improvement plan has been contravened. If the Authority rescinds its approval for an EIP, it must notify the applicant of its decision and the reasons for its decision within 7 days of making the decision. The Authority would endeavour to work with industry to overcome problems that may arise so as to avoid any need to rescind an approved EIP.

Labelling (Refrigeration and Air Conditioning Equipment): Clauses 26-27

Clauses 26 and 27 provide for labelling obligations in relation to refrigeration and air conditioning equipment and are based on clause 35 of the former policy. These clauses have been revised to clarify the labelling obligations under the former policy and are consistent with other State and Territory ozone frameworks. They seek to address specific industry concerns to ensure that equipment using an ozone-

depleting refrigerant is clearly labelled to reduce the likelihood of contaminating the refrigerant with other substances. Industry can incur the costs of fully recharging the equipment or vessel where contamination results in the ozone-depleting refrigerant being unsuitable for reuse or when simply "topping up" the equipment or vessel with the appropriate substance is not possible because the refrigerant cannot be identified. Sub-clause 26(a) requires labelling of equipment to enable the ozone-depleting substance to be identified at all times. This provision reflects clause 35 of the former policy. Sub-clause 26(b) varies clause 35 by requiring that the labelling is such that it will endure for the likely service life of the equipment. This seeks to help ensure that the labelling remains affixed and legible in both the short and long term. These labelling provisions under clause 26 expressly apply to manufacturers, distributors and sellers of such equipment. This is provided by way of clarification, as clause 35 of the former policy is not clear in identifying to whom labelling requirements applied.

Clause 27 imposes labelling obligations upon service personnel whenever charging refrigeration and air conditioning equipment with an ozone-depleting substance or when replacing any existing ozone-depleting substance with some other refrigerant. Labelling must clearly record the name and address of the person carrying out the service, the date of the service and the type of refrigerant used in the service. These obligations are new and also seek to address specific industry concerns to ensure up-to-date labelling where information provided by labelling at the point of manufacture, distribution or sale under clause 26 of the policy has become redundant after the original ozone-depleting substance has been replaced with a different substance.

Clause 28 – Labelling and Handling of Vessels Containing Ozone-Depleting Substances

Clause 28 of the policy sets out general requirements in relation to the handling of ozone-depleting substances. This clause seeks to clarify and improve clauses 28 and 29 of the former policy to address specific industry concerns to ensure that vessels containing an ozone-depleting substance are clearly labelled to reduce the likelihood of contaminating the equipment and substance with other substances. Sub-clauses 28(1) and (3) provide that any vessel containing an ozone-depleting substance must be clearly identified with the name of the substance contained in that vessel and that transferral of ozone-depleting substances between vessels must be achieved with no or minimal emission of ozone-depleting substances to the atmosphere. Sub-clause 28(2) provides that any vessel containing an ozone-depleting substance must not be filled or partially filled any with any substance other than the ozone-depleting substance identified on the vessel unless the person ensures that the vessel is clearly labelled with the name of the substance. This improves flexibility under the policy by making provision for those who are legitimately using various blends of ozone-depleting substances and other substances as part of a consumption or emission reduction strategy.

Clause 29 – Obligations Relating to Halon Fire Protection Equipment

Clause 29 of the policy consolidates and replaces clauses 37 to 47 and 49 of the former policy which set out obligations in relation to the use of halon. These obligations have been redrafted in view of the successful phase-out of halon for non-essential uses. Clause 29 retains the essential use system provided for under the former policy.

Clause 29 covers both portable halon fire extinguishers and fixed systems under the term "halon fire protection equipment". Sub-clause 29(1) provides that a person must not install, use or operate halon fire protection equipment unless-

- the Authority is satisfied that the use of the halon fire protection equipment complies with essential use criteria specified in Schedule D of the policy: clause 29(1)(a); or
- on two occasions in 21 days, the Authority publishes a notice in a newspaper circulated generally throughout Victoria stating that it is satisfied the use of the halon fire protection equipment in the situation described in the notice complies with essential use criteria specified in Schedule D: clause 29(1)(b)

Sub-clauses 29(1)(a) and (b) reflect clauses 38, 39(3) and 49 of the former policy and do not change former requirements. Under sub-clause 29(2) any person who owns or controls halon fire protection equipment which, in the opinion of the Authority, does not comply with the essential use criteria specified in Schedule D must ensure that it is decommissioned. This requirement reflects the former policy and does not change former requirements. Sub-clause 29(2) varies the former policy by requiring that the recovered halons are returned to a supplier for storage, reuse, recycling or destruction. This provision reflects current practice which has developed over the past 10 years following the establishment of DASCEM and has enabled halon used for essential use applications to be sourced from recycled stocks.

Under sub-clause 29(3) EPA may consult any person or bodies that it considers capable of assisting it in relation to making determinations for essential use under sub-clause 29(1). This provision is new and recognises that in practice EPA may seek the assistance of expert advisory groups, such as the NHEUP, in determining whether the use of halon based fire protection equipment complies with the essential use criteria under the policy.

- *Testing of Halon Fire Protection Equipment*

Sub-clause 29(4)(a) prohibits discharge testing of portable halon fire extinguishers and their use for training purposes. This prohibition duplicates the former policy and does not change former requirements. The former policy prohibited the use of halons for testing halon fire protection systems unless the prior written consent of the Authority is obtained. Sub-clause 29(4)(b)(ii) varies this prohibition by replacing the requirement to obtain written consent with a requirement to have an approved EIP. EPA considers that the EIP process provides a more flexible mechanism to enable EPA to work with industry to phase out the use of halon in essential use applications. EIPs provide an opportunity for EPA to assist industry in identifying strategies tailored to the particular industry sectors for achieving a final transition to alternatives.

Sub-clause 29(4)(b)(i) retains the prohibition under the former policy banning the testing of fixed systems if it will result in halon being released into the atmosphere.

- *Simplification of Notification Obligations*

The policy simplifies the former policy by removing the requirement on occupiers of premises at which a halon fire suppression system is installed to notify the Authority of the location and capacity of the system. This requirement was necessary ten years ago when the policy was declared to enable the Authority to monitor the decommissioning of non-essential systems. This requirement is no longer necessary as all systems currently operating should be decommissioned and the halons recovered as required under clause 29 of the policy unless the equipment meets essential use criteria under the policy and has been identified through that process. The policy also removes the former requirement on occupiers of premises at which a halon fire suppression system is installed to notify the Authority of any discharges of halon from such systems because the policy already places specific bans on discharge testing and discharges for the purposes of putting out fires are a necessity.

Schedule D – Essential Use Criteria for Use of Halon Portable Fire Extinguishers and Halon Fire Suppression Systems

Schedule D sets out the essential use criteria for use of halon portable fire extinguishers and halon fire suppression systems for the purposes of clause 29 of the policy. The essential use criteria under Schedule D of the policy are the same as provided in Schedule D of the former policy.

7. POTENTIAL IMPACTS

Industry has made significant progress in phasing out the use of ozone-depleting substances with many sectors successfully adopting alternatives over the past decade. This chapter sets out the achievements of Victorian industry together with a discussion as to the anticipated impacts of the revised Victorian framework for ozone layer protection, including the policy, on these and other industry sectors. A summary of the key anticipated benefits and costs of the revised Victorian framework and policy are summarised below.

Summary of benefits and costs of the revised Victorian framework and policy

- *Continues key features of approach under former ozone protection framework*: which are well understood and accepted by industry thereby minimising any associated costs.
- *Simplifies framework*: by streamlining three statutory instruments into one.
- *Promotes national consistency*: by including ozone-depleting substances that have been added to the Montreal Protocol but were not covered by the former policy, consistent with other State and Territory frameworks.
- *Introduces environment improvement plans (EIPs):* as an additional and complementary tool to assist industry develop, or support and build upon existing, strategies to meet internationally mandated phase-out dates, manage transition to alternatives and avoid or minimise emissions. (see further detail in boxed text below).
- *Recovery provisions:* updated to cover the revised range of ozone-depleting substances and fumigation activities; expands industry options where recovery not practicable.
- *Updates registration/ accreditation provisions to include:* revised range of ozone-depleting substances; suppliers of ozone-depleting substances helping to ensure that suppliers, as with purchasers and users, have the expertise and facilities to minimise emissions; and revised range of activities with higher risk of emissions helping to ensure environment protection. Costs, including Board fees, currently determined on a low cost recovery basis ranging up to $250 for registration and $50 for accreditation, and course fees.
- *Ozone Layer Protection Boards:* clarifies the roles and responsibilities of Ozone Layer Protection Boards and provides for improved transparency and accountability.
- *Simplifies record-keeping and reporting requirements*: including removal of record-keeping requirements on purchasers of ozone-depleting substances, reducing costs to industry (see further detail in boxed text below).
- *Strengthens labelling obligations*: applying to refrigeration and air conditioning industries addressing industry concerns to reduce contamination of ozone-depleting substances.

- *Avoids duplication:* of Commonwealth ozone layer protection laws and existing State statutory requirements.

Environment Improvement plans (EIPs)

- *Benefits:*
  - Can be initiated where industry indicates beneficial in identifying transitional strategies for reducing consumption and emissions ahead of national phase-out schedules.
  - Provide for improved flexibility and choices to industry by expanding options for developing emission reduction strategies which can be tailored to meet the specific needs of individual businesses or industry sectors on the most cost effective basis while helping to ensure environment protection.
  - Provide for improved handling and management of ozone-depleting substances by the identification and adoption of best practice management options through the EIP process and the development and updating of Codes of Practice.
  - Can be used to ensure consistency across industry where considered useful by industry to minimise competitive disadvantage during national phase-out.
  - No service fees to apply to EIP process.
- *Costs of developing an EIP*: these are likely to be minor as EIPs can integrate with or be driven by industry initiatives developed in response to national phase-out schedules and national strategies. EIPs can be developed on an industry sector basis to minimise costs or where preferred, on an individual basis.
- *Costs of implementing management strategies under an EIP*:
  - Will be variable depending on whether the industry under the EIP has been covered by the former framework. Those industries who are new to the framework may incur costs of accessing or investing in appropriate recovery equipment where recovery considered practicable.
  - Will not impose any additional research and development costs as already being incurred in anticipation of national phase-out;
  - Can be offset by providing industry with a mechanism to minimise commercial disadvantage during the transition to alternatives.
  - Can be recovered through savings accruing from improved management of ozone-depleting substances helping conserve stocks and extending their use through recovery, recycling or other emission minimising strategies.

Record-keeping and reporting obligations simplified

The record-keeping and reporting obligations under clause 23 of the policy assist EPA in monitoring consumption trends for ozone-depleting substances. Clause 23 significantly reduces associated costs to industry compared to these obligations under the former policy by-

- removing the record-keeping obligations upon purchasers;
- limiting record-keeping to a period of two years;
- replacing the obligation for quarterly reporting with an annual obligation;
- replacing the obligation to record and report individual transaction records with an obligation for aggregate information;
- allowing equivalent information provided for other statutory purposes to be supplied in satisfaction of the policy to promote integration with other Victorian and national statutory requirements for ozone-depleting substances.

7.1 Aerosols

- *Commonwealth Statutory Measures and Former Victorian Framework*

The manufacture and sale of CFC-based aerosol products have been banned in Victoria since the late 1980s and early 1990s under the ODS Control Regulations and the ODS Purchase and Sale Regulations. These prohibitions applied unless an exemption had been granted in relation to such a product under section 40 of the Commonwealth Act for essential uses where there were no practical alternatives.

Under the Commonwealth Act, the Victorian aerosol industry has also been subject to manufacture and import bans of CFC-based aerosol products since 31 December 1989 unless exempted under section 40 of that Act. The only exempted use for aerosols granted for the period 2000 and 2001 under section 40 is the medical use of these ozone-depleting substances in metered dose inhalers (MDIs) for the treatment of asthma and chronic obstructive pulmonary disease.

The manufacture bans under the Commonwealth Act are duplicative of the manufacture bans under the expired ODS Control Regulations and currently apply to aerosol products containing a broader range of ozone-depleting substances than under the expired ODS Control Regulations, namely CFCs, halons, carbon tetrachloride and methyl chloroform. While the ODS Control Regulations expired in June 2000, the manufacture bans under the Commonwealth Act continue to apply in Victoria and nationally. Under the former policy suppliers were required to keep sale records of CFCs supplied for a number of end-use categories including aerosols.

- *Revised Framework and Anticipated Impacts*

CFC-based aerosol products are no longer subject to manufacture bans under the ODS Control Regulations, which expired in June 2000, or the sale bans under the ODS Purchase and Sale Regulations

which expired in March 2001. Currently the only use of ozone-depleting substances in the aerosol industry is the medical use of CFCs in MDIs where exempted under section 40 of the Commonwealth Act. Any exemption under section 40 of the Commonwealth Act also constituted an exemption from the manufacture bans on aerosol products under the ODS Control Regulations and the sale ban on aerosol products under the ODS Purchase and Sale Regulations. The use of all other ozone-depleting substances has been phased out by the aerosol industry.

In these circumstances the proposal not to remake the ODS Control Regulations will have no adverse environmental impact as these Regulations have become unnecessary. In any event, the manufacture bans under the Commonwealth Act will continue to apply in Victoria and nationally. Similarly, the proposal not to remake the ODS Purchase and Sale Regulations will have no adverse environmental or economic impact. The sale ban on aerosol products under these regulations have also become unnecessary due to the length of time since these products have been more generally available (about ten years or more).

Under the revised policy, users of ozone-depleting substances in the aerosol industry will be covered by the overarching provisions of clause 14 to replace ozone-depleting substances with alternatives where practicable and to avoid or minimise emissions of ozone-depleting substances to the atmosphere. These obligations are implicit in the former policy and are implemented in practice. Clause 14 clarifies these obligations. In practice this obligation will only affect CFC based MDIs. EPA recognises that there are currently practicable constraints in meeting these obligations in the case of CFC-based MDIs. If considered advantageous, the development, under clause 24 of the policy, of individual EIPs or an EIP for the CFC-based MDI industry in Victoria, could support or build upon the voluntary initiatives of the industry to date that help to ensure the transition from ozone-depleting substances to alternatives by the industry's agreed phase-out date of 2005.

The policy retains some of the record-keeping requirements of the former policy which will continue to apply to CFCs and aerosol applications using any ozone-depleting substance. In practice, this will only affect suppliers of CFCs for the manufacture of MDIs in Victoria which is currently being undertaken by one company.

Phase-out of ozone-depleting substances in the aerosol industry

Since 1998 the only use of ozone-depleting substances in the aerosol industry has been the use of CFCs in MDIs where exempted under section 40 of the Commonwealth Act. A proactive voluntary response by industry to emerging scientific evidence of the effects of CFCs on stratospheric ozone saw consumption of CFC based aerosols decrease in Australia from a peak of 5,189 tonnes in 1982, at which time CFC based aerosols comprised 43.8% of the aerosol market, to only 723 tonnes of CFCs in 1989.

By 1998, 96.8% of aerosol products used hydrocarbon as a propellant and no ozone-depleting substances were being used in aerosol manufacture with the exception of MDIs exempted under the Commonwealth Act.

Ten years ago 100% of the MDI market was CFC based. In 1996 the MDI industry made a voluntary commitment to a phase-out of CFC based MDIs by the end of 2005. From February 1999, several CFC-free MDIs were available in Australia. These MDIs use HFCs as an alternative to CFCs and have proven as effective in the delivery of medication as CFC-based MDIs. In 1999, industry data indicates CFC-based MDIs comprised less than 20% of the MDI market.

As at March 2000, only five companies were exempted under section 40 of the Commonwealth Act for the manufacture or import of CFC-based MDIs. Two of these companies are located in Victoria. One of the companies imports CFC-based MDIs but anticipates moving to alternatives within two years. The other Victorian company currently manufactures CFC-based MDIs and their alternatives and anticipates a further transition to alternatives in the next few years.

7.2 Solvents

Dry Cleaning

- *Commonwealth Statutory Measures and Former Victorian Framework*

The manufacture of dry cleaning machinery was banned in Victoria from 1989 under the ODS Control Regulations where such machinery was capable of being operated using only a CFC controlled under the Regulations. Similarly the manufacture of dry cleaning machinery has been banned under the Commonwealth Act for machinery using the same CFCs since 1989 and currently for an extended range of ozone-depleting substances comprising CFCs, halons, carbon tetrachloride and methyl chloroform.

Under the former policy purchasers or users of the solvent CFC-113 for the service, maintenance, operation, installation and decommissioning of dry cleaning equipment were obliged to be registered or accredited with the Dry Cleaning Industry Registration Board established by EPA under the policy. Persons who operate or maintain CFC-based dry cleaning equipment were also obliged to comply with the relevant industry code of practice specified in the policy and endorsed by EPA which aimed to improve industry practices so as to avoid or minimise emissions to the atmosphere. Suppliers

and purchasers of CFCs were obliged to keep detailed sale transaction records and, in the case of suppliers, to forward written records to EPA on a quarterly basis. The former policy specified dry cleaning as an end use category that was to be recorded by suppliers when supplying ozone-depleting substances for such applications.

- *Revised Framework and Anticipated Impacts*

The Victorian manufacture bans on dry cleaning equipment ceased to have effect upon the expiry of the ODS Control Regulations in June 2000. The ongoing manufacture of CFC-based dry cleaning equipment is unlikely given that CFC imports were phased out by the end of 1995 and in view of the near total phase-out of CFC based equipment in the Victorian dry cleaning industry. In these circumstances manufacture bans are unnecessary. Nonetheless manufacture bans under the Commonwealth Act continue to have effect in Victoria and nationally.

Only four out of approximately 220 dry cleaning machines currently operating in Victoria are CFC-based. The Dry Cleaning Registrations Board is no longer active in view of the near total phase-out of CFC-based equipment. The policy has removed the registration and accreditation obligations under the former policy for dry cleaning in recognition of these developments and the proactive response of the industry. The overarching provisions of clause 14 of the policy to replace ozone-depleting substances with alternatives where practicable and to avoid or minimise emissions of ozone-depleting substances to the atmosphere would apply to users of ozone-depleting substances in the dry cleaning industry. Users of CFC-based dry cleaning equipment are currently required under relevant industry codes of practice to recover and recycle CFC-113 solvent and to incorporate best practice technology to minimise emissions of CFCs. In practice the obligations under clause 14 of the policy would affect the four remaining CFC-based machines currently in use in Victoria. The development of an EIP under clause 24 of the policy for the CFC based dry cleaning industry in Victoria could build upon the initiatives of the industry to assist the few remaining users of CFC-based equipment to make the transition to alternatives.

The policy retains some of the record-keeping provisions of the former policy. In practice this will affect suppliers of recycled stocks of CFCs for use in dry cleaning equipment in Victoria which is currently limited to four units. The end-use categories to be recorded by suppliers under the former policy include dry cleaning. This remains unchanged under the revised policy and will enable EPA to monitor the use of CFC-based dry cleaning equipment.

Phase-out of ozone-depleting substances in the dry cleaning industry

The dry cleaning industry in Australia began using CFC-113 in 1963 on a very limited basis. It became popular in late 1985, with up to 160 machines sold until 1987. In 1989, only 10% of dry cleaning machines in Australia were CFC based. The remainder used non-ozone-depleting substances such as perchloroethylene. In Victoria, halons, carbon tetrachloride, methyl chloroform and HCFCs have not been used by the industry. During 1992-1993, use of CFC-based dry cleaning equipment peaked with 44 dry cleaning businesses being registered and 120 persons accredited in Victoria with the Dry Cleaning Registration Board under the former policy. Commonwealth import restrictions reduced and eventually phased out the supply of CFC-113, which led to a substantial increase in its cost. Improved design of perchloroethylene based equipment enabled plants to operate well within health requirements for air quality as well as enabling them to clean more fragile garments previously serviced by CFC-113.

The majority of the dry cleaning industry has now moved away from using CFCs in favour of alternative non-ozone-depleting solvents such as perchloroethylene. Only four out of a total of approximately 220 dry cleaning machines currently operating in Victoria are CFC-based. These remaining units are limited to cleaning fragile garments only and contain less than 1000 litres of CFC in total. Emissions to the atmosphere are minimised by fully containing the CFC in the dry cleaning machinery and reusing the CFC continuously. The remaining majority of dry cleaning equipment uses perchloroethylene.

Other Solvent Applications

- *Commonwealth Statutory Measures and Former Victorian Framework*

Under the former policy any person who operated or maintained electronic cleaning systems and degreasing systems using a CFC controlled under the policy were obliged, in order to reduce emissions from such systems, to comply with the relevant industry code of practice specified under the former policy and endorsed by EPA. Recovery of the CFC for reuse or return to the distributor or wholesaler for reprocessing or secure storage pending destruction was also required. Suppliers and purchasers of CFCs were required to keep detailed sale transaction records and, in the case of suppliers, forward written records to EPA on a quarterly basis. The end-use categories to be recorded by suppliers included solvents use.

The use of CFCs in these applications were not regulated under either the ODS Control Regulations or the ODS Purchase and Sale Regulations which focused on product and equipment bans. While under the Commonwealth Act, the importation and manufacture of CFCs have been banned since the end of 1995, the handling and use of ozone-depleting substances in such applications is not specifically addressed under this Act.

Methyl chloroform and carbon tetrachloride have not been covered by Victoria's statutory framework for ozone-layer protection. They are controlled substances under the Montreal Protocol which required the phase-out of the manufacture and import in developed countries by the end of 1995, for non-essential uses. The manufacture, import and export of methyl chloroform and carbon tetrachloride has been prohibited in Australia under the Commonwealth Act since 1 January 1996 unless an essential use licence has been granted under the Act.

- *Revised Framework and Anticipated Impacts*

The obligation under clause 14 of the policy to replace ozone-depleting substances with an alternative where practicable and to avoid or minimise emissions will apply in relation to ozone-depleting solvents. This obligation is unlikely to have a significant impact on industry in view of the transition of the majority of industry to non-ozone-depleting substances and alternative technologies.

The recovery provisions under clause 15 of the policy apply to all solvent cleaning applications using any of the revised range of ozone-depleting substances and not just in relation to the operation or maintenance of electronic cleaning systems and degreasing systems as under the former policy. Clause 15 is unlikely to significantly impact the solvent industry as the majority have adopted alternative solvents or technologies which are not ozone-depleting. It is unlikely that ozone-depleting substances are being used in Victoria in any significant quantities. No essential use licenses have recently been granted under the Commonwealth Act for use of CFCs, halons, methyl chloroform and carbon tetrachloride in Victoria. The current range of applications for recycled stock of these substances is very limited and would involve small volumes.

An exemption may be granted under clause 15 where EPA is satisfied that recovery of the ozone-depleting solvent is not practicable. An exemption is likely to be granted where use of ozone-depleting solvents is infrequent or involving small quantities. The EIP process may be useful in assisting any persons or industry sectors still using ozone-depleting solvents to move towards the adoption of alternatives.

Solvent use is retained as an end use category under the record-keeping and reporting obligations of the policy. Retaining these record keeping obligations will assist EPA in identifying any remaining industry sectors that may still be using ozone-depleting solvents.

Phase-out of ozone-depleting solvents

CFCs, such as CFC-113, and methyl chloroform have been used widely for cleaning and other solvent applications such as metal cleaning, degreasing in engineering and component cleaning operations, and other miscellaneous uses such as forensic fingerprinting. In both the electronics industry and in other cleaning applications the use of CFCs and methyl chloroform has largely ceased in favour of alternative technologies or solvents which are not ozone depleting. In the 1980s the Australian defence forces were the largest users of CFC-113 with the majority of solvent uses identical to those used in the commercial sector. The Australian defence forces have, as in most developed countries, virtually eliminated all uses of ozone-depleting solvents. There may be some minor uses of ozone-depleting HCFCs in some specific applications for which particular solvent properties are needed.

Methyl chloroform has been used in a wide variety of applications including metal cleaning, aerosols, adhesives and correction fluids, electronics and photography. Carbon tetrachloride is used as a feedstock in the production of CFCs 11 and 12 (but not in Australia) and in small quantities as a laboratory chemical. Typical laboratory uses, some of which are non-solvent uses, include equipment calibration, carriers for specific chemical analyses, biochemical research, carrier for laboratory chemicals and for critical uses in research and development where substitutes are not readily available.

During 1998-99, three essential use licences were granted under the Commonwealth Act for the import of small quantities of CFC-113, carbon tetrachloride and methyl chloroform for essential laboratory purposes. In 1999, Australia imported only 7.4 kg of carbon tetrachloride, and only 51kg of methyl chloroform. In 2000, no essential use licences were granted for any person or organisations in Victoria.

7.3 Air Conditioning and Refrigeration

In the refrigeration and stationary air conditioning sectors, CFCs were initially being phased out in favour of HCFCs as transitional substances which, while still an ozone-depleting substance, have a lower ozone-depletion potential than CFCs. HFCs are commonly being used in refrigeration and air conditioning, and are currently the preferred refrigerant for automotive air conditioning in Australia for new systems. The consumption of CFCs in the commercial, industrial and domestic refrigeration and air conditioning sector peaked in 1997 when the CFC Registration Board granted 1337 registrations and 3671 accreditations under the former policy. These numbers have steadily decreased with approximately 855 registrations and 2818 accreditations currently active in Victoria. Similarly, registrations and accreditations processed by the Automotive Air Conditioning Registration Board (Vic) (the AACRB) have been steadily declining over the past 10 years.

- *Commonwealth Statutory Measures and Former Victorian Framework*

Manufacture Bans

In Victoria, the manufacture of non-refillable containers of CFCs to be used to maintain refrigerator, air conditioning or automotive air conditioning units were banned under the ODS Control Regulations since 1989 for containers with a capacity of 5 kilograms or less. A similar ban has been imposed under the Commonwealth Act for the same CFCs since 1989 and currently for a broader range of ozone-depleting substances comprising CFCs, halons, carbon tetrachloride and methyl chloroform. The ODS Purchase and Sale Regulations did not apply to these types of equipment.

Registration and Accreditation

The registration and accreditation provisions under the former policy applied to certain activities undertaken in relation to CFC-based commercial and industrial refrigeration and air conditioning equipment, domestic refrigeration equipment and motor vehicle air conditioning equipment. Targeted activities varied in respect of such equipment and included installation, service, maintenance, installation and decommissioning. Two industry boards were established by EPA under the policy to administer applications for registration and accreditation namely, the CFC Board and the AACRB. Persons who design or service such CFC based equipment were also required to comply with codes of practice specified under the former policy and endorsed by EPA.

Recovery and Recycling

The recovery and recycling provisions under the former policy also applied to certain activities undertaken in relation to commercial and industrial refrigeration and air conditioning equipment, domestic air conditioning equipment and motor vehicle air conditioning equipment. CFCs were required to be recovered during certain activities, including service, maintenance and decommissioning, for recycling on site or secure storage pending destruction or for return to the distributor or wholesaler for reprocessing.

Labelling, Record-Keeping and Reporting

Other requirements under the former policy that affected the refrigeration and air conditioning industry included an obligation to ensure that any vessel containing a CFC must ensure that the name of the substance was clearly identified and an obligation to avoid or minimise emissions when transferring CFCs between vessels. In addition, suppliers and purchasers of CFCs were obliged to keep detailed sale transaction records and, in the case of suppliers, to forward written records to EPA on a quarterly basis. End use categories to be recorded by suppliers included commercial and industrial refrigeration and air conditioning, domestic air conditioning and refrigeration, and motor vehicle air conditioning.

- *Revised Framework and Anticipated Impacts*

Removal of Duplicative Manufacture Bans

The Victorian bans on the manufacture of non-refillable containers of CFCs to be used to maintain refrigerator, air conditioning or automotive air

conditioning units ceased to have effect upon the expiry of the ODS Control Regulations in June 2000. The ongoing manufacture of such equipment is unlikely given that CFC imports have been phased out since 1 January 1996 and in view of the eventual phase-out of CFC use in the Victorian refrigeration and air conditioning industry. In these circumstances manufacture bans are unlikely to be of benefit. Nonetheless manufacture bans continue to have effect in Victoria and nationally under the Commonwealth Act for such equipment containing CFCs, halons, carbon tetrachloride and methyl chloroform.

Supporting Phase-Out of HCFCs

HCFCs are to be included in the revised range of ozone-depleting substances under the revised Victorian framework. Sectors of the Victorian refrigeration and air conditioning industry which have either phased out CFCs in favour of HCFCs or have generally never used CFCs but are using HCFCs, such as the domestic air conditioning sector, will be affected by the policy.

The obligations covering HCFCs under the revised framework will be the same as for CFCs. These are set out under the policy and include: an obligation to replace HCFCs with alternatives where practicable and to avoid or minimise emissions; to comply with registration and accreditation obligations through the appropriate Ozone Layer Protection Board; to comply with any relevant code of practice endorsed by EPA and to recover where used in relation to certain activities unless impracticable.

HCFCs have been subject to import, export and manufacture controls under the Commonwealth Act since controls for HCFCs were introduced in January 1996. Accordingly, all users of HCFCs in the Victorian refrigeration and air conditioning industry are subject to a decreasing supply of HCFCs with a total phase-out scheduled for 2020.

The recovery provisions under the policy will help avoid or minimise the consumption of HCFCs and their emission to the atmosphere and will help ensure continued access to HCFCs leading to, and after, 2020 where there are no practicable alternatives. The recovery provisions of clause 15 as they apply to HCFCs are consistent with statutory requirements in other State and Territory jurisdictions and reflect current industry best practice in response to decreasing supply therefore any associated costs are likely to be minimal. In the past Victorian industry has indicated its strong support for this approach when applied to CFCs. Industry has argued in favour of mandatory requirements for minimising emissions (implemented under the former policy in the form of requirements for registration, accreditation, codes of practice, recovery and recycling). Industry argues that this approach has provided it with a way of more carefully managing CFCs as a valuable commodity with a finite market lifetime. Industry has seen this as the most equitable way of managing a dwindling supply of product and as having provided the most stable framework under which to manage a phase-out. According to industry, it has also provided unintended benefits to the industry generally, by improving industry organisation and self-management. Given these positive experiences, strong industry representations have been made to EPA to maintain and extend mandatory requirements to cover all ozone-depleting substances.

This approach, used successfully for CFCs, can be complemented by the EIP process under the policy which may provide statutory support for Victorian industry in developing strategies for the transition to non ozone-depleting alternatives. The EIP provisions can also help minimise competitive disadvantage by helping to ensure consistent practices within the industry.

Industry sectors using HCFCs may incur costs in applying for registration and accreditation, investing in appropriate recovery and reuse equipment and, if applicable, in developing EIPs. Fees currently levied by the CFC Board for registration and accreditation are likely to be similar for purchasers and users of HCFCs in the industry.

Individual or industry EIPs may be developed where industry feedback indicates that this would be useful. Associated costs could be minimised by opting for an industry EIP. Costs associated with implementing management strategies under an EIP can be offset by the benefits of providing industry with consistent industry requirements and minimising commercial disadvantage during the transition to alternatives. Costs can also be recovered through savings accruing from improved management of HCFCs thereby conserving stocks and extending their use through recovery, recycling or other emission minimising strategies.

Users of HCFCs will also be covered by the proposed labelling obligations which will help contractors identify the refrigerant within equipment and reduce the incidence of contaminated blends which cannot be recycled. Users will also be covered by the former obligation to avoid or minimise emissions when transferring ozone-depleting substances between vessels. The simplified record keeping obligations under the policy will apply to suppliers of HCFCs. Record keeping obligations under the policy are based upon normal business records and should not impose any additional cost burden to industry sectors coming under the Victorian framework for the first time.

National Consistency

Those sectors of the Victorian refrigeration and air conditioning industry which have used HCFCs as a transitional alternative to CFCs have been subject to varying controls between State jurisdictions to the extent that their commercial activities extend interstate or nationally. Updating the framework to include HCFCs will help achieve national consistency and certainty for these industry sectors. Those sectors of the Victorian refrigeration and air conditioning industry with interstate or national interests which have never used CFCs but are using HCFCs will also benefit from consistent industry obligations as HCFCs are included within the Victorian regulatory framework for ozone layer protection.

As discussed in chapter 3, a NEPM for ozone-layer protection is one option that might help ensure national consistency across jurisdictions and a level playing field for all industry sectors by removing any competitive disadvantages currently being experienced as a result of differing State and Territory Government regulatory controls. A NEPM could provide a legally binding national framework for the refrigeration and air conditioning industries and could incorporate the aims of the proposed national certification program currently being scoped by the industry.

Specified Activities

The inclusion of additional activities in the range of activities specified for the purposes of the recovery and registration/accreditation provisions of the policy for the air conditioning and refrigeration industries addresses industry calls for consistent obligations across the industry and is supported by industry. Costs impacts are likely to be minimal as people undertaking these additional activities in relation to the commercial and industrial sector would already be registered/accredited under the former policy. The costs impact to the domestic refrigeration sector, will be minimal as this sector, with the exception of some older models, uses HFCs which are non-ozone-depleting. The domestic air conditioning sector uses HCFCs and are likely to incur some costs with the inclusion of HCFCs under the policy. For example, registration/accreditation costs will include Board fees (currently levied on a cost recovery basis to minimise costs ranging up to $250 for registration and up to $50 for accreditation) and course fees. Recovery equipment has been used in the air conditioning and refrigeration industry for many years with costs ranging from approximately $1,700 to - $4,500 for various units depending on the quantity to be reclaimed, and whether the substance being reclaimed is in a gas or liquid state. Alternatively, service fees vary from $50 per hour to $65 per hour plus approximately $50 for use of the equipment which is applied to defray equipment maintenance costs. Reclaim equipment can also be hired at competitive rates.

Non Ozone-Depleting Refrigerants

As already indicated, the revised framework now covers the revised range of ozone-depleting substances consistent with the Montreal Protocol and Commonwealth and State and Territory statutory frameworks. Various members of the Victorian refrigeration and air conditioning industry have requested that Victoria's statutory framework for ozone layer protection be extended to all refrigerants used by the industry. The proposal seeks to raise industry standards, as demonstrated in industry sectors dealing with ozone-depleting substances, by making all refrigerants subject to registration and accreditation requirements as well as any relevant codes of practice. Industry argues that extending the policy or developing other statutory measures to cover all refrigerants will facilitate ongoing improvement in works practices and standards across all sectors of the industry. Industry has suggested that government might regulate refrigerants to address any associated adverse consumer, occupational, health and safety or environmental impacts.

While some alternatives to CFCs have been ozone-depleting, such as HCFCs, other alternatives, while not ozone-depleting, have other potential undesirable environmental impacts. For example HFCs, while not ozone-depleting are greenhouse gases addressed under the Kyoto Protocol. Similarly, HCFCs are ozone-depleting and greenhouse gases addressed under the Montreal Protocol. Other alternatives, such as hydrocarbons, while unlikely through these activities to have a significant environmental impact, may have characteristics through their application that potentially raise other implications for occupational and consumer health and safety.

The strengthening of the former labelling requirements under the revised policy should assist

industry to minimise the likelihood of mixing ozone-depleting substances with HCFCs and hydrocarbons.

EPA acknowledges that due to the links between substances that contribute to ozone-depletion and climate change there is a need for an integrated response by Governments and between Government agencies to these issues. EPA will continue to participate in the implementation of the National Greenhouse Strategy to help ensure consistency across jurisdictions and will be working with other Victorian Government agencies to help ensure that the statutory frameworks within Victoria are complementary on both these issues. Measure 7.2 of the National Greenhouse Strategy commits Governments to work with industry to develop environmental strategies for each of the synthetic gases addressed under in the Kyoto Protocol, including HFCs. Environment Australia, through its Ozone Protection Section, in conjunction with the Australian Greenhouse Office, is currently undertaking consultancies to provide background for the development of a national environmental strategy for synthetic greenhouse gases such as HFCs. The outcomes of this Commonwealth process are likely to inform the development of national approaches to HFCs, but will not be completed during the review of the framework for ozone-depleting substances in Victoria.

Similarly, EPA acknowledges the concerns of industry to maintain and raise standards in the handling and use of all refrigerants and to integrate and complement regulatory controls of State Government agencies regarding other non-ozone-depleting refrigerants. The Victorian statutory framework for ozone layer protection has been developed under the *Environment Protection Act* 1970, which provides the overarching legislative framework for the protection of the Victorian environment. Regulatory measures for substances such as HCs without being directed towards or providing any clear environmental benefits are likely to be outside EPA's legislative mandate.

During the review, stakeholders raised issues, such as safety issues, associated with the use of hydrocarbon refrigerants used as a replacement for CFCs in applications such as automobile air conditioning. EPA considered all information provided. However, direct responsibility for such safety issues is likely to rest with the Victorian Work Cover Authority or the Office of Fair Trading and Business Affairs.

While extending the policy to cover all substances is likely to be beyond the policy's statutory scope, EPA will work with industry and other government agencies in the development of any future regulatory and other approaches to ensure the integrated management of ozone and non-ozone-depleting substances. Likewise, although the policy focuses on ozone layer protection, it is capable of complementing any statutory framework developed to address greenhouse gases to help ensure an integrated approach across both issues.

Plumbing Industry Commission

Under the *Building (Plumbing) Act* 1998 refrigeration mechanics are subject to the licensing and registration requirements of the *Building Act* 1993 which prohibits any person from undertaking any plumbing work unless licensed or registered by the Plumbing Industry Commission (PIC) established under the Act. Refrigeration mechanics who work on mechanical services plant and equipment for the

heating, cooling and ventilation of buildings must be registered or licensed by the PIC to undertake such work. The licensing and registration requirements for refrigeration mechanics commenced on 1 January 2000. The *Building (Plumbing) Act* 1998 effectively covers persons who may already be registered or accredited under the former policy but in relation to requirements for general industry standards and practices. In addition, the *Building (Plumbing) Act* 1998 covers persons who are qualified plumbers who have not previously worked in the refrigeration and air conditioning sector. Implementation of licensing and registration requirements under the *Building (Plumbing) Act* 1998 is administered through the PIC with the assistance of industry, which currently includes a member of the CFC Board. Through its activities, the PIC has provided valuable support by ensuring that applicants who are new to the refrigeration and air conditioning sector have also been registered or accredited under the former policy, which entitles them to also handle equipment containing or using ozone-depleting substances.

EPA recognises the need for complementary statutory measures between State regulatory authorities in order to maximise environmental protection and minimise unnecessary costs to industry. EPA and the PIC have agreed to work together to develop integrated and complementary competencies and administrative arrangements to meet the needs of both the PIC and EPA for people handling ozone-depleting substances in the air conditioning sector. EPA will also explore the potential links for mutual assistance and cooperation with the PIC, for example in relation to enforcement programs.

7.4 Foams

- *Commonwealth Statutory Measures and Former Victorian Framework.*

The manufacture of certain extruded polystyrene packaging and insulation products have been banned in Victoria since 1989 under the ODS Control Regulations where either a CFC was used in its manufacture or the product contains a CFC. Similarly, the manufacture and import of polystyrene packaging and insulation products have been banned under the Commonwealth Act since 31 December 1989 if either a CFC or halon was used in their manufacture or if the products contain such a substance. The Commonwealth bans were extended in 1992 to cover these products in relation to carbon tetrachloride and methyl chloroform. The product bans under the Commonwealth Act also apply to the manufacture and import of rigid polyurethane foam products and moulded flexible polyurethane foam using CFCs, halon, carbon tetrachloride or methyl chloroform.

The sale of any extruded polystyrene packaging or insulation material have been banned under the ODS Purchase & Sale Regulations since 1990 if either it contains a CFC or a CFC was used in its manufacture. Under the former policy distributors and wholesalers of CFCs and halons were obliged to record end use categories for each sale transaction, including foam production and to forward written records to EPA on a quarterly basis. Purchasers of any CFCs and halons were also obliged to record details of purchase transactions of these substances which were to be made available for

inspection by EPA upon request. This requirement applied to any purchase of CFCs for foam production.

- *Revised Framework and Anticipated Impacts*

The obligations under the former policy remain essentially unchanged under the revised framework. The principle variations under the policy relevant to the foam industry includes improved national consistency by the extension of the Victorian framework for ozone layer protection to a broader range of ozone-depleting substances, including HCFCs, and support for industry phase-out programs through EIPs which will help ensure consistent industry practices thereby minimising commercial disadvantage during the transition to alternatives.

Product Bans

CFCs are no longer used for the manufacture of extruded polystyrene packaging and insulation products. The use of CFCs in the manufacture of such products is unlikely to resume in the future in view of the limited availability of CFCs due to import bans imposed under the Commonwealth Act since 1996. Accordingly the manufacture bans on such CFC based products under the ODS Control Regulations were unlikely to provide any ongoing environmental benefit. For this reason and the reasons discussed in chapter 5, the ODS Control Regulations, which lapsed in June 2000, will not be remade. However, as these manufacturing bans are effectively duplicated under the Commonwealth Act, manufacture bans for these products will continue to operate in Victoria and nationally.

Similarly, the sale bans on these products under the ODS Purchase and Sale Regulations were unlikely to provide any ongoing environmental benefit as these products are unlikely to be available for sale in the market place in any significant quantities after 10 years of controls under the former policy and the Commonwealth Act. Any imported products which are CFC-based and sold in Victoria will be in breach of the import bans under the Commonwealth Act and subject to enforcement action under that Act.

Supporting the Transition to Alternatives: EIPS

Under the revised policy the term "ozone-depleting substance" is defined to include HCFCs. This ensures that the Victorian regulatory framework is consistent with the Montreal Protocol and helps to provide national consistency with other State regulatory frameworks that also cover HCFCs. Users of HCFCs and other ozone-depleting substances in foam production will be subject to the overarching provisions of clause 14 of the policy to replace ozone-depleting substances with alternatives where practicable and to avoid or minimise emissions of ozone-depleting substances to the atmosphere. EPA recognises that there are currently practicable constraints in complying with the obligation to adopt alternatives to HCFCs.

The Victorian rigid foam industry has been proactive in phasing out the use of CFCs in favour of HCFCs, which while still ozone-depleting, are less damaging to the ozone layer than CFCs. HCFCs are principally used by the industry in the rigid and semi rigid foam sector. Under the Commonwealth Act the national supply of HCFCs is decreasing through import controls under which HCFCs are due to be phased out by 2020. However, key export markets have effectively brought industry phase-out schedules forward. For example phase out for HCFC-141b in

rigid foam use in the United States is due in March 2003 whereas all HCFCs are due to be phased out in the European Union by 2004.

EPA recognises that the industry faces a number of difficulties in its transition away from ozone-depleting substances for rigid and semi-rigid foam applications. A number of alternative blowing agents are yet to be commercially available or viable for all applications. HFCs are considered to be relatively expensive and, as a greenhouse gas under the Kyoto Protocol, may be subject to future regulatory controls. Industry is looking for more cost effective alternatives to HFCs which are likely to be limited to critical insulation applications.

Suitable alternatives for HCFCs are anticipated to be available in Australia from approximately 2003. However, delays in the availability of alternatives will potentially cause industry sectors using HCFCs to be vulnerable to a competitive disadvantage in meeting export markets to the United States and Europe in view of their advanced phase-out dates for HCFCs. Industry sectors that incur costs of developing alternatives substances and technologies are also vulnerable to a competitive disadvantage compared to those who do not invest in developing alternatives and to those that import foam products manufactured or containing CFCs or HCFCs.

Under clause 24 of the policy, EIPs could provide a statutory framework for EPA to work with Victorian industries to manage the transition from HCFCs to alternatives under an industry-agreed phase-out program. Individual or industry EIPs may be developed where appropriate. An EIP covering an industry sector is likely to be more cost effective.

This approach could be used to help ensure that those who make a commitment in an EIP to develop alternative substances, technologies and practices are not at a competitive disadvantage during the transition to total phase-out compared to others who do not make such a commitment. It is anticipated that EIPs will provide a statutory framework to help ensure consistent industry practices and to support and build upon voluntary initiatives of industry to date.

The foams industry which is currently developing a national industry phase-out strategy for HCFCs for polyurethane foam manufacture have indicated support for the EIP process under the policy and have indicated their willingness to develop an EIP for the polyurethane foam industry. Such an EIP could be integrated with the development of any national strategy and could help ensure a consistent industry approach to the phase-out the use of ozone-depleting substances from certain non-critical applications.

Simplified Record-Keeping and Reporting Obligations

As discussed in chapter 6 and summarised at the beginning of chapter 7, clause 23 of the policy simplifies the record-keeping and reporting obligations of the former policy significantly reducing associated costs to industry, including the removal of record-keeping requirements upon purchasers of ozone-depleting substances. Currently, the end-use categories to be recorded by suppliers include foam production. This remains unchanged under the policy and will enable EPA to monitor the use of ozone-depleting substances in the industry.

7.5 Fire Protection

- *Commonwealth Statutory Measures and Former Victorian Framework*

The manufacture, import and export of halon have been controlled under the Commonwealth Act since 1989, and were subsequently prohibited under that Act from the end of 1992. The prohibition applies unless an essential use licence is granted under the Commonwealth Act. Essential uses include those critical to the protection of human life or where no acceptable alternative exists. The import and manufacture of products that contain halon has been prohibited under the Commonwealth Act since January 1996. An exemption may be granted under section 40 of the Act where the product is essential for a limited range of uses including medical, defence or public safety purposes and where there are no practical alternatives to the use of an ozone-depleting substance in the operation or manufacture of the product.

The purchase of halon portable fire extinguishers has been prohibited in Victoria under the ODS Purchase and Sale Regulations since 1990 unless the Authority was satisfied that certain essential use criteria were met and the written consent of the Authority was obtained. The Authority could specify conditions in the written consent which was required to be complied with. A copy of the written consent was also required be provided to the seller of the extinguisher and the seller was required to forward the written consent and sale transaction records to the Authority within 14 days of the sale of the extinguisher. Since January 1996, portable halon extinguishers and halon fire suppression systems have been required under the former policy to be decommissioned and halons stored pending destruction. The prohibitions applied unless the Authority was satisfied that the proposed use complies with essential use criteria specified under the policy. The registration and accreditation provisions under the former policy and associated provisions under industry codes of practice applied to the purchase and use of halons. Sellers and purchasers of halons were also covered by the record keeping and reporting provisions under the former policy.

- *Revised Framework and Anticipated Impacts*

The obligations under the former policy remain essentially unchanged under the revised framework. The principle variations under the policy relevant to the fire protection industry includes the simplification and clarification of obligations providing greater certainty to industry and the extension of the recovery/recycling and registration and accreditation provisions from halon-based fire protection equipment to equipment using any ozone-depleting substance, including HCFCs. Clause 29 retains the essential use system provided for under the former policy.

The overarching obligation under clause 14 of the policy to replace ozone-depleting substances with alternatives where practicable and to avoid or minimise emissions of ozone-depleting substances to the atmosphere will apply to users of fire protection equipment using any ozone-depleting substance. The fire protection industry has already replaced halons with alternatives, including some small use of HCFCs as transitional substances, with the exception of essential use halon applications which are regularly reviewed by the NHEUP. The

obligation to avoid or minimise emissions of ozone-depleting substances to the atmosphere reflects the former policy and does not change existing requirements apart from extending those to HCFC fire protection applications.

Recovery/Recycling

Clause 15 of the policy varies the recovery/recycling provisions under the former policy, which, for fire protection equipment, were limited to halon-based systems, by extending them to systems using any ozone-depleting substances. In practice this would apply to halon and HCFC based systems. The recovery and recycling provisions under clause 15 for fire protection equipment apply to the same activities under the former policy and include the servicing, maintaining and decommissioning of fixed flooding fire suppression systems (now covered under the term 'fire protection equipment' which includes portable fire extinguishers). The recovery and recycling provisions under the policy will help avoid or minimise the consumption of HCFCs and their emission to the atmosphere and will help ensure continued access to HCFCs after the phase-out of imports under the Commonwealth Act by 2020 where there are no practicable alternatives. This approach used successfully for CFCs, will help conserve stocks of HCFCs to meet any gap in demand and supply after 2020 and will help ensure consistent industry practices across the industry offsetting any costs incurred in meeting the obligation under clause 15.

The former policy required recovered halon to be reused or held in storage pending destruction. Clause 15 broadens the options available to industry to include recycling and return to the distributor or wholesaler or a reclaimer for reuse, recycling, reclamation or destruction. In practice halons are recovered and reused on site or may be returned to DASCEM for destruction or reprocessing to enable them to be recycled for essential use applications. Clause 15 varies the former policy to reflect these industry practices providing flexibility and, in effect, does not impose any new obligation.

Registration and Accreditation

Similarly, clause 17 of the policy varies the registration and accreditation provisions under the former policy which, for fire protection equipment, were limited to halon-based equipment, by extending them to equipment using any ozone-depleting substances including halon and HCFC based equipment. The registration and accreditation provisions under clause 17 for fire protection equipment apply to the same activities under the former policy and include the service, maintenance, design, installation, commissioning and decommissioning of fixed flooding fire protection systems (now covered in the term 'fire suppression systems') and the service, maintenance and decommissioning of portable fire extinguishers. Under the policy the registration requirements apply to wholesalers and distributors of halons and other ozone-depleting substances for the first time in recognition of the need to ensure that suppliers, as in the case of purchasers and users, have the expertise and facilities to handle ozone-depleting substances with no or minimal discharge to the atmosphere. Grants of registration or accreditation by the Fire Protection Registration Board (Halon) were subject to fees of up to $250 annually and $50 every three years, respectively in relation to halon

based fire protection equipment and are likely to similar for HCFC based equipment.

Halon Essential Use Applications

Clauses 37 to 47 and 49 of the former policy provide for the gradual decommissioning of portable and fixed halon fire protection equipment subject to exemptions for essential uses and includes prohibitions on certain uses of such equipment to avoid or minimise emissions of halons to the atmosphere. Clause 29 under the revised policy simplifies the former policy by consolidating these clauses into one clause.

Sub-clause 29(1) prohibits the installation, use and operation of halon based fire protection equipment unless the Authority is satisfied that the use of the equipment meets essential use criteria specified under the policy. This prohibition effectively mirrors the former policy which requires all portable and fixed equipment to be decommissioned by 1 January 1996 unless the use meets essential use criteria. The essential use criteria under the policy duplicates the criteria under the former policy.

The NHEUP is currently undertaking a review of halon use in fixed fire protection systems in the Australian shipping industry. The review was established to explore the issues in relation to the phase-out of halon from the industry and will have implications for the granting of essential use status for halon applications in the industry. EPA has participated in the review and will continue to provide input on these issues.

Discharge Testing and Installation

Sub-clause 29(4)(a) prohibits discharge testing of portable halon fire extinguishers and their use for training purposes. This prohibition duplicates the former policy and does not change former requirements. The former policy prohibited the use of halons for testing of halon fire protection systems unless the prior written consent of the Authority was obtained. Sub-clause 29(4)(b)(ii) varies this prohibition by replacing the requirement to obtain written consent with a requirement to have an approved EIP. EPA considers that the EIP process provides a more flexible mechanism to enable EPA to work with industry to phase out the use of halon in essential use applications. EIPs provide an opportunity for EPA to assist industry in identifying strategies tailored to the particular industry sectors for achieving a final transition to alternatives.

Sub-clause 29(4)(b)(i) of the policy retains the former prohibition banning the testing of such equipment if it will result in halon being released into the atmosphere.

The policy simplifies the former policy by removing the requirement on occupiers of premises at which a halon fire suppression system is installed to notify the Authority of the location and capacity of the system. This requirement was necessary ten years ago when the policy was declared to assist the Authority in monitoring the implementation of the policy. This requirement is no longer necessary as all systems currently operating should be decommissioned and the halons recovered as required under clause 29 of the policy unless the equipment has met essential use criteria under the former policy and has been identified through that process. The policy also removes the former requirement on occupiers of premises at which a halon fire suppression system is installed to notify the Authority of any discharges of halon from such

systems because the policy already places specific bans on discharge testing and discharges for the purposes of putting out fires are a necessity.

Halon Portable Fire Extinguishers

The decision not to remake the ODS Purchase and Sale Regulations upon their expiry in March 2001 means that the purchase of halon portable fire extinguishers will no longer be prohibited in Victoria. However, it is unlikely that there would be sufficient quantities of such extinguishers in Victoria to justify the remaking of these regulations in view of the Commonwealth and Victorian controls over the last ten years. The use of any remaining halon portable fire extinguishers will be prohibited under clause 29 of the policy unless it meets the essential use criteria under the policy. This is consistent with the prohibition under the ODS Purchase and Sale Regulations which provided for an exemption for essential use applications. The prohibition on the import and manufacture of products that contain halon will continue under the Commonwealth Act and any exemption granted under section 40 of that Act will be limited to essential uses. These controls together with the prohibition under clause 29 of the policy are considered sufficient to ensure that any remaining halon portable fire extinguishers will be managed appropriately to ensure environment protection.

Phase-out of halon in the fire protection industry

Under the Montreal Protocol the import and manufacture of halons were to be phased out by the end of 1993. Australia achieved this target in 1992. All halon currently in use is for essential use applications which are reviewed regularly by the NHEUP. The three major sectors for essential use applications in Australia are in the aviation, defence and maritime industries. EPA has sought the advice of the NHEUP to assist it in making statutory decisions on the essential nature of a proposed halon use and the continued use, refilling, installation or relocation of portable halon fire extinguishers or fixed halon suppression systems.

The Halon Bank was established in 1993 to collect, safely store, decant, recycle and ultimately destroy excess halon. The fire protection industry also provides collection for interim storage services for their customers, while metropolitan and country fire brigades provide a drop-off point for halon 1211 fire extinguishers from the community.

Currently, approximately 99 accreditations have been granted by the Fire Protection Registration Board (Halon) compared with 350 in 1995. The registrations have remained relatively constant over that last 10 years at five companies. The decrease in accreditations reflects the decreasing use of halons through the decommissioning of halon based equipment throughout industry and the community.

HCFCs have been used principally as a replacement for halons in portable fire extinguishers and in fixed systems in the shipping industry. Annual consumption of HCFCs in Victoria have decreased from a peak of approximately 20 tonnes in the mid 1990s to approximately 5 tonnes currently. Industry has indicated that less than one per cent of all portable extinguishers and approximately ten to fifteen per cent of fixed systems in Australia would be HCFC based as these substances are relatively expensive and the availability of other agents with superior performance.

7.6 Methyl Bromide

Methyl bromide is a volatile organic compound which has been used extensively throughout Australia as a fumigant in agriculture, commercial horticulture and for quarantine and pre-shipment uses. The principal application of methyl bromide in Australia is in horticultural industries where it is widely used as a soil fumigant for controlling fungal diseases, nematodes, soil-borne insect pests and weeds in a range of sub-tropical and temperate horticultural crops, in space fumigation of food commodities (eg grains) and in storage facilities (such as mills, warehouses, and ships) to control insects and rodents. Over the last 40 years, industries such as the strawberry, floriculture, vegetable and others have become heavily dependant on the use of methyl bromide to sustain their levels of production.

International Phase-Out Schedule

The Montreal Protocol provides for the phase-out of methyl bromide by developed countries by 2005 in accordance with the following schedule–

- 25% reduction by 1999
- 50% reduction by 2001
- 70% reduction by 2003
- 100% reduction by 2005.

Methyl bromide used for quarantine and pre-shipment purposes is currently exempt from the phase-out schedule. The Montreal Protocol also provides for critical use exemptions to allow for the manufacture and import of methyl bromide after manufacture/import for non-exempt uses have ceased in 2005. Specific critical use exemptions have not been identified to date and are unlikely to be until closer to the scheduled phase-out date.

- *Commonwealth Statutory Measures and Former Victorian Framework*

Methyl bromide was not a prescribed ozone-depleting substance under the former Victorian statutory framework for ozone layer protection. The manufacture, import and export of methyl bromide have been prohibited in Australia under the Commonwealth Act since 1995 unless a "Controlled Substances Licence" has been granted under that Act. Reductions in the importation of methyl bromide are currently being implemented under the Commonwealth Act in line with the Montreal Protocol's phase-out schedule. Currently there are no manufacturers of methyl bromide in Australia. However, four controlled substance licenses have been granted under the Commonwealth Act for the import of methyl bromide into Australia in 2000. One of the four licensed importers is located in Victoria.

The National Methyl Bromide Strategy provides a national framework for the phase-out of methyl bromide use in Australian horticultural industries by the phase-out date of 2005 required under the Montreal Protocol. The proposed *National Methyl Bromide Response Strategy: Part 2 – Quarantine and Pre-shipment Uses* currently being developed by the Commonwealth Government aims to provide phase-out and emission reduction strategies for quarantine and pre-shipment applications in anticipation of further restrictions on methyl bromide under the Montreal Protocol.

While currently not prescribed as ozone-depleting substances in Victoria, methyl bromide is regulated under the *Environment Protection (Scheduled Premises and Exemptions) Regulations* 1996 under "total organic compounds". Any premises with a daily discharge of 100 kilograms or more to the atmosphere of such compounds are prescribed as scheduled one premises due to their potential adverse impact on the ambient air environment and are therefore subject to works approvals and licensing under the Act.

Due to methyl bromide's highly toxic properties to humans its use is also regulated in Victoria under a range of health and safety legislation. For example, the *Health Act* 1958 requires users of pesticides, such as methyl bromide, to be licensed under that Act. The *Health (Pest Control Operators) Regulations* 1992 sets out the qualifications for the granting of such a licence and requires users of methyl bromide to undergo an annual medical examination. Pest control operators using methyl bromide are also subject to detailed record-keeping and reporting requirements under the Act and Regulations. The *Occupational Health and Safety (Major Hazard Facilities) Regulations* 2000 provides for health and safety requirements for the operators of major hazard facilities and their employees at which specified hazardous materials, including methyl bromide, are present or are likely to be present.

- *Revised Framework and Anticipated Impacts*

Methyl bromide is included in the revised range of ozone-depleting substances under the policy. This ensures that the revised Victorian statutory framework for ozone-layer protection is consistent with the Montreal Protocol and national ozone protection legislation. Manufacturers and users of methyl bromide are obliged under the overarching provisions of clause 14 of the policy to replace ozone-depleting substances with alternatives where practicable and to avoid or minimise emissions of ozone-depleting substances to the atmosphere. The recovery provisions of clause 15 of the policy apply to fumigation activities using methyl bromide.

Supporting the Transition to Alternatives

Methyl bromide is a broad spectrum fumigant effective across a diverse range of climatic conditions. Alternative fumigants identified to date are not as effective or versatile and it is unlikely that a single alternative for methyl bromide will be identified. For this reason the National Methyl Bromide Strategy acknowledges that the phase-out of methyl bromide under the Montreal Protocol will be significantly more complex than that of other ozone-depleting substances. The National Methyl Bromide Strategy recommends that, as with Australia's successful phase-out of CFCs, there is a need for a proactive approach for the establishment of phase-out strategies for methyl bromide if

potential adverse impacts on crop production are to be avoided or minimised.

The National Methyl Bromide Strategy anticipates that, while applications for critical use exemptions under the Protocol may be available after 2005, applications would not be necessary in most instances in view of encouraging research developments for alternatives for horticultural applications. The National Methyl Bromide Strategy also emphasises the need to pursue research into alternatives as a high priority in view of historical difficulties in obtaining exemptions for ozone-depleting substances generally.

EPA recognises that there are currently practical constraints facing Victorian industries using methyl bromide in meeting the provisions of clauses 14 and 15. Current fumigation practices are to vent excess methyl bromide to the atmosphere following its use. Recovery and recycling practices have not been developed, in some cases due the practical feasibility of these practices in the applications being used. Clause 15 includes destruction as an option for recovered ozone-depleting substances, including methyl bromide. This will improve flexibility for those who have on-site destruction capabilities and where destruction may be preferable to reuse/recycling.

EPA anticipates that in view of these practical issues the exemption under clause 15 of the policy from the obligation to recover methyl bromide may be applicable where recovery is impracticable. This exemption aims to provide flexibility for industries which might otherwise face difficulty in meeting the obligation under clause 15. This is likely to be particularly relevant to users of methyl bromide where the use of alternatives and recovery/recycling are not widely available or practically feasible for all methyl bromide applications. In any case EPA believes that the identification and use of technologies and processes that minimise emissions of methyl bromide should be pursued as a priority.

EPA believes that there are benefits in including methyl bromide within the Victorian framework as the policy provides a mechanism for industry to meet the general consumption and emissions reduction obligations of the Montreal Protocol. The importance of minimising emissions of methyl bromide ahead of national phase-out has been recognised in the National Methyl Bromide Strategy and the proposed national strategy for quarantine and pre-shipment applications currently being prepared by the Commonwealth Government. The EIP mechanism under the policy provides industry with an optional tool that it might use to equitably manage dwindling supplies of methyl bromide during the phase-out period before 2005 for horticultural uses and any phase-out timetables developed for quarantine and pre-shipment applications.

Under clause 24 an EIP may be initiated by any individual or an industry association or body representing an industry sector. EPA may initiate an EIP where industry feedback has indicated that this would be beneficial in helping the industry to identify strategies for the transition to alternatives and reducing emissions. Where an industry EIP has been approved, EPA may initiate additional EIPs with industry stakeholders that have not signed up to the industry plan to ensure that those who make a commitment in an EIP to develop alternative

technologies and practices are not at a competitive disadvantage during the transition to total phase-out compared to others who do not make such a commitment. It is anticipated that EIPs will provide a legislative framework to help ensure consistent requirements for industry and to support and build upon any voluntary industry initiatives to date.

EIPs for methyl bromide industries are likely to impose minimal costs on industry as they can integrate with or be driven by industry initiatives developed in response to national phase-out schedules and national strategies. An EIP for methyl bromide industries could develop a range of emission reduction strategies, including VIF barrier films as an approach for meeting the objectives of the policy and implementing the National Methyl Bromide Strategy. EIPs will not impose any additional research and development costs as industry is already incurring such costs in the transition to non-ozone-depleting alternatives to meet international obligations. Voluntary industry levies under the National Methyl Bromide Strategy help defray these existing costs across industry.

Individual or industry EIPs may be developed where appropriate. Associated costs could be minimised by opting for an industry EIP and by building on existing industry strategies and research developments to assist industry in its final transition to alternatives. Recovery and recycling would only be included within EIPs where this is considered practicable. Where recovery was considered practicable, an EIP would not necessitate the acquisition of recovery equipment provided access to such equipment was possible, thereby minimising industry costs. For example, commercial recovery services may be available on a fee for service basis to an industry included within an EIP. At present there are only prototypes but no commercially available recovery equipment for methyl bromide applications. Costs associated with implementing management strategies under an EIP can be offset by the use of EIPs to help ensure consistent industry practices thereby minimising commercial disadvantage during the transition to alternatives. Costs can also be recovered through savings accruing from improved management of methyl bromide thereby conserving stocks and extending their use through recovery, recycling or other emission minimising strategies.

Return of Recovered Ozone-Depleting Substance to Suppliers

Under clause 23 suppliers are obligated to accept any ozone-depleting substance returned for reuse, recycling, reclamation, storage or destruction. Wholesalers and distributors are responsible for returning any ozone-depleting substances returned to them to a supplier for reclamation, recycling, storage or destruction wherever practical. This obligation is reflected in the former policy and will only relate to stocks of methyl bromide that become surplus as and when alternatives become available.

Record-Keeping

The policy retains some of the record-keeping provisions of the former policy which will apply to suppliers of methyl bromide. As discussed in chapter 6 and summarised at the beginning of this chapter, clause 23 of the policy significantly reduces associated costs to industry compared to these obligations under the former policy by: removing the record-keeping obligations upon purchasers;

limiting record-keeping to a period of two years; replacing the obligation for quarterly reporting with an annual obligation and replacing the obligation to record and report individual transaction records with an obligation for aggregate information. The end use categories which to be recorded have been varied under the policy to include fumigation in response to the inclusion of methyl bromide as an ozone-depleting substance controlled under the policy. Record keeping obligations under the policy are based upon normal business records and should not impose any additional cost burden on industry.

The policy recognises that methyl bromide is already subject to a range of reporting requirements under other statutory requirements addressing occupational, health and safety issues. Sub-clause 23(5) of the policy will help eliminate any duplication with reporting obligations under existing requirements by allowing equivalent information provided for other statutory purposes to be supplied in satisfaction of the policy. This approach will promote integration with other Victorian and national statutory requirements for ozone-depleting substances.

Quarantine and Pre-Shipment Uses

The provisions of the policy will apply to all applications of methyl bromide including quarantine and preshipment uses. These uses are currently exempt from meeting the phase-out schedule under the Montreal Protocol. However, parties to the Protocol are under a general obligation under the Vienna Convention to protect human health and the environment from the adverse effects of ozone-depletion by reducing or preventing emissions of ozone-depleting substances to the atmosphere. The policy recognises and gives effect to this general obligation in Victoria. The National Methyl Bromide Strategy also recognises that the exemptions for quarantine and pre-shipment uses will not be indefinite and are likely to cease as alternatives are developed. The policy provides a framework for the elimination of both non-exempt uses of methyl bromide by the phase-out date of 2005 and exempt uses over time. The proposed *National Methyl Bromide Response Strategy: Part 2 – Quarantine and Pre-shipment Uses* currently being developed by the Commonwealth Government aims to provide phase-out and emission reduction strategies for quarantine and pre-shipment applications in anticipation of further restrictions on methyl bromide under the Montreal Protocol. The EIP approach under the policy can build upon any strategies developed under the proposed strategy and can help ensure consistent industry requirements where industry indicates that this approach would be useful.

Methyl bromide use and phase-out

In 1995, Australia's annual importations of methyl bromide was frozen under the Commonwealth Act at 1991 levels for non-exempt uses. Import levels of methyl bromide for non-exempt uses have been decreasing from 679 metric tonnes in 1996 to 305.519 tonnes in 1999. However imports for quarantine and pre-shipment uses have been steadily increasing from 125 tonnes in 1995 to 425 tonnes in 1999. It is anticipated that quarantine and pre-shipment uses are likely to increase.

Under the Methyl Bromide Strategy it is estimated that 86% of Australia's non-exempt use of methyl bromide occurs in 11 major horticultural sectors of which 75% is consumed in soil fumigation. The remaining 14% of non-exempt use of methyl bromide occurs across a range of applications including several minor horticultural sectors; in plant nurseries; the storage of grain and dried fruit, and building fumigation. Victoria's consumption of methyl bromide in the horticultural sector amounts to approximately 14% of Australia's total use in the sector consisting of the strawberry runner industry (5%), the strawberry fruit industry (5%) and the bulb and flower industry (4%).

The Victorian strawberry runner industry, located in the Toolangi district of Victoria, produce more than 90% of the runners used by the Australian strawberry fruit industry. In 1995 the industry made a commitment to a long term research and development project and phase-out schedule for methyl bromide. The Victorian strawberry fruit industry is located in the Yarra Valley, Dandenong Ranges, Goulburn Valley and Mornington Peninsula areas and comprises approximately 300 growers. The industry has taken a number of initiatives to reduce its consumption of methyl bromide including a changeover from a 70:30 mix to a 50:50 mix as the standard formulation used by the industry and research projects into alternatives. The Victorian bulb and flower industry is located in the Dandenong Ranges and Melbourne metropolitan areas. These industries are all preparing for total phase-out in 2005.

7.7 HBFCs

The manufacture of HBFCs were phased out under the Montreal Protocol by the end of 1995. The manufacture and export of HBFCs have been banned under the Commonwealth Act since 1996. The importation of HBFCs has also been banned under the Act since 1996 unless an essential use licence has been granted. No essential use licenses have been granted for HBFCs under the Commonwealth Act. These substances were not covered under the former Victorian regulatory framework for ozone layer protection.

HBFCs were used as fire fighting agents but were phased out more that 15 years ago and before the Montreal Protocol was declared. HBFCs were also used in pest control but have not been used as such for several years.

Extending the former framework to include HBFCs will make the Victorian framework consistent with the Montreal Protocol and complementary to Commonwealth controls. While it is highly unlikely

that any recycled stocks of HBFCs are being used in Victoria any users would be subject to the overarching provisions under clause 14 of the revised policy to adopt alternatives where practical and to avoid or minimise emissions. HBFCs would also become subject to the recovery provisions under clause 15. The record keeping provisions under the policy apply to suppliers of HBFCs and would enable EPA to monitor any applications of HBFCs in Victoria.

7.8 Sterilants

Medical device manufacturers and hospitals used CFC-12 with ethylene oxide (EO) for gas sterilisation of medical devices and equipment. This mixture had the capacity to penetrate a wide variety of packaging materials and destroy microorganisms on medical products and devices.

In 1992 a total of 94.9 tonnes of CFC-12 was used for sterilisation through out Australia. By 1997 CFC-12 use for sterilisation in developed countries had virtually disappeared. Alternatives are now available such as 100% EO, low temperature gas plasma, 10/90 EO/CO_2 and EO/HCFC and HFC mixtures.

In the past ten years the industry has moved out of EO/CFC based sterilants. Technologies that have replaced previous use of CFC-12/EO include a wet technique using per-acetic acid as the sterilising agent and a dry technique using a hydrogen peroxide gas plasma. In the last five years these techniques have become the two most common sterilising technologies used in Victoria neither of which use ozone depleting substances. Out of 218 hospital and medical sites in Victoria, approximately three units use 100% EO while the rest have moved to techniques using per-acetic acid or hydrogen peroxide gas plasma.

While EO/HFC mixtures have been developed very few, if any, sites in Victoria use these mixtures with no orders for EO in Victoria in the last 12 months. There is a EO/HCFC-124 mixture called 'Oxifume'. However, the demand for this mixture is less than 1000 litres annually. No other alternative containing ozone-depleting substances is available in Victoria.

7.9 Community

The impact of the policy and the revised framework for Victoria's ozone protection program on the broader community may be summarised as follows.

- The policy provides mechanisms to ensure that ozone-depleting substances are avoided or recovered for reuse, recycled or safely destroyed in accordance with community expectations, thereby assuring the community that the environment is being protected;
- Avoidance and reductions in the quantity of emissions of ozone-depleting substances to the atmosphere will support international efforts for recovery of the ozone layer to pre 1980 "ozone hole" levels reducing potential adverse impacts on human health and the environment;
- The policy supports economic development in Victoria, to the benefit of all Victorians, by promoting national consistency and helping to ensure consistent industry practices through flexible and supportive mechanisms for the management of the transition by industry to non ozone-depleting alternative substances;
- The policy encourages the public in their role as consumers to influence industry's waste

management practices through purchasing preferences;

- The cost of managing ozone-depleting substances is, in general, a marginal component of overall industry costs, so any changes in these costs in response to the policy, will have negligible effect on the price of consumer goods and services while promoting improved industry practices and standards.