Australian

Chlorofluorocarbon Management Strategy

October 2001

AUSTRALIA'S ozone PROTECTION PROGRAM

Environment Australia

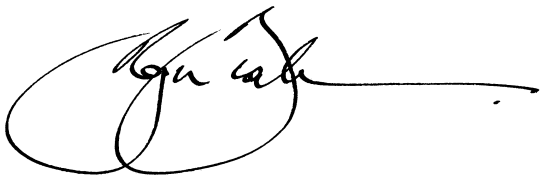
A message from the Secretary

Depletion of the ozone layer is a major environmental concern both nationally and internationally.

Depletion of the ozone layer is a major environmental concern both nationally and internationally. In recent years, Australia has made significant advances in phasing out and managing those substances that contribute to the depletion of the ozone layer. This Strategy describes the legislation developed and actions that have been carried out to date by Australia. It also outlines Australia's continued commitment to the effective management of chlorofluorocarbon (CFC) stocks in Australia until a complete phase out of the use of CFCs can be achieved.

CFCs have been major contributors to ozone depletion. They do, however, have vital pharmaceutical and laboratory uses. Until suitable technically feasible alternatives can be found, Australia must manage its existing use of CFCs to meet essential use requirements domestically and in support of our international obligations.

This Australian Chlorofluorocarbon Management Strategy represents the commitment made by Government, industry and the community to the effective phase-out of CFCs in Australia.



Mr Roger Beale
Secretary
Department of the Environment and Heritage

AUSTRALIAN CFC MANAGEMENT STRATEGY

Australia is a signatory to the *Vienna Convention for the Protection of the Ozone Layer* and its *Montreal Protocol on Substances that Deplete the Ozone Layer* (the *Montreal Protocol*). The *Montreal Protocol* sets out a mandatory timetable for the phasing out of ozone depleting substances, including CFCs, and urges Parties to act to minimise damage to the ozone layer.

The Australian CFC Management Strategy will be provided to the Ozone Secretariat by October 2001. This fulfils Australia's obligations under Decision XI/16 of the *Montreal Protocol*, to develop a national strategy for the management of CFCs, including options for recovery, recycling, disposal and eventual elimination of their use.

This Strategy outlines Australia's efforts since ratification of the *Montreal Protocol* in 1989 as well as its ongoing commitment to maintaining a leading role in the phase-out and responsible management of CFC stocks in the region, in line with its international obligations.



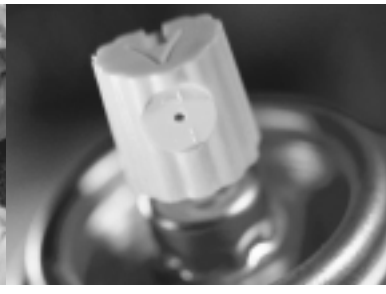



Table of Contents

1. Introduction

1.1 The purpose of the Australian CFC Management Strategy

The Australian CFC Management Strategy (ACMS) has been developed to report on Australia's efforts to date in managing CFCs and to provide an ongoing framework for the responsible management and use of CFCs in Australia. Although the majority of new CFC use in Australia has been phased out and/or replaced by less ozone damaging substances, there is still a need for newly produced CFCs in essential pharmaceutical and laboratory uses. The ongoing challenges for Australia are the phase-out of existing systems that use CFCs or the retrofitting of systems to enable them to use non-ozone depleting substances, and the eventual phase-out of CFCs used currently for essential pharmaceutical and laboratory uses, once suitable alternatives are found.

1.2 The effects of CFCs on the ozone layer

The stratospheric ozone layer exists in the upper atmosphere 15-30 kilometres above the surface of the earth, and protects life on earth by absorbing ultra-violet (UV) radiation from the sun. UV radiation is linked to skin cancer, genetic damage and reduced productivity in agricultural crops and the food chain.

Scientists' concerns about the depletion of the stratospheric ozone layer were confirmed in 1985 when they recorded the first ozone 'hole' over Antarctica. The formation of the hole over Antarctica has become a regular springtime feature since then and is a key public indicator of the global ozone depletion problem.

CFCs, and halons, are the most aggressive ozone depleting substances (ODS)[1]. CFCs are relatively stable chemicals that are capable of remaining in the atmosphere for significant lengths of time after they have been released. Once released CFCs move around the globe on air currents, eventually rising to the stratosphere. At altitudes of 12km or more CFCs are broken down by sunlight, releasing chlorine which reacts with and destroys stratospheric ozone. It is estimated that one chlorine atom can destroy over 100,000 ozone molecules.

Prior to 1989 CFCs were commonly used throughout the world in a wide range of industrial and domestic applications including: refrigeration and air conditioning, as cleaning solvents, blowing agents for rigid insulation and flexible upholstery foam, as propellants in aerosols and in a range of other pharmaceutical and laboratory applications.

1.3 International agreements

Australia is a signatory to the *Vienna Convention for the Protection of the Ozone Layer* and its *Montreal Protocol on Substances that Deplete the Ozone Layer* (*Montreal Protocol*). As such the Australian Government has a responsibility to meet a number of international obligations regarding the import, export and provision of CFCs.

THE PHASE-OUT TIMETABLE FOR CFCS IN DEVELOPED AND DEVELOPING COUNTRIES

Ozone Depleting Substance	Date	Control Measures	
		Developed Countries	Developing Countries
CFC	1 July 1989	Freeze consumption/production	
	1 January 1994	75% reduction in consumption/production	
	1 January 1996	100% reduction in consumption/production	
	1 July 1999		Freeze consumption/production
	1 January 2005		50% reduction in consumption/production
	1 January 2007		85% reduction in consumption/production
	1 January 2010		100% reduction in consumption/production

[1] Australia's response to the management of halons is contained in the *Australian Halon Management Strategy* (AHMS) July 2000.

Under the *Montreal Protocol* the production and consumption of CFCs was banned in developed countries from 1 January 1996, except for essential uses, which must meet a very limited range of essential use criteria. Developing countries have until 2010 to totally phase out CFCs.

1.4 Jurisdictional and legislative framework

Australia operates under a federal system of government where State/Territory and the Commonwealth (national) Governments have distinct roles and responsibilities. This Strategy recognises the interrelationship between the powers and responsibilities of both levels of government.

Australia undertook a number of early actions in order to establish a domestic policy framework for ozone protection. The Commonwealth Government is responsible for meeting Australia's international obligations under the Montreal Protocol to phase-out production and consumption of ODS.

1.4.1 Commonwealth (national) Legislation

The *Ozone Protection Act 1989* (Commonwealth) (the Act) was implemented by the Commonwealth to enable Australia to meet its obligations under the *Montreal Protocol* to phase out production and consumption of ODS, including CFCs. The Commonwealth Government (through administration by Environment Australia) controls the import, export and manufacture of bulk ODS through transferable licensing quota systems and the import and manufacture of products containing specific ODS, including CFCs and halons. The Act is the key legislation underpinning the National Ozone Protection Program. Under the Act, Australia banned importation and manufacture of CFCs from 31 December 1995, for all but essential uses. This has effectively reduced Australia's consumption (as defined in the *Montreal Protocol*) to zero in line with the *Montreal Protocol* phase-out schedule.

1.4.2 State and Territory Legislation

State and Territory Governments have controlled the sale, use, handling and distribution of ODS, through: regulating ODS transactions; mandatory training and accreditation of ODS equipment service personnel; mandatory codes of practice; and mandatory recovery and return of ODS. State and Territory legislation has controlled the use of CFCs, and CFC systems.

KEY STATE AND TERRITORY LEGISLATION	
Australian Capital Territory	• Environment Protection Act 1997 • Environment Protection (Consequential Provisions) Act 1997
New South Wales	• Ozone Protection Act 1989 • Ozone Protection Regulations 1997
Northern Territory	• Ozone Protection Act and the Ozone Protection Regulations
Queensland	• Environment Protection Act 1994 • Environment Protection Regulations 1998
Western Australia	• Environmental Protection (Ozone Protection) Policy Approval Order 2000
South Australia	• Environment Protection Act 1993
Tasmania	• Environmental Management and Pollution Control Act 1994
Victoria	• Environment Protection Act 1970 • Industrial Waste Management Policy (Control of Ozone Depleting Substances) IW-1B 1990

1.5 Consultation

1.5.1 Ministerial Councils

The Australian Environment Council

The Australian Environment Council (AEC), comprised of Commonwealth, State and Territory Ministers with responsibility for environmental issues, developed and adopted the *Strategy for Ozone Protection 1989*. This strategy recommended, *inter alia*, that the phase out of ODS in Australia should be advanced wherever possible and the national strategy should be implemented by consistent complementary legislation adopted by Commonwealth, State and Territory Governments. The AEC provided the vehicle for consultation and the adopted strategy formed the basis of Australia's Ozone Protection Program.

The AEC, with the addition of New Zealand, evolved to become the Australian and New Zealand Environment and Conservation Council (ANZECC).

The Australian New Zealand Environment and Conservation Council

ANZECC coordinated environment protection and conservation activities in Australia to July 2001. The Council consisted of the environment ministers from the Australian Commonwealth, States, Territories and New Zealand.

ANZECC's responsibilities have included the development of a *Revised Strategy for Ozone Protection*, adopted in 1994, that details Australia's further response to the global phase out program of ODS, including CFCs, following on from developments since the original 1989 Strategy. Some of the issues and recommendations raised in the *Strategy for Ozone Protection 1989* and the *Revised Strategy for Ozone Protection 1994* have been used as a basis for the development of the ACMS. As of July 2001, ANZECC has been superseded by two new Ministerial Councils: the National Resource Management Council and the Environment Protection and Heritage Council.

The Environment Protection and Heritage Council

The Environment Protection and Heritage Council (EPHC) is a new Council agreed to in July 2001, which adopts the environment protection agenda from ANZECC. It has been established to ensure the protection of Australia's environment and heritage places. Its objectives and scope will be finalised at its first meeting. However, its environment protection responsibilities are likely to include:

- protection of air quality;
- improving the environmental performance of Australian industry;
- international aspects of environment protection; and
- development of the policy tools needed to manage the above issues.

1.5.2 Advisory Committees to the Councils

The Ozone Protection Working Group and the Ozone Protection Consultative Committee

The Ozone Protection Working Group (OPWG) and the Ozone Protection Consultative Committee (OPCC) were established under ANZECC and contributed to the development and implementation of ANZECC's national approach to ozone protection. The OPWG consisted of relevant Commonwealth and State/Territory Government officials charged with monitoring policy implementation and significant international developments.

The OPCC comprised representatives from government, industry, community and conservation groups and was established to facilitate dialogue between major stakeholders on a national basis. The OPCC also advised the OPWG on progress and on industry responses to the *Revised Strategy for Ozone Protection 1994*. This Committee helped industry and governments to work together in meeting and, where technically possible, exceeding both the *Strategy for Ozone Protection 1989* and the *Revised Strategy for Ozone Protection 1994*.

The Ozone Protection Advisory Committee

Resulting from a review of the National Ozone Protection Program conducted in 2000, the OPCC terms of reference were revised and the committee was reformulated to create the Ozone Protection Advisory Committee (OPAC). OPAC comprises representatives from each of the State and Territory Governments and is chaired by the Commonwealth Government. This committee has acted as the advisory body to ANZECC on both ozone protection policy and the further development of the national ozone protection program.

The Ozone Protection Forum

In conjunction with the formulation of OPAC, the 2000 Review recommended the establishment of an Ozone Protection Forum (OPF) made up of OPAC and relevant industry and community groups concerned about the phase-out of ODS. It is hoped that the OPF will better facilitate information exchange, stakeholder input to policy development and increased awareness of Government action and policy development on ozone protection. Both OPAC and OPF are coordinated by Environment Australia.

Advisory Committees under the Environment Protection and Heritage Ministerial Council

The modalities and guidelines of the Advisory Committees under the EPHMC are yet to be finalised. It is presumed that a number of committees will be established and that one of them will include in its terms of reference any matters pertaining to ozone protection. These matters are likely to be finalised after the release of this strategy.

1.5.3 Phase-out of CFCs

Australia undertook extensive consultations both in the initial move toward the phase-out of CFCs and the subsequent actions taken to regulate CFC use under the National Ozone Protection Program. Consultation occurred between the Commonwealth, State and Territory Governments, and with a wide range of stakeholders including industry, environment organisations and the wider community. These consultations informed the development of the *Strategy for Ozone Protection 1989*, which set a target of 95 per cent phase-out in CFC and halon consumption by 1995 at a time when the Montreal Protocol advocated a 50 per cent reduction in consumption of CFCs by the year 2000.

The OPCC also engaged in extensive consultation with major stakeholders and contributed to the development of the *Revised Strategy for Ozone Protection 1994*, adopted by ANZECC. As with any consultation process, there were often significant differences in the perspective of stakeholders. However, these views were taken into consideration in preparing management strategies for ozone protection in Australia. Consultation with key stakeholders is sustained through the link between OPAC and the OPF.

1.6 CFC Alternatives and Encouraging Substitutes and Replacements

In the 1980s, CFCs were widely used in Australia in air-conditioning and refrigeration, foam plastics, aerosol products, as solvents and for sterilisation. As the need for alternatives to CFCs grew, those Australian companies intending to enter the global HCFC/HFC markets combined their resources to establish the Alternative Fluorocarbon Environmental Acceptability Study (AFEAS) and the Program for Alternative Fluorocarbon Toxicity Testing (PAFT).

The Alternative Fluorocarbon Environmental Acceptability Study

The Alternative Fluorocarbon Environmental Acceptability Study (AFEAS) program focused on evaluating the effects of the proposed CFC alternatives on stratospheric ozone, global warming, mechanisms of product degradation and the potential environmental effects of its degradation in air, water and soil.

The Program for Alternative Fluorocarbon Toxicity Testing

The Program for Alternative Fluorocarbon Toxicity Testing (PAFT) program, launched in 1987, focused on worker safety, risk assessment and consumer protection issues. The main areas of its work have been the toxicity testing of alternative chemicals. The program evaluated and integrated all available toxicological information and then carried out acute, sub-chronic and chronic toxicity studies, together with carcinogenicity and genotoxicity studies for each of the potential alternatives.

Global Research and Development

In addition to the above studies, Australian industry has relied upon assessments of available alternatives to CFCs, and other ozone depleting substances, from other countries, particularly the United States where assessments are carried out under the Significant New Alternatives Policy (SNAP) program.

Australian ozone protection legislation has not extended to non-controlled substances and technologies that may be used as alternatives to ozone depleting substances (ODS). In addition, there are no established governmental guidelines for the selection of acceptable alternatives to ODS, but alternatives may be assessed by authorities in charge of, for example, occupational health and safety standards. Information brochures on changing to non-ozone-depleting alternatives for car and

building air-conditioners and halon fire protection systems have been issued by Environment Australia in cooperation with relevant organisations. These brochures do not have any official status.

Australian industry frequently looks to the findings of the United States Environment Protection Agency (USEPA) SNAP program, the AFEAS PAFT program and other significant studies from overseas environmental organisations for guidance on the acceptability of alternatives.

1.6.1 Air-Conditioning

There has been a significant movement within the Australian air-conditioning industry away from CFCs since measures to control CFCs were first introduced. At present, most domestic systems use HCFC-22, and while some existing industrial or commercial systems still use CFCs, equipment is being progressively retrofitted with an increasing uptake of HCFCs and HFCs.

CFCs were used in new motor vehicle air-conditioning units until 1994. New car air-conditioning systems are now primarily using HFC-134a as the refrigerant, as it is not ozone depleting. It is also being used in existing systems after only minor alterations. Existing car air conditioners operating on CFC are becoming increasingly difficult to service due to the limited availability of CFCs, and are gradually being retrofitted or retired.

1.6.2 Refrigeration

CFCs were used extensively in refrigeration equipment prior to 1996. HCFCs have proven to be an efficient and easily accepted alternative in a number of applications, having many of the same characteristics as CFCs but with a reduced effect on the ozone layer. HCFCs however are also ozone depleting – although to a much lesser extent than CFCs – and as a transitional substance will be phased out by 2030. Controls on the importation and manufacture of HCFCs have been in place since January 1996. HFCs are an acceptable alternative to HCFCs in a number of refrigeration applications.

Prior to 1995, CFCs were used extensively in chillers. HCFC-123 replaced CFC-11 in new chillers and is also used in retrofitting some existing CFC chillers and it is likely that this will continue. A factor that might have inhibited uptake of HCFC-123 was that there were initial occupational health and safety concerns. Toxicity testing cleared it for use in refrigeration and air-conditioning, but safety concerns have impeded application in foam blowing where it was considered a possible substitute for CFC-11. There is no ban on the sale or use of domestic refrigerators containing CFCs in insulation and/or refrigerant. However, shortages of CFCs encourage service conversion when loss occurs. Continuing use of CFCs in chillers is largely reliant on recovered and recycled stocks. Refrigerant blends containing HCFCs that are suitable for domestic refrigerator retrofit have been available since 1994.

For domestic refrigeration, CFC-12 refrigerant has been replaced with HFC-134a for new equipment. Existing equipment continues to use CFC-12 until the end of equipment life.

1.6.3 Foam

Prior to the phase-out of CFCs, an assortment of CFCs including CFC-11, CFC-12, CFC-113 and CFC-114 were used extensively as foam blowing agents and for the manufacture of foam plastic products. A range of alternatives have replaced CFCs used in these applications including methylene chloride, hydrocarbons and HCFCs. HCFCs, particularly HCFC-141b, are an acceptable interim alternative that has replaced CFC for rigid polyurethane foam manufacture. Non-ozone depleting substances which are also used as alternatives to CFCs as blowing agents are cyclopentane and isopentane. There is concern within the foam industry, both in Australia and overseas, that substitutes for HCFCs are not widely available and substitution in some applications would potentially require new technologies.

1.6.4 Aerosol Products

In the 1980s the majority of aerosol products were converted from using CFCs to hydrocarbon propellants. Medical and technical specialty products using CFC-12, CFC-11, CFC-113 have converted to alternatives including aqueous sprays and HFCs, with pharmaceutical metered dose inhalers for asthma and chronic obstructive pulmonary disease gradually being converted to HFC-134a.

The import of aerosols containing CFCs into Australia requires an essential uses exemption licence, according to Section 40 of the *Ozone Protection Act 1989*. Few aerosols containing these substances are now imported into Australia.

1.6.5 Solvents

CFC-113 was used as a solvent and very effective cleaning agent for electronic components, metal parts, dry cleaning, and laboratory analysis. Prior to the phase-out of CFCs, the largest use was as a solvent, which has now disappeared. A large range of alternatives have been developed and adopted including:

- trichloroethylene,
- perchloroethylene,
- isopropanol,
- water,
- blasting with CO_2 pellets; and
- pressurised gas.

When considering replacement solvents and/or retrofitting of equipment currently using solvents, it has been essential to consider the potential occupational health and environmental effects of the alternatives. This includes the ODP, the GWP (global warming potential), potential waste disposal problems, and occupational hazards including flammability, toxicity, exposure to vapours and skin absorption.

1.6.6 Sterilisation

CFC-12 was blended with ethylene oxide (EO), a non-ozone depleting substance, and used in sterilisation and fumigation applications. This mixture consisted of 12 percent EO, and 88 percent CFC-12. It has been replaced by 100% EO, low temperature gas plasma technology, a mixture of 10 percent EO and 90 percent carbon dioxide, and EO/HCFC mixtures.

1.6.7 Conclusion

Australia actively encourages the use of substitutes and replacements for ODS. For most CFC use, the transition to less ozone depleting substances, such as HCFCs, or to non-ozone-depleting alternatives has already occurred. CFC use exists primarily in old equipment, where operations now require recycled substances or are being gradually retrofitted

SECTOR APPLICATIONS OF CFCS AND SOME OF THEIR ALTERNATIVES

Use	CFCs	Alternative
Refrigeration	CFC-12, CFC-11	HCFCs, HFCs
Foam plastics	CFC-11	Methylene chloride, HCFCs, cyclopentane, isopentane
Aerosol products	CFC-12, CFC-11, CFC-113	Hydrocarbons, HFCs
Solvents	CFC-113	Trichloroethylene, perchloroethylene, isopropanol, water, blasting with CO_2 pellets and pressurised gas
Sterilisation	CFC-12	100% Ethylene oxide, HCFCs
Air-conditioning:		
– Domestic, Commercial and Industrial	CFC-12, CFC-11, CFC-114 CFC-115	HCFCs, HFCs
– Motor Vehicle	CFC-12	

The successful phase out of the majority of CFCs in Australia is attributable both to collaboration between government and industry in determining the regulatory framework for the phase-out of CFCs and to developments in refrigerants and equipment whereby suitable alternatives to CFCs became available. The latter alternatives were planned for and promoted in a wide ranging educational campaign in order to facilitate a smooth and timely transition.

2. MANAGEMENT OPTIONS

Internationally the phase-out of CFCs under the *Montreal Protocol* has been successful. In developed countries, the success of the phase-out of ODS generally is reflected in the rapid fall in ODS production since the phase-out commenced. Since 1995, there has been a ban on the import and manufacture of CFCs in developed countries, except for a limited number of essential use exemptions. Australia's experience suggests that access to state-of-the-art technology is only one of many important elements in effective, responsible ODS management and disposal.

2.1 Control of Bulk Ozone Depleting Substances (ODS) (other than methyl bromide)

2.1.1 Production, import and export of ODS in bulk (national regulations)

All manufacturers, importers and exporters of ODS must have a licence from the Minister for Environment and Heritage under the *Ozone Protection Act 1989* (the Act). Up until 1996, individual quotas for CFCs were issued for each manufacturer, importer and exporter, specifying the quantity that they were allowed to manufacture, import or export. Since 1 January 1996, CFCs may be imported for a limited range of essential uses as defined by the *Montreal Protocol* and require an essential uses licence. Since 1 January 1996, the Act also applies to recycled and used CFCs. These substances require a used substances licence.

Australia produced CFC-11 and CFC-12 up until 1995. Production declined from 7485.4 tonnes in 1991 to 3849.9 tonnes in 1995, the final year of operation of the plant. Australia no longer produces any ODS. All of these substances are imported either in bulk form or contained in equipment or products.

Bulk imports of ODS are the primary source of these substances for use in original equipment manufactured domestically and for servicing both imported and domestically manufactured equipment. Recovered substances are a minor source of substance overall. However, due to the restricted and highly regulated import of CFCs these particular ODS are increasingly scarce, and equipment and uses that still rely upon CFCs, with the exception of essential use exemptions, must rely exclusively on recovered substances if the equipment is to remain in operation without retrofitting.

PRODUCTION OF CFCS FROM 1990 TO 1995 (TONNES)[2]

Substance	1990	1991	1992	1993	1994	1995
CFC-11	NAV	3542.4	3143.1	3145	1473.9	835.0
CFC-12	NAV	3943	3609.4	3499	2978.5	3014.9
CFC-113	NAV	0	0	0	0	0
CFC-114	NAV	0	0	0	0	0
CFC-115	NAV	0	0	0	0	0
Total	**NAV**	**7485.4**	**6752.5**	**6644.0**	**4452.4**	**3849.9**

NAV = not available

[2] Table obtained from report for Environment Australia, *Development of Inventories for Ozone Depleting Substances and Synthetic Greenhouse Gases in Montreal Protocol Industries*, prepared by Burbank Consulting, July 2001.

AUSTRALIA'S IMPORTS OF CFCS FROM 1990 TO 1999

Substance	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
CFC-11	NAV	1.3	56.5	140.0	81.5	5.6	68.5	51.8	60.5	89.7	0.0
CFC-12	NAV	763.5	698.5	754.0	384.7	280.8	180.8	129.2	134.4	181.5	8.0
CFC-113	NAV	998.9	807.5	486.0	168.3	235.8	0.0	0.1	0.2	0.1	0.0
CFC-114	NAV	6.0	19.2	6.0	11.4	0.0	3.2	2.8	0.0	2.8	1.4
CFC-115	NAV	331.3	85.0	172.0	63.9	45.6	0.0	0.0	0.0	0.0	0.0
Total	**NAV**	**2101.0**	**1666.7**	**1558.0**	**709.8**	**567.9**	**252.6**	**183.9**	**195.1**	**274.2**	**9.5**

NAV = not available

Total imports in 2000 pursuant to essential use exemptions were 9.45 tonnes, decreasing from 274.2 tonnes in 1999.

The exemption permitting these imports relates to the use of CFCs to manufacture metered dose inhalers (MDIs) to treat asthma and chronic obstructive pulmonary disease (COPD). This is considered an essential use by the *Montreal Protocol*. The requirement for a pharmaceutical grade solvent and propellant for MDIs has meant that CFCs have continued to be imported for this purpose. The meetings of the Parties have, however, adopted decisions requiring the Parties develop national strategies for transition to CFC-free treatments of asthma and COPD.

Australia's peak stakeholder group on CFC MDI phase out, the CFC-free Working Group (comprising health professionals, respiratory medicine companies, health regulatory bodies and major user groups), identified 31 December 2005 as Australia's deadline for completing domestic transition to CFC-free treatments for asthma and COPD. This reflects the target date proposed by the Protocol's expert advisory bodies for transition by developed countries. Australia's first CFC-free pressurised MDI became available in February 1999. Consequently, since 2000, the import of CFC for use in MDIs has declined dramatically.

CONSUMPTION[4] OF CFCS FROM 1990 TO 1999[5]

Substance	1990*	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
CFC-11	1914.9	1758.9	1786.6	1443.0	926.6	-271.3	68.5	51.8	60.5	89.7	0.0
CFC-12	4408.4	4049.2	3053.5	3205.0	2784.0	2828.6	180.8	129.2	134.4	181.5	8.0
CFC-113	1087.5	998.9	807.5	484.5	168.3	235.8	0.0	0.1	0.2	0.1	0.0
CFC-114	6.5	6.0	19.2	5.7	11.4	0.0	3.2	2.8	0.0	2.8	1.4
CFC-115	360.1	330.8	84.4	172.0	63.9	45.6	0.0	0.0	0.0	0.0	0.0
Total	**7777.6**	**7143.8**	**5751.2**	**5310.2**	**3954.2**	**2838.8**	**252.6**	**183.9**	**195.1**	**274.2**	**9.5**

* Estimated from UNEP (1999)

[3] Burbank Consulting, July 2001.
[4] Consumption = Products + Imports – Exports
[5] Burbank Consulting, July 2001.

The consumption of CFCs has fallen from 7777.6 tonnes in 1990 to 9.45 tonnes in 2000 (the amount used in essential uses). Substantial quantities of CFCs were used in refrigeration, air-conditioning, foam blowing, and solvent applications in 1990. Estimated consumption in 1986, the base year for the phase-out under the *Montreal Protocol*, was in excess of 14,000 tonnes. These data refer to new substances (imports plus production minus exports) and do not take into account consumption of recovered and recycled CFCs. Imports of equipment containing stage-1 scheduled substances (those substances shown in the table) were restricted from 1989 (Schedule 4 of the *Ozone Protection Act 1989*). Dates varied from 1 January to the 16th of March 1989 (date of commencement of the Act) to 31 December 1989, dependent on the application of the substance.

Several States introduced restrictions on those who sell bulk ODS, closely linked to corresponding restrictions on those who purchase and use ODS. The scope and structure of these controls varies from the State to State.

2.1.2 Monitoring import of ODS

Imports of ODS into Australia are monitored through quarterly reports to Environment Australia, which are submitted by licensees in accordance with their license conditions. Data provided by licensees is cross-checked against information provided by customs authorities. Since 1997, the Australian Customs Service (ACS) has the power to require companies seeking to import ODS to enter a licence number, issued by Environment Australia, prior to obtaining import/export clearance at the Customs barrier. The import from and export to countries that are not Party to the *Montreal Protocol* is prohibited.

2.2 Controls on Import and Sale of Products Containing, Made with or Using ODS

The national *Ozone Protection Act 1989* (the Act) bans the import of certain products that contain or are made with, *inter alia*, CFCs. Manufacturing the same products is also prohibited. Under the Act, exemptions can be approved by the Minister for Environment and Heritage for uses that are essential for medical, veterinary, defence, industrial safety and public safety purposes.

Some State regulations prohibit the sale of certain products containing, made with or requiring ODS for their use. The products affected and structure of the regulations very from State to State, but are based on the *1989 Strategy for Ozone Protection*.

2.3 Controls on Use of ODS (other than methyl bromide) – 'End Use Controls'

The controls on use of ODS, e.g. in manufacturing processes or for installation, service operation of refrigeration, fire protection or dry cleaning, have been implemented by the States and Territories, through general restrictions supplemented by bans on the use of ODS for certain applications. Several State/Territory regulations include general restrictions on purchase and use of ODS to manufacture, install, service and operate certain products and equipment. The scope and structure varies across the States and Territories.

The controls on service and installation of refrigeration and air-conditioning equipment form part of the general State/Territory restrictions on purchasers and users of ODS.

KEY STATE AND TERRITORY END-USE CONTROLS ON CFCS AND OTHER ODS

Australian Capital Territory	• A person shall not undertake a *prescribed activity*[6] unless they hold an environmental authorisation (licence) in respect of that activity. • Venting of ODS to the atmosphere without the appropriate authorisation is prohibited and shall be taken to cause environmental harm. • The sale of an article or other thing in the ACT is regulated under the relevant NSW ozone protection legislation.
New South Wales	• Authorisation required to obtain possession of CFCs and blends containing CFCs. CFCs must only be obtained from suppliers authorised by the NSW EPA. Possession is subject to a number of conditions. • Sale of CFC aerosols is prohibited without an exemption under Commonwealth regulations. • Some activities are classified as *restricted activities*[7]. Authorisation is required to carry out such activities. Authorised persons must demonstrate a knowledge of the relevant regulations, industry Code of Practice and must ensure recovery of the controlled substances.
Northern Territory	• Only authorised and suitably qualified persons may use controlled substances or operate equipment containing controlled substances. • Buying or selling a controlled substance requires a licence. Exemptions are required for the sale of aerosols. • When systems are serviced, controlled substances must be reclaimed and then recycled. • Any person who uses an ODS or who operates a product/system which uses an ODS, must comply with the relevant Codes of Practice.
Queensland	• CFCs, classified as controlled substances, must be correctly labelled, handled and stored, must not be sold in disposable containers, and can be returned to the seller installed in a suitable container. • Relevant industry Codes of Practice must be adhered to. • Controlled substances must not be released to the atmosphere from *specified equipment*[8] except in accordance with the relevant industry Code of Practice. • Any person who uses an ODS or who operates a product/system which uses an ODS, must comply with the relevant Codes of Practice.
South Australia	• *Prescribed substances*[9] cannot be sold without an ëexemption' from the SA EPA. Anyone who holds the Commonwealth licence or exemption is automatically granted an exemption by the SA EPA on application. The same conditions apply also to anyone using, storing, servicing or disposing of ODS or products containing ODS.
Tasmania	• A person must not sell or purchase an amount of CFC or undertake a controlled activity unless the person has an authorisation to sell a controlled substances or is acting under the direction of a person who has such an authorisation • Best practice environmental management must be followed • A person must not needlessly release or allow the needless release of an ozone-depleting substance
Victoria	• Anyone who purchases or uses CFCs and halons for certain *specified activities*[10] must be registered and accredited by an appropriate industry board or by the Victorian EPA. • Registration is only granted if the applicant has access to equipment to minimise ODS emissions and if they comply with sector specific Codes of Practice. In addition, they must only supply the controlled substances to accredited persons. For accreditation, applicants must demonstrate a proven ability to take effective measures to minimise emissions and an adequate awareness of ozone issues, including relevant legislation, and Codes of Practice.
Western Australia	• Purchasers and vendors of ODS must be authorised. • Anyone engaging in a *restricted activity*[11] needs authorisation to do so and must demonstrate adequate awareness of ozone issues, relevant legislation, and Codes of Practice. Venting to atmosphere is prohibited except under certain exemptions and authorised persons have a duty to reclaim any ODS that would otherwise be unlawfully emitted.

[6] Prescribed activitiesí include: the manufacture, sale, storage, supply, transport, use, servicing or disposal of, or any other dealing with an ODS or a thing containing an ODS.

[7] Restricted activitiesí include: the manufacture, installation, servicing or decommissioning of any refrigeration equipment, air conditioning equipment (including motor vehicle air conditioning equipment) or any aerosol, fire protection system, any portable fire extinguisher, or any other controlled article (other than a mere container), that uses a CFC, HCFC or halon in its operation; the use of the CFC on HCFC for the purposes of drycleaning; and the reprocessing or upgrading of any reclaim CFC or HCFC.

[8] This includes: commercial industrial refrigeration or air-conditioning equipment; domestic air-conditioning equipment; domestic refrigeration equipment; motor vehicle air-conditioning equipment; fire extinguishing devices (halons and HCFCs); drycleaning equipment; and storage vessels.

[9] Prescribed substancesí include substances covered by the Commonwealth *Ozone Protection Act 1989*.

[10] Specified activitiesí include installation, service, maintenance, operation and decommissioning related to: drycleaning; refrigeration/air conditioning; and fire protection.

[11] Restricted activitiesí include manufacture, installation, and service of controlled ODS products and drycleaning.

2.4 Voluntary Agreements

The *Australian Strategy for Ozone Protection* to phase-out ODS, is based upon agreements between government and industry. Australian Governments have established cooperative and co-regulatory approaches with industry through representative industry and trade associations and organisations:

- Australian Fluorocarbon Council (AFC, formerly Association of Fluorocarbon Consumers and Manufacturers)
- Appliance Industry Association (AIA)
- Refrigeration and Air-conditioning Contractors Association (RACCA)
- Technical and Further Education (TAFE) colleges
- Dry Cleaning Institute of Australia (DIA)
- Fire Protection Industry Association (FPIAA) – now the Fire Protection Association of Australia (FPAA).
- Motor Trades Association of Australia (MTAA)
- Plastic and Chemicals Industry Association (PACIA)

The following trade associations have been involved in the development of Codes of Good Practice to minimise emissions:

- Australian Fluorocarbon Council (AFC, formerly Association of Fluorocarbon Consumers and Manufacturers)
- Fire Protection Industry Association of Australia (FPIAA) – now the Fire Protection Association of Australia (FPAA).
- Dry Cleaning Institute of Australia (DIA)
- Motor Trades Association of Australia (MTAA)
- Motor Vehicle Repair Industry Council (MVRIC)
- Refrigeration and Air conditioning Contractors Association of Australia (RACCA).

2.5 Labelling Requirements

State regulations contain various requirements for the labelling of vessels and products containing ODS or requiring ODS for their use.

2.5.1 New South Wales

Containers marked 'RECLAIMED' must be used for return of recovered ODS (NSW OP Reg., cl. 40). Manufacturers, Distributors and vendors of refrigeration and air conditioning equipment that uses a CFC or HCFC must ensure that the equipment bears a label identifying the CFC or HCFC (NSW OP Reg. cl. 21 and 23).

Any person who services any motor vehicle air conditioner or refrigeration and air-conditioning equipment (including domestic equipment) that originally used a controlled substance by adding new refrigerants must attach a label which identifies the name of the organisation carrying out the service, the authorisation number (if any) of the person purchasing the refrigerant, date of survice and type of refrigerant and lubrication used (NSW OP Reg, cl 22, 24 and 25).[12]

The NSW Ozone Protection Regulation moved towards more cost-effective enforcement by providing penalty infringement notices for less serious offences, including the following:

- failure to make or retain records.
- failure to forward records to the EPA.
- failure to attach labels to equipment (such as refrigerators and air conditioners) after charging with CFC, HCFC or a replacement refrigerant, to indicate the type of refrigerant used.

2.5.2 Northern Territory

All controlled articles shall be labelled or identified in accordance with any Code of Practice relating to such labelling or identification currently in use. A person shall not fill or use a controlled article with a controlled substance unless the article is labelled or identified in accordance with this regulation.

2.5.3 South Australia

Products and equipment which must be commissioned, serviced, repaired or decommissioned by an accredited person must carry a label, specified in detail in the regulation.

2.5.4 Queensland

Manufacturers or importers must attach an appropriate label to any controlled article, except foam manufacturing equipment. At the request the purchaser, the seller of any controlled substance, must supply suitable containers labelled with: the word 'reclaimed'; the name of the controlled substance; the name and address of the seller; and statement that the container must be used only for the substance specified.

[12] A label on a serviced motor vehicle air conditioning equipment must also state the date of filter/drier replacement.

2.5.5 Victoria

All vessels containing CFC Annex A or halons should be labelled with the name of substance (VIC IW-1B, cl. 28). All refrigeration and air-conditioning units containing CFCs must clearly identify the refrigerant for service personnel at all times (VIC IW-1B, cl. 35).

2.6 Options for recovery, recycling and disposal

2.6.1 Recovery and Recycling

Australian end-use regulations for recovery, recycling, reprocessing and disposal are complemented by industry initiatives which establish practical, self-sustaining recovery, recycling, reprocessing and destruction infrastructure and systems. Industry is responsible for a number of ODS management initiatives. These include: Refrigerant Reclaim Australia, a program for the responsible recovery, reclamation and destruction of ozone depleting refrigerants; and, codes of practice covering every ODS application sector. Some sectors, including the fire protection, aviation, shipping and defence, chose to establish their own storage facilities.

Refrigerant Reclaim Australia

In 1995, Australian industry established Refrigerant Reclaim Australia (RRA), to manage the collection, recovery, reprocessing and safe destruction of used ozone depleting substances, including CFCs. RRA, previously known as the ODS Reclaim Fund, is financed through a contribution from the importers of bulk ozone depleting refrigerants and refrigerant wholesalers. Reclaimed, recycled or reprocessed refrigerants are exempt from the phase out controls and as such can be reused without contravening current legislation. State and Territory legislation covers venting to the atmosphere of both new and reclaimed, recycled/reprocessed ozone depleting substances.

RRA is funded by a voluntary levy of the US$0.6/kg on importers. To encourage the reclamation of used refrigerants, the wholesalers pay $2.50 per kg for reprocessable refrigerant and $0.50 per kg for unusable refrigerant. Under the Program, contractors recover contaminated unwanted refrigerants from equipment into refillable cylinders supplied by the wholesaler. Full cylinders are returned to the wholesaler by the contractor, who receives in return a credit of US $1.50/kg. RRA will continue to facilitate the reprocessing, safe and effective storage or safe disposal of used refrigerant. Many applications containing CFCs, such as domestic refrigerators and small air conditioners, can conceivably continue running until the end of their useful life without maintenance. The greatest concentration of existing CFCs is in the air conditioning systems of older large buildings.

Other Applications

Due to the nature of other applications, such as ODS use in foams or in laboratory and medical applications, it is virtually impossible to recapture and/or recycle the substances used. In laboratory or medical applications, the majority of the substance is used during the life of the equipment or vented to the atmosphere. Foams gradually degenerate over time, resulting in some release to the atmosphere. In both examples, it is impossible to recapture any of the ODS. However, the quantities emitted are relatively insignificant compared to other ODS applications.

State Legislation

Since the early 1990s, State and Territory legislation has required the automotive industry to adopt the practice of CFC refrigerant recovery. Service organisations use on-site equipment to recycle any refrigerant they recover. Where recycling is not possible, the refrigerant is returned to the manufacturer or supplier for reprocessing. The recovery and reprocessing of used CFC refrigerants reduced consumption of newly produced CFCs and has extended the quantities of refrigerant available now that new supplies are no longer available.

2.6.2 Disposal

The disposal of ODS has always been considered a necessary element of Australia's ODS management. One element of an ODS disposal program includes the potential need for interim or long-term storage. Measures for ODS storage were incorporated into Australia's ODS management program in 1993 with the National Halon Bank's (NHB) establishment.

The NHB is Australia's major ODS disposal management facility. EA owns the NHB and contracts its operation to the private sector, which is currently DASCEM Holdings Pty Ltd. This involves managing:

- arrangements for the collection, transportation, decanting, purification, safe storage and destruction of halon and ozone depleting refrigerants;
- the design and implementation of public awareness campaigns and operation of community, small business and dumped halon collection activities (Community Service Obligation (CSO)); and
- the sale of halon to approved users in Australia and overseas.

The NHB was the Commonwealth Government's response to a rapidly accumulating stockpile of halon within government, industry and the community. This accumulation was the result of compliance with State and Territory regulations, requiring the mandatory decommissioning of non-essential halon systems by 1995, and the mandatory recovery of all ODS from any decommissioned equipment.

ODS disposal measures, in the sense of destruction, were introduced in late 1996 with the installation of SRL Plasma's argon plasma arc technology at the NHB. Australia's ODS disposal programme can be broken down into: collection and transportation; public awareness/education; recovery and reclamation; and destruction. The NHB has destroyed more than 1200 metric tonnes of halon and more than 200 metric tonnes of CFC to date.

2.7 Essential uses as permitted by the *Montreal Protocol*

The *Montreal Protocol* states that:

On or after 21 April 1993 a person must not manufacture or import refrigeration or air-conditioning equipment that is intended to be used for commercial or industrial use if:

(a) The equipment is charged with a CFC: or

(b) The equipment may only operate by using a CFC.

The criteria agreed by the Parties to the Protocol follow.

(a) That a use of a controlled substance should qualify as essential only if:

  (i) it is necessary for health or safety, or critical for the functioning, of society (encompassing cultural and intellectual aspects); and

  (ii) there are no available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health.

(b) That production and consumption, if any, of a controlled substance, for essential uses should be permitted only if:

  (i) all economically feasible steps have been taken to minimise the essential use and any associated emission of the controlled substance; and

  (ii) the controlled substance is not available in sufficient quantity and quality from existing stocks of banked and recycled material.

All these criteria have to be met. The aim is not to determine a list of generic essential uses, but to determine on a case by case basis whether it is necessary to produce a particular quantity of controlled substance for a particular essential use after 1 January 1996. There may be uses that society would consider essential, but for which there are already alternatives, or for which recycled material is suitable and available. Those uses would therefore not qualify for continued production.

There is no guarantee that any nominations made by Australia will be accepted by the Parties. It should also be noted that, even if any use qualifies as essential and continued production is allowed, this does not guarantee supply of the controlled substance. Production will only occur if a producer finds it economically viable to continue producing the substance.

2.8 Essential uses as permitted by the *Ozone Protection Act 1989* – Section 40

The *Ozone Protection Act 1989* allows for the on-going essential use of CFCs in specific applications. The Act states that:

(3) The Minister may grant to the applicant an exemption from compliance with an obligation imposed by Schedule 4, or by regulations made under section 39, in relation to a product if the Minister is satisfied:

  (a) that:

    (i) the product is essential for medical, veterinary, defence, industrial safety or public safety purposes; and

(ii) no practical alternative exists to the use of scheduled substances in the operation or manufacture, as the case requires, of the product if it is to continue to be effective for such a purpose;

(b) that, because of the requirements of a law concerning the manufacture or use of the product, there is no practical alternative to the use of scheduled substances in the operation or manufacture, as the case requires, of the product; or

(c) the product is for use in conjunction with the calibration of scientific, measuring or safety equipment.

2.9 Licensing and accreditation

When the *Ozone Protection Act 1989* was first introduced it implemented the requirements of the *Montreal Protocol* as well as controlling selected end uses of CFCs. At that time, in order for CFCs to be imported or exported, the Act provided for, *inter alia*: regulations for licencing; restrictions on licensees; a ban on imports of CFC products on a date to be determined by the Protocol Parties; and a ban on the import of products in which CFCs were used in manufacture, and no exports to non-Protocol countries after 1994.

End-use controls in Schedule 4 of the Act included a ban on the importation and manufacture of:

- Aerosols (exemptions for essential use) effective from 31 December 1989
- Extruded polystyrene installation and packaging effective from 31 December 1989
- Automotive air-conditioning maintenance kits effective from 31 December 1989
- Non-refillable containers under five kilos effective from 31 December 1989
- Dry-cleaning equipment designed to use CFCs.

In 1995, the above list of products was expanded to include the following:

- Disposable refrigerant containers regardless of size
- Refrigeration and air-conditioning units, charged with CFCs, designed to operate only with CFCs, or installation with foam made with CFCs
- Polyurethane foam packaging material
- Moulded flexible polyurethane foam
- All products containing halons

The licence and exemption system under the Act is one of the key regulatory mechanisms employed by Australia to progress its domestic transition to CFC-free metered dose inhalers (MDIs), which are used in the treatments of asthma and chronic obstructive pulmonary disease (COPD). The only CFCs currently allowed to be imported into Australia are those for essential uses and importers are required to obtain a licence from the national Government through the Ozone Protection Section of Environment Australia. CFCs are still imported for use in MDIs, pursuant to an essential use exemption license, but the quantity of CFCs imported for MDIs has decreased dramatically since 2000, following the approval of appropriate alternatives.

3. ACHIEVEMENTS / PROGRESS

Australia has found the mix of government regulation, co-regulation and voluntary industry initiatives extremely effective in managing its ODS stocks. Underpinning this mix of measures has been the ongoing education of the public and affected industries. Awareness raising has been the joint responsibility of governments, industry and public interest groups. With cooperation between all levels of government and industry Australia has acted in advance of international obligations to phase-out ozone depleting substances. Australia has phased-out CFCs for general use in line with or in advance of the *Montreal Protocol* phase-out schedule. Australian legislation now calls for the phase-out of remaining essential purpose CFC use well in advance of the Protocol dates.

The effectiveness of Australia's ODS phase-out program is largely due to a combination of the following factors.

Disposal programs which reinforce and complement measures under the ODS management strategy

Australia believes it is important that ODS disposal programs are developed to reinforce the overall integrity of ODS management strategies. Decisions as to the nature and extent of the program, and how it operates within the established ODS management measures, should therefore be informed by the following threshold questions:

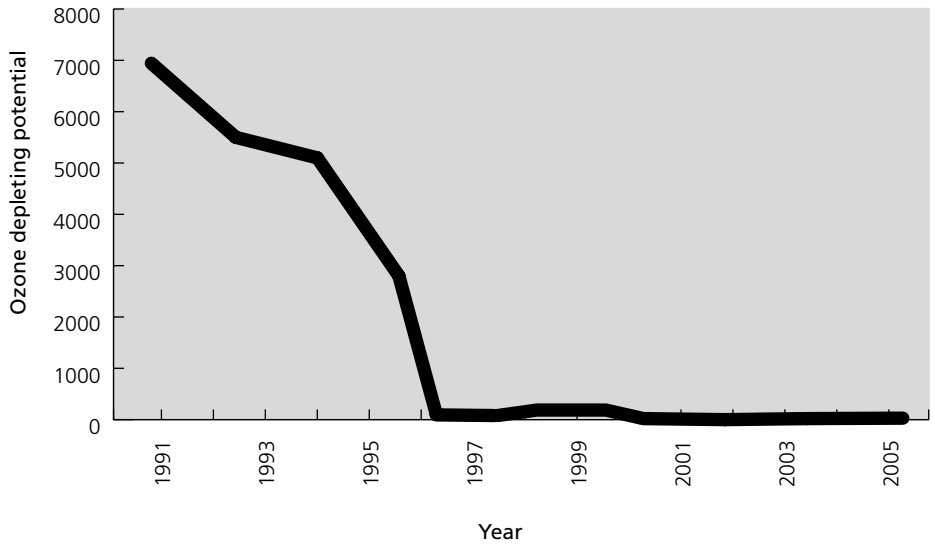
- How much (if any) ODS should be reserved?
- For how long should ODS be reserved?
- Who should pay the storage costs?
- What should be done with ësurpluses'? Destruction, long-term storage, or exported for essential uses?

In Australia's case, its ODS disposal program complements measures under the ODS management strategy.

Ownership of Solutions

Australia has provided key affected stakeholders with a sense of ownership of strategies to manage the phase-out of ODS. This has contributed greatly to their effective implementation. Australia has found that, if key stakeholders are given the opportunity to participate in the development and implementation of ODS phase-out programs, these programs are more likely to be sustainable as they will: recognise the technical, commercial and regulatory constraints under which the stakeholders operate and also gives the stakeholders a vested interest in ensuring a project with which they are associated is a success.

AUSTRALIA'S PHASE-OUT OF CFCS IN TERMS OF OZONE DEPLETING POTENTIAL



National information, education and training

The value of early and consistent communication in facilitating the required changes in commercial operations and consumer behaviour cannot be overestimated. This is particularly important where mandatory requirements are in place relating to the use of ODS and subsequent decommissioning measures relating to equipment. Given the planning and investment lead time that may be necessary, early notification is required to ensure safety is not compromised.

All participants in the product chain, from the ODS importer to the service technician who decommissions the ODS equipment, must be engaged to ensure information on the program's objectives and measures flows through the whole of the industry and the community.

Leadership & funding

Although Australia advocates a cooperative approach to developing and implementing ODS programs and management strategies, leadership is obviously necessary to initiate the process, monitor its progress and ensure its objectives are achieved. This role falls naturally to the country's national government for the following reasons:

- as the signatory to the *Montreal Protocol*, the national government has a vested interest in ensuring compliance with Protocol obligations. Its participation in Protocol fora also gives it ready access to the environmental, economic, technical and scientific information required to: educate stakeholders; and, inform the program's developmental, implementation and review phases;
- its leadership lends credibility to the efforts of those charged with the development, implementation, monitoring and enforcement of ODS management strategies and programs;
- it may have the opportunity to lead by example.

Adequate funding of any ODS programs or management strategies is essential to their effectiveness and sustainability.

Regulatory/financial incentives and disincentives

Australia's experience has been that the early establishment of cooperative partnerships with affected stakeholders, particularly industry, not only encourages the development of innovative, cost-effective measures for responsibly managing ODS and their recovery, recycling and disposal, but also, facilitates the implementation and ongoing effectiveness of the approach adopted.

In terms of ODS disposal, Australia's experience suggests that at least some form of regulatory catalyst is required to achieve significant ODS disposal. Regarding Australia's halon disposal program: despite the fact that all key stakeholders agreed to the original recommendation in Australia's 1989 Strategy that all non-essential 1211 extinguishers should be replaced by December 1995, decommissioning was minimal until State and Territory governments legislated mandatory decommissioning of all non-essential halon systems.

Through Refrigerant Reclaim Australia (RRA), a financial incentive is provided in the form of a rebate to ozone depleting refrigerant (ODR) service personnel. This has proved particularly effective in ensuring the return, rather than release to atmosphere of ODR which no longer holds a commercial value – namely, ODR which is beyond reclamation or for which supply exceeds demand. While RRA is an excellent example of industry environmental stewardship and the effectiveness of financial incentives, the industry concedes that this innovative approach would not have developed without the regulatory framework requiring ODR be recovered and returned to wholesalers.

4. FUTURE REQUIREMENTS FOR CFCs IN AUSTRALIA

Under the ANZECC *Strategy for Ozone Protection*, State and Territory Governments implemented measures to minimise emissions of ODS, through training, accreditation programs and controls on their end use. State and Territory legislation essentially controls the ownership and use of CFCs and CFC-systems. It is expected that existing stocks of CFCs in Australia will meet future needs, with the exception of some requests for Essential Use Authorisations under the *Montreal Protocol*, for pharmaceutical grade CFCs to manufacture MDIs thereby ensuring continuity of supply of asthma and COPD treatments to export markets.

In light of Australia's national and international obligations, the Commonwealth will:

- continue to ensure a supply of CFCs for essential use applications in Australia;
- dispose of surplus CFCs deposited with Refrigerant Reclaim Australia (and accompanied by a deposit fee) at the National Halon Bank; and
- undertake ongoing stocktaking of CFCs including validation of projected usage requirements.




5. CONCLUSION

The Australian Chlorofluorocarbon Management Strategy meets Australia's commitment under Decision XI/16 of the *Montreal Protocol*, to develop a national strategy for the management of CFCs and the phase-out of CFC use in Australia.

By restricting the availability of new CFCs to essential uses and ensuring the maintenance of infrastructure for the responsible recovery and disposal of CFC stocks, Australia will encourage the use of CFC substitutes and minimise the damage of CFCs to the ozone layer.

This Strategy underscores the vital role Australia plays in managing CFCs within Australia and the Asia–Pacific region. The Australian Chlorofluorocarbon Management Strategy will be revised regularly to reflect international, national, technological and environmental developments relating to CFC management.

APPENDIX I

6.1 Decision XI/16 of *Montreal Protocol*

Decision XI/16.
CFC management strategies in non-Article 5 Parties

1. To recall that decision IV/24 urges all parties to take all practicable measures to prevent releases on controlled substances into the atmosphere.
2. To recall also that decision IX/23 requests non-Article 5 Parties to consider banning the placing on the market and sale of virgin CFCs, except to meet basic domestic needs of Article 5 Parties and other exempted uses;
3. To note that other strategies, besides those considered in decision IX/23, could help to reduce emissions of CFCs from existing equipment;
4. To note that, in the case of halons, decision X/7 requests Parties to develop strategies for the management of halons, including emissions reductions and ultimate elimination of their use;
5. To request that each non-Article 5 Party develops and submits to the Ozone Secretariat, by July 2001, a strategy for the management of CFCs, including options for recovery, recycling, disposal and eventual elimination of their use. In preparing such a strategy, taking into account technological and economic feasibility, Parties should consider the following options;
   (a) Recovering and eliminating, where appropriate, CFCs from existing or out-of-service products and equipment;
   (b) Setting target dates for bans on the refilling and/or the use of refrigeration and air-conditioning equipment functioning on CFCs;
   (c) Ensuring that appropriate measures are taken for the environmentally safe and effective storage, management and final disposition of recovered CFCs;
   (d) Encouraging the use of CFC substitutes and replacements acceptable from the standpoint of environment and health, taking into account their impact on the ozone layer, and any other environmental issues.

AUSTRALIA'S ozone PROTECTION PROGRAM

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