Australian Government

Department of the Environment and Heritage

Stockholm Convention on Persistent Organic Pollutants

AUSTRALIA'S NATIONAL IMPLEMENTATION PLAN

July 2006

NOTE

The National Implementation Plan has been developed in consultation with the Stockholm Intergovernmental Forum and the Stockholm Reference Group. The Stockholm Intergovernmental Forum comprises representatives from Australian Government and state and territory government agencies. The Stockholm Reference Group is the consultation mechanism for the non-government sector. It is open to any organisation, company or individual with an interest in the Stockholm Convention and includes representatives from industry, environment, primary producers and health sectors.

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Preface

The Stockholm Convention on Persistent Organic Pollutants (POPs) commits governments to reducing, and where feasible, eliminating the production and environmental releases of twelve POPs. The Convention entered into force on 17 May 2004. Australia ratified on 20 May 2004 and became a Party on 18 August 2004.

Parties to the Convention are required to develop, and endeavour to put into practice, a National Implementation Plan (NIP) setting out how they will implement their obligations under the Convention.

Australia's NIP sets out the actions already taken in Australia and the actions that are proposed to be undertaken by Australia to meet the obligations. The NIP will be updated as necessary to reflect decisions made by the Australian Government, or by the Conference of the Parties such as amendments to the Convention or its annexes, including the addition of chemicals to Annexes A, B or C, or adoption of guidance or guidelines.

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The Stockholm Convention on Persistent Organic Pollutants (POPs) commits governments to reducing, and where feasible, eliminating the production and environmental releases of 12 POPs – aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene, polychlorinated biphenyls (PCBs), dioxins, furans and hexachlorobenzene (HCB). The Convention entered into force on 17 May 2004. Australia ratified on 20 May 2004 and became a party on 18 August 2004. As at 1 July 2006, 151 countries had signed and 127 countries had ratified the Convention.

Article 7 of the Stockholm Convention requires each Party to develop a National Implementation Plan (NIP) setting out how it will address its obligations under the Convention and to submit the plan to the Conference of the Parties (COP) within two years of the Convention coming into force for the Party.

Over the past two decades, Australia has made significant progress in reducing POPs in the environment and the Australian community. Australia is well positioned in setting out how it implements its obligations under the Convention, as much of the work has already been done or is under way. Therefore, the NIP sets out the actions related to each relevant article that Australia:

- has undertaken to date in reducing the presence of POPs *and*
- proposes to undertake in the future to meet obligations under the Convention.

The actions proposed in the NIP under each article of the Convention are:

Article 3

- The Australian Government to:
  - enforce controls banning the production and use of aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene and toxaphene
  - enforce controls banning the production of mirex and limit its use to the purpose for which Australia has registered a specific exemption
  - maintain controls banning the production of PCBs
  - maintain existing controls on the import and export of chemicals listed in the Convention unless for the purpose of environmentally sound disposal or research
  - promote environmentally sound alternative processes and chemicals to reduce the presence and impact of POPs *and*
  - ensure that national chemical regulators maintain a watching brief on new chemicals and prevent the registration of new chemicals which exhibit POPs characteristics.
- The Australian, state and territory governments to continue phasing out the use of PCBs in accordance with the PCB Management Plan.

Article 4

- The Northern Territory Government to:
  - maintain controls on the use of Mirant to ensure that releases of mirex to the environment are minimised
  - cease issuing new authorisations for the use of Mirant and have all authorisations expire before February 2007

- continue further trial work on the active ingredient fipronil as an alternative control for the giant termite *and*
- ensure that once remaining authorisations for the use of Mirant expire, remaining stocks of mirex are destroyed in an environmentally sound manner.

- The Australian Government to withdraw the exemption once the current authorisations for the use of Mirant expire.

Article 5

- Details on how Australia will meet its obligations under Article 5 are addressed in the *National Action Plan for Addressing Dioxins in Australia* (NAP) which was adopted by the Environment Protection and Heritage Council on 29 October 2005.

Article 6

- The Australian Government, and state governments holding stocks of organochlorine pesticides (OCP) collected under the ChemCollect programme, to continue efforts to ensure that these chemicals are destroyed in an environmentally sound manner by 2007.
- The New South Wales Government, in cooperation with the Australian Government and other stakeholders including Orica and the local community, to ensure management and ultimate destruction of the HCB waste in accordance with the HCB Waste Management Plan, although it is unlikely that the 2006 deadline to complete this work will be met.
- The Australian, state and territory governments continue actions under the PCB Management Plan aimed at removing and treating scheduled PCB material at concentrations of >50mg/kg and quantities of 50 g by 1 January 2009.
- State and territory governments endeavour to develop strategies for identifying sites contaminated with chemicals listed on Annexes A, B and C.
- The Australian, state and territory governments to review the two protocols for assessing new facilities to treat POPs against guidelines developed for best available techniques and best environmental practices under the Convention.
- In the review of the National Environment Protection (Assessment of Site Contamination) Measure (NEPM), take into consideration obligations related to contaminated sites as required under paragraph 1 (e) of Article 6.

Article 8

- The Australian Government to:
  - maintain a watching brief on chemicals that have been flagged by other countries for possible inclusion on the Convention and subject to resources, collect information about these POPs candidates in Australia
  - consider submitting proposals for including chemicals on Annexes A, B or C where the evidence meets the criteria in Annex D.

Article 9

- Subject to Australian privacy legislation and any law relating to the disclosure of commercially sensitive or confidential information, the Australian Government to provide information to other Parties or the Stockholm Secretariat on Australian initiatives related to the management of POPs.

Article 10

- The Australian Government to:
    - establish appropriate forums and collaborate with relevant existing forums to ensure effective consultation with all stakeholders in implementation of Australia's National Implementation Plan
    - build on existing information sources, continue with development of information and educational and training material about POPs in Australia
    - disseminate this material nationally and to other Parties using a range of appropriate communication mechanisms
    - subject to resources, support training activities aimed at increasing awareness about POPs *and*
    - ensure that the national chemical regulators continue to provide public access to information on the potential impacts of chemicals, including POPs, on health and safety of humans and the environment.
- In the review of the National Pollutant Inventory, give consideration to appropriate reporting mechanisms for dioxins, furans, HCB and dioxin-like PCBs.

Article 11

- Subject to availability of resources, the Australian Government, in consultation with state and territory governments and other stakeholders, to consider:
    - undertaking further research on current and candidate POPs in Australia *and*
    - developing appropriate mechanisms for monitoring current and candidate POPs in Australia.

Article 12

- The Australian Government, subject to resources, to continue assisting neighbouring developing countries in managing and removing POPs and implementing other obligations under the Convention.

Articles 13 and 14

- The Australian Government to continue supporting the Global Environment Facility (GEF) through contributing to the 4th GEF replenishment.

Article 15

- The Australian Government to report to the Conference of the Parties, using the adopted format and timetable, on all actions taken to meet its obligations under the Convention.

Article 16

- The Australian Government to:
    - contribute to the global monitoring programme by providing relevant information gained from existing POPs monitoring programmes and, subject to resources, from future research programmes *and*
    - collaborate with the Stockholm Secretariat to develop a global monitoring programme for POPs.

Glossary/Abbreviations

ACS	Australian Customs Service
Agvet Code	*Agricultural and Veterinary Code Act 1994*
Agvet Regulations	*Agricultural and Veterinary Chemicals (Administration) Regulations 1995*
AICS	Australian Inventory of Chemical Substances
APVMA	Australian Pesticides and Veterinary Medicines Authority
ASCC	Australian Safety and Compensation Council
(Formerly NOHSC)	(Formerly National Occupational Health and Safety Commission)
BAT	Best Available Techniques
BEP	Best Environmental Practices
COP	Conference of the Parties
CPRC	Community Participation and Review Committee
ACS Import Regulations	*Customs (Prohibited Import) Regulations 1956*
DAFF	Department of Agriculture, Fisheries and Forestry
DEH	Department of the Environment and Heritage
DoHA	Department of Health and Ageing
EPBC	*Environment Protection and Biodiversity Conservation Act 1999*
EPHC	Environment Protection and Heritage Council
GEF	Global Environment Facility
HCB	Hexachlorobenzene*
mg	milligram = 10^{-3}g
NAB	National Advisory Body
NChEM	National framework for Chemicals Environmental Management
NDP	National Dioxins Programme
NEPM	National Environment Protection Measure
ng	nanogram = 10^{-9}g
NICNAS	National Industrial Chemicals Notification and Assessment Scheme
NIP	National Implementation Plan
NPI	National Pollutant Inventory
NRS	National Residue Survey
OCP	Organochlorine Pesticides
PCB	Polychlorinated Biphenyls*. The PCB Management Plan provides the following definitions of PCBs: **Scheduled PCB** – PCB material or waste containing PCBs at or greater than the threshold concentration of 50 mg/kg and

* HCB and PCBs can also be formed as unintentional by-products from anthropogenic sources.

	threshold quantity of 50 g
	Non-scheduled PCB material and waste - PCB material or waste containing PCBs below the threshold concentration of 50 mg/kg and threshold quantity of 50 g and above the concentration of 2 mg/kg
pg	picogram = 10^{-12}g
POPs	Persistent Organic Pollutants
SPREP	South Pacific Regional Environment Programme
SWMG	Scheduled Wastes Management Group
SWMN	Scheduled Waste Management Network
TEQ	Toxic Equivalents
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme

1. Introduction

1.1 Background

The objective of the Stockholm Convention on Persistent Organic Pollutants (POPs) is to protect human health and the environment from the effects of POPs. The Convention sets out a range of control measures to reduce and, where feasible, eliminate POP releases, including emissions of unintentionally produced POPs. The Convention also aims to ensure the sound management of stockpiles consisting of or containing POPs and wastes consisting of, containing or contaminated with POPs.

POPs are hazardous and environmentally persistent substances which can be transported between countries by the earth's oceans, atmosphere and migratory species. The substances bioaccumulate and have been found in the fatty tissues of humans and other animals.

Some countries, however, still use and produce POPs, for instance DDT is used in vector management associated with disease control. Upon ratification of the Convention, Australia registered an exemption for the continued use of mirex, one of the POPs listed as a pesticide, for controlling the giant termite (*Mastotermes darwiniensis*), which is endemic to the tropical areas of northern Australia. In addition, stockpiles of unwanted POPs exist in many parts of the world including Australia. POPs may, therefore, enter Australia through the environment as well as through importation of contaminated products.

Only a multilateral approach could adequately address the problem posed by the trans-boundary movement of POPs. Governments agreed in 1997 that the most effective form of multilateral action was by way of a binding international agreement. Negotiations on text for a multilateral convention on POPs began in mid-1998 and concluded in December 2000. Australia, together with 90 other countries, signed the Stockholm Convention on Persistent Organic Pollutants at a diplomatic conference held in Stockholm on 22 May 2001.

The Convention entered into force on 17 May 2004, 90 days after the 50th party ratified. Australia ratified the Convention on 20 May 2004 and became a party on 18 August 2004. As at 1 July 2006, 151 countries had signed and 127 countries had ratified the Convention. The first meeting of the Conference of the Parties (COP1) was held in Punta del Este, Uruguay 2-6 May 2005 and the second meeting held in Geneva, Switzerland 1-5 May 2006.

The Stockholm Convention establishes control measures for twelve POPs, which have been used as pesticides, for industrial purposes or are unintentionally produced in industrial processes. These chemicals are listed in three annexes to the Convention (as shown in Table 1):

- Annex A – chemicals to be eliminated
- Annex B – chemicals which have restricted use
- Annex C – unintentionally produced chemicals

Table 1: POPs listed under the Stockholm Convention

Chemical	Pesticide	Industrial	Unintentionally produced	Annex
Aldrin	✓			A
Chlordane	✓			A
Dieldrin	✓			A
Endrin	✓			A
Heptachlor	✓			A
Hexachlorobenzene	✓	✓	✓	A, C
Mirex	✓			A
Toxaphene	✓			A
Polychlorinated Biphenyls		✓	✓	A, C
DDT	✓			B
Dioxins (polychlorinated dibenzo-p-dioxins)			✓	C
Furans (polychlorinated dibenzofurans)			✓	C

Each of these chemicals has been identified for international action due to its persistence, bioaccumulation, long-range dispersion and toxicity. The Convention focuses on three broad areas:

- intentionally produced and used POPs
- unintentionally produced POPs *and*
- POPs in stockpiles and wastes.

Further information on each POP in Australia is in Table 2, Section 2.

The Australian Government implements the Convention in Australia with the lead agency being the Department of the Environment and Heritage (DEH). The Convention is implemented in consultation with other Australian Government agencies including the Departments of Agriculture, Fisheries and Forestry; Health and Ageing; Foreign Affairs and Trade; and Industry, Tourism and Resources, as well as state and territory environment protection, agriculture and health agencies. Non-government environment, public health and industry organisations are also consulted.

Australia is also a party to two other international chemical-related conventions, which, together with the Stockholm Convention, provide an international framework governing the environmentally sound management of hazardous chemicals and wastes throughout their life cycles. These two Conventions are the Basel and Rotterdam Conventions.

The *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* was adopted in 1989 to manage movement of hazardous wastes between countries. Australia ratified the Basel Convention in 1992, and implements it obligations through the *Hazardous Waste (Regulation of Exports and Imports) Act 1989.* Under the Convention, Australia is obliged to:

- minimise the generation of hazardous waste
- ensure adequate disposal facilities are available
- control and reduce international movements of hazardous waste
- ensure environmentally sound management of wastes *and*
- prevent and punish illegal traffic.

The *Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade* was adopted in 1998 and entered into force in 2004.

Australia participated in the voluntary PIC procedure prior to 2004 and ratified the Rotterdam Convention on 20 May 2004.

The Convention promotes a shared responsibility between exporting and importing countries in protecting human health and the environment from the harmful effects of hazardous chemicals. Under the Prior Informed Consent procedure, participating countries learn more about the characteristics of potentially hazardous chemicals that may be shipped to them. The procedure provides a process by which countries can decide on which chemicals they want to receive and to exclude those they cannot manage safely.

Many of the chemicals listed on the Stockholm Convention are subject to controls under the Rotterdam and Basel Conventions.

1.2 Aim of Australia's National Implementation Plan

Article 7 of the Stockholm Convention requires that each Party must develop, and endeavour to put into practice, a plan setting out how it will implement its obligations under the Convention. The plan must be transmitted to the Conference of the Parties within two years of the date on which the Convention entered into force for that Party.

The objectives of the National Implementation Plan (NIP) are to set out the actions that Australia:

- has undertaken to date in reducing the presence of POPs *and*
- proposes to undertake in the future to meet obligations under the Convention.

A summary of each of the articles under the Convention is in Appendix A; it indicates which articles are covered in Australia's NIP. The full text of the Convention can be viewed at http://www.pops.int/default.htm.

The outcomes from implementation of the plan will include:

- protecting Australians' health from the effects of POPs
- a cleaner Australian environment
- improving Australia's capacity to maintain the quality of its food
- reducing Australia's contribution to the global pollutant loading *and*
- Australia meeting its obligations under the Stockholm Convention.

The NIP will be updated as necessary to reflect decisions made by the Australian Government, or by the Conference of the Parties such as amendments to the Convention or its annexes, including the addition of chemicals to Annexes A, B or C, or adoption of guidance or guidelines.

The Parties are also required to endeavour to integrate their NIP into their sustainable development strategies where appropriate. In Australia, the National Strategy for Ecologically Sustainable Development (NSESD), endorsed by the Council of Australian Governments (COAG) in 1992, set the approach that governments are taking to ensure that Australia's future development is ecologically sustainable. This Strategy sets out the broad strategic and policy framework under which governments will make decisions cooperatively and take actions to pursue ecologically sustainable development in Australia. Australia's NIP is consistent with the principles of waste minimisation and management as defined in the NSESD.

1.3 Government responsibilities for environmental management in Australia

Under the Australian Constitution, there is no specific power enabling the Australian Parliament to make laws with respect to the environment. The High Court has ruled, however, that the Australian Parliament can make laws with environmental purposes, provided the laws come under one or more heads of power in the Constitution. Powers that have been used to support environmental laws include trade and commerce (s 51(i)), corporations (s 51(xx)) and external affairs (s 51(xxix)).

In Australia, responsibility for environmental and natural resource management has always been divided between the Australian Government and state and local levels of government, with most of the legislative responsibility for this area resting with the state and territory governments. In 1992 all levels of government in Australia became party to the Intergovernmental Agreement on the Environment, which defined a framework of environmental responsibilities and interests for each level of government. It also established agreed processes and principles to be put in place to accommodate those interests. The agreement recognised that all levels of government share the responsibility for protecting Australia's environment.

The *Environment Protection and Biodiversity Conservation Act 1999* (the Act) is the Australian Government's key piece of environmental legislation. The Act focuses Australian Government interests on matters of national environmental significance, puts in place a streamlined environmental assessment and approvals process and establishes an integrated regime for biodiversity conservation and the management of important protected areas and heritage places. The environmental assessment and approvals requirements of the Act may be triggered where a proposal involving the management or release of POPs is likely to have a significant impact on a matter of national environmental significance. As part of a public review to determining if new matters of national environmental significance should be covered by the Act, some suggestions have been made that the Act should apply to certain processes, facilities and destruction of chemicals identified in the Stockholm Convention. These suggestions will be investigated as part of the review.

The management of chemicals is shared between the Australian Government and states and territories. Several Australian Government agencies are responsible for registration and approval of chemicals, including environment, health and agriculture, while the states and territories approve the day-to-day use (see section 2.1 for more details). Emission controls and waste management of POPs rests with the states and territories, although the Australian Government, through implementation of the Basel Convention, would have a role in waste management if it involved waste disposal (including recycling or reclamation) in another country.

Although the responsibility for meeting Australia's obligations under the Stockholm Convention rests with the Australian Government, past actions on the chemicals covered by the Convention have been taken by all levels of government and through several ministerial councils including the Environment Protection and Heritage Council (EPHC) and its predecessor, and that is likely to continue.

The EPHC was established by the Council of Australian Governments in June 2001. The EPHC incorporates the National Environment Protection Council (NEPC), the environmental protection components of the former Australia and New Zealand Environment and Conservation Council (ANZECC) and the Heritage Ministers' Meeting. The scope of the EPHC includes environment protection and heritage (natural, historic and indigenous heritage) responsibilities. The statutory functions of NEPC continue under the umbrella of EPHC. Many of the issues related to the management of POPs in Australia are being addressed through EPHC including:

- measures related to releases of dioxins

- management plans for Organochlorine Pesticides Waste, Hexachlorobenzene Waste and Polychlorinated Biphenyls
- National Environment Protection Measures for the Movement of Controlled Waste between states and territories, Assessment of Site Contamination and the National Pollutant Inventory *and*
- development of the National framework for Chemicals Environmental Management (NChEM).

The Australia and New Zealand Food Regulation Ministerial Council (ANZFRMC), Natural Resource Management Ministerial Council (NRMMC), Primary Industries Ministerial Council (PIMC) and the Australian Health Ministers Conference are other ministerial councils that have an interest in the management of POPs in Australia. The government organisations involved in implementing the Stockholm Convention in Australia and their roles are shown in Table 2.

In recognising the importance of cooperation between governments to ensure Australia's obligations are met, the Stockholm Intergovernmental Forum was established in September 2004 to facilitate consultations between the Australian Government, state and territory agencies with an interest in POPs.

A list of current Australian Government, state and territory legislation, guidelines and policies relevant to POPs is at Appendix B.

Table 2: Government organisations involved in implementing the Stockholm Convention in Australia

Organisation	Role
Australian Government	
Department of the Environment and Heritage	Lead agency for implementation of Convention, environmental assessment of applications for new agricultural, veterinary and industrial chemicals and existing chemicals, POPs waste management through implementation of the Basel Convention.
Department of Agriculture, Fisheries and Forestry;	Controls on production, use, import and export of POPs pesticides.
Australian Pesticides and Veterinary Medicines Authority	Registration and reviews of agricultural and veterinary chemicals.
Department of Health and Ageing - Office of Chemical Safety	Human health aspects of chemical use.
National Industrial Chemicals Notification and Assessment Scheme	Registration, review and controls on production, use, import and export of industrial chemicals.
Department of Foreign Affairs and Trade	Domestic treaty ratification processes, consider implications on trade, provides a point of liaison for other Parties.
Department of Industry, Tourism and Resources	Liaise with industry and seek to ensure that international environmental obligations relating to chemicals follow good policy making practices, take into consideration all relevant costs and benefits, and do not place unjustifiable costs on business.
Department of Employment and Workplace Relations	Provides policy advice on a range of issues including national occupational health and safety and workers' compensation matters and standards review, development and implementation. This includes storage and handing of chemicals in the workplace.
AusAID	Funds a project to remove POPs waste from Pacific Island Countries and coordinates Australia's communications with and contributes funds for the Global Environment Facility.
Australian Customs Service	Border control of exports and imports of chemicals.
States and Territories	
Environment ACT, Australian Capital Territory	Approve the day-to-day use of chemicals, emission controls and waste management.
Department of Environment and Conservation, New South Wales	
Office of Environment and Heritage, Department of Infrastructure, Planning and Environment, Northern Territory	
Queensland Environment Protection Agency	
Environment Protection Authority, South Australia	
Department of Primary Industries, Water and Environment, Tasmania	
Environment Protection Authority, Victoria	
Department of the Environment, Western Australia	
Ministerial Councils	
Environment Protection and Heritage Council	Measures related to releases of dioxins, interstate movement of controlled wastes, assessment of site contamination and National Pollutants Inventory and development of NChEM.
Australia and New Zealand Food Regulation Ministerial Council	Advice on dietary intakes and maximum residue limits of chemicals in food.
Natural Resource Management Ministerial Council	Promote the conservation and sustainable use of natural resources.
Primary Industries Ministerial Council	Maintain the quality of primary products.

2. Current and Proposed Actions

Over the past two decades, Australia has made significant progress in reducing POPs in the environment and the Australian community. Actions range from measures specifically targeting the chemicals listed on the Convention, through to broader measures addressing a range of environmental contaminants, including POPs, such as National Environment Protection Measures (NEPM) e.g. the Assessment of Site Contamination NEPM.

This section sets out the obligations under the Convention, the actions already taken in Australia and the actions that are proposed to be undertaken by Australia to meet the obligations.

2.1 Article 3: Measures to reduce or eliminate releases from intentional production and use

Obligations under Article 3

Article 3 aims to reduce or eliminate releases from intentional production and use of chemicals listed in Annexes A and B by requiring Parties to eliminate or restrict the production, and to prevent introduction of new chemicals with POPs characteristics. Parties are also required to restrict the import and export of chemicals listed in Annexes A and B unless they are to be disposed of in an environmentally sound manner as required under paragraph 1(d) of Article 6. These conditions apply in different ways to different listed chemicals:

- for endrin and toxaphene there is a complete ban on production and use by all Parties
- for aldrin, chlordane, dieldrin, heptachlor, hexachlorobenzene and mirex the default provision is for Parties to ban production and use. However, for these chemicals there is provision for a country, when ratifying the Convention, to register a specific exemption to allow continued production and/or use of that chemical for particular purposes set out in Annex A. Any specific exemptions registered by Parties will determine how Article 3 applies to them. For any chemical to which a specific exemption applies, the obligation will be to restrict production and/or use rather than to eliminate them, as long as the specific exemption remains
- for PCBs, Parties must ban the production of PCBs; phase out the use of equipment containing PCBs by no later than 2025 according to the priorities set out in paragraph (a), Part II of Annex A; and make determined efforts to lead to environmentally sound management of liquids and equipment containing a PCB content above 0.005 percent as soon as possible but no later than 2028[#]
- for DDT, Parties must eliminate production and use unless they have notified the Secretariat of their intention to continue production and/or use. This is a general exemption for vector control; specific exemptions as for the other pesticides may also be registered
- Parties must strictly limit import and export of listed chemicals, so that they are traded only for permitted uses or for environmentally sound disposal; provisions are made for trade with non-Parties *and*

[#] Australia's PCB Management Plan requires the phasing out and destruction of PCB material with concentrations of >50mg/kg and quantities of >50 g PCBs by 2009. Refer to the actions proposed in relation to the management of PCB wastes and material in Section 2.4.

- where Parties have national regulatory and assessment schemes for chemicals, they must take action to prevent new chemicals with POPs characteristics being introduced.

Current actions related to Article 3

Australia has a range of existing measures which are aimed at eliminating the production and use of POPs, controlling their export or import, and assessment processes designed to ensure chemicals with POPS characteristics are not allowed to be registered for use.

Australia has registered a specific exemption for use of mirex as a termiticide (see section 2.2), but has no other specific exemptions, nor has it registered a continuing need for production or use of DDT. Australia has regulatory schemes for both industrial and agricultural and veterinary chemicals. Australia's obligations under Article 3, therefore, are to:

- ban the production and use of aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene and toxaphene
- ban production of mirex and limit its use to the purpose for which Australia has registered a specific exemption
- ban production of PCBs and phase out their use in accordance with the PCB Management Plan
- limit the import and export of all listed chemicals in accordance with the detailed provisions of the Article *and*
- prevent the introduction of new chemicals which have the same characteristics as POPs.

Production and use of chemicals on Annexes A and B

Pesticides

The production and use of pesticides in Australia is controlled under the *Agricultural and Veterinary Chemicals (Administration) Regulations 1995* (Agvet Regulations) enforced by the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF). Amendments to the Agvet regulations came into force on 18 August 2004 to include all chemicals listed on Annexes A and B. The Regulations prohibit the production and use of eight of the nine pesticides listed in Annexes A and B although most of these were deregistered for use in the late 1980s through the 1990s as shown in Table 2. The remaining pesticide (mirex) is subject to restrictions on its production and use in line with Australia's exemption under paragraph 6 of Article 3.

Use of alternative products and processes to replace POPs

While research to develop appropriate alternatives for some POPs (e.g. mirex) is still proceeding, alternative products and processes have been developed and widely used to overcome the challenges presented by the elimination of the POPs previously used in pest management. With termite control in buildings, for example, non-POPs insecticides, and changes to building designs and construction methods have replaced the use of several POPs previously used as insecticides. Construction methods have focused on the installation of physical barriers including sheet materials (termite caps and strip shielding), stainless steel mesh under concrete slab and graded stone particles. Chemical soil barriers under and around concrete slabs are used singly or in combination with physical barriers to provide an integrated barrier system for new buildings.

Industrial chemicals

The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) was established under the *Industrial Chemicals (Notification and Assessment) Act 1989* (Industrial Chemicals Act), and operates within the Office of Chemical Safety, in the Australian Government Department of Health and Ageing (DoHA).

NICNAS is the Australian Government regulatory authority for industrial chemicals (including cosmetics), and provides a national notification and assessment scheme to protect the health of the public, workers and the environment from the harmful effects of industrial chemicals. It assesses all chemicals new to Australia and assesses those chemicals already used (existing chemicals) on a priority basis, in response to concerns about their safety on health and environmental grounds.

Table 3: POPs in Australia

Chemical	Past use / sources**	Restricted / phase out[##]
Aldrin (A)[#]	Insecticide used for soil treatment for the pre-planting of crops (as an additive to fertiliser only for the purpose of wireworm control in sugarcane); farm, industrial and domestic control of ants, fleas, flies, lice and mites; protection of power poles from termites.	Phased out in 1992.
Chlordane (A)[#]	Insecticide used for control of a wide range of pests including termites, ants, and nematodes, in food crops, tobacco; home gardens and domestic situations.	Phased out in 1995 but used in the Northern Territory until 1997.
Dieldrin (A)[#]	Insecticide used against a wide range of pests including termites, locusts and ants in fodder crops, tobacco and tick control in cattle/sheep ; for protection of electricity and telephone cables, buildings, fences and similar structures; soil treatment for termites on farms, industrial and domestic premises and gardens.	Restricted for use only on sugar cane and banana crops in 1977. Phased out in 1988.
Endrin (A)[#]	Used as an insecticide for crops including grain and cotton and a control against mice. Evidence indicates illegal use in some domestic situations	Phased out in 1987.
Heptachlor (A)[#]	Insecticide used in food and fodder crops and tobacco against a wide range of insects including ants, grubs, beetles and borers and for termite control in homes.	Phased out in 1995 but used in the Northern Territory until 1997.
Hexachloro-benzene (HCB) (A, C)[#]	Use as a fungicide. Also a by-product from industries manufacturing solvents, chlorine containing compounds and pesticides. Can be generated unintentionally from combustion facilities.	Production at the Orica plant, Sydney ceased in 1991. De-registered as a pesticide by 1987 and use as an industrial chemical was phased out by 1997. See details in Section 2.4.
Toxaphene (A)[#]	Used as an insecticide for controlling grasshoppers.	Banned in 1987.
DDT (B)[#]	Used as an insecticide to control a broad range of insects in food crops, cotton and tobacco, in cattle/sheep and in domestic premises and gardens.	Banned in 1987.
Mirex (A)[#]	Used as an insecticide against ants and termites; fire retardant in plastics, rubber and electrical goods	Australia registered an exemption for the use of mirex as a pesticide in the Northern Territory to control the giant termite until an alternative is found. See further details in Section 2.2
Polychlorinated biphenyls (PCBs) (A, C)[#]	Industrial chemicals used as heat exchange fluids in electric transformers and capacitors; additives in paint, carbonless copy paper and paint. Dioxin-like PCBs are also formed in combustion.	Large quantities of PCBs have been removed from use and destroyed in accordance with the PCB Management Plan. See section 2.4 for more details.
Dioxins (C)[#]	Produced unintentionally due to incomplete combustion as well as the manufacture of some pesticides and other chlorinated substances. Emitted from a range of sources including bushfires, uncontrolled burning of waste and metal processing.	
Furans (C)[#]	Produced unintentionally from many of the same processes that produce dioxins. Furans are structurally similar to dioxins and share many of their toxic effects.	

[#] The Annex of the Stockholm Convention that the chemical is listed in.

[*] Under Article 5, Parties are required to reduce and where feasible, eliminate the total releases derived from anthropogenic sources of the chemicals listed in Annex C, which include PCBs, HCB, dioxins and furans.

** Some of the insecticides were allowed to be used under specific off-label approvals and control of use legislation (e.g. Pesticide Orders under *Pesticides Act 1978* and *Pesticides Act 1999* in New South Wales and Off-label Permits (Queensland Board Approvals) or under the Queensland Chemical Usage Act).

[##] The use of some of the POPs as pesticides may have ceased in some states/territories of Australia before the phase out/banning dates specified in the table (e.g. in Queensland, the use of aldrin to control wireworms ended in the early 1980's, dieldrin was withdrawn from use in sheep dips in 1962 and was banned in 1971 and the use of HCB as a fungicide was prohibited in 1972).

Import and export of chemicals on Annexes A and B

Pesticides

The import of pesticides into Australia is controlled under the Agvet Regulations and the *Customs (Prohibited Import) Regulations 1956* (Custom Import Regulations) enforced by the Australian Customs Service (ACS). Amendments to the Agvet and Customs Import Regulations came into force on 18 August 2004 to include all pesticides listed on Annexes A and B. Importation of these pesticides, or goods containing these chemicals, is prohibited unless the Minister for Agriculture, Fisheries and Forestry or an authorised officer has given written permission. Permission may be granted where the import is to be used for laboratory-scale research or as a reference standard. Permission may also be granted for disposal in an environmentally sound manner.

The export of pesticides from Australia is controlled under the Agvet Regulations and the *Customs (Prohibited Exports) Regulations 1958*. Amendments to these two regulations also came into force on 18 August 2004 to include all chemicals listed on Annexes A and B. Export of these chemicals is not permitted unless the Minister for Agriculture, Fisheries and Forestry or an authorised officer has given written permission.

The export and import of pesticides destined for disposal are controlled under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

Industrial chemicals

The *Industrial Chemicals (Notification and Assessment) Act 1989* covers the import of industrial chemicals and contains provisions to give force to international conventions.

The importation without permission of all goods containing PCBs and other chlorinated biphenyls was prohibited in 1975 under Regulation 4AB of the Customs Import Regulations. Regulation 5I of the Customs Import Regulations came into force on 18 August 2004 to include all industrial chemicals listed on Annex A. DEH is the policy agency for this control and liaises with the ACS and NICNAS on matters regarding PCB imports. Again, permission may be granted where the import is for laboratory scale research reference standards or for disposal in an environmentally sound manner.

The export and import of waste pesticides and industrial chemicals (destined for disposal) are also controlled under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*. Any export or import of waste pesticides and industrial chemicals, which gains permission under the Customs Export and Import Regulations above, will also require a permit under the Hazardous Waste Act.

Assessment of new chemicals with POPs characteristics

The Stockholm Convention recognises the importance of developing and using environmentally sound alternative processes and chemicals to reduce the presence and impact of POPs. It encourages Parties to develop and use alternatives to POPs, which are less dangerous to human health and the environment. This can be achieved by finding an alternative substance to do the same task, or indirectly, by finding alternative technologies or processes that make use of the dangerous chemical unnecessary. In other words a hazardous chemical can be replaced by a safer or less hazardous chemical, or the chemical's function in the product or process can be met through product redesign or system change.

The principle of substitution is applied in chemical assessment/registration processes in Australia. Applying the principle includes comparison of hazards and risks and balancing considerations of the following:

- risks to humans and the environment
- the need for legitimate access
- balancing costs and benefits of the potential substitute *and*
- the feasibility/practicality of the potential substitute.

Pesticides

The *Agricultural and Veterinary Chemicals (Administration) Act 1992* and the *Agricultural and Veterinary Chemicals Code Act 1994* (the Agvet Code) established a national scheme for the assessment and registration of agricultural and veterinary active constituents or chemical products, through the Australian Pesticides and Veterinary Medicines Authority (APVMA).

The APVMA is an independent statutory authority within the Agriculture, Fisheries and Forestry portfolio. All agricultural and veterinary active constituents and chemical products new to Australia must be assessed and approved or registered by the APVMA before they can be sold, supplied, distributed or used in Australia. The APVMA reviews registered chemicals and products in response to new information. It also manages quality assurance programmes that monitor the ongoing safety and performance of registered products.

The APVMA evaluations of pesticides are already consistent with obligations under the Convention. Applicants must supply information on the product's properties, including its chemistry and manufacture, toxicology, metabolic studies, proposed use pattern and resulting residues, maximum residue limits, overseas registration details, exposure effects, methods of safe handling in the workplace, safety information to be provided on the label, Material Safety Data Sheet, environmental impacts including bioaccumulation and mobility in soil, degradation and leachability, ecotoxicology and trade aspects.

Applications are assessed by the APVMA with input from relevant agencies including DoHA and DEH. APVMA also seeks advice on efficacy and target species from state authorities, and may seek advice more broadly. When the product is registered, it is entered on the National Chemical Register Information System. Registration is subject to conditions including usage and safety instructions to be provided on the product label. The APVMA will not register chemicals that exhibit POPs characteristics.

Industrial chemicals

Around 40 000 chemicals that were used in Australia before the inception of NICNAS in 1990 are registered in the Australian Inventory of Chemical Substances. All industrial chemicals not on the inventory are regarded as new to Australia and must be assessed by NICNAS before they can be manufactured in, or imported into, Australia.

Evaluations of industrial chemicals are already consistent with obligations under the Convention, as NICNAS takes into account the characteristics of persistence, bio-accumulation, potential for long-range environmental transport and adverse effects on human health and the environment. NICNAS has published guidance in the Chemical Gazette (6 January 2004), outlining the tiered approach it uses for assessing chemicals in relation to persistence, bio-accumulation and toxicity. Introducers of these chemicals must supply detailed information on the chemical's properties, including health and environmental effects data, exposure information and procedures for safe use and disposal. Australia has no formally declared criteria on persistence, bioaccumulation and toxicity (PBT). However, this is an issue that will be considered under the proposed *National framework for Chemicals Environmental Management (NChEM)*. Annex D of the Convention sets out the

requirements and screening criteria for considering chemicals to be listed in Annexes A, B and C. These criteria would have to be taken into consideration in this process.

NICNAS also assesses substances on the Australian Inventory of Chemical Substances through its Priority Existing Chemicals Scheme, on its own initiative or in response to concerns raised by governments, industry and/or community about public health, occupational health and safety, or environmental effects.

NICNAS is required to publish an assessment that includes a Material Safety Data Sheet and a summary of the health, safety and environmental matters considered. The assessment may also make other recommendations including:

- precautions to be observed during the importation, manufacture, handling, storage, use or disposal of the chemical
- controls to limit emissions of the chemical into the environment
- the measures to be employed in emergencies involving the chemical *and*
- the uses of the chemical and its means of disposal

National environmental risk management framework for chemicals

While the above schemes provide a mechanism for the assessment of chemicals prior to their use, the National Chemicals Taskforce review completed in 2003 for the EPHC found that there was a need to improve the environmental management of chemicals at all stages of their life cycle. The review identified a number of areas where there could be improvements, including approaches to chemical policy frameworks, legislation and administrative infrastructure, assessments, management of exposures, monitoring and research, as well as in education, information and public participation in each of these areas.

These improvements will be addressed through the proposed *National framework for Chemicals Environmental Management (NChEM) proposals* being developed by the Chemicals Working Group set up by the EPHC.

The key elements of NChEM are a set of four linked action areas:

- **strengthening environmental risk assessment** – improving methodologies to assess chemical risks and strengthening consultative mechanisms between national chemical assessment agencies and state and territory environmental regulators so that chemicals problems are identified and prevented up-front
- **streamlining environmental controls** – improving approaches to and consistency in environmental regulation and management of chemicals so that industry can plan for and manage its business with certainty and governments can make better strategic use of resources through practical and joint approaches
- **informing our decisions** - improving feedback on chemical impacts so that decisions are practical, fit the problem and are informed by on-ground experience
- **prioritising action** – identifying our highest areas of environmental concern, including a role for the public, so that environment ministers can be pro-active and strategically focused.

It is expected that governments will consider NChEM in the first half of 2007 and if agreed to, full implementation would take place in the following 12-18 months.

Proposed actions related to Article 3

The Australian Government to:

- **enforce controls banning the production and use of aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene and toxaphene**
- **enforce controls banning the production of mirex and limit its use to the purpose for which Australia has registered a specific exemption**
- **maintain controls banning the production of PCBs**
- **maintain existing controls on the import and export of chemicals listed in the Convention unless for the purpose of environmentally sound disposal or research**
- **promote environmentally sound alternative processes and chemicals to reduce the presence and impact of POPs *and***
- **ensure that national chemical regulators maintain a watching brief on new chemicals and prevent the registration of new chemicals which exhibit POPs characteristics.**

The Australian, state and territory governments to continue phasing out the use of PCBs in accordance with the PCB Management Plan.

2.2 Article 4: Register of specific exemptions (mirex)

Obligations under Articles 3 and 4

Under paragraph 6 of Article 3, Parties that have an exemption in accordance with Annex A or B of the Convention must take appropriate measures to ensure that any production or use under such exemption or purpose is carried out in a manner that prevents or minimises human exposure and releases into the environment.

Article 4 establishes a register which allows Parties to apply for specific exemptions for use of chemicals listed under Annexes A and B. Each exemption will expire five years after the Convention comes into force, unless a Party applies for and receives an extension of time. A Party requesting an extension to a specific exemption is required to submit a report justifying its continuing need to register the exemption, which will be circulated to all Parties. The Conference of the Parties reviews the registration based on all available information and may extend the expiry date of an exemption up to five years.

Current actions under Articles 3 and 4

Upon ratification of the Stockholm Convention, Australia registered an exemption for the continued use of mirex in the Northern Territory as a pesticide to control the giant termite (*Mastotermes darwiniensis*), which is endemic to the tropical areas of northern Australia. The exemption will expire on 17 May 2009 unless an extension is requested and granted. The exemption does not extend to its use as a fire retardant.

Under this exemption, Australia must take appropriate measures to ensure that the use of mirex is carried out in a manner that prevents or minimises human exposure and releases to the environment. If there are intended releases into the environment, standards and guidelines will need to be taken into account.

There is a stockpile of approximately 165 kg of mirex in the Northern Territory. The pesticide Mirant containing the active ingredient mirex is used in small quantities as a bait for the giant termite.

The use is strictly controlled via permit, and monitoring of agricultural produce is undertaken. In January 2006, the Northern Territory Government ceased issuing new authorisations for the use of Mirant. Authorisations have been issued with a maximum of a 12 month term and therefore all authorisations will expire before February 2007.

The APVMA has recently issued permits for the use of an alternative pesticide, with the active ingredient fipronil, and research is being conducted by the Northern Territory Government to enable the registration of this alternative pesticide. This will allow the use of mirex to be phased out.

Proposed actions related to Article 4

The Northern Territory Government to:

- **maintain controls on the use of Mirant to ensure that releases of mirex to the environment are minimised**
- **cease issuing new authorisations for the use of Mirant and have all authorisations expire before February 2007**
- **continue further trial work on the active ingredient fipronil as an alternative control for the giant termite *and***
- **ensure that once remaining authorisations for the use of Mirant expire, remaining stocks of mirex are destroyed in an environmentally sound manner.**

The Australian Government to withdraw the exemption once the current authorisations for the use of Mirant expire.

2.3 Article 5: Measures to reduce or eliminate releases from unintentional production

Obligations under Article 5

Parties are required to reduce the total releases of the chemicals listed in Annex C (unintentionally produced POPs including dioxins, furans, PCBs and HCB) with the goal of continuing their minimisation and, where feasible, achieving their elimination. Parties are required to:

- develop an action plan within two years of entry into force of the Convention for it, to identify, characterise and address the releases of unintentionally produced POPs through the following elements:
    - evaluation of current and projected releases
    - evaluation of the efficacy of current laws and policies
    - strategies to meet the obligations
    - steps to promote education and training *and*
    - a review every five years of these strategies
- promote the application of available, feasible and practical measures to achieve a reasonable level of release reduction or source elimination *and*
- promote the development and require the use of substitute or modified materials, products and processes to prevent the formation and release of chemicals listed in Annex C.

Parties must also promote and require the use of best available techniques (BAT) and best environmental practices (BEP) within source categories which are identified as warranting such action in their action plan to prevent the release of chemicals listed in Annex C by no later than four years after the Convention comes into force for a Party (for Australia this is August 2008) for **new sources** in the following categories listed in Part II of Annex C:

- waste incinerators, including co-incinerators of municipal, hazardous or medical waste or of sewage sludge
- cement kilns firing hazardous waste
- production of pulp using elemental chlorine or chemicals generating elemental chlorine for bleaching *and*
- thermal processes in the metallurgical industry such as secondary copper production, sinter plants in the iron and steel industry, secondary aluminium production and secondary zinc production.

Parties should also promote the use of BAT and BEP for **existing sources** for the above industries as well as other categories in Part III of Annex C including:

- open burning of waste, including burning of landfill sites
- thermal processes in the metallurgical industry not mentioned above
- residential combustion sources
- fossil fuel fired utility and industrial boilers
- firing installations for wood and other biomass fuels

- specific chemical production processes releasing unintentionally formed persistent organic pollutants, especially production of chlorophenols and chloranil
- crematoria
- motor vehicles, particularly those burning leaded gasoline
- destruction of animal carcasses
- textile and leather dyeing (with chloranil) and finishing (with alkaline extraction)
- shredder plants for the treatment of end of life vehicles
- smouldering of copper cables *and*
- waste oil refineries.

Current actions under Article 5

National Action Plan for Addressing Dioxins

Details on how Australia will meet its obligations under Article 5 are outlined in the *National Action Plan for Addressing Dioxins* (NAP) which was adopted by the Environment Protection and Heritage Council on 29 October 2005. The NAP, developed under the National Dioxins Programme (NDP), outlines actions that Australian governments will undertake that are broader than reducing and eliminating releases of dioxins as required under Article 5. For example, it also covers dioxins in soil, water, biota, waste oil, food and human intake. Section 5 of the NAP "Ways to Address Dioxins in Australia" is attached in Appendix C. A complete copy of the NAP can be viewed at http://www.ephc.gov.au/.

2.4 Article 6: Measures to reduce or eliminate releases from stockpiles and wastes

Obligations under Article 6

Article 6 of the Convention requires Parties to:

- develop appropriate strategies for identifying stockpiles and wastes (including products and articles that have become wastes) containing, consisting of or contaminated with chemicals listed in Annexes A, B or C
- identify and manage stockpiles in a safe, efficient and environmentally sound manner
- implement measures to reduce or eliminate releases from stockpiles and wastes containing chemicals listed in Annexes A, B or C in a manner that protects human health and the environment
- take appropriate measures to ensure that waste products and Articles containing chemicals listed in Annexes A, B or C are handled in an environmentally friendly manner
- dispose waste products and articles containing chemicals listed in Annexes A, B or C in a way that destroys the POPs content, taking into consideration the *Technical guidelines for the environmentally sound management of persistent organic pollutant wastes* developed under the Basel Convention
- endeavour to develop strategies for identifying sites contaminated with chemicals listed on Annexes A, B or C; if remediation is required then it must be done in an environmentally sound manner *and*
- participate in the ongoing work under the Basel Convention on the methodology for further definition of the low POPs content, level of destruction and irreversible transformation and on guidelines regarding POPs other than PCBs.

Current actions under Article 6

National Strategy for the Management of Scheduled Waste

In 1991, ANZECC, made up of Australian Government, state and territory environment ministers, considered a draft strategy based on the recommendations of a joint taskforce to tackle the problem of scheduled wastes. The strategy was released to address concerns by industry and environment groups on the disposal of this waste. An independent panel was established to investigate the extent and production of scheduled waste and alternative disposal technologies to be used. Based on this recommendation, ANZECC rejected the proposal to establish a centralised high temperature waste disposal facility and instead, agreed to establish criteria and arrangements to assess new technologies. The revised strategy was considered by government and non-government organisations and in 1992, ANZECC endorsed the *National Strategy for the Management of Scheduled Waste*.

The strategy focuses on emerging, alternative, non-incineration waste destruction technologies with the aim to provide for the safe management and disposal of scheduled waste. For the purpose of the strategy, a scheduled waste means a material or article containing a chemical, or mixture of chemicals exceeding the threshold concentration and threshold quantity, which is:

- organic in nature
- resistant to degradation by chemical, physical or biological means
- toxic to humans, animals, vegetation or aquatic life *and*

- bio-accumulative in humans, flora and fauna.

These criteria are similar to the criteria used for determining chemicals for inclusion on the Stockholm Convention. The strategy covers most of the chemicals listed in Annexes A and B of the Convention as well as other toxic chemicals. However, it does not cover mirex or toxaphene. A list of scheduled wastes is in Appendix D.

The key aspects of the strategy are:

- identification of separate waste streams facilitating distinct and diverse management and disposal options
- nationally agreed and consistent principles and practice
- regulatory support through legislation and regulations
- commercially viable management and disposal/destruction strategies for wasteholders *and*
- based on a consultative and open process.

The implementation of the strategy was through two bodies; the now defunct National Advisory Body (NAB) drawn from industry, environment groups and local government; and the Scheduled Wastes Management Group (SWMG) composed of officials from Australian Government, state and territory environment agencies. The NAB was abolished in 2002. The scope of the strategy is now covered by the Stockholm Reference Group and Stockholm Intergovernmental Forum.

The main development under the strategy, was the establishment of three management plans which specify threshold concentrations, quantities of chemicals to be covered and phase-out dates for the three groups of chemical wastes:

- Organochlorine Pesticides Waste Management Plan
- Hexachlorobenzene Waste Management Plan *and*
- Polychlorinated Biphenyls Management Plan.

Organochlorine Pesticides Waste Management Plan

The OCP Waste Management Plan was published in 1999 and covers the pesticides listed in Annexes A and B of the Convention (except mirex and toxaphene), as well as hexachlorophene, isodrin, lindane, hexachlorocyclohexane isomers, pentachloronitrobenzene, pentachlorophenol, 2,4,5-T and breakdown products of DDT (DDD and DDE). The plan also covers OCP wastes that are spilled from containers, contents of spray vats and containers, bulk fertilisers, reformulated or decanted OCP material and pest control materials. This plan does not cover soil contaminated with OCPs.

The OCP Plan provides guidance on the management of OCP waste on farms, businesses and domestic premises; the collection, handling, transport and storage of waste; the identification, sampling and analysis of the collected waste; and the destruction and disposal of the scheduled OCP waste.

The plan states that OCP waste is to be destroyed at the earliest practicable opportunity and in an environmentally sound manner. Discharge and residues from the destruction process should be in accordance with applicable standards and guidelines including the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2001* and the *Guidelines for Sewerage Systems: Acceptance of Trade Waste (Industrial Waste)*.

Due to the closure of two facilities in Australia which destroyed OCP waste, there are still some OCPs collected from the ChemCollect programme awaiting destruction. There is currently only one facility (BCD Technologies located in Brisbane) that is licensed to destroy these chemicals. DEH and the state and territory environment protection agencies are monitoring the destruction of these chemicals through the EPHC. The chemicals should be destroyed over the next few years.

Chemical collection programmes in Australia

The OCP Plan proposed a national collection programme, involving close cooperation between industry, government and community organisations to remove OCPs from farms. Prior to the OCP Plan coming into effect, collections were made from 1987 to 1995, removing approximately 1900 tonnes of chemicals from farms. Over 75% were OCPs.

In 1999, a national survey estimated there were still stocks of unwanted and deregistered agricultural and veterinary chemicals on rural properties. A further government funded collection programme, ChemCollect, was conducted from 1999 to 2002 resulting in the removal of approximately 1700 tonnes of chemicals, of which around 139 tonnes were OCPs.

Building on the achievements of ChemCollect, ChemClear® is an industry-driven initiative that aims to provide farmers with a free collection and disposal service for unwanted registered agricultural and veterinary chemicals. The programme has been developed by peak industry organisations including the National Association for Crop Production and Animal Health (Avcare), the Veterinary Manufacturers and Distributors Association, the National Farmers' Federation and Agsafe.

ChemClear® undertook its first pilot programme in December 2003 and is being rolled-out across Australia. While most OCPs were collected through the ChemCollect programme and its predecessor, there is anecdotal evidence that there are still small quantities of these chemicals held by landholders. ChemClear® will charge a fee for the collection and disposal of these chemicals.

Hexachlorobenzene Waste Management Plan

The HCB Waste Management Plan was published in 1996 and sets out the requirements for the safe management and destruction of HCB waste stored at the Orica Botany site (previously ICI Australia Operations Pty Ltd).

At the Orica Botany site there is an inventory of stored HCB waste in drums (drum waste) and varying levels of HCB contaminated soils on site (car park waste). The HCB drum waste refers to the 10 500 tonnes of concentrated solid HCB waste while there is an additional 4 000 tonnes of contaminated packages and handling materials. The car park waste refers to approximately

45 000m^3 of soil contaminated with medium levels of HCB, HCBD (hexachlorobutadiene) and other chlorinated solvents encapsulated inside a synthetic envelope and further encased by soil walls and an asphalt top. The HCB waste at Orica's Botany premises was produced as a by-product of the manufacture of chlorinated solvents including carbon tetrachloride and tetrachloroethene from 1964 to 1991.

The HCB Plan provides guidance for sound management of the HCB wastes, as well as processes for reporting and community consultation. The plan does not apply to the management of HCB previously used for agriculture, or to HCB which can be formed and released unintentionally from anthropogenic sources listed in Annex C of the Convention.

The storage of the HCB drum waste and the car park waste is currently regulated by the New South Wales (NSW) Department of Environment and Conservation (DEC) under an *Environmentally Hazardous Chemicals Act* licence and certain requirements of the HCB Plan are conditions of this licence. The Orica Botany site is also regulated by an Environment Protection Licence under the NSW *Protection of the Environment Operations Act 1997*.

The HCB Plan requires the destruction and disposal of the HCB drum waste by 2006, to be done in a facility approved and licensed by the relevant environment protection authority. Destruction should also be carried out in a manner that meets discharge standards for air emissions, liquids and residues. However, due to the delay in obtaining statutory approval for a suitable treatment process, this timeline is unlikely to be met.

Implementation of the plan has focused on selecting a technology for onsite destruction, as well as managing the stored HCB drum waste currently awaiting destruction. In November 2000, Orica announced their commitment to destroy the HCB drum waste using a destruction technology known as the GeoMelt process at its Botany site, where the waste was produced and is now stored. In selecting this process, Orica undertook extensive consultation with the local community.

Following a Commission of Inquiry by the NSW Government in 2002 into the proposed destruction facility and treatment process, an Independent Expert Panel was commissioned by the NSW Department of Infrastructure, Planning and Natural Resources in 2004 to review the findings from this inquiry. The panel found that the GeoMelt technology was suitable for this purpose but recommended that the destruction plant be located in a remote site in NSW. Orica subsequently withdrew its development application for the proposed destruction facility.

Orica, in consultation with the NSW Government, is currently working to identify an alternative site for the HCB destruction facility. As a contingency plan, in the event that an appropriate site or technology to destroy the HCB drum waste cannot be found, the option of exporting the waste under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989* is concurrently being considered by Orica. Any decision to allow the export would need to assess whether the export was in accord with the environmentally sound management of the waste. The assessment would also need to consider what domestic options were considered, and the reasons for exporting rather than adopting a domestic solution.

Orica has also applied for planning approval under the NSW *Environmental Planning and Assessment Act 1979* to install a plant at Botany to re-package the HCB drum waste to maintain it in a safe condition for storage at the site while work continues to find an acceptable option for its destruction. The re-packaging plant will also ensure that the waste is packaged in a manner that allows its transport for off-site destruction. It is anticipated that planning approval for the re-packaging plant will be granted shortly.

The conditions of Orica's environment licences require on-going periodic monitoring and reporting to the DEC in relation to the car park waste. Orica is currently progressing proposals in relation to

short term mitigation measures to prevent further emissions of HCB to the environment. Long-term remediation options for the car park waste are also being progressed by Orica, as required by the HCB Plan and the NSW Government. Orica has commissioned a consultant to review the treatment technology options available for the car park waste material and has recently submitted an application for planning approval to remediate the car park waste by either ex-situ bioremediation or directly-heated thermal desorption.

The Community Participation and Review Committee (CPRC) established by the plan provides a forum for discussion of implementation of the plan and issues related to HCB waste management at the Orica Botany site. The CPRC comprises local community, academic, industry, environment, local and state government representatives.

Polychlorinated Biphenyls Management Plan

The PCB Management Plan was first published in 1996 and revised in 1999 for the management of PCB waste of varying concentrations. The plan provides treatment provisions for the different types of PCB waste including liquid residues and discharges, gaseous emissions, solid residues and disposal:

- **Scheduled PCB** – PCB material or waste containing PCBs at or greater than the threshold concentration of 50 mg/kg and threshold quantity of 50 g. All scheduled PCB material and scheduled PCB waste is to be treated. Scheduled PCB solid or liquid waste must not go to landfill. Scheduled PCB waste is to be treated with treatment methods to be licensed/approved by an agency.
- **Non-scheduled PCB material and non-scheduled PCB waste** - PCB material or waste containing PCBs below the threshold concentration of 50 mg/kg and threshold quantity of 50 g and above the concentration of 2 mg/kg. Non-scheduled PCB material and non-scheduled PCB waste are to be disposed of by methods approved by an agency in accordance with guidance notes supplied in the Plan. Solid non-scheduled PCB waste can go to landfill. Non-scheduled PCB liquid wastes must not go to landfill.
- **PCB-free** - Material or wastes containing PCBs at 2 mg/kg or less; not controlled under the plan.

The plan also states that scheduled PCB waste must not be intentionally diluted or disaggregated merely to meet non-scheduled PCB levels.

The plan requires that the removal from service of all equipment containing scheduled PCB material at >50mg/kg and 50 g should be completed no later than 1 January 2009.

The plan does not cover the control of releases of dioxin-like PCBs which can be unintentionally formed and released from anthropogenic sources listed in Annex C of the Convention. Actions related to dioxin-like PCBs are covered in section 2.3.

The plan is given effect through Australian Government, state and territory statutory instruments and provides guidance to state and territory regulatory authorities who have the responsibility for ensuring the safe storing, handling, treating and disposal of PCB waste. State and territory authorities must maintain records of quantities of scheduled PCB material and waste stored and destroyed.

A review of the PCB Plan in 2001 concluded that there were no major deficiencies in the Plan and that it provides a strong but not complete basis for Australia to meet any future PCB obligations under the Stockholm Convention.

The review also made a number of recommendations including the need to maintain up to date information on stocks of PCBs and the need to monitor PCBs and OCPs in breast milk as an indicator of exposure of these chemicals in the Australian community.

The actions to date in response to the recommendations include the following:

- a survey in 2005 showed that an estimated 14,936 tonnes of PCB waste (includes scheduled and non-scheduled liquid and solid wastes) were destroyed in Australia between 1994 and December 2004. Approximately 3,547 tonnes of scheduled and non-scheduled liquid and solid waste remain awaiting destruction - this figure includes 3,000 tonnes of soils contaminated with scheduled PCB. A further 20,800 tonnes are known to be still in use in equipment across the electricity generation and mining sector, with around 96% of this as non-scheduled PCBs
- research looking at OCPs and other chemicals in breast milk found that levels of these compounds are low compared with international standards and have declined
- progress in removing a range of toxic chemicals, including POPs, from Pacific Island countries and bringing this material to Australia for destruction (see section 2.9).

National codes and standards for transport, storage and handling

All substances classified as dangerous goods or hazardous substances are subject to controls in the workplace. The Australian Safety and Compensation Council (ASCC) has the power to declare National Standards and Codes. National Standards are developed as the basis for nationally consistent OHS regulation by states/territories. National Codes of Practice provide guidance on how employers can meet their obligations under the relevant laws. National OHS Standards and Codes are in place for workplace hazardous substances and the storage and handling of workplace dangerous goods.

The *National Model Regulations for the Control of Workplace Hazardous Substances* (including a list of designated hazardous substances) were developed in 1994 and have since been adopted by all states and territories. The hazardous substances framework includes criteria for classifying hazardous substances; and codes of practice for the control of workplace hazardous substances, the preparation of Material Safety Data Sheets (MSDS) and the labeling of workplace substances.

The ASCC also maintains the *National Standard for the Storage and Handling of Workplace Dangerous Goods*. This standard sets out a framework for managing and communicating hazards associated with dangerous goods, including classification, labeling, MSDS, storage, placards and emergency procedures.

The *National Environment Protection Measure for the Movement of Controlled Waste between States and Territories* also ensures that controlled wastes that are to be moved between states and territories are properly identified, transported, and handled in ways that are consistent with environmentally sound practices.

For the surface transport of dangerous goods, the primary regulatory instrument is the *Australian Code for the Transport of Dangerous Goods by Road and Rail*, prepared by the National Transport Commission. This document largely reflects the United Nations Transport of Dangerous Goods Model Regulations requirements for dangerous goods transport and provides the technical basis for the classification of dangerous goods for other purposes as well as transport.

Recycling used oil

The *Product Stewardship (Oil) Act 2000* establishes the general framework and benefit entitlements to provide incentives for recycling of used oil. Under the *Product Stewardship (Oil) Regulations 2000* - Schedule 1, criteria have been established to ensure that re-refined base oil, for which a product stewardship benefit is payable, is of a quality that is not damaging to the health and safety of workers and users of the oil. The specifications include that:

- the oil must contain less than 2.0 mg of polychlorinated biphenyls for each kilogram of oil, determined using EPA test SW-846 Method 8082 or American Society for Testing and Materials Method D4059 *and*
- the total amount of dioxins and furans that the oil contains must be less than 10 pg TEQ/g of oil, determined using EPA Method 1613A.

Identification and remediation of contaminated sites

Paragraph 1(e) of Article 6 requires Parties to endeavour to develop appropriate strategies to identify sites contaminated by chemicals listed in Annexes A, B and C; if remediation is undertaken it is to be done in an environmentally sound manner.

Australia has agreed criteria for determining if a site is contaminated through the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Site Contamination NEPM). The Site Contamination NEPM provides general guidance in relation to health-based soil investigation levels. The purpose of the NEPM is to establish a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices by the community – including regulators, site assessors, environmental auditors, land owners, developers and industry. Where site contamination has occurred, the desired environmental outcome for the Site Contamination NEPM is to provide adequate protection of human health and the environment, through the development of an efficient and effective national approach to the assessment of site contamination.

The Site Contamination NEPM sets criteria for a range of POPs. A review of the Site Contamination NEPM commenced in 2005 and will continue through to the end of 2006. As part of this review, consideration will be given for the need to establish criteria for POPs not already covered in the NEPM (i.e. endrin, HCB, mirex, toxaphene, dioxins and furans) and whether the levels for the POPs currently listed are in line with international guidelines such as the *Technical guidelines for the environmentally sound management of persistent organic pollutant wastes* being developed under the Basel Convention.

Actions to clean up contaminated sites

Most states and territories have legislation that addresses contaminated sites. Some states and territories have sites contaminated with POPs, for example, industrial sites and old cattle dip sites. Some of these have been cleaned up, including some orphan sites. Clean-up of a contaminated site is usually required if the levels of contamination pose an unacceptable risk to human health or the environment. Where contaminants are moving off the site, states and territories will continue to require, encourage or undertake the clean-up of such sites as they come to their attention and as contaminated site policy dictates.

There are several sites in the Sydney region which have undergone or are in the process of remediation. The Homebush Bay Olympic site provided the location for the first POPs waste destruction process licensed in NSW and also involved the remediation of 160 hectares of degraded lands, some of it contaminated with cyclodiene insecticides and POPs wastes including dioxins.

The nearby Rhodes Peninsula clean up involves three sites as well as some of the sediments along part of the foreshore of Homebush Bay contaminated with dioxins, chlorobenzenes, chlorophenols and organochlorine pesticides. About 115 000 m^3 of POPs contaminated soils will be remediated using thermal treatment at the Lednez site (formerly Union Carbide) (including part of the Bay) and 110 000 m^3 of soil will be remediated at the former Allied Feeds site. The adjacent Statewide site has also been remediated, which involved the excavation and removal of between 500 and 1000 m^3 of contaminated material to the adjacent Lednez site for thermal treatment. Contaminated material from the Lednez and Statewide sites and Homebush Bay is planned to be treated using indirectly-heated thermal desorption, with off-site treatment of residues using BCD and/or plasma arc processes. Contaminated material from the former Allied Feeds site will be treated onsite using directly-heated thermal desorption process.

Processes for the treatment and destruction of POPs waste

In 1997, DEH undertook a review to assess the status of the development and availability of technologies for treating scheduled wastes within Australia. The findings were published in the report titled *Appropriate Technologies for the Treatment of Scheduled Wastes*.

The *National Strategy for the Management of Scheduled Waste* establishes two protocols for assessing new facilities to treat POPs:

- National Protocol for Approval of Trials of Technologies for the Treatment/Disposal of Schedule X Wastes *and*
- National Protocol for Approval/Licensing of Commercial - Scale Facilities for the Treatment/Disposal of Schedule X Wastes.

These protocols have been in place since 1994 and should be reviewed and where necessary revised against guidelines developed for best available techniques and best environmental practices under the Convention.

POPs destruction processes and facilities in Australia

Several processes have been used in the Australia over the past decade to destroy scheduled waste in an environmentally sound manner.

CSIRO, Siddons Ramset Limited (SRL) and Nufarm developed PLASCON, an in-flight plasma arc system in the early 1990s. This technology was designed to treat process wastes from chemical manufacturing by using an in flight high temperature electric arc plasma destruction technique. The technology was jointly owned by CSIRO and SRL Limited. SRL was sold to Illinois Tool Works, USA in 2000 and at the same time SRL Plasma Limited (a division of SRL) was sold to Base Catalysed Dechlorination (BCD) Technologies, Brisbane, Queensland and renamed SRL Plasma Pty Ltd.

In the PLASCON system a liquid or gaseous waste stream together with argon is injected directly into a plasma arc, which provides plasma/waste mixing temperatures in excess of 3000^{o}C. At these temperatures, organic material is pyrolysed i.e. the organics in the waste dissociate into elemental ions and atoms and recombine in the cooler area of the reaction chamber prior to a rapid, alkaline quench to form simple molecules. The resulting end products include gases consisting of argon, carbon dioxide and water vapour and an aqueous solution of inorganic sodium salts (including sodium chloride, sodium bicarbonate and sodium fluoride). The waste stream to be treated must be a liquid or a gas, however, any form of pre-processing which will produce a liquid or a gas can be used upstream of the PLASCON process unit. For example, contaminated soil and very viscous liquids or sludges thicker than 30 to 40 weight motor oil cannot be processed by the system without pre-treatment.

The BCD Technologies plant in Brisbane involves the heating of waste in mineral oil to 200-400^{o}C together with a base, such as caustic soda, and a catalyst. The process strips the chlorine from the POPs molecules. The other facility which operated in Australia using this technology was at the HazWaste Services based in Dandenong, Victoria; this facility has closed. The BCD Technologies plant in Brisbane is now the sole Australian facility for the destruction of OCP and PCB material.

The former Gas-phase Chemical Reduction facility run by EcoLogic in Kwinana, Western Australia used a reduction process in which the organochlorine waste reacted with hydrogen to strip off chlorine. This occurs at a temperature of 850^{o}C or higher. Prior to its closure in 2001, due to commercial reasons, the facility had treated approximately 2000 tonnes of POPs waste.

There are a number of facilities which can remove PCBs oils from electrical transformers and replace them with PCB-free coolants. A list of these facilities is provided in Appendix E. The PCBs must then be destroyed in accordance with the PCB Management Plan.

Proposed actions related to Article 6

- **The Australian Government and state governments holding stocks of OCP collected under the ChemCollect programme, to continue efforts to ensure that these chemicals are destroyed in an environmentally sound manner by 2007.**
- **The NSW Government, in cooperation with the Australian Government and other stakeholders including Orica and the local community, to ensure management and ultimate destruction of the HCB waste in accordance with the HCB Waste Management Plan, although it is unlikely that the 2006 deadline to complete this work will be met.**
- **The Australian, state and territory governments to continue actions under the PCB Management Plan aimed at removing and treating scheduled PCB material at >50mg/kg and 50 g by 1 January 2009.**
- **State and territory governments to endeavour to develop strategies for identifying sites contaminated with chemicals listed on Annexes A, B and C.**
- **The Australian, state and territory governments to review the two protocols for assessing new facilities to treat POPs against guidelines developed for best available techniques and best environmental practices under the Convention.**
- **In the review of the Assessment of Site Contamination NEPM, take into consideration obligations related to contaminated sites as required under paragraph 1 (e) of Article 6.**

2.5 Article 8: Listing of chemicals in Annexes A, B and C

Obligations under Article 8

Under Article 8 of the Convention, Parties are able to submit proposals for listing a new chemical in Annexes A, B or C. A Party may be assisted by other Parties and/or the Secretariat to develop a proposal. Article 8 describes the process by which a proposal is submitted for the consideration by the Persistent Organic Pollutants Review Committee (POPRC). Set up by the first meeting of the Conference of Parties (COP1) in accordance with paragraph 6 of Article 19, the POPRC has 31 members from developed and developing countries. Members are government designated experts on chemical assessment or management and have been appointed for either two or four year terms. Australia has a four year membership with an option for extension for another term. The first meeting of the POPRC was held in November 2005 and its report was considered by the COP2 in May 2006. The second meeting will be held in late 2006.

Proposals put forward for consideration by the POPRC must go through several stages as required under Annexes D, E and F:

- **Annex D** - assessment of the chemical's persistence in the environment, its ability to bio-accumulate, potential for long-range transport and its adverse effects on human health or the environment
- **Annex E** – preparation of a risk profile which covers details on sources (production data, uses and releases), hazard assessment, environmental fate, monitoring data, exposure, risk evaluation and status of the chemical under international conventions
- **Annex F** – a socio-economic evaluation covering efficacy and efficiency of control measures, alternative products and processes, impact on society of implementing control measures, waste disposal implications, access to information and public education, status of control and monitoring capacity and any national or regional control actions.

The proposals submitted are first assessed by the POPRC against the screening criteria in Annex D. If the committee decides that the chemical meets these criteria, a draft risk profile is prepared in accordance with Annex E. The committee must then take into consideration the socio-economic issues listed in Annex F in preparing an evaluation on possible control measures.

The complexity of this process is such that it may take several years between the time a chemical is first proposed, through to a final decision by the COP to list the chemical. At any stage a proposal may be set aside. The Parties are able to resubmit a proposal for reconsideration if it is set aside by the committee. The committee will submit its recommendations for consideration at meetings of the COP.

In developing the Australian Government's position on chemicals put forward to the POPRC, DEH invites comments from Australian Government, state and territory agencies and non-government organisations on the Stockholm Intergovernmental Forum and Stockholm Reference Group. If the COP agrees to include a chemical, the Australian Government will give the decision further consideration in accordance with the Australian domestic treaty process.

Current actions under Article 8

Australia will continue to collect information about potential candidate POPs via research and monitoring activities undertaken by Australian Government agencies.

Work has been already undertaken to gather information on the levels of potential POPs candidates in the Australian community and environment. This work involves studies to determine levels of brominated flame retardants, specifically polybrominated diphenyl ethers, in the Australian

environment and population with the aim of improving the knowledge about these chemicals in Australia. Draft reports of these studies were received in mid 2006. This information will place Australia in a better position to contribute to international debate about including these chemicals on the Convention.

Proposed actions relate to Article 8

The Australian Government to:

- **maintain a watching brief on chemicals that have been flagged by other countries for possible inclusion on the Convention and subject to resources, collect information about these POPs candidates in Australia and**
- **consider submitting proposals for including chemicals on Annexes A, B or C where the evidence meets the criteria in Annex D.**

2.6 Article 9: Information exchange

Obligations under Article 9

Article 9 of the Convention requires Parties to facilitate or undertake information exchange relevant to:

- the reduction or elimination of the production, use and release of POPs *and*
- alternatives to POPs including information relating to their risks as well as their economic and social costs.

This information exchange can take place either directly or through the Secretariat. Where Parties exchange information on health and safety of humans and the environment, it must not be treated as confidential. Parties that exchange other information must protect any confidential information as mutually agreed.

Article 9 also requires Parties to have a national focal point for the exchange of information. DEH is the focal point for Australia and works closely with other Australian Government agencies in developing and exchanging information about POPs.

COP2 invited Parties and others to support and collaborate with the Secretariat in developing a programme for it to serve as the clearing-house mechanism for information on POPs and approved the pilot-phase information activities.

Current actions under Article 9

As highlighted in other sections of this Plan, Australia has undertaken a range of initiatives over the past ten years, which have reduced the levels of POPs in this country. These initiatives include:

- zero waste programmes which promote waste management practices based on reuse and recycling and destruction of waste using innovative technology
- establishment of regulations governing the registration of agricultural and industrial chemicals
- reporting dioxins and furans on the National Pollutant Inventory
- development of OCP, HCB and PCB Waste Management Plans
- remediation of contaminated sites *and*
- collection of POPs from South Pacific countries for final disposal in Australia.

Australia has already disseminated information on some of these initiatives through international forums such as the Expert Group established by UNEP to develop guidance on best available techniques and best environmental practices under Article 5. A presentation on the collection of POPs from the South Pacific was given at the first meeting of the COP in May 2005.

Proposed actions relate to Article 9

- **Subject to Australian privacy legislation and any law relating to the disclosure of commercially sensitive or confidential information, the Australian Government to provide information to other Parties or the Stockholm Secretariat on Australian initiatives related to the management of POPs.**

2.7 Article 10: Public information, awareness and education

Obligations under Article 10

Article 10 of the Convention requires Parties to promote and facilitate:

- awareness of POPs among policy and decision makers and provide all available information on POPs to the public
- development and implementation, especially for women, children and the least educated, of educational and public awareness programmes on POPs and their health and environmental effects and alternatives and exchange these materials at the national/international levels
- public participation in addressing POPs and their health and environmental effects and in developing adequate responses, including opportunities for providing input at the national level regarding implementation of the Convention
- development and implementation of education and training programmes at the national/international levels and training of workers, scientists, educators and technical and managerial personnel
- encourage industry and professional users to provide information on POPs at the national level and subregional, regional and global levels as appropriate

Within its capabilities, Parties are to ensure that the public has access to up-to-date information described above. Parties are also to encourage industry and professional users to provide information at the national level and subregional, regional and global levels, as appropriate. In providing this information, Parties may use a variety of media, reports and other means of communication and may establish information centres at national and regional levels.

Each Party must also give consideration to the development of mechanisms, including pollutant release and transfer registers, for the collection and dissemination of information on the release and disposal of chemicals listed in Annexes A, B and C.

Current actions under Article 10

Participation and consultation with stakeholders is an integral part of environmental decision making by Australian Government, state and territory agencies with guidelines on consultation mechanisms often set out in legislation. In undertaking actions addressing POPs, Australian governments have consulted widely with government and non-government stakeholders and provided information through a range of media including publications, workshops and the Internet. Examples of these are as follows.

Awareness of POPs, among policy and decision makers

The Stockholm Intergovernmental Forum, comprising representatives from Australian Government, state and territory agencies with an interest in POPs was established in September 2004 to facilitate consultation in development of Australia's National Implementation Plan. This forum will also be used as a channel for ensuring government officials are made aware of the obligations under the Convention.

Provision of information on POPs to the public

The Australian Government has developed a range of information materials on POPs such as the publications listed below. In disseminating these materials the Government uses a range of communication media including hard copies of publications, media releases, mailing lists and via the Internet. Copies of publications are also lodged in the National Library of Australia, the State libraries in each State and Territory, and most university libraries throughout Australia.

Information on POPs

A number of publications have been produced on POPs in Australia including:

- A booklet about the community consultation process undertaken for the development of the three scheduled waste management plans. Entitled '*On Schedule Eventually, A Case Study of Problem Solving Through Effective Community Consultation',* is a guide for those considering engaging in similar consultations and describes the public involvement and consultative processes used to achieve a broad consensus on the means of managing scheduled wastes in Australia.
- Under the ChemCollect programme a brochure on the '*Safe Handling of Organochlorine Pesticides on Farms'* was produced and circulated widely to landholders. A report on the collection of chemicals under the ChemCollect programme was released and included details on the communication activities used by government agencies to encourage landholders' participation in the programme.
- Under the PCB Management Plan a booklet titled '*Identification of PCB-Containing Capacitors: an Information Booklet for Electricians and Electrical Contractors'* was prepared. As the major use of PCBs in the electrical industry has been as an insulating fluid inside transformers and capacitors, this booklet provides listings that assist trade people to determine if a piece of electrical equipment is likely to contain PCBs. As well as identifying PCB-containing equipment, this booking also provides information on the safe handling of PCB-containing equipment including handling procedures, first-aid, cleanup of leaks as well as requirements for storage and disposal.
- A community summary containing concise information on the findings of the studies looking at dioxin levels in Australia published under the National Dioxins Programme - *Dioxins in Australia: a summary of the findings of studies conducted from 2001 to 2004,*

The following activities have been also undertaken by the Australian Government to increase awareness of the Stockholm Convention within Australia:

- The Australian Customs Service wrote to all importers and exporters in 2004 advising them of changes to the Customs (Prohibited Imports) Regulations 1956 and Customs (Prohibited Export) Regulations 1958 that implemented Australia's import and export obligations under the Stockholm Convention
- Information has been provided on the Department of Agriculture, Fisheries and Forestry website at http://www.affa.gov.au/content/output.cfm?ObjectID=9FDF0BC1-2124-4995-932020AA869EBC18
- The Department of Foreign Affairs and Trade also provides information on its website at: http://www.dfat.gov.au/environment/haz_chem.html.

In addition to the above specific information on POPs, the Australian Government has established two Internet tools providing readily accessible information on a wide range of chemicals:

- The *National Chemical Information Gateway* is a website designed to help the public find relevant information about chemicals as quickly and easily as possible. Information has been arranged into various categories to help search for information on chemicals used in work and at home, including information on exposure and safety, chemical regulators and legislation. The website is accessible at www.deh.gov.au/chemicals-gateway.
- The *National Chemical Reference Guide* is a comprehensive, searchable database containing environmental standards and guidelines for air, water, soil, sediment and biota for over 600 chemicals including most of the Stockholm POPs. The website is accessible at www.deh.gov.au/chemicals-guide. The guide also provides practical and concise summaries of:
    - how environmental standards and guidelines have been developed and should be applied
    - which standard and guideline documents are used in the database
    - the status of each standard and guideline *and*
    - technical terms used.

Public participation in addressing POPs

Consultation for development of the National Implementation Plan

The Stockholm Reference Group (SRG) was established in December 2004, to enable consultation with the non-government organisations with an interest in POPs on the development of Australia's National Implementation Plan. This group includes representatives from industry, environment, primary producers and health sectors and any other groups, companies or individuals with an interest in the Stockholm Convention. Under the chair of the Department of the Environment and Heritage, the Stockholm Reference Group is to:

- assist in the development and implementation of Australia's National Implementation Plan
- provide an information conduit for non-government organisations with an interest in persistent organic pollutants and to act as a resource for the sharing of knowledge and experience between organizations *and*
- assist with the development of educational and information material relevant to Australia's National Implementation Plan.

Consultation for management of scheduled waste

Under the National Strategy for the Management of Scheduled Waste adopted in 1992, the National Advisory Body (NAB) was established to provide for community and industry input into development of the three management plans. This body, which first met in 1994, had an independent chair and representatives from environment groups, industry, electricity generators, chemical manufacturers, local government and trade unions. With the dissolving of the NAB in 2002, its functions have been picked up under Stockholm Intergovernmental Forum and Stockholm Reference Group. The NAB and the Scheduled Wastes Management Group (SWMG) developed a *National Protocol for Community Consultation on Scheduled Wastes*. This protocol was used as the guide for seeking stakeholder comments into the development of the three scheduled waste management plans. A key feature of this consultation process was the holding of public meetings in major cities across Australia, which representatives from the NAB and government agencies attended.

Under the HCB Waste Management Plan, a Community Participation and Review Committee (CPRC) was established to provide a forum for discussing the implementation of the plan. The Committee also receives and requests information; disseminates information to the local community; participates in relevant processes; and reviews and advises the NSW Government and industry on relevant proposals, including monitoring and implementation of the management plan. The CPRC includes local community, academic, industry, environment and local and state governments.

As part of the Conditions of Consent, the Rhodes Peninsula and Homebush Bay remediation projects are required to support the Rhodes Community Consultation Committee for the duration of the projects. Meetings are held monthly to discuss up coming activities, review monitoring data and consider other topics of interest. The Committee is serviced by an independent chair and community advisor.

Consultation for the National Dioxins Programme

Consultation for development of the National Dioxins Programme (NDP) was facilitated through two advisory bodies - the National Dioxins Project Team, comprising government officials; and the National Dioxins Consultative Group, comprising representatives from industry, scientific research and community interest organisations. With the cessation of the NDP in 2005, issues related to dioxins will be picked up by the Stockholm Intergovernmental Forum and Stockholm Reference Group.

Reporting of emissions through the National Pollutant Inventory (NPI)

The NPI is an Internet database designed to provide the community, industry and government with information on the types and amounts of certain substances being emitted to the environment. The NPI is designed to satisfy community demand for this information and increase understanding of the relative environmental impact of local industry and everyday activities.

The NPI contains data on 90 priority substances, which are emitted to the environment. The substance list was determined by the consideration of health and environmental risks in Australia. This list includes polychlorinated dioxins and furans and HCB emissions from facilities which trigger reporting thresholds. For polychlorinated dioxins and furans the reporting threshold is burning 2000 tonnes of fuel or waste per year or 60 000 megawatt hours. For HCB the reporting threshold is 10 tonnes of HCB used per year. The NPI does not gather information for any of the other POPs listed in the Convention as they are not likely to be released to the environment.

At the EPHC meeting in Perth on 1 July 2005, Australian Government, state and territory environment ministers agreed to start the process of varying the National Environment Protection Measure (NEPM) that governs the NPI after considering the findings of a recently completed NPI review. The NPI Review recommended that the NEPM require dioxins and furans to be reported as Toxic Equivalents (TEQ) and this is one of the changes being investigated through the NPI NEPM variation.

At its meeting on 23 June 2006, Environment Ministers agreed to the public release of the draft NPI NEPM and associated Impact Statement. Public consultation is scheduled from July through to mid September 2006, with the amended NEPM going forward to Ministers in April 2007 for final decision. For more information on the review or the public consultation process for the variation, visit the NPI website at http://www.npi.gov.au./.

Proposed actions related to Article 10

The Australian Government to:

- **establish appropriate forums and collaborate with relevant existing forums to ensure effective consultation with all stakeholders in implementation of Australia's National Implementation Plan**
- **build on existing information sources, continue with development of information and educational and training material about POPs in Australia**
- **disseminate this material nationally and to other Parties using a range of appropriate communication mechanisms**
- **subject to resources, support training activities aimed at increasing awareness about POPs *and***
- **ensure that the national chemical regulators continue to provide public access to information on health and safety of humans and the environment.**

In the review of the National Pollutant Inventory, give consideration to appropriate reporting mechanisms for dioxins, furans, HCB and dioxin-like PCBs.

2.8 Article 11: Research, development and monitoring

Obligations under Article 11

Article 11 requires Parties to encourage research, development and monitoring of POPs on their:

- sources, releases and transport to the environment
- presence, levels, trends and effects in humans and the environment
- environmental transport, fate and transformation
- effects on human health and the environment
- socio-economic and cultural impacts
- release reduction and/or elimination *and*
- harmonised methodologies for making inventories and analytical techniques for measuring releases.

In taking this action, Parties should also:

- support and further develop international programmes aimed at research, data collection and monitoring
- support efforts to strengthen national scientific and technical research capabilities
- take into account the concerns and needs of developing countries to improve their capability to participate
- undertake research towards alleviating the effects of POPs and make the results of this work available to the public *and*
- encourage and/or undertake cooperation with regard to storage and maintenance of this generated information.

Current actions under Article 11

Research on POPs in Australia funded by the Australian Government includes:

- the studies funded through the National Dioxins Programme (described under section 2.3)
- the research on dioxin emissions from bushfires which has contributed to development of better emission factors for this source both in Australia and in other countries
- tertiary institutions such as the National Research Centre for Environmental Toxicology undertaking work for the NDP and other research on POPs in Australia and public research bodies such as the CSIRO assessing dioxins levels in the environment and emissions from bushfires
- a study in 2002 which analysed POPs (HCB, lindane, aldrin, heptachlor, dieldrin, mirex and DDT) and polybrominated diphenyl ethers in human breast milk from 157 samples collected from twelve regions across Australia – including both urban and rural areas. This study found POPs in all samples but overall, the concentrations detected were low, consistent with the use of these chemicals being phased out by the late 1980s
- analysis of organochlorine POPs and PCBs in a range of plant and animal commodities through the Australian National Residue Survey (NRS). The NRS was established in the early 1960s as the Australian Government's response to growing concerns about pesticide residues in major meat export markets. Dioxins were surveyed for the first time in 2002-03

- surveys of POPs through the former Australian Market Basket Survey by Food Standards Australia New Zealand. The most recent (20th) survey, published in January 2003, estimated the level of dietary exposure to a range of pesticide residues and contaminants including PCBs. No PCBs were found in any foods, with a limit of reporting of 0.01mg/kg. Samples collected from the 20th survey were later analysed for dioxins and dioxin-like PCBs and this information contributed to the dioxin human health risk assessment as part of the NDP.

The findings from these and future studies will contribute valuable information for the Global Monitoring Programme for POPs to be developed under Article 16 (see section 2.12).

These research activities have been supported through the establishment of the National Measurement Institute in Sydney, the only facility in Australia dedicated to the analysis of dioxins, furans and dioxin-like PCBs in a range of materials at ultra-trace level. It is understood that other laboratories in Australia are developing the capacity to analyse dioxins. There are a number of other laboratories around Australia with the capacity to analyse POPs other than dioxins, furans and dioxin-like PCBs.

There is likely to be research into POPs undertaken by other organisations across Australia which will contribute to improved knowledge about POPs however, DEH currently does not have details of such research for inclusion in this Plan.

In the 2003-04 Commonwealth Budget, $2 million was allocated for the development of a "*chemicals monitoring database for reporting and monitoring industrial and household chemical use, disposal and environmental fate*" as one of the initiatives under the Sustainable Cities programme. Funding for this project will be allocated over three years (2005-2008). This database, being developed by DEH, could provide a valuable tool for reporting POPs research and monitoring in Australia.

The *National Action Plan for Addressing Dioxins in Australia* recommends that the Australian Government, subject to resources, give consideration to undertaking a study in ten years to determine if dioxin levels in livestock commodities remain within international and domestic standards. The Plan also notes that the Food Regulation Standing Committee (FRSC) supports the repeat of a dioxin dietary exposure survey in ten years, contingent on future decisions about funding and the lead agency.

Proposed actions related to Article 11

Subject to availability of resources, the Australian Government, in consultation with state and territory governments and other stakeholders, to consider:

- **undertaking further research on current and candidate POPs in Australia *and***
- **developing appropriate mechanisms for monitoring current and candidate POPs in Australia.**

2.9 Article 12: Technical assistance

Obligations under Article 12

Article 12 requires Parties to recognise that rendering of timely and appropriate technical assistance in response to requests from developing country Parties and Parties with economies in transition, is essential to the successful implementation of the Convention.

The Parties are to cooperate to provide timely and appropriate technical assistance to developing Parties and Parties with economies in transition, to assist them, taking into account their particular needs, to develop and strengthen their capacity to implement their obligations under this Convention.

Current actions under Article 12

Australia is currently funding the removal of POPs wastes from Pacific Island Countries through the second phase of an AusAID-funded project. This project was developed in conjunction with the South Pacific Regional Environment Programme (SPREP) to manage POPs in these countries and has a budget of $5.9 million. The project involves collecting and transporting chemicals to Australia for destruction from thirteen SPREP member countries. The countries are Fiji, Cook Islands, Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu. All are small island developing states lacking the specialised resources needed for treatment and disposal of persistent hazardous chemicals.

As at the end of 2005, approximately 141 tonnes of POPs waste had been collected. Since the beginning of the project in 2002, 37,713kg of pesticide, 28,745kg of solid PCBs and 3,000L of PCB contaminated oil have been imported into Australia under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989,* with approximately 33 tonnes destroyed. This waste has been sent to the BCD Technologies plant in Queensland for destruction as it is the only plant in the Pacific that can destroy such waste.

Proposed actions related to Article 12

- **The Australian Government, subject to resources, to continue assisting neighbouring developing countries in managing and removing POPs and implementing other obligations under the Convention.**

2.10 Article 13 and 14: Financial resources and mechanisms and Interim financial arrangements

Obligations under Articles 13 and 14

Article 13 of the Convention establishes a financial mechanism for the provision of financial resources to developing country Parties and Parties with economies in transition to assist in their implementation of the Convention.

Article 14 provides for the Global Environment Facility (GEF), on an interim basis, to be the principal entity entrusted with the operations of the financial mechanism referred to in Article 13. The first meeting of the Conference of the Parties has agreed to continue using the GEF as the financial mechanism.

The GEF was launched in 1991 to provide grants and concessional funds to eligible countries for activities that aim to address four critical threats to the global environment: biodiversity loss, climate change, degradation of international waters and ozone depletion. Countries are eligible for GEF funds if they qualify for World Bank loans, or receive technical assistance grants through a country programme of the United Nations Development Programme (UNDP). The facility is jointly implemented by the UNDP, the United Nations Environment Programme and the World Bank.

GEF assistance is designed to cover the incremental costs of undertaking activities that provide benefits to the global community, and for which development funds are not normally available. Since 1994, GEF assistance has expanded beyond the original four areas to cover persistent organic pollutants and land degradation. It is an operating entity of the financial mechanisms of the UN Framework Convention on Climate Change, the UN Convention on Biological Diversity, the UN Convention to Combat Desertification, and the Stockholm Convention on Persistent Organic Pollutants. Accordingly, it operates under the guidance of the Conferences of the Parties to these conventions.

The GEF has 176 member countries which comprise the GEF Assembly, which meets every three to four years to assess the GEF's overall direction and is responsible for approving amendments to the GEF Instrument (constitution). The main executive body of the GEF is the GEF Council, which has primary responsibility for developing, adopting and evaluating GEF policies and programmes. The Council meets every six months. The Council consists of members representing 32 constituencies (16 from developing countries, 14 from developed countries, and two from countries with transitional economies). Australia has formed a constituency with New Zealand and the Republic of Korea.

A replenishment of the GEF is undertaken every four years. In 1994, following the piloting of the GEF, 34 nations pledged US$2 billion for the first replenishment; this was followed by a second replenishment in 1998 when a further US$2.75 billion was pledged by 36 nations. Negotiations for the third replenishment concluded with 32 countries pledging US$2.92 billion. Subsequent pledges took the replenishment to US3 billion. Negotiations for the 4th replenishment (GEF4) commenced in June 2005 and are nearing completion

Current actions under Articles 13 and 14

Since the GEF inception, Australia has committed just over $A184 million or 1.46% of the total contributions ($30 million for the GEF pilot, $42.76 million for the first replenishment, $43.27 million for the second replenishment and $68.2 million for the third replenishment).

Proposed actions relate to Article 13 and 14

- **The Australian Government to continue supporting the Global Environment Facility through contributing to the 4th GEF replenishment programme.**

2.11 Article 15: Reporting

Obligations under Article 15

Each Party must report to the Conference of the Parties (COP) on the measures it has taken to implement the provisions of the Convention and on the effectiveness of such measures in meeting the objectives of the Convention. Reporting will include:

- data on the total quantity of production, import and export of the chemicals listed in Annexes A and B *and*
- a list of countries from which it has imported and exported substances.

COP1 agreed that each Party will submit its first report by 31 December 2006 for consideration by COP3 in 2007. The subsequent reports will need to be submitted every four years thereafter for consideration of the COP at its meeting to be held the following year. COP1 adopted a format for reporting that requires providing information on the following topics:

- the Party, its focal point and contact officer

the measures taken to implement the Convention and their effectiveness, such as

  - implementation plans
  - measures to reduce/eliminate releases from intentional/unintentional production and use and from stockpiles and wastes
  - registration for exemptions
  - production, import and export of chemicals listed in Annexes A and B of the Convention
  - information exchange
  - public information, awareness and education
  - research, development and monitoring
  - technical assistance *and*
  - financial resources and mechanisms.

COP2 adopted a format for reporting on PCBs and requested the Secretariat to develop an electronic system for reporting and make it and the format for reporting on PCBs available to Parties no later than 30 September 2006.

Australia's reporting requirements will include the following:

- first national report by 31 December 2006 in accordance with the above format (subsequent reports every four years)
- first report on progress in eliminating PCBs by 31 December 2006 (subsequent reports every five years) *and*
- report on the review of the *National Action Plan for Addressing Dioxins by October 2010* (subsequent reports every five years).

Proposed actions related to Article 15

- **The Australian Government to report to the Conference of the Parties, using the adopted format and timetable, on all actions taken to meet its obligations under the Convention.**

2.12 Article 16: Effectiveness evaluation

Obligations under Article 16

Article 16 requires the COP to periodically evaluate the effectiveness of the Convention, starting four years after entry into force. The evaluation will be conducted on the basis of available scientific, environmental, technical and economic information.

To facilitate this evaluation, COP1 agreed to initiate arrangements to provide comparable monitoring data on which to evaluate the effectiveness of the Convention. The national reports submitted under Article 15 and non-compliance information provided under Article 17 are expected to be used for this purpose.

The Parties are to cooperate by using existing monitoring programmes and mechanisms where possible and promoting harmonisation of approaches.

COP2 agreed to complete the first effectiveness evaluation for reporting at COP4 in 2009, implement the elements for a global monitoring plan and carry out the field test according to the elements. COP2 also invited Parties in a position to do so to support the setting up and the long-term implementation of the global monitoring programme and to contribute necessary resources for the first effectiveness evaluation including through existing programmes where appropriate.

Current actions under Article 16

In recent years, Australia has undertaken monitoring of POPs through a number of programmes looking at the presence of POPs in the environment, food and in the Australian community as outlined in section 2.8. This work will contribute to the global monitoring programme of POPs.

Proposed actions related to Article 16

The Australian Government to:

- **contribute to the global monitoring programme by providing relevant information gained from existing POPs monitoring programmes and, subject to resources, from future research programmes *and***
- **collaborate with the Stockholm Secretariat to develop a global monitoring programme for POPs.**

Appendices

Appendix A: Summary of Articles of the Stockholm Convention

The following table provide a summary of all Articles of the Convention and indicates which articles are addressed in Australia's National Implementation Plan.

Article	Addressed in the NIP
1. Objective The objective of the Convention is to protect human health and the environment from POPs.	
2. Definitions Definitions for the purpose of the Convention.	
3. Measures to reduce or eliminate releases from intentional production and use Each Party shall take measures to ensure production, release, import and export of the chemicals listed in Annexes A and B are reduced or eliminated.	✓
4. Register of specific exemptions The register will enable Parties to identify specific exemptions from the Convention.	✓
5. Measures to reduce or eliminate releases from unintentional production Parties shall take measures to reduce, and where feasible, eliminate the releases of chemicals listed in Annex C, and in accordance with the prevention and release reduction measures, promote the use of best available techniques and best environmental practices.	✓
6. Measures to reduce or eliminate releases from stockpiles and wastes Ensure that stockpiles and wastes containing or contaminated with chemicals listed in Annexes A, B and C are managed in a manner to protect human health and the environment.	✓
7. Implementation plan Each Party shall develop and endeavour to implement a plan for the implementation of its obligations under the Convention.	✓
8. Listing of chemicals in Annexes A, B and C Parties may submit proposals to the Secretariat for listing a chemical in the Annexes – the Conference of the Parties (COP) will then consider if the chemical is to be listed in the Annexes.	✓
9. Information exchange Each Party shall facilitate or undertake the exchange of information relevant to reducing or eliminating the production, use and release of POPs and alternatives to POPs.	✓
10. Public information, awareness and education Each Party shall promote and facilitate awareness among policy makers, provide information to the public, develop and implement education campaigns and engage public participation.	✓
11. Research, development and monitoring Parties shall encourage and/or undertake appropriate research, development, monitoring and cooperation relating to POPs and in doing so undertake action to support and develop international programmes to strengthen scientific and technical research to alleviate the effects of POPs on human health and the environment.	✓
12. Technical assistance Developed countries shall provide technical assistance to developing countries and countries with economies in transition. Parties shall do this in accordance with their capabilities.	✓
13. Financial resources and mechanisms Each Party shall undertake financial support and incentives to those national activities that are intended to achieve the objectives of the Convention. Developed countries shall also provide financial resources to enable developing countries to meet their obligations.	✓
14. Interim financial arrangements The Global Environment Facility is the principal entity entrusted with providing the funding financial mechanisms as required under Article 13.	✓
15. Reporting Each Party shall report to the COP on the measures, and effectiveness of such measures, it has taken to implement the provisions of the Convention.	✓
16. Effectiveness evaluation The first COP shall evaluate the effectiveness of the Convention by initiating arrangements to provide comparable monitoring data on the presence of POPs.	✓

17. Non-compliance The COP shall, as soon as practicable, develop and approve procedures and institutional mechanisms to determine non-compliance and the treatment of Parties found to be non-compliant.	
18. Settlement of disputes Parties shall settle disputes concerning the interpretation or application of the Convention through negotiation or other peaceful means.	
19. Conference of the Parties A COP is established and shall meet no later than one year from entry into force and shall adopt rules of procedure, perform a variety of functions and establish subsidiary bodies.	
20. Secretariat A secretariat is established to undertake the administrative duties of the Convention, performed by the Executive Director of UNEP.	
21. Amendments to the Convention Amendments of the Convention may be proposed by any Party and shall be adopted at meetings of the COP whereby all Parties shall make every effort to reach an agreement on any proposed amendment of the Convention by consensus.	
22. Adoption and amendment of annexes Additional annexes shall be restricted to procedural, scientific, technical or administrative matters and shall be proposed and adopted by procedures laid out in Article 21.	
23. Right to vote Each Party shall have one vote, with the exception of a regional economic integration organisation who can exercise the right to vote with a number of votes equal to the number of member states that are Parties.	
24. Signature The Convention was opened for signature by all states between 23 May 2001 and 22 May 2002.	
25. Ratification, acceptance, approval or accession The Convention was subject to ratification, acceptance, approval or accession by states the day after the Convention was closed for signature with instruments deposited with the depositary.	
26. Entry into force The Convention entered into force on the 90th day after the deposit of the 50th instrument – with each state that ratifies after the deposit of the 50th instrument, will do so 90 days after the date of deposit.	
27. Reservations No reservation may be made to this Convention.	
28. Withdrawal At any time after three years from the date the Convention has entered into force, Parties may withdraw from the Convention. The withdrawal will take effect one year from the date of receipt.	
29. Depository The Secretary-General of the UN shall be the depository of the Convention.	
30. Authentic texts The original of this Convention, of which all languages are equally authentic, shall be deposited with the Secretary-General of the UN.	

Appendix B: Commonwealth, state and territory legislation relevant to the implementation of the Stockholm Convention

NATIONAL
Legislation *Agricultural and Veterinary Chemicals (Administration) Act 1992* http://scaleplus.law.gov.au/cgi-bin/download.pl?/scale/data/pasteact/0/431 *Agricultural and Veterinary Chemicals (Administration) Regulations 1995* http://scaleplus.law.gov.au/cgi-bin/download.pl?/scale/data/pastereg/1/612 *Customs Act 1901* *http://scaleplus.law.gov.au/cgi-bin/download.pl?/scale/data/pasteact/0/175* *Customs (Prohibited Exports) Regulations 1958* http://scaleplus.law.gov.au/html/pastereg/0/84/rtf/CusProhibExp1958.rtf *Customs (Prohibited Imports) Regulations 1956* http://scaleplus.law.gov.au/html/pastereg/0/140/rtf/CusProhImp1956.rtf *Environment Protection and Biodiversity Conservation Act 1999* http://www.deh.gov.au/epbc/index.html *Product Stewardship (Oil) Amendment Regulations 2003 (No 1)* http://www.deh.gov.au/industry/waste/oilrecycling/index.html http://scaleplus.law.gov.au/html/numrul/19/9695/rtf/2003No47.rtf *Hazardous Waste (Regulation of Exports and Imports) Act 1989* *http://www.deh.gov.au/settlements/chemicals/hazardous-waste/guide.html*

Guidelines and policies

*National Environment Protection (Assessment of Site Contamination) Measure 1999**

National Environment Protection (Movement of Controlled Waste Between States and Territories) Measure as varied 2004*
http://www.ephc.gov.au/nepms/waste/waste_intro.html

National Strategy for the Management of Scheduled Waste*http://www.deh.gov.au/industry/chemicals/scheduled-waste/strategy.html

National Strategy for the Management of Scheduled Waste: PCB Management Plan*

http://www.deh.gov.au/settlements/publications/chemicals/scheduled-waste/pcbmanagement/index.html

National Strategy for the Management of Scheduled Waste: HCB Management Plan*
http://www.deh.gov.au/settlements/publications/chemicals/scheduled-waste/hcbplan.html

National Strategy for the Management of Scheduled Waste: OCP Management Plan*
http://www.deh.gov.au/settlements/publications/chemicals/scheduled-waste/ocpmanagement.html

Australia and New Zealand Guidelines for Fresh and Marine Water Quality - The Water Quality Guidelines (Revised 2004)*

Guidelines for Sewerage Systems: Acceptance of Trade Waste (Industrial Waste) 1994 (The Trade Waste Guidelines)*

Natural Resource Management Ministerial Council (2004) - Guidelines for Sewerage Systems Biosolids Management Canberra*

National Environment Protection Council Service Corporation, Guidelines on Health Based Investigation Levels, National Environment (Assessment of Site Contamination) Measure, Schedule B (7A), 1999*

National Environment (Ambient Air Quality) Measure 1998*http://www.ephc.gov.au/nepms/air/air_nepm.html

Australian Environment Council and National Health and Medical Research Council (1985) National Guidelines for Control of Emissions of Air Pollutants from New Stationary Sources – Recommended Methods for Monitoring Air Pollutants in the Environment, Canberra*

Commonwealth of Australia (1995), Environmental Guidelines for New Bleached Eucalypt Kraft Pulp Mills, Australia*

Guide to Controlled and Other Wastes under Australia's Hazardous Waste Act, Information Paper No. 4, June 1998*

National Health and Medical Research Council (2002), Dioxins: Recommendation for a Tolerable Monthly Intake for Australians, Canberra*

* These national guidelines are implemented at state and territory levels.

AUSTRALIAN CAPITAL TERRITORY

Legislation

ACT Environment Protection Act 1997 (No 92)

http://www.legislation.act.gov.au/a/1997-92/current/pdf/1997-92.pdf

Guidelines and policies

Environment ACT, Air Environment Protection Policy

http://www.environment.act.gov.au/Files/airenvprotectionpolicy.pdf

Environment ACT, Hazardous Materials Environment Protection Policy

http://www.environment.act.gov.au/businessandindustry/environmentprotectionpoliciesandguidelines

NEW SOUTH WALES

Legislation

Environmental Planning and Assessment Act 1979

Environmentally Hazardous Chemicals Act 1985

Chemical Control Order in relation to Dioxin-contaminated Waste Materials 1986

Chemical Control Order in relation to Scheduled Chemical Wastes 2004

Chemical Control Order in relation to Materials and Wastes containing Polychlorinated Biphenyls (PCB) 1997
http://www.epa.nsw.gov.au/chemicals/pcbcco1997.pdf

Pesticides Act 1999

Protection of the Environment (Operations) Act 1997
http://www.legislation.nsw.gov.au/viewtop/inforce/act+156+1997+first+0+N

Road and Rail Transport (Dangerous Goods) Act 1997

Contaminated Land Management Act 1997 http://www.epa.nsw.gov.au/clm/guidelines.htm

Clean Air (Plant and Equipment) Regulation 1997

Guidelines and policies

Approved methods and guidance for the modelling and assessment of air pollutants in NSW

http://www.epa.nsw.gov.au/air/amgmaap.htm

Environmental Guidelines: Assessment, Classification & Management of Liquid and Non-liquid Wastes

http://www.environment.nsw.gov.au/resources/waste_guide.pdf

NORTHERN TERRITORY

Legislation

NT *Waste Management and Pollution Control Act*
http://notes.nt.gov.au/dcm/legislat/legislat.nsf/d989974724db65b1482561cf0017cbd2/1d7b60ccf9999f7069256c68000f8cc2/$FILE/Repw015.doc

NT *Water Act 2001*
http://notes.nt.gov.au/dcm/legislat/legislat.nsf/d989974724db65b1482561cf0017cbd2/7bd338238fd7596c69256a9c007fe284/$FILE/Repw010.doc

NT *Water Supply and Sewerage Services Act 2001*
http://notes.nt.gov.au/dcm/legislat/legislat.nsf/d989974724db65b1482561cf0017cbd2/fb1ec118fc4e471469256c6e007c4fd1?OpenDocument

Guidelines

Power and Water Authority (2000), *Draft Trade Waste Management System, Consultative Paper No 2, 22nd September 2000*, Northern Territory Government

QUEENSLAND

Legislation

Environmental Protection Act 1994

Environmental Protection Regulation 1998

Environmental Protection (Interim Waste) Regulation 1996

Environmental Protection (Waste Management) Regulation 2000

All these pieces of legislation can be accessed via the following links:

http://www.epa.qld.gov.au/environmental_management/planning_and_guidelines/environmental_legislation

http://www.legislation.qld.gov.au/Legislation%20Docs/CurrentE.htm

Guidelines and policies

Environmental Protection (Air) Policy 1997

Environmental Protection (Waste Management) Policy 2000

Environmental Protection (Water) Policy 1997

SOUTH AUSTRALIA

Legislation

SA *Environment Protection (Water Quality) Policy 2003*

http://www.environment.sa.gov.au/epa/pdfs/epwq_policy.pdf

SA *Environment Protection (Air Quality) Policy 1994*

http://www.parliament.sa.gov.au/dbsearch/display.asp?CALLER=regs-list.htm&IS_QUERY=&IS_PAGE_SIZE=0&SEARCH_PAGE=legislation_search.asp&DOC_INDEX=20&HIGHLIGHT_HITS=False

Guidelines and policies

Department for Environment and Heritage (2000), *Waste Management in South Australia – Discussion Paper, Leading to the Development of an Environment Protection (Waste) Policy*, Adelaide

Department of Environment Protection, *Landfill Waste Classification and Waste Definitions 1996*, WA, 1996

TASMANIA

Legislation

TAS *Environment Protection Policy (Air Quality) 2001*

http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/CDAT-53M4U8?open

TAS Environment Management and Pollution Control Act 1994

http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/CDAT-53L38C?open

Environmental Management and Pollution Control (Waste Management) Regulations 2000

Guidelines and policies

Department of Primary Industries, Water and Environment (2002), *Classification and Management of Contaminated Soil for Disposal – Information Bulletin No. 105*, Tasmania.

VICTORIA

Legislation

VIC *State Environment Protection Policy (Air Quality Management)*

http://www.craftpress.com.au/gazette/Gazettes2001/GG2001S240.pdf

VIC *State Environment Protection Policy (Groundwaters of Victoria)*

http://www.craftpress.com.au/gazette/Gazettes2002/GG2002G012.pdf

Environment Protection Act 1970

http://www.dms.dpc.vic.gov.au/Domino/Web_Notes/LDMS/PubLawToday.nsf/2184e627479f8392ca256da50082bf3e/1289504FD20A7756CA2570CF0022F47C/$FILE/70-8056a150.pdf

Guidelines and policies

Guidelines to the Management of PCBs http://www.epa.vic.gov.au/Industry/docs/EPAPub693.pdf

Waste Management Policy (Solid Fuel Heating) Gazette (No. S174)

State Environment Protection Policy (Prevention and Management of Contamination of Land) Gazette (No. S95)

WESTERN AUSTRALIA

Legislation

WA *Environment Protection Act 1986*

Guidelines and policies

Department of Environment Protection, Landfill Waste Classification and Waste Definitions 1996, (as amended), 1 July 2005.

Contaminated Sites Technical Guidelines www.environment.wa.gov.au

Appendix C: Section 5 of the National Action Plan for Addressing Dioxins in Australia

(This section has been taken from the "National Action Plan for Addressing Dioxins in Australia" available at: http://www.ephc.gov.au/ephc/dioxins.html)

5. WAYS TO ADDRESS DIOXINS IN AUSTRALIA

A review of existing national, State and Territory environmental programmes and legislation shows that there are a number of measures which apply controls, standards or guidelines for chemicals. Some already cover dioxins whereas others could be modified to include, for example, a guideline level for the emissions of dioxins. Some measures are subject to review over the next one to two years and will need to consider dioxins in these reviews.

This section outlines the existing measures, identifies gaps and suggests actions to address dioxins in Australia.

Table 2 summarises dioxin emissions estimates from the top 25 emitters categories as determined in the National Dioxins Programme "Inventory of Dioxin Emissions in Australia, 2004".

Table 2: Emission estimates by subcategory - top 25 emitters

Source Category	Annual Estimated Release (g TEQ/annum)			
	Air	Water	Land	Total [a]
Biomass burning	240	0	1,020	1,270
Pulp and paper production	0.4	0.2	103	104
Waste burning and accidental fires	88	0	8.7	97
Zinc production	50	0	0	50
Fossil fuel power plants	14.3	0	27.7	42.0
Aluminium production	4.45	0	31.80	36.26
Sewage and sewage treatment	0	0.9	33	34
Metal ore sintering	32	0	0	32
Medical waste incineration	6.39	0.36	21.9	28.7
Household heating and cooking with biomass	20.2	0	1.6	21.8
Iron and steel production plants	20.3	0	0.03	20.3
Copper production	1	0	13	14
Composting	0	0	7.3	7.3
Diesel engines	5.4	0	0	5.4
Other non-ferrous metal production	4	0	0	4
Heavy oil fired engines	3	0	0	3
Domestic heating and cooking with fossil fuel	0.4	0	2.5	2.9
Open water dumping	0	1.5	0	1.5
Ceramics production	1	0	0	1
Lead production	0.5	0	0	0.5
Cement production	0.48	0	0	0.48
Crematoria	0.3	0	0.15	0.46
4-Stroke Engines	0.3	0	0	0.3
Landfills and waste dumps	0	0.2	0	0.2
2-Stroke engines	0.2	0	0	0.2
Other	0.06	0.05	0.7	0.9
Total	**500**	**3.2**	**1,271**	**1,778**

* Includes emissions from uncontrolled burning of biomass in bush fires, grassland and harvest residues.

5.1 AIR

The inventory of dioxin emissions in Australia (NDP Technical Report No 3) shows that the main sources of dioxins to the environment are from uncontrolled combustion (includes prescribed burning and wildfires, waste burning and accidental fires) which is estimated to contribute nearly 70% of total emissions. The next highest emitters of dioxins to air are metal smelting (including zinc, aluminium, iron and steel) and fossil fuel power generation. Domestic woodheaters contribute around 4%.

Emissions from combustion facilities

The level of 0.1 ng TEQ/m^3 of dioxins has been accepted internationally as a goal for achieving best practice for controlling emissions of dioxins from combustion sources.

In Australia this level has been adopted by most States and Territories with some jurisdictions prescribing this level in legislation while others adopting it as a licence condition (Table 3). The responsibility for licensing facilities rests with the States and Territories and not the Australian Government.

Table 3: Jurisdictional regulations for dioxin emissions to air

	ACT	NSW	QLD	SA	TAS	VIC	WA
Level	0.1 ng/m^3	0.1 ng/m^3 (stack)	0.1 ng/m^3	0.1 ng/m^3	0.1 ng/m^3 * (stack)	0.0037 ng/m^3 *	0.1 ng/m^3
How	Lic	Leg	Lic	Lic	Lic	Lic	Lic
Apply		New facilities and upgrades.	New facilities and upgrades		New and upgrade of old facilities. Permit conditions to reflect best practice.	New facilities	

Legend:

Leg: Prescribed through legislation

Lic: Prescribed through licensing agreements

* The new figure of 0.0037 ng/m^3 refers to a ground level concentration (not emission discharge limit) as contained in the *State Environment Protection Policy (Air Quality Management) 2001*

As discussed under Section 4, Parties under the Stockholm Convention are required from four years after entry into force for them to promote BAT and BEP for new facilities and existing facilities which are to be modified. Although these Guidelines will not be mandatory for Parties, they must be taken into consideration and will provide a valuable benchmark against which Australian governments can ensure that facilities that are known sources of dioxins are meeting world's best practice.

Actions for Governments:

Adopt or reaffirm 0.1 ng TEQ/m3 as a guideline emission level for new combustion facilities and for existing combustion facilities when they are upgraded.

Use recommendations in the Stockholm Convention BAT and BEP guidance for new facilities and for existing facilities when they are upgraded.

Emissions from domestic woodheaters

The ambient air study (NDP Technical Report No 4) has shown that levels of dioxins in ambient air are low compared with other countries. There was an increase in urban areas over winter most likely due to wood burning for residential heating. Domestic woodheaters account for around 4% of total dioxin emissions.

DEH, along with State and Territory governments, has implemented a range of measures to reduce woodsmoke from domestic heaters in recent years. These measures include woodheater replacement programmes, education and awareness programmes, development of regulations to minimise excessive smoke from woodheaters, and the development of more stringent particle emission standards. Although the principal objective of these initiatives is to reduce particle emissions from woodheaters, it is expected that the levels of dioxins over the winter months would also be reduced as a result of these initiatives.

Actions for Governments:

Continue with existing measures aimed at reducing particle emissions from domestic woodheaters including community education on the correct operating practices for woodheaters, seeking improvements to woodheater installation and emission standards, and sponsoring research to improve our understanding of woodheater emissions.

Emissions from motor vehicles

The study of dioxin emissions from motor vehicles (NDP Technical Report No 2) has shown that motor vehicles contribute less than 2% of total dioxin emissions, with leaded petrol and diesel fuel vehicles the highest contributors. However, in January 2002 the Commonwealth Government phased out the use of leaded petrol in Australia.

With the phase-out of leaded fuel, it is expected that the total dioxin emissions from motor vehicles will have substantially declined in recent years.

There is little information on the emissions of dioxins from diesel vehicles, but what research has been undertaken indicates that diesel vehicles may contribute a large proportion of the total dioxin emissions from motor vehicles. The reason for the formation of dioxins in diesel engines is still unclear.

In the absence of any dioxin emissions data, vehicles using Liquefied Petroleum Gas (LPG) and Compressed Natural Gas (CNG) are assumed to have emission factors similar to passenger cars running on unleaded petrol. However, the motor vehicle study noted that the overall impact of

these vehicle types on total dioxin emissions is low due to LPG and CNG vehicles accounting for only a small part of total vehicle kilometres travelled.

Action for the Australian Government:

Monitor overseas research looking at emissions of dioxins from diesel, LPG and CNG vehicles to determine whether further action is required in Australia.

Emissions from bushfires

The bushfires study (NDP Technical Report No 1) shows that prescribed burning and wildfires may account for around 20-30% of total dioxin emissions to the environment. Savannah fires in northern Australia account for 83% of these emissions.

Restrictions cannot be placed on wildfires, but they are placed on hazard reduction control burns to minimise impact on human health from smoke and not to destroy too much native vegetation. As the conditions for the formation of dioxins in bushfires are very complex and are still not fully understood, it would be very difficult to place conditions on permits aimed solely at reducing dioxin emissions.

DEH will fund further research on the formation and emission of dioxins from bushfires. This research will aim to provide a more accurate estimation of the total emissions of dioxins from bushfires in Australia and to determine the extent to which dioxin releases are the result of new dioxin formation during a fire, or re-mobilisation of existing dioxin stored in the top soil, ground litter and vegetation. The CSIRO, in conjunction with the National Research Centre for Environment Toxicology will undertake this research in 2005.

Action for the Australian Government:

Undertake further research on dioxin emissions from bushfires to provide firmer evidence on the formation of dioxins to help governments determine appropriate response measures, if any.

Air toxics NEPM

In February 2001, the National Environment Protection Council (NEPC) established a Working Group to scope the development of a National Environment Protection Measure (NEPM) for Air Toxics, sometimes known as hazardous air pollutants. In June 2001, the Working Group recommended that five priority air toxics be the subject of a NEPM, from a list of 29 air toxics including dioxins. Dioxins were not identified as a priority at that time as there were insufficient data on their levels in Australia.

In June 2001, NEPC commenced the development of a NEPM for Air Toxics to address benzene, toluene, formaldehyde, xylenes and polycyclic aromatic hydrocarbons (PAHs). The draft Air Toxics NEPM and Impact Statement were released for public consultation in May 2003. At the 9th meeting of EPHC in December 2004, Council resolved to make the National Environment Protection (Air Toxics) Measure.

While results from the NDP show that the risk presented by dioxins in ambient air in Australia is very low, dioxins, along with other air pollutants, will be considered for possible future inclusion

in the Air Toxics NEPM. A Working Group has been established under the EPHC to develop a process to prioritise air toxics.

Action for Governments:

The EPHC Air Toxics Working Group to utilise NDP Ambient Air study data when assessing the relative priority of dioxins, for possible inclusion in the Air Toxics NEPM.

5.2 SOILS

The soil study (NDP Technical Report No 5) shows that dioxin levels in remote and agricultural areas are generally lower compared with soils in urban and industrial areas. Overall, the study found that levels in soils are generally low compared to levels in many other countries. The comparatively elevated levels of dioxins in coastal soils in Queensland are so far unexplained. Scientists have suggested that the higher levels of dioxins in coastal eastern Australian soils may be due to historical geological processes. Further research would be needed in order to confirm this view or to determine another sources, if considered warranted.

The area of land with this high level of naturally occurring dioxin is very large. Given the dioxin levels found, it appears that remediation is neither warranted nor indeed feasible.

There are currently no national agreed acceptable level or guidelines in place for dioxins in soils in Australia. However, the *National Environment Protection (Assessment of Site Contamination) Measure 1999* specifies an effective process that covers chemicals that do not have a nationally agreed health investigation level.

Site Contamination NEPM

The purpose of the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (Site Contamination NEPM) is to establish a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices by regulators, site assessors, environmental auditors, land owners, developers and industry. The desired environmental outcome for the Site Contamination NEPM is to provide adequate protection to human health and the environment, where site contamination has occurred, through the development of an efficient and effective national approach to the assessment of site contamination. The Site Contamination NEPM provides general guidance in relation to ecological, groundwater and health-based investigation levels.

The Site Contamination NEPM sets health-based investigation levels for a range of chemicals including heavy metals, pesticides and PCBs. Currently, there is no health-based investigation level set for dioxins. At its 9th meeting in December 2004, EPHC agreed to undertake a review of the Site Contamination NEPM. It was resolved to establish a committee to assist with this review which would develop and release an issues paper. The review will consider the need to establish investigation levels for additional chemicals including dioxins.

Some States and Territories have sites contaminated with dioxins, and some of these have been remediated, including some orphan sites. Clean-up of a contaminated site is usually required if the levels of contamination pose an unacceptable risk to human health or the environment. Where contaminants are moving off the site, State and Territory governments will continue to

require, encourage or undertake the clean-up of such sites as they come to their attention and as contaminated site policy dictates.

Action for Governments:

In the review of the Site Contamination NEPM during 2005/2006, consider including health-based investigation levels for dioxins. An investigation level for sites contaminated with dioxins may provide guidance which will lead to uniformity of site risk assessment. Consider the feasibility of a screening process for identifying sites where dioxins could be present.

Continue best efforts towards remediating sites where dioxin contamination poses an unacceptable risk to the environment or human health and undertake this work in an environmentally sound manner.

Action for the Australian Government:

Consider further research to improve our knowledge of natural dioxins formation, and the sources and exposure risks to sources of dioxins in the soils of coastal eastern Australia.

5.3 WATER

Dioxins are insoluble in water, therefore the most effective way of determining levels in aquatic environments is to analyse sediments and aquatic animals. This is discussed in section 5.4.

As part of Australia's National Water Quality Management Strategy, the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 Volume 1* (the *Water Quality Guidelines*) provides a guide for setting water quality objectives required to sustain current, or likely future, environmental values (beneficial uses) for natural and semi-natural water resources in Australia and New Zealand.

These and other National Water Quality Management Strategy guidelines help communities and water authorities achieve consistency for the level of service provided by local water and sewage systems.

The *Water Quality Guidelines* mention dioxins (2,3,7,8-tetrachlorodibenzo-*p*-dioxin) in marine ecosystems, but as there were insufficient data available on dioxins when the guidelines were being developed, no level is given for dioxins in any water ecosystem.

It is expected that these guidelines will be updated in the next few years. Inclusion of a level for dioxins in water could be considered, although as dioxins are insoluble in water, the setting of a level may be problematic given the difficulty in measuring their presence.

Action for Governments:

Consider including a level for dioxins in water when undertaking a future update of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000.

5.4 SEDIMENTS

The results of the aquatic environment study (NDP Technical Report No 6) show that the levels of dioxins in most aquatic environments in Australia are generally low when compared to levels from many other industrialised countries. However, sediments in urban and industrial areas had significantly higher levels of dioxins than sediments in remote and agricultural locations. Some estuaries, for example, Port Jackson, Sydney had very high levels in sediments similar to those found in estuaries adjacent to industrial centres in other countries. These elevated levels may be due to historical contamination from former chemical manufacturing sites near Homebush Bay. These sites are subject to current clean-up activities by the NSW Government.

The *Water Quality Guidelines* applies to sediment quality, but there are no levels for dioxins. These guidelines are expected to be updated in future, with sediment levels a component of the update. Inclusion of a level for dioxins could be considered.

Action for Governments:

Consider including a level for dioxins in sediments when undertaking a future update of the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000.

5.5 BIOTA

Dioxins emitted to air can deposit on plant, soil and water surfaces. Dioxins can then enter the food chain when animals eat contaminated leaves, soils or sediments. The dioxins are then absorbed into animal fat. Dioxins increase in concentration as they move up the food chain, so that carnivores are more likely to have higher levels than herbivores.

The fauna study (NDP Technical Report No 7) found that levels are generally lower in Australia compared with fauna in other countries. Birds of prey had the highest levels, due to their position at the top of the food chain. Levels were much lower in herbivorous animals such as kangaroos, galahs and dugongs.

There are currently no regulated levels for dioxins in biota in Australia. The ecological risk assessment (NDP Technical Report No 11) noted that more reliable risk estimations would require information on the toxicity of dioxins to Australian wildlife species. However, as Australian ethical committees and current State legislation generally do not allow toxicity testing on native species, the establishment of a level for dioxins in biota would be very difficult. Reduction of emissions in Australia will most likely lead over time to lower levels of dioxins in Australian biota.

Action for Governments:

Subject to resources, the Australian Government to give consideration to undertaking further studies of biota in order to assess whether source directed measures are having the desired effect in lowering dioxin levels in biota.

5.6 WASTES

Sewage effluent and biosolids

The risk to environmental and human health from dioxins in sewage effluent and biosolids is low. The inventory of dioxin emissions (NDP Technical Report No.3) shows that sewage treatment works emit small amounts of dioxins to land. Emissions from biomass burning and paper production represent the most significant contributors to land.

The potential for dioxins to enter sewerage systems is low, primarily due to the limited number of industrial sources that produce dioxins and discharge to sewer. In addition, trade waste policies employed by sewage management authorities may limit or exclude dioxins from entering the sewerage system. Increasing use of recycled sewage and biosolids has the potential to shift some of the load of dioxin presently discharged to waterways to land.

Dioxins in recycled water are currently being considered by the Environmental Contaminant Working Group for the *National Guidelines for Water Recycling - Managing Health and Environmental Risk* being prepared under the National Water Quality Management Strategy (NWQMS). These Guidelines are being developed in consultation with the States and Territories and are due for completion in 2005. They will cover water recycling and water sensitive urban design using a risk management framework already tested on the Australian Drinking Water Guidelines. These Guidelines will supersede current guidelines for reclaimed water and urban stormwater management.

The NWQMS *Guidelines for Sewerage Systems Biosolids Management* were agreed to at the Natural Resource Management Ministerial Council in December 2004. These guidelines are due for public release in mid 2005. A level for dioxins was not included in these guidelines. However, as the knowledge of dioxin levels in biosolids is limited, further work and research is presently being undertaken in this area to confirm what the quantities are and the risks they pose.

Action for Governments:

Where information identifies environmental or human health risks from dioxins in water recycling and biosolids activities, consider including a level for dioxins when undertaking a future update of the National Water Quality Management Strategy:

- Guidelines for Water Recycling – Managing Health and Environmental Risks; and

- Guidelines for Sewerage Systems – Biosolids Management.

Trade Waste

Through the NWQMS *Guidelines for Sewerage Systems: Acceptance of Trade Waste (Industrial Waste) 1994,* (*Trade Waste Guidelines*), trade waste, a liquid waste generated from any industry, business, trade or manufacturing process, must be managed to minimise the cost to the community of processing waste, to ensure environmental protection and encourage waste minimisation.

There are currently no levels set for dioxins. However, the guidelines may be amended where the local sewage authority has an appropriate scientific basis to nominate alternative criteria.

Action for Governments:

Consider including a level for dioxins when undertaking a review of the NWQMS Guidelines for Sewerage Systems: Acceptance of Trade Waste (Industrial Waste) 1994.

National Strategy for the Management of Scheduled Wastes

In 1991, the former Australia and New Zealand Environment Conservation Council (ANZECC) considered a draft strategy based on the recommendations of a joint taskforce to tackle the problem of scheduled wastes. The Strategy was released to address concerns by industry and environment groups on the disposal of this waste. An independent panel was established to investigate the extent and production of scheduled waste and alternative disposal technologies to be used. Based on this recommendation, ANZECC rejected the proposal to establish a centralised high temperature waste disposal facility and instead, agreed to establish criteria and arrangements to assess new technologies. The revised Strategy was considered by government and non-governmental agencies and in 1992 ANZECC endorsed the '*National Strategy for the Management of Scheduled Wastes'*.

The Strategy focuses on emerging, alternative, non-incineration waste destruction technologies with the aim to provide for the safe management and disposal of scheduled waste. For the purpose of the Strategy, scheduled wastes means a material or article containing a chemical, or mixture of chemicals exceeding the threshold concentration and threshold quantity, which is:

- organic in nature
- resistant to degradation by chemical, physical or biological means
- toxic to humans, animals, vegetation or aquatic life
- bioaccumulative in humans, flora and fauna.

The key aspects of the Strategy are:

- identification of separate waste streams facilitating distinct and diverse management and disposal options
- nationally agreed and consistent principles and practice
- regulatory support through legislation and regulations
- commercially viable management disposal/destruction strategies for wasteholders
- based on a consultative and open process.

The main development under the Strategy, was the establishment of three management plans which specify threshold concentrations, quantities of chemicals to be covered and phase-out dates for the three groups of chemical wastes:

- *Organochlorine Pesticides Waste Management Plan 1999*
- *Polychlorinated Biphenyls Management Plan 1996* (revised 1999)
- *Hexachlorobenzene Waste Management Plan 1996*

The three plans all require that emissions of dioxins to atmosphere from the destruction of scheduled wastes shall not exceed 0.1 ng TEQ/m^3.

While there has been good progress in removing organochlorine pesticides and polychlorinated biphenyls from use and destroying them, the process for the treatment of the hexachlorobenzene (HCB) waste held at the Orica site in Botany is under review. In determining the treatment process for the HCB waste, consideration should be given to the Stockholm Convention guidance on Best Available Techniques and Best Environmental Practices to prevent or minimise the formation and release of dioxins.

Action for Governments:

Continue the removal from use and destruction of scheduled wastes in accordance with the three plans under the National Strategy for the Management of Scheduled Waste.

Ensure that the Stockholm Convention guidance on Best Available Techniques and Best Environmental Practices is considered in selecting the process to treat the HCB waste so as to prevent or minimise the formation and release of dioxins.

Pulp mill guidelines

Commonwealth Ministers in May 1989 commissioned the CSIRO to undertake a study of bleached chemical pulp mill technology and environmental implications. On the basis of the conclusions from this study, the first set of guidelines, *Environmental Guidelines for New Bleached Eucalypt Kraft Pulp Mills* (*Pulp Mill Guidelines*) for the pulp mill industry were developed and subsequently revised in 1995 to include current State/Territory policies and incorporate new technical information. The objective of these Guidelines is to ensure protection of the environment from emissions generated by future pulp mills.

The guidelines set emission limits to ensure that the best technology and best environmental management practices are used in any new mill. The limits for dioxins in the effluent stream to be discharged to water are set at 15 pg/L.

In 2004 the Tasmanian Government reviewed these guidelines to take into consideration current world's best practice for any future bleached eucalypt kraft mills. They are consistent with the BAT and BEP guidance for production of pulp developed under the Stockholm Convention. The review, undertaken by the Tasmanian Resource Planning and Development Commission, has set new restrictions on a mill's environmental impact which all but eliminates dioxins and cuts organochlorine emissions and organic matter discharged in waste water.

With the discharge to effluent, the Commission has recommended that dioxins be set at a maximum limit of 10 pg/L, a reduction from the previous level of 15 pg/L.

The Stockholm Convention BAT and BEP guidance will be revised in future to include new technologies or practices.

Action for Governments:

Take into account the Stockholm Convention BAT and BEP guidelines for production of pulp when new mills or modifications to existing mills are proposed.

Reuse of industrial residues for land management applications

In October 2002 the EPHC agreed to develop a national approach for the re-use and recycling of industrial residues. The Ministers directed the EPHC Standing Committee to develop a national framework for the reuse and recycling of industrial residues focusing initially on their use in land management applications. It is envisaged that the framework would provide guidance on management approaches for industrial residues from source to end-use, and its ultimate fate in the environment.

Industrial residues are by-products (wastes) from industry which can be reused and recycled as an efficient means of enabling industry to contribute to sustainable resource management. Industrial residues have the potential to exhibit valuable soil conditioning and fertiliser properties due to their high levels of essential elements, such as zinc and magnesium, which are deficient in some Australian soils. However, there are a number of elements, such as cadmium, that can have adverse affects on the environment and human health, if present in high concentrations.

The EPHC Industrial Residues Working Group is currently working with the Fertiliser Working Group, a Primary Industries Standing Committee body, in developing national standards for contaminants in fertiliser. A standard for dioxins will be included.

Action for Governments:

Consider setting a level for dioxins in fertilisers and industrial residues when applied to land for soil amelioration purposes.

Used Oil Regulations

The *Product Stewardship for Oil Programme* was introduced in 2001 by the Australian Government to provide incentives to increase used oil recycling with the aim to encourage the environmentally sustainable management and re-refining of used oil.

The *Product Stewardship (Oil) Act 2000* establishes the general framework and benefit entitlements of the arrangements. The objectives of the Act are to:

- develop a product stewardship arrangement for used oils
- ensure the environmentally sustainable management, re-refining and reuse of used oil
- support economic recycling options for used oil.

Under the *Product Stewardship (Oil) Amended Regulations 2003 (No. 1)*, the total amount of dioxins and furans in re-refined base oil (Category 1) must be less than 10 pg/g of oil. This level was based on methods developed by the United States of America Environment Protection Agency.

A review of the Act in July 2004 was tabled in the House of Representatives in November 2004. The recommendations are now currently out for public consultation. There were no recommendations to amend the level of dioxins and furans in re-refined base oil.

Action for the Australian Government:

No further action required at this time to amend the level of dioxins and furans in re-refined base oil.

5.7 NATIONAL POLLUTANT INVENTORY

The *National Pollutant Inventory (NPI) National Environmental Protection Measure* is an Internet database designed to provide the community, industry and government with information on the types and amounts of certain substances being emitted to the environment.

The NPI contains data on 90 priority substances, including polychlorinated dioxins and furans, which were identified as important because of their possible health and environmental effects. The NPI requires reporting from a wide range of industry and non-industry sources using a variety of techniques. Facilities must report on dioxins and furans if they exceed the reporting threshold i.e. if a facility uses 2,000 tonnes or more of fuel, or 60,000 megawatt hours of energy per year.

Currently, the NPI reports the emissions of polychlorinated dioxins and furans in kilograms per year. However, polychlorinated dioxins and furans are complex mixtures and are usually reported by other programmes and studies in toxic equivalents (TEQ). TEQ is a means of scaling the emissions of each type of dioxins and furans according to their relative toxicity.

The reporting of polychlorinated dioxins and furans in TEQs would bring the NPI into line with current world's best practice. It would also provide a more useful data set, simplify reporting by industry and enable easier benchmarking within Australia and between other countries.

At the 9th meeting of EPHC in December 2004, Council resolved to review the NPI NEPM. The NPI NEPM has been operational for six years and as the programme is used by a variety of groups, the review was to establish whether the programme is currently delivering all the benefits expected of the programme.

The review targeted the areas for improvements and built on earlier reviews, evaluating whether previous recommendations were still relevant. The review set out to identify possible changes to design parameters for the NPI. The outcome of the review will provide a starting point for Council to consider whether to embark on a process to vary the NPI NEPM.

The review has been carried out by an independent reviewer under the supervision of an EPH Standing Committee working group and the results have been submitted to EPHC.

Action for Governments:

Consider reporting dioxins in toxic equivalents (TEQs) under the National Pollutant Inventory.

5.8 HUMAN INTAKE

The human health risk assessment (NDP Technical Report No 12) found that the public health risk for Australians from the exposure of dioxins from food and other sources is low. However to keep this level low, the report made a number of recommendations with the aim of reducing any potential risks to human health:

- programmes to reduce the release of dioxins into the environment need to be ongoing
- ways to block the cycling of dioxins through the food supply need to be identified
- reducing the levels of dioxins in feed given to livestock, poultry and aquaculture fish will help to reduce the levels of dioxins in the food supply
- since foods high in animal fats are a source of exposure to these chemicals, current efforts to promote lower saturated fat intake in the population should continue
- due to the inhalation of dioxins through cigarette smoke, current programmes to discourage cigarette smoking should be maintained
- the population burden of dioxin-like compounds should be monitored periodically, to see whether risk reduction strategies are effective.

Action relating to reducing the environmental release of dioxins is considered under sections 5.1 to 5.7 and section 5.11. Action relating to stockfeed is considered under section 5.9.

As the levels of dioxins in breast milk are low by international standards and have declined over the last decade (as outlined in NDP Technical Report No 10) it should be noted that it is the advice of the World Health Organisation and the National Health and Medical Research Council (NHMRC) in Australia that breast milk is the best food for babies.

Efforts to promote lower saturated fat intake in the population are reflected in several recent Australian Government initiatives. The *NHMRC's 2003 Dietary Guidelines for Australian Adults* and the *Dietary Guidelines for Children and Adolescents in Australia* both recommend 'limiting saturated fat' in the diet and provide practical advice on how this can be achieved. This recommendation is supported by the Australian Government's national food selection guide, the *Australian Guide to Healthy Eating* (1998), an educational resource providing advice on eating for good health. Organisations such as Nutrition Australia, the Dieticians Association of Australia and the National Heart Foundation of Australia also support reducing saturated fat intake through provision of professional and consumer-based advice, resources and projects. Other national initiatives, including a focus on healthy eating, although not specifically aimed at reducing saturated fat intake, include: the National strategic framework and agenda for action for public health nutrition, (*Eat Well Australia*, 2000-2010) developed by the Strategic Inter-Governmental Nutrition Alliance and the Australian Government's response to the issue of overweight and obesity in children - *Healthy Weight 2008: the national action agenda for children and young people and their families* (2003).

Tobacco leaf naturally contains both organic carbon and chlorine ions and consequently, as for any thermal process, “combustion” of cigarettes and cigars produces dioxins. On studies undertaken in Germany and Sweden, emissions on average from the smoking of a cigarette were 0.1pg TEQ/cigarette. Recent studies in Australia illustrate that on average the smoking population smoke 14 to 15 cigarettes per day. For those who smoke approximately 20 cigarettes a day, this could result in a dioxin intake of 3 pg/day. For smokers, the health risk from other

carcinogenic components of cigarettes far outweigh the likely health risk from dioxins, however, it appears that encouraging people to give up smoking would help reduce their body burden of dioxins.

Australia has a comprehensive tobacco policy expressed in the *National Tobacco Strategy 2004-2009*. The Australian Government discourages cigarette smoking through the national prohibition of tobacco advertising and sponsorship; health warnings on tobacco packaging; the classification and scheduling of smoking cessation pharmacotherapies; customs duty and excise on tobacco products; control of illicit production and distribution; and prohibition of smoking in certain venues such as airports. The Government has introduced regulations to require new, graphic health warnings on cigarette packaging from March 2006. States and Territories are responsible for smoking cessation support services (Quitlines); regulation of retailers, including registration and licensing where applicable; prevention, detection and prosecution of sales to minors; smoking restrictions in non-Australian Government venues (the vast majority); and local restrictions on advertising and sponsorship, including point of sale advertising. Both tiers of government are involved in public information campaigns. These efforts have given Australia one of the lowest smoking rates in the world (17.4% of the population aged 14 and over were smokers in 2004).

Action for Governments:

Continue with existing programmes that discourage cigarette smoking and promote lower saturated fat intake.

Continue to promote the health benefits of exclusive breastfeeding to the age of six months, then the introduction of complementary foods and continued breastfeeding thereafter.

Subject to resources, give consideration to periodically monitoring the population burden of dioxins in order to assess whether risk reduction strategies are having the desired effect in lowering dioxin levels in humans.

5.9 AGRICULTURAL PRODUCTS

Agricultural commodities

The Australian National Residue Survey (NRS) is a programme conducted by the Department of Agriculture, Fisheries and Forestry (DAFF). The NRS was established in the early 1960s as the Commonwealth's response to growing concerns about pesticide residues in major meat export markets. The purpose of the NRS now is to monitor and report the level of residues and contaminants in food, inputs to production and/or the environment. Since then, the range of commodities covered by the NRS has expanded and now, about 15 animal, 14 plant and selected fisheries and aquaculture products are monitored. The NRS is not involved in the testing of imported food or animal feedstuffs.

Residue[1] testing is an important part of the national strategy to minimise unwanted residues and environmental contamination in food. Monitoring identifies potential problems and any necessary follow-up action. Residue testing is also an important measure of product quality, particularly for exporting countries such as Australia. The NRS also monitors and reports the level of residues and contaminants in food and inputs to production and/or the environment.

The NRS conducts or is involved in monitoring surveys and surveillance, compliance and residue prevention programmes. Residue prevention programmes are designed to prevent or minimise the risks of unacceptable residues to public health and trade. Chemical commodity combinations to be included in surveys are determined by the NRS in consultation with industries on the basis of risk assessments, and those combinations of highest risk are including in the NRS monitoring surveys. In conducting risk assessments, the main factors considered include international and/or domestic perceptions of the chemical commodity combination as a possible public health hazard or trade barrier, the toxicity of the chemical or its break-down products and the extent and results of previous monitoring of the chemical commodity combination.

Concentrations of residues of agricultural and veterinary chemicals and environmental contaminants, such as metals, are assessed against Australian standards that are expressed as Maximum Residue Limits (MRL), which are maximum permissible limits for chemical residues in food. MRL's are set by Food Standards Australia New Zealand (FSANZ) and the Australian Pesticides and Veterinary Medicines Authority (APVMA). MRLs have been set for PCBs in food such as meats, however there are no current limits set for dioxins and furans.

Contaminants that have been surveyed include organochlorines, organophosphates, PCBs, and antimicrobials. Dioxins were surveyed in 2002-03 for the first time under the NDP and the results were reported in the NDP Technical Report No 8[2]. The NDP study shows that levels of dioxins and dioxin-like PCBs in Australia's meat, milk and fish are low and compare favourably with levels reported in comparable studies from other countries. No samples contained dioxin levels exceeding the European Union standard. In view of the results of this survey, and given

[1] Residues in agricultural terms are generally used to describe a small amount of a chemical treatment or its breakdown products which remain in or on a product. Residues in food safety include elements, such as metals, or other chemicals which may be present in food either through natural circumstances or as a consequence of industrial or agricultural activities.

[2] The work in this study was co-funded by participant industry groups.

the significant costs associated with dioxins testing, DAFF does not support routine on-going testing of livestock commodities but would consider further testing in ten years, subject to resources.

Action for the Australian Government:

Subject to resources, give consideration to undertaking a study in ten years in order to ensure dioxin levels in livestock commodities remain within international and domestic standards.

Stockfeeds

Regulatory controls over imports of animal feeds are primarily the responsibility of the Australian Government. No specific legislation currently exists to address potential food hazards in imported animal feeds unless they can be shown to be a quarantine risk and dealt with under the *Quarantine Act 1908*. There are currently controls in every Australian jurisdiction to prevent the use of restricted animal material in feeds for ruminants. Other feed controls are managed under the "Uniform Australian Standards for the Labelling and Content of Stock Foods", which was agreed to by the then Standing Committee on Agriculture and Resource Management (now Primary Industries Standing Committee, PISC) in February 1997.

While Australian animal production industries have considered and implemented voluntary measures to address hazards in animal feeds, the regulatory framework has identifiable gaps. Controls over animal feeds across domestic jurisdictions are very variable and there is no current Commonwealth statutory structure to deal with imports of animal feeds beyond the scope of specific quarantine concerns.

The Australian Government red meat industry partnership, SAFEMEAT, recently endorsed a proposed national framework for managing food safety risks associated with stockfeeds. In March 2005, PISC agreed that the Primary Industries Health Committee (PIHC) would establish a working group to examine and evaluate components of a proposed framework for addressing the issue of animal feed controls in Australia. The working group will determine the scope of the framework for national feed standards ensuring coverage of terrestrial and aquatic animal production. Reference will be made to existing animal feed standards to ensure the standard is applied Australia-wide and is effective in controlling all known or anticipated hazards of concern in animal feeds.

Action for the Australian Government:

Work with Australian animal production industries to support implementation of voluntary measures to address hazards, including dioxins, in animal feeds.

Establish a working group to examine and evaluate components of a proposed framework for addressing the issue of animal feed controls in Australia.

5.10 FOOD

FSANZ, working in partnership with Australia's Commonwealth, State and Territory governments and the New Zealand Government, protects the health and safety of the people in Australia and New Zealand by maintaining a safe food supply. A key activity for FSANZ is

monitoring the food supply to ensure that existing food regulatory measures provide adequate protection of consumer health and safety. The Australian Total Diet Survey (ATDS) is part of that monitoring.

The ATDS estimates Australian consumers' dietary exposure to substances found in the food supply through the testing of food samples collected from around Australia that are representative of the total diet. In order to achieve more accurate dietary exposure estimates, the foods examined in the ATDS are prepared to a 'table ready' state before they are tested.

The samples collected for the 20th ATDS in 2000/2001 were analysed for dioxins. These results were then combined with dietary information from the 1995 National Nutrition Survey to assess the population's dietary exposure. The resulting dietary exposure assessment contributed to the overall dioxin human health risk assessment conducted by the Department of Health and Ageing as part of the NDP (NDP Technical Report No 12).

For the general population, over 95% of exposure to dioxins is through the diet, with foods of animal origin such as meat, dairy products and fish being the main sources.

An Australian Tolerable Monthly Intake (TMI) value for dioxins and furans of 70 pg TEQ/kg body weight/month, was recommended by the Therapeutic Goods Administration and the National Health and Medical Research Council in 2002. This level was based on the most sensitive reproductive effects of dioxins in animals. The recommended TMI from all sources combined and including dioxins, polychlorinated furans and dioxin-like PCBs, is equivalent to that set by the Joint Expert Committee on Food Additives (JECFA), a committee of the United Nations Food and Agriculture Organization (FAO) and the World Health Organization (WHO). The human health risk assessment found that for Australians aged 2 years or older, the monthly intake of dioxins was between 3.9-15.8 pg TEQ/kg bw/month or between 6-23% of the TMI. Since the completion of the Human Health Risk Assessment of Dioxins in Australia, the Therapeutic Goods Administration has considered available information published post 2002 and found no evidence that would suggest the Australian TMI should be updated at this stage.

As there are limitations associated with the data used to characterise the risk associated with exposure to dioxins from food, in general, conservative assumptions were used to minimise the possibility that risks would be underestimated. On the basis of this analysis the public health and safety risk for all Australians from exposure to dioxins from foods is very low.

The results and recommendations of the National Dioxins Programme's human health risk assessment were considered by the Food Regulation Standing Committee (FRSC) in June 2005. FRSC acknowledged that source-directed measures that reduce the release of dioxins into the environment are the most appropriate means of ensuring a long term reduction in the exposure of Australians to dioxins, including through food. Given the current low public health risk, FRSC agreed that setting maximum levels (MLs) and generally expected levels (GELs) for dioxins in food is not appropriate at this stage. However, FRSC supports the repeat of the National Dioxins Programme's dioxin dietary exposure survey in ten years, contingent on future decisions about funding and the lead agency. Should a future survey show that source-directed measures have been ineffective at reducing dioxin levels in foods, FRSC will give further consideration to establishing levels for dioxins in food.

Action for the Governments:

Subject to resources, give consideration to undertaking a study in ten years to determine if dioxin levels in food have remained low

Consider setting maximum levels or generally expected levels for dioxins in food, should a future survey reveal that source-directed measures have been ineffective at reducing dioxin levels in foods.

5.11 OTHER ACTIONS

The Australian Government is also investigating possible legislative avenues with which it can address dioxins in the environment, to ensure the discharge of Australia's obligations under the Stockholm Convention. One suggested legislative avenue is through approval being required under the *Environment Protection and Biodiversity Conservation Act 1999* for dioxin emissions above a particular level or resulting from particular activities.

Action for the Australian Government

Continue to investigate possible legislative avenues with which it can address dioxins in the environment, as obliged under the Stockholm Convention.

Appendix D: Chemicals targeted in the National Strategy for the Management of Scheduled Wastes

CATEGORY	CHEMICAL	REGULATORY SYNONYMS	CAS RN(1)	Listed on Stockholm
Hexachlorobenzene	Benzene, hexachloro-	Hexachlorobenzene (HCB)	118741	✓
Organochlorine pesticides and germicides	Aldrin=	1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exodimethanonaphthalene	309002	✓
	Benzene, pentachloro-nitro	Pentachloronitrobenzene	82688	
	alpha-BHC		319846	
	beta-BHC		319857	
	gamma-BHC	Hexachlorocyclohexane (gamma isomer) (Lindane)	58899	
	delta-BHC		319868	
	Chlordane	1,2,4,5, 6,7,8,8-octachloro- 3a,4, 7,7a-tetrahydro-4,7-methanoindan	57749	✓
	Dieldrin	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo, exo-1,4: 5,8-dimenthanonaphthalene	60571	✓
	DDD	4,4'-DDD, Dichlorodiphenyldichloroethane (TDE)	72548	
	DDE	4,4'-DDE	72559	
	DDT	4.4'-DDT Dichlorodiphenyltrichloroethane	50293	✓
	Endrin	1,2,3,4,10,10-Hexachloro-6,6,7-epoxy-1,4,4a,5,6,7,8, 8a-octahydro-endo, endo-1,4: 5,8-dimethanonaphthalene	60571	✓
	Heptachlor	4,7-Methano-1H-indene, 1,4, 5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-		✓
	Heptachlor epoxide		1024573	
	Hexachlorophene	2,2'-Methylenebis (3,4,6-trichlorophenol)	7304	
	Isodrin	1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,endo-dimethano-naphthalene	465736	
	Pentachlorophenol	Phenol, pentachloro-	87865	
	2,4,5-Trichlorophenoxy-acetic acid	2,4,5-Trichlorophenoxyacetic acid	93765	
Other chlorinated hydrocarbons	Benzene, pentachloro-	Pentachlorobenzene	608935	
	Benzene, 1,2,4,5-tetrachloro	1,2,4,5-Tetrachlorobenzene	95943	
	Endrin aldehyde		7421934	✓
	Phenol, 2,3,4,6-tetrachloro-	2,3,4,6-Tetrachlorophenol	58902	
	1,2,4-Trichlorobenzene		120821	
PCBs	Polychlorinated Biphenyls (#) (PCBs)			✓

Substances popularly known as but not limited to Aroclor, Askeral, Chlophen, Chlorentol, chlorextol, Chlorinated Diphenyl, Chlorinated Biphenyl, Chlorinol, Diachlor, DK, Dykanol, Fenchlor, Fenclor, Inerteen, Kanachlor, Kanechlor, Montar and Noflamol.

Appendix E: Facilities licensed to store, transport or treat PCB waste

State / territory	Address	Activity
Australian Capital T	Energy Services Invironmental Pty Ltd (ESI) Unit 2/20 Winchcombe Court MITCHELL ACT 2911 Tel: 02 6241 5367 Fax: 02 6241 5439	PCB dechlorination and recycling facility Treating non-scheduled only
New South Wales	Plastech Operations PO Box 396 ST MARYS NSW 1790 Tel: 1800 024 259	Drained PCB transformers only
	Oil Treatment Services (OTS) 90 Old Temora Road YOUNG NSW 2594 Tel: 02 6382 5387 Fax: 02 6382 5043	Treatment facility – only treats non-scheduled PCBs (<50 mg/kg) at commercial scale
Queensland	BCD Technologies 2 Krypton Street NARANGBA QLD 4505 Tel: 07 3203 3400 Fax: 07 3203 3450.	Final destruction facility
Victoria	Ace Scrap Metal & Steel Co P/L, 5 Coronet St WENDOUREE VIC 3355 Tel: 03 5339 1753 Fax: 03 5339 6288	Storage only (capacitors only)
	Chemsal P/L 83 Dohertys Rd LAVERTON NORTH VIC 3026 Tel: 03 9369 4222	Storage only
	Master Waste P/L 1 Amanda Rd TOTTENHAM VIC 3012 Tel: 03 9314 1138	Receive waste oil with <50 ppm PCB only.
	Mri (Aust) P/L 20-24 Dennis St CAMPBELLFIELD VIC 3061 Tel: 03 9305 4611	Storage only
	Ozwaste Solutions P/L 21 Tova Dr CARRUM DOWNS VIC 3201 Tel: 0425 776 215 or 0403 462 423	Storage only

	Patrick Distribution P/L Trading As United Transport Services 180 Fitzgerald Rd LAVERTON NORTH VIC 3026 Tel: 02 9250 1100 Fax: 02 9250 1155	Storage only
	Siemens Ltd & Thiess Contractors P/L Trading As Silcar Miners Way MORWELL VIC 3840 Tel: 03 5132 1420	Storage only
	Teris (Aust) P/L 92 Ordish Rd DANDENONG VIC 3175 Tel: 03 9794 0066	Receive waste oil with <50 ppm PCB only.
South Australia	Transpacific Industries Pty Ltd, 20 George St WINGFIELD SA 5013 Tel: 07 3367 7800 Fax: 07 3367 7899	Storage only
	D & V Services Pty Ltd, Cheviot Road, Salisbury South, SA 5108 Tel: 08 8283 2700 Fax: 08 8283 2711	Storage only
	Brambles Australia Ltd, 7 Eucalypt Drive, Mount Gambier SA 5290 Tel: 08 8725 3500 Fax: 08 8723 0325	Storage only
	Patrick Logistics Pty Ltd, Stock Rd, Cavan, SA 5094 Tel: 08 8262 4517 Fax: 08 8349 4353	Storage only
	CKI Utilities etc (formerly ETSA) 500 Grand Junction Road, Angle Park, SA 5010 Tel: 08 8292 0597 Fax: 08 8292 0047	Storage only
	Terminals Pty Ltd, Veitch Road, Osborne SA 5017 Tel: 08 8440 9700 Fax: 08 8341 8850	Storage only
Tasmania	No facilities in Tasmania	
Western Australia	Tox Free Solutions Mason Road KWINANA WA 6966 Tel: 08 9439 2362	Thermal desorption technology to concentrate PCB, before sent to BCD Technologies for destruction.

Appendix F: Further information

All publications marked with an * are available in hard copy from DEH.

International Conventions

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal http://www.basel.int/

*Rotterdam Convention – Prior Informed Consent** http://www.pic.int

*Stockholm Convention on Persistent Organic Pollutants** http://www.pops.int

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